

**AG E N D A**  
**JAMES CITY COUNTY BOARD OF SUPERVISORS**  
**REGULAR MEETING**  
**County Government Center Board Room**  
**101 Mounts Bay Road, Williamsburg, VA 23185**  
**December 13, 2016**  
**6:30 PM**

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**A. CALL TO ORDER**

**B. ROLL CALL**

**C. MOMENT OF SILENCE**

**D. PLEDGE OF ALLEGIANCE**

1. Pledge Leader - Cub Scout Pack 44

**E. PUBLIC COMMENT - Until 7 p.m.**

**F. PRESENTATIONS**

1. Presentation of Chairman's Awards
2. Review of FY16 Financial Statements for James City County and James City Service Authority - Dixon Hughes Goodman, LLP
3. VDOT Quarterly Update
4. General Services Update

**G. CONSENT CALENDAR**

1. Minutes Adoption - November 8, 2016
2. Chesapeake Bay Preservation Ordinance Violation
3. Chesapeake Bay Preservation Ordinance Violation
4. Dedication of a Street in Section 3 of the White Hall Subdivision
5. Authorization for One Temporary Overhire Police Officer Position
6. Grant Award - Commonwealth Attorney - Virginia Domestic Violence Victim Fund - \$55,471
7. Heritage Humane Society Contract for Animal Shelter Management Services
8. EDA Memorandum of Understanding (Marina)

**H. PUBLIC HEARING(S)**

1. ZO-0013-2016. Zoning Ordinance Amendments to Permit Mobile Food Vending Vehicles (Food Trucks) in the B-1, General Business District
2. SUP-0015-2016. Lafayette High School Auxiliary Gym
3. SUP-0014-2016/MP-0002-2016. Warhill Sports Complex Master Plan and SUP Amendment
4. Ordinance to Amend Chapter 20, Taxation

**I. BOARD CONSIDERATION(S)**

**J. BOARD REQUESTS AND DIRECTIVES**

**K. REPORTS OF THE COUNTY ADMINISTRATOR**

1. County Administrator's Report

**L. PUBLIC COMMENT**

**M. CLOSED SESSION**

**N. ADJOURNMENT**

1. Adjourn until 4 pm on January 3, 2017 for the Organizational Meeting



**ITEM SUMMARY**

DATE: 12/13/2016

TO: The Board of Supervisors

FROM: Teresa J. Fellows, Administrative Coordinator

SUBJECT: Pledge Leader - Cub Scout Pack 44

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**REVIEWERS:**

Department	Reviewer	Action	Date
Board Secretary	Fellows, Teresa	Approved	12/6/2016 - 4:11 PM

**ITEM SUMMARY**

DATE: 12/13/2016

TO: The Board of Supervisors

FROM: Teresa J. Fellows, Administrative Coordinator

SUBJECT: Presentation of Chairman's Awards

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**REVIEWERS:**

Department	Reviewer	Action	Date
Board Secretary	Fellows, Teresa	Approved	11/29/2016 - 1:48 PM

**ITEM SUMMARY**

DATE: 12/13/2016

TO: The Board of Supervisors

FROM: Sharon B. Day, Assistant Director of Financial and Management Services

SUBJECT: Review of FY16 Financial Statements for James City County and James City Service Authority - Dixon Hughes Goodman, LLP

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**ATTACHMENTS:**

	Description	Type
▣	Review of FY16 Financial Statements for James City County and James City Service Authority - Dixon Hughes Goodman, LLP	Cover Memo
▣	JCC SAS 114 Letter	Exhibit
▣	JCC Financial Statements	Exhibit
▣	JCSA SAS 114 Letter	Exhibit
▣	JCSA Financial Statements	Exhibit

**REVIEWERS:**

Department	Reviewer	Action	Date
Accounting	Mellen, Sue	Approved	11/21/2016 - 2:09 PM
Financial Management	Mellen, Sue	Approved	11/21/2016 - 2:11 PM
Publication Management	Babbitt, Katterina	Approved	11/21/2016 - 2:12 PM
Legal Review	Kinsman, Adam	Approved	11/22/2016 - 6:38 PM
Board Secretary	Fellows, Teresa	Approved	11/23/2016 - 7:57 AM
Board Secretary	Purse, Jason	Approved	12/6/2016 - 9:27 AM
Board Secretary	Fellows, Teresa	Approved	12/6/2016 - 9:38 AM

## **MEMORANDUM**

DATE: December 13, 2016

TO: The Board of Supervisors

FROM: Sharon Day, Assistant Director of Financial & Management Services

SUBJECT: Review of FY16 Financial Statements for James City County and James City Service Authority – Dixon Hughes Goodman, LLP

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Included in the Reading File are the FY16 financial statements for James City County and James City Service Authority. Leslie Roberts, Partner at Dixon Hughes Goodman, LLP, will present an overview to the Board.

No Board action is needed.

SD/kb  
AnnualFinReportFY16-mem

Attachment

**Report to the  
Board of  
Supervisors**

# **County of James City, Virginia**

**June 30, 2016**

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## **Contacts**

### ***Leslie F. Roberts, CPA***

Partner

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701 Town Center Drive, Suite 700  
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### ***Cheri D. Spencer, CPA***

Manager

Dixon Hughes Goodman LLP  
440 Monticello Avenue, Suite 1400  
Norfolk, VA 23510  
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## Communications with Those Charged with Governance

November 30, 2016

Board of Supervisors  
County of James City, Virginia

We have audited the financial statements of the County of James City, Virginia (the “County”) for the year ended June 30, 2016, and have issued our report thereon dated November 30, 2016. Professional standards require that we provide you with information about our responsibilities in accordance with auditing standards generally accepted in the United States of America, as well as certain information related to the planned scope and timing of our audit. We have communicated such information in our letter to you dated January 15, 2016. Professional standards also require that we communicate to you the following information related to our audit.

### Qualitative Aspects of Accounting Practices

Management is responsible for the selection and use of appropriate accounting policies. The significant accounting policies used by County of James City, Virginia are described in Note 1 to the financial statements. As described in Note 1 to the financial statements, the County adopted GASB Statement No. 72, *Fair Value Measurement and Application (GASB 72)*, in 2016. No matters have come to our attention that would require us, under professional standards, to inform you about (1) the methods used to account for significant unusual transactions and (2) the effect of significant accounting policies in controversial or emerging areas for which there is a lack of authoritative guidance or consensus.

Accounting estimates are an integral part of the financial statements prepared by management, and are based on management’s knowledge and experience about past and current events, and assumptions about future events. Certain accounting estimates are particularly sensitive because of their significance to the financial statements and because of the possibility that future events affecting them may differ significantly from those expected. The most sensitive estimates affecting the financial statements were:

Management’s estimates of the Other Post-Employment Benefits (OPEB) and pension plan liabilities and related deferred balances are based on the valuations received from the independent actuaries. We evaluated the key factors and assumptions used to develop the OPEB and pension plan liabilities and related deferred balances in determining that it is reasonable in relation to the financial statements taken as a whole.

Management’s estimate of the allowance for uncollectible accounts is based on County policy. We evaluated the key factors and assumptions used in determining that it is reasonable in relation to the financial statements taken as a whole.

Management’s estimate of the landfill closure and post-closure care cost liability is based on the valuations received from the Department of Environmental Quality. We evaluated the key factors and assumptions used in determining the landfill closure and post-closure care cost liability in determining that it is reasonable in relation to the financial statements taken as a whole.

Management’s estimate of the depreciable lives is based on County policy. We evaluated the key factors and assumptions used in determining asset lives in determining that it is reasonable in relation to the financial statements taken as a whole.





The most significant disclosures in the financial statements were:

Note 6 – Capital Assets

Note 9 – Long-Term Liabilities

Note 16 – Commitments and Contingencies

**Difficulties Encountered in Performing the Audit**

We encountered no significant difficulties in dealing with management in performing and completing our audit.

**Corrected and Uncorrected Misstatements**

Professional standards require us to accumulate all misstatements identified during the audit, other than those that are trivial, and communicate them to the appropriate level of management. We are pleased to report that there were no audit adjustments posted and there were no uncorrected misstatements or omitted disclosures.

**Disagreements with Management**

For purposes of this letter, professional standards define a disagreement with management as a financial accounting, reporting, or auditing matter, whether or not resolved to our satisfaction, that could be significant to the financial statements or the auditor's report. We are pleased to report that no such disagreements arose during the course of our audit.

**Management Representations**

We have requested certain representations from management that are included in the management representation letter included in Appendix A.

**Management Consultations with Other Accountants**

In some cases, management may decide to consult with other accountants about auditing and accounting matters, similar to obtaining a "second opinion" on certain situations. If a consultation involves application of an accounting principle to the County's financial statements or a determination of the type of auditor's opinion that may be expressed on those statements, our professional standards require the consulting accountant to check with us to determine that the consultant has all the relevant facts. To our knowledge, there were no such consultations with other accountants.

**Other Significant Matters, Findings, or Issues**

We generally discuss a variety of matters, including the application of accounting principles and auditing standards, with management each year prior to retention as the County's auditors. However, these discussions occurred in the normal course of our professional relationship and our responses were not a condition to our retention.

This information is intended solely for the use of the Board of Supervisors and management of the County of James City, Virginia, and is not intended to be, and should not be, used by anyone other than these specified parties.

Sincerely,

*Dixon Hughes Goodman LLP*

**Newport News, Virginia**

Report to the Board of Supervisors  
County of James City, Virginia

## **Appendix A**

### **Management Representation Letter**



**Financial and Management Services**

101-F Mounts Bay Road  
P.O. Box 8784  
Williamsburg, VA 23187-8784  
P: 757-253-6630

[jamestownva.gov](http://jamestownva.gov)

November 30, 2016

Dixon Hughes Goodman, L.L.P.  
701 Town Center Drive, Suite 700  
Newport News, VA 23606-4295

This representation letter is provided in connection with your audit of the financial statements of the County of James City, Virginia (the "County"), which comprises the respective financial position of the governmental activities, the business-type activities, the aggregate discretely presented component units, each major fund, and the aggregate remaining fund information as of June 30, 2016 and the respective changes in financial position and, where applicable, cash flows for the year then ended, and the related notes to the financial statements, for the purpose of expressing an opinion on whether the financial statements are presented fairly, in all material respects, in accordance with accounting principles generally accepted in the United States of America (U.S. GAAP).

Certain representations in this letter are described as being limited to matters that are material. Items are considered material, regardless of size, if they involve an omission or misstatement of accounting information that, in the light of surrounding circumstances, makes it probable that the judgment of a reasonable person relying on the information would be changed or influenced by the omission or misstatement. An omission or misstatement that is monetarily small in amount could be considered material as a result of qualitative factors.

We confirm that, to the best of our knowledge and belief, having made such inquiries as we considered necessary for the purpose of appropriately informing ourselves as of the date of this letter:

***Financial Statements***

1. We have fulfilled our responsibilities, as set out in the terms of the audit engagement letter dated January 15, 2016 our responsibility for the preparation and fair presentation of the financial statements and for preparation of the supplementary information in accordance with the applicable criteria.
2. The financial statements referred to above are fairly presented in accordance with U.S. GAAP and include all properly classified funds and other financial information of the primary government and all component units required by generally accepted accounting principles to be included in the financial reporting entity.
3. We acknowledge our responsibility for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.
4. We acknowledge our responsibility for the design, implementation, and maintenance of internal control to prevent and detect fraud.
5. The following have been properly accounted for and disclosed in the financial statements:
  - a. Related-party relationships and transactions, including revenues, expenditures/expenses, loans, transfers, leasing arrangements, and guarantees, and amounts receivable from or payable to related parties;
  - b. Guarantees, whether written or oral, under which the County is contingently liable;
  - c. Other liabilities or gain or loss contingencies.
6. Significant estimates that may be subject to a material change in the near term have been properly disclosed in the financial statements. We understand that "near term" means the period within one

year of the date of the financial statements. In addition, we have no knowledge of concentrations existing at the date of the financial statements that make the County vulnerable to the risk of severe impact that have not been properly disclosed in the financial statements.

7. Significant assumptions we used in making accounting estimates, including estimates of fair value, are reasonable.
8. We believe that the effects of the uncorrected misstatements in the financial statements summarized in the attached schedule, which consists only of the reversal impact of prior year's uncorrected misstatements (no current year uncorrected misstatements) and aggregated by you during the current engagement are immaterial, both individually and in the aggregate, to the financial statements taken as a whole. There were no omitted disclosures.
9. Guarantees, whether written or oral, under which the County is contingently liable, if any, have been properly recorded or disclosed.
10. All events subsequent to the date of the financial statements and for which U.S. GAAP requires adjustment or disclosure have been adjusted or disclosed. No events, including instances of noncompliance, have occurred subsequent to the balance sheet date and through the date of this letter that would require adjustment to or disclosure in the aforementioned financial statements.
11. We have disclosed to you all known actual or possible litigation and claims and they have been accounted for and disclosed in accordance with U.S. GAAP. The County is currently involved in certain legal matters of which the outcome is uncertain. Management does not feel that a material unfavorable outcome related to any legal matter under current evaluation is probable at this time.

***Information Provided***

12. We have provided you with:
  - a. Access to all information, of which we are aware, that is relevant to the preparation and fair presentation of the financial statements, such as records, documentation, and other matters.
  - b. Additional information that you have requested from us for the purpose of the audit.
  - c. Unrestricted access to persons within the County from whom you determined it necessary to obtain audit evidence.
  - d. Minutes of the meetings of the County or summaries of actions of recent meetings for which minutes have not yet been prepared.
13. All material transactions have been recorded in the accounting records and are reflected in the financial statements.
14. We have disclosed to you the results of our assessment of the risk that the financial statements may be materially misstated as a result of fraud.
15. We have no knowledge of any fraud or suspected fraud affecting the County involving:
  - a. Management.
  - b. Employees who have significant roles in internal control.
  - c. Others where the fraud could have a material effect on the financial statements.
16. We have no knowledge of any allegations of fraud or suspected fraud affecting the County's financial statements received in communications from employees, former employees, regulators, or others.
17. There have been no communications from regulatory agencies concerning noncompliance with, or deficiencies in, financial reporting practices.




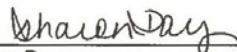
18. We have no knowledge of instances of noncompliance or suspected noncompliance with laws, regulations, contracts, or grant agreements, or abuse, whose effects should be considered when preparing the financial statements.
19. We have disclosed to you the identity of the County's related parties and all the related party relationships and transactions of which we are aware.
20. We have made available to you all financial records and related data.
21. We have identified to you any previous audits, attestation engagements, and other studies related to the audit objectives and whether related recommendations have been implemented.
22. The County has no plans or intentions that may materially affect the carrying value or classification of assets, liabilities, or equity.
23. We are responsible for compliance with the laws, regulations, and provisions of contracts and grant agreements applicable to us, including tax or debt limits and debt contracts; and we have identified and disclosed to you all laws, regulations and provisions of contracts and grant agreements that we believe have a direct and material effect on the determination of financial statement amounts or other financial data significant to the audit objectives, including legal and contractual provisions for reporting specific activities in separate funds.
24. There are no violations or possible violations of budget ordinances, laws and regulations (including those pertaining to adopting, approving, and amending budgets), provisions of contracts and grant agreements, tax or debt limits, and any related debt covenants whose effects should be considered for disclosure in the financial statements, or as a basis for recording a loss contingency, or for reporting on noncompliance.
25. The County complied with all aspects of contractual agreements that would have a material effect on the financial statements in the event of noncompliance.
26. The County has satisfactory title to all owned assets and there are no liens or encumbrances on such assets nor has any asset been pledged as collateral.
27. We have followed all applicable laws and regulations in adopting, approving, and amending budgets.
28. Components of net position (net investment in capital assets; restricted; and unrestricted) and fund balance amounts are properly classified and, if applicable, approved.
29. Provision for uncollectible receivables have been properly identified and recorded.
30. Expenses have been appropriately classified in or allocated to functions and programs in the statements of activities, and allocations have been made on a reasonable basis.
31. Revenues are appropriately classified in the statement of activities with program revenues or general revenues.
32. Deposits and investment securities and derivative instruments are properly classified as to risk and are properly disclosed.
33. Capital assets, including infrastructure and intangible assets, are properly capitalized, reported, and, if applicable, depreciated.
34. The government meets the GASB-established requirements for accounting for eligible infrastructure assets using the modified approach.

35. We have appropriately disclosed the County's policy regarding whether to first apply restricted or unrestricted resources when an expense is incurred for purposes for which both restricted and unrestricted net position is available and have determined that net position is properly recognized under the policy.
36. We acknowledge our responsibility for presenting the required supplementary information (RSI). The RSI is measured and presented within prescribed guidelines and the methods of measurement and presentation have not changed from those used in the prior period. We have disclosed to you any significant assumptions and interpretations underlying the measurement and presentation of the RSI.
37. With respect to the discretely presented component units supplementary information:
  - a. We acknowledge our responsibility for presenting the discretely presented component units in accordance with accounting principles generally accepted in the United States of America, and we believe the discretely presented component units, including its form and content, is fairly presented in accordance with accounting principles generally accepted in the United States of America. The methods of measurement and presentation of the discretely presented component units have not changed from those used in the prior period, and we have disclosed to you any significant assumptions or interpretations underlying the measurement and presentation of the supplementary information.
38. With respect to federal award programs:
  - a. We are responsible for understanding and complying with and have complied with the requirements of Title 2 U.S. Code of Federal Regulations (CFR) Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards (Uniform Guidance), including requirements relating to preparation of the schedule of expenditures of federal awards.
  - b. We acknowledge our responsibility for presenting the schedule of expenditures of federal awards (SEFA) and related notes in accordance with the requirements of the Uniform Guidance, and we believe the SEFA, including its form and content, is fairly presented in accordance with the Uniform Guidance. The methods of measurement or presentation of the SEFA have not changed from those used in the prior period and we have disclosed to you any significant assumptions and interpretations underlying the measurement or presentation of the SEFA.
  - c. We have identified and disclosed to you all of our government programs and related activities subject to the Uniform Guidance compliance audit, and have included in the SEFA, expenditures made during the audit period for all awards provided by federal agencies in the form of federal awards, federal cost-reimbursement contracts, loans, loan guarantees, property (including donated surplus property), cooperative agreements, interest subsidies, insurance, food commodities, direct appropriations, and other direct assistance.
  - d. We are responsible for understanding and complying with, and have complied with, the requirements of federal statutes, regulations, and the terms and conditions of federal awards related to each of our federal programs and have identified and disclosed to you the requirements of federal statutes, regulations, and the terms and conditions of federal awards that are considered to have a direct and material effect on each major program.
  - e. We are responsible for establishing and maintaining, and have established and maintained, effective internal control over compliance for federal programs that provides reasonable assurance that we are managing our federal awards in compliance with federal statutes, regulations, and the terms and conditions of federal awards that could have a material effect on our federal programs. We believe the internal control system is adequate and is functioning as intended.
  - f. We have made available to you all federal awards (including amendments, if any) and any other correspondence with federal agencies or pass-through entities relevant to federal programs and related activities.
  - g. We have received no requests from a federal agency to audit one or more specific programs as a major program.



- h. We have complied with the direct and material compliance requirements, including when applicable, those set forth in the OMB Compliance Supplement, relating to federal awards and have identified and disclosed to you all amounts questioned and all known noncompliance with the requirements of federal awards.
  - i. We have disclosed any communications from federal awarding agencies and pass-through entities concerning possible noncompliance with the direct and material compliance requirements, including communications received from the end of the period covered by the compliance audit to the date of the auditor's report.
  - j. We have disclosed to you the findings received and related corrective actions taken for previous audits, attestation engagements, and internal or external monitoring that directly relate to the objectives of the compliance audit, including findings received and corrective actions taken from the end of the period covered by the compliance audit to the date of the auditor's report.
  - k. Amounts claimed or used for matching were determined in accordance with relevant guidelines in OMB's Uniform Guidance (2 CFR part 200, subpart E) and OMB Circular A-87, Cost Principles for State, Local, and Indian Tribal Governments, if applicable.
  - l. We have disclosed to you our interpretation of compliance requirements that may have varying interpretations.
  - m. We have made available to you all documentation related to compliance with the direct material compliance requirements, including information related to federal program financial reports and claims for advances and reimbursements.
  - n. We have disclosed to you the nature of any subsequent events that provide additional evidence about conditions that existed at the end of the reporting period affecting noncompliance during the reporting period.
  - o. There are no such known instances of noncompliance with direct and material compliance requirements that occurred subsequent to the period covered by the auditors' report.
  - p. No changes have been made in internal control over compliance or other factors that might significantly affect internal control, including any corrective action we have taken regarding significant deficiencies or material weaknesses in internal control over compliance, subsequent to the period covered by the auditor's report.
  - q. Federal program financial reports and claims for advances and reimbursements are supported by the books and records from which the financial statements have been prepared.
  - r. The copies of federal program financial reports provided to you are true copies of the reports submitted, or electronically transmitted, to the respective federal agency or pass-through entity, as applicable.
  - s. We have charged costs to federal awards in accordance with applicable cost principles.
  - t. We are responsible for and have accurately prepared the summary schedule of prior audit findings to include all findings required to be included by the Uniform Guidance and we have provided you with all information on the status of the follow-up on prior audit findings by federal awarding agencies and pass-through entities, including all management decisions.
  - u. We are responsible for and have ensured the reporting package does not contain protected personally identifiable information.
  - v. We are responsible for and have accurately prepared the auditee section of the Data Collection Form as required by the Uniform Guidance.
  - w. We are responsible for taking corrective action on each audit finding of the compliance audit and have developed a corrective action plan that meets the requirements of the Uniform Guidance.
39. We take responsibility for the current year implementation of Governmental Accounting Standards Board (GASB) Statement No. 72, Fair Value Measurement and Application.

40. We have evaluated subsequent events through the date of this letter, which is the date the financial statements were available to be issued. No events have occurred subsequent to the balance sheet date and through the date of this letter that would require adjustment to or disclosure in the aforementioned financial statements.

  
\_\_\_\_\_  
Bryan Hill  
County Administrator  
\_\_\_\_\_  
Suzanne R. Mellen  
Director of Financial and Management Services  
\_\_\_\_\_  
Sharon Day  
Assistant Director of Financial and Management Services





jamescitycountyva.gov

PREPARED BY THE DEPARTMENT OF FINANCIAL AND MANAGEMENT SERVICES  
JAMES CITY COUNTY, VIRGINIA

**THE COMPREHENSIVE ANNUAL FINANCIAL REPORT**  
**FOR THE FISCAL YEAR ENDED JUNE 30, 2016**

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**County of James City, Virginia**  
Comprehensive Annual Financial Report  
June 30, 2016

*(With Independent Auditors' Report Thereon)*

Prepared by:  
Department of Financial and Management Services  
James City County, Virginia

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## **Introductory Section**

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# County of James City, Virginia

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## County of James City, Virginia

### County Officials

Year ended June 30, 2016

#### Board of Supervisors

Michael J. Hipple, Sr., Powhatan District, Chairman  
John J. McGlennon, Roberts District, Vice Chairman  
Kevin D. Onizuk, Jamestown District  
Sue Sadler, Stonehouse District  
Ruth Larson, Berkeley District  
Bryan J. Hill, Clerk

#### Officials

Michael E. McGinty, Judge of the Circuit Court  
B. Elliott Bondurant, Judge of the Circuit Court  
Mona Foley, Clerk of the Circuit Court  
Nathan R. Green, Commonwealth's Attorney  
Richard W. Bradshaw, Commissioner of the Revenue  
Jennifer D. Tomes, Treasurer  
Colleen K. Killilea, Judge of the General District Court  
George C. Fairbanks, IV, Judge of the Juvenile and Domestic Relations Court  
Robert J. Deeds, Sheriff  
Bradley J. Rinehimer, Chief of Police  
Dr. Olwen E. Herron, Acting Superintendent of Schools  
Bryan J. Hill, County Administrator  
Adam R. Kinsman, County Attorney

#### Board of Directors, James City Service Authority

Kevin D. Onizuk, Chairman  
Sue Sadler, Vice Chairman  
Michael J. Hipple, Sr.  
Ruth Larson  
John J. McGlennon  
M. Douglas Powell, General Manager  
Stephanie A. Luton, Treasurer

#### School Board, Williamsburg-James City County Public Schools

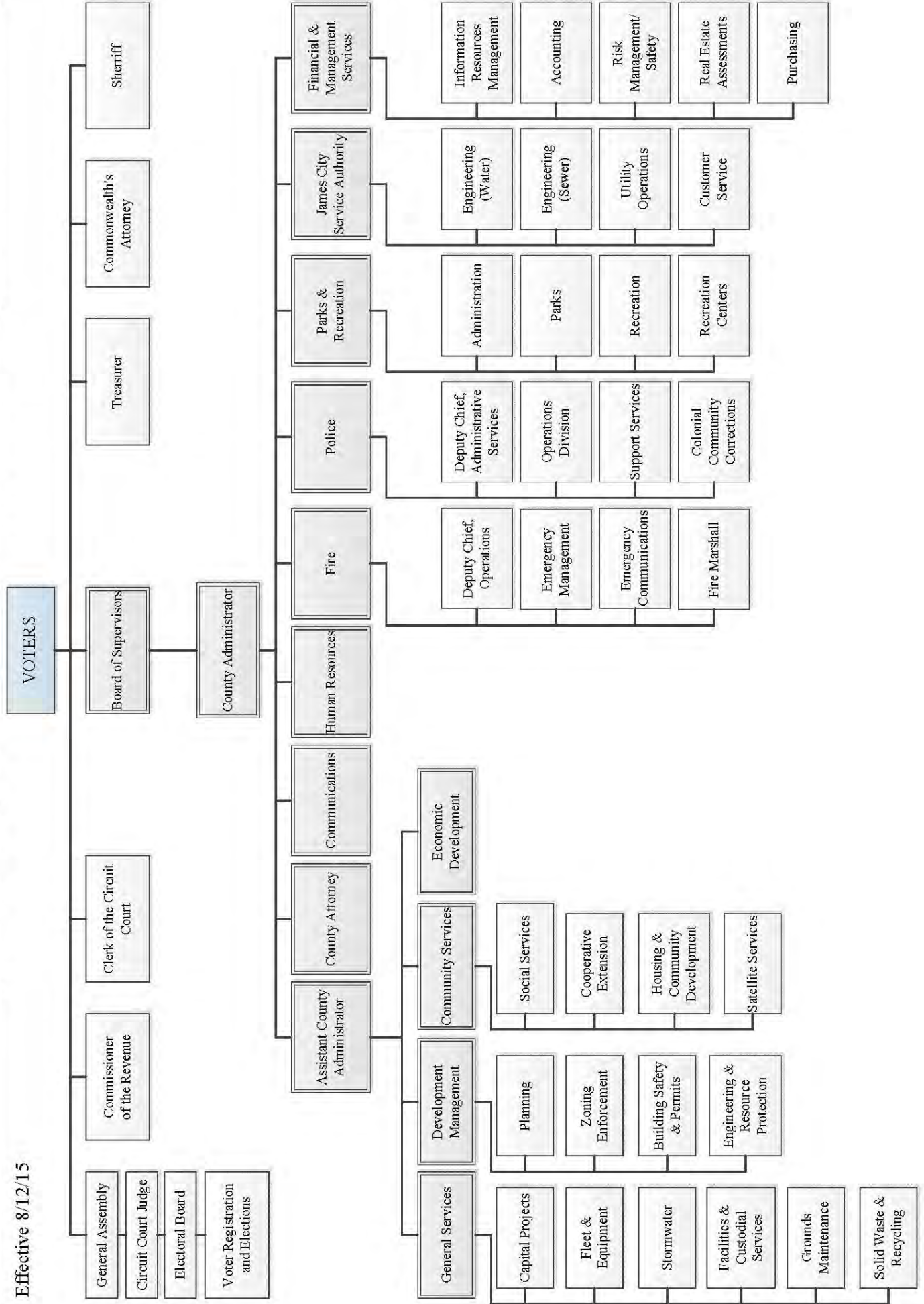
James Kelly, Chairman  
Kyra Cook, Vice Chairman  
James W. Beers  
Julie Y. Hummel  
Mary P. Minor  
Holly A. Taylor  
Sandra S. Young

#### Board Members, Economic Development Authority

Thomas Tingle, Chairman  
Robin Carson, Vice Chairman  
Paul W. Gerhardt  
Tim Harris  
Stephen H. Montgomery  
Christopher Odle  
Marshall Warner

# James City County Organization Chart

Effective 8/12/15





November 30, 2016

The Members of the Board of Supervisors and the Citizens of James City County:

We are pleased to submit to you the Comprehensive Annual Financial Report of James City County, Virginia (the County), for the fiscal year ended June 30, 2016, as required by the Code of Virginia. The Department of Financial and Management Services has prepared this report in accordance with accounting principles generally accepted in the United States of America (GAAP) and the standards of financial reporting prescribed by the Governmental Accounting Standards Board (GASB) and specifications of the Auditor of Public Accounts of the Commonwealth of Virginia. Section 15.1-67 of the Code of Virginia (1950, as amended) requires the County to have an annual audit of the books of account, financial records, and the transactions of the County. Dixon Hughes Goodman LLP was selected to perform the required audit. The unmodified report of Dixon Hughes Goodman LLP, the highest possible result of the audit process, accompanies the financial statements in this report.

Responsibility for both the accuracy of the presented data and the fairness of the presentation, including all disclosures, rests with the County. To provide a reasonable basis for making these representations, management of the County has established a comprehensive internal control framework that is designed both to protect the County's assets from loss, theft, or misuse and to compile sufficient reliable information for the preparation of the County's financial statements. Because the cost of internal controls should not outweigh their benefits, the County's comprehensive framework of internal controls has been designed to provide reasonable, rather than absolute assurance, that the financial statements will be free from material misstatement. We believe the data, as presented, is accurate in all material respects; that it is presented in a manner designed to fairly set forth the financial position and the results of operations of the various funds of the County; and that all disclosures necessary to enable the reader to gain maximum understanding of the County's financial activity have been included.

The County government is required to undergo an annual single audit as required by Title 2 U.S. Code of Federal Regulations (CFR) Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards (Uniform Guidance). Information related to this single audit, including the schedule of expenditures of federal awards, the schedule of findings and questioned costs, and the auditors' reports on internal control and compliance with applicable laws and regulations, are included in the compliance section of this report.

GAAP requires that management provide a narrative introduction, overview, and analysis to accompany the basic financial statements in the form of Management's Discussion and Analysis (MD&A). This letter of transmittal is designed to complement the MD&A and should be read in conjunction with it. The County's MD&A can be found immediately following the report of the independent auditors on pages 3-8 of this report.

### **Profile of the Government**

The County is located in southeastern Virginia and partially surrounds the City of Williamsburg. Although much of the County's 144 square miles consists of developed suburban areas, it has retained a considerable amount of undeveloped agricultural and forest land. There are no incorporated towns within the County. The County is empowered to levy a property tax on both real and personal properties located within its boundaries.

The County is organized under the County Administrator form of government (as defined under Virginia Law). Under this form of government, the Board of Supervisors appoints a County Administrator to serve as the Chief Executive Officer of the County. The Administrator serves at the pleasure of the Board of Supervisors, implements its policies, appoints division directors, and directs business and administrative procedures.

The Board of Supervisors is a five-member body; one member from each of the five districts, elected for a four-year staggered term by the voters of the district in which the member resides. The Chairman of the Board is elected annually by its members. This body enacts ordinances, appropriates funds, sets tax rates, and establishes policies for the administration of the County's public services.

The County provides a full range of services, including law enforcement, fire protection, and recreational activities. Water and sewer services are provided through the legally separate James City Service Authority (JCSA). The Board of Supervisors of James City County serves as the Board of Directors of the JCSA. The financial activity of the JCSA is included as an integral part of the County's financial statements. The County is also financially accountable for the legally separate Williamsburg-James City County (WJCC) School Board and the legally separate James City County Economic Development Authority, both of which are reported separately as discretely presented component units within the County's financial statements. Additional information on each of these legally separate entities can be found in Note 1 to the basic financial statements.

The annual budget serves as the foundation for the County's financial planning and control. In the spring of each year, departments and agencies of the County are required to submit requests for appropriation to the County Administrator. The County Administrator then submits to the Board of Supervisors a proposed operating and capital budget for the fiscal year commencing the following July 1. The operating budget and capital budget include proposed expenditures and the means of financing them. Public hearings are conducted to obtain citizen comments.

Prior to June 30, the budget is legally enacted through passage of an Appropriations Resolution. The Appropriations Resolution places legal restrictions on expenditures at the fund and function level. The appropriation for each fund and function can be revised only by the Board of Supervisors; however, the County Administrator may amend the budget within functions. Budget to actual comparisons are provided in this report for each individual governmental fund for which an appropriated annual budget has been adopted. For the general fund, this comparison is presented on pages 60-63 as part of the required supplementary information other than management's discussion and analysis. For governmental funds, other than the general fund, with appropriated budgets, these comparisons are presented in the other supplementary information subsection of this report which starts on page 68.

### **Economic Condition and Outlook**

James City County has seen a gradual increase in economic activity during the current fiscal year. Overall, general fund revenues increased 8.5% from last year. The majority of the increase was due to the 7 cent real estate tax increase. Revenues are expected to increase 3.3% during fiscal year 2017, due to the slow economic improvement.

In May 2016, Standard & Poor's and Moody's Investors Service reaffirmed the County's AAA bond rating, which is the highest possible rating. This bond rating is based on analysts' recommendations after a review of economic and fiscal performance, strong liquidity, fiscal policies and practices, evidence of financial planning to meet future capital needs. This rating is excellent for a community the size of James City County and gives the County additional leverage in the bond market for potential bond buyers and investors.

### **Major Initiatives**

During fiscal year 2016, the County started work on its Strategic Plan. There have been multiple meetings with Advisory groups, along with Open Houses to get feedback from County residents. Phase 1, Setting Direction, was completed in winter 2015, and initiated the beginning of Phase 2, Focusing Efforts in early 2016. Phase 2 took the input from Phase 1 and developed a set of priority goals that were then discussed in the Advisory groups.



Once these priority goals were developed and discussed, the residents of the County had an opportunity to provide input. The Advisory groups are working on implementation strategies for these priority goals.

### **Economic Development**

The Office of Economic Development has worked closely on projects that have resulted in the recent expansion and/or attraction of several existing businesses, including the most recent announcement of H & H Medical Corporation in the Busch Corporate Center. Launchpad, the regional business incubator, continues to grow in its new location in New Town, rapidly approaching capacity. Also, working with regional partners in York County and the City of Williamsburg, the Greater Williamsburg Partnership was established to serve as the new regional economic development public/private partnership for the area.

### **Capital Improvement Program**

Capital expenditures totaled \$12,647,985 in fiscal year 2016. The largest capital expenditures this year were related to capital maintenance projects whose purpose is to improve and extend the useful life of County or School buildings and to replace major pieces of equipment. In fiscal year 2016, major projects included the replacement of fire station 1, fire pumper replacements and stormwater projects. Transfers to the schools were made to cover the costs of renovations at Jamestown High School, Clara Byrd Baker and a middle school.

James City County will continue to face challenges over the next several years. Several years of population growth have produced demands for public services and facilities. The five-year Capital Improvement Program totals \$65,387,500 and focuses on a wide variety of needs. An indication of anticipated impacts are included in the adopted budget and capital improvements program for the fiscal year beginning July 1, 2016.

In fiscal year 2017, funding is included for the following major projects: stormwater projects focusing on the federal and state mandates on improving water quality, the Enterprise Resource Software replacement, the radio system upgrade, fire pumper replacement, a refurbishment at an elementary school and an auxiliary high school gym. Future planning includes drainage projects, capital building maintenance, software replacements, fire equipment and vehicle replacements, and school refurbishments and projects.

### **James City Service Authority**

The financial statements of the JCSA are included in this report in accordance with GAAP. The JCSA, for legal and management purposes, issues its own audited comprehensive annual financial report and is available from the Department of Financial and Management Services.

The Board of Supervisors has authorized water and sewer operations for the JCSA within the Primary Service Area (PSA) in the County. With the approval of the County, the JCSA has extended services beyond the PSA to several public sites in the County, including three public schools, two major planned communities, Greensprings West and Governor's Land. The JCSA also provides water and/or sewer service to limited sections of York County and the City of Williamsburg with the concurrence of the appropriate governing bodies.

During fiscal year 2016, work continued on the multi-year water meter replacement project to increase accuracy and efficiency in meter reading and leak repair using radio read meters.

### **Awards of Achievement**

The Government Finance Officers' Association (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to James City County for its Comprehensive Annual Financial Report for the fiscal year ended June 30, 2015. This was the 31<sup>st</sup> year that the County has received this prestigious award.

In order to be awarded a Certificate of Achievement, the County must publish an easily readable and efficiently organized comprehensive annual financial report, whose contents conform to program standards. Such reports must satisfy both accounting principles generally accepted in the United States of America and applicable legal requirements.

A Certificate of Achievement is valid for a period of one year only. We believe our current report continues to conform to Certificate of Achievement Program requirements, and we are submitting it to the GFOA to determine its eligibility for another certificate.

### **Acknowledgments**

The County has established and continues to maintain a strong and stable financial position through progressive management of financial operations and through sound accounting and financial reporting practices. Appreciation is expressed to the Members of the James City County Board of Supervisors and all of the Constitutional Officers for their interest and support in planning and conducting the financial operations of the County in a responsible and progressive manner.

The preparation of this report could not have been accomplished without the extensive effort and efficient services of the staff of Financial and Management Services. We would like to express our appreciation to each employee of the department who assisted with the annual audit and preparation of the financial statements.

Respectfully submitted,



Bryan J. Hill  
County Administrator



Suzanne R. Mellen  
Director of Financial and Management Services



Government Finance Officers Association

**Certificate of  
Achievement  
for Excellence  
in Financial  
Reporting**

Presented to

**James City County  
Virginia**

For its Comprehensive Annual  
Financial Report  
for the Fiscal Year Ended

**June 30, 2015**

A handwritten signature in black ink, reading "Jeffrey R. Egan". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Executive Director/CEO

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## **Financial Section**

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## **Independent Auditors' Report**

Board of Supervisors  
County of James City, Virginia

We have audited the accompanying financial statements of the governmental activities, the business-type activities, the aggregate discretely presented component units, each major fund, and the aggregate remaining fund information of the County of James City, Virginia as of and for the year ended June 30, 2016, and the related notes to the financial statements, which collectively comprise the County of James City, Virginia's basic financial statements as listed in the table of contents.

### ***Management's Responsibility for the Financial Statements***

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

### ***Auditors' Responsibility***

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and *Specifications for Audits of Counties, Cities, and Towns* issued by the Auditor of Public Accounts of the Commonwealth of Virginia. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

### ***Opinions***

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities, the business-type activities, the aggregate discretely presented component units, each major fund, and the aggregate remaining fund information of the County of James City, Virginia, as of June 30, 2016, and the respective changes in financial position and, where applicable, cash flows thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America.

### ***Other Matters***

#### ***Required Supplementary Information***

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis; the schedule of revenues, expenditures and changes in fund balance – budget and actual – general fund, and schedules of changes in net pension liability and related ratios and employer contributions and related notes on pages 3 through 8; 59 through 66, respectively, be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the *Governmental Accounting Standards Board*, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

#### ***Other Information***

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the County of James City, Virginia's basic financial statements. The introductory section, supplementary information, and statistical section are presented for purposes of additional analysis and are not a required part of the basic financial statements. The schedule of expenditures of federal awards is presented for purposes of additional analysis as required by Title 2 U.S. Code of Federal Regulations (CFR) Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards (Uniform Guidance), and is also not a required part of the basic financial statements.

The supplementary information and the schedule of expenditures of federal awards are the responsibility of management and were derived from and relate directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the supplementary information and schedule of expenditures of federal awards are fairly stated, in all material respects, in relation to the basic financial statements as a whole.

The introductory and statistical sections have not been subjected to the auditing procedures applied in the audit of the basic financial statements and, accordingly, we do not express an opinion or provide any assurance on them.

#### ***Other Reporting Required by Government Auditing Standards***

In accordance with *Government Auditing Standards*, we have also issued our report dated November 30, 2016, on our consideration of County of James City, Virginia's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering County of James City, Virginia's internal control over financial reporting and compliance.

*Dixon Hughes Goodman LLP*

**Newport News, Virginia  
November 30, 2016**

**County of James City, Virginia**  
**Management's Discussion and Analysis**  
**June 30, 2016**

As management of James City County (County), we offer readers of the County's financial statements this narrative overview and analysis of the financial activities of the County for the fiscal year ended June 30, 2016. We encourage readers to consider the information presented here in conjunction with additional information in our letter of transmittal at the front of this report and the County's financial statements, which follow this analysis.

**Financial Highlights**

- The County's total net position increased by approximately \$24.4 million over the course of this year's operations, which represents a 6.3% increase from fiscal year 2015.
- The County's assets and deferred outflows of resources exceeded its liabilities and deferred inflow of resources as of June 30, 2016 by approximately \$409.4 million. Of this amount, approximately \$315.6 million, or 77.1% is the net investment in capital assets.
- The County's total long-term liabilities for governmental activities at June 30, 2016 increased by approximately \$14.6 million, primarily due to the issuance of bonds and refunding bonds.
- General Fund revenues were \$3,199,792, or 1.7% higher than budgeted. The bulk of the increase was driven by real estate taxes, personal property taxes, sales tax and meals tax. These collections were the result of new development, higher vehicle values and a moderate uptick in economic growth.

**Overview of the Financial Statements**

The Comprehensive Annual Financial Report consists of four sections: introductory, financial, statistical and compliance. The financial section consists of three primary components - government-wide financial statements, fund financial statements, and notes to the basic financial statements.

**Government-Wide Financial Statements**

The government-wide financial statements report information about the County as a whole using accounting methods similar to those used by private-sector companies. The statement of net position includes all of the government's assets, deferred outflows of resources, liabilities and deferred inflows of resources. The current year's revenues and expenses are accounted for in the statement of activities regardless of when cash is received or paid.

The two government-wide financial statements report the County's net position and how its changed. Net position - the difference between the County's (1) assets and deferred outflows of resources and (2) liabilities and deferred inflows of resources, is one way to measure the County's financial health, or position.

- Over time, increases or decreases in the County's net position is an indicator of whether its financial health is improving or deteriorating, respectively.
- To assess the overall health of the County, you need to consider additional nonfinancial factors, such as changes in the County's property tax base.
- The government-wide financial statements of the County are divided into three categories:
  - *Governmental activities:* Most of the County's basic services are included here, such as the police, fire, parks and recreation, and general administration. Property taxes and state and federal funding finance most of these activities.
  - *Business-type activities:* Activities that are intended to recover all or a significant portion of their costs through user fee charges to external parties for goods or services are included here.
  - *Component units:* The County includes two other entities in its report, the Public Schools and the Economic Development Authority. Although legally separate, these "component units" are important because of the County's financial accountability for them.

**Fund Financial Statements**

The fund financial statements provide more detailed information about the County's most significant funds, not the County as a whole. Funds are accounting devices that the County uses to keep track of specific sources of funding and spending for particular purposes. Some funds are required by state law and by bond covenants.

**County of James City, Virginia**  
**Management's Discussion and Analysis**  
June 30, 2016

Other funds are established to control and manage money for particular purposes or to show that the County is properly using certain taxes and grants. The County has three kinds of funds:

- **Governmental funds:** Most of the County's basic services are included in governmental funds, which focus on (1) how cash and other financial assets can be readily converted to cash flow in and out and (2) the balances remaining at year end that are available for spending. Consequently, the governmental funds statements provide a detailed short-term view that helps you determine whether there are more or fewer financial resources that can be spent in the near future to finance the County's programs. Because this information does not encompass the additional long-term focus of the government-wide statements, additional information is provided at the bottom of the governmental funds statement or on the subsequent page that explains the relationship (or differences) between them.
- **Proprietary funds:** Services that are intended to recover all or a significant portion of their costs through user fees are generally reported in the proprietary fund. Proprietary funds, like the government-wide statements, provide both long and short-term financing information. The County's enterprise fund (one type of proprietary fund) is the same as its business-type activity, but provides more detail and additional information, such as cash flows.
- **Fiduciary funds:** The County is responsible for assets of various agency funds. It is responsible for ensuring that the assets reported in these funds are used for their intended purposes. All of the County's fiduciary activities are reported in a separate statement of fiduciary net position and a statement of changes in fiduciary net position. These activities are excluded from the County's government-wide financial statements because the County cannot use their assets to finance its operations.

**Notes to the Basic Financial Statements**

The notes to the basic financial statements provide additional information that is essential to a full understanding of the data provided in the government-wide and fund financial statements.

**Other Information**

In addition to the basic financial statements and accompanying notes, this report also presents certain required supplementary information concerning the County's General Fund budget and the County's obligation to provide pension benefits to its employees. The combining statements for nonmajor governmental funds are presented immediately following the required supplementary information on the General Fund budget and defined benefit pension plans.

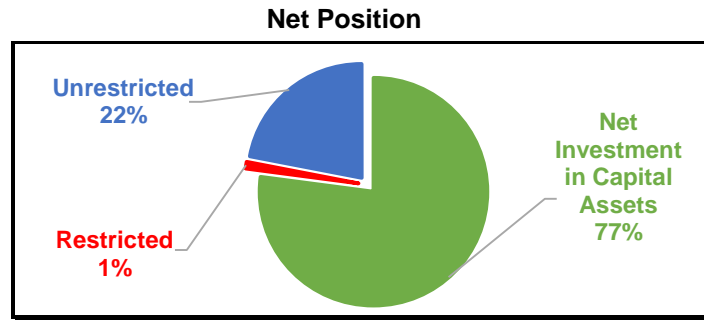
**Financial Analysis**

Condensed Statement of Net Position							
	Governmental activities		Business-type activities		Total		
	6/30/2016	6/30/2015	6/30/2016	6/30/2015	6/30/2016	6/30/2015	
Current and other assets	\$ 119,515,469	\$ 88,863,125	\$ 40,306,992	\$ 38,765,495	\$ 159,822,461	\$ 127,628,620	
Capital assets	328,000,441	329,390,782	161,615,472	161,288,064	489,615,913	490,678,846	
Total assets	447,515,910	418,253,907	201,922,464	200,053,559	649,438,374	618,307,466	
Deferred outflows of resources	4,669,697	4,091,153	2,157,296	330,920	6,826,993	4,422,073	
Total assets and deferred outflows	\$ 452,185,607	\$ 422,345,060	\$ 204,079,760	\$ 200,384,479	\$ 656,265,367	\$ 622,729,539	
Long-term liabilities	\$ 206,825,049	\$ 176,738,321	\$ 25,853,370	\$ 24,715,862	\$ 232,678,419	\$ 201,454,183	
Other liabilities	9,315,956	24,922,054	707,112	2,071,956	10,023,068	26,994,010	
Total liabilities	216,141,005	201,660,375	26,560,482	26,787,818	242,701,487	228,448,193	
Deferred inflow of resources	3,656,951	8,441,486	462,686	803,802	4,119,637	9,245,288	
Total liabilities and deferred inflow	219,797,956	210,101,861	27,023,168	27,591,620	246,821,124	237,693,481	
Net investment in capital assets	176,303,250	159,469,360	139,312,785	137,173,064	315,616,035	296,642,424	
Restricted net position	3,122,280	1,551,387	729,605	2,716,277	3,851,885	4,267,664	
Unrestricted net position	52,962,121	51,222,452	37,014,202	32,903,518	89,976,323	84,125,970	
Total net position	232,387,651	212,243,199	177,056,592	172,792,859	409,444,243	385,036,058	
Total liabilities, deferred inflows and net position	\$ 452,185,607	\$ 422,345,060	\$ 204,079,760	\$ 200,384,479	\$ 656,265,367	\$ 622,729,539	

**County of James City, Virginia**  
**Management's Discussion and Analysis**  
**June 30, 2016**

The County's net position was \$409,444,243 at the close of the most recent fiscal year. This represents a 6.3% increase from last year. The largest portion of the County's net position at June 30, 2016 (77.1%) reflects its investment in capital assets, less any related debt used to acquire those assets that are still outstanding. The County uses these capital assets to provide services to citizens; consequently, these assets are not available for future spending. Although the County's investment in its capital assets is reported net of related debt, it should be noted that the resources needed to repay this debt must be provided from other sources, since the capital assets themselves cannot be used to liquidate these liabilities.

The restricted net position (0.9%) is restricted for specific purposes. The unrestricted portion of net position (22%) may be used to meet the County's ongoing obligations to citizens and creditors. At the end of the current fiscal year, the County was able to report positive balances in all three categories of net position, both for the primary government as a whole, as well as for its separate governmental and business-type activities.



**Condensed Changes in Net Position**

	Governmental activities		Business-type activities		Total	
	6/30/2016	6/30/2015	6/30/2016	6/30/2015	6/30/2016	6/30/2015
Program revenues						
Charges for services	\$ 18,176,017	\$ 16,715,136	\$ 16,018,375	\$ 16,452,120	\$ 34,194,392	\$ 33,167,256
Operating grants and contributions	32,181,074	31,767,861	-	-	32,181,074	31,767,861
Capital grants and contributions	269,439	346,627	6,865,346	5,284,379	7,134,785	5,631,006
General revenues:						
Property taxes	120,796,742	113,359,672	-	-	120,796,742	113,359,672
Other taxes	24,027,667	22,771,626	-	-	24,027,667	22,771,626
Interest and investment earnings	263,745	232,388	519,767	248,207	783,512	480,595
Miscellaneous	1,932,580	4,217,841	832,182	1,013,854	2,764,762	5,231,696
Total revenues	197,647,264	189,411,151	24,235,670	22,998,560	221,882,934	212,409,712
Expenses:						
General government admin.	8,807,519	19,278,147	-	-	8,807,519	19,278,147
Judicial admin.	5,682,096	5,598,594	-	-	5,682,096	5,598,594
Public safety	30,842,789	23,996,973	-	-	30,842,789	23,996,973
Public works	7,986,260	6,985,073	-	-	7,986,260	6,985,073
Health and welfare	7,368,295	7,013,325	-	-	7,368,295	7,013,325
Education	87,508,710	87,713,464	-	-	87,508,710	87,713,464
Parks, rec. and cultural	10,650,141	9,386,351	-	-	10,650,141	9,386,351
Community development	12,787,069	10,692,736	-	-	12,787,069	10,692,736
Interest on long-term debt	5,869,933	7,787,361	-	-	5,869,933	7,787,361
Service Authority	-	-	19,971,937	19,888,935	19,971,937	19,888,935
Total expenses	177,502,812	178,452,024	19,971,937	19,888,935	197,474,749	198,340,959
Change in net position	20,144,452	10,959,127	4,263,733	3,109,625	24,408,185	14,068,753
Net position, beginning of year	212,243,199	201,284,071	172,792,859	169,683,234	385,036,058	370,967,305
Net position, end of year	\$ 232,387,651	\$ 212,243,198	\$ 177,056,592	\$ 172,792,859	\$ 409,444,243	\$ 385,036,058

**County of James City, Virginia**  
**Management's Discussion and Analysis**  
**June 30, 2016**

**Governmental Activities**

For the fiscal year ended June 30, 2016, revenues from governmental activities totaled \$197,747,264. Of this amount, \$52,822,855, or 26.7%, is received from sources other than local tax revenue. Real estate tax revenues, the County's largest single revenue source, totaled \$94,899,836. The County's assessed real property tax base for fiscal year 2016 was \$11,352,153,219, which was an increase of 1.8% from fiscal year 2015. Overall, the net position increased by \$20,144,452 from last year.

In fiscal year 2016, the County reported current year collections of \$20,804,210 in personal property taxes, and received reimbursement from the Commonwealth of Virginia of \$9,770,137. Under the provisions of the Personal Property Tax Relief Act (PPTRA), the state's share of local personal property tax was approximately 47% of most taxpayer's payments.

For the fiscal year ended June 30, 2016, expenses for governmental activities totaled \$177,502,812, including \$87,508,711 for Education expenses for the public school system. Total expenses decreased by 0.5% over fiscal year 2015, primarily for interest on long-term debt, as a result of savings from the bond refundings.

**Business-Type Activity**

The business-type activity had an increase in net position of \$4,263,733 during fiscal year 2016. This was a result of increased water demand primarily attributable to irrigation, the introduction of a fixed water and sewer rate charge, and an increase in the number and value of water and sewer system dedications. Overall, the expenses increased from last year by 0.4%. The primary source of revenue consists of charges for water and sewer services, which totaled \$12,774,840 and increased by 1.4% from last year. This was primarily a result of the introduction of a fixed water and sewer charge.

**Financial Analysis of the County's Funds**

The County's General Fund experienced an overall increase in fund balance of \$3,630,136. This was primarily due to higher real estate revenue as a result of a 8.2 cent tax rate increase. The portion of the unassigned fund balance for fiscal liquidity totaled \$24,681,548, which was 10.8% of the total general governmental expenditures (from Table 11 in the Statistical section), including the County's share of the Public Schools' operating expenditures, and within the goal of 10% to 12%.

**General Fund Budgetary Highlights**

The overall difference between the original budget and the final amended budget for revenues was an increase of \$446,800. There were supplemental appropriations for the operation of a marina and a park, grant funds and insurance recoveries for damaged equipment and vehicles. General Fund revenues were 1.7%, or \$3,199,792 higher than budgeted and increased 8.5% or \$14,905,229 from fiscal year 2015.

The largest increase in revenues from fiscal year 2015 to fiscal year 2016 occurred in real estate tax revenues, by \$10,206,597 and is the County's largest revenue source. For fiscal year 2016, total collections were \$94,899,836, which exceeded the budget by \$795,836. Personal property taxes, another large source of local tax funding, had combined collections from the state and local taxpayers of \$30,574,347. State revenues, not including the personal property tax reimbursement, were \$105,684 less than budgeted. Although less than budgeted, State revenues, excluding the personal property tax reimbursement, increased \$779,454 in fiscal year 2016 from fiscal year 2015. This increase is primarily due to receiving more in State sales tax for education, which increased \$512,035 from fiscal year 2015.

General Fund budgeted expenditures were 3.9% below the final budget, or \$6,044,053, which was primarily due to reduced departmental spending. Of this amount, \$1,332,619 is for encumbrances and is assigned in the fund balance.

As a result of revenues above budget and underspending, the fund balance increased to \$38,293,568. This was an increase of \$3,630,136 or 10.4% from 2015.



**County of James City, Virginia**  
**Management's Discussion and Analysis**  
June 30, 2016

**Other Governmental Funds**

The County maintains seven individual governmental funds. Information is presented separately in the governmental fund balance sheet and the governmental fund statement of revenues, expenditures and changes in fund balances for all funds, which can be found on pages 70-71. The other governmental funds had an increase in fund balance of \$1,153,705 in fiscal year 2016 from 2015.

**Proprietary Fund**

The County operates one proprietary fund, James City Service Authority (JCSA or the Authority), which provides water and sewer service to County residents. The proprietary funds had an increase of \$4,263,733 in net position during the fiscal year primarily as a result of an increase in the number and value of water and sewer system dedications.

**Capital Assets**

At the end of fiscal year 2016, the County's investment in capital assets for its governmental and business-type activities totaled \$489,615,913 (net of accumulated depreciation). This investment in capital assets includes land and land improvements, construction in progress, intangibles, buildings and improvements, water and sewer systems, infrastructure, equipment, and vehicles. The County does not own its roads, and therefore they are not included in capital assets. In addition, the Public Schools own all school buildings and the related debt is County debt. The value associated with the purchase and/or construction of the Public Schools' buildings is reported as capital assets in the governmental activities of the County to properly match with the associated debt, as allowed by Virginia state law. In fiscal year 2016, the net value of school buildings reflected in the governmental activities of the County equals \$197,410,997, and the associated current year's depreciation expense of \$5,168,964 is reflected in Education expense in the County's governmental activities in the statement of net position.

	Summary of Capital Assets, Net			
	6/30/2016			6/30/2015
	Governmental activities	Business-type activity	Total	Total
Land	\$ -	\$ 1,739,491	\$ 1,739,491	\$ 1,739,491
Land - utility plant	-	962,995	962,995	962,995
Land and land improvements	28,132,818	13,183	28,146,001	28,146,001
Construction in progress	9,873,563	1,334,553	11,208,116	8,399,196
Intangible assets - easements	8,646,400	4,570	8,650,970	8,073,747
Intangible assets - water rights	-	20,552,147	20,552,147	21,165,644
Water and sewer systems	-	132,477,462	132,477,462	132,011,921
Buildings and improvements	235,518,034	3,259,899	238,777,933	246,063,496
Improvements other than buildings	26,686,456	-	26,686,456	23,258,341
Equipment and vehicles	12,544,658	1,271,172	13,815,830	13,874,950
Infrastructure	6,598,512	-	6,598,512	6,983,063
Total	\$ 328,000,441	\$ 161,615,472	\$ 489,615,913	\$ 490,678,845

Additional information about the County's capital assets can be found in Note 6 to the financial statements.

**Capital Projects Fund**

The Capital Projects Fund is used by the County to account for the financing sources used to acquire and construct major capital projects for the general government. A major source of funding for the capital projects is transfers from the General Fund.

For fiscal year 2016, \$12,929,834 was transferred to the Capital Projects Fund from the General Fund. During the year, capital project expenditures of \$12,647,985 included transfers to the schools for renovations to Clara Byrd Baker Elementary School, Jamestown High School and James River Elementary School; transfers to the schools for a new middle school; expenditures for replacement of a fire station and costs incurred for drainage improvements projects.

**County of James City, Virginia**  
**Management's Discussion and Analysis**  
June 30, 2016

**Long-Term Debt**

During 2016, the County has three refunding bond issuances (two for governmental activities and one for its business-type activity) and a bond issuance to provide funding for new capital projects. In April 2016, Standard & Poor's (S&P) upgraded its rating of AA+ to AAA, and Moody's Investors Service upgraded its rating of Aa2 to Aa1 for the Service Authority's outstanding bonded debt. In May 2016, S&P and Moody's reaffirmed the County's AAA bond rating, which is the highest possible rating.

Below is a summary of the County's long-term debt as of June 30, 2016 and 2015, respectively.

<b>Summary of Long-Term Debt</b>				
	<b>6/30/2016</b>			<b>6/30/2015</b>
	<b>Governmental activities</b>	<b>Business-type activity</b>	<b>Total</b>	<b>Total</b>
General obligation bonds, net unamortized premium	\$ 49,844,841	\$ -	\$ 49,844,841	\$ 65,458,589
Revenue bonds, net unamortized premium	130,451,552	24,118,109	154,569,661	127,719,000
Capital leases	728,456	-	728,456	858,833
Pension	18,526,124	1,074,947	19,601,071	16,398,285
OPEB	2,608,962	277,509	2,886,471	2,437,471
Compensated absences	3,495,440	382,805	3,878,245	3,812,130
Landfill	1,169,674	-	1,169,674	1,168,160
Total	<u>\$ 206,825,049</u>	<u>\$ 25,853,370</u>	<u>\$ 232,678,419</u>	<u>\$ 217,852,468</u>

Additional information about the County's long-term debt can be found in Note 9 to the financial statements.

**Economic Factors and Next Year's Budgets and Tax Rates**

The County has a two-year budget cycle. The first year of a two-year cycle is adopted and appropriated and the second year is adopted for planning purposes. Fiscal year 2016 is the second year of the current two-year cycle. The fiscal year 2016 approved budget for the General Fund was \$186,964,000 (Note: for financial reporting purposes, the General Fund budget also includes \$245,000 for landfill user fees, for a total of \$187,209,000).

Fiscal year 2017 is the first year of the next two-year cycle. The fiscal year 2017 approved budget for the General Fund is \$193,415,000. This budget was adopted on May 10, 2016, and reflects a \$6,451,000, or a 3.5%, increase over the fiscal year 2016 budget. This increase is primarily due to increases in real estate, personal property and local sales, meals and lodging tax revenues.

During fiscal year 2017, real estate revenues, the largest source of general fund revenue, are projected to increase 2.3% over last year. Personal property tax revenue is expected to increase by 4.0% in the number of vehicles and 7.0% in the value of vehicles over last year. State revenues increase by 2.0%, primarily from an increase in sales tax for education, which is provided to the school system.

Expenditures include costs for a salary increase and health insurance. The County's general fund contribution to the Williamsburg-James City County School Board will be \$103,283,448, which is a 2.3% or \$2,334,941 increase from fiscal year 2016.

**Contacting the County's Financial Management**

This financial report is designed to provide our citizens, taxpayers, customers, and investors and creditors with a general overview of the County's finances and to demonstrate the County's accountability for the money it receives. Questions concerning this report or requests for additional information should be directed to the Department of Financial and Management Services, 101-F Mounts Bay Road, P.O. Box 8784, Williamsburg, Virginia 23187-8784.

\* \* \* \* \*

**County of James City, Virginia**  
**Statement of Net Position**  
**June 30, 2016**

	<b>Primary government</b>			<b>Discretely presented component units</b>	
	<b>Governmental activities</b>	<b>Business-type activity</b>	<b>Total</b>	<b>Public schools</b>	<b>Economic Development Authority</b>
<b>Assets</b>					
Cash and cash equivalents (note 2)	\$ 35,123,440	\$ 655,568	\$ 35,779,008	\$ 17,922,073	\$ 951,618
Investments (note 2)	6,438,998	36,128,873	42,567,871	-	-
Restricted cash, cash equivalents and investments (note 2)	32,404,980	729,605	33,134,585	-	-
Receivables, net of allowance for uncollectibles:					
Taxes, including penalties	26,363,825	-	26,363,825	-	-
Accounts	-	2,489,595	2,489,595	79,931	-
Interest	16,530	125,238	141,768	-	317
Loans	3,639,688	-	3,639,688	-	-
Notes	-	2,544	2,544	-	37,518
Miscellaneous (note 3)	3,921,942	-	3,921,942	-	-
Internal balances (note 7)	633,544	(633,544)	-	-	-
Due from component units (note 7)	961,643	-	961,643	-	-
Due from other governments, net (note 5)	9,064,515	-	9,064,515	1,033,421	-
Inventory	336,498	809,113	1,145,611	16,525	-
Other assets	609,866	-	609,866	-	-
Capital assets, net (note 6):					
Non-depreciable	46,652,781	4,054,792	50,707,573	12,803,814	399,616
Depreciable	281,347,660	157,560,680	438,908,340	41,313,135	109,969
Net capital assets	328,000,441	161,615,472	489,615,913	54,116,949	509,585
Total assets	447,515,910	201,922,464	649,438,374	73,168,899	1,499,038
<b>Deferred Outflows of Resources</b>					
Deferred charge on refundings, net (note 9)	284,034	1,815,422	2,099,456	-	-
Deferred differences between expected and actual experience on pension actuarial valuation (note 11)	195,419	-	195,419	-	-
Deferred pension contributions (note 11)	4,190,244	341,874	4,532,118	11,786,430	-
Total deferred outflow of resources	4,669,697	2,157,296	6,826,993	11,786,430	-
Total assets and deferred outflow of resources	<u>\$ 452,185,607</u>	<u>\$ 204,079,760</u>	<u>\$ 656,265,367</u>	<u>\$ 84,955,329</u>	<u>\$ 1,499,038</u>
<b>Liabilities</b>					
Liabilities:					
Accounts payable	\$ 3,240,704	\$ 326,814	\$ 3,567,518	\$ 2,524,481	\$ 12,174
Accrued liabilities	1,156,361	166,906	1,323,267	13,921,394	-
Liabilities payable from restricted assets	1,024,389	-	1,024,389	-	-
Due to primary government (note 7)	-	-	-	960,495	1,148
Advances for construction (note 16)	-	32,902	32,902	-	-
Amounts held for others	-	180,490	180,490	-	-
Unearned revenue	3,894,502	-	3,894,502	65,983	-
Long-term liabilities (notes 9, 10, 11 and 12):					
Due within one year	17,754,372	1,136,011	18,890,383	558,256	-
Due in more than one year	189,070,677	24,717,359	213,788,036	116,311,641	-
Total liabilities	216,141,005	26,560,482	242,701,487	134,342,250	13,322
<b>Deferred Inflow of Resources</b>					
Deferred pension investment experience (note 11)	3,656,951	462,686	4,119,637	9,228,209	-
<b>Net Position</b>					
Net position:					
Net investment in capital assets	176,303,250	139,312,785	315,616,035	53,952,706	509,585
Restricted net position:					
Capital projects	-	-	-	-	-
Debt service	1,222,336	729,605	1,951,941	-	-
Other	1,899,944	-	1,899,944	619,624	-
Unrestricted	52,962,121	37,014,202	89,976,323	(113,187,460)	976,131
Total net position	232,387,651	177,056,592	409,444,243	(58,615,130)	1,485,716
Total liabilities and net position	<u>\$ 452,185,607</u>	<u>\$ 204,079,760</u>	<u>\$ 656,265,367</u>	<u>\$ 84,955,329</u>	<u>\$ 1,499,038</u>

See accompanying notes to basic financials statements

**County of James City, Virginia**  
Statement of Activities  
Year ended June 30, 2016

Functions/programs	Expenses	Program revenues			Net (expenses) revenues and changes in net assets			Discretely presented component units	
		Charges for services	Operating grants and contributions	Capital grants and contributions	Primary government			Public schools	Economic Development Authority
					Governmental activities	Business-type activity	Total		
Primary government:									
Governmental activities:									
General government administration	\$ 8,807,519	\$ 7,547,746	\$ 23,769,082	\$ -	\$ 22,509,309	\$ -	\$ 22,509,309	\$ -	\$ -
Judicial administration	5,682,096	2,464,271	1,041,060	-	(2,176,765)	-	(2,176,765)	-	-
Public safety	30,842,789	3,558,411	1,848,469	269,439	(25,166,470)	-	(25,166,470)	-	-
Public works	7,986,260	649,214	13,154	-	(7,323,892)	-	(7,323,892)	-	-
Health and welfare	7,368,295	-	3,720,425	-	(3,647,870)	-	(3,647,870)	-	-
Education (including School system)	87,508,710	-	-	-	(87,508,710)	-	(87,508,710)	-	-
Parks, recreation and cultural	10,650,141	3,563,791	9,000	-	(7,077,350)	-	(7,077,350)	-	-
Community development	12,787,069	392,584	1,779,884	-	(10,614,601)	-	(10,614,601)	-	-
Interest on long-term debt	5,869,933	-	-	-	(5,869,933)	-	(5,869,933)	-	-
Total governmental activities	177,502,812	18,176,017	32,181,074	269,439	(126,876,282)	-	(126,876,282)	-	-
Business-type activity:									
Service Authority	19,971,937	16,018,375	-	6,865,346	-	2,911,784	2,911,784	-	-
Total primary government	<u>\$ 197,474,749</u>	<u>\$ 34,194,392</u>	<u>\$ 32,181,074</u>	<u>\$ 7,134,785</u>	<u>\$ (126,876,282)</u>	<u>\$ 2,911,784</u>	<u>\$ (123,964,498)</u>	<u>\$ -</u>	<u>\$ -</u>
Component units:									
Economic Development Authority	\$ 387,367	\$ 14,975	\$ 148,524	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (223,868)
Public Schools	132,425,464	2,406,885	17,326,000	-	-	-	-	(112,692,579)	-
Total component units	<u>\$ 132,812,831</u>	<u>\$ 2,421,860</u>	<u>\$ 17,474,524</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ (112,692,579)</u>	<u>\$ (223,868)</u>
General revenues:									
Property taxes, levied for general purposes	\$ 120,796,742				\$ 120,796,742	\$ -	\$ 120,796,742	\$ -	\$ -
Local sales and use taxes	11,193,481				11,193,481	-	11,193,481	-	-
Franchise license tax	627,762				627,762	-	627,762	-	-
Taxes on recordation and wills	1,349,105				1,349,105	-	1,349,105	-	-
Hotel and motel room taxes	3,474,512				3,474,512	-	3,474,512	-	-
Restaurant food taxes	7,017,178				7,017,178	-	7,017,178	-	-
Deeds of conveyance	347,548				347,548	-	347,548	-	-
Penalties and interest	18,081				18,081	-	18,081	-	-
Grants and contributions not restricted to specific programs	-				-	-	-	113,865,906	-
Interest and investment earnings	263,745				263,745	519,767	783,512	681	9,895
Miscellaneous	1,932,580				1,932,580	832,182	2,764,762	231,314	53,827
Total general revenues	147,020,734				147,020,734	1,351,949	148,372,683	114,097,901	63,722
Change in net position	20,144,452				20,144,452	4,263,733	24,408,185	1,405,322	(160,146)
Net position, beginning	212,243,199				212,243,199	172,792,859	385,036,058	(60,020,452)	1,645,862
Net position, ending	<u>\$ 232,387,651</u>				<u>\$ 232,387,651</u>	<u>\$ 177,056,592</u>	<u>\$ 409,444,243</u>	<u>\$ (58,615,130)</u>	<u>\$ 1,485,716</u>

See accompanying notes to basic financials statements.

**County of James City, Virginia**  
Balance Sheet  
Governmental Funds  
June 30, 2016

	<b>Major Funds</b>			<b>Nonmajor governmental funds</b>	<b>Total governmental funds</b>
	<b>General</b>	<b>Capital projects</b>	<b>Debt service</b>		
<b>Assets</b>					
Cash and cash equivalents	\$ 14,475,497	\$ 17,276,192	\$ -	\$ 3,371,751	\$ 35,123,440
Investments	6,438,998	-	-	-	6,438,998
Restricted cash and cash equivalents and investments (note 2)	967,532	29,537,504	-	1,899,944	32,404,980
Receivables, net of allowance:					
Taxes	26,274,591	593	-	88,641	26,363,825
Interest	-	16,530	-	-	16,530
Loans	-	-	-	3,639,688	3,639,688
Miscellaneous (note 3)	3,916,238	5,704	-	-	3,921,942
Due from other funds (note 4)	428,548	3,121,834	-	26,755	3,577,137
Due from blended component unit (note 7)	633,544	-	-	-	633,544
Due from component unit (note 7)	3,167,069	-	-	-	3,167,069
Due from other governments, net (note 5)	7,566,514	-	-	1,498,001	9,064,515
Inventory	336,498	-	-	-	336,498
Total assets	<u>\$ 64,205,029</u>	<u>\$ 49,958,357</u>	<u>\$ -</u>	<u>\$ 10,524,780</u>	<u>\$ 124,688,166</u>
<b>Liabilities and Fund Balances</b>					
Liabilities:					
Accounts payable	\$ 2,870,639	\$ 220,870	\$ -	\$ 149,195	\$ 3,240,704
Accrued liabilities	304,796	-	-	6,707	311,503
Payables from restricted assets	952,190	-	-	72,199	1,024,389
Due to other funds (note 4)	3,148,589	-	-	428,548	3,577,137
Due to component units (note 7)	40,652	2,130,191	-	34,583	2,205,426
Unearned revenue (note 8)	18,594,595	592	-	3,722,365	22,317,552
Total liabilities	<u>25,911,461</u>	<u>2,351,653</u>	<u>-</u>	<u>4,413,597</u>	<u>32,676,711</u>
Fund balances:					
Nonspendable:					
Loans	-	-	-	765,745	765,745
Inventory	336,498	-	-	-	336,498
Committed	-	28,907,491	-	-	28,907,491
Assigned:					
General	7,860,584	18,699,213	-	-	26,559,797
Capital reserve	5,414,938	-	-	-	5,414,938
Other governmental funds	-	-	-	5,345,438	5,345,438
Unassigned:	24,681,548	-	-	-	24,681,548
Total fund balances	<u>38,293,568</u>	<u>47,606,704</u>	<u>-</u>	<u>6,111,183</u>	<u>92,011,455</u>
Total liabilities and fund balances	<u>\$ 64,205,029</u>	<u>\$ 49,958,357</u>	<u>\$ -</u>	<u>\$ 10,524,780</u>	<u>\$ 124,688,166</u>

See accompanying notes to basic financials statements.

**County of James City, Virginia**  
 Balance Sheet  
 Governmental Funds  
 June 30, 2016

Reconciliation of the balance sheet for governmental funds to the government-wide statement of net position:

Ending fund balance, governmental funds		\$ 92,011,455
Amounts reported for governmental activities in the balance sheet are different because:		
Capital assets used in governmental activities are not financial resources and therefore are not reported in the funds.		328,000,441
Land held for resale and future development used in governmental activities are not financial resources and therefore are not reported in the funds.		609,866
Other long-term assets are not available to pay for current-period expenditures and therefore are deferred in the funds.		18,423,050
Deferred outflows of resources represent a consumption of net position applying to future periods and therefore, are not reported in the governmental funds.		
Deferred charge on refundings	\$ 284,034	
Deferred pension actuarial differences	195,419	
Deferred pension contributions	<u>4,190,244</u>	4,669,697
Unmatured interest payable reported in governmental activities will not be paid with current financial resources and therefore is not reported in the funds.		(844,858)
Long-term liabilities, including bonds payable, are not due and payable in the current period and therefore are not reported in the funds.		
General obligation bonds	(46,390,000)	
Lease revenue bonds	(118,592,000)	
Unamortized bond premiums, net	(15,314,393)	
Capital leases	(728,456)	
Net pension liability	(18,526,124)	
Other post-employment benefits	(2,608,962)	
Compensated absences	(3,495,440)	
Landfill postclosure care cost	<u>(1,169,674)</u>	(206,825,049)
Deferred inflows of resources for pension contributions represent an acquisition of net position that is applicable to a future reporting period and therefore, is not reported in the governmental funds.		<u>(3,656,951)</u>
Net position, governmental activities		<u><u>\$ 232,387,651</u></u>

See accompanying notes to basic financials statements.

**County of James City, Virginia**  
**Statement of Revenues, Expenditures and Changes in Fund Balances**  
**Governmental Funds**  
**Year ended June 30, 2016**

	<b>Major Funds</b>			<b>Nonmajor governmental funds</b>	<b>Total governmental funds</b>
	<b>General</b>	<b>Capital projects</b>	<b>Debt service</b>		
<b>Revenues:</b>					
General property taxes	\$ 124,363,595	\$ -	\$ -	\$ -	\$ 124,363,595
Other local taxes	23,243,899	-	-	783,768	24,027,667
Permits, privilege fees and regulatory licenses	8,779,496	-	-	-	8,779,496
Fines and forfeitures	309,278	-	-	-	309,278
Use of money and property	205,768	55,135	2,806	36	263,745
Charges for services	6,623,273	-	-	-	6,623,273
Miscellaneous	250,331	540,910	225,961	915,378	1,932,580
Intergovernmental:					
Local	-	-	-	317,958	317,958
Commonwealth	27,071,816	450,605	-	3,050,808	30,573,229
Federal	8,136	-	-	3,735,848	3,743,984
Total revenues	<u>\$ 190,855,592</u>	<u>\$ 1,046,650</u>	<u>\$ 228,767</u>	<u>\$ 8,803,796</u>	<u>\$ 200,934,805</u>
<b>Expenditures:</b>					
Current:					
General government administration	\$ 9,678,060	\$ -	\$ -	\$ -	\$ 9,678,060
Judicial administration	4,195,078	-	-	1,268,666	5,463,744
Public safety	27,003,530	-	-	874,722	27,878,252
Public works	7,066,548	-	-	15,654	7,082,202
Health and welfare	1,865,341	-	-	5,368,711	7,234,052
Education	79,825,974	-	-	-	79,825,974
Parks, recreation and cultural	9,864,071	-	-	8,380	9,872,451
Community development	5,809,243	-	50,804	4,493,797	10,353,844
Nondepartmental	1,183,538	-	-	-	1,183,538
Debt service:					
Principal	-	-	17,122,377	-	17,122,377
Interest and other fiscal charges	-	-	6,188,222	-	6,188,222
Bond issuance costs	-	-	1,173,546	-	1,173,546
Capital outlay - governmental activities	-	8,398,349	-	-	8,398,349
Capital outlay - school activities	-	4,249,636	-	-	4,249,636
Total expenditures	<u>146,491,383</u>	<u>12,647,985</u>	<u>24,534,949</u>	<u>12,029,930</u>	<u>195,704,247</u>
Excess (deficiency) of revenues over (under) expenditures	<u>44,364,209</u>	<u>(11,601,335)</u>	<u>(24,306,182)</u>	<u>(3,226,134)</u>	<u>5,230,558</u>
Other financing sources (uses):					
Transfers in (note 4)	39,235	12,929,834	23,568,074	4,419,074	40,956,217
Transfers out (note 4)	(40,773,308)	(143,674)	-	(39,235)	(40,956,217)
Issuance of bonds	-	26,750,000	-	-	26,750,000
Premium on bond issuance	-	1,941,744	-	-	1,941,744
Issuance of refunding bonds	-	-	64,915,000	-	64,915,000
Premium on refunding bonds	-	-	8,988,550	-	8,988,550
Payment to escrow agent for refunded bonds	-	-	(73,165,442)	-	(73,165,442)
Total other financing sources (uses)	<u>(40,734,073)</u>	<u>41,477,904</u>	<u>24,306,182</u>	<u>4,379,839</u>	<u>29,429,852</u>
Net change in fund balances	<u>3,630,136</u>	<u>29,876,569</u>	<u>-</u>	<u>1,153,705</u>	<u>34,660,410</u>
Fund balances, beginning of year	<u>34,663,432</u>	<u>17,730,135</u>	<u>-</u>	<u>4,957,478</u>	<u>57,351,045</u>
Fund balances, end of year	<u>\$ 38,293,568</u>	<u>\$ 47,606,704</u>	<u>\$ -</u>	<u>\$ 6,111,183</u>	<u>\$ 92,011,455</u>

See accompanying notes to basic financials statements.

**County of James City, Virginia**  
**Statement of Revenues, Expenditures and Changes in Fund Balances**  
**Governmental Funds**  
**Year ended June 30, 2016**

Reconciliation of the statement of revenues, expenditures and changes in fund balances of governmental funds to the statement of activities:

Net change in fund balances, governmental funds \$ 34,660,410

Amounts reported for governmental activities in the statement of activities are different because:

Governmental funds report capital outlays as expenditures; however, in the statement of activities, the cost of those assets is allocated over their estimated useful lives and reported as depreciation expense. This amount represents the difference between depreciation expense and capital outlay expenditures. The details of this difference are as follows:

Depreciation expense	\$ (11,463,847)	
Capital outlay expenditures	10,169,127	
Loss on disposal of capital assets	<u>(672,593)</u>	(1,967,313)

Because some revenues will not be collected for several months after the County's fiscal year end, they are not considered "available" revenues and are deferred in the governmental funds. Deferred revenue increased by this amount this year.

(3,287,541)

The issuance of long-term debt provides current financial resources to governmental funds, while the repayment of the principal of long-term debt consumes the current financial resources of governmental funds. Neither transaction, however, has any effect on net position. Also, governmental funds report the effect of premiums and refunding gains/losses, and similar items when debt is first issued, whereas these amounts are deferred and amortized in the statement of activities. This amount is the net effect of these differences in the treatment of long-term debt and related accounts. The details of this difference are as follows:

Issuance of debt	(91,665,000)	
Principal payments	17,122,377	
Payment to escrow agent	73,165,442	
Premium on debt issuance	(10,930,294)	
Amortization on premium	1,572,930	
Amortization on deferred charge on refundings	(84,848)	
OPEB obligation	<u>(415,000)</u>	(11,234,393)

Some expenses reported in the statement of activities do not require the use of current financial resources and therefore are not reported as expenditures in governmental funds. The details of this difference is as follows:

Compensated absences	(40,663)	
Landfill	(1,514)	
Interest payable	3,753	
Pension liability and related deferred inflows and outflows	<u>2,011,713</u>	1,973,289

Change in net position, governmental activities		<u><u>\$ 20,144,452</u></u>
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See accompanying notes to basic financials statements.



**County of James City, Virginia**  
Statement of Net Position  
Proprietary Fund  
June 30, 2016

	<b>James City Service Authority</b>
<b>Assets</b>	
Current assets:	
Cash and cash equivalents (note 2)	\$ 655,568
Investments (note 2)	36,128,873
Restricted investments (note 2)	729,605
Accounts receivable, customers	2,456,377
Accounts receivable, other	33,218
Notes receivable	2,544
Interest receivable	125,238
Inventories	809,113
Total current assets	<u>40,940,536</u>
Noncurrent assets:	
Capital assets (note 6):	
Land	1,739,491
Land – utility plant	962,995
Land improvements	13,183
Construction in progress	1,334,553
Water and sewer systems – utility plant	251,061,253
Buildings and improvements	4,892,209
Office fixtures and equipment	1,840,746
Automotive equipment	2,629,462
Intangibles	25,004,570
Less accumulated depreciation and amortization	(127,862,990)
Net capital assets	<u>161,615,472</u>
Total assets	<u>202,556,008</u>
<b>Deferred Outflows of Resources</b>	
Deferred charge on refunding, net (note 9)	1,815,422
Deferred pension contributions (note 11)	341,874
Total deferred outflows of resources	<u>2,157,296</u>
Total assets and deferred outflows of resources	<u>\$ 204,713,304</u>
<b>Liabilities</b>	
Current liabilities:	
Accounts payable	\$ 326,814
Accrued salaries	14,083
Compensated absences, current portion (note 9)	287,104
Due to other funds (note 7)	633,544
Deposits	180,490
Interest payable	152,823
Bonds payable, current portion (note 9)	785,000
Unamortized bond premium, current portion (note 9)	63,907
Total current liabilities	<u>2,443,765</u>
Noncurrent liabilities:	
Advances for construction (note 16)	32,902
Other post-employment benefits (OPEB) (note 12)	277,509
Compensated absences, net of current portion (note 9)	95,701
Bonds payable, net of current portion (note 9)	21,810,000
Unamortized bond premium, net of current portion (note 9)	1,459,202
Net pension liability (note 11)	1,074,947
Total noncurrent liabilities	<u>24,750,261</u>
Total liabilities	<u>27,194,026</u>
<b>Deferred Inflow of Resources</b>	
Deferred pension investment experience (note 11)	<u>462,686</u>
<b>Net Position</b>	
Net position:	
Net investment in capital assets	139,312,785
Restricted for debt service	729,605
Unrestricted	37,014,202
Total net position	<u>177,056,592</u>
Total liabilities, deferred inflow of resources and net position	<u>\$ 204,713,304</u>

See accompanying notes to basic financials statements.

**Exhibit 6**

**County of James City, Virginia**  
**Statement of Revenues, Expenses and Changes in Fund Net Position**  
**Proprietary Fund**  
**Year ended June 30, 2016**

	<b>James City Service Authority</b>
Operating revenues:	
Water and sewer services	\$ 12,774,840
Water supply proffers	218,987
Rental income	326,377
Other	272,599
Total operating revenues	<u>13,592,803</u>
Operating expenses:	
Salaries	4,347,283
Fringe benefits	1,583,480
Operating supplies	1,094,002
Maintenance of buildings and equipment	1,670,023
Utilities	870,220
Contractual fees	903,463
Other	233,233
Total operating expenses	<u>10,701,704</u>
Operating income before depreciation and amortization	2,891,099
Depreciation and amortization	<u>7,930,632</u>
Operating loss	<u>(5,039,533)</u>
Nonoperating revenues (expenses):	
Facility charges	3,243,535
Investment income	519,767
Insurance recovery	14,219
Loss on disposal of capital assets	(193,113)
Bond issuance costs	(402,364)
Interest expense, net	(744,124)
Total nonoperating revenues, net	<u>2,437,920</u>
Loss before capital contributions	(2,601,613)
Capital contributions	<u>6,865,346</u>
Change in net position	4,263,733
Net position, beginning of year	172,792,859
Net position, end of year	<u><u>\$ 177,056,592</u></u>

See accompanying notes to basic financials statements.

**Exhibit 7****County of James City, Virginia**

## Statement of Cash Flows

## Proprietary Fund

Year ended June 30, 2016

	<b>James City Service Authority</b>
Cash flows from operating activities:	
Cash receipts from customers	\$ 12,876,543
Other cash receipts	852,252
Cash payments to suppliers of goods and services	(5,533,320)
Cash payments for personnel services	(6,095,449)
Facility charges	3,243,535
Net cash provided by operating activities	<u>5,343,561</u>
Cash flows from capital and related financing activities:	
Repayments of debt	(1,814,357)
Interest paid	(1,085,357)
Bond issuance costs	(402,364)
Insurance recovery	14,219
Acquisition and construction of capital assets	(1,615,979)
Proceeds from sale of capital assets	30,172
Net cash used in capital and related financing activities	<u>(4,873,666)</u>
Cash flows from investing activities:	
Purchases of investments	(60,367,516)
Proceeds from sales of investments	59,232,798
Interest received	482,641
Net cash used in investing activities	<u>(652,077)</u>
Net decrease in cash and cash equivalents	(182,182)
Cash and cash equivalents, beginning of year	837,750
Cash and cash equivalents, end of year	<u>\$ 655,568</u>
Reconciliation of operating loss to net cash provided by operating activities:	
Operating loss	\$ (5,039,533)
Adjustments to reconcile operating loss to net cash provided by operating activities:	
Depreciation and amortization	7,930,632
Facility charges	3,243,535
Changes in assets and liabilities:	
Accounts receivable, customers and others	123,319
Notes receivable	28,987
Inventory	8,319
Accounts payable	(58,238)
Accrued salaries	(7,522)
Compensated absences	25,452
Due to other funds	(712,460)
Deposits	(16,314)
OPEB liability	34,000
Net pension liability and related deferred inflows/outflows of resources	(216,616)
Net cash provided by operating activities	<u>\$ 5,343,561</u>
Supplemental schedule – noncash capital and investing activities:	
Capital asset contributions	<u>\$ 6,865,346</u>
Unrealized gain from change in fair value of investments	<u>\$ 99,188</u>

See accompanying notes to basic financials statements.

**County of James City, Virginia**  
**Statement of Fiduciary Net Position**  
**Fiduciary Funds**  
**June 30, 2016**

	<b>Deferred compensation trust fund</b>	<b>Agency funds</b>
<b>Assets</b>		
Cash and cash equivalents (note 2)	\$ -	\$ 2,941,631
Restricted cash and cash equivalents and investments (note 2):		
Money market funds	7,344,461	1,397,532
Bond mutual funds	807,244	5,696,074
Debt and equities	9,068,186	-
U.S. stock funds	10,204,585	-
International stock funds	527,681	-
Accounts receivable		575,584
Due from other governmental units		2,534,487
Prepaid item	-	113,320
Total assets	\$ 27,952,157	\$ 13,258,628
<b>Liabilities and Net Position</b>		
Liabilities:		
Accounts payable and accrued liabilities	\$ -	\$ 2,020,819
Amounts held for others	-	11,237,809
Total liabilities	-	13,258,628
Net position restricted for deferred compensation	27,952,157	-
Total liabilities and net position	\$ 27,952,157	\$ 13,258,628

See accompanying notes to basic financials statements.

**Exhibit 9**

**County of James City, Virginia**  
**Statement of Changes in Fiduciary Net Position**  
**Fiduciary Funds**  
**Year ended June 30, 2016**

	<b>Deferred compensation trust fund</b>
Additions:	
Contributions	<u>\$ 2,111,988</u>
Deductions:	
Distributions to employees	2,714,198
Administrative expenses	395
Net decrease in fair value of investments	210,540
Total deductions	<u>2,925,133</u>
Change in net position restricted for pensions	<u>(813,145)</u>
Net position, beginning of year	<u>28,765,302</u>
Net position, end of year	<u><u>\$ 27,952,157</u></u>

See accompanying notes to basic financials statements.

**County of James City, Virginia**  
Notes to Basic Financial Statements  
June 30, 2016

**1) Summary of Significant Accounting Policies**

The County of James City (the County or the primary government) operates under the County Administrator form of government (as defined under Virginia Law). The elected five-member Board of Supervisors appoints a County Administrator to serve as the Chief Executive Officer of the County.

The accompanying financial statements of the County of James City, Virginia conform to U.S. generally accepted accounting principles (GAAP) applicable to government units promulgated by the Governmental Accounting Standards Board (GASB). The County's significant accounting and reporting policies are described below.

**The Financial Reporting Entity**

As defined by U.S. GAAP established by GASB, the financial reporting entity consists of the primary government and its component units, which are legally separate organizations for which the Board of Supervisors of the County is financially accountable. Financial accountability is defined as appointment of a voting majority of the component unit's board, and either (a) the ability to impose will by the primary government, or (b) the possibility that the component unit will provide a financial benefit or impose a financial burden on the primary government.

These financial statements present the County and its component units. The component units discussed below are included in the County's reporting entity because of the significance of the operational or financial relationships with the County.

**Blended Component Unit**

James City Service Authority (the Authority): The Authority was established on June 30, 1969, by resolution of the Board of Supervisors of James City County, Virginia and was chartered by the Commonwealth of Virginia State Corporation Commission in July 1969 to provide water and sewer service to County residents as permitted under the *Code of Virginia*, 1950, as amended (the Enabling Act).

The Authority's governing body is appointed by the James City County Board of Supervisors, although the Authority is legally separate. The James City County Board of Supervisors is the appointed Board of Directors of the Authority.

The County can impose its will over the Authority, significantly influencing the programs, projects, activities, or level of service. Although a financial benefit or burden relationship may not exist, the County is financially accountable. The Authority is accounted for as a proprietary fund and its financial statements have been blended with the County's financial statements for reporting purposes.

The Authority's financial statements for the fiscal year ended June 30, 2016 may be obtained from the Department of Financial and Management Services, 101-F Mounts Bay Road, P.O. Box 8784, Williamsburg, Virginia 23187-8784.

**Discretely Presented Component Units**

Williamsburg-James City County Public Schools (the Public Schools): The Public Schools, pursuant to an agreement dated January 14, 1954, as amended, is responsible for educating the school-age population of the City of Williamsburg, Virginia (the City) and the County. Two members of the School Board are appointed by the City Council of the City. Five members of the School Board represent James City County and are elected by the citizens of James City County.

Although the Public Schools are legally separate, the County is financially accountable due to the significance of the fiscal dependency relationship with the Public Schools.

**County of James City, Virginia**  
**Notes to Basic Financial Statements**  
**June 30, 2016**

**1) Summary of Significant Accounting Policies, Continued**

Local costs related to operations of the Public Schools are apportioned between the participating localities in accordance with the agreement, as amended. For the fiscal year ended June 30, 2016, the apportionment of the Public Schools' operating costs to the City and County was \$8,497,787 (9.61%) and \$79,935,464 (90.39%), respectively. For the fiscal year ended June 30, 2016, the contributions for the Public Schools' capital project costs from the City and County were \$434,460 (9.56%) and \$4,110,035 (90.44%), respectively.

The Public Schools' financial statements for the fiscal year ended June 30, 2016 may be obtained from the Finance Department, 117 Ironbound Road, Williamsburg, Virginia 23185.

James City County Economic Development Authority (the Development Authority): The Development Authority is responsible for industrial and commercial development in the County. The Development Authority makes recommendations to the James City County Board of Supervisors. The Development Authority consists of seven members appointed by the James City County Board of Supervisors. Although the Development Authority is a legally separate entity, the County is financially accountable due to the significance of the fiscal dependency relationship with the Development Authority because the majority of their income is appropriated by the County.

From time to time, the Development Authority has issued Industrial Revenue Bonds (the Bonds) to provide financial assistance to private-sector entities for the acquisition and construction of industrial and commercial facilities deemed to be in the public interest. The Bonds are secured by the property financed and are payable solely from payments received on the underlying mortgage loans. Upon repayment of the Bonds, ownership of the acquired facilities transfers to the private-sector entity served by the bond issuance. Neither the County, the state, nor any political subdivision thereof is obligated in any manner for repayment of the Bonds. Accordingly, the Bonds are not reported as liabilities in the accompanying financial statements. As of June 30, 2016, there were 14 series of Industrial Revenue Bonds outstanding, with an aggregate principal amount payable of approximately \$201.2 million.

The Development Authority's financial statements for the fiscal year ended June 30, 2016 may be obtained from the Director of Economic Development, 101-D Mounts Bay Road, Williamsburg, Virginia 23185.

**Other Related Organizations and Joint Ventures**

Separate financial statements for the fiscal year ended June 30, 2016, for all other related organizations and joint ventures discussed below except the Colonial Community Corrections Program, Inc., the Virginia Peninsulas Public Service Authority, and the Williamsburg Regional Library, may be obtained from the Assistant Director of Financial and Management Services of James City County, 101-F Mounts Bay Road, P.O. Box 8784, Williamsburg, Virginia 23187-8784.

Williamsburg Area Medical Assistance Corporation (the Corporation): The Corporation was incorporated on February 19, 1993. The Corporation provides a primary medical care clinic to economically disadvantaged persons in the Counties of James City and York and the City of Williamsburg. The County appoints two board members to the Corporation. The Corporation is a legally separate organization, and the County cannot impose its will on the Corporation. The program is fiscally independent, and there is no financial benefit or burden relationship with the County. The County is fiscal agent for the Corporation, and as a result, the Corporation's financial transactions are included as an agency fund in the County's financial statements.

Colonial Community Corrections Program (the Program): The Program serves the Counties of James City, New Kent, York and Charles City, and the City of Williamsburg. The Program is fiscally independent, and there is no financial benefit or burden relationship with the County. The County is the fiscal and administrative agent and the Program is included as a special revenue fund in the County's financial statements.

**County of James City, Virginia**  
**Notes to Basic Financial Statements**  
**June 30, 2016**

**1) Summary of Significant Accounting Policies, Continued**

Virginia Peninsulas Public Service Authority (the Public Service Authority): The Public Service Authority was created pursuant to the *Code of Virginia*, 1950, as amended, between the Cities of Hampton, Newport News, Poquoson and Williamsburg, and the Counties of Essex, Gloucester, James City, King and Queen, King William, Mathews, Middlesex and York. Each jurisdiction appoints one board member. The Public Service Authority is a legally separate organization, and the County cannot impose its will on the Public Service Authority. The Public Service Authority is fiscally independent, and there is no financial benefit or burden relationship with the County; therefore, it is not included in the County's financial statements. The Public Service Authority's financial statements for the fiscal year ended June 30, 2016 may be obtained from the Public Service Authority, 475 McLaws Circle, Suite 3B, Williamsburg, Virginia 23185-5676.

Williamsburg Regional Library (the Library): The Library, pursuant to an agreement dated May 26, 1977, as amended, provides library services to the City of Williamsburg, James City County and York County. The Library is operated by a board of trustees. The County appoints 6 trustees, the City of Williamsburg appoints 4 trustees and York County appoints 1 trustee. The Library is a legally separate organization, and the County cannot impose its will on the trustees. The Library is fiscally independent, and there is no financial benefit or burden relationship with the County; therefore, it is not included in the County's financial statements. The Library's financial statements for the fiscal year ended June 30, 2016 may be obtained from the Library, 7770 Croaker Road, Williamsburg, Virginia 23188.

Virginia Peninsula Regional Jail Authority (the Jail Authority): The Jail Authority was organized and exists pursuant to resolutions adopted in 1993 by and between the Cities of Williamsburg and Poquoson and the Counties of James City and York. The Jail Authority is operated by a board. Each member jurisdiction appoints one member and the sheriff from that jurisdiction. The County, as fiscal agent, appoints one additional member. The Jail Authority is a legally separate organization, and the County cannot impose its will on the Jail Authority. The Jail Authority is fiscally independent, and there is no financial benefit or burden relationship with the County. The County is charged user fees based on inmate population in order to cover direct and indirect costs of the Jail Authority. The County is fiscal agent for the Jail Authority, and as such, the Jail Authority's financial transactions are included as an agency fund in the County's financial statements.

Middle Peninsula Juvenile Detention Commission (the Commission): The Commission was created as a political subdivision of the Commonwealth of Virginia by resolutions adopted in 1993. The member jurisdictions are as follows: Caroline County, Charles City County, Essex County, Gloucester County, Hanover County, James City County, King and Queen County, King William County, Lancaster County, Mathews County, Middlesex County, New Kent County, Northumberland County, City of Poquoson, Richmond County, Westmoreland County, City of Williamsburg and York County. The Commission is operated by a board. Each member jurisdiction appoints one member. The Commission is a legally separate organization, and the County cannot impose its will on the Commission. The Commission is fiscally independent, and there is no financial benefit or burden relationship with the County. The County is charged user fees based on juvenile population in order to cover direct and indirect costs of the Commission. The County is fiscal agent for the Commission, and as such, the Commission's financial statements are included as an agency fund in the County's financial statements.

Williamsburg Area Transit Authority (the Transit Authority): The Transit Authority was created as a political subdivision of the Commonwealth of Virginia by resolutions adopted in 2008. Members include the County, City of Williamsburg, County of York and the Colonial Williamsburg Foundation. The Transit Authority is governed by a board, consisting of five representatives appointed by the members. The Transit Authority is a legally separate organization, and the County cannot impose its will on the Transit Authority. The Transit Authority is fiscally independent from the County, and there is no financial benefit or burden relationship with the County. The County is fiscal agent for the Transit Authority, and as such, the Transit Authority's financial statements are included as an agency fund in the County's financial statements.



**County of James City, Virginia**  
**Notes to Basic Financial Statements**  
**June 30, 2016**

**1) Summary of Significant Accounting Policies, Continued**

**Basis of Presentation**

**Government-Wide and Fund Financial Statements**

The accompanying basic financial statements include both government-wide (based on the County as a whole) and fund financial statements. Both the government-wide and fund financial statements (within the basic financial statements) categorize primary activities as either governmental or business type. In the government-wide statement of net position, the governmental and business-type activities columns (a) are presented on a consolidated basis by column, and (b) are reflected, on a full accrual basis of accounting and economic resources measurement focus, which incorporates long-term assets and receivables as well as long-term debt and obligations. The County generally first uses restricted assets for expenses incurred for which both restricted and unrestricted assets are available. The County may defer the use of restricted assets based on a review of the specific transaction.

The government-wide statement of activities reflects both the gross and net cost per functional category that are otherwise being supported by general government revenues. The statement of activities reduces gross expenses (including depreciation) by related program revenues, operating and capital grants and contributions. The program revenues must be directly associated with the function or a business-type activity. Program revenues include 1) charges to customers or applicants who purchase, use, or directly benefit from goods, services, or privileges provided by a given function and 2) grants and contributions that are restricted to meeting the operation or capital requirements of a particular function or segment. Taxes and other items not properly included among program revenues are reported as general revenues. Administrative overhead charges are allocated to the programs and included in direct expenses. The operating grants include operating-specific and discretionary (either operating or capital) grants while the capital grants column reflects capital-specific grants.

In the fund financial statements, financial transactions and accounts of the County are organized on the basis of funds. The operation of each fund is considered to be an independent fiscal and separate accounting entity, with a self-balancing set of accounts recording cash and/or other financial resources together with all related liabilities and residual equities or balances, and changes therein, which are segregated for the purpose of carrying on specific activities or attaining certain objectives in accordance with special regulations, restrictions, or limitations. The governmental fund statements are presented on a current financial resources measurement focus and modified accrual basis of accounting. Since the governmental fund statements are presented on a different measurement focus and basis of accounting than the government-wide statements' governmental activities column, a reconciliation is presented which explains the adjustments necessary to reconcile the fund financial statements to the governmental activities column of the government-wide financial statements. The County's fiduciary funds are presented in the fund financial statements. Since, by definition, these assets are being held for the benefit of third parties and cannot be used to address activities or obligations of the County, these funds are not incorporated into the government-wide statements.

The County reports the following major governmental funds:

General Fund: The General Fund is the general operating fund of the County. It is used to account for all financial resources except those required to be accounted for in other funds. A significant part of the General Fund's revenues is contributed to the joint-school operations of the City and County or is transferred to other funds principally to fund debt service, capital projects and social services requirements.

Capital Projects Fund: The Capital Projects Fund is used to account for financial resources to be used for the acquisition or construction of major capital facilities other than those financed by the proprietary fund.

Debt Service Fund: The Debt Service Fund is used to account for the accumulation of resources for, and the payment of principal, interest and related costs on long-term debt of governmental funds.

The County reports the following major proprietary fund:

James City Service Authority: The James City Service Authority accounts for the operation of the County's water and sewer services.

**County of James City, Virginia**  
**Notes to Basic Financial Statements**  
**June 30, 2016**

**1) Summary of Significant Accounting Policies, Continued**

Additionally, the County reports the following fund types:

**Nonmajor Governmental Funds:** Nonmajor Governmental Funds include special revenue funds which account for revenue derived from specific sources that are restricted by legal and regulatory provisions to finance specific activities of the County. These funds consist of Virginia Public Assistance, Colonial Community Corrections, Community Development, Trust, Tourism Investment, and Grants and Special Projects.

**Nonmajor Fiduciary Funds:** Nonmajor Fiduciary Funds are used to account for assets held by the County in a trustee capacity or as an agent for individuals, private organizations, other governmental units and/or other funds. The Fiduciary Funds of the County are the Pension Trust Fund, which is the Deferred Compensation Plan and is accounted for in essentially the same manner as proprietary funds. Also included are the Agency Funds, which consist of Special Welfare, Williamsburg Area Medical Assistance Corporation, Regional Jail, Juvenile Detention, and Williamsburg Area Transit Authority.

**Basis of Accounting and Measurement Focus**

The accounting and financial reporting treatment applied to a fund is determined by its measurement focus. All governmental funds are accounted for using the current financial resources measurement focus. With this measurement focus, only current assets and current liabilities generally are included on the balance sheet in the funds statements. Long-term assets and long-term liabilities are included in the government-wide statements. Operating statements of the governmental funds present increases (i.e., revenues and other financing sources) and decreases (i.e., expenditures and other financing uses) in net current assets.

The accompanying fund financial statements of the governmental funds are maintained and reported on the modified accrual basis of accounting using the current financial resources measurement focus. Under this method of accounting, revenues are recognized in the period in which they become measurable and available to finance operations during the year. Revenues are considered to be available when they are collectible within the current period or soon enough thereafter to pay liabilities of the current period. For this purpose, the government considers revenues to be available if they are collected within 45 days of the end of the current fiscal period. Expenditures, other than interest on long-term debt, are recorded when the fund liability is incurred. Interest on long-term debt is recorded when due.

In applying the modified accrual concept to intergovernmental revenues, the legal and contractual requirements of the numerous individual programs are used as guidance. There are, however, essentially two types of those revenues. In one, monies must be expended for the specific purpose or project before any amounts will be paid to the County, which is usually within 45 days; therefore, revenues are recognized based upon the expenditures recorded. In the other, monies are virtually unrestricted as to purpose of expenditure and are usually revocable only for failure to comply with prescribed compliance requirements. These resources are reflected as revenues at the time of receipt or earlier if the susceptible to accrual criteria are met.

Real estate and personal property taxes are recorded as revenues and receivables when levied and billed, net of allowances for uncollectible amounts. Property taxes levied but not collected within 45 days after year end are reflected as deferred revenue. Sales taxes, which are collected by the state and subsequently remitted to the County, are recognized as revenues and receivables upon execution of the sale, which is generally two months preceding receipt by the County.

License and permits, fines and rents are recorded as revenue when received in cash because they are generally not measurable until actually received. Investment earnings are recorded at fair value as earned since they are measurable and available.

The government-wide and the proprietary fund financial statements are accounted for on a flow of economic resources measurement focus. With this measurement focus, all assets and all liabilities associated with the operation of these activities are included on the statement of net position. The proprietary fund-type operating statement presents increases (e.g., revenues) and decreases (e.g., expenses) in net total position.

**County of James City, Virginia**  
**Notes to Basic Financial Statements**  
**June 30, 2016**

**1) Summary of Significant Accounting Policies, Continued**

The statement of net position, statement of activities and financial statements of the proprietary fund are presented on the accrual basis of accounting. Under this method of accounting, revenues are recognized when earned and expenses are recorded when liabilities are incurred without regard to receipt or disbursement of cash. The proprietary fund distinguishes operating revenues and expenses from nonoperating items. Operating revenues and expenses generally result from providing services and producing and delivering goods in connection with a proprietary fund's principal ongoing operations. The principal operating revenues of the County's proprietary fund are charges to customers for services. Operating expenses for the proprietary fund include the cost of services, administrative expenses and depreciation on capital assets. All revenues and expenses not meeting this definition are reported as nonoperating revenues and expenses.

**Cash and Cash Equivalents**

For purpose of the statement of cash flows, cash equivalents are defined as short-term, highly liquid investments that are both (a) readily convertible to known amounts of cash, and (b) so near the maturity that they present insignificant risk of changes in value because of changes in interest rates. Generally, the County considers investments with original maturities of 90 days or less to be cash equivalents.

**Allowance for Uncollectible Accounts**

The County calculates its allowance for uncollectible accounts using historical collection data and specific account analysis. The allowance for uncollectible accounts relating solely to property taxes was \$72,700 in the General Fund at June 30, 2016. Additionally, the County recorded an allowance for uncollectible accounts of \$28,583 related to business, professional and occupational license taxes and \$110,599 for the Advance Life Support/Basic Life Support (ALS/BLS) fees.

The Authority has few uncollectible receivables and does not use allowance accounts. State law permits filing of liens against real property for unpaid utility charges. The write-off of bad debts only occurs when the property is sold prior to the lien process being instituted.

**Inventory**

All inventories, which consist of materials and supplies, are valued at cost using the average-cost method. Reported inventories are accounted for under the consumption method (i.e., recorded as expenditures when used) in the governmental and proprietary funds. The cost is recorded as an expenditure at the time individual inventory items are consumed. Quantities on hand at year end are recorded at cost on the balance sheet with an offsetting reserve to fund balance which indicates that they do not constitute available spendable resources.

**Capital Assets**

Capital outlays are recorded as expenditures of the General and Special Revenue Funds and as assets in the accompanying government-wide financial statements to the extent the County's capitalization threshold of \$5,000 is met. Depreciation is recorded on capital assets on a government-wide basis. Capital outlays of the proprietary funds are recorded as capital assets and depreciated over their estimated useful lives on a straight-line basis on both the funds basis and the government-wide basis. All capital assets are valued at historical cost or estimated historical cost if actual cost was not available. Contributed capital assets are valued at their acquisition value on the date donated.

Maintenance, repairs and minor equipment are charged to operations when incurred. Expenditures that materially change capacities or extend useful lives are capitalized. Upon sale or retirement of capital assets, the cost and related accumulated depreciation, if applicable, are eliminated from the respective accounts and any resulting gain or loss is included in the results of operations.

Depreciation of capital assets is calculated on the straight-line basis over the following estimated useful lives:

Buildings and improvements	10 to 50 years
Improvements other than buildings	6 to 40 years
Equipment and vehicles	3 to 20 years
Infrastructure	20 to 40 years

**County of James City, Virginia**  
Notes to Basic Financial Statements  
June 30, 2016

**1) Summary of Significant Accounting Policies, Continued**

**Compensated Absences**

County employees are granted sick and vacation leave in varying amounts based on length of service. They may accumulate, subject to certain limitations, unused sick and vacation leave, and upon retirement, termination, or death, may be compensated for certain amounts at their then current rates of pay. The accumulated annual sick and vacation leave estimated to be payable upon separation are recorded in the accompanying government-wide financial statements.

**Unbilled Revenue**

The Authority records the amount of earned but unbilled service charges revenue by prorating actual subsequent billings. Amounts accrued but unbilled were approximately \$1,106,000 at June 30, 2016.

**Property Taxes**

Real property taxes are recognized as receivables when levied. Real property taxes attach as an enforceable lien on property automatically. Taxes are levied no later than October 1 and are due by December 5 and June 5.

Property taxes levied in the current and prior year have been recorded in governmental activities as receivables as of the date the County has the legal right to receive payments thereon. Personal property taxes create a lien on the assessed property. The receivables collected during the fiscal year and during the first 45 days of the succeeding fiscal year are recognized in the General Fund as revenues in the current fiscal year.

A penalty of 10% of the tax is assessed the business day after the due date on taxes outstanding as of those dates and interest at 10% per annum is added.

**Risk Management**

The County is exposed to various risks of loss related to torts; theft of, damage to, and destruction of assets; errors and omissions; injuries to employees; and natural disasters. Property and liability coverages are provided through a group self-insurance risk pool. The County's retention is through deductibles on a per-claim basis. Deductibles and coverage limits at June 30, 2016 are as follows:

	<b><u>Deductibles</u></b>
Property:	\$ 10,000
Flood	25,000
Earthquake	25,000
Inland marine	1,000
General liability and law enforcement	100,000
Automobile:	
Liability	100,000
Comprehensive	1,000
Collision	1,000
Crime	250
Workers' compensation	None

**County of James City, Virginia**  
**Notes to Basic Financial Statements**  
June 30, 2016

**1) Summary of Significant Accounting Policies, Continued**

	<b>Coverage limits</b>
Property insurance:	
Valuation at functional replacement	\$ 83,792,000
Flood (outside 100 year flood plain)	83,792,000
Business interruption/extra expense	3,000,000
Property in transit	5,000,000
Increased cost of construction/ordinance demolition	20,000,000
Back-up of sewers and drains	1,000,000
Debris removal	20,000,000
Pollutant clean-up and removal	500,000
Off premises power failure	2,000,000
Media reproduction	100,000
Newly acquired locations for up to 120 days	20,000,000
General liability and law enforcement	9,000,000
Automobile liability	9,000,000
Public officials	9,000,000
Crime	500,000
Workers' compensation	Statutory limits

There have been no reductions in insurance coverages from the prior year, and settled claims have not exceeded the amount of insurance coverage in any of the past three fiscal years.

Effective July 1, 2011, the County participates in the group self-insurance risk pool with Virginia Association of Counties to provide Line of Duty Act benefits to eligible participants. During fiscal year 2016, the County made a payment of \$154,935 for these premiums.

**Bond Premiums, Discounts and Issuance Costs**

In the accompanying government-wide financial statements, bond premiums and discounts are deferred and amortized over the terms of the related issues on a straight-line basis, which approximates the effective interest method.

In the accompanying fund financial statements, governmental fund types recognize bond premiums and discounts, as well as bond issuance costs, during the current period. Premiums received on debt issuances are reported as other financing sources while discounts on debt issuances are reported as other financing uses. Issuance costs, whether or not withheld from the actual debt proceeds received, are reported as debt service expenditures.

**Interfund Transactions**

Interfund transactions are reflected as either loans, services provided, reimbursements or transfers. Loans are reported as receivables and payables as appropriate and are subject to elimination upon consolidation. Services provided, deemed to be at market or near market rates, are treated as revenues and expenditures/expenses. Reimbursements occur when one fund incurs a cost, charges the appropriate benefiting fund and reduces its related cost as a reimbursement. All other interfund transactions are treated as transfers. Transfers between governmental or proprietary funds are netted as part of the reconciliation to the government-wide presentation.

**Encumbrances**

Encumbrance accounting, in which purchase orders, contracts and other commitments for the expenditure of monies are recorded in order to reserve that portion of the applicable appropriations, is employed as an extension of formal budgetary integration in the General, Special Revenue and Capital Projects Funds. Encumbrances outstanding at year end are reported as assigned in fund balance since they do not constitute expenditures or liabilities under GAAP.

**County of James City, Virginia**  
**Notes to Basic Financial Statements**  
June 30, 2016

**1) Summary of Significant Accounting Policies, Continued**

**Fund Balances**

Fund balances are reported according to the following categories:

Nonspendable: Amounts that cannot be spent because they are not in spendable form, or are legally or contractually required to be maintained intact. This classification includes inventories, prepaid amounts, assets held for sale, and long-term receivables.

Restricted: Amounts that can be spent only for the specific purposes stipulated by constitution, external resource providers or through enabling legislation.

Committed: Amounts that can be used only for the specific purposes determined by formal action of the Board of Supervisors by adoption of an ordinance and cannot be used for any other purpose unless the County removes or changes the specified use by taking the same type of action it employed to previously commit those amounts. In contrast to fund balance that is restricted by enabling legislation, committed fund balance may be redeployed for other purposes with appropriate due process.

Assigned: Amounts that are intended to be used for specific purposes, but do not meet the criteria as restricted or committed. In governmental funds other than the general fund, assigned fund balance represents the remaining amount that is not restricted or committed. In the general fund, assigned amounts represent intended uses established by the Board of Supervisors, or as delegated to the Director of Financial and Management Services. The Board of Supervisors has, by resolution, authorized the Director of Financial and Management Services to assign fund balance. Unlike commitments, assignments generally only exist temporarily and an additional action is not normally required to be taken for the removal of an assignment.

Unassigned: Includes the residual classification for the County's general fund and includes all spendable amounts not contained in other classifications. Only the general fund can report a positive unassigned fund balance. This includes the County's goal of maintaining a fiscal liquidity balance between 10%-12% of the total general governmental expenditures.

The County's policy is to apply expenditures against restricted resources first when either restricted or unrestricted amounts are available. Within unrestricted fund balance, it is the County's policy to apply expenditures against committed amounts first, followed by assigned, and then unassigned amounts. In a governmental fund other than the general fund, a negative unassigned fund balance could result if expenditures incurred for a specific purpose exceeds the amounts in the fund that are restricted, committed, and assigned for that purpose.

For the fiscal year ended June 30, 2016, the General Fund has the following amounts assigned or unassigned:

	<u>Assigned</u>	<u>Unassigned</u>
Health insurance	\$ 3,383,322	\$ -
Capital projects	2,844,643	-
Encumbrances	1,332,619	-
Potential insurance loss	300,000	-
Subtotal	7,860,584	-
Capital reserve	5,414,938	-
Fiscal liquidity	-	24,681,548
Total	<u>\$ 21,136,106</u>	<u>\$ 24,681,548</u>

The committed fund balance for the Capital Projects Fund was \$29,537,504 at June 30, 2016 and was primarily for amounts approved related to bond proceeds received for school renovation projects and a new middle school. The assigned fund balance in the capital projects fund was \$18,069,200 at June 30, 2016 and was for ongoing capital projects. The assigned fund balance in the other governmental funds was \$5,345,438 at June 30, 2016 and was primarily for ongoing expenditures.

**County of James City, Virginia**  
**Notes to Basic Financial Statements**  
June 30, 2016

**1) Summary of Significant Accounting Policies, Continued**

**Estimates**

The preparation of financial statements requires management to make estimates and assumptions that affect the reported amounts and disclosures. Accordingly, actual results could differ from those estimates and assumptions.

**Adoption of New Accounting Statement**

Effective with the financial statements for the fiscal year ended June 30, 2016, the County has adopted GASB Statement No. 72, Fair Value Measurement and Application. This statement requires the use of valuation techniques which are appropriate under the circumstances and are either a market approach, a cost approach, or an income approach.

The statement establishes a hierarchy of inputs used to measure fair value consisting of three levels. Level 1 inputs are quoted prices in active markets for identical assets or liabilities. Level 2 inputs are inputs, other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly. Level 3 inputs are unobservable inputs, such as management's assumption of the default rate among underlying mortgages of a mortgage-backed security. Statement No. 72 also contains note disclosure requirements regarding the hierarchy of valuation inputs and valuation techniques that was used for the fair value measurements.

**2) Cash, Cash Equivalents and Investments**

**Primary Government**

The primary government's cash and investments at June 30, 2016, consisted of the following:

Bank deposits	\$ 38,640,579
Petty cash	5,905
Investments	72,834,980
Total	<u>\$ 111,481,464</u>
Cash and cash equivalents	\$ 35,779,008
Investments	42,567,871
Restricted cash, cash equivalents and investments	33,134,585
Total	<u>\$ 111,481,464</u>

Deposits with banks are fully covered by the Federal Deposit Insurance Corporation (FDIC) or collateralized in accordance with the Virginia Security for Public Deposits Act, Section 2.2-4400 et. seq. of the Code of Virginia.

The primary government's restricted cash, cash equivalents and investments at June 30, 2016 are detailed as follows:

<u>Fund</u>	<u>Purpose</u>	<u>Amount</u>
General	Subdivision escrow	\$ 967,532
Capital projects	Unspent bond proceeds	29,537,504
Nonmajor governmental:		
Community development	Community rehabilitation	1,456,153
Grants and special projects	Grants and special projects	443,791
Total		<u>\$ 32,404,980</u>
Proprietary - James City		
County Service Authority	Debt service	\$ 729,605
Total		<u>\$ 33,134,585</u>

**County of James City, Virginia**  
**Notes to Basic Financial Statements**  
June 30, 2016

**2) Cash, Cash Equivalents and Investments, Continued**

As of June 30, 2016, the primary government's investments were as follows:

<b>Investment Type</b>	<b>Cost</b>	<b>Fair value</b>	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>
U.S. Treasury securities	\$ 20,111,756	\$ 20,246,052	\$ 20,246,052	\$ -	\$ -
Federal agency notes and bonds	7,164,800	7,137,000	-	7,137,000	-
Corporate notes and bonds	6,598,201	6,580,205	-	6,580,205	-
Commercial paper	2,084,038	2,089,218	-	2,089,218	-
Certificates of deposit	4,449,034	4,456,702	-	4,456,702	-
Federal agency collateralized mortgage obligation	1,952,505	1,949,535	-	1,949,535	-
Subtotal	42,360,334	42,458,712	20,246,052	22,212,660	-
LGIP (amortized cost)	25,067	25,067	N/A	N/A	N/A
Money market	30,351,201	30,351,201	N/A	N/A	N/A
Total	\$ 72,736,602	\$ 72,834,980	\$ 20,246,052	\$ 22,212,660	\$ -

	<b>Fair value</b>	<b>Original investment maturity (in years)</b>		
		<b>Less than 1</b>	<b>1-2</b>	<b>2-7</b>
U.S. Treasury securities	\$ 20,246,052	\$ 310,630	\$ 6,544,966	\$ 13,390,456
Federal agency notes and bonds	7,137,000	50,356	4,844,411	2,242,233
Corporate notes and bonds	6,580,205	1,767,158	2,380,701	2,432,346
Commercial paper	2,089,218	2,089,218	-	-
Certificates of deposit	4,456,702	850,104	3,256,249	350,349
Federal agency collateralized mortgage obligation	1,949,535	-	226,823	1,722,712
LGIP	25,067	25,067	-	-
Money market	30,351,201	30,351,201	-	-
Total	\$ 72,834,980	\$ 35,443,734	\$ 17,253,150	\$ 20,138,096

**Investment Policy**

In accordance with the Code of Virginia and other applicable law, including regulations, the County's Investment Policy (the Policy) permits investments in U.S. government obligations, municipal obligations, prime quality commercial paper, and certain corporate notes, bankers' acceptances, repurchase agreements, negotiable certificates of deposit, bank deposit notes, mutual funds that invest exclusively in securities specifically permitted under the Policy, and the State Treasurer's Local Government Investment Pool (the Virginia LGIP, a 2a-7 like pool). The fair value of the Commission's position in the LGIP is the same as the value of the pool shares. The Treasury Board of the Commonwealth of Virginia has regulatory oversight of the LGIP.

The Policy establishes limitations on the holdings of non-U.S. government obligations. The maximum percentage of the portfolio (book value at the date of acquisition) permitted in each security is as follows:

Registered money market mutual funds	100% maximum
Commonwealth of Virginia LGIP	100% maximum
Bank deposits	100% maximum
Repurchase agreements	50% maximum
Bankers' acceptances	40% maximum
Commercial paper	35% maximum
Negotiable certificates of deposit/bank notes	20% maximum
Municipal obligations	20% maximum
Corporate notes	15% maximum



**County of James City, Virginia**  
**Notes to Basic Financial Statements**  
June 30, 2016

**2) Cash, Cash Equivalents and Investments, Continued**

**Credit Risk**

As required by state statute, the Policy requires that commercial paper have a short-term debt rating of no less than "A-1" (or its equivalent) from at least two of the following; Moody's Investors Service, Standard & Poor's, Fitch Investor's Service, and Duff and Phelps. Corporate notes must have a minimum of "Aa" long-term debt rating by Moody's Investors Service and a minimum of "AA" long-term debt rating by Standard & Poor's. Negotiable Certificates of Deposit and bank deposit notes maturing in less than one year must have a short-term debt rating of at least "A-1" by Standard & Poor's and "P-1" by Moody's Investors Service. Notes having a maturity of greater than one year must be rated "AA" by Standard & Poor's and "Aa" by Moody's Investors Service.

Although state statute does not impose credit standards on repurchase agreement counterparties, bankers' acceptances or money market mutual funds, the County has established stringent credit standards for these investments to minimize portfolio risk.

The County's investments as of June 30, 2016 were rated by Standard & Poor's, Moody's and Fitch and/or an equivalent national rating organization and the ratings are as follows:

	Unrated	AAA	AA+	AA	AA-	A-1+	A-1
U.S. Treasury securities	\$ -	\$ -	\$ 20,246,052	\$ -	\$ -	\$ -	\$ -
Federal agency notes and bonds	-	-	7,137,000	-	-	-	-
Corporate notes and bonds	-	1,047,539	1,886,144	591,805	3,054,717	-	-
Commercial paper	-	-	-	-	-	-	2,089,218
Certificates of deposit	503,584	-	-	-	1,301,967	1,676,037	975,114
Federal agency collateralized mortgage obligation	-	-	1,949,535	-	-	-	-
LGIP	-	25,067	-	-	-	-	-
Money market	30,267,110	84,091	-	-	-	-	-
Total	\$ 30,770,694	\$ 1,156,697	\$ 31,218,731	\$ 591,805	\$ 4,356,684	\$ 1,676,037	\$ 3,064,332

**Concentration of Credit Risk**

The Policy establishes limitations on portfolio composition by issuer in order to control concentration of credit risk. No more than 5% of the County's portfolio will be invested in the securities of any single issuer with the following exceptions:

U.S. Treasury	100% maximum
Each money market mutual fund	50% maximum
Each federal agency	35% maximum
Each repurchase agreement counterparty	25% maximum

As of June 30, 2016, the portions of the County's portfolio (excluding the blended component units), excluding U.S. Treasury notes, which exceed 5% of the total portfolio are as follows:

Issuer	% of portfolio
Federal Home Loan Banks	15.5%

**Interest Rate Risk**

As a means of limiting exposure to fair value losses arising from rising interest rates, the County's Policy limits the investment of short-term operating funds to an average weighted maturity of no more than 180 days, with a portion of the portfolio continuously invested in readily available funds. The operating fund core portfolio will be invested in permitted investments with a stated maturity of no more than five years from the date of purchase. To control the volatility of the core portfolio, the Treasurer will determine a duration target, not to exceed three years.

**County of James City, Virginia**  
**Notes to Basic Financial Statements**  
June 30, 2016

**2) Cash, Cash Equivalents and Investments, Continued**

Proceeds from the sale of bonds must be invested in compliance with the specific requirements of the bond covenants and may be invested in securities with longer maturities, so long as the maturity does not exceed the expected disbursement date of those funds.

**Custodial Credit Risk**

The Policy requires that all investment securities purchased by the County or held as collateral on deposits or investments shall be held by the County or by a third-party custodial agent who may not otherwise be a counterparty to the investment transaction. As of June 30, 2016, all of the County's investments are held in a bank's trust department in the name of James City County.

**Component Units**

The Public School's and Economic Development Authority's (EDA) cash and investments at June 30, 2016, consisted of the following:

	<b>Component Unit</b>	
	<b>Public Schools</b>	<b>EDA</b>
Bank deposits	\$ 18,721,860	\$ 174,874
Investments	236,595	776,744
Total cash and cash equivalents	<u>\$ 18,958,455</u>	<u>\$ 951,618</u>

Deposits with banks are fully covered by the Federal Deposit Insurance Corporation (FDIC) or collateralized in accordance with the Virginia Security for Public Deposits Act, Section 2.2-4400 et. seq. of the Code of Virginia.

**3) Receivables**

Amounts due from miscellaneous sources at June 30, 2016, are detailed as follows:

<b><u>General Fund</u></b>	
Sales tax	\$ 1,900,363
Meals tax	754,445
Emergency medical services	427,319
Charges for services	247,530
Other	214,382
Recordation tax	140,848
Business license	118,586
Deeds of conveyance	43,909
Utility consumption fee	28,314
Fines and forfeitures	26,245
Williamsburg Regional Library	14,297
Total	<u>\$ 3,916,238</u>
<b><u>Capital Projects Fund</u></b>	
Proffers	<u>\$ 5,704</u>
Total governmental funds	<u>\$ 3,921,942</u>

**4) Interfund Receivables, Payables and Transfers**

Interfund receivable and payable balances are considered short-term in nature. All other balances resulted from the time-lag between the dates that (1) interfund goods and services are provided or reimbursable expenditures occur, (2) transactions are recorded in the accounting system, and (3) payments between funds are made.

**County of James City, Virginia**  
**Notes to Basic Financial Statements**  
June 30, 2016

**4) Interfund Receivables, Payables and Transfers, Continued**

At June 30, 2016, the balances were as follows:

	Due from other funds		
	General	Capital Projects	Nonmajor governmental funds
<b>Due to other funds:</b>			
General	\$ -	\$ 3,121,834	\$ 26,755
Nonmajor governmental	428,548	-	-
Total	<u>\$ 428,548</u>	<u>\$ 3,121,834</u>	<u>\$ 26,755</u>
			<u>\$ 3,577,137</u>

Transfers are used to (1) move revenues from the fund that statute or budget requires to collect them to the fund that statute or budget requires to expend them, (2) move receipts restricted to debt service from the funds collecting the receipts to the debt service fund as debt service payments become due, and (3) use unrestricted revenues collected in the General Fund to finance various programs accounted for in other funds in accordance with budgetary authorizations. Interfund transfers for the year ended June 30, 2016, consisted of the following:

	Transfers In	Transfers Out
General	\$ 39,235	\$ (40,773,308)
Capital projects	12,929,834	(143,674)
Debt service	23,568,074	-
Nonmajor governmental	4,419,074	(39,235)
Total	<u>\$ 40,956,217</u>	<u>\$ (40,956,217)</u>

Transfers from the General Fund of \$12,929,834 to the Capital Projects Fund represent the County's budgeted pay-as-you-go funding. Transfers from the General Fund of \$23,568,074 to the Debt Service Fund were for the principal and interest on outstanding debt as the payments became due.

Transfers from the General Fund of \$4,275,400 to various Nonmajor governmental funds represent the movement of funds collected in the General Fund to finance various programs accounted for in other funds in accordance with budgetary authorizations. In addition, a transfer of \$143,674 from the Capital Projects Fund to the Nonmajor government funds represents grant funding for a capital purchase.

Transfers from the Nonmajor governmental funds of \$39,235 to the General Fund was to provide partial funding for a position and to transfer the residual balance of a special revenue fund with no remaining activity.

**County of James City, Virginia**  
**Notes to Basic Financial Statements**  
June 30, 2016

**5) Due from Other Governments**

Details of amounts due from other governments as of June 30, 2016 are as follows:

<b>Primary Government</b>	<b>General</b>	<b>Nonmajor Governmental</b>	<b>Total</b>
Local:			
City of Williamsburg	\$ 38,745	\$ 20,055	\$ 58,800
Other	11,111	109,770	120,881
Commonwealth of Virginia:			
Recordation tax	122,127	-	122,127
Rolling stock tax	41,797	-	41,797
Communications sales and use tax	269,430	-	269,430
State sales tax	2,016,931	-	2,016,931
Personal property tax relief	4,836,856	-	4,836,856
Compensation Board	174,246	24,841	199,087
Virginia Dept. of Social Services	-	198,670	198,670
Comprehensive Services Act	-	16,965	16,965
Virginia Dept. of Housing and Community Development	-	183,925	183,925
Virginia Dept. of Transportation	-	750	750
Virginia Dept. of Criminal Justice Services	-	67,563	67,563
Virginia Dept. of Aviation	-	429,600	429,600
Virginia Dept. of Conservation and Recr.	-	372	372
Other	47,718	40,522	88,240
Federal:			
Dept. of Homeland Security	-	14,583	14,583
Dept. of Social Services	-	142,739	142,739
Dept. of Transportation	-	11,645	11,645
Dept. of Justice	-	32,897	32,897
Dept. of the Interior	-	142,909	142,909
Dept. of Criminal Justice Services	-	47,764	47,764
FEMA	-	1,908	1,908
E911 Service Board	-	10,523	10,523
Other	7,553	-	7,553
Total	<u>\$ 7,566,514</u>	<u>\$ 1,498,001</u>	<u>\$ 9,064,515</u>

**Component Unit - Public Schools**

Federal government	\$ 866,760
Commonwealth of Virginia	166,661
Total	<u>\$ 1,033,421</u>

All amounts due from other governments are expected to be collected within one year.

**County of James City, Virginia**  
**Notes to Basic Financial Statements**  
June 30, 2016

**6) Capital Assets**

The following is a summary of changes in capital assets for the fiscal year ended June 30, 2016:

	<b>Balances</b>			<b>Balances</b>
<b>Governmental activities:</b>	<b>July 1, 2015</b>	<b>Increases</b>	<b>Decreases</b>	<b>June 30, 2016</b>
Capital assets not being depreciated:				
Land and land improvements	\$ 28,132,818	\$ -	\$ -	\$ 28,132,818
Construction in progress	7,693,335	8,542,128	6,361,900	9,873,563
Intangible assets - easements	8,069,178	577,222	-	8,646,400
Total capital assets not being depreciated	<u>43,895,331</u>	<u>9,119,350</u>	<u>6,361,900</u>	<u>46,652,781</u>
Capital assets being depreciated:				
Buildings and improvements	328,135,904	147,453	-	328,283,357
Improvements other than buildings	32,490,279	4,604,844	-	37,095,123
Equipment and vehicles	44,665,636	2,659,382	930,499	46,394,519
Infrastructure	10,500,853	-	-	10,500,853
Total capital assets being depreciated	<u>415,792,672</u>	<u>7,411,679</u>	<u>930,499</u>	<u>422,273,852</u>
Less accumulated depreciation for:				
Buildings and improvements	85,476,555	7,288,768	-	92,765,323
Improvements other than buildings	9,231,938	1,176,729	-	10,408,667
Equipment and vehicles	32,070,940	2,613,799	834,878	33,849,861
Infrastructure	3,517,790	384,551	-	3,902,341
Total accumulated depreciation	<u>130,297,223</u>	<u>11,463,847</u>	<u>834,878</u>	<u>140,926,192</u>
Total capital assets being depreciated, net	<u>285,495,449</u>	<u>(4,052,168)</u>	<u>95,621</u>	<u>281,347,660</u>
Total	<u>\$ 329,390,780</u>	<u>\$ 5,067,182</u>	<u>\$ 6,457,521</u>	<u>\$ 328,000,441</u>

Depreciation was charged to governmental functions as follows:

General government administration	\$ 846,056
Judicial administration	263,581
Public safety	2,262,615
Public works	1,195,587
Parks, recreation and cultural	1,192,959
Community development	355,041
Education	5,168,964
Health and welfare	179,044
Total	<u>\$ 11,463,847</u>

**County of James City, Virginia**  
**Notes to Basic Financial Statements**  
June 30, 2016

**6) Capital Assets, Continued**

<b>Business-type activity:</b>	<b>Balances July 1, 2015</b>	<b>Increases</b>	<b>Decreases</b>	<b>Balances June 30, 2016</b>
Capital assets not being depreciated:				
Land	\$ 1,739,491	\$ -	\$ -	\$ 1,739,491
Land - utility plant	962,995	-	-	962,995
Land improvements	13,183	-	-	13,183
Construction in progress	705,860	1,505,763	877,070	1,334,553
Intangible assets - easements	4,570	-	-	4,570
Total capital assets not being depreciated	<u>3,426,099</u>	<u>1,505,763</u>	<u>877,070</u>	<u>4,054,792</u>
Capital assets being depreciated:				
Water and sewer systems - utility plant	244,019,716	7,472,448	430,911	251,061,253
Buildings and improvements	4,892,209	-	-	4,892,209
Office fixtures and equipment	1,809,839	98,578	67,671	1,840,746
Automotive equipment	2,482,789	281,607	134,934	2,629,462
Intangible assets - water rights	25,000,000	-	-	25,000,000
Total capital assets being depreciated	<u>278,204,553</u>	<u>7,852,633</u>	<u>633,516</u>	<u>285,423,670</u>
Less accumulated depreciation for:				
Water and sewer systems - utility plant	112,007,794	6,784,156	208,159	118,583,791
Buildings and improvements	1,488,065	144,245	-	1,632,310
Office fixtures and equipment	1,109,095	135,485	67,136	1,177,444
Automotive equipment	1,903,277	253,249	134,934	2,021,592
Intangible assets - water rights	3,834,356	613,497	-	4,447,853
Total accumulated depreciation	<u>120,342,587</u>	<u>7,930,632</u>	<u>410,229</u>	<u>127,862,990</u>
Total capital assets being depreciated, net	<u>157,861,966</u>	<u>(77,999)</u>	<u>223,287</u>	<u>157,560,680</u>
Total	<u>\$ 161,288,065</u>	<u>\$ 1,427,764</u>	<u>\$ 1,100,357</u>	<u>\$ 161,615,472</u>

Depreciation was charged to the business-type operations as follows:

Water	\$ 4,908,815
Sewer	3,021,817
Total	<u>\$ 7,930,632</u>

**County of James City, Virginia**  
**Notes to Basic Financial Statements**  
June 30, 2016

**6) Capital Assets, Continued**

<b>Component Unit - Public Schools</b>	<b>Balances July 1, 2015</b>	<b>Increases</b>	<b>Decreases</b>	<b>Balances June 30, 2016</b>
Capital assets not being depreciated:				
Land improvements	\$ 8,435,126	\$ -	\$ -	\$ 8,435,126
Construction in progress	1,944,242	3,239,193	814,747	4,368,688
Total capital assets not being depreciated	10,379,368	3,239,193	814,747	12,803,814
Capital assets being depreciated:				
Buildings and improvements	51,140,524	650,545	-	51,791,069
Furniture and equipment	23,298,994	1,810,150	1,181,442	23,927,702
Total capital assets being depreciated	74,439,518	2,460,695	1,181,442	75,718,771
Less accumulated depreciation for:				
Buildings and improvements	16,257,069	2,484,880	-	18,741,949
Furniture and equipment	15,012,545	1,774,305	1,123,163	15,663,687
Total accumulated depreciation	31,269,614	4,259,185	1,123,163	34,405,636
Total capital assets being depreciated, net	43,169,904	(1,798,490)	58,279	41,313,135
Total	\$ 53,549,272	\$ 1,440,703	\$ 873,026	\$ 54,116,949

Depreciation of \$4,259,185 was charged to the Public Schools' governmental functions.

The total construction in progress for the Public Schools was \$6,141,266. Capital outlay expenditures totaling \$1,772,578 are presented in the County's construction in progress balance in order to match the corresponding debt.

<b>Component Unit - EDA</b>	<b>Balances July 1, 2015</b>	<b>Increases</b>	<b>Decreases</b>	<b>Balances June 30, 2016</b>
Capital assets not being depreciated:				
Land	\$ 233,106	\$ -	\$ -	\$ 233,106
Construction in progress	166,510	-	-	166,510
Total capital assets not being depreciated	399,616	-	-	399,616
Capital assets being depreciated:				
Leasehold improvements	-	137,315	-	137,315
Furniture and equipment	5,119	-	-	5,119
Intangibles	7,600	-	-	7,600
Total capital assets being depreciated	12,719	137,315	-	150,034
Less accumulated depreciation for:				
Leasehold improvements	-	31,468	-	31,468
Furniture and equipment	2,005	512	-	2,517
Intangibles	4,560	1,520	-	6,080
Total accumulated depreciation	6,565	33,500	-	40,065
Total capital assets being depreciated, net	6,154	103,815	-	109,969
Total	\$ 405,770	\$ 103,815	\$ -	\$ 509,585

**7) Due From and To Component Units**

The Service Authority owed the County \$633,544 at June 30, 2016, which primarily represents payroll expenses.

The County funds its construction costs for new schools through the Capital Projects Fund for the component unit - Public Schools. At June 30, 2016, the County owed the Public Schools \$2,205,426, which primarily represents construction incurred by the Public Schools. The Public Schools owed the County \$3,165,921, which represents local schools funds unexpended at year-end that are contractually required to be returned to the County.

The Development Authority owed the County \$1,148, for an audit expense paid by the County.

**County of James City, Virginia**  
**Notes to Basic Financial Statements**  
June 30, 2016

**8) Unearned Revenue**

Unearned revenue represents amounts for which asset recognition criteria have been met, but for which revenue recognition criteria have not been met. Under the modified accrual basis of accounting, such amounts are measurable, but not available. Details of unearned revenue as of June 30, 2016 follow:

	General fund	Capital projects	Other governmental funds	Total
Prepaid property taxes and fees	\$ 172,138	\$ -	\$ -	\$ 172,138
Medic fees	279,312	-	-	279,312
Unexpended grants	19,805	-	587,966	607,771
Grants not collected within availability period	-	-	260,456	260,456
Property taxes not collected within availability period	18,123,340	592		18,123,932
Loans	-	-	2,873,943	2,873,943
	<u>\$ 18,594,595</u>	<u>\$ 592</u>	<u>\$ 3,722,365</u>	<u>\$ 22,317,552</u>

**9) Long-Term Liabilities**

**Primary Government**

A summary of the County's long-term liability activity for governmental activities for the fiscal year ended June 30, 2016, is presented below:

<b>Governmental activities</b>	<b>Balance July 1, 2015</b>	<b>Additions</b>	<b>Reductions</b>	<b>Balance June 30, 2016</b>	<b>Due within one year</b>
General obligation bonds	\$ 54,630,000	\$ 15,100,000	\$ 23,340,000	\$ 46,390,000	\$ 5,370,000
Lease revenue/refunding bonds	103,604,000	76,565,000	61,577,000	118,592,000	9,567,000
Bond premiums, net	10,828,589	10,930,294	6,444,490	15,314,393	-
Capital lease	858,833	-	130,377	728,456	135,234
Pension liability	15,458,792	3,067,332	-	18,526,124	-
OPEB obligation	2,193,962	566,000	151,000	2,608,962	-
Compensated absences	3,454,777	3,866,083	3,825,420	3,495,440	2,621,580
Landfill post-closure care	1,168,160	1,514	-	1,169,674	60,558
Total	<u>\$192,197,113</u>	<u>\$110,096,223</u>	<u>\$95,468,287</u>	<u>\$206,825,049</u>	<u>\$17,754,372</u>

The General Fund or the Special Revenue Fund where the employees' salaries are charged generally liquidates compensated absences, pension liabilities and the OPEB obligation.

In November 2010, the County executed a regional lease purchase agreement with York County totaling \$1,312,522 to purchase enhanced 911 equipment to service each respective jurisdiction's Dispatch Center and to be compatible with current technology and telephone systems. At June 30, 2016, \$1,008,200 was included in capital assets, and \$100,820 depreciation expense was incurred during fiscal year 2016.

**Advanced Refundings**

- In August 2015, the County issued \$15,100,000 in general obligation refunding bonds, with interest rates ranging 1.00%-5.00%. The proceeds were used to advance refund \$15,260,000 of outstanding 2005 and 2006 general obligation bonds, which had interest rates ranging from 3.25%-5.00%. The net proceeds of \$16,133,668 (including a \$1,261,520 premium and after payment of \$227,852 in underwriting fees and other issuance costs) were deposited in an irrevocable trust with an escrow agent to provide funds for the future debt service payment on the refunded bonds.

The reacquisition price exceeded the net carrying value of the old bonds by \$105,002 ("deferred charge on refunding"), and this amount is being amortized over the life of the old debt. The deferred charge on refunding net of accumulated amortization, was \$46,541 at June 30, 2016.



**County of James City, Virginia**  
**Notes to Basic Financial Statements**  
June 30, 2016

**9) Long-Term Liabilities, Continued**

The government advance refunded the 2005 and 2006 general obligation bonds to reduce its total debt service payments of \$1,442,452 and to obtain an economic gain (difference between the present values of the debt service payments on the old and new debt) of \$1,262,138.

- In August 2015, the County issued \$49,815,000 in revenue refunding bonds, with interest rates ranging 4.00%-5.00%. The proceeds were used to advance refund \$52,665,000 of outstanding 2006 lease revenue bonds, which had interest rates ranging from 4.00%-5.00%. The net proceeds of \$57,031,774 (including a \$7,727,030 premium and after payment of \$510,256 in underwriting fees and other issuance costs) were deposited in an irrevocable trust with an escrow agent to provide funds for the future debt service payment on the refunded bonds. As a result, the 2006 lease revenue bonds are considered defeased and the liability for those bonds has been removed from the statement of net position.

The reacquisition price exceeded the carrying value of the old debt by \$263,881 ("deferred charge on refunding"), and this amount is being amortized over the life of the old debt. The deferred charge on refunding net of accumulated amortization, was \$237,493 at June 30, 2016. The revenue refunding bonds mature in various installment through 2026 with interest payable semiannually. The government advance refunded the 2006 lease revenue bonds to reduce its total debt service payments over 10 years by \$4,378,333 and to obtain an economic gain (difference between the present values of the debt service payments on the old and new debt) of \$3,899,218.

**Lease Revenue Bonds Issuance**

The County issued \$26,750,000 in lease revenue bonds, with interest rates ranging from 2.00%-5.00%. The proceeds from these bonds will provide funds to cover the cost of a new middle school and refurbishment at several school locations.

Details of long-term bond indebtedness at June 30, 2016 for governmental activities were as follows:

<b><u>Governmental activities</u></b>					
	Sale date	Original borrowing	Interest rates	Final maturity	Balance June 30, 2016
General obligation bonds					
Virginia Public School Authority bonds	1997	\$ 18,800,000	5.60%	2018	\$ 2,965,000
Virginia Public School Authority bonds (Series A)	1999	19,220,000	5.10-5.225%	2020	5,430,000
Virginia Public School Authority bonds (Series B)	1999	1,250,000	6.10%	2020	240,000
General obligation bonds	2006	21,000,000	5.00%	2017	730,000
Virginia Public School Authority bonds (Series A)	2011	1,000,000	4.25%	2031	800,000
General obligation bonds	2014	21,610,000	2.00-5.00%	2028	21,585,000
General obligation refunding bonds (Series A)	2015	11,280,000	2.50-5.00%	2030	11,235,000
Taxable general obligation refunding bonds (Series B)	2015	3,820,000	1.50-2.00%	2020	3,405,000
Total					<u>\$ 46,390,000</u>
<b><u>Lease revenue/refunding bonds</u></b>					
Lease revenue bonds - Build America Bonds	2009	14,935,000	4.00-4.60%	2030	\$ 10,820,000
Lease revenue bonds	2011	6,672,000	2.18%	2022	4,002,000
Lease revenue bonds	2012	26,380,000	3.00-5.00%	2033	20,535,000
Lease revenue refunding bonds	2014	12,575,000	3.00-4.00%	2026	11,625,000
Lease revenue refunding bonds	2015	49,815,000	4.00-5.00%	2026	44,860,000
Lease revenue bonds	2016	26,750,000	2.00-5.00%	2036	26,750,000
					<u>\$ 118,592,000</u>
Capital lease	2010	1,312,522	3.725%	2021	<u>\$ 728,456</u>

**County of James City, Virginia**  
**Notes to Basic Financial Statements**  
June 30, 2016

**9) Long-Term Liabilities, Continued**

The debt service requirements for the governmental activities debt obligations are as follows:

Year ending June 30,	General obligation bonds		Lease revenue/refunding bonds	
	Principal	Interest	Principal	Interest
2017	\$ 5,370,000	\$ 1,804,939	\$ 9,567,000	\$ 5,009,063
2018	5,515,000	1,543,646	9,757,000	4,551,935
2019	4,090,000	1,335,088	9,877,000	4,162,085
2020	4,195,000	1,181,116	8,782,000	3,720,134
2021	2,710,000	1,062,787	8,907,000	3,329,013
2022-2026	14,830,000	3,284,887	44,082,000	10,497,431
2027-2031	9,680,000	856,550	16,680,000	3,300,945
2032-2036	-	-	10,940,000	894,525
	<u>\$ 46,390,000</u>	<u>\$ 11,069,013</u>	<u>\$ 118,592,000</u>	<u>\$ 35,465,131</u>

**Arbitrage**

Arbitrage is the difference between the yield on an issuer's tax-exempt bonds and the investment income earned on the proceeds. Arbitrage restrictions imposed by the federal government prohibit an issuer from retaining arbitrage profits when investing bond proceeds at a yield that exceeds the yield on the bonds. Any excess arbitrage must be rebated to the U.S. Treasury. As of June 30, 2016, there was no rebate liability.

The present value of future minimum capital lease payments of the County as of June 30, 2016, is as follows:

Year ending June 30:	
2017	\$ 162,369
2018	162,369
2019	162,369
2020	162,369
2021	162,369
Total minimum lease payments	<u>811,845</u>
Less amount representing interest	<u>(83,389)</u>
Present value of minimum capital lease payments	<u>\$ 728,456</u>

A summary of the County's long-term liability activity for its business-type activity for the fiscal year ended June 30, 2016, is presented below:

**Business-type activity**

	Sale date	Original borrowing	Interest rates	Final maturity	Balance June 30, 2016
Revenue refunding bonds					
Water and sewer system revenue refunding bonds	2016	\$ 22,595,000	3.00-5.00%	2040	<u>\$ 22,595,000</u>

A summary of the County's long-term liability activity for the business-type activity for the fiscal year ended June 30, 2016, is presented below:

Business-type activity	Balance July 1, 2015	Additions	Reductions	Balance June 30, 2016	Due within one year
Revenue bonds	\$ 24,115,000	\$ -	\$ 24,115,000	\$ -	\$ -
Revenue refunding bonds	-	22,595,000	-	22,595,000	785,000
Premium, net	-	1,533,760	10,651	1,523,109	63,907
Pension liability	939,493	135,454	-	1,074,947	-
OPEB obligation	243,509	34,000	-	277,509	-
Compensated absences	357,353	448,474	423,022	382,805	287,104
Total	<u>\$ 25,655,355</u>	<u>\$ 24,746,688</u>	<u>\$ 24,548,673</u>	<u>\$ 25,853,370</u>	<u>\$ 1,136,011</u>

**County of James City, Virginia**  
**Notes to Basic Financial Statements**  
June 30, 2016

**9) Long-Term Liabilities, Continued**

**Advanced Refunding**

In August 2008, the Authority issued revenue bonds totaling \$27,120,000 to finance the purchase from the City of Newport News, Virginia of a "safe yield share" of treated water capacity from the King William Reservoir Project or an alternate water supply source. In April 2016, the Authority issued revenue refunding bonds totaling \$22,595,000 to advance refund the outstanding 2008 revenue bonds. The interest rate on the bonds range from 3% - 5% and the net proceeds were deposited in an irrevocable trust with an escrow agent to provide funds for the future debt service payments on the refunded bonds. Consequently, the 2008 revenue bonds are considered defeased and the liability for those bonds has been removed from the statement of net position.

The reacquisition price exceeded the carrying value of the old debt by \$1,828,117 ("deferred charge on refunding"), and this amount is being amortized over the life of the new debt. The deferred charge on refunding net of accumulated amortization, was \$1,815,422 at June 30, 2016. The advance refunding reduced its total debt service payments over 24 years by \$6,956,051 and to obtain an economic gain of \$3,548,748.

The debt service requirements for the business-type activity debt obligations are as follows:

Year ending June 30,	Revenue refunding bonds	
	Principal	Interest
2017	\$ 785,000	\$ 571,161
2018	605,000	749,450
2019	630,000	725,250
2020	655,000	700,050
2021	690,000	667,300
2022-2026	3,925,000	2,854,550
2027-2031	4,750,000	2,018,850
2032-2036	5,515,000	1,262,100
2037-2041	5,040,000	383,400
	<u>\$ 22,595,000</u>	<u>\$ 9,932,111</u>

**Component Unit - Public Schools**

A summary of the Public Schools' long-term liability activity for the fiscal year ended June 30, 2016, is presented below:

Component unit - Public Schools	Balance July 1, 2015	Additions	Reductions	Balance June 30, 2016	Due within one year
Capital leases	\$ 221,020	\$ -	\$ 56,777	\$ 164,243	\$ 62,701
Pension liability	103,108,314	6,933,807	-	110,042,121	-
OPEB obligation	4,996,300	825,000	259,000	5,562,300	-
Compensated absences	1,004,533	1,014,217	917,517	1,101,233	495,555
Total	<u>\$109,330,167</u>	<u>\$ 8,773,024</u>	<u>\$ 1,233,294</u>	<u>\$116,869,897</u>	<u>\$ 558,256</u>

**10) Landfill Closure and Postclosure Care Cost**

The County closed its landfill during fiscal year 1994 and contracted with a third party to provide solid waste disposal services to its residents. This third party operates the site, collects fees based upon the source of the waste, and pays the associated expenditures. The County was responsible for construction of the transfer station and all major maintenance and repairs to it.

State and federal laws and regulations require the County to perform certain maintenance and monitoring functions at the site for 10 to 30 years after closure. The \$1,169,674 reported as landfill postclosure liability at June 30, 2016, represents the liability estimated to monitor the landfill for an average monitoring period of 25 years plus the cost of a corrective action plan. This amount is based on what it would cost to perform all closure and postclosure care in 2016. Actual costs may be higher due to inflation, technology changes, or regulation changes. The County intends to fund these costs from the net revenues collected from the above contract and from any funds accumulated for this purpose in the County's General Fund.

**County of James City, Virginia**  
**Notes to Basic Financial Statements**  
**June 30, 2016**

**11) Pension Plan**

***Pensions***

The Virginia Retirement System (VRS) Political Subdivision Retirement Plan is a multi-employer, agent plan. For purposes of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the fiduciary net position of the County's retirement plan and the additions to/deductions from the County's retirement plan's net fiduciary position have been determined on the same basis as they were reported by the VRS. For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

VRS issues a publicly available comprehensive annual financial report that includes financial statements, required supplementary information and detailed information about the fiduciary net position of the VRS plans. A copy of that report may be downloaded from their web site at <http://www.varetire.org/pdf/publications/2015-annual-report.pdf> or obtained by writing to VRS at P.O. Box 2500, Richmond, VA, 23218-2500.

***Plan Description***

All full-time, salaried regular employees of the Authority are automatically covered by VRS upon employment. This plan is administered by the VRS (the System) along with plans for other employer groups in the Commonwealth of Virginia. Members earn one month of service credit for each month they are employed and for which they and their employer are paying contributions to VRS. Members are eligible to purchase prior service, based on specific criteria as defined in the *Code of Virginia*, as amended. Eligible prior service that may be purchased includes prior public service, active military service, certain periods of leave and previously refunded service.

The System administers three different benefit structures for covered employees - Plan 1, Plan 2 and Hybrid. Each of these benefit structures has a different eligibility criteria. The specific information for each plan and the eligibility for covered groups within each plan are set out below.

<b>Plan 1</b>
---------------

***About Plan 1***

Plan 1 is a defined benefit plan. The retirement benefit is based on a member's age, creditable service and average final compensation at retirement using a formula. Employees are eligible for Plan 1 if their membership date is before July 1, 2010, and they were vested as of January 1, 2013.

***Eligible Members***

Employees are in Plan 1 if their membership date is before July 1, 2010, and they were vested as of January 1, 2013.

***Hybrid Opt-In Election***

VRS non-hazardous duty covered Plan 1 members were allowed to make an irrevocable decision to opt into the Hybrid Retirement Plan during a special election window held January 1 through April 30, 2014. The Hybrid Retirement Plan's effective date for eligible VRS Plan 1 members who opted in was July 1, 2014. If eligible deferred members returned to work during the election window, they were also eligible to opt into the Hybrid Retirement Plan. Members who were eligible for an optional retirement plan (ORP) and had prior service under Plan 1 were not eligible to elect the Hybrid Retirement Plan and remain as Plan 1 or ORP.

***Retirement Contributions***

Employees contribute up to 5% of their compensation each month to their member contribution account through a pre-tax salary reduction. Some political subdivisions elected to phase in the required 5% member contribution but all employees will be paying the full 5% by July 1, 2016. Member contributions are tax-deferred until they are withdrawn as part of a retirement benefit or as a refund. The employer makes a separate actuarially determined contribution to VRS for all covered employees. VRS invests both member and employer contributions to provide funding for the future benefit payment.

**County of James City, Virginia**  
**Notes to Basic Financial Statements**  
**June 30, 2016**

**11) Pension Plan, Continued**

***Creditable Service***

Creditable service includes active service. Members earn creditable service for each month they are employed in a covered position. It also may include credit for prior service the member has purchased or additional creditable service the member was granted. A member's total creditable service is one of the factors used to determine their eligibility for retirement and to calculate their retirement benefit. It also may count toward eligibility for the health insurance credit in retirement, if the employer offers the health insurance credit.

***Vesting***

Vesting is the minimum length of service a member needs to qualify for a future retirement benefit. Members become vested when they have at least five years (60 months) of creditable service. Vesting means members are eligible to qualify for retirement if they meet the age and service requirements for their plan. Members also must be vested to receive a full refund of their member contribution account balance if they leave employment and request a refund. Members are always 100% vested in the contributions that they make.

***Calculating the Benefit***

The Basic Benefit is calculated based on a formula using the member's average final compensation, a retirement multiplier and total service credit at retirement. It is one of the benefit payout options available to a member at retirement. An early retirement reduction factor is applied to the Basic Benefit if the member retires with a reduced retirement benefit or selects a benefit payout option other than the Basic Benefit.

***Average Final Compensation***

A member's average final compensation is the average of the 36 consecutive months of highest compensation as a covered employee.

***Service Retirement Multiplier***

The retirement multiplier is a factor used in the formula to determine a final retirement benefit. The retirement multiplier for non-hazardous duty members is 1.70%. The retirement multiplier for sheriffs and regional jail superintendents is 1.85%. The retirement multiplier of eligible political subdivision hazardous duty employees other than sheriffs and regional jail superintendents is 1.70% or 1.85% as elected by the employer.

***Normal Retirement Age***

Age 65 and age 60 for political subdivisions hazardous duty employees.

***Earliest Unreduced Retirement Eligibility***

Age 65 with at least five years (60 months) of creditable service or at age 50 with at least 30 years of creditable service. For hazardous duty employees, age 60 with at least five years of creditable service or age 50 with at least 25 years of creditable service.

***Earliest Reduced Retirement Eligibility***

Age 55 with at least five years (60 months) of creditable service or age 50 with at least 10 years of creditable service. For hazardous duty employees, age 50 with at least five years of creditable service.

***Cost-of-Living Adjustment (COLA) in Retirement***

The COLA matches the first 3% increase in the Consumer Price Index for all Urban Consumers (CPI-U) and half of any additional increase (up to 4%) up to a maximum COLA of 5%.

***Eligibility:***

For members who retire with an unreduced benefit or with a reduced benefit with at least 20 years of creditable service, the COLA will go into effect on July 1 after one full calendar year from the retirement date. For members who retire with a reduced benefit and who have less than 20 years of creditable service, the COLA will go into effect on July 1 after one calendar year following the unreduced retirement eligibility date.

**County of James City, Virginia**  
**Notes to Basic Financial Statements**  
**June 30, 2016**

**11) Pension Plan, Continued**

**Exceptions to COLA Effective Dates:**

The COLA is effective July 1 following one full calendar year (January 1 to December 31) under any of the following circumstances:

- The member is within five years of qualifying for an unreduced retirement benefit as of January 1, 2013.
- The member retires on disability.
- The member retires directly from short-term or long-term disability under the Virginia Sickness and Disability Program (VSDP).
- The member is involuntarily separated from employment for causes other than job performance or misconduct and is eligible to retire under the Workforce Transition Act or the Transitional Benefits Program.
- The member dies in service and the member's survivor or beneficiary is eligible for a monthly death-in-service benefit. The COLA will go into effect on July 1 following one full calendar year (January 1 to December 31) from the date the monthly benefit begins.

***Disability Coverage***

Members who are eligible to be considered for disability retirement and retire on disability, the retirement multiplier is 1.7% on all service, regardless of when it was earned, purchased or granted. VSDP members are subject to a one-year waiting period before becoming eligible for non-work related disability benefits.

***Purchase of Prior Service***

Members may be eligible to purchase service from previous public employment, active duty military service, an eligible period of leave or VRS refunded service as creditable service in their plan. Prior creditable service counts toward vesting, eligibility for retirement and the health insurance credit. Only active members are eligible to purchase prior service. When buying service, members must purchase their most recent period of service first. Members also may be eligible to purchase periods of leave without pay.

<b>Plan 2</b>
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***About Plan 2***

Plan 2 is a defined benefit plan. The retirement benefit is based on a member's age, creditable service and average final compensation at retirement using a formula. Employees are eligible for VRS Plan 2 if their membership date is on or after July 1, 2010, or their membership date is before July 1, 2010, and they were not vested as of January 1, 2013.

***Eligible Members***

Employees are in Plan 2 if their membership date is on or after July 1, 2010, or their membership date is before July 1, 2010, and they were not vested as of January 1, 2013.

***Hybrid Opt-In Election***

Eligible Plan 2 members were allowed to make an irrevocable decision to opt into the Hybrid Retirement Plan during a special election window held January 1 through April 30, 2014. The Hybrid Retirement Plan's effective date for eligible Plan 2 members who opted in was July 1, 2014. If eligible deferred members returned to work during the election window, they were also eligible to opt into the Hybrid Retirement Plan. Members who were eligible for an optional retirement plan (ORP) and have prior service under Plan 2 were not eligible to elect the Hybrid Retirement Plan and remain as Plan 2 or ORP.

***Retirement Contributions***

Employees contribute 5% of their compensation each month to their member contribution account through a pre-tax salary reduction. Some political subdivisions elected to phase in the required 5% member contribution but all employees will be paying the full 5% by July 1, 2016.

***Creditable Service***

Same as Plan 1.

***Vesting***

Same as Plan 1.

**County of James City, Virginia**  
Notes to Basic Financial Statements  
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**11) Pension Plan, Continued**

***Calculating the Benefit***

See definition under Plan 1.

***Average Final Compensation***

A member's average final compensation is the average of their 60 consecutive months of highest compensation as a covered employee.

***Service Retirement Multiplier***

Same as Plan 1 for service earned, purchased or granted prior to January 1, 2013. For non-hazardous duty members the retirement multiplier is 1.65% for creditable service earned, purchased or granted on or after January 1, 2013. For Sheriffs, regional jail superintendents and hazardous duty employees, it is the same as Plan 1.

***Normal Retirement Age***

Normal Social Security retirement age. For hazardous duty employees, it is the same as Plan 1.

***Earliest Unreduced Retirement Eligibility***

Normal Social Security retirement age and have at least five years (60 months) of creditable service or when their age and service equal 90. For hazardous duty employees, it is the same as Plan 1.

***Earliest Reduced Retirement Eligibility***

Age 60 with at least five years (60 months) of creditable service. For hazardous duty employees, it is the same as Plan 1.

***Cost-of-Living Adjustment (COLA) in Retirement***

The COLA matches the first 2% increase in the CPI-U and half of any additional increase (up to 2%), for a maximum COLA of 3%.

**Eligibility:** Same as Plan 1.

**Exceptions to COLA Effective Dates:** Same as Plan 1.

***Disability Coverage***

Members who are eligible to be considered for disability retirement and retire on disability, the retirement multiplier is 1.65% on all service, regardless of when it was earned, purchased or granted. VSDP members are subject to a one-year waiting period before becoming eligible for non-work related disability benefits.

***Purchase of Prior Service***

Same as Plan 1.

<b>Hybrid Retirement Plan</b>
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***About the Hybrid Retirement Plan***

The Hybrid Retirement Plan combines the features of a defined benefit plan and a defined contribution plan. Most members hired on or after January 1, 2014 are in this plan, as well as VRS Plan 1 and VRS Plan 2 members who were eligible and opted into the plan during a special election window. (See "Eligible Members") The defined benefit is based on a member's age, creditable service and average final compensation at retirement using a formula. The benefit from the defined contribution component of the plan depends on the member and employer contributions made to the plan and the investment performance of those contributions. In addition to the monthly benefit payment payable from the defined benefit plan at retirement, a member may start receiving distributions from the balance in the defined contribution account, reflecting the contributions, investment gains or losses, and any required fees.

**County of James City, Virginia**  
**Notes to Basic Financial Statements**  
**June 30, 2016**

**11) Pension Plan, Continued**

***Eligible Members***

Employees are in the Hybrid Retirement Plan if their membership date is on or after January 1, 2014. This includes political subdivision employees, members in Plan 1 or Plan 2 who elected to opt into the plan during the election window held January 1 - April 30, 2014; the plan's effective date for opt-in members was July 1, 2014. Some employees are not eligible to participate in the Hybrid Retirement Plan. They include political subdivision employees who are covered by enhanced benefits for hazardous duty employees. Those employees eligible for an optional retirement plan (ORP) must elect the ORP plan or the Hybrid Retirement Plan. If these members have prior service under Plan 1 or Plan 2, they are not eligible to elect the Hybrid Retirement Plan and must select Plan 1 or Plan 2 (as applicable) or ORP.

***Retirement Contributions***

A member's retirement benefit is funded through mandatory and voluntary contributions made by the member and the employer to both the defined benefit and the defined contribution components of the plan. Mandatory contributions are based on a percentage of the employee's creditable compensation and are required from both the member and the employer. Additionally, members may choose to make voluntary contributions to the defined contribution component of the plan, and the employer is required to match those voluntary contributions according to specified percentages.

***Creditable Service***

**Defined Benefit Component:**

Under the defined benefit component of the plan, creditable service includes active service. Members earn creditable service for each month they are employed in a covered position. It also may include credit for prior service the member has purchased or additional creditable service the member was granted. A member's total creditable service is one of the factors used to determine their eligibility for retirement and to calculate their retirement benefit. It also may count toward eligibility for the health insurance credit in retirement, if the employer offers the health insurance credit.

**Defined Contributions Component:**

Under the defined contribution component, creditable service is used to determine vesting for the employer contribution portion of the plan.

***Vesting***

**Defined Benefit Component:**

Defined benefit vesting is the minimum length of service a member needs to qualify for a future retirement benefit. Members are vested under the defined benefit component of the Hybrid Retirement Plan when they reach five years (60 months) of creditable service. Plan 1 or Plan 2 members with at least five years (60 months) of creditable service who opted into the Hybrid Retirement Plan remain vested in the defined benefit component.

**Defined Contributions Component:**

Defined contribution vesting refers to the minimum length of service a member needs to be eligible to withdraw the employer contributions from the defined contribution component of the plan. Members are always 100% vested in the contributions that they make.

Upon retirement or leaving covered employment, a member is eligible to withdraw a percentage of employer contributions to the defined contribution component of the plan, based on service. After two years, a member is 50% vested and may withdraw 50% of employer contributions. After three years, a member is 75% vested and may withdraw 75% of employer contributions. After four or more years, a member is 100% vested and may withdraw 100% of employer contributions. Distribution is not required by law until age 70½.

***Calculating the Benefit***

**Defined Benefit Component:**

See definition under Plan 1.



**County of James City, Virginia**  
Notes to Basic Financial Statements  
June 30, 2016

**11) Pension Plan, Continued**

**Defined Contribution Component:**

The benefit is based on contributions made by the member and any matching contributions made by the employer, plus net investment earnings on those contributions.

**Average Final Compensation**

Same as Plan 2. It is used in the retirement formula for the defined benefit component of the plan.

**Service Retirement Multiplier**

**Defined Benefit Component:**

The retirement multiplier is 1.00%. For members that opted into the Hybrid Retirement Plan from Plan 1 or Plan 2, the applicable multipliers for those plans will be used to calculate the retirement benefit for service credited in those plans. This is not applicable to Sheriffs, jail superintendents and hazardous duty employees.

**Normal Retirement Age**

**Defined Benefit Component:**

Same as Plan 2. This is not applicable to hazardous duty employees.

**Defined Contribution Component:**

Members are eligible to receive distributions upon leaving employment, subject to restrictions.

**Earliest Unreduced Retirement Eligibility**

**Defined Benefit Component:**

Normal Social Security retirement age and have at least five years (60 months) of creditable service or when their age and service equal 90. This is not applicable to hazardous duty employees.

**Defined Contribution Component:**

Members are eligible to receive distributions upon leaving employment, subject to restrictions.

**Earliest Reduced Retirement Eligibility**

**Defined Benefit Component:**

Age members may retire with a reduced benefit as early as age 60 with at least five years (60 months) of creditable service. This is not applicable to hazardous duty employees.

**Defined Contribution Component:**

Members are eligible to receive distributions upon leaving employment, subject to restrictions.

**Cost-of-Living Adjustment (COLA) in Retirement**

**Defined Benefit Component:** Same as Plan 2.

**Defined Contribution Component:** Not applicable.

**Eligibility:** Same as Plan 1 and Plan 2.

**Exceptions to COLA Effective Dates:** Same as Plan 1 and Plan 2.

**Disability Coverage**

Eligible political subdivision (including Plan 1 and Plan 2 opt-ins) participate in the Virginia Local Disability Program (VLDP) unless their local governing body provides an employer-paid comparable program for its members. Hybrid members (including Plan 1 and Plan 2 opt-ins) covered under VLDP are subject to a one-year waiting period before becoming eligible for non-work related disability benefits.

**County of James City, Virginia**  
**Notes to Basic Financial Statements**  
June 30, 2016

**11) Pension Plan, Continued**

**Purchase of Prior Service**

**Defined Benefit Component:**

Same as VRS Plan 1 with the following exceptions:

- Hybrid retirement plan members are ineligible for ported service.
- The cost for purchasing refunded service is the higher of 4% of creditable compensation or average final compensation
- Plan members have one year from their date of hire or return from leave to purchase all but refunded prior service at approximate normal cost. After that one year period, the rate for most categories of service will change to actuarial cost.

**Defined Contribution Component:** Not applicable.

**Employees Covered by Benefit Terms**

As of the June 30, 2014 actuarial valuation, the following employees were covered by the benefit terms of the pension plan:

	<b>Governmental Activities Number</b>	<b>Business-type Activities Number</b>	<b>Component unit- Public Schools Number</b>
Inactive members or their beneficiaries currently receiving benefits	339	35	86
Inactive members:			
Vested	123	11	17
Non-vested	162	13	72
Active elsewhere in VRS	241	31	44
Total inactive members	526	55	133
Active members	769	84	226
Total	1,634	174	445

**Contributions**

The contributions requirement for active employees is governed by §51.1-145 of the *Code of Virginia*, as amended, but may be impacted as a result of funding options provided to political subdivisions by the Virginia General Assembly. Employees are required to contribute 5% of their compensation toward their retirement. Prior to July 1, 2012, all of the 5% member contribution was paid by the County on behalf of its employees. Beginning July 1, 2012, new employees were required to pay the 5% member contribution. In addition, for existing employees, employers were required to begin making the employee pay the 5% member contribution. This could be phased in over a period of up to 5 years and the employer is required to provide a salary increase equal to the amount of the increase in the employee-paid member contribution.

The County's, Authority's and Public Schools' contractually required contribution rates for the year ended June 30, 2016 were 11.12%, 8.49% and 7.22%, respectively, of covered employee compensation. These rates were based on actuarially determined rates from an actuarial valuation as of June 30, 2013.

This rate, when combined with employee contributions, was expected to finance the costs of benefits earned by employees during the year, with an additional amount to finance any unfunded accrued liability. Total contributions to the pension plan from the County were \$4,190,244 and \$4,091,153, the Authority were \$341,874 and \$330,920, and the Public Schools were \$369,942 and \$372,141 for years ended June 30, 2016 and June 30, 2015, respectively.

**County of James City, Virginia**  
**Notes to Basic Financial Statements**  
**June 30, 2016**

**11) Pension Plan, Continued**

***Net Pension Liability***

The net pension liability was measured as of June 30, 2015. The total pension liability used to calculate the net pension liability was determined by an actuarial valuation performed as of June 30, 2014, using updated actuarial assumptions, applied to all periods included in the measurement and rolled forward to the measurement date of June 30, 2015.

***Actuarial Assumptions - General Employees***

The total pension liability for general employees in the County's retirement plan was based on an actuarial valuation as of June 30, 2014, using the entry age normal actuarial cost method and the following assumptions, applied to all periods included in the measurement and rolled forward to the measurement date of June 30, 2015.

- Inflation: 2.5%
- Salary increases, including inflation: 3.5% - 5.35%
- Investment rate of return: 7.0%, net of pension plan investment expense, including inflation\*  
\*Administrative expenses as a percent of the market value of assets for the last experience study were found to be approximately 0.06% of the market assets for all of the VRS plans. This would provide an assumed investment return rate for GASB purposes of slightly more than the assumed 7.0%. However, since the difference was minimal, and a more conservative 7.0% investment return assumption provided a projected plan net position that exceeded the projected benefit payments, the long-term expected rate of return on investments was assumed to be 7.0% to simplify preparation of pension liabilities.

Mortality rates: 14% of deaths are assumed to be service related.

**Largest 10 - Non-LEOS:**

**Pre-retirement:**

RP-2000 employee mortality table projected with scale AA to 2020 with males set forward 4 years and females set back 2 years.

**Post-retirement:**

RP-2000 combined mortality table projected with scale AA to 2020 with males set forward 1 year.

**Post-Disablement:**

RP-2000 disability life mortality table with males set back 3 years and no provision for future mortality improvement.

**All Others (Non 10 Largest) - Non-LEOS:**

**Pre-retirement:**

RP-2000 employee mortality table projected with scale AA to 2020 with males set forward 4 years and females set back 2 years.

**Post-retirement:**

RP-2000 combined mortality table projected with scale AA to 2020 with males set forward 1 year.

**Post-Disablement:**

RP-2000 disability life mortality table with males set back 3 years and no provision for future mortality improvement.

The actuarial assumptions used in the June 30, 2014 valuation were based on the results of an actuarial experience study for the period from July 1, 2008 through June 30, 2012. Changes to the actuarial assumptions as a result of the experience study are as follows:

**Largest 10 - Non-LEOS:**

- Update mortality table
- Decrease in rates of service retirement
- Decrease in rates of disability retirement
- Reduce rates of salary increase by 0.25% per year

**County of James City, Virginia**  
**Notes to Basic Financial Statements**  
**June 30, 2016**

**11) Pension Plan, Continued**

All Others (Non 10 Largest) - Non-LEOS:

- Update mortality table
- Decrease in rates of service retirement
- Decrease in rates of disability retirement
- Reduce rates of salary increase by 0.25% per year

***Actuarial Assumptions - Public Safety Employees***

The total pension liability for public safety employees in the retirement plan was based on an actuarial valuation as of June 30, 2014, using the entry age normal actuarial cost method and the following assumptions, applied to all periods included in the measurement and rolled forward to the measurement date of June 30, 2015.

- Inflation: 2.5%
- Salary increases, including inflation: 3.5% - 4.75%
- Investment rate of return: 7.0%, net of pension plan investment expense, including inflation\*  
\*Administrative expenses as a percent of the market value of assets for the last experience study were found to be approximately 0.06% of the market assets for all of the VRS plans. This would provide an assumed investment return rate for GASB purposes of slightly more than the assumed 7.0%. However, since the difference was minimal, and a more conservative 7.0% investment return assumption provided a projected plan net position that exceeded the projected benefit payments, the long-term expected rate of return on investments was assumed to be 7.0% to simplify preparation of pension liabilities.

Mortality rates: 60% of deaths are assumed to be service related.

Largest 10 - LEOS:

Pre-retirement:

RP-2000 employee mortality table projected with scale AA to 2020 with males set back 2 years and females set back 2 years.

Post-retirement:

RP-2000 combined mortality table projected with scale AA to 2020 with males set forward 1 year.

Post-Disablement:

RP-2000 disability life mortality table projected with scale AA to 2020 with males set back 3 years and no provision for future mortality improvement.

All Others (Non 10 Largest) - LEOS:

Pre-retirement:

RP-2000 employee mortality table projected with scale AA to 2020 with males set back 2 years and females set back 2 years.

Post-retirement:

RP-2000 combined mortality table projected with scale AA to 2020 with males set forward 1 year.

Post-Disablement:

RP-2000 disability life mortality table with males set back 3 years and no provision for future mortality improvement.

The actuarial assumptions used in the June 30, 2014 valuation were based on the results of an actuarial experience study for the period from July 1, 2008 through June 30, 2012. Changes to the actuarial assumptions as a result of the experience study are as follows:

Largest 10 - LEOS:

- Update mortality table
- Decrease in male rates of disability

**County of James City, Virginia**  
**Notes to Basic Financial Statements**  
June 30, 2016

**11) Pension Plan, Continued**

All Others (Non 10 Largest) - LEOS:

- Update mortality table
- Adjustments to rates of service retirement for females
- Increase in rates of withdrawal
- Decrease in male and female rates of disability

***Long Term Expected Rate of Return***

The long-term expected rate of return on pension system investments was determined using a log-normal distribution analysis in which best-estimate ranges of expected future real rates of return (expected returns, net of pension system investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target asset allocation and best estimate of arithmetic real rates of return for each major asset class are summarized in the following table:

<u>Asset Class (Strategy)</u>	<u>Target Allocation</u>	<u>Arithmetic Long-Term Expected Rate of Return</u>	<u>Weighted Average Long-Term Expected Rate of Return</u>
U.S. Equity	19.50%	6.46%	1.26%
Developed Non U.S. Equity	16.50%	6.28%	1.04%
Emerging Market Equity	6.00%	10.00%	0.60%
Fixed Income	15.00%	0.09%	0.01%
Emerging Debt	3.00%	3.51%	0.11%
Rate Sensitive Credit	4.50%	3.51%	0.16%
Non Rate Sensitive Credit	4.50%	5.00%	0.23%
Convertibles	3.00%	4.81%	0.14%
Public Real Estate	2.25%	6.12%	0.14%
Private Real Estate	12.75%	7.10%	0.91%
Private Equity	12.00%	10.41%	1.25%
Cash	1.00%	-1.50%	-0.02%
<b>Total</b>	<b>100.00%</b>		<b>5.83%</b>
		Inflation	2.50%
		<i>*Expected arithmetic nominal return</i>	<b>8.33%</b>

\*Using stochastic projection results provides an expected range of real rates of return over various time horizons. Looking at one year results produces an expected real return of 8.33% but also has a high standard deviation, which means there is high volatility. Over larger time horizons the volatility declines significantly and provides a median return of 7.44%, including expected inflation of 2.50%.

***Discount Rate***

The discount rate used to measure the total pension liability was 7.00%. The projection of cash flows used to determine the discount rate assumed that System member contributions will be made per the VRS statutes and the employer contributions will be made in accordance with the VRS funding policy at rates equal to the difference between actuarially determined contribution rates adopted by the VRS Board of Trustees and the member rate. Through the fiscal year ending June 30, 2018, the rate contributed by the employer for the retirement plan will be subject to the portion of the VRS Board-certified rates that are funded by the Virginia General Assembly. From July 1, 2018 on, participating employers are assumed to contribute 100% of the actuarially determined contribution rates. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current active and inactive employees. Therefore, the long-term expected rate of return was applied to all periods of projected benefit payments to determine the total pension liability.

**County of James City, Virginia**  
**Notes to Basic Financial Statements**  
June 30, 2016

**11) Pension Plan, Continued**

***Changes in Net Pension Liability***

	Increase (decrease)		
	Total pension liability (a)	Plan fiduciary net pension (b)	Net pension liability (a) - (b)
<b>Governmental activities</b>			
Balances at June 30, 2014	\$ 154,567,747	\$ 139,108,955	\$ 15,458,792
Changes for the year:			
Service cost	4,416,137	-	4,416,137
Interest	10,586,624	-	10,586,624
Difference between expected and actual experience	252,227	-	252,227
Contributions - employer	-	4,065,806	(4,065,806)
Contributions - employee	-	1,844,202	(1,844,202)
Net investment income	-	6,365,577	(6,365,577)
Benefit payments, including refunds of employee contributions	(6,660,511)	(6,660,511)	-
Administrative expenses	-	(86,580)	86,580
Other changes	-	(1,349)	1,349
Net changes	8,594,477	5,527,145	3,067,332
Balances at June 30, 2015	\$ 163,162,224	\$ 144,636,100	\$ 18,526,124
<b>Business-type activity</b>			
Balances at June 30, 2014	\$ 14,197,242	\$ 13,257,749	\$ 939,493
Changes for the year:			
Service cost	430,269	-	430,269
Interest	978,647	-	978,647
Difference between expected and actual experience	(146,331)	-	(146,331)
Contributions - employer	-	329,381	(329,381)
Contributions - employee	-	193,349	(193,349)
Net investment income	-	612,704	(612,704)
Benefit payments, including refunds of employee contributions	(433,146)	(433,146)	-
Administrative expenses	-	(8,173)	8,173
Other changes	-	(130)	130
Net changes	829,439	693,985	135,454
Balances at June 30, 2015	\$ 15,026,681	\$ 13,951,734	\$ 1,074,947
<b>Component unit - Public Schools (non-professional)</b>			
Balances at June 30, 2014	\$ 15,835,445	\$ 16,640,131	\$ (804,686)
Changes for the year:			
Service cost	526,136	-	526,136
Interest	1,087,945	-	1,087,945
Difference between expected and actual experience	(13,491)	-	(13,491)
Contributions - employer	-	372,141	(372,141)
Contributions - employee	-	256,454	(256,454)
Net investment income	-	764,646	(764,646)
Benefit payments, including refunds of employee contributions	(586,736)	(586,736)	-
Administrative expenses	-	(10,296)	10,296
Other changes	-	(162)	162
Net changes	1,013,854	796,047	217,807
Balances at June 30, 2015	\$ 16,849,299	\$ 17,436,178	\$ (586,879)

**County of James City, Virginia**  
**Notes to Basic Financial Statements**  
June 30, 2016

**11) Pension Plan, Continued**

***Sensitivity of the Net Pension Liability to Changes in the Discount Rate***

The following presents the new pension liability using the discount rate of 7.00%, as well as what the net pension liability would be if it were calculated using a discount rate that is one percentage point lower (6.00%) or one percentage point higher (8.00%) than the current rate:

	<b>1% Decrease (6%)</b>	<b>Current Discount Rate (7%)</b>	<b>1% Increase (8%)</b>
<b>Governmental activities</b>			
Net pension liability	\$ 41,563,141	\$ 18,526,124	\$ (516,089)
<b>Business-type activity</b>			
Net pension liability	\$ 3,188,176	\$ 1,074,947	\$ (677,716)
<b>Component unit - Public Schools (non-professional)</b>			
Net pension liability	\$ 1,479,598	\$ (586,879)	\$ (2,324,398)

***Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions***

For the year ended June 30, 2016, the County, Authority, and Schools (non-professional) recognized pension expense of \$2,153,184, \$123,719 and \$26,351, respectively. At June 30, 2016, deferred outflows of resources and deferred inflows of resources related to pensions from the following sources were reported:

	<b>Deferred outflows of resources</b>	<b>Deferred inflows of resources</b>
<b>Governmental activities</b>		
Differences between expected and actual experience	\$ 195,419	\$ -
Net difference between projected and actual earnings on pension plan investments	-	3,656,951
Employer contributions subsequent to the measurement date	4,190,244	-
Total	<u>\$ 4,385,663</u>	<u>\$ 3,656,951</u>
<b>Business-type activity</b>		
Differences between expected and actual experience	\$ -	\$ 114,381
Net difference between projected and actual earnings on pension plan investments	-	348,305
Employer contributions subsequent to the measurement date	341,874	-
Total	<u>\$ 341,874</u>	<u>\$ 462,686</u>
<b>Component unit - Public Schools (non-professional)</b>		
Differences between expected and actual experience	\$ -	\$ 9,864
Net difference between projected and actual earnings on pension plan investments	-	436,345
Employer contributions subsequent to the measurement date	369,942	-
Total	<u>\$ 369,942</u>	<u>\$ 446,209</u>

**County of James City, Virginia**  
**Notes to Basic Financial Statements**  
June 30, 2016

**11) Pension Plan, Continued**

The County, Authority, and Schools reported deferred outflows of resources of \$4,190,244, \$341,874 and \$369,942, respectively, related to pensions resulting from contributions subsequent to the measurement date will be recognized as a reduction of the net pension liability in the year ended June 30, 2017. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

<b>Year ended</b>	<b>Governmental Activities</b>	<b>Business-type Activity</b>	<b>Component unit - Public Schools (non-professional)</b>
2017	\$ (1,385,022)	\$ (169,264)	\$ (175,826)
2018	(1,385,022)	(169,264)	(175,826)
2019	(1,385,024)	(169,262)	(174,811)
2020	693,536	45,104	80,254
	<u>\$ (3,461,532)</u>	<u>\$ (462,686)</u>	<u>\$ (446,209)</u>

**12) Other Post-Employment Benefits (OPEB)**

The County, Authority and Public Schools provide post-employment health care benefits for qualifying retired employees who are not yet eligible for Medicare through single-employer defined benefit plans. The benefits, benefit levels, employee contributions and employer contributions are governed by the County and Public Schools and can be amended through their personnel manuals.

A valuation report was prepared for the County by Bolton Partners, Inc. The report may be obtained from the James City County Department of Financial and Management Services, 101-F Mounts Bay Road, P.O. Box 8784, Williamsburg, Virginia 23187-8784.

***Funding Policy***

The County, Authority and Public Schools do not intend to establish a trust to pre-fund this obligation. The anticipated growth in the net OPEB obligation is based on contributions to the benefit plan on a pay-as-you-go cost basis. The data has been projected into the future based on the assumption the current active population remains constant. The County and Authority do not contribute towards the retiree's health insurance premiums. Since the retirees pay their full health insurance premiums based on a blended rate, the County and Authority has an implicit obligation.

***Plan Description***

Covered full-time active employees who retire directly from the County or Authority and are at least 50 years of age with 15 years of service are eligible to receive post-employment health care benefits. Each year, retirees participating in the County or Authority's sponsored plans will be given the opportunity to change plans or drop coverage during an open enrollment period. The pre-Medicare retirees have a choice of three plans: Optima, Healthkeepers and KeyCare. The majority of the participants are in Healthkeepers. Dental plans are available at the retiree's cost and therefore, have no employer obligation. There is no coverage for post-Medicare retirees. There were 551 County and 75 Authority participants at the time of the actuarial study.

The Public Schools provides a single-employer defined benefit medical plan and a retiree health insurance premium contribution plan that covers retirees until they reach 65 years of age. There is no coverage for retirees or their spouses once they reach the age of 65 and are eligible for Medicare. Both plans were established under the authority of the Williamsburg-James City County School Board and any amendments to the plans must be approved by the School Board. The Public Schools' plan allows retirees under the age of 65 to remain in the same medical and dental plan as active employees if they have at least five years of service and are a covered member under the plan at retirement and for at least 24 months prior to retiring. Retirees pay 100% of the premium, minus any applicable \$62.50 monthly contributed. The Public Schools' plan allows eligible retirees to receive a \$62.50 monthly contribution toward their health insurance premium if they have a minimum of twelve continuous years of service. The Public Schools' current membership is 42.



**County of James City, Virginia**  
**Notes to Basic Financial Statements**  
June 30, 2016

**12) Other Post-Employment Benefits (OPEB), Continued**

***Net OPEB Obligation***

The net OPEB obligation as of June 30, 2016 was calculated as follows:

	<b>Governmental activities</b>	<b>Business-type activity</b>	<b>Component unit - Public Schools</b>
Annual required contribution	\$ 588,000	\$ 57,000	\$ 887,000
Interest on net OPEB obligation	88,000	10,000	175,000
Actuarial adjustments	(110,000)	(12,000)	(237,000)
Annual OPEB cost	566,000	55,000	825,000
Contributions made	(151,000)	(21,000)	(259,000)
Increase in net OPEB obligation	415,000	34,000	566,000
Net OPEB obligation, beginning of year	2,193,962	243,509	4,996,300
Net OPEB obligation, end of year	<u>\$ 2,608,962</u>	<u>\$ 277,509</u>	<u>\$ 5,562,300</u>

***Annual OPEB Cost***

<b>Three-year trend information</b>				
<b>Year ended June 30,</b>	<b>Annual OPEB cost</b>	<b>Actual contribution</b>	<b>Percentage of annual OPEB cost contributed</b>	<b>Net OPEB obligation</b>
<b>Governmental activities</b>				
2016	\$ 566,000	\$ 151,000	26.7%	\$ 2,608,962
2015	490,000	107,000	21.8%	2,193,962
2014	457,000	93,000	20.4%	1,810,962
<b>Business-type activity</b>				
2016	\$ 55,000	\$ 21,000	38.2%	\$ 277,509
2015	45,000	9,000	20.0%	243,509
2014	43,000	7,000	16.3%	207,509
<b>Component unit - Public Schools</b>				
2016	\$ 825,000	\$ 259,000	31.4%	\$ 5,562,300
2015	859,000	303,000	35.3%	4,996,300
2014	804,000	242,000	30.1%	4,440,300

***Actuarial Methods and Assumptions***

For the actuarial valuation at June 30, 2016, the projected unit credit method was used. Under this method, benefits provided by the substantive plans (the plans as understood by the employers and the plan members) at the time of the actuarial study are projected and their present value is determined. The present value is divided into equal parts which are earned over the period from date of hire to the full eligibility date.

The actuarial assumptions included calculations based on a discount rate of 4% for the unfunded liability, rate of inflation of 2.2% and a payroll growth of 3%. Amortization of the initial unfunded actuarial liability is over 23 years based on a level percent of payroll method. Future increases for medical benefits are assumed to range from an initial rate of 7.5% and decrease gradually with the ultimate rate being 5.04%. It should be noted actuarial calculations reflect a long-term perspective and therefore, actuarially determined amounts are subject to revision as results are compared to past expectations and new estimates are made about the future.

All active employees who are expected to meet the plan's eligibility requirements on or before the ultimate assumed retirement age are included in the calculations. Retirees, spouses and spouse survivors who are entitled to a benefit under the provisions of the plan are also included.

**County of James City, Virginia**  
Notes to Basic Financial Statements  
June 30, 2016

**12) Other Post-Employment Benefits (OPEB), Continued**

The following Schedule of Funding Progress presents multi-year trend information about whether the actuarial value of the plan assets is increasing or decreasing over time relative to the actual accrual liability for benefits.

***Schedule of Funding Progress***

Actuarial valuation date July 1,	Actuarial value of assets	Actuarial accrued liability (AAL) project unit credit	Unfunded actuarial accrued liability (UAAL)	Funded ratio	Covered payroll	UAAL as a percentage of covered payroll
<b>Governmental-type activities</b>						
2015	\$ -	\$ 6,594,000	\$ 6,594,000	0.0%	\$ 37,227,884	17.7%
2014	-	4,396,000	4,396,000	0.0%	34,159,831	12.9%
2013	-	4,050,000	4,050,000	0.0%	34,545,065	11.7%
<b>Business-type activity</b>						
2015	\$ -	\$ 528,000	\$ 528,000	0.0%	\$ 4,026,779	13.1%
2014	-	423,000	423,000	0.0%	3,897,762	10.9%
2013	-	389,000	389,000	0.0%	3,943,666	9.9%
<b>Component unit - Public Schools</b>						
2015	\$ -	\$ 6,979,000	\$ 6,979,000	0.0%	\$ 79,000,900	8.8%
2014	-	7,335,000	7,335,000	0.0%	74,000,962	9.9%
2013	-	6,782,000	6,782,000	0.0%	71,291,388	9.5%

**13) Deferred Compensation Plan**

The County offers its employees a deferred compensation plan created in accordance with Internal Revenue Code (IRC) Section 457. The plan, available to permanent part-time and full-time County and Authority employees, permits them to defer 25% of their gross income up to the maximum allowable by the IRC (\$18,000 in 2016). The deferred compensation is not available to employees until termination, retirement, death or an unforeseeable emergency.

All amounts of compensation deferred under the plan, all property and rights purchased with those amounts, and all income attributable to those amounts, property, or rights are held in trust for the participants. The County acts as trustee for the plan with the choice of investment options being made by the participants. The activity of the plan is accounted for in the Deferred Compensation trust fund in the accompanying basic financial statements.

**14) Related-Party Transactions**

Certain financial management, accounting, and other services are provided to the Authority by the County. The charges for these services amounted to \$770,378 for the year ended June 30, 2016. In addition, the County leases space in Authority's buildings under 10 year operating lease agreements. The County paid the Authority \$261,959 for the year ended June 30, 2016.

In September 2009, the County entered into an agreement with the Schools for maintenance and custodial services. The agreement is in place for one year, which may be renewed or amended by November 1 each year. The County paid the Schools \$106,391 for the year ended June 30, 2016 for these services.

In April 2013, the County entered into a memorandum of understanding (MOU) with the Schools to provide risk management services. The MOU has an initial term of one year with the option of renewal for four additional one year terms.

**County of James City, Virginia**  
**Notes to Basic Financial Statements**  
June 30, 2016

**15) Risk Management**

The County is exposed to various risks of loss related to torts, theft of, damage to, and destruction of assets, errors and omissions, injuries to employees and natural disasters. Property, liability and worker's compensation coverage are provided through the Virginia Association of Counties Group Self Insurance Risk Pool. The County reports all of its risk management expenditures in the General Fund. There were no settlements in excess of the insurance coverage in any of the three prior fiscal years.

The County maintains surety coverage for principal officials through the Virginia Association of Counties Self Insurance Risk Pool. Surety coverage is provided under the general liability coverage with a limit of \$9,000,000. All elected officials, appointed officials, members of all appointed governing bodies, employees and volunteers are covered while acting within the scope of their duties with the County.

The County is subject to certain claims that arise in the ordinary course of operations. Many of these claims are in the early stages of the evaluation process. Accordingly, it is not possible at the present time to estimate the ultimate legal and financial liability, if any, with respect to certain lawsuits or other proceedings. In the opinion of management, after consultation with counsel, the eventual outcome of such claims has not yet been determined probable to have a material adverse effect on the County's operations or financial position.

**16) Commitments and Contingencies**

**Primary Government**

**Construction in Progress**

At June 30, 2016, the County and Authority had several major projects under construction which are presented in the accompanying financial statements as construction in progress. Below are the financial details.

<b>Project</b>	<b>Budget</b>	<b>Expenditures to date</b>	<b>Balance of contract</b>	<b>Budget balance</b>
<b>Governmental activities</b>				
General government admin.	\$ 109,761	\$ -	\$ -	\$ 109,761
Public safety	7,297,779	6,205,761	871,882	220,136
Public works	4,414,418	1,758,438	1,620,788	1,035,192
Community development	4,382,347	40,672	1,912,214	2,429,461
Parks, recreation and cultural	1,598,288	96,114	199,666	1,302,508
Total	<u>\$ 17,802,593</u>	<u>\$ 8,100,985</u>	<u>\$ 4,604,550</u>	<u>\$ 5,097,058</u>
<b>Business-type activity</b>				
Sewer improvements	\$ 4,161,433	\$ 443,900	\$ 319,061	\$ 3,398,472
Water supply	16,526,620	722,217	108,493	15,695,910
Water distribution	319,792	-	-	319,792
Water transmission	500,000	34,435	10,640	454,925
Water storage	185,620	-	-	185,620
Other	1,205,717	134,001	37,851	1,033,865
	<u>\$ 22,899,182</u>	<u>\$ 1,334,553</u>	<u>\$ 476,045</u>	<u>\$ 21,088,584</u>

**Advances for Construction**

The Authority records advances for construction representing two separate agreement types. Funds can be advanced by developers for the construction of specific facilities. These agreements call for rebates, up to the amount advanced, and have no expiration date. Developers can also construct a facility, dedicate it to the Authority and receive rebates up to the cost of the facility for up to 10 years. The Authority no longer enters into these types of agreements. At June 30, 2016, the Authority had \$32,902 outstanding in advances for construction.

**County of James City, Virginia**  
**Notes to Basic Financial Statements**  
June 30, 2016

**16) Commitments and Contingencies, Continued**

**Operating Leases**

The County leases certain land and office space under noncancelable operating lease agreements. Rental expenditures related to these lease agreements were \$243,277 for the year ended June 30, 2016.

The Public Schools lease equipment and buildings under noncancelable operating leases. Total costs for such leases were approximately \$272,009 for the year ended June 30, 2016. The future minimum lease payments for these leases are as follows:

A summary of future minimum lease payments as of June 30, 2016 are as follows:

<u>Year ending June 30:</u>	<u>Primary government - governmental activities</u>	<u>Component unit - Public Schools</u>
2017	\$ 239,152	\$ 215,723
2018	245,577	161,761
2019	251,810	138,471
2020	258,607	74,199
2021	265,027	24,517
2022-2026	1,432,370	-
2027-2029	225,226	-
Total	<u>\$ 2,917,769</u>	<u>\$ 614,671</u>

**Other**

The County and the Public Schools participate in a number of federal awards. Amounts received or receivable from grantor agencies are subject to audit and adjustment by grantor agencies, principally the federal government. Any disallowed claims, including amounts already collected, may constitute a liability of the applicable funds. The amount, if any, of expenditures which may be disallowed by the grantor cannot be determined at this time although the County expects such amounts, if any, to be immaterial.

The County, the Public Schools and the Development Authority are currently not involved in any litigation in which management deems any potential impact would be material to their respective financial statements.

## **Required Supplementary Information Other Than MD&A**

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**County of James City, Virginia**  
General Fund

The General Fund is the general operating fund of the County, which is used to account for all of the financial resources, except those required to be accounted for in another fund. Revenues are derived primarily from general property taxes, other local taxes, licenses, permits and fees and intergovernmental revenues. Primary expenditures are for public safety, public works, health and welfare, parks, recreation and culture, education and the general administration of the County.

## County of James City, Virginia

## Schedule of Revenues, Expenditures and Changes in Fund Balance – Budget and Actual (Unaudited)

## General Fund

Year ended June 30, 2016

<b>Fund, major and minor revenue source</b>	<b>Original budget</b>	<b>Final budget</b>	<b>Actual</b>	<b>Variance positive (negative)</b>
Revenue from local sources:				
General property taxes:				
Real property taxes	\$ 94,104,000	\$ 94,104,000	\$ 94,899,836	\$ 795,836
Real and personal public service corporation property taxes	1,800,000	1,800,000	1,904,413	104,413
Personal property taxes	20,472,950	20,472,950	20,804,210	331,260
Machinery and tools taxes	5,650,000	5,650,000	5,792,203	142,203
Penalties	600,000	600,000	673,805	73,805
Interest	350,000	350,000	289,128	(60,872)
Total general property taxes	<u>122,976,950</u>	<u>122,976,950</u>	<u>124,363,595</u>	<u>1,386,645</u>
Other local taxes:				
Local sales and use taxes	10,600,000	10,600,000	11,193,481	593,481
Franchise license taxes	500,000	500,000	627,762	127,762
Taxes on recordation and wills	1,125,000	1,125,000	1,349,105	224,105
Hotel and motel room taxes	2,500,000	2,500,000	2,690,744	190,744
Restaurant food taxes	6,740,000	6,740,000	7,017,178	277,178
Deeds of conveyance	325,000	325,000	347,548	22,548
Penalties	-	-	9,511	9,511
Interest	-	-	8,570	8,570
Total other local taxes	<u>21,790,000</u>	<u>21,790,000</u>	<u>23,243,899</u>	<u>1,453,899</u>
Permits, privilege fees and regulatory licenses:				
Animal licenses	20,000	20,000	14,725	(5,275)
Business licenses	6,605,000	6,605,000	6,961,284	356,284
Motor vehicle licenses	160,000	160,000	160,582	582
Building permits	1,075,000	1,075,000	928,148	(146,852)
Permits and other licenses	725,000	725,000	714,757	(10,243)
Total permits, privilege fees and regulatory licenses	<u>8,585,000</u>	<u>8,585,000</u>	<u>8,779,496</u>	<u>194,496</u>
Fines and forfeitures	<u>320,000</u>	<u>320,000</u>	<u>309,278</u>	<u>(10,722)</u>
Use of money and property	<u>125,000</u>	<u>125,000</u>	<u>205,768</u>	<u>80,768</u>
Charges for services:				
Excess fees of the clerk	130,000	223,000	239,472	16,472
Charges for Commonwealth's attorney	6,000	6,000	5,744	(256)
Charges for law enforcement and traffic control	137,500	137,500	134,646	(2,854)
Charges for emergency medical services	2,364,000	2,364,000	2,325,117	(38,883)
Charges for parks and recreation	3,059,750	3,354,750	3,563,791	209,041
Landfill user fees	245,000	245,000	310,053	65,053
Other fees	101,500	101,500	44,450	(57,050)
Total charges for services	<u>6,043,750</u>	<u>6,431,750</u>	<u>6,623,273</u>	<u>191,523</u>
Miscellaneous revenue:				
Sale of property	75,000	75,000	64,997	(10,003)
Miscellaneous	108,300	167,100	185,334	18,234
Total miscellaneous revenue	<u>183,300</u>	<u>242,100</u>	<u>250,331</u>	<u>8,231</u>
Total revenue from local sources	<u>160,024,000</u>	<u>160,470,800</u>	<u>163,775,640</u>	<u>3,304,840</u>

(Continued)



## County of James City, Virginia

## Schedule of Revenues, Expenditures and Changes in Fund Balance – Budget and Actual (Unaudited)

## General Fund

Year ended June 30, 2016

<b>Fund, major and minor revenue source</b>	<b>Original budget</b>	<b>Final budget</b>	<b>Actual</b>	<b>Variance positive (negative)</b>
Revenue from the Commonwealth:				
Noncategorical aid:				
Mobile home titling taxes	\$ 30,000	\$ 30,000	\$ 40,135	\$ 10,135
Tax on deeds	475,000	475,000	469,318	(5,682)
Railroad rolling stock taxes	60,000	60,000	41,797	(18,203)
Personal property tax relief	9,770,137	9,770,137	9,770,137	-
Communications sales and use tax	1,800,000	1,800,000	1,649,481	(150,519)
Car rental tax	125,000	125,000	109,809	(15,191)
Total noncategorical aid	12,260,137	12,260,137	12,080,677	(179,460)
Categorical aid:				
Shared expenses:				
Commonwealth's attorney	551,835	551,835	551,791	(44)
Sheriff	710,330	710,330	716,743	6,413
Commissioner of the revenue	169,185	169,185	174,212	5,027
Treasurer	172,300	172,300	156,525	(15,775)
Registrar/electoral board	47,750	47,750	68,796	21,046
Clerk of the circuit court	491,659	491,659	516,591	24,932
Total shared expenses	2,143,059	2,143,059	2,184,658	41,599
Other categorical aid:				
Wireless Board	185,000	185,000	196,117	11,117
Commission of the arts	5,000	5,000	5,000	-
HB 599 payments	1,387,341	1,387,341	1,320,488	(66,853)
Share of state sales tax	11,131,963	11,131,963	11,208,964	77,001
Other	65,000	65,000	75,912	10,912
Total other categorical aid	12,774,304	12,774,304	12,806,481	32,177
Total categorical aid	14,917,363	14,917,363	14,991,139	73,776
Total revenue from the Commonwealth	27,177,500	27,177,500	27,071,816	(105,684)
Revenue from the federal government:				
Payments in lieu of taxes	7,500	7,500	8,136	636
Total revenue from the federal government	7,500	7,500	8,136	636
Total revenues	\$ 187,209,000	\$ 187,655,800	\$ 190,855,592	\$ 3,199,792

(Continued)

## County of James City, Virginia

## Schedule of Revenues, Expenditures and Changes in Fund Balance – Budget and Actual (Unaudited)

## General Fund

Year ended June 30, 2016

<b>Fund, major and minor expenditure source</b>	<b>Original budget</b>	<b>Final budget</b>	<b>Actual</b>	<b>Variance positive (negative)</b>
General government administration:				
Legislative:				
Board of supervisors	\$ 192,683	\$ 392,690	\$ 306,353	\$ 86,337
General and financial administration:				
County administrator	512,189	512,192	503,642	8,550
County attorney	458,863	366,571	366,483	88
Human resources	654,549	646,251	622,726	23,525
Legal services	13,500	126,735	126,731	4
Commissioner of the revenue	787,031	787,058	741,096	45,962
Real estate assessments	853,255	859,715	818,953	40,762
Treasurer	1,363,792	1,370,590	1,257,209	113,381
Financial management	1,006,694	1,020,291	891,645	128,646
Accounting	218,063	218,099	154,540	63,559
Publications management	216,030	212,686	202,420	10,266
Purchasing	302,862	302,865	268,147	34,718
Records management	244,031	244,984	229,522	15,462
Information technology	2,000,630	2,025,352	1,886,458	138,894
Fleet maintenance	973,293	976,817	931,739	45,078
Total general and financial administration	9,604,782	9,670,206	9,001,311	668,895
Board of elections:				
Voter registration and elections	410,016	418,976	370,396	48,580
Total general government administration	10,207,481	10,481,872	9,678,060	803,812
Judicial administration:				
Courts:				
Circuit court and judicial services	503,673	503,673	498,550	5,123
General district court	35,306	35,306	27,804	7,502
Juvenile and domestic relations district court	21,827	21,827	13,407	8,420
Clerk of the circuit court	708,972	802,850	802,425	425
Sheriff	1,297,550	1,295,504	1,256,369	39,135
9th judicial district	10,259	6,000	5,848	152
Court services and juvenile detention	379,191	321,651	321,633	18
Courthouse	463,582	530,702	458,856	71,846
Total courts	3,420,360	3,517,513	3,384,892	132,621
Commonwealth's attorney	792,986	830,285	810,186	20,099
Total judicial administration	4,213,346	4,347,798	4,195,078	152,720
Public safety:				
Law enforcement and traffic control:				
Police department	9,858,705	9,879,583	9,454,511	425,072
Emergency communications	2,987,869	2,987,869	2,723,504	264,365
Total law enforcement and traffic control	12,846,574	12,867,452	12,178,015	689,437
Fire and rescue services:				
Fire department and emergency medical services	11,038,762	11,096,709	10,616,645	480,064
Correction and detention:				
Regional jail	2,562,000	2,648,000	2,647,185	815
Inspections:				
Building and safety permits	1,184,025	1,190,138	1,112,212	77,926
Other protection:				
Animal control	245,117	245,117	213,538	31,579
Emergency management	259,001	259,001	235,935	23,066
Total other protection	504,118	504,118	449,473	54,645
Total public safety	28,135,479	28,306,417	27,003,530	1,302,887

(Continued)

See accompanying notes to the basic financial statements and independent auditors' report.

See accompanying notes to required supplementary information.

## County of James City, Virginia

## Schedule of Revenues, Expenditures and Changes in Fund Balance – Budget and Actual (Unaudited)

## General Fund

Year ended June 30, 2016

<b>Fund, major and minor expenditure source</b>	<b>Original budget</b>	<b>Final budget</b>	<b>Actual</b>	<b>Variance positive (negative)</b>
Public works:				
Sanitation and waste removal:				
Grounds maintenance	\$ 1,548,937	\$ 1,635,382	\$ 1,456,867	\$ 178,515
Solid waste and recycling	1,377,271	1,377,271	1,339,128	38,143
Total sanitation and waste removal	2,926,208	3,012,653	2,795,995	216,658
Maintenance of general buildings and grounds:				
Facilities management	4,556,233	4,751,333	4,270,553	480,780
Total public works	7,482,441	7,763,986	7,066,548	697,438
Health and welfare:				
Local health department	715,362	715,362	725,341	(9,979)
Mental health and mental retardation	1,140,000	1,140,000	1,140,000	-
Total health and welfare	1,855,362	1,855,362	1,865,341	(9,979)
Education:				
School board administration	82,948,507	82,948,507	79,825,974	3,122,533
Parks, recreation and cultural:				
Parks and recreation:				
Administration	4,685,341	4,827,862	4,495,374	332,488
Community centers	250,205	251,985	211,810	40,175
Park operations	238,613	415,628	344,305	71,323
Recreation services	477,274	479,194	396,327	82,867
Total parks and recreation	5,651,433	5,974,669	5,447,816	526,853
Library:				
Regional library	4,421,282	4,421,282	4,416,255	5,027
Total parks, recreation and cultural	10,072,715	10,395,951	9,864,071	531,880
Community development:				
Planning and community development:				
Planning	966,315	1,036,779	862,377	174,402
Development management	217,108	211,061	141,728	69,333
Communications	636,715	638,284	626,703	11,581
Zoning enforcement	343,688	343,692	311,354	32,338
Economic development	402,702	455,310	346,707	108,603
Satellite office	221,907	221,907	210,936	10,971
Contributions – other	760,969	761,878	759,726	2,152
Regional transportation	590,625	590,625	590,625	-
Total planning and community development	4,140,029	4,259,536	3,850,156	409,380
Environmental management:				
Engineering and resource protection	918,266	919,199	900,566	18,633
Stormwater management	1,381,933	1,533,750	1,058,521	475,229
Total environmental management	2,300,199	2,452,949	1,959,087	493,862
Total community development	6,440,228	6,712,485	5,809,243	903,242
Nondepartmental:				
Miscellaneous	67,224	(276,942)	1,183,538	(1,460,480)
Total expenditures	151,422,783	152,535,436	146,491,383	6,044,053
Excess of revenues over expenditures	35,786,217	35,120,364	44,364,209	9,243,845
Other financing sources (uses):				
Transfers in	26,794	26,794	39,235	12,441
Transfers out	(35,813,011)	(37,757,511)	(40,773,308)	(3,015,797)
Total other financing sources (uses)	(35,786,217)	(37,730,717)	(40,734,073)	(3,003,356)
Net change in fund balance	-	(2,610,353)	3,630,136	6,240,489
Fund balance at beginning of year	-	2,610,353	34,663,432	32,053,079
Fund balance at end of year	\$ -	\$ -	\$ 38,293,568	\$ 38,293,568

See accompanying notes to the basic financial statements and independent auditors' report.

See accompanying notes to required supplementary information.

**County of James City, Virginia**  
Schedule of Changes in the Net Pension Liability and Related Ratios  
Required Supplementary Information (Unaudited)  
Years ended June 30, 2016 and 2015 (1)

	2014			2015		
	County Employees	JCSA Employees	Public Schools' Non-Professional	County Employees	JCSA Employees	Public Schools' Non-Professional
<b>Total pension liability</b>						
Service cost	\$ 4,376,092	\$ 417,066	\$ 507,972	\$ 4,416,137	\$ 430,269	\$ 526,136
Interest	9,996,496	913,818	1,021,383	10,586,624	978,647	1,087,945
Changes of benefit terms	-	-	-	-	-	-
Differences between expected and actual experience	-	-	-	252,227	(146,331)	(13,491)
Changes in assumptions	-	-	-	-	-	-
Benefit payments, including refunds of employee contributions	(5,223,843)	(376,365)	(570,189)	(6,660,511)	(433,146)	(586,736)
<b>Net change in total pension liability</b>	<b>9,148,745</b>	<b>954,519</b>	<b>959,166</b>	<b>8,594,477</b>	<b>829,439</b>	<b>1,013,854</b>
<b>Total pension liability, beginning</b>	<b>145,419,002</b>	<b>13,242,723</b>	<b>14,876,279</b>	<b>154,567,747</b>	<b>14,197,242</b>	<b>15,835,445</b>
<b>Total pension liability, ending (a)</b>	<b>\$ 154,567,747</b>	<b>\$ 14,197,242</b>	<b>\$ 15,835,445</b>	<b>\$ 163,162,224</b>	<b>\$ 15,026,681</b>	<b>\$ 16,849,299</b>
<b>Plan fiduciary net position</b>						
Contributions - employer	4,362,691	308,820	435,519	4,065,806	329,381	372,141
Contributions - employee	1,909,429	197,188	237,728	1,844,202	193,349	256,454
Net investment income	18,931,089	1,802,418	2,265,304	6,365,577	612,704	764,646
Benefit payments, including refunds of employee contributions	(5,223,843)	(376,365)	(570,189)	(6,660,511)	(433,146)	(586,736)
Administrative expense	(100,186)	(9,511)	(12,002)	(86,580)	(8,173)	(10,296)
Other	998	95	120	(1,349)	(130)	(162)
<b>Net change in plan fiduciary net position</b>	<b>19,880,178</b>	<b>1,922,645</b>	<b>2,356,480</b>	<b>5,527,145</b>	<b>693,985</b>	<b>796,047</b>
<b>Plan fiduciary net position, beginning</b>	<b>119,228,777</b>	<b>11,335,104</b>	<b>14,283,651</b>	<b>139,108,955</b>	<b>13,257,749</b>	<b>16,640,131</b>
<b>Plan fiduciary net position, ending (b)</b>	<b>139,108,955</b>	<b>13,257,749</b>	<b>16,640,131</b>	<b>144,636,100</b>	<b>13,951,734</b>	<b>17,436,178</b>
<b>Net pension liability (a) - (b)</b>	<b>\$ 15,458,792</b>	<b>\$ 939,493</b>	<b>\$ (804,686)</b>	<b>\$ 18,526,124</b>	<b>\$ 1,074,947</b>	<b>\$ (586,879)</b>
<b>Plan fiduciary net position as a percentage of the total pension liability</b>	90.00%	93.38%	105.08%	88.65%	92.85%	103.48%
<b>Covered-employee payroll</b>	<b>\$ 37,347,889</b>	<b>\$ 3,943,666</b>	<b>\$ 4,812,365</b>	<b>\$ 36,788,968</b>	<b>\$ 3,897,762</b>	<b>\$ 5,154,307</b>
<b>Net pension liability as a percentage of the total covered-employee payroll</b>	41.39%	23.82%	-16.72%	50.36%	27.58%	-11.39%

(1) This schedule is intended to present 10 years of information. GASB 68 and 71 were implemented in fiscal year 2015, and additional years will be presented as the information becomes available.

See accompanying notes to the basic financial statements and independent auditors' report.  
See accompanying notes to required supplementary information.

**County of James City, Virginia**  
Schedule of Employer Contributions  
Required Supplementary Information (Unaudited)  
Years ended June 30, 2016 and 2015 (1)

<b>County employees</b>					
<b>Fiscal Year</b>	<b>Contractually Required Contribution</b>	<b>Contributions in relation to contractually required contribution</b>	<b>Contribution deficiency (Excess)*</b>	<b>Employer's covered employee payroll</b>	<b>Contributions as a % of covered employee payroll</b>
2015	\$ 4,090,933	\$ 4,091,153	\$ 220	\$ 36,788,968	11.12%
2016	4,190,228	4,190,244	16	37,681,907	11.12%

\*Excess contributions are a result of an amount due for retroactive payment for prior fiscal year.

<b>James City Service Authority employees</b>					
<b>Fiscal Year</b>	<b>Contractually Required Contribution</b>	<b>Contributions in relation to contractually required contribution</b>	<b>Contribution deficiency (Excess)</b>	<b>Employer's covered employee payroll</b>	<b>Contributions as a % of covered employee payroll</b>
2015	\$ 330,920	\$ 330,920	\$ -	\$ 3,897,762	8.49%
2016	341,874	341,874	-	4,026,779	8.49%

<b>Public Schools' - non-professional</b>					
<b>Fiscal Year</b>	<b>Contractually Required Contribution</b>	<b>Contributions in relation to contractually required contribution</b>	<b>Contribution deficiency (Excess)</b>	<b>Employer's covered employee payroll</b>	<b>Contributions as a % of covered employee payroll</b>
2015	\$ 372,141	\$ 372,141	\$ -	\$ 5,154,307	7.22%
2016	369,942	369,942	-	5,123,850	7.22%

(1) This schedule is intended to present 10 years of information. GASB 68 and 71 were implemented in fiscal year 2015, and additional years will be presented as the information becomes available.

**County of James City, Virginia**  
Notes to Required Supplementary Information (Unaudited)  
June 30, 2016

**1) Budgeting and Budgetary Accounting**

The following procedures are used by the County in establishing the budgetary data reflected in the financial statements:

Prior to April 1, the County Administrator submits to the Board of Supervisors a proposed operating and capital budget for the fiscal year commencing the following July 1. The operating budget and capital budget include proposed expenditures and the means of financing them. Public hearings are then conducted to obtain citizen comments.

Prior to June 30, the budget is legally enacted through passage of an Appropriations Resolution. The Appropriations Resolution places legal restrictions on expenditures at the fund and function level. The appropriation for each fund and function can be revised only by the Board of Supervisors; however, the County Administrator may amend the budget within functions. Supplemental appropriations in addition to the appropriated budget were necessary during the year.

Formal budgetary integration is employed as a management control device during the year for those funds with legally adopted annual budgets which are the General Fund, Special Revenue Fund - Virginia Public Assistance, and Debt Service Fund, and these funds are integrated only at the level of legal adoption. Program and project budgets are utilized in the Capital Projects; Community Development; and Grants and Special Projects Funds where appropriations remain open and carry over to the succeeding years.

All budgets are adopted on the modified accrual basis of accounting. The budget was increased by \$446,800 in supplemental appropriations during the fiscal year ended June 30, 2016. This increase was for the operation of a marina and park, and to appropriate grant funds and insurance recoveries to replace damaged equipment and vehicles. All appropriations lapse on June 30 for all County funds, except the funds referenced above. All budget data presented in the accompanying basic financial statements represents the appropriated budget as of June 30, 2016, as adopted and amended by supplemental appropriations.

**2) Changes of Benefit Terms**

There have been no actuarially material changes to the system benefit provisions since the prior actuarial valuation. The 2014 valuation includes Hybrid Retirement Plan members for the first time. The hybrid plan applies to most new employees hired on or after January 1, 2014 and not covered by enhanced hazardous duty benefits. Because this was a new benefit and the number of participants was relatively small, the impact on the liabilities as of the measurement date of June 30, 2015 are not material.

**3) Changes of Assumptions**

The following changes in actuarial assumptions were made effective June 30, 2013 based on the most recent experience study of the System for the four-year period ending June 30, 2012:

**Largest 10 - Non-LEOS:**

- Update mortality table
- Decrease in rates of service retirement
- Decrease in rates of disability retirement
- Reduce rates of salary increase by 0.25% per year

**Largest 10 - LEOS:**

- Update mortality table
- Decrease in male rates of disability

**All Others (Non 10 Largest) - Non-LEOS:**

- Update mortality table
- Decrease in rates of service retirement
- Decrease in rates of disability retirement
- Reduce rates of salary increase by 0.25% per year

**All Others (Non 10 Largest) - LEOS:**

- Update mortality table
- Adjustments to rates of service retirement for females
- Increase in rates of withdrawal
- Decrease in male and female rates of disability

See accompanying independent auditors' report.

## **Supplementary Information**

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**County of James City, Virginia**  
Debt Service Fund

*Debt Service Fund* – accounts for the accumulation of resources for, and the payment of principal, interest and related costs on long-term debt of governmental funds.

## County of James City, Virginia

## Schedule of Revenues, Expenditures and Changes in Fund Balance – Budget and Actual

## Debt Service Fund

Year ended June 30, 2016

	Original Budget	Final Budget	Actual	Variance positive (negative)
Revenues:				
Revenue from use of money and property	\$ -	\$ -	\$ 2,806	\$ 2,806
Miscellaneous	204,331	204,331	225,961	21,630
Total revenues	204,331	204,331	228,767	24,436
Expenditures:				
Community development	75,000	75,000	50,804	24,196
Debt service:				
Principal	16,817,377	16,817,377	17,122,377	(305,000)
Interest and other fiscal charges	6,900,152	6,900,152	6,188,222	711,930
Bond issuance costs	-	-	1,173,546	(1,173,546)
Total expenditures	23,792,529	23,792,529	24,534,949	(742,420)
Deficiency of revenues under expenditures	(23,588,198)	(23,588,198)	(24,306,182)	(717,984)
Other financing sources (uses):				
Transfers in	23,600,000	23,600,000	23,568,074	31,926
Issuance of refunding bonds	-	-	64,915,000	(64,915,000)
Premium on refunding bonds	-	-	8,988,550	(8,988,550)
Payment to escrow agent for refunded bonds	-	-	(73,165,442)	73,165,442
Total other financing sources (uses)	23,600,000	23,600,000	24,306,182	(706,182)
Deficiency of revenues and other sources under expenditures	11,802	11,802	-	(11,802)
Fund balance, beginning of year	(11,802)	(11,802)	-	11,802
Fund balance, end of year	\$ -	\$ -	\$ -	\$ -

See accompanying independent auditors' report.

**County of James City, Virginia**  
**Nonmajor Governmental Funds**

The County reports the following nonmajor governmental funds:

*Virginia Public Assistance Fund* – accounts for funds received from the federal and state governments and transfers from the General Fund that are utilized for Social Service programs.

*Colonial Community Corrections Fund* – accounts for the revenues and expenditures, under the Virginia Community Corrections Act, for providing the judicial system with sentencing alternatives for certain nonviolent offenders requiring less than institutional custody, but more than probation supervision.

*Community Development Fund* – accounts for the revenues that are utilized to improve targeted areas within the County.

*Trust Fund* – accounts for monies and donations held to celebrate historical events and various special purposes.

*Tourism Investment Fund* – accounts for revenues and expenditures that provide for tourism initiatives.

*Grants and Special Projects Fund* – accounts for monies held for use for grants and special projects.

**County of James City, Virginia**  
Combining Balance Sheet  
Nonmajor Governmental Funds  
June 30, 2016

	Virginia Public Assistance Fund	Colonial Community Corrections Fund	Community Development Fund	Trust Fund	Tourism Investment Fund	Grants and Special Projects Fund	Total
<b>Assets</b>							
Cash and cash equivalents and investments	\$ 1,368,505	\$ 192,251	\$ 268,545	\$ 353,987	\$ 1,188,463	\$ -	\$ 3,371,751
Cash and cash equivalents, restricted	-	-	1,456,153	-	-	443,791	1,899,944
Taxes receivable	-	-	-	-	88,641	-	88,641
Loans receivable	-	-	3,639,688	-	-	-	3,639,688
Due from other funds	-	-	-	-	-	26,755	26,755
Due from other governments	241,195	2,370	183,925	-	-	1,070,511	1,498,001
Total assets	<u>\$ 1,609,700</u>	<u>\$ 194,621</u>	<u>\$ 5,548,311</u>	<u>\$ 353,987</u>	<u>\$ 1,277,104</u>	<u>\$ 1,541,057</u>	<u>\$ 10,524,780</u>
<b>Liabilities and Fund Balances</b>							
Liabilities:							
Accounts payable	\$ 22,339	\$ 14,643	\$ 15,004	\$ -	\$ 35,729	\$ 61,480	\$ 149,195
Accrued liabilities	4,067	1,136	-	-	-	1,504	6,707
Payables from restricted assets	-	-	72,199	-	-	-	72,199
Due to other funds	286,866	22,165	118,888	-	629	-	428,548
Due to component unit	-	-	-	-	-	34,583	34,583
Unearned revenue	-	-	2,873,943	-	-	848,422	3,722,365
Total liabilities	<u>313,272</u>	<u>37,944</u>	<u>3,080,034</u>	<u>-</u>	<u>36,358</u>	<u>945,989</u>	<u>4,413,597</u>
Fund balances:							
Nonspendable - loans	-	-	765,745	-	-	-	765,745
Assigned	1,296,428	156,677	1,702,532	353,987	1,240,746	595,068	5,345,438
Total fund balances	<u>1,296,428</u>	<u>156,677</u>	<u>2,468,277</u>	<u>353,987</u>	<u>1,240,746</u>	<u>595,068</u>	<u>6,111,183</u>
Total liabilities and fund balances	<u>\$ 1,609,700</u>	<u>\$ 194,621</u>	<u>\$ 5,548,311</u>	<u>\$ 353,987</u>	<u>\$ 1,277,104</u>	<u>\$ 1,541,057</u>	<u>\$ 10,524,780</u>

See accompanying independent auditors' report.

**County of James City, Virginia**  
Combining Statement of Revenues, Expenditures and Changes in Fund Balances  
Nonmajor Governmental Funds  
Year ended June 30, 2016

	Virginia Public Assistance Fund	Colonial Community Corrections Fund	Community Development Fund	Trust Fund	Tourism Investment Fund	Grants and Special Projects Fund	Total
Revenues:							
Other local taxes	\$ -	\$ -	\$ -	\$ -	\$ 783,768	\$ -	\$ 783,768
Use of money and property	-	-	-	36	-	-	36
Miscellaneous	-	82,991	747,291	69,148	15,948	-	915,378
Intergovernmental:							
Local	-	97,832	-	-	-	220,126	317,958
Commonwealth	1,021,367	786,660	513,421	7,559	-	721,801	3,050,808
Federal	2,284,547	37,969	1,168,363	54,064	-	190,905	3,735,848
Total revenues	<u>3,305,914</u>	<u>1,005,452</u>	<u>2,429,075</u>	<u>130,807</u>	<u>799,716</u>	<u>1,132,832</u>	<u>8,803,796</u>
Expenditures:							
Current:							
Judicial administration	-	1,001,130	-	9,189	-	258,347	1,268,666
Public safety	-	-	-	69,979	-	804,743	874,722
Public works	-	-	-	2,500	-	13,154	15,654
Health and welfare	4,725,646	-	-	500	-	642,565	5,368,711
Parks, recreation and cultural	-	-	-	4,380	-	4,000	8,380
Community development	-	-	2,479,835	-	1,984,042	29,920	4,493,797
Total expenditures	<u>4,725,646</u>	<u>1,001,130</u>	<u>2,479,835</u>	<u>86,548</u>	<u>1,984,042</u>	<u>1,752,729</u>	<u>12,029,930</u>
Excess (deficiency) of revenues over (under) expenditures	(1,419,732)	4,322	(50,760)	44,259	(1,184,326)	(619,897)	(3,226,134)
Other financing sources (uses):							
Transfers in	1,451,094	49,192	651,615	-	1,620,000	647,173	4,419,074
Transfers out	-	-	-	(12,235)	(27,000)	-	(39,235)
Total other financing sources (uses)	<u>1,451,094</u>	<u>49,192</u>	<u>651,615</u>	<u>(12,235)</u>	<u>1,593,000</u>	<u>647,173</u>	<u>4,379,839</u>
Net change in fund balances	<u>31,362</u>	<u>53,514</u>	<u>600,855</u>	<u>32,024</u>	<u>408,674</u>	<u>27,276</u>	<u>1,153,705</u>
Fund balances, beginning of year	<u>1,265,066</u>	<u>103,163</u>	<u>1,867,422</u>	<u>321,963</u>	<u>832,072</u>	<u>567,792</u>	<u>4,957,478</u>
Fund balances, end of year	<u>\$ 1,296,428</u>	<u>\$ 156,677</u>	<u>\$ 2,468,277</u>	<u>\$ 353,987</u>	<u>\$ 1,240,746</u>	<u>\$ 595,068</u>	<u>\$ 6,111,183</u>

See accompanying independent auditors' report.

**County of James City, Virginia**

Schedule of Revenues, Expenditures and Changes in Fund Balance – Budget and Actual  
 Virginia Public Assistance Fund  
 Year ended June 30, 2016

	<u>Budget</u>	<u>Actual</u>	<u>Variance positive (negative)</u>
Revenues:			
Intergovernmental:			
Commonwealth	\$ 2,935	\$ 1,021,367	\$ 1,018,432
Federal	3,822,131	2,284,547	(1,537,584)
Total intergovernmental revenues	<u>3,825,066</u>	<u>3,305,914</u>	<u>(519,152)</u>
Expenditures:			
Current:			
Health and welfare	<u>5,741,825</u>	<u>4,725,646</u>	<u>1,016,179</u>
Deficiency of revenues under expenditures	<u>(1,916,759)</u>	<u>(1,419,732)</u>	<u>497,027</u>
Other financing sources:			
Operating transfers in	<u>1,451,094</u>	<u>1,451,094</u>	<u>-</u>
Deficiency of revenues and other sources under expenditures	<u>(465,665)</u>	<u>31,362</u>	<u>(497,027)</u>
Fund balance, beginning of year	<u>465,665</u>	<u>1,265,066</u>	<u>(799,401)</u>
Fund balance, end of year	<u>\$ -</u>	<u>\$ 1,296,428</u>	<u>\$ (1,296,428)</u>

See accompanying independent auditors' report.

**County of James City, Virginia**  
**Agency Funds**

Trust and Agency funds account for money received and held by the County in the capacity of trustee, custodian, or agent for individuals, other governmental agencies and private organizations. The County reports the following

Trust and Agency funds:

**Pension Trust Fund**

*Deferred Compensation Plan* – accounts for wages of employees participating in the deferred compensation plan created in accordance with Internal Revenue Code Section 457.

**Agency Funds**

*Special Welfare* – accounts for the transfer of funds provided by the Virginia Public Assistance Fund for aid to dependent children.

*WAMAC* – accounts for the fiscal agent funds held for the Williamsburg Area Medical Assistance Corporation.

*Regional Jail* – accounts for the fiscal agency funds held for the Virginia Peninsula Regional Jail Authority.

*Juvenile Detention* – accounts for fiscal agency funds held for the Middle Peninsula Juvenile Detention Commission.

*Williamsburg Area Transit* – accounts for the fiscal agency funds held for the Williamsburg Area Transit Authority.

**County of James City, Virginia**  
Combining Statement of Fiduciary Net Position  
Agency Funds  
June 30, 2016

	Special Welfare	WAMAC	Regional Jail	Juvenile Detention	Williamsburg Area Transit Authority	Total
<b>Assets</b>						
Cash and cash equivalents	\$ 480	\$ 27,960	\$ 725,813	\$ 1,425,305	\$ 762,073	\$ 2,941,631
Restricted cash and cash equivalents and investments	-	4,278,476	2,815,130	-	-	7,093,606
Accounts receivable	-	247,228	129,142	112,061	87,153	575,584
Due from other governmental units	-	-	1,599,541	-	934,946	2,534,487
Prepaid item	-	15,435	97,885	-	-	113,320
Total assets	<u>\$ 480</u>	<u>\$ 4,569,099</u>	<u>\$ 5,367,511</u>	<u>\$ 1,537,366</u>	<u>\$ 1,784,172</u>	<u>\$ 13,258,628</u>
<b>Liabilities</b>						
Accounts payable and accrued liabilities	\$ -	\$ 24,787	\$ 521,698	\$ 789,141	\$ 685,193	\$ 2,020,819
Amounts held for others	480	4,544,312	4,845,813	748,225	1,098,979	11,237,809
Total liabilities	<u>\$ 480</u>	<u>\$ 4,569,099</u>	<u>\$ 5,367,511</u>	<u>\$ 1,537,366</u>	<u>\$ 1,784,172</u>	<u>\$ 13,258,628</u>

See accompanying independent auditors' report.



**County of James City, Virginia**  
Combining Statement of Changes in Assets and Liabilities  
Agency Funds  
Year ended June 30, 2016

	Balance July 1, 2015	Additions	Reductions	Balance June 30, 2016
<b>Special Welfare Fund:</b>				
Assets:				
Cash	\$ 10	\$ 6,763	\$ 6,293	\$ 480
Liabilities:				
Amounts held for others	\$ 10	\$ 7,536	\$ 7,066	\$ 480
<b>WAMAC Fund:</b>				
Assets:				
Cash	\$ 89,092	\$ 2,430,574	\$ 2,491,706	\$ 27,960
Restricted cash	4,207,422	231,863	160,809	4,278,476
Accounts receivable	152,280	606,206	511,258	247,228
Prepaid item	-	15,435	-	15,435
Total assets	<u>\$ 4,448,794</u>	<u>\$ 3,284,078</u>	<u>\$ 3,163,773</u>	<u>\$ 4,569,099</u>
Liabilities:				
Accounts payable and accrued liabilities	\$ 29,333	\$ 2,139,500	\$ 2,144,046	\$ 24,787
Amounts held for others	4,419,461	5,638,371	5,513,520	4,544,312
Total liabilities	<u>\$ 4,448,794</u>	<u>\$ 7,777,871</u>	<u>\$ 7,657,566</u>	<u>\$ 4,569,099</u>
<b>Regional Jail Fund:</b>				
Assets:				
Cash and cash equivalents	\$ 604,476	\$ 15,871,659	\$ 15,750,322	\$ 725,813
Restricted cash and cash equivalents and investments	3,368,000	1,742,598	2,295,468	2,815,130
Accounts receivable	308,042	129,142	308,042	129,142
Due from other governmental units	1,155,407	1,599,541	1,155,407	1,599,541
Prepaid item	-	97,885	-	97,885
Total assets	<u>\$ 5,435,925</u>	<u>\$ 19,440,825</u>	<u>\$ 19,509,239</u>	<u>\$ 5,367,511</u>
Liabilities:				
Accounts payable and accrued liabilities	\$ 238,009	\$ 692,321	\$ 408,632	\$ 521,698
Amounts held for others	5,197,916	18,878,830	19,230,933	4,845,813
Total liabilities	<u>\$ 5,435,925</u>	<u>\$ 19,571,151</u>	<u>\$ 19,639,565</u>	<u>\$ 5,367,511</u>
<b>Juvenile Detention Fund:</b>				
Assets:				
Cash and cash equivalents and investments	\$ 940,631	\$ 4,451,472	\$ 3,966,798	\$ 1,425,305
Accounts receivable	127,144	154,182	169,265	112,061
Total assets	<u>\$ 1,067,775</u>	<u>\$ 4,605,654</u>	<u>\$ 4,136,063</u>	<u>\$ 1,537,366</u>
Liabilities:				
Accounts payable and accrued liabilities	\$ 210,041	\$ 4,158,813	\$ 3,579,713	\$ 789,141
Amounts held for others	857,734	5,380,549	5,490,058	748,225
Total liabilities	<u>\$ 1,067,775</u>	<u>\$ 9,539,362</u>	<u>\$ 9,069,771</u>	<u>\$ 1,537,366</u>
<b>Williamsburg Area Transit Authority Fund:</b>				
Assets:				
Cash and cash equivalents	\$ 470,382	\$ 6,014,944	\$ 5,723,253	\$ 762,073
Accounts receivable	1,675	91,353	5,875	87,153
Due from other governmental units	743,168	934,946	743,168	934,946
Total assets	<u>\$ 1,215,225</u>	<u>\$ 7,041,243</u>	<u>\$ 6,472,296</u>	<u>\$ 1,784,172</u>
Liabilities:				
Accounts payable and accrued liabilities	\$ 214,169	\$ 3,502,900	\$ 3,031,876	\$ 685,193
Amounts held for others	1,001,056	15,118,844	15,020,921	1,098,979
Total liabilities	<u>\$ 1,215,225</u>	<u>\$ 18,621,744</u>	<u>\$ 18,052,797</u>	<u>\$ 1,784,172</u>
<b>Total:</b>				
Assets:				
Cash and cash equivalents and investments	\$ 2,104,591	\$ 28,775,412	\$ 27,938,372	\$ 2,941,631
Restricted cash and cash equivalents and investments	7,575,422	1,974,461	2,456,277	7,093,606
Accounts receivable	589,141	980,883	994,440	575,584
Due from other governmental units	1,898,575	2,534,487	1,898,575	2,534,487
Prepaid item	-	113,320	-	113,320
Total assets	<u>\$ 12,167,729</u>	<u>\$ 34,378,563</u>	<u>\$ 33,287,664</u>	<u>\$ 13,258,628</u>
Liabilities:				
Accounts payable and accrued liabilities	\$ 691,552	\$ 10,493,534	\$ 9,164,267	\$ 2,020,819
Amounts held for others	11,476,177	45,024,130	45,262,498	11,237,809
Total liabilities	<u>\$ 12,167,729</u>	<u>\$ 55,517,664</u>	<u>\$ 54,426,765</u>	<u>\$ 13,258,628</u>

See accompanying independent auditors' report.

**County of James City, Virginia**  
Discretely Presented Component Units

The County reports the following discretely presented component units:

*Public Schools* – responsible for educating the school-age population of the City of Williamsburg, Virginia and the County.

*Economic Development Authority* – promote industrial and commercial development in the County.

**County of James City, Virginia**  
**Balance Sheet**  
Discretely Presented Component Unit – Public Schools – Governmental Funds  
June 30, 2016

	General	Grants	Schools' food services	Capital projects	Total governmental funds
<b>Assets</b>					
Cash and temporary investments	\$ 16,971,480	\$ (11,267)	\$ 631,262	\$ 330,598	\$ 17,922,073
Receivables	59,111	19,988	832	-	79,931
Due from federal government	386	694,898	171,476	-	866,760
Due from Commonwealth of Virginia	138,445	28,216	-	-	166,661
Due from the City of Williamsburg and James City County	253,968	-	-	2,200,605	2,454,573
Inventory	-	-	16,525	-	16,525
Total assets	<u>\$ 17,423,390</u>	<u>\$ 731,835</u>	<u>\$ 820,095</u>	<u>\$ 2,531,203</u>	<u>\$ 21,506,523</u>
<b>Liabilities and Fund Balances</b>					
<b>Liabilities:</b>					
Accounts payable	\$ 507,294	\$ 26,691	\$ 68,942	\$ 1,844,028	\$ 2,446,955
Accrued payroll	6,505,002	260,155	125,750	-	6,890,907
Accrued benefits	6,662,227	240,752	127,508	-	7,030,487
Due to the City of Williamsburg and James City County	3,492,594	-	-	-	3,492,594
Unearned revenue	-	65,983	-	-	65,983
Total liabilities	<u>17,167,117</u>	<u>593,581</u>	<u>322,200</u>	<u>1,844,028</u>	<u>19,926,926</u>
<b>Fund balances:</b>					
Nonspendable - inventory	-	-	16,525	-	16,525
Restricted	-	138,254	481,370	-	619,624
Committed	-	-	-	687,175	687,175
Assigned	56,273	-	-	-	56,273
Unassigned	200,000	-	-	-	200,000
Total fund balances	<u>256,273</u>	<u>138,254</u>	<u>497,895</u>	<u>687,175</u>	<u>1,579,597</u>
Total liabilities and fund balances	<u>\$ 17,423,390</u>	<u>\$ 731,835</u>	<u>\$ 820,095</u>	<u>\$ 2,531,203</u>	

## Adjustments for the statement of net position:

Capital assets used in governmental activities are not current financial resources and therefore are not reported in the governmental funds.	54,116,949
Long-term liabilities are not reported as liabilities in the governmental funds.	
Compensated absences	(1,101,233)
Equipment capital leases	(164,243)
Other post employment benefits	(5,562,300)
Net pension liability	(110,042,121)
Deferred outflows and inflows of resources are not current financial resources and therefore are not reported in the governmental funds.	2,558,221
Net position of governmental activities	<u>\$ (58,615,130)</u>

See accompanying independent auditors' report.

**County of James City, Virginia**  
Statement of Revenues, Expenditures and Changes in Fund Balances  
Discretely Presented Component Unit – Public Schools – Governmental Funds  
Year ended June 30, 2016

	General	Grants	Schools' food services	Capital projects	Total governmental funds
Revenues:					
Intergovernmental:					
From City of Williamsburg and James City County	\$ 88,433,251	\$ -	\$ -	\$ 2,808,630	\$ 91,241,881
From Commonwealth of Virginia	31,665,192	953,592	54,582	68,054	32,741,420
From federal government	98,906	3,870,398	2,285,323	-	6,254,627
Total intergovernmental	120,197,349	4,823,990	2,339,905	2,876,684	130,237,928
Charges for services	588,520	-	1,818,365	-	2,406,885
Interest	447	-	234	-	681
Miscellaneous	231,314	793,541	-	-	1,024,855
Total revenues	121,017,630	5,617,531	4,158,504	2,876,684	133,670,349
Expenditures:					
General and administrative	2,857,644	-	-	-	2,857,644
Instruction	89,269,571	4,361,084	-	-	93,630,655
Attendance and health services	4,217,836	590,091	-	-	4,807,927
Pupil transportation	7,122,053	-	-	-	7,122,053
Operations and maintenance	10,779,477	42,155	-	-	10,821,632
Technology	6,501,215	392,383	-	-	6,893,598
Food services	-	102,802	4,064,570	-	4,167,372
Debt service:					
Principal	56,777	-	-	-	56,777
Interest	19,486	-	-	-	19,486
Capital outlay	1,480,170	151,198	14,580	3,239,193	4,885,141
Total expenditures	122,304,229	5,639,713	4,079,150	3,239,193	135,262,285
Excess (deficiency) of revenues over (under) expenditures	(1,286,599)	(22,182)	79,354	(362,509)	(1,591,936)
Net change in fund balances	(1,286,599)	(22,182)	79,354	(362,509)	(1,591,936)
Fund balances, beginning of year	1,542,872	160,436	418,541	1,049,684	3,171,533
Fund balances, end of year	\$ 256,273	\$ 138,254	\$ 497,895	\$ 687,175	\$ 1,579,597

See accompanying independent auditors' report.

**County of James City, Virginia**  
**Statement of Revenues, Expenditures and Changes in Fund Balances**  
**Discretely Presented Component Unit – Public Schools – Governmental Funds**  
**Year ended June 30, 2016**

Net change in fund balances \$ (1,591,936)

Adjustments for the statement of activities:

Governmental funds report capital outlays as expenditures while governmental activities report depreciation expense to allocate those expenditures over the life of the assets. This is the amount by which new capital assets exceeded depreciation expense in the current period:

Capital outlay	4,885,141
Depreciation expense	(4,259,185)
	625,956

In the statement of activities, the loss on the sale of equipment is reported, whereas in the governmental funds, only the proceeds from the sale increase financial resources. Thus, the change in net assets differs from the change in fund balances by the cost of the equipment sold.

(58,279)

Repayment of debt principal is an expenditure in the governmental funds, but does not affect the statement of activities.

56,777

Expenses reported in the statement of activities do not require the use of current financial resources and, therefore, are not reported as expenditures in the governmental funds.

Change in compensated absences liability	(96,700)
Change in net OPEB obligation	(566,000)
Change in net pension liability	2,875,068
	2,212,368

Governmental funds recognize revenues when they are both measurable and available, that is collected during the period or within two months after year end. However, they are recognized in full for the period they are earned in the statement of activities.

Change in net position	160,436
	\$ 1,405,322

**County of James City, Virginia**  
Schedule of Changes in Assets and Liabilities  
Discretely Presented Component Unit – Public Schools – Agency Funds  
Year ended June 30, 2016

	<u>Balance July 1, 2015</u>	<u>Additions</u>	<u>Reductions</u>	<u>Balance June 30, 2016</u>
State Operated Educational Program:				
Assets:				
Cash and temporary investments	\$ (201,221)	\$ 1,224,499	\$ 1,210,546	\$ (187,268)
Due from other governmental units	266,887	734,692	730,131	271,448
Total assets	<u>\$ 65,666</u>	<u>\$ 1,959,191</u>	<u>\$ 1,940,677</u>	<u>\$ 84,180</u>
Liabilities:				
Accounts payable and accrued liabilities	<u>\$ 65,666</u>	<u>\$ 1,991,731</u>	<u>\$ 1,973,217</u>	<u>\$ 84,180</u>
School Activity Fund:				
Assets:				
Cash and temporary investments	<u>\$ 1,271,617</u>	<u>\$ 2,043,557</u>	<u>\$ 2,091,524</u>	<u>\$ 1,223,650</u>
Liabilities:				
Amounts held for others	<u>\$ 1,271,617</u>	<u>\$ 2,043,557</u>	<u>\$ 2,091,524</u>	<u>\$ 1,223,650</u>
Totals – primary government:				
Assets:				
Cash and temporary investments	\$ 1,070,396	\$ 3,268,056	\$ 3,302,070	\$ 1,036,382
Due from other governmental units	266,887	734,692	730,131	271,448
Total assets	<u>\$ 1,337,283</u>	<u>\$ 4,002,748</u>	<u>\$ 4,032,201</u>	<u>\$ 1,307,830</u>
Liabilities:				
Accounts payable and accrued liabilities	\$ 65,666	\$ 1,991,731	\$ 1,973,217	\$ 84,180
Amounts held for others	1,271,617	2,043,557	2,091,524	1,223,650
Total liabilities	<u>\$ 1,337,283</u>	<u>\$ 4,035,288</u>	<u>\$ 4,064,741</u>	<u>\$ 1,307,830</u>

See accompanying independent auditors' report.

**County of James City, Virginia**  
**Statement of Net Position**  
**Discretely Presented Component Unit – Economic Development Authority**  
**June 30, 2016**

**Assets**

Current assets:	
Cash and short-term investments (note 2)	\$ 951,618
Interest receivable	317
Notes receivable	12,518
	<u>964,453</u>
Notes receivable, net of current portion	25,000
Capital assets (note 6):	
Nondepreciable	399,616
Depreciable, net	109,969
Capital assets, net	<u>509,585</u>
Total assets	<u><u>\$ 1,499,038</u></u>

**Liabilities and Net Position**

Current liabilities:	
Accounts payable	\$ 12,174
Due to James City County	1,148
	<u>13,322</u>
Net position:	
Net investment in capital assets	509,585
Unrestricted	976,131
Total net position	<u>1,485,716</u>
Total liabilities and net position	<u><u>\$ 1,499,038</u></u>

See accompanying independent auditors' report.

## County of James City, Virginia

Statement of Revenues, Expenses and Changes in Fund Net Position  
Discretely Presented Component Unit – Economic Development Authority  
Year ended June 30, 2016

Operating revenues:	
Lease income	\$ 14,975
Intergovernmental - County contribution	29,524
Bond fees	18,426
Launchpad member contributions	69,000
Launchpad landlord contributions	50,000
Launchpad client revenue	15,380
Miscellaneous revenue	20,021
Total operating revenues	<u>217,326</u>
Operating expenses:	
Community development	197,322
Depreciation and amortization	33,500
Leases	66,315
Note forgiveness	2,721
Other	398
Professional fees	16,693
Promotion	63,793
Telecommunications	3,364
Utilities	3,261
Total operating expenses	<u>387,367</u>
Operating loss	<u>(170,041)</u>
Nonoperating revenue:	
Interest income	9,895
Change in net position	(160,146)
Net position, beginning of year	1,645,862
Net position, end of year	<u>\$ 1,485,716</u>

See accompanying independent auditors' report.



**County of James City, Virginia**  
**Statement of Cash Flows**  
**Discretely Presented Component Unit – Economic Development Authority**  
**Year ended June 30, 2016**

Cash flows from operating activities:	
Receipts from customers	\$ 286,386
Payments to suppliers	(445,353)
Net cash used for operating activities	<u>(158,967)</u>
Cash flows from capital and related financing activities:	
Acquisition and construction of capital assets	<u>(137,315)</u>
Cash flows from investing activities:	
Interest received	<u>9,895</u>
Net decrease in cash and short-term investments	(286,387)
Cash and short-term investments, beginning of year	1,238,005
Cash and short-term investments, end of year	<u><u>\$ 951,618</u></u>
Reconciliation of operating loss to net cash used for operating activities:	
Operating loss	\$ (170,041)
Adjustments to reconcile operating loss to cash used by operating activities:	
Depreciation and amortization	33,500
Note forgiveness	2,721
Changes in assets and liabilities:	
Interest receivable	323
Bond fee receivable	4,807
Due from James City County	82,000
Notes receivable	(25,000)
Accounts payable	(88,016)
Due to James City County	739
Net cash used for operating activities	<u><u>\$ (158,967)</u></u>

See accompanying independent auditors' report.

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## **Statistical Section (Unaudited)**

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## County of James City, Virginia

### Statistical Section Overview

This part of the James City County's comprehensive annual financial report presents detailed information as a context for understanding what the information in the financial statements, note disclosures and required supplementary information says about the County's overall financial health.

#### **Financial Trends**

**Tables 1 - 4**

These tables contain trend information to help the reader understand how the County's financial performance and well-being has changed over time.

#### **Revenue Capacity**

**Tables 5 - 9**

These tables contain information to help the reader assess the factors affecting the County's ability to generate its property taxes.

#### **Debt Capacity**

**Tables 10 - 12**

These tables present information to help the reader assess the affordability of the County's current levels of outstanding debt and its ability to issue additional debt in the future.

#### **Demographic & Economic Information**

**Tables 13 - 14**

These tables offer demographic and economic indicators to help the reader understand the environment within which the County's financial activities take place and to help make comparisons over time and with other governments.

#### **Operation Information**

**Tables 15 - 18**

These tables contain information about the County's operations and resources to help the reader understand how the County's financial information relates to the services the County provides and the activities it performs.

**Sources:** *Unless otherwise noted, the information in these tables is derived from the comprehensive annual financial report for the relevant year.*

Table 1

**County of James City, Virginia**  
**Net Position by Component**  
**Last Ten Fiscal Years**

	2007	2008	2009	2010	2011	2012	2013	2014, as restated	2015	2016
Governmental activities:										
Net investment in capital assets	\$ 25,413,961	\$ 160,168,505	\$ 155,643,755	\$ 91,045,788	\$ 46,961,066	\$ 133,812,951	\$ 128,851,392	\$ 142,867,725	\$ 159,469,360	\$ 176,303,250
Restricted:										
Capital projects	124,329,355	6,498,734	15,716,245	41,296,767	20,005,183	21,226,338	35,010,428	8,320,449	1,551,387	-
Debt Service	-	-	-	-	-	-	-	-	-	1,222,336
Other purposes	6,214,172	433,272	394,831	813,685	-	-	-	-	-	1,899,944
Unrestricted	37,081,001	44,309,703	42,816,887	61,999,946	134,831,315	55,343,408	52,396,401	50,095,897	51,222,452	52,962,121
Total governmental activities net position	<u>\$ 193,038,489</u>	<u>\$ 211,410,214</u>	<u>\$ 214,571,718</u>	<u>\$ 195,156,186</u>	<u>\$ 201,797,564</u>	<u>\$ 210,382,697</u>	<u>\$ 216,258,221</u>	<u>\$ 201,284,071</u>	<u>\$ 212,243,199</u>	<u>\$ 232,387,651</u>
Business-type activity:										
Net investment in capital assets	\$ 132,145,149	\$ 134,569,730	\$ 134,314,330	\$ 135,071,435	\$ 135,641,623	\$ 135,110,313	\$ 139,966,206	\$ 137,922,955	\$ 137,173,064	\$ 139,312,785
Restricted:										
Capital projects	709,584	1,305,775	4,674,837	4,610,218	4,740,769	4,876,760	2,620,384	2,601,160	2,716,277	-
Debt Service	-	-	-	-	-	-	-	-	-	729,605
Unrestricted	33,151,555	36,275,425	36,591,088	36,430,621	34,057,874	34,462,629	30,189,025	29,159,119	32,903,518	37,014,202
Total business-type activity net position	<u>\$ 166,006,288</u>	<u>\$ 172,150,930</u>	<u>\$ 175,580,255</u>	<u>\$ 176,112,274</u>	<u>\$ 174,440,266</u>	<u>\$ 174,449,702</u>	<u>\$ 172,775,615</u>	<u>\$ 169,683,234</u>	<u>\$ 172,792,859</u>	<u>\$ 177,056,592</u>
Primary government:										
Net investment in capital assets	\$ 157,559,110	\$ 294,738,235	\$ 289,958,085	\$ 226,117,223	\$ 182,602,689	\$ 268,923,264	\$ 268,817,598	\$ 280,790,680	\$ 296,642,424	\$ 315,616,035
Restricted:										
Capital projects	125,038,939	7,804,509	20,391,082	45,906,985	24,745,952	26,103,098	37,630,812	10,921,609	4,267,664	-
Debt Service	-	-	-	-	-	-	-	-	-	1,951,941
Other purposes	6,214,172	433,272	394,831	813,685	-	-	-	-	-	1,899,944
Unrestricted	70,232,556	80,585,128	79,407,975	98,430,567	168,889,189	89,806,037	82,585,426	79,255,016	84,125,970	89,976,323
Total primary government net position	<u>\$ 359,044,777</u>	<u>\$ 383,561,144</u>	<u>\$ 390,151,973</u>	<u>\$ 371,268,460</u>	<u>\$ 376,237,830</u>	<u>\$ 384,832,399</u>	<u>\$ 389,033,836</u>	<u>\$ 370,967,305</u>	<u>\$ 385,036,058</u>	<u>\$ 409,444,243</u>

Table 2

**County of James City, Virginia**  
**Government-Wide Expenses and Program Revenues by Function**  
**Last Ten Fiscal Years**

	2007	2008	2009	2010	2011	2012	2013	2014, as restated	2015	2016
<b>Expenses:</b>										
Governmental activities:										
General government administration	\$ 16,835,827	\$ 18,873,491	\$ 21,347,839	\$ 23,962,622	\$ 23,061,671	\$ 17,103,421	\$ 14,304,134	\$ 9,249,487	\$ 19,278,147	\$ 8,807,519
Judicial administration	5,053,351	5,151,971	5,515,309	5,321,244	5,394,548	5,513,976	5,505,727	5,216,769	5,598,594	5,682,096
Public safety	23,500,193	24,704,720	23,267,505	22,477,094	15,003,864	23,768,668	27,750,476	25,964,996	23,996,973	30,842,789
Public works	3,361,025	5,990,017	5,925,566	19,240,014	7,332,972	6,119,246	7,963,622	7,244,367	6,985,073	7,986,260
Health and welfare	6,762,204	7,116,193	7,171,131	7,332,607	7,582,994	7,042,619	6,785,380	6,671,151	7,013,325	7,368,295
Education	63,874,870	75,880,133	83,021,945	81,441,066	83,737,593	82,082,568	84,309,615	85,595,145	87,713,464	87,508,710
Parks, recreation, and cultural	2,131,929	6,534,492	10,302,398	8,938,509	8,980,597	8,744,156	8,536,371	10,897,006	9,386,351	10,650,141
Community development	17,214,104	16,633,166	13,575,967	11,472,198	9,467,357	14,832,661	11,139,632	10,676,484	10,692,736	12,787,069
Storm costs	166,546	-	-	-	-	-	-	-	-	-
Interest on long-term debt	9,857,524	11,198,606	10,582,404	10,671,318	9,853,465	9,384,810	9,522,081	8,822,326	7,787,361	5,869,933
Total governmental activities expenses	<u>148,757,573</u>	<u>172,082,789</u>	<u>180,710,064</u>	<u>190,856,672</u>	<u>170,415,061</u>	<u>174,592,125</u>	<u>175,817,038</u>	<u>170,337,731</u>	<u>178,452,024</u>	<u>177,502,812</u>
Business-type activities:										
Service Authority	17,688,528	16,551,103	18,742,699	20,074,066	20,896,660	21,361,681	21,272,566	21,002,926	19,888,935	19,971,937
Stormwater Utility	-	882,254	1,466,080	-	-	-	-	-	-	-
Total business-type expenses	<u>17,688,528</u>	<u>17,433,357</u>	<u>20,208,779</u>	<u>20,074,066</u>	<u>20,896,660</u>	<u>21,361,681</u>	<u>21,272,566</u>	<u>21,002,926</u>	<u>21,002,926</u>	<u>19,971,937</u>
Total primary government expenses	<u>\$ 166,446,101</u>	<u>\$ 189,516,146</u>	<u>\$ 200,918,843</u>	<u>\$ 210,930,738</u>	<u>\$ 191,311,721</u>	<u>\$ 195,953,806</u>	<u>\$ 197,089,604</u>	<u>\$ 191,340,657</u>	<u>\$ 199,454,950</u>	<u>\$ 197,474,749</u>
<b>Program revenues:</b>										
Governmental activities:										
Charges for services:										
General government administration	\$ 8,362,971	\$ 7,996,663	\$ 7,342,625	\$ 6,594,623	\$ 6,845,682	\$ 7,246,961	\$ 7,436,450	\$ 7,758,238	\$ 8,047,642	\$ 7,547,746
Judicial administration	2,269,336	2,200,572	2,013,959	1,753,575	1,864,708	1,816,700	1,828,073	1,839,637	1,832,471	2,464,271
Public safety	1,879,979	2,950,693	2,714,769	2,704,770	2,874,239	3,172,589	3,463,159	3,330,101	3,455,177	3,558,411
Parks, recreation and cultural	2,565,177	2,539,147	2,493,973	2,547,762	2,494,536	2,527,532	2,708,063	2,854,489	3,109,047	3,563,791
Other	691,062	684,719	736,926	213,976	203,302	216,443	225,520	281,256	270,799	1,041,798
Total charges for services	<u>15,768,525</u>	<u>16,371,794</u>	<u>15,302,252</u>	<u>13,814,706</u>	<u>14,282,467</u>	<u>14,980,225</u>	<u>15,661,265</u>	<u>16,063,721</u>	<u>16,715,136</u>	<u>18,176,017</u>
Operating grants and contributions	22,448,104	24,593,841	25,171,862	23,161,669	32,049,993	33,019,242	31,354,415	30,572,383	31,767,861	32,181,074
Capital grants and contributions	5,039,467	3,087,066	804,605	423,581	434,823	2,035,365	1,312,352	1,286,856	346,627	269,439
Total governmental activities program revenues	<u>43,256,096</u>	<u>44,052,701</u>	<u>41,278,719</u>	<u>37,399,956</u>	<u>46,767,283</u>	<u>50,034,832</u>	<u>48,328,032</u>	<u>47,922,960</u>	<u>48,829,624</u>	<u>50,626,530</u>
Business-type activities:										
Charges for services	17,899,853	16,928,117	14,787,096	15,575,143	16,443,520	14,883,627	15,871,187	16,131,430	16,452,120	16,018,375
Operating grants and contributions	-	-	21,978	2,756	-	-	-	-	-	-
Capital grants and contributions	7,926,456	3,154,158	4,563,025	3,427,510	1,750,073	5,395,362	4,600,645	3,388,700	5,284,379	6,865,346
Total business-type activities program revenues	<u>25,826,309</u>	<u>20,082,275</u>	<u>19,372,099</u>	<u>19,005,409</u>	<u>18,193,593</u>	<u>20,278,989</u>	<u>20,471,832</u>	<u>19,520,130</u>	<u>21,736,499</u>	<u>22,883,721</u>
Total primary government program revenues	<u>\$ 69,082,405</u>	<u>\$ 64,134,976</u>	<u>\$ 60,650,818</u>	<u>\$ 56,405,365</u>	<u>\$ 64,960,876</u>	<u>\$ 70,313,821</u>	<u>\$ 68,799,864</u>	<u>\$ 67,443,090</u>	<u>\$ 70,566,123</u>	<u>\$ 73,510,251</u>
<b>Net (expense)/revenue:</b>										
Governmental activities	\$(105,501,477)	\$(128,030,088)	\$(139,431,345)	\$(153,456,716)	\$(123,647,778)	\$(124,557,293)	\$(127,489,006)	\$(122,414,771)	\$(129,622,400)	\$(126,876,282)
Business-type activities	8,137,781	2,648,918	(836,680)	(1,068,657)	(2,703,067)	(1,082,692)	(800,734)	(1,482,796)	1,847,564	2,911,784
Total primary government net expense	<u>\$ (97,363,696)</u>	<u>\$ (125,381,170)</u>	<u>\$ (140,268,025)</u>	<u>\$ (154,525,373)</u>	<u>\$ (126,350,845)</u>	<u>\$ (125,639,985)</u>	<u>\$ (128,289,740)</u>	<u>\$ (123,897,567)</u>	<u>\$ (127,774,836)</u>	<u>\$ (123,964,498)</u>
<b>General revenues and other changes in net position:</b>										
Governmental activities:										
Taxes:										
Property taxes, levied for general purposes	\$ 94,855,055	\$ 109,559,232	\$ 106,494,452	\$ 109,159,897	\$ 109,545,003	\$ 111,454,692	\$ 110,351,991	\$ 111,899,484	\$ 113,359,672	\$ 120,796,742
Other local taxes	21,273,019	20,486,124	18,869,282	18,355,067	19,100,086	20,006,069	21,208,061	21,435,046	22,771,626	24,027,667
Permits, fees and licenses	9,255,185	8,288,580	7,420,591	6,672,136	-	-	-	-	-	-
Interest on investment earnings	7,306,357	5,105,721	2,351,497	673,668	442,698	395,001	330,514	339,358	232,388	263,745
Gain on sale of capital assets	-	-	223,203	-	-	-	-	-	-	-
Sale of land	-	-	4,936,444	-	-	-	-	-	-	-
Miscellaneous	5,102,599	2,962,156	2,297,380	1,390,966	1,201,369	1,286,664	1,473,964	1,875,485	4,217,842	1,932,580
Total governmental activities	<u>137,792,215</u>	<u>146,401,813</u>	<u>142,592,849</u>	<u>136,251,734</u>	<u>130,289,156</u>	<u>133,142,426</u>	<u>133,364,530</u>	<u>135,549,373</u>	<u>140,581,528</u>	<u>147,020,734</u>
Business-type activities:										
Interest on investment earnings	1,503,939	2,004,957	3,669,266	956,056	509,675	351,929	(1,249,111)	267,061	248,207	519,767
Gain (loss) on sale of capital assets	-	181,615	74,226	-	-	-	-	-	-	-
Miscellaneous	1,378,725	1,309,152	522,513	644,620	521,384	740,199	375,758	520,504	1,013,854	832,182
Total business-type activities	<u>2,882,664</u>	<u>3,495,724</u>	<u>4,266,005</u>	<u>1,600,676</u>	<u>1,031,059</u>	<u>1,092,128</u>	<u>(873,353)</u>	<u>787,565</u>	<u>1,262,061</u>	<u>1,351,949</u>
Total primary government	<u>\$ 140,674,879</u>	<u>\$ 149,897,537</u>	<u>\$ 146,858,854</u>	<u>\$ 137,852,410</u>	<u>\$ 131,320,215</u>	<u>\$ 134,234,554</u>	<u>\$ 132,491,177</u>	<u>\$ 136,336,938</u>	<u>\$ 141,843,589</u>	<u>\$ 148,372,683</u>
<b>Change in net position:</b>										
Governmental activities	\$ 32,290,738	\$ 18,371,725	\$ 3,161,504	\$ (17,204,982)	\$ 6,641,378	\$ 8,585,133	\$ 5,875,524	\$ 13,134,602	\$ 10,959,128	\$ 20,144,452
Business-type activities	11,020,445	6,144,642	3,429,325	532,019	(1,672,008)	9,436	(1,674,087)	(695,231)	3,109,625	4,263,733
Total primary government	<u>\$ 43,311,183</u>	<u>\$ 24,516,367</u>	<u>\$ 6,590,829</u>	<u>\$ (16,672,963)</u>	<u>\$ 4,969,370</u>	<u>\$ 8,594,569</u>	<u>\$ 4,201,437</u>	<u>\$ 12,439,371</u>	<u>\$ 14,068,753</u>	<u>\$ 24,408,185</u>

(1) Reflects expenses from Exhibit 2.

**Table 3**

**County of James City, Virginia**  
**Fund Balances, Governmental Funds**  
**Last Ten Fiscal Years (1)**

	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>
General fund:										
Nonspendable:										
Inventory	\$ 291,364	\$ 288,734	\$ 264,969	\$ 276,083	\$ 298,757	\$ 346,545	\$ 361,682	\$ 370,536	\$ 340,709	\$ 336,498
Prepaid items	-	-	-	400,301	-	-	-	-	2,111	-
Assigned:										
General	452,420	407,496	437,744	1,161,093	2,678,655	6,089,236	6,595,137	6,544,809	5,991,822	7,860,584
Capital reserve	14,668,476	13,729,826	11,118,329	12,408,971	16,045,435	15,766,115	11,583,529	8,118,950	4,968,111	5,414,938
Unassigned:										
General	23,904,427	22,099,383	21,311,672	21,187,263	20,449,054	21,674,594	22,345,746	23,099,410	23,360,679	24,681,548
Total general fund	<u>\$ 39,316,687</u>	<u>\$ 36,525,439</u>	<u>\$ 33,132,714</u>	<u>\$ 35,433,711</u>	<u>\$ 39,471,901</u>	<u>\$ 43,876,490</u>	<u>\$ 40,886,094</u>	<u>\$ 38,133,705</u>	<u>\$ 34,663,432</u>	<u>\$ 38,293,568</u>
All other government funds:										
Nonspendable:										
Loans	\$ 170,886	\$ 144,538	\$ 129,862	\$ 137,301	\$ 155,940	\$ 167,249	\$ 173,501	\$ 601,707	\$ 540,850	\$ 765,745
Committed:										
Grants	-	-	-	-	741,113	962,702	128,700	240,900	69	-
Capital projects	113,413,284	95,085,866	80,344,173	52,626,696	25,150,586	21,226,338	35,010,428	8,320,449	1,551,387	28,907,491
Assigned:										
Capital reserve	-	-	-	-	-	-	-	14,466,602	16,178,748	18,699,213
Special revenue	2,880,529	4,248,738	5,206,988	4,317,141	3,216,855	3,964,888	4,819,570	3,904,010	4,416,559	5,345,438
Total all other governmental funds	<u>\$ 116,464,699</u>	<u>\$ 99,479,142</u>	<u>\$ 85,681,023</u>	<u>\$ 57,081,138</u>	<u>\$ 29,264,494</u>	<u>\$ 26,321,177</u>	<u>\$ 40,132,199</u>	<u>\$ 27,533,668</u>	<u>\$ 22,687,613</u>	<u>\$ 53,717,887</u>

(1) Governmental Accounting Standards Board (GASB) Statement No. 54, Fund Balance Reporting and Governmental Fund Type Definitions, which provides fund balance classifications that can be more consistently applied was adopted by the County as of July 1, 2010. Therefore, the fund balances for years 2007 through 2010 have been restated to reflect this standard.



Table 4

**County of James City, Virginia**  
**Changes in Fund Balances, Governmental Funds**  
**Last Ten Fiscal Years**

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<b>Revenues:</b>										
General property taxes	\$ 97,049,153	\$ 105,668,764	\$ 107,015,723	\$ 107,695,813	\$ 108,564,306	\$ 110,677,787	\$ 109,112,196	\$ 112,151,342	\$ 112,542,078	\$ 124,363,595
Other local taxes	21,273,019	20,486,124	18,869,282	18,355,067	19,100,086	20,006,069	21,208,061	21,435,046	22,771,626	24,027,667
Licenses, permits, and fees	9,255,185	8,288,580	7,420,591	6,672,136	7,055,618	7,487,105	7,623,652	8,134,299	8,443,821	8,779,496
Fines and forfeitures	321,443	366,606	348,846	296,866	334,633	274,198	295,355	293,625	271,615	309,278
Use of money and property	7,306,357	5,105,721	2,351,497	673,668	442,698	395,001	330,514	339,358	232,388	263,745
Charges for services	4,124,072	5,519,603	5,504,494	4,857,836	4,861,478	5,174,185	5,736,864	5,549,607	5,944,750	6,623,273
Intergovernmental	38,810,581	38,166,492	35,425,379	32,245,254	34,515,554	37,099,346	34,672,161	33,945,431	34,169,438	34,635,171
Miscellaneous	5,102,599	2,962,156	7,457,027	1,390,966	1,201,370	1,286,664	1,473,964	1,875,484	4,217,842	1,932,580
Total revenues	183,242,409	186,564,046	184,392,839	172,187,606	176,075,743	182,400,355	180,452,767	183,724,192	188,593,558	200,934,805
<b>Expenditures:</b>										
Storm costs	166,546	-	-	-	-	2,454,661	-	-	-	-
General government	10,363,474	9,564,540	8,756,912	8,323,563	8,265,513	8,669,692	9,399,885	9,643,858	9,432,889	9,678,060
Judicial administration	4,837,033	5,267,359	5,323,019	5,302,279	5,311,684	5,254,489	5,250,974	5,514,609	5,599,728	5,463,744
Public works	5,181,021	5,885,527	5,878,757	5,650,572	7,241,872	6,493,573	7,606,884	7,353,940	6,976,533	27,878,252
Health and welfare	6,762,204	7,116,193	7,171,131	7,332,607	7,582,994	7,042,619	6,785,380	7,061,327	7,193,841	7,082,202
Education	64,498,554	74,228,490	74,724,304	73,757,904	73,830,796	74,280,245	75,931,599	77,496,482	79,610,865	7,234,052
Parks, recreation, and cultural	9,825,513	10,045,603	10,100,822	9,509,436	9,180,161	9,163,941	9,075,083	9,899,159	9,858,887	79,825,974
Public safety	22,416,276	23,382,553	23,159,401	22,987,019	23,792,805	24,915,821	26,555,114	26,764,383	27,475,307	9,872,451
Community development	17,191,954	16,332,072	14,520,010	11,086,234	10,289,898	9,873,740	10,914,977	10,958,279	10,769,064	10,353,844
Nondepartmental	1,473,817	2,492,546	1,502,034	556,381	(266,150)	1,265,803	966,806	721,744	525,433	1,183,538
Debt service (2):										
Principal	14,488,702	14,245,257	14,363,935	15,077,900	14,830,524	14,787,955	23,473,305	16,417,326	16,862,695	17,122,377
Interest	9,857,524	11,253,935	10,625,010	10,365,470	9,853,465	9,384,810	9,522,081	8,822,326	7,787,361	6,188,222
Bond issuance costs	192,900	-	-	101,667	20,003	-	253,624	-	112,863	1,173,546
Capital outlay (1)	76,594,343	26,526,776	25,458,348	43,005,939	30,042,723	15,023,734	12,586,344	18,421,679	13,424,741	12,647,985
Total expenditures	243,849,861	206,340,851	201,583,683	213,056,971	199,976,288	188,611,083	198,322,056	199,075,112	195,630,207	195,704,247
Excess (deficiency) of revenues over (under) expenditures	(60,607,452)	(19,776,805)	(17,190,844)	(40,869,365)	(23,900,545)	(6,210,728)	(17,869,289)	(15,350,920)	(7,036,649)	5,230,558
<b>Other financing sources:</b>										
Transfers in	32,695,840	33,046,784	30,904,124	29,093,987	28,784,026	29,412,515	33,965,148	34,729,940	35,271,660	40,956,217
Transfers out	(32,695,840)	(33,046,784)	(30,904,124)	(29,093,987)	(28,784,026)	(29,412,515)	(33,965,148)	(34,729,940)	(35,271,660)	(40,956,217)
Issuance of debt	116,775,000	-	-	14,935,000	4,820,000	7,672,000	26,380,000	-	34,185,000	91,665,000
Premiums on bonds issued	7,830,141	-	-	12,809	321,834	-	2,309,915	-	3,907,273	10,930,294
Payment to refunded bond escrow agent	-	-	-	-	(5,019,743)	-	-	-	(39,371,952)	(73,165,442)
Total other financing sources	124,605,141	-	-	14,947,809	122,091	7,672,000	28,689,915	-	(1,279,679)	29,429,852
Net change in fund balances	\$ 63,997,689	\$ (19,776,805)	\$ (17,190,844)	\$ (25,921,556)	\$ (23,778,454)	\$ 1,461,272	\$ 10,820,626	\$ (15,350,920)	\$ (8,316,328)	\$ 34,660,410
<b>Debt service as a percentage of noncapital expenditures</b>	15.62%	14.48%	13.92%	13.58%	14.27%	13.65%	17.55%	13.97%	13.35%	12.56%

(1) Including operating transfers to capital projects.

(2) Noncapital expenditures equals total expenditures less amounts for capitalized assets on the government-wide statement of net position.

Table 5

**County of James City, Virginia**  
Assessed Value and Actual Value of Taxable Property  
Last Ten Fiscal Years

<b>Fiscal year</b>	<b>Total real property</b>	<b>General personal property</b>	<b>Machinery and tools</b>	<b>Mobile homes</b>	<b>Total Personal property</b>	<b>Public service</b>	<b>Total assessed value</b>	<b>Total direct tax rate</b>
2007	\$9,821,638,100	\$ 595,277,728	\$ 122,197,566	\$ 12,675,461	\$ 730,150,755	\$ 152,475,702	\$10,704,264,557	\$ 4.77
2008	10,672,714,225	623,336,868	125,136,293	12,537,160	761,010,321	176,428,097	11,610,152,643	4.77
2009	11,005,655,000	610,316,169	128,696,107	11,641,959	750,654,235	184,750,991	11,941,060,226	4.77
2010	11,155,493,300	598,149,387	132,052,632	10,994,266	741,196,285	196,289,584	12,092,979,169	4.77
2011	11,172,929,700	621,471,862	137,178,668	10,101,067	768,751,597	210,802,200	12,152,483,497	4.77
2012	11,316,807,900	652,561,625	139,945,157	9,719,184	802,225,966	222,670,868	12,341,704,734	4.77
2013	10,921,180,200	687,058,440	141,877,157	9,209,475	838,145,072	232,588,225	11,991,913,497	4.77
2014	11,067,756,400	710,720,870	144,950,305	8,346,659	864,017,834	233,973,337	12,165,747,571	4.77
2015	11,148,405,300	783,249,672	144,694,099	7,901,856	935,845,627	336,370,602	12,420,621,529	4.77
2016	11,352,153,219	770,378,346	145,094,277	7,533,858	923,006,481	236,177,856	12,511,337,556	4.84

Source: Real Estate Assessments and Commissioner of the Revenue, James City County.

Note: Tax rate is per \$100 of assessed value.

**Table 6**

**County of James City, Virginia**  
**Tax Rates**  
**Last Ten Fiscal Years**

<b>Fiscal year</b>	<b>Real estate tax (1)</b>	<b>Personal property tax (1)</b>	<b>Room tax</b>	<b>Meal tax</b>	<b>Retail sales tax (2)</b>	<b>Total direct tax rate</b>
2007	\$ 0.77	\$ 4.00	\$ 5.00	\$ 4.00	\$ 1.00	\$ 4.77
2008	0.77	4.00	5.00	4.00	1.00	4.77
2009	0.77	4.00	5.00	4.00	1.00	4.77
2010	0.77	4.00	5.00	4.00	1.00	4.77
2011	0.77	4.00	5.00	4.00	1.00	4.77
2012	0.77	4.00	5.00	4.00	1.00	4.77
2013	0.77	4.00	5.00	4.00	1.00	4.77
2014	0.77	4.00	5.00	4.00	1.00	4.77
2015	0.77	4.00	5.00	4.00	1.00	4.77
2016	0.84	4.00	5.00	4.00	1.00	4.84

(1) Per \$100 assessed value

(2) Collected by the State and remitted to the County monthly

(3) There are no overlapping taxes in the rates disclosed in this table.

Table 7

**County of James City, Virginia**  
Principal Tax Payers  
Current Year and Nine Years Ago

<b>Principal Property Tax Payers</b>						
	<b>2016</b>			<b>2007</b>		
	<b>Property taxes assessed</b>	<b>Rank</b>	<b>Percentage of County total</b>	<b>Property taxes assessed</b>	<b>Rank</b>	<b>Percentage of County total</b>
Anheuser-Busch, Inc.	\$ 5,242,873	1	3.92%	\$ 4,626,557	1	4.36%
Seaworld Parks, LLC	2,174,333	2	1.62%			
Premium Outlets of Williamsburg (1)	1,175,322	3	0.88%			
Wal-Mart, Inc.	1,156,964	4	0.86%	1,093,159	3	1.03%
Virginia Electric & Power Company	1,066,991	5	0.80%	548,665	10	0.52%
Powhatan Plantation Owners Association	1,004,739	6	0.75%	922,269	4	0.87%
Williamsburg Landing, Inc.	813,944	7	0.61%	559,475	9	0.53%
Williamsburg Plantation Owners Association	717,088	8	0.54%	586,816	7	0.55%
Ball Metal Container	703,135	9	0.53%	621,644	6	0.59%
Virginia United Methodist Homes, Inc.	657,115	10	0.49%			
Busch Entertainment Corp				1,438,461	2	1.36%
Busch Properties				676,616	5	0.64%
Manor Houses Association				571,625	8	0.54%
<b>Total</b>	<b>\$ 14,712,504</b>		<b>11.00%</b>	<b>\$ 11,645,287</b>		<b>10.99%</b>

Source: Commissioner of the Revenue

(1) Premium Outlets includes two related parties, Williamsburg Outlets, LLC and Williamsburg Mazel, LLC. They are combined in this table to show the value of the shopping center.

<b>Principal Personal Property Tax Payers</b>			
	<b>2016</b>		
	<b>Property taxes assessed</b>	<b>Rank</b>	<b>Percentage of County total</b>
Anheuser-Busch, Inc.	\$ 4,061,173	1	11.09%
Seaworld Parks, LLC	1,605,223	2	4.38%
Ball Metal Container	561,906	3	1.53%
Printpack, Inc.	470,525	4	1.28%
Owens-Brockway Glass Container	448,168	5	1.22%
Wal-Mart, Inc.	316,964	6	0.87%
Cox Communications of Hampton Roads	248,428	7	0.68%
Toyota Lease Trust	209,857	8	0.57%
HVT, Inc.	137,713	9	0.38%
Lumber Liquidators Prod, LLC	103,993	10	0.28%
<b>Total</b>	<b>\$ 8,163,950</b>		<b>22.28%</b>

Source: Commissioner of the Revenue

(1) Fiscal year 2010 was the first year this information was reported and therefore, information for fiscal year 2007 is not available.

<b>Principal Real Estate Property Tax Payers</b>			
	<b>2016</b>		
	<b>Property taxes assessed</b>	<b>Rank</b>	<b>Percentage of County total</b>
Anheuser-Busch, Inc.	\$ 1,181,700	1	1.21%
Premium Outlets of Williamsburg (2)	1,175,322	2	1.21%
Virginia Electric & Power Company	1,064,257	3	1.09%
Powhatan Plantation Owners Association	990,920	4	1.02%
Wal-Mart, Inc.	840,000	5	0.86%
Williamsburg Landing, Inc.	738,064	6	0.76%
Williamsburg Plantation Owners Association	709,121	7	0.73%
Manor Houses Associates	651,006	8	0.67%
Virginia United Methodist Homes, Inc.	630,216	9	0.65%
Seaworld Parks, LLC	569,110	10	0.61%
<b>Total</b>	<b>\$ 8,549,716</b>		<b>8.81%</b>

Source: Commissioner of the Revenue

(1) Fiscal year 2010 was the first year this information was reported and therefore, information for fiscal year 2007 is not available.

(2) Premium Outlets includes two related parties, Williamsburg Outlets, LLC and Williamsburg Mazel, LLC. They are combined in this table to show the value of the shopping center.

Table 8

**County of James City, Virginia**  
**Property Tax Levies and Collections**  
**Last Ten Fiscal Years**

<b>Fiscal year</b>	<b>Taxes levied for the fiscal year</b>	<b>Collected within the fiscal year of the levy</b>		<b>Collections in subsequent years</b>	<b>Total collections to date</b>	
		<b>Amount (1)</b>	<b>Percentage of levy</b>		<b>Amount</b>	<b>Percentage of levy</b>
2007	\$ 105,811,045	\$ 88,752,007	83.88%	\$ 16,982,131	\$ 105,734,138	99.93%
2008	114,064,606	96,586,301	84.68%	17,371,259	113,957,560	99.91%
2009	114,856,453	97,895,837	85.23%	16,824,283	114,720,120	99.88%
2010	116,316,624	99,101,581	85.20%	16,968,862	116,070,443	99.79%
2011	117,215,610	100,889,563	86.07%	15,946,267	116,835,830	99.68%
2012	121,312,654	101,482,234	83.65%	19,498,752	120,980,986	99.73%
2013	117,414,914	98,431,581	83.83%	18,747,396	117,178,977	99.80%
2014	118,804,815	100,523,591	84.61%	17,810,298	118,333,889	99.60%
2015	116,313,370	101,071,578	86.90%	13,981,851	115,053,429	98.92%
2016	122,270,532	106,867,113	87.40%	-	106,867,113	87.40%

Source: Treasurer, James City County

(1) Collections related to fiscal year levies includes PPTRA claimed by taxpayers.

Table 9

**County of James City, Virginia**  
**Taxable Sales by Category**  
**Last Ten Fiscal Years**

	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
Apparel stores	\$ 129,014,904	\$ 140,648,465	\$ 167,950,739	\$ 175,885,946	\$ 183,244,309	\$ 198,116,199	\$ 206,585,825	\$ 213,354,143	\$ 194,143,321	\$ 194,900,831
Automotive dealers, supplies and repair	9,958,680	10,626,082	14,567,840	12,949,521	17,019,548	24,017,913	21,792,904	21,122,470	20,893,120	23,582,443
Building materials, machinery and equipment	70,536,701	48,814,343	31,817,138	42,771,225	16,631,597	20,676,668	19,518,301	18,093,198	18,046,110	20,957,143
Eating and drinking establishments	64,500,250	61,733,750	67,796,606	89,306,904	91,552,799	103,724,814	105,121,625	116,111,215	112,320,430	116,764,293
Food stores	121,052,401	131,331,534	136,126,199	109,487,554	135,172,441	148,451,817	160,043,266	169,193,864	172,591,926	178,533,330
Furniture, home furnishings and household equipment	39,426,034	40,492,354	34,053,707	21,986,380	22,119,421	23,420,749	25,032,485	31,239,589	33,524,596	34,915,814
General merchandise	89,788,633	100,039,981	91,584,624	95,560,600	87,029,287	92,522,324	103,860,834	116,426,211	133,412,703	138,011,583
Lodging	58,643,553	55,764,241	47,796,238	39,984,592	32,414,685	14,172,343	16,041,031	15,276,927	20,352,083	22,528,553
Other outlets	23,256,354	27,416,608	26,130,061	25,930,390	29,255,159	39,511,197	38,200,453	38,297,074	32,410,167	31,055,094
Other retail stores, dealers, trades and services	205,937,385	212,079,549	182,317,205	163,456,030	188,073,849	204,974,337	208,856,679	205,764,580	231,051,462	250,886,839
<b>Total</b>	<b>\$ 812,114,895</b>	<b>\$ 828,946,907</b>	<b>\$ 800,140,357</b>	<b>\$ 777,319,142</b>	<b>\$ 802,513,095</b>	<b>\$ 869,588,361</b>	<b>\$ 905,053,403</b>	<b>\$ 944,879,271</b>	<b>\$ 968,745,918</b>	<b>\$1,012,135,923</b>

Source: Weldon Cooper Center

Note: Some data is not categorized to protect confidentiality of the business.

Table 10

**County of James City, Virginia**  
Ratios of Outstanding Debt by Type  
Last Ten Fiscal Years

Fiscal year	Governmental activities					Business-type activity	Total primary government	Percentage of personal income (1)	Per capita personal income (2)
	General obligation bonds	Capital leases	Loan payable	Lease revenue bonds	Total	Revenue bonds			
2007	\$ 126,590,560	\$ 13,038,190	\$ 125,000	\$ 112,780,000	\$ 252,533,750	\$ 12,133,794	\$ 264,667,544	13.76	\$ 47,825
2008	118,369,735	12,126,298	-	107,200,000	237,696,033	11,212,670	248,908,703	16.01	51,274
2009	109,974,105	11,170,533	-	101,595,000	222,739,638	37,386,546	260,126,184	14.77	48,129
2010	101,414,765	10,169,895	-	110,275,000	221,859,660	35,950,423	257,810,083	15.66	49,563
2011	93,283,624	10,285,522	-	104,055,000	207,624,146	34,469,298	242,093,444	18.21	53,364
2012	86,134,103	9,235,074	-	104,472,000	199,841,177	32,938,174	232,779,351	19.81	54,796
2013	80,004,294	1,098,854	-	123,034,000	204,137,148	25,185,000	229,322,148	21.01	56,208
2014	72,164,244	984,528	-	114,416,000	187,564,772	24,660,000	212,224,772	23.63	57,465
2015	65,458,589	858,833	-	103,604,000	169,921,422	24,115,000	194,036,422	**	**
2016	49,844,842	728,456	-	130,451,552	181,024,850	22,595,000	203,619,850	**	**

(1) Based on personal income from Table 13

(2) From Table 13, calendar year basis

\*\* Statistics not yet available

Table 11

**County of James City, Virginia**  
Debt Statistics  
Last Ten Fiscal Years

**Ratio of Net General Bonded Debt to Assessed Value and Net Bonded Debt Per Capita**

Fiscal year	Population (1)	Assessed value (2)	Gross bonded debt (3) (4)	Less debt service monies available (5)	Net bonded debt	Ratio of net bonded debt to assessed value	Net bonded debt per capita
2007	60,867	\$ 10,704,264,557	\$ 126,590,560	\$ 1,832,039	\$ 124,758,521	1.17	\$ 2,050
2008	61,195	11,610,152,643	118,369,735	1,890,734	116,479,001	1.00	1,903
2009	63,135	11,941,060,226	109,974,105	1,706,525	108,267,580	0.91	1,715
2010	67,745	12,092,979,169	101,414,765	2,921,044	98,493,721	0.81	1,454
2011	68,500	12,152,483,497	93,283,624	2,921,037	90,362,587	0.74	1,319
2012	69,451	12,341,704,734	86,134,103	2,920,981	83,213,122	0.67	1,198
2013	69,945	11,991,913,497	80,004,294	2,920,538	77,083,756	0.64	1,102
2014	70,711	12,165,747,571	72,164,244	2,920,369	69,243,875	0.57	979
2015	72,187	12,420,621,529	65,458,589	1,219,616	64,238,973	0.52	890
2016	74,289	12,511,337,556	49,844,842	1,221,521	48,623,321	0.39	655

(1) Planning Division - population figure is the estimate from the second quarter of the year

(2) From Table 5

(3) Includes all long-term general obligation bonded debt, bond anticipation notes, and literary fund loans

(4) Includes general obligation debt payable from enterprise revenues

(5) Debt Service Reserve Funds held by a trustee

**Ratio of Annual Debt Service Expenditures for General Bonded Debt (1) to Total General Government Expenditures and Revenues**

Fiscal year	Principal (1) (5)	Interest (2)	Total debt service (4)	Total general governmental expenditures (3)	Ratio of debt service to general total governmental expenditures	Total general governmental revenues (3)	Ratio of debt service to general total governmental revenues
2007	\$ 14,488,702	\$ 9,857,524	\$ 24,346,226	\$ 199,622,475	12.20	\$ 204,284,050	11.92
2008	14,245,257	11,253,935	25,499,192	212,383,260	12.01	219,920,086	11.59
2009	14,363,935	10,625,010	24,988,945	208,510,363	11.98	216,835,334	11.52
2010	15,077,900	10,147,353	25,225,253	198,552,653	12.70	200,014,429	12.61
2011	14,830,524	9,853,465	24,683,989	198,893,176	12.41	201,684,905	12.24
2012	14,787,955	9,384,810	24,172,765	201,078,316	12.02	206,996,888	11.68
2013	23,473,305	9,522,081	32,995,386	215,304,486	15.32	205,082,111	16.09
2014	16,417,326	8,822,326	25,239,652	211,866,777	11.91	209,633,075	12.04
2015	16,862,695	8,781,971	25,644,666	218,984,810	11.71	213,074,589	12.04
2016	17,122,377	6,188,222	23,310,599	226,845,449	10.28	239,451,445	9.74

(1) General obligation bonds reported in the enterprise funds and special assessment debt with government commitment have been excluded.

(2) Excludes bond issuance and other costs.

(3) Reflects recurring expenditures and revenues included in the General Fund, Debt Service Fund, Special Revenue funds, operating transfers to Capital Projects and the County's percentage of discretely presented Component Unit – Public Schools Operating Fund.

(4) The County has no overlapping debt.

(5) In fiscal year 2013, principal payments increased by \$7,380,000 related to the refinancing of a capital lease. Proceeds from the issuance of new debt were used for these principal payments.



Table 12

## County of James City, Virginia

Pledged Revenue Coverage

James City Service Authority

Last Ten Fiscal Years

Fiscal year	Gross revenue	(1) Operating expenses	Net revenue available for debt service	(2) Debt service requirements			Coverage
				Principal	Interest	Total	
2007	\$ 20,782,517	\$ 9,420,318	\$ 11,362,199	\$ 880,000	\$ 503,631	\$ 1,383,631	8.21
2008	18,115,871	10,205,599	7,910,272	905,000	479,431	1,384,431	5.71
2009	19,034,715	10,953,522	8,081,193	1,395,000	1,637,050	3,032,050	2.67
2010	17,178,575	10,985,233	6,193,342	1,440,000	1,590,562	3,030,562	2.04
2011	17,474,579	12,091,472	5,383,107	1,490,000	1,537,750	3,027,750	1.78
2012	15,975,755	12,414,605	3,561,150	1,545,000	1,483,100	3,028,100	1.18
2013	14,997,834	12,407,414	2,590,420	525,000	1,119,306	1,644,306	1.58
2014	16,918,995	12,218,405	4,700,590	545,000	1,100,931	1,645,931	2.86
2015	17,714,181	10,982,443	6,731,738	565,000	1,081,856	1,646,856	4.09
2016	17,370,324	10,701,704	6,668,620	785,000	571,161	1,356,161	4.92

(1) Total operating expenses exclusive of depreciation.

(2) The Authority has no debt margin or overlapping debt.

Table 13

**County of James City, Virginia**  
Demographic and Economic Statistics  
Last Ten Years

<b>Calendar year</b>	<b>Population (1)</b>	<b>Personal income (2)</b>	<b>Per capita personal income (2)</b>	<b>Unemployment percentage (1)</b>
2007	60,867	\$ 3,641,841,000	\$ 47,825	2.5%
2008	61,195	3,985,612,000	51,274	3.2%
2009	63,135	3,840,912,000	48,129	5.4%
2010	67,745	4,037,513,000	49,563	6.3%
2011	68,500	4,408,223,000	53,364	6.1%
2012	69,451	4,610,247,000	54,796	5.7%
2013	70,376	4,817,524,000	56,208	5.3%
2014	71,254	5,015,208,000	57,465	4.9%
2015	72,682	**	**	4.3%
2016	**	**	**	**

(1) Planning Division, supplemented by data from Virginia Employment Commission (<http://www.vec.virginia.gov/>)

(2) Data from the Bureau of Economic Analysis (<http://www.bea.gov/>), and has combined data for James City County and the City of Williamsburg

\*\* Statistics not yet available

<b>Median Household Income</b>
--------------------------------

<b>Calendar year</b>	<b>James City County</b>	<b>Commonwealth of Virginia</b>	<b>United States</b>
2007	\$ 70,487	\$ 59,575	\$ 50,740
2008	76,705	61,210	52,029
2009	72,902	59,372	50,221
2010	74,241	60,665	50,046
2011	73,575	61,877	50,502
2012	78,396	61,782	51,371
2013	75,806	62,745	52,250
2014	75,926	64,923	53,657
2015	**	**	**
2016	**	**	**

Source: U.S. Census Bureau, Small Area Income and Poverty Estimates

\*\* Statistics not yet available

<b>Households and Population</b>
----------------------------------

<b>Fiscal year</b>	<b>Food stamp households</b>	<b>Total households*</b>	<b>Percentage of food stamp households</b>
2007	927	26,507	3.5%
2008	965	27,217	3.5%
2009	1,224	27,567	4.4%
2010	1,638	27,003	6.1%
2011	1,840	27,375	6.7%
2012	2,015	27,707	7.3%
2013	2,236	28,090	8.0%
2014	2,211	28,415	7.8%
2015	2,006	28,986	6.9%
2016	1,875	29,390	6.4%

Source: Social Services Department and Planning Division

\* Reflects the number of occupied housing

(Continued)

Table 13 (Continued)

**County of James City, Virginia**  
Demographic and Economic Statistics

<b>Year</b>	<b>Population</b>	<b>Percentage Increase</b>
1950	6,317	28.7%
1960	11,539	82.7%
1970	17,853	54.7%
1980	22,763	27.5%
1990	34,859	53.1%
2000	48,102	38.0%
2010	67,009	39.3%

Source: U.S. Census

<b>Age Distribution</b>										
<b>Age</b>	<b>1970</b>		<b>1980</b>		<b>1990</b>		<b>2000</b>		<b>2010</b>	
0-14	5,226	29.3%	5,008	22.0%	7,211	20.7%	9,254	19.2%	11,608	17.3%
15-19	1,448	8.1%	2,276	10.0%	2,147	6.2%	2,838	5.9%	4,120	6.1%
20-29	2,915	16.3%	3,870	17.0%	5,330	15.3%	-	0.0%	-	0.0%
20-34	*	*	*	*	*	*	7,484	15.6%	9,741	14.5%
30-44	3,172	17.8%	4,780	21.0%	8,901	25.5%	-	0.0%	-	0.0%
35-44	*	*	*	*	*	*	7,866	16.4%	8,133	12.1%
45-64	3,531	19.8%	5,235	23.0%	7,255	20.8%	12,563	26.1%	19,537	29.2%
65+	1,561	8.7%	1,594	7.0%	4,015	11.5%	8,097	16.8%	13,870	20.7%
	17,853	100%	22,763	100%	34,859	100%	48,102	100%	67,009	100%

Source: U.S. Census Bureau

\* New categories, as defined by the U.S. Census

<b>Households and Population</b>			
<b>Fiscal year</b>	<b>Number of households*</b>	<b>Total households population**</b>	<b>Persons per household</b>
2007	26,507	59,905	2.26
2008	27,217	61,511	2.26
2009	27,567	62,301	2.26
2010	27,003	66,157	2.45
2011	27,375	67,068	2.45
2012	27,707	67,882	2.45
2013	28,090	68,821	2.45
2014	28,415	69,616	2.45
2015	28,986	71,015	2.45
2016	29,390	72,005	2.45

Source: Planning Division

\* Reflects the number of occupied housing

\*\* Reflects total population less group quarter population, such as nursing facilities, Eastern State Hospital, a state mental facility, Middle Peninsula Juvenile Detention Center and the Virginia Peninsula Regional Jail.

<b>Unemployment Rate and Labor Force</b>				
<b>Calendar year</b>	<b>Civilian labor force</b>	<b>Number employed</b>	<b>Number unemployed</b>	<b>Unemployment rate</b>
2007	31,433	30,571	772	2.5%
2008	32,414	31,386	1,028	3.2%
2009	32,172	30,447	1,725	5.4%
2010	32,243	30,205	2,038	6.3%
2011	32,605	30,618	1,987	6.1%
2012	33,000	31,116	1,884	5.7%
2013	33,714	31,920	1,794	5.3%
2014	34,743	33,039	1,704	4.9%
2015	34,406	32,924	1,482	4.3%
2016	**	**	**	**

Source: Planning Division, supplemented by data from Virginia Workforce Connection

\*\* Statistics not yet available

Table 14

**County of James City, Virginia**  
Principal Employers in James City County  
Current Year and Nine Years Ago

	2016			2007		
	<u>Employees</u>	<u>Rank</u>	<u>Percent of total County employment</u>	<u>Employees</u>	<u>Rank</u>	<u>Percent of total County employment</u>
Principal Public/Private Employers:						
Busch Gardens	1000+	1	**	1000+	1	21.85%
Williamsburg-James City County Public Schools	1000+	2	4.86%	1000+	2	6.23%
Eastern State Hospital	500-999	3	2.73%	1000+	3	3.68%
James City County	500-999	4	2.28%	500-999	6	2.53%
Wal-Mart Distribution Center	500-999	5	1.82%	500-999	7	2.35%
Anheuser-Busch, Inc.	500-999	6	1.67%	500-999	5	3.08%
Riverside Regional Medical Center	500-999	7	1.52%			
Kingsmill Resort	250-499	8	1.37%			
Owens & Minor	250-499	9	1.21%			
Jamestown-Yorktown Foundation	250-499	10	0.91%	500-999	8	1.91%
Williamsburg Landing				250-499	10	1.03%
Busch Properties, Inc.				500-999	4	3.32%
Avid Medical				250-499	9	1.46%
Total			<u>18.37%</u>			<u>47.44%</u>

Source: Economic Development, James City County and Virginia Employment Commission

\*\* Busch Gardens became publicly traded during fiscal year 2013, and information is not available.

Table 15

**County of James City, Virginia**  
Full-time County Government Employees by Function/Program  
Last Ten Fiscal Years

Function/program	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Administrative:										
Board of supervisors	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.5
County administration	2.5	2.5	2.5	2.5	2.5	2.5	3.0	3.0	3.0	3.0
Satellite services	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
County attorney	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Communications	7.5	7.5	6.5	6.5	7.5	7.5	7.0	7.0	7.0	8.0
Economic development	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	3.5
Voter registration and elections	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Human resources:										
Human resources	5.0	5.0	5.0	4.0	4.0	7.0	7.0	7.0	7.0	7.0
Training and Quality Performance	3.0	3.0	3.0	3.0	3.0	-	-	-	-	-
Financial administration:										
Accounting	9.0	9.0	9.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Commissioner of the revenue	13.0	13.0	13.0	12.0	11.0	11.0	11.0	11.0	11.0	11.0
Financial and management services	7.0	7.0	7.0	7.0	7.0	6.0	7.0	7.0	7.0	7.0
Purchasing	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0
Real estate assessments	12.0	13.0	13.0	11.0	10.0	9.0	10.0	10.0	10.0	10.0
Treasurer	13.0	13.0	13.0	13.0	12.0	11.0	12.0	12.0	13.0	13.0
Information resources management	20.0	21.0	21.0	21.0	20.0	21.0	21.0	21.0	21.0	21.0
General services:										
Facilities maintenance	18.0	19.0	19.0	18.0	17.0	17.0	18.0	18.0	18.0	18.0
Fleet and equipment	8.0	8.0	8.0	7.0	8.0	8.0	8.0	8.0	8.0	8.0
General and capital services	6.5	6.5	6.5	6.5	5.5	7.0	8.0	8.0	7.0	7.0
Grounds maintenance	16.0	21.0	21.0	20.0	22.0	22.0	24.0	25.0	25.0	25.0
Solid waste management	7.0	7.0	7.0	7.0	6.0	6.0	5.0	5.0	5.0	5.0
Stormwater	-	9.0	8.5	6.5	6.5	4.0	4.0	4.0	6.0	8.0
Development management:										
Building safety and permits	20.0	21.0	19.0	15.0	13.0	13.0	13.0	13.0	14.0	14.0
Development management	3.5	4.5	2.5	2.5	2.5	2.5	2.0	2.0	2.0	2.0
Engineering and resource protection	15.0	15.0	15.0	14.0	12.0	13.0	12.0	12.0	11.0	11.0
Mosquito control	1.0	1.0	1.0	-	-	-	-	-	-	-
Planning	17.5	19.5	19.5	17.5	12.5	10.5	10.0	10.0	10.0	10.0
Zoning enforcement	-	-	-	-	3.0	4.0	4.0	4.0	4.0	4.0
Judicial:										
Courts/judicial	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Courthouse	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Clerk of the circuit court	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	11.0	11.0
Commonwealth's attorney	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Sheriff	18.0	18.0	18.0	18.0	16.0	16.0	16.0	16.0	16.0	16.0
Public safety:										
Animal control	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Emergency communications	27.0	27.0	27.0	27.0	26.0	26.0	26.0	26.0	29.0	29.0
Emergency management	1.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	2.0
Emergency medical services	24.0	25.0	25.0	25.0	25.0	-	-	-	-	-
Fire	80.0	83.0	86.0	86.0	86.0	110.0	110.0	110.0	114.0	115.0
Police	87.0	94.0	97.0	98.0	98.0	98.0	98.0	99.0	100.0	103.0
Parks and recreation	52.0	56.0	54.0	53.0	48.0	49.0	48.0	48.0	47.0	49.0
Community services:										
Community services	4.0	4.0	3.0	3.0	-	-	-	-	-	-
Cooperative extension service	2.0	2.0	2.0	2.0	2.0	2.0	-	-	-	-
Neighborhood connections	4.0	4.0	4.0	2.0	-	-	-	-	-	-
Total general fund	548.5	586.5	584.0	563.0	541.0	541.0	542.0	544.0	552.0	559.0
Other services:										
Community development	9.5	9.5	9.5	8.5	9.5	9.5	9.0	9.0	8.0	8.0
JCSA	87.0	88.0	90.0	90.0	86.0	89.0	89.0	89.0	89.0	89.0
Social services	53.5	57.5	57.5	52.5	52.5	52.5	52.0	51.0	51.0	51.0
Colonial community corrections	13.0	13.0	11.0	11.0	12.0	12.0	12.0	13.0	13.0	13.0
Special projects/grants	4.0	5.0	6.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0
Grand total all funds	715.5	759.5	758.0	730.0	704.0	707.0	707.0	709.0	716.0	723.0

Source: Financial and Management Services

Table 16

**County of James City, Virginia**  
**Operating Indicators by Function/Program**  
**Last Ten Fiscal Years**

Function/program	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Police:										
Calls for service	21,897	21,320	21,694	21,762	21,129	20,879	19,539	20,175	20,875	22,225
Major crimes reported	971	1,007	1,060	1,080	1,071	1,092	999	999	1,182	1,260
Major crimes cleared	351	343	363	396	325	324	317	247	335	390
Fire:										
Fire/other responses	3,064	3,575	2,969	2,922	2,786	3,178	2,822	3,065	3,153	3,302
Inspections	1,486	2,334	1,156	2,037	1,735	1,804	1,910	1,829	1,320	1,255
EMS responses	5,219	4,851	5,276	5,573	5,956	6,147	6,446	6,450	6,666	7,039
Refuse collection:										
Refuse collected (tons per day)	12	9	8	8	9	10	12	11	10	11
Recyclables collected (tons per day)	1	1	1	1	1	1	1	1	1	1
Recyclables collected curbside (tons per day)	N/A	N/A	N/A	N/A	23	22	22	22	23	24
Parks and recreation:										
Community center admissions	315,480	409,706	353,862	394,757	463,491	464,358	511,976	444,755	400,367	401,111
Park attendance	1,151,574	1,236,968	1,368,462	1,349,550	1,708,976	2,253,617	2,163,533	2,428,894	2,595,974	2,817,348
Participants in programs offered	250,042	408,905	422,009	384,650	395,789	378,733	371,959	402,634	441,969	463,319
Water:										
New connections	694	351	263	385	388	351	448	359	388	423
Water mains breaks	42	57	37	40	44	31	25	21	26	21
Wastewater:										
New connections	693	389	269	380	375	296	347	261	380	447

Source: County operating departments

N/A: Information is not available.

Table 17

**County of James City, Virginia**  
**Capital Asset Statistics by Function/Program**  
**Last Ten Fiscal Years**

<b>Function/program</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
Police stations	1	1	1	1	1	1	1	1	1	1
Fire stations	5	5	5	5	5	5	5	5	5	5
Parks and recreation:										
Acreage	1,709	1,582	1,582	1,582	1,582	1,582	1,582	1,582	1,582	1,582
Playgrounds	8	10	10	11	11	11	11	11	12	12
Ball fields maintained	23	30	30	58	65	65	65	65	65	65
Tennis courts maintained	6	6	6	5	5	5	5	5	4	4
Community centers	2	2	2	2	2	2	2	2	2	2
Water:										
Water lines (miles)	329	332	339	344	393	390	393	400	402	407
Water customers	18,283	18,770	19,085	19,368	19,719	20,070	20,549	20,858	21,246	21,669
Storage tanks (greater than 250,000 gallons)	6	7	7	7	7	7	7	7	7	7
Average ERCs (1)	19,600	20,400	25,753	20,200	20,866	19,200	18,597	18,937	19,415	18,921
Wastewater:										
Sewer lines (miles)	370	375	379	382	419	423	425	430	435	439
Gallons collected (millions)	1,680	1,727	1,765	1,833	1,598	1,771	1,739	1,862	1,922	1,863
Sewer customers	18,426	18,590	18,702	18,860	21,127	21,488	21,962	22,575	22,955	23,402

Source: County operating departments

(1) Equivalent Residential Connections (ERCs) are determined based upon the rated capacity of a water meter (e.g., the average amount of water which can flow through such meter on a continuous basis) as compared to the rated capacity for a typical 5/8" residential water meter.

Table 18

**County of James City, Virginia**  
Miscellaneous Statistics

<b>Fiscal year</b>	<b>Taxable retail sales</b>	<b>Percentage change</b>
2007	882,593,500	6.1%
2008	892,444,900	1.1%
2009	861,852,500	-3.4%
2010	842,195,600	-2.3%
2011	892,445,000	6.0%
2012	932,214,200	4.5%
2013	992,914,200	6.5%
2014	999,911,900	0.7%
2015	1,053,339,000	5.3%
2016	1,119,348,000	6.3%

Source: Treasurer, James City County

<b>Business Licenses Issued</b>		
<b>Fiscal year</b>	<b>Number of licenses</b>	<b>Percentage change</b>
2007	5,983	17.6%
2008	5,800	-3.1%
2009	6,446	11.1%
2010	6,109	-5.2%
2011	5,931	-2.9%
2012	5,831	-1.7%
2013	5,881	0.9%
2014	5,854	-0.5%
2015	6,005	2.6%
2016	6,208	3.4%

Source: Commissioner of Revenue, James City County

<b>Construction Information</b>						
<b>Fiscal year</b>	<b>Commercial/Industrial</b>		<b>Residential</b>		<b>Total</b>	
	<b>Number of permits</b>	<b>Value</b>	<b>Number of permits</b>	<b>Value</b>	<b>Number of permits</b>	<b>Value</b>
2007	231	\$ 111,021,564	1,454	\$ 256,134,794	1,685	\$ 367,156,358
2008	225	63,187,911	973	130,064,874	1,198	193,252,785
2009	183	45,242,077	790	89,989,687	973	135,231,764
2010	128	24,599,420	830	99,077,199	958	123,676,619
2011	144	48,473,968	809	106,315,258	953	154,789,226
2012	172	45,837,716	802	100,812,412	974	146,650,128
2013	139	27,700,522	835	117,237,035	974	144,937,557
2014	166	33,169,762	741	123,841,836	907	157,011,598
2015	147	16,449,776	822	126,526,342	969	142,976,118
2016	227	35,201,616	759	113,133,643	986	148,335,259

Source: Building and Safety Permits Division

<b>Staffing Analysis</b>			
<b>School year</b>	<b>Classroom teachers</b>	<b>Pupils</b>	<b>Pupil-teacher ratio</b>
2006-07	612.00	10,107	16.5
2007-08	625.00	10,137	16.2
2008-09	643.00	10,249	15.9
2009-10	668.98	10,503	15.7
2010-11	673.91	10,549	15.7
2011-12	658.59	10,671	16.2
2012-13	648.10	10,795	16.7
2013-14	648.67	10,998	17.0
2014-15	662.84	11,116	16.8
2015-16	662.45	11,303	17.1

Source: Williamsburg-James City County Public Schools

<b>Projected Enrollment (1)</b>	
<b>School year</b>	<b>Projected Enrollment</b>
2017-18	11,459
2018-19	11,501
2019-20	11,577

Source: Williamsburg-James City County Public Schools

(1) Based on low enrollment projections provided by Future Think, November 2016.



## **Compliance Section**

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**County of James City, Virginia**  
Schedule of Expenditures of Federal Awards - Primary Government and  
Discretely Presented Component Unit - Public Schools  
Year ended June 30, 2016

<b>Federal Grantor/Pass-Through Grantor/Program Title</b>	<b>Federal catalog number</b>	<b>Pass-through entity identifying number</b>	<b>Expenditures</b>
Primary Government - Governmental Activities:			
Department of Agriculture:			
Virginia Department of Social Services:			
State Administrative Matching Grants - Supplemental Nutrition Assistance Program	10.561	**	\$ 424,719
Department of Health and Human Services:			
Virginia Department of Social Services:			
Promoting Safe and Stable Families	93.556	**	1,113
Temporary Assistance for Needy Families	93.558	**	328,440
Refugee and Entrant Assistance - State Administered Programs	93.566	**	231
Low-Income Home Energy Assistance	93.568	**	36,905
Child Welfare Services	93.645	**	2,170
Foster Care - Title IV-E	93.658	**	186,882
Adoption Assistance	93.659	**	320,812
Social Services Block Grant	93.667	**	219,902
Chafee Foster Care Independent Living	93.674	**	1,554
State Children's Insurance Program	93.767	**	14,974
Medical Assistance Program	93.778	**	504,888
Child Care Mandatory and Matching Funds of the Child Care and Development Fund	93.596	**	46,523
Total Department of Health and Human Services			1,664,394
Department of Interior:			
Bureau of Cash Management Payment in Lieu of Taxes	15.000	N/A	8,136
Department of Homeland Security:			
Virginia Department of Emergency Management:			
Homeland Security Grant Program	97.067	15VA-HSGP-058714VA	25,845
Emergency Management Performance Grants	97.042	6954	18,406
Port Security Grant Program	97.056	**	16,281
Total Department of Homeland Security			60,532
Department of Housing and Community Development:			
Virginia Department of Housing and Community Development:			
Section 8 Housing Choice Vouchers	14.871	**	1,082,289
Housing Counselor Grant	14.169	**	19,557
Total Department of Housing and Community Development			1,101,846
Department of Transportation:			
National Highway Traffic Safety Administration - Highway Safety Grant	20.600	N/A	51,861
Highway Planning and Construction Cluster:			
Virginia Department of Transportation:			
Transportation Enhancement Programs Funds	20.205	98810	14,075
Total Department of Transportation			65,936
Department of Justice:			
Bureau of Justice Administration:			
BJA - Bulletproof Vests Partnership	16.607	N/A	13,764
Office of Justice Programs			
Edward Byrne Memorial Justice Assistance Grant Program	16.738	N/A	9,995
Virginia Department of Criminal Justice Services:			
Joint Law Enforcement Operations - Equitable Sharing Program	16.922	**	34,336
Violence Against Women Formula Grants	16.588	15-S9412VA14	28,907
Crime Victim Assistance	16.575	16-V8579VW15	79,565
Total Department of Criminal Justice Services			142,808
Office on Violence Against Women:			
Grants to Encourage Arrest Policies and Enforcement of Protection Orders	16.590	N/A	57,428
Total Department of Justice			223,995
Total federal awards, primary government - governmental activities			3,549,558
Primary Government - Business-type activities:			
Environmental Protection Agency:			
Virginia Department of Environmental Quality:			
Wellhead Protection Grant	66.468	**	5,700
Total federal awards, primary government			3,555,258
N/A Not applicable; direct funding			(Continued)
** Information is not available.			

See accompanying notes to schedule of expenditures of federal awards.

**County of James City, Virginia**  
Schedule of Expenditures of Federal Awards - Primary Government and  
Discretely Presented Component Unit - Public Schools  
Year ended June 30, 2016

<b>Federal Grantor/Pass-Through Grantor/Program Title</b>	<b>Federal catalog number</b>	<b>Pass-through entity identifying number</b>	<b>Expenditures</b>
Component Unit - Public Schools:			
Department of Agriculture:			
Child Nutrition Cluster:			
Virginia Department of Agriculture and Consumer Services:			
Food Commodities	10.555	**	\$ 222,654
Virginia Department of Education:			
School Breakfast Program	10.553	**	449,029
National School Lunch Program	10.555	**	1,492,339
Discretionary Grants	10.579	**	28,690
Total Child Nutrition Cluster, Department of Agriculture			<u>2,192,712</u>
Department of Education:			
Impact Aid	84.041	N/A	125,048
Virginia Department of Education:			
Title I Grants to Local Educational Agencies	84.010	5100036,	1,320,033
Title I, Part D, Neglected and Delinquent Children	84.013	5104020	35,988
Vocational Education - Basic Grants to States	84.048	**	132,122
Title II, Part A, Improving Teacher Quality State Grants	84.367	**	284,210
Title III, Part A, English Language Acquisition Grants	84.365	**	32,163
Special Education Cluster:			
Virginia Department of Education:			
Special Education - Grants to States	84.027	**	1,941,245
Special Education - Preschool Grants	84.173	**	21,824
Total Special Education Cluster			<u>1,963,069</u>
College of William and Mary - Project HOPE	84.387	S196A130048	17,883
Total Department of Education			<u>3,910,516</u>
Department of Health and Human Services:			
Head Start Program Cluster:			
Williamsburg-James City County Community Action Agency - Head Start	93.600	**	121,301
Department of Transportation - Safe Routes to Schools	20.205	N/A	42,155
Total federal awards, Component Unit - Public Schools			<u>6,266,684</u>
Total federal awards, reporting entity			<u>\$ 9,821,942</u>

N/A Not applicable; direct funding

\*\* Information is not available.

**County of James City, Virginia**  
Notes to Schedule of Expenditures of Federal Awards  
Year ended June 30, 2016

**1) Basis of Presentation**

The accompanying schedule of expenditures of federal awards includes the federal award activity of the County of James City, Virginia (the County) and its component unit, Williamsburg-James City County Public Schools (Public Schools). The information in this schedule is presented in accordance with the requirements of Title 2 U.S. *Code of Federal Regulations* (CFR) Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance). Because the schedule presents only a selected portion of the operations of the County and Public Schools, it is not intended to and does not present the financial position, changes in net position or cash flows of the County and Public Schools.

**2) Summary of Significant Accounting Policies**

Expenditures reported in the schedule are reported on the modified accrual basis of accounting. Such expenditures are recognized following the cost principles contained in the Uniform Guidance and OMB Circular A-87, *Cost Principles for State, Local and Indian Tribal Governments*, wherein certain types of expenditures are not allowable or are limited as to reimbursement.

Federal expenditures in the basic financial statements are summarized as follows:

Governmental funds - Primary Government	\$	3,549,558
Component Unit - JCSA		5,700
Component Unit - Public Schools		6,266,684
	\$	<u>9,821,942</u>

**3) Indirect Cost Rate**

The County and Public Schools have elected not to use the 10% de minimus indirect cost rate allowed under the Uniform Guidance.

**4) Sub-recipient Payments**

There were no awards passed-through to sub-recipients during the fiscal year ended June 30, 2016.

## **Independent Auditors' Report on Internal Control over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with Government Auditing Standards**

Board of Supervisors  
County of James City, Virginia

We have audited, in accordance with the auditing standards generally accepted in the United States of America; the *Specifications for Audits of Counties, Cities and Towns*, issued by the Auditor of Public Accounts of the Commonwealth of Virginia; and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States, the financial statements of the governmental activities, business-type activities, the discretely presented component unit, each major fund, and the aggregate remaining fund information of the County of James City, Virginia, as of and for the year ended June 30, 2016, and the related notes to the financial statements, which collectively comprise the County of James City, Virginia's basic financial statements and have issued our report thereon dated November 30, 2016.

### ***Internal Control over Financial Reporting***

In planning and performing our audit of the financial statements, we considered James City County's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of James City County's internal control. Accordingly, we do not express an opinion on the effectiveness of James City County's internal control.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct misstatements on a timely basis. A material weakness is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A significant deficiency is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control over financial reporting was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.



### ***Compliance and Other Matters***

As part of obtaining reasonable assurance about whether James City County's financial statements are free of material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

### ***Purpose of this Report***

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purposes.

*Dixon Hughes Goodman LLP*

**Newport News, Virginia  
November 30, 2016**

## **Independent Auditors' Report on Compliance For Each Major Federal Program and on Internal Control Over Compliance Required by the Uniform Guidance**

Board of Supervisors  
County of James City, Virginia

### ***Report on Compliance for Each Major Federal Program***

We have audited County of James City, Virginia's compliance with the types of compliance requirements described in the OMB Compliance Supplement that could have a direct and material effect on each of County of James City, Virginia's major federal programs for the year ended June 30, 2016. The County of James City, Virginia's major federal programs are identified in the summary of auditors' results section of the accompanying schedule of findings and questioned costs.

### ***Management's Responsibility***

Management is responsible for compliance with the requirements of laws, regulations, contracts, and grants applicable to its federal programs.

### ***Auditors' Responsibility***

Our responsibility is to express an opinion on compliance for each of County of James City, Virginia's major federal programs based on our audit of the types of compliance requirements referred to above. We conducted our audit of compliance in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; the audit requirements of *Title 2 U.S. Code of Federal Regulations, Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance). Those standards and the Uniform Guidance require that we plan and perform the audit to obtain reasonable assurance about whether noncompliance with the types of compliance requirements referred to above that could have a direct and material effect on a major federal program occurred. An audit includes examining, on a test basis, evidence about County of James City, Virginia's compliance with those requirements and performing such other procedures as we considered necessary in the circumstances.

We believe that our audit provides a reasonable basis for our opinion on compliance for each major federal program. However, our audit does not provide a legal determination of County of James City, Virginia's compliance.

### ***Opinion on Each Major Federal Program***

In our opinion, County of James City, Virginia complied, in all material respects, with the types of compliance requirements referred to above that could have a direct and material effect on each of its major federal programs for the year ended June 30, 2016.



***Report on Internal Control over Compliance***

Management of County of James City, Virginia is responsible for establishing and maintaining effective internal control over compliance with the types of compliance requirements referred to above. In planning and performing our audit of compliance, we considered County of James City, Virginia's internal control over compliance with types of requirements that could have a direct and material effect on each major federal program to determine the auditing procedures that are appropriate in the circumstances for the purpose of expressing an opinion on compliance for each major federal program and to test and report on internal control over compliance in accordance with the Uniform Guidance, but not for the purpose of expressing an opinion on the effectiveness of internal control over compliance. Accordingly, we do not express an opinion on the effectiveness of County of James City, Virginia's internal control over compliance.

*A deficiency in internal control over compliance* exists when the design or operation of a control over compliance does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, noncompliance with a type of compliance requirement of a federal program on a timely basis. *A material weakness in internal control over compliance* is a deficiency, or combination of deficiencies, in internal control over compliance, such that there is a reasonable possibility that material noncompliance with a type of compliance requirement of a federal program will not be prevented, or detected and corrected, on a timely basis. *A significant deficiency in internal control over compliance* is a deficiency, or a combination of deficiencies, in internal control over compliance with a type of compliance requirement of a federal program that is less severe than a material weakness in internal control over compliance, yet important enough to merit attention by those charged with governance.

Our consideration of the internal control over compliance was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control over compliance that might be material weaknesses or significant deficiencies. We did not identify any deficiencies in internal control over compliance that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

The purpose of this report on internal control over compliance is solely to describe the scope of our testing of internal control over compliance and the results of that testing based on the requirements of the Uniform Guidance. Accordingly, this report is not suitable for any other purpose.

*Dixon Hughes Goodman LLP*

**Newport News, Virginia  
November 30, 2016**

## **Independent Auditors' Report on Compliance with Commonwealth of Virginia Laws, Regulations, Contracts and Grants**

Board of Supervisors  
County of James City, Virginia

We have audited the financial statements of the County of James City, Virginia, as of and for the year ended June 30, 2016, and have issued our report thereon November 30, 2016.

We conducted our audit in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and *Specifications for Audits of Counties, Cities, and Towns*, issued by the Auditor of Public Accounts of the Commonwealth of Virginia. Those standards and specifications require that we plan and perform the audit to obtain reasonable assurance about whether the general-purpose financial statements are free of material misstatement.

Compliance with Commonwealth of Virginia laws, regulations, contracts and grants applicable to the County of James City, Virginia, is the responsibility of the County of James City, Virginia's management. As part of obtaining reasonable assurance about whether the financial statements are free of material misstatement, we performed tests of the County of James City, Virginia's compliance with certain provisions of the Commonwealth of Virginia's laws, regulations, contracts, and grants. However, the objective of our audit of the financial statements was not to provide an opinion on overall compliance with such provisions. Accordingly, we do not express such an opinion.

Following is a summary of the Commonwealth of Virginia's laws, regulations, contracts and grants for which we performed tests of compliance:

### Code of Virginia

- Budget and Appropriation Laws
- Cash and Investments
- Conflicts of Interest
- Debt Provisions
- Retirement Systems
- Procurement
- Unclaimed Property

### State Agency Requirements

- Education
- Comprehensive Services Act Funds
- Social Services

The results of our tests disclosed one instance of noncompliance with the provisions referred to in the preceding paragraph. This instance is discussed in the Schedule of Findings and Questioned Costs as Finding 16-1. With respect to items not tested, nothing came to our attention that caused us to believe that the County of James City, Virginia had not complied, in all material respects, with those provisions.



This report is intended solely for the information and use of the County of James City, Virginia's Board of Supervisors, management, and the Auditor of Public Accounts and all applicable state agencies and is not intended to be, and should not be, used by anyone other than these specified parties.

*Dixon Hughes Goodman LLP*

**Newport News, Virginia  
November 30, 2016**

## COUNTY OF JAMES CITY, VIRGINIA

### Schedule of Findings and Responses

Year ended June 30, 2016

#### (1) Summary of Auditor's Results

##### Financial Statements

- An unmodified opinion was issued on the financial statements.

Internal control over financial reporting:

- There were no material weaknesses identified.
- There were no significant deficiencies identified.
- The audit did not disclose any material noncompliance.

##### Federal Awards

- There were no material weaknesses identified.
- There were no significant deficiencies identified.
- An unmodified opinion was issued on compliance for major programs.
- The audit did not disclose any audit findings required to be reported.
- The dollar threshold used to distinguish between Type A and Type B programs is \$750,000.
- The auditee qualified as a low-risk auditee.
- Major programs: Medical Assistance Program (CFDA Number 93.778), Child Nutrition Cluster (CFDA Numbers 10.555, 10.553, and 10.579), and Section 8 Housing Vouchers Program (CFDA Number 14.871).

#### (2) Findings Relating to the Financial Statements which are Required to be Reported in Accordance with GAGAS

None

#### (3) Findings and Questioned Costs for Federal Awards

None

#### (4) State Compliance Findings:

##### Finding 16-1

**Condition:** During fiscal year 2016, The State and Local Government Conflict of Interests Act contained in Chapter 31 of Title 2.2 of the Code of Virginia requires certain local government officials to file certain disclosure forms with the clerk of the governing body by December 15, 2015 and June 15, 2016.

**Criteria:** Three statements of economic interest forms were not filed timely.

**Effect:** The County was not in compliance with the State and Local Government Conflict of Interest Act.

**Recommendation:** The County should take steps to ensure that each local official files the required forms in a timely manner.

**Management's response:** Management will take steps to ensure compliance going forward.

**COUNTY OF JAMES CITY, VIRGINIA**

**Schedule of Findings and Responses, Continued**

**Year ended June 30, 2016**

**(5) Summary Schedule of Prior Federal and State Audit Findings:**

**Federal:** There were no prior year federal findings.

**State:** There were two findings in the prior year related to one disclosure of real estate holdings form not filed timely and the Sheriff's office did not deposit a cash receipt in excess of \$200 timely. As noted in section 4 above, untimely filing of statements of economic interest forms was noted and there was no issue with real estate holding form filings noted. Also, no issues were noted with Sheriff's office deposits during the current year's audit.

**Report to the  
Board of Directors**

# **James City Service Authority**

**June 30, 2016**

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## Contacts

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***Cheri D. Spencer, CPA***

Manager  
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cheri.spencer@dhgllp.com



## **Communications with Those Charged with Governance**

November 29, 2016

Board of Directors  
James City Service Authority

We have audited the financial statements of James City Service Authority (the “Authority”) for the year ended June 30, 2016, and have issued our report thereon dated November 29, 2016. Professional standards require that we provide you with information about our responsibilities in accordance with auditing standards generally accepted in the United States of America, as well as certain information related to the planned scope and timing of our audit. We have communicated such information in our letter to you dated January 15, 2016. Professional standards also require that we communicate to you the following information related to our audit.

### **Qualitative Aspects of Accounting Practices**

Management is responsible for the selection and use of appropriate accounting policies. The significant accounting policies used by James City Service Authority are described in Note 1 to the financial statements. As described in Note 1 to the financial statements, James City Service Authority adopted GASB Statement No. 72, *Fair Value Measurement and Application (GASB 72)*, in 2016. No matters have come to our attention that would require us, under professional standards, to inform you about (1) the methods used to account for significant unusual transactions and (2) the effect of significant accounting policies in controversial or emerging areas for which there is a lack of authoritative guidance or consensus.

Accounting estimates are an integral part of the financial statements prepared by management, and are based on management’s knowledge and experience about past and current events, and assumptions about future events. Certain accounting estimates are particularly sensitive because of their significance to the financial statements and because of the possibility that future events affecting them may differ significantly from those expected. The most sensitive estimates affecting the financial statements was were:

Management’s estimates of the pension plan liability are based on the valuation received from the independent actuary. We evaluated the key factors and assumptions used to develop the pension plan liability in determining that it is reasonable in relation to the financial statements taken as a whole.

Management’s estimate of the depreciable lives is based on the James City County policy. We evaluated the key factors and assumptions in determining asset lives in determining that it is reasonable in relation to the financial statement taken as a whole.

The most significant disclosures in the financial statements were:

Note 6 – Long-Term Debt

Note 11 - Commitments and Contingencies

### **Difficulties Encountered in Performing the Audit**

We encountered no significant difficulties in dealing with management in performing and completing our audit.

**Corrected and Uncorrected Misstatements**

Professional standards require us to accumulate all misstatements identified during the audit, other than those that are trivial, and communicate them to the appropriate level of management. We are pleased to report that there was only one audit adjustment posted and it was an adjustment provided by the Authority's staff. There were no uncorrected misstatements.

**Disagreements with Management**

For purposes of this letter, professional standards define a disagreement with management as a financial accounting, reporting, or auditing matter, whether or not resolved to our satisfaction, that could be significant to the financial statements or the auditor's report. We are pleased to report that no such disagreements arose during the course of our audit.

**Management Representations**

We have requested certain representations from management that are included in the management representation letter included in Appendix A.

**Management Consultations with Other Accountants**

In some cases, management may decide to consult with other accountants about auditing and accounting matters, similar to obtaining a "second opinion" on certain situations. If a consultation involves application of an accounting principle to the Authority's financial statements or a determination of the type of auditor's opinion that may be expressed on those statements, our professional standards require the consulting accountant to check with us to determine that the consultant has all the relevant facts. To our knowledge, there were no such consultations with other accountants.

**Other Significant Matters, Findings, or Issues**

We generally discuss a variety of matters, including the application of accounting principles and auditing standards, with management each year prior to retention as the Authority's auditors. However, these discussions occurred in the normal course of our professional relationship and our responses were not a condition to our retention.

This information is intended solely for the use of the Board of Directors and management of James City Service Authority and is not intended to be, and should not be, used by anyone other than these specified parties.

Sincerely,

*Dixon Hughes Goodman LLP*

**Newport News, Virginia**

## **Appendix A**

### **Management Representation Letter**



November 29, 2016

Dixon Hughes Goodman LLP  
Fountain Plaza One  
701 Town Center Drive, Suite 700  
Newport News, VA 23606

**Operations Center**  
119 Tewning Road  
Williamsburg, VA 23188-2639  
P: 757-229-7421  
F: 757-229-2463  
jcsa@jamescitycountyva.gov

This representation letter is provided in connection with your audits of the financial statements of James City Service Authority (the "Authority"), which comprise the statements of net position as of June 30, 2016 and 2015 and the related statements of revenues, expenses, and changes in net position and statements of cash flows for the years then ended, and the related notes to the financial statements, for the purpose of expressing an opinion on whether the financial statements are presented fairly, in all material respects, in accordance with accounting principles generally accepted in the United States of America (U.S. GAAP).

Certain representations in this letter are described as being limited to matters that are material. Items are considered material, regardless of size, if they involve an omission or misstatement of accounting information that, in the light of surrounding circumstances, makes it probable that the judgment of a reasonable person relying on the information would be changed or influenced by the omission or misstatement. An omission or misstatement that is monetarily small in amount could be considered material as a result of qualitative factors.

We confirm that, to the best of our knowledge and belief, having made such inquiries as we considered necessary for the purpose of appropriately informing ourselves as of the date of this letter:

***Financial Statements***

1. We have fulfilled our responsibilities, as set out in the terms of the audit engagement letter dated January 15, 2016 for the preparation and fair presentation of the financial statements in accordance with U.S. GAAP.
2. The financial statements referred to above are fairly presented in conformity with U.S. GAAP and include all properly classified funds and other financial information required by generally accepted accounting principles to be included in the financial reporting entity.
3. We acknowledge our responsibility for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.
4. We acknowledge our responsibility for the design, implementation, and maintenance of internal control to prevent and detect fraud.
5. Significant assumptions we used in making accounting estimates, including estimates of fair value, are reasonable.
6. The following have been properly accounted for and disclosed in the financial statements:
  - a) Related-party relationships and transactions, including sales, purchases, loans, transfers, leasing arrangements, and guarantees, and amounts receivable from or payable to related parties;
  - b) Guarantees, whether written or oral, under which the Authority is contingently liable;



jamescitycountyva.gov/jcsa

- c) Other liabilities or gain or loss contingencies.
- 7. Significant estimates that may be subject to a material change in the near term have been properly disclosed in the financial statements. We understand that "near term" means the period within one year of the date of the financial statements. In addition, we have no knowledge of concentrations existing at the date of the financial statements that make the Authority vulnerable to the risk of severe impact that have not been properly disclosed in the financial statements.
- 8. There was only one audit adjustment posted and it was an adjustment provided by the Authority's staff. There were no uncorrected misstatements or omitted disclosures.
- 9. We represent to you the following for the Authority's fair value measurements and disclosures:
  - a) The underlying assumptions are reasonable and they appropriately reflect management's intent and ability to carry out its stated courses of action.
  - b) The measurement methods and related assumptions used in determining fair value are appropriate in the circumstances and have been consistently applied.
  - c) The disclosures related to fair values are complete, adequate, and in conformity with U.S. GAAP.
  - d) There are no subsequent events that require adjustments to the fair value measurements and disclosures included in the financial statements.
- 10. The effects of all known actual or possible litigation and claims, if any, have been accounted for and disclosed in accordance with U.S. GAAP.
- 11. There are no component units or joint ventures that should be included or disclosed in the financial statements.
- 12. The financial statements properly classify all funds and activities.
- 13. Receivables recorded in the financial statements represent valid claims against debtors for transactions arising on or before the balance sheet date and have been properly reduced to their estimated net realizable value. No provision for uncollectible receivables is considered necessary.
- 14. Operating expenses have been appropriately classified in the statement of revenues, expenses, and changes in net position.
- 15. Operating revenues are appropriately classified in the statement of revenues, expenses, and changes in net position.
- 16. Inter-fund, internal, and intra-entity activity balances have been appropriately classified and reported.
- 17. Arrangements, if any, with financial institutions involving compensating balances or other arrangements involving restrictions on cash balances, lines of credit, or similar arrangements have been properly disclosed in the financial statements.
- 18. We review long-lived assets to be held and used for impairment whenever events or changes in circumstances indicate the carrying amount of such might not be recoverable and record an appropriate adjustment.
- 19. Net position components (net investment in capital assets; restricted; and unrestricted) and fund balance reserves and designations are properly classified and, if applicable, approved.
- 20. All transactions have been recorded in the accounting records and are reflected in the financial statements.
- 21. We have provided you with:
  - a) Access to all information, of which we are aware, that is relevant to the preparation and fair presentation of the financial statements, such as records, documentation, and other matters.
  - b) Additional information that you have requested from us for the purpose of the audit.
  - c) Unrestricted access to persons within the entity from whom you determined it necessary to obtain audit evidence.
- 22. We have no knowledge of any fraud or suspected fraud affecting the Authority involving:



- a) Management.
- b) Employees who have significant roles in internal control.
- c) Others where the fraud could have a material effect on the financial statements.

- 23. We have no knowledge of any allegations of fraud or suspected fraud affecting the Authority's financial statements received in communications from employees, former employees, analysts, regulators, short sellers, or others.
- 24. We have disclosed to you all known instances of noncompliance or suspected noncompliance with laws and regulations whose effects should be considered when preparing the financial statements.
- 25. We have disclosed to you the identity of the entity's related parties and all the related party relationships and transactions of which we are aware.
- 26. The Authority has no plans or intentions that may materially affect the carrying value or classification of assets and liabilities.
- 27. We have complied with all aspects of contractual agreements that would have a material effect on the financial statements in the event of noncompliance.
- 28. We are not aware of any pending or threatened litigation and claims whose effects should be considered when preparing the financial statements.
- 29. The Authority has satisfactory title to all owned assets and there are no liens or encumbrances on such assets nor has any asset been pledged as collateral.
- 30. Deposits and investment securities and derivative instruments are properly classified as to risk and are properly disclosed.
- 31. Capital assets, including infrastructure and intangible assets, are properly capitalized, reported, and, if applicable, depreciated.

*Government—specific*

- 32. We have made available to you all financial records and related data.
- 33. There have been no communications from regulatory agencies concerning noncompliance with, or deficiencies in, financial reporting practices.
- 34. We have identified to you any previous audits, attestation engagements, and other studies related to the audit objectives and whether related recommendations have been implemented.
- 35. We are responsible for compliance with the laws, regulations, and provisions of contracts and grant agreements applicable to us, including tax or debt limits and debt contracts; and we have identified and disclosed to you all laws, regulations, and provisions of contracts and grant agreements that we believe have a direct and material effect on the financial statement amounts or other financial data significant to the audit objectives, including legal and contractual provisions.
- 36. There are no violations or possible violations of budget ordinances, laws and regulations (including those pertaining to adopting, approving, and amending budgets), provisions of contracts and grant agreements, tax or debt limits, and any related debt covenants whose effects should be considered for disclosure in the financial statements, or as a basis for recording a loss contingency, or for reporting on noncompliance.
- 37. We have followed all applicable laws and regulations in adopting, approving, and amending budgets.

38. We have appropriately disclosed the Authority's policy regarding whether to first apply restricted or unrestricted resources when an expense is incurred for purposes for which both restricted and unrestricted net position is available and have determined that net position is properly recognized under the policy.
39. We take responsibility for the current year implementation of Governmental Accounting Standards Board (GASB) Statement No. 72, Fair Value Measurement and Application.
40. We acknowledge our responsibility for the required supplementary information (RSI). The RSI (Management's Discussion and Analysis, Schedule of Changes in Net Pension Liability and Related Ratios, and Schedule of Employer Contributions and Related Notes) is measured and presented within prescribed guidelines and the methods of measurement and presentation have not changed from those used in the prior period. We have disclosed to you any significant assumptions and interpretations underlying the measurement and presentation of the RSI.
41. With respect to the Schedules of Net Position – by Activity, Schedules of Revenues, Expenses, Changes in Net Position – by Activity, and Schedule of Operating Revenues and Expenses – Budget to Actual – by Activity (Supplementary Information).
- a) We acknowledge our responsibility for presenting the supplementary information in accordance with accounting principles generally accepted in the United States of America, and we believe the supplementary information, including its form and content, is fairly presented in accordance with accounting principles generally accepted in the United States of America. The methods of measurement and presentation of the supplementary information have not changed from those used in the prior period, and we have disclosed to you any significant assumptions or interpretations underlying the measurement and presentation of the supplementary information.
- b) If the supplementary information is not presented with the audited financial statements, we will make the audited financial statements readily available to the intended users of the supplementary information no later than the date we issue the supplementary information and the auditor's report thereon.

We have evaluated subsequent events through the date of this letter, which is the date the financial statements were available to be issued. No events have occurred subsequent to the balance sheet date and through the date of this letter that would require adjustment to or disclosure in the aforementioned financial statements.

  
M. Douglas Powell, General Manager

  
Suzanne R. Mellen, Director of FMS, James City County



[jamescitycountyva.gov/jcsa](http://jamescitycountyva.gov/jcsa)

PREPARED BY THE DEPARTMENT OF FINANCIAL AND MANAGEMENT SERVICES  
JAMES CITY COUNTY, VIRGINIA



**THE COMPREHENSIVE ANNUAL FINANCIAL REPORT**  
**FOR THE FISCAL YEARS ENDED JUNE 30, 2016 AND 2015**



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**JAMES CITY SERVICE AUTHORITY**  
(A Component Unit of the County of James City, Virginia)

Comprehensive Annual Financial Report  
(*With Independent Auditors' Report Thereon*)

June 30, 2016 and 2015

Prepared by:  
Department of Financial and Management Services  
James City County, Virginia

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## **INTRODUCTORY SECTION**

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**JAMES CITY SERVICE AUTHORITY**  
(A Component Unit of the County of James City, Virginia)

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# JAMES CITY SERVICE AUTHORITY

(A Component Unit of the County of James City, Virginia)

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**JAMES CITY SERVICE AUTHORITY**  
(A Component Unit of the County of James City, Virginia)

**Authority Officials**

June 30, 2016

**Board of Directors**

Kevin D. Onizuk, Chair

Sue Sadler, Vice-Chair

Michael J. Hipple

Ruth Larson

John J. McGlennon

**Officials**

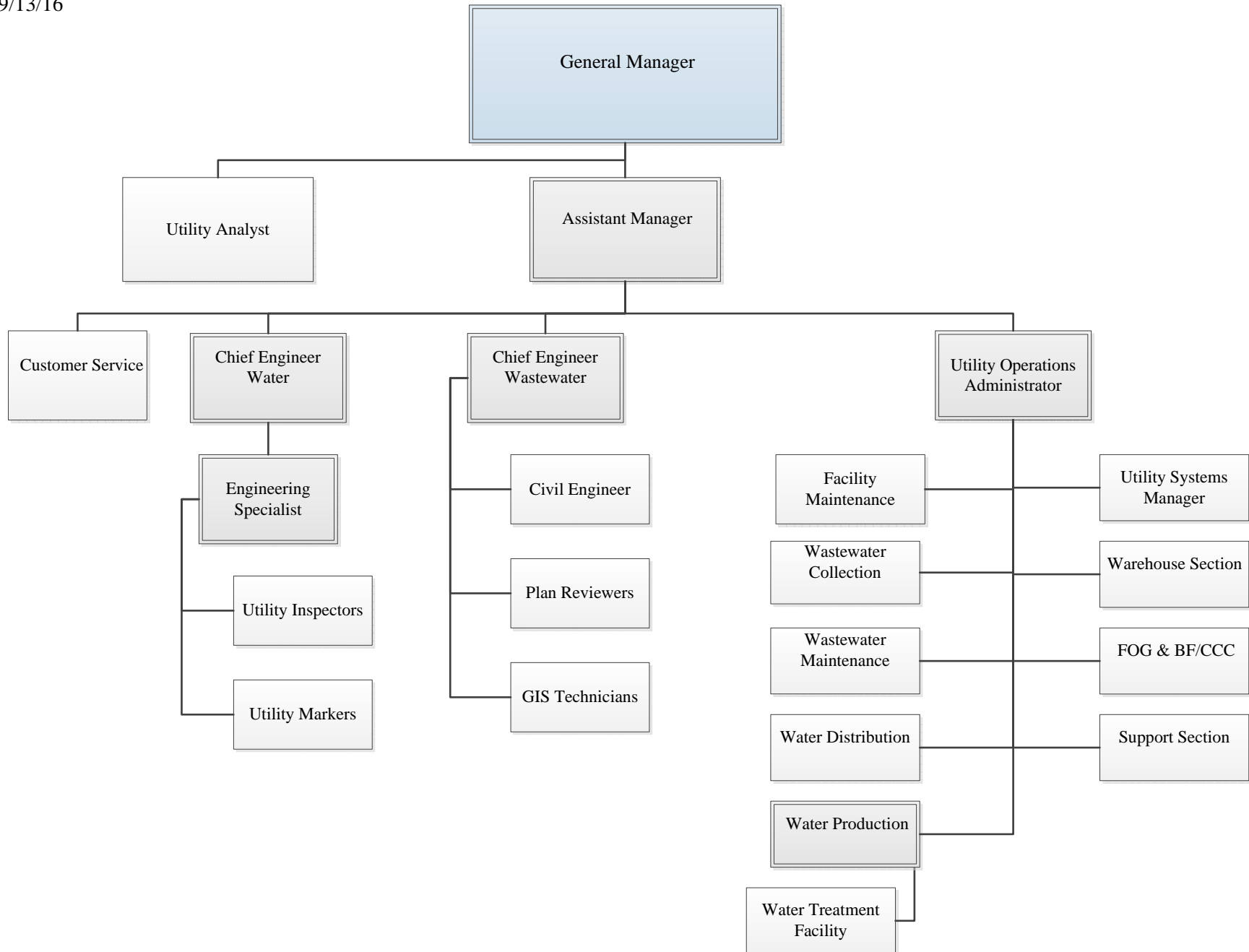
M. Douglas Powell  
General Manager

Stephanie A. Luton  
Assistant Manager/Treasurer



# James City Service Authority Organization Chart

Effective 09/13/16





Operations Center  
119 Tewning Road  
Williamsburg, VA 23188-2639  
P: 757-229-7421  
F: 757-229-2463  
jcsa@jamescitycountyva.gov

November 29, 2016

To the Members of the Board of Directors and the Citizens of James City County:

The Comprehensive Annual Financial Report of the James City Service Authority, a component unit of the County of James City, Virginia, for the fiscal years ending June 30, 2016 and 2015, is hereby submitted. This report presents the financial position of all fund types of the James City Service Authority (JCSA) and the results of operations for the years then ended.

The JCSA financial records have been audited by Dixon Hughes Goodman LLP. Their opinion and management's accompanying statements comprise the Financial Section of this report. This report was prepared by the JCSA, and responsibility for both the accuracy of the information presented and the completeness and fairness of the presentation, including all disclosures, rests with the JCSA. We believe the information as presented is accurate in all material respects; that it is presented in a manner designed to fairly set forth the financial position and results of operations of the JCSA as measured by the financial activity of its various legal funds; and that all disclosures necessary to enable the reader to gain the maximum understanding of the JCSA's financial activity have been included. The funds included in our Comprehensive Annual Financial Report are controlled solely by the JCSA.

Generally accepted accounting principles require that management provide a narrative introduction, overview, and analysis to accompany the basic financial statements in the form of Management's Discussion and Analysis (MD&A). This letter of transmittal is designed to complement the MD&A and should be read in conjunction with it. JCSA's MD&A can be found on pages 3-8, immediately following the independent auditors' report.

### **The Reporting Entity and Its Service**

The James City Service Authority is a public body politic and corporate of the Commonwealth of Virginia. The JCSA was created in 1969 by the James City County Board of Supervisors pursuant to the Virginia Water and Sewer Authorities Act (Code of Virginia, 1950, as amended). The JCSA was created to acquire, construct, operate and maintain, to the extent determined by the JCSA to be financially feasible, an integrated water system and an integrated sewer collection system in James City County (County). The Board of Directors is appointed by the Board of Supervisors. Since 1976, the Board of Supervisors has appointed its members as Directors of the JCSA to more fully coordinate JCSA activities with those of the County in the planning and development of utility systems.

The Board of Supervisors has authorized water and sewer operations for the JCSA within the Primary Service Area (PSA) in the County. With the approval of the County, the JCSA has extended services beyond the PSA to several public sites in the County, including three public schools, Freedom Park and two major planned communities, Greensprings West and Governor's Land. The JCSA also provides water and/or sewer service to limited sections of York County and the City of Williamsburg with the concurrence of the appropriate governing bodies.

The JCSA's water system includes the central water system and Five Forks Water Treatment Facility with 10 water production facilities, and 8 independent water production facilities that are located outside the PSA. There are approximately 407 miles of water transmission and distribution lines throughout the entire system. The water system facilities supply approximately 4.7 million gallons of water per day to 21,669 water customers.

The JCSA's sewer system includes 76 pump stations with approximately 439 miles of sewer collection lines. The sewer system facilities collect and move approximately 5.1 million gallons of sewage per day for 23,402 sewer customers. The JCSA has no sewage treatment facilities. Sewage treatment for areas served by the JCSA, as well as for other Hampton Roads communities, is provided by the Hampton Roads Sanitation District (HRSB).

As of June 30, 2016, the JCSA had 89 full-time and 2 part-time employees with the responsibility to operate and maintain its utility facilities and lines. The JCSA's operating funds are self-supporting and the JCSA receives no share of any local or property tax levies. The Board of Directors has the sole power to set water and sewer utility rates and related fees. The Board of Directors adopted an inverted-block or inclining rate structure in 1996 for residential customers which incorporates a unit charge that increases with increasing consumption. The primary objective of the inverted-block rate structure is to promote water conservation, particularly from large-volume residential customers.

As a result of a comprehensive water and sewer rate study in fiscal year 2015, the Board of Directors adopted a new rate structure for fiscal year 2016 that included a fixed charge for water and sewer service. The rationale behind the fixed charge is that JCSA incurs significant costs to maintain infrastructure regardless of usage and JCSA should not be completely reliant on variable revenue to cover these fixed costs. The water and sewer fixed charges are based on meter size. For a typical residential customer in fiscal year 2016, the quarterly water fixed charge was \$7.22 and the quarterly sewer fixed charge was \$5.66.

The new rate structure also included changes to the water and sewer service rates to offset some of the additional customer cost from the fixed charge and provide for near term water supply enhancement projects and operating and maintenance costs. The first tier (0-15,000 gallons per quarter) water service rate for a typical single family residential customer decreased from \$2.85 per 1,000 gallons to \$2.47. The second tier (15,001-30,000 gallons per quarter) rate increased from \$3.45 per 1,000 gallons to \$4.93, and the third tier (30,000+ gallons per quarter) rate increased from \$9.80 to \$11.59. The water service rate for non-residential and multi-family residential customers increased from \$3.45 per 1,000 gallons to \$3.65. The sewer service rate decreased from \$3.22 to \$2.93. The rate changes increased a typical 5,000 gallons per month residential customer's bill by \$0.95 per month from \$30.35 to \$31.30.

### **Economic Condition and Outlook**

The County has a strong, diverse, and growing economic base. The County is located near the Cities of Hampton, Newport News and Williamsburg, and York County. Major employers within commuting distance include Busch Gardens, Anheuser-Busch, Owens-Illinois, Ball Metal, Newport News Shipbuilding, Langley Air Force Base, Fort Eustis, the Colonial Williamsburg Foundation, and the National Aeronautics and Space Administration. The County's population grew 9.4 percent from 2010 to 2015 while the Commonwealth of Virginia's population increased 4.8 percent during the same time period. A historically fast-growing population and expanding commercial base enhances the long-term economic outlook for the Authority.

### **Major Initiatives**

Implementation of the new rates and the fixed charge structure in fiscal year 2016 was the start of a multi-year budgetary initiative to ensure the long-term financial stability of the Authority. The goals of this initiative are to reduce revenue variability and adequately provide for both current water and wastewater operating needs and future capital infrastructure repairs, upgrades and expansion required by asset age and regulations.

The Authority currently has groundwater permits for its central water system to withdraw 8.9 million gallons per day to support its residential and commercial customers. Facilities currently provide ample resources and treatment capacity through at least 2040. The Virginia Department of Environmental Quality has expressed an interest in reducing the withdrawal of groundwater within the Eastern Virginia Groundwater Management Area, of

which the Authority is a part. The Authority is currently evaluating options for alternative sources of water should the groundwater withdrawal permit be reduced.

Major multi-year projects started in fiscal year 2016 are upgrading the existing Supervisory Control and Data Acquisition (SCADA) communication and control system for 107 remote sites and replacement of a deep production well and the reverse osmosis membranes at the Five Forks Water Treatment Facility. Wastewater projects completed in fiscal year 2016 include flood proofing Lift Station 4-7 along Route 5, replacement of Lift Station 3-5 on Marclay Lane, rehabilitation of a Kingsmill neighborhood sewer bridge, manhole raising and rehabilitation, and extensive sewer easement clearing. Work continued on the multi-year asset management and water meter replacement projects.

In 2007, the Board of Directors authorized the JCSA to enter into a Consent Agreement with the Virginia Department of Environmental Quality (DEQ) to address sewer system overflows. Thirteen other Hampton Roads localities entered into similar agreements during the same timeframe. In February 2014, Hampton Roads Sanitation District (HRSD) and fourteen Hampton Roads localities, including the JCSA, entered into a Regional Hybrid Consolidation Plan for meeting Consent Agreement requirements to reduce sewer overflows. Development of the detailed Plan is ongoing and scheduled for completion in November 2017.

Under this Plan, HRSD is responsible for major rehabilitation projects to repair deteriorated infrastructure and projects to increase the capacity of HRSD and locality pump stations and pipelines. Projects will be designed on a regional basis. Work will be performed where it is most needed rather than in each individual sewer basin within a locality that did not meet Consent Agreement standards. This regional approach to capital construction is estimated to save approximately \$1 billion regionally compared to the cost of each locality individually fulfilling its Consent Agreement responsibilities. HRSD will fund the work through a regional HRSD rate. In addition, HRSD will also assume liability for wet weather sewer overflows due to inadequate capacity.

JCSA keeps ownership and control of its local sewer infrastructure and is still responsible for monitoring and maintaining the local sewer system to Consent Agreement standards and fixing significant defects on an ongoing basis ("find and fix").

### **Accounting System and Budgetary Control**

The JCSA's accounting records are maintained on a full accrual basis incorporating the principles of enterprise fund accounting. Basically, this approach presents the statements on a profit and loss basis, including a provision for depreciation, which is comparable to private industry.

In developing and evaluating the JCSA's accounting system, consideration is given to the adequacy of internal accounting controls. The controls are designed to provide reasonable, but not absolute, assurance regarding: (1) the safeguarding of assets against loss from unauthorized use or disposition; and, (2) the reliability of financial records for preparing the financial statements.

All internal control evaluations occur within the above framework using the concept of reasonable assurance and recognizing: (1) the cost of control should not exceed the benefits likely to be derived; and (2) the evaluation of costs and benefits requires estimates and judgments by management.

We believe the JCSA's internal accounting controls adequately safeguard assets and provide reasonable assurance of the proper recording of financial transactions.

Budgetary controls are maintained to ensure compliance with the budget adopted by the Board of Directors. Encumbrances are used to reserve a portion of the applicable appropriation for purchase orders, contracts and commitments of the JCSA.

### **Awards of Achievement**

The Government Finance Officers' Association (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to James City Service Authority for its component unit financial report for the fiscal year ended June 30, 2015. This was the thirty-first year that the JCSA has received this prestigious award.

In order to be awarded a Certificate of Achievement, the JCSA must publish an easily readable and efficiently organized comprehensive annual financial report, whose contents conform to program standards. Such reports must satisfy both accounting principles generally accepted in the United States of America and applicable legal requirements.

A Certificate of Achievement is valid for a period of one year only. We believe our current report continues to conform to Certificate of Achievement Program requirements, and we are submitting it to the GFOA to determine its eligibility for another certificate.

### **Acknowledgments**

We wish to express our appreciation to the staff of the James City County Department of Financial and Management Services who participated in the preparation of the report. Also, we would like to thank the members of the Board of Directors for their continued support in the planning and implementation of the financial affairs and setting policy for water and sewer development of the JCSA.

Sincerely,



M. Douglas Powell  
General Manager



Stephanie A. Luton  
Assistant Manager/Treasurer



Government Finance Officers Association

**Certificate of  
Achievement  
for Excellence  
in Financial  
Reporting**

Presented to

**James City Service Authority  
Virginia**

For its Comprehensive Annual  
Financial Report  
for the Fiscal Year Ended

**June 30, 2015**

Executive Director/CEO

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## **FINANCIAL SECTION**



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## **Independent Auditors' Report**

Board of Directors  
James City Service Authority  
Williamsburg, Virginia

We have audited the accompanying financial statements of the business-type activities of the James City Service Authority (the "Authority"), a component unit of the County of James City, Virginia, as of and for the years ended June 30, 2016 and 2015, and the related notes to the financial statements, which collectively comprise the Authority's basic financial statements, as listed in the table of contents.

### ***Management's Responsibility for the Financial Statements***

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

### ***Auditors' Responsibility***

Our responsibility is to express opinions on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and *Specifications for Audits of Authorities, Boards and Commissions* issued by the Auditor of Public Accounts of the Commonwealth of Virginia. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence, about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

### ***Opinion***

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the James City Service Authority as of June 30, 2016 and 2015, and the changes in net position and cash flows thereof for the years then ended in accordance with accounting principles generally accepted in the United States of America.

***Other Matters***

***Required Supplementary Information***

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis and schedules of changes in net pension liability and related ratios and schedule of employer contributions, and related notes on pages 3-8 and 38-40 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the *Governmental Accounting Standards Board*, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

***Other Information***

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the James City Service Authority's basic financial statements. The schedule of net position – by activity, schedule of revenues, expenses, and changes in net position – by activity, and schedule of operating revenues and expenses – budget and actual – by activity are presented for purposes of additional analysis and are not a required part of the basic financial statements. Such information is the responsibility of management and were derived from and relate directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, this information is fairly stated, in all material respects, in relation to the basic financial statements as a whole.

The introductory section and statistical sections have not been subjected to the auditing procedures applied in the audit of the basic financial statements and, accordingly, we do not express an opinion or provide any assurance on them.

***Other Reporting Required by Government Auditing Standards***

In accordance with *Government Auditing Standards*, we have also issued our report dated November 29, 2016, on our consideration of the James City Service Authority's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering James City Service Authority's internal control over financial reporting and compliance.

*Dixon Hughes Goodman LLP*

**Newport News, Virginia  
November 29, 2016**

**JAMES CITY SERVICE AUTHORITY**  
(A Component Unit of the County of James City, Virginia)  
Management's Discussion and Analysis  
June 30, 2016 and 2015

This section of the James City Service Authority's (the Authority or JCSA) comprehensive annual financial report presents management's discussion and analysis of the Authority's financial performance during fiscal years ended June 30, 2016 and 2015. The information presented in this section should be read in conjunction with the letter of transmittal, which begins on page v.

**Financial Highlights for Fiscal Years 2016 and 2015**

- ◆ The Authority's total net position was \$177,056,592 and \$172,792,859 at June 30, 2016 and 2015, respectively.
- ◆ Capital assets remained relatively consistent in 2016 from 2015, primarily attributable to the netting effect of current year additions and current year depreciation expense. For fiscal year 2016, there was formal acceptance of 11 new water system dedications and 10 new sewer system dedications.

Capital assets decreased by 0.8% in 2015 from 2014. For fiscal year 2015, there was formal acceptance of 8 new water system dedications and 10 new sewer system dedications.

- ◆ The Authority's total operating expenses before depreciation and amortization decreased by 2.6% in 2016 from 2015. The slight decrease was primarily attributable to less maintenance expense.

Total operating expenses before depreciation and amortization decreased by 10.1% in 2015 from 2014. This was primarily due to fewer emergency repairs in 2015. In 2014, there were one-time emergency infrastructure and equipment repairs and replacements that were classified as maintenance and funded through the Authority's Capital Improvement Program budget and uncommitted reserves.

- ◆ The Authority's total operating revenues remained relatively flat in 2016 from 2015. Gains from the new rate structure including the introduction of a fixed water and sewer charge offset a reduction in proffers.

**Overview of the Financial Statements**

The Comprehensive Annual Financial Report consists of three sections: introductory, financial and statistical. The financial section includes the basic financial statements, which are comprised of the statements of net position, statements of revenues, expenses, and changes in net position, statements of cash flows, and notes to the basic financial statements. Required supplementary information is included in addition to the basic financial statements.

Transactions are accounted for under the economic resources measurement focus and the accrual basis of accounting utilizing an enterprise fund. Accordingly, revenues are recognized in the period earned and expenses are recognized when they are incurred. Enterprise funds are used to account for activities that are financed and operated similar to those often found in the private sector.

The *statements of net position* present information on the Authority's (1) assets and deferred outflows of resources and (2) liabilities and deferred inflows of resources as of June 30, 2016 and 2015, with the difference between the two reported as net position.

The *statements of revenues, expenses, and changes in net position* present information showing how the Authority's net position changed during the fiscal year. All changes in net position are reported as soon as the underlying event giving rise to the change occurs, regardless of the timing of cash flows.

The *statements of cash flows* supplement the above two statements by presenting the changes in cash position as a result of the Authority's activities over the last two years.

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*Notes to the financial statements* provide additional information that is essential for a full understanding of the data provided in the financial statements. The notes to the financial statements begin on page 12.

In addition to the basic financial statements and accompanying notes, this report also presents certain *required supplementary information* concerning the Authority's progress in funding its obligation to provide pension benefits to its employees. The required supplementary information begins on page 38.

Net position is a financial measure that compares an entity's assets and deferred outflows of resources to its liabilities and deferred inflows of resources. Over time, increases and decreases in net position are one indicator of whether the Authority's financial health is improving or deteriorating. However, it is also important to consider other nonfinancial factors, such as changes in economic conditions, industry trends, population and service area growth, and new or changed legislation.

### Financial Analysis

#### Condensed Statements of Net Position

	6/30/2016	6/30/2015	6/30/2014
Current and other assets	\$ 40,940,536	\$ 40,111,499	\$ 35,614,226
Capital assets	161,615,472	161,288,064	162,582,955
Total assets	202,556,008	201,399,563	198,197,181
Deferred charge on refunding, net	1,815,422	-	-
Deferred pension contributions	341,874	330,920	308,820
Total assets and deferred outflows	<u>\$ 204,713,304</u>	<u>\$ 201,730,483</u>	<u>\$ 198,506,001</u>
Current liabilities	\$ 2,443,765	\$ 3,278,575	\$ 2,466,259
Noncurrent liabilities	24,750,261	24,855,247	26,356,508
Total liabilities	27,194,026	28,133,822	28,822,767
Deferred pension investment experience	462,686	803,802	-
Net position:			
Net investment in capital assets	139,312,785	137,173,064	137,922,955
Restricted for debt service	729,605	2,716,277	2,601,160
Unrestricted	37,014,202	32,903,518	29,159,119
Total net position	<u>177,056,592</u>	<u>172,792,859</u>	<u>169,683,234</u>
Total liabilities, deferred inflows and net position	<u>\$ 204,713,304</u>	<u>\$ 201,730,483</u>	<u>\$ 198,506,001</u>

The largest portion of the Authority's net position at June 30, 2016 (78.7%), reflects its investment in capital assets, less any related debt used to acquire those assets that are still outstanding. The Authority uses these capital assets to provide services to customers; consequently, these assets are not available for future spending. Although the Authority's investment in its capital assets is reported net of related debt, it should be noted that the resources needed to repay this debt must be provided from other sources since the capital assets themselves cannot be used to liquidate these liabilities. The unrestricted portion of net position at June 30, 2016 (20.9%) may be used to meet the Authority's ongoing obligations.

The change in net position can also be determined by reviewing the following condensed statements of revenues, expenses, and changes in net position information.

**JAMES CITY SERVICE AUTHORITY**  
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**Condensed Statements of Revenues, Expenses and Changes in Net Position  
for the Year Ended**

	<u>6/30/2016</u>	<u>6/30/2015</u>	<u>6/30/2014</u>
Water and sewer services	\$ 12,774,840	\$ 12,588,470	\$ 11,825,702
Other	817,963	990,357	505,152
Total operating revenues	<u>13,592,803</u>	<u>13,578,827</u>	<u>12,330,854</u>
Salaries	4,347,283	4,257,924	4,288,721
Fringe benefits	1,583,480	1,546,525	1,337,328
Operating supplies	1,094,002	836,288	882,253
Maintenance of buildings & equipment	1,670,023	2,067,464	3,501,598
Utilities	870,220	861,074	875,020
Contractual fees	903,463	915,365	836,634
Other	233,233	497,803	496,851
Depreciation and amortization	7,930,632	7,810,808	7,670,391
Total expenses	<u>18,632,336</u>	<u>18,793,251</u>	<u>19,888,796</u>
Facility charges	3,243,535	3,863,650	4,305,728
Investment income (loss)	519,767	248,207	267,061
Gain (loss) on disposal of capital assets	(193,113)	23,497	15,352
Insurance recovery	14,219	-	-
Bond issuance costs	(402,364)	-	-
Interest, net	(744,124)	(1,095,684)	(1,114,130)
Total nonoperating revenues	<u>2,437,920</u>	<u>3,039,670</u>	<u>3,474,011</u>
Loss before capital contributions	(2,601,613)	(2,174,754)	(4,083,931)
Capital contributions	6,865,346	5,284,379	3,388,700
Change in net position	<u>4,263,733</u>	<u>3,109,625</u>	<u>(695,231)</u>
Net position, beginning of year	<u>172,792,859</u>	<u>169,683,234</u>	<u>170,378,465</u>
Net position, end of year	<u>\$ 177,056,592</u>	<u>\$ 172,792,859</u>	<u>\$ 169,683,234</u>

In fiscal year 2016, water and sewer service revenue increased by 1.5% over 2015, primarily a result of the introduction of a new rate structure. The Authority received \$218,987 in proffers from developers to fund capital improvements, which was \$231,275 less than the amount received in 2015. There was a decrease in the facility charges collected during 2016. This was primarily due to the lack of independent water system connection fees. The 2015 facility charges included independent water system connection fees, which are collected sporadically.

In fiscal year 2015, water and sewer service revenue increased by 6.5% over 2014. This was a result of increased water demand primarily attributable to irrigation. The Authority received \$450,262 in proffers from developers to fund capital improvements, which was \$392,816 more than what was received during 2014. There was a decrease in the facility charges collected during 2015. The 2014 facility charges included one large master metered apartment complex that accounted for approximately 25% of the total collected. New water connections increased to 388 in 2015 from 359 in 2014, and new sewer connections increased to 380 in 2015 from 261 in 2014. The large master metered apartment complex represents one connection in 2014.

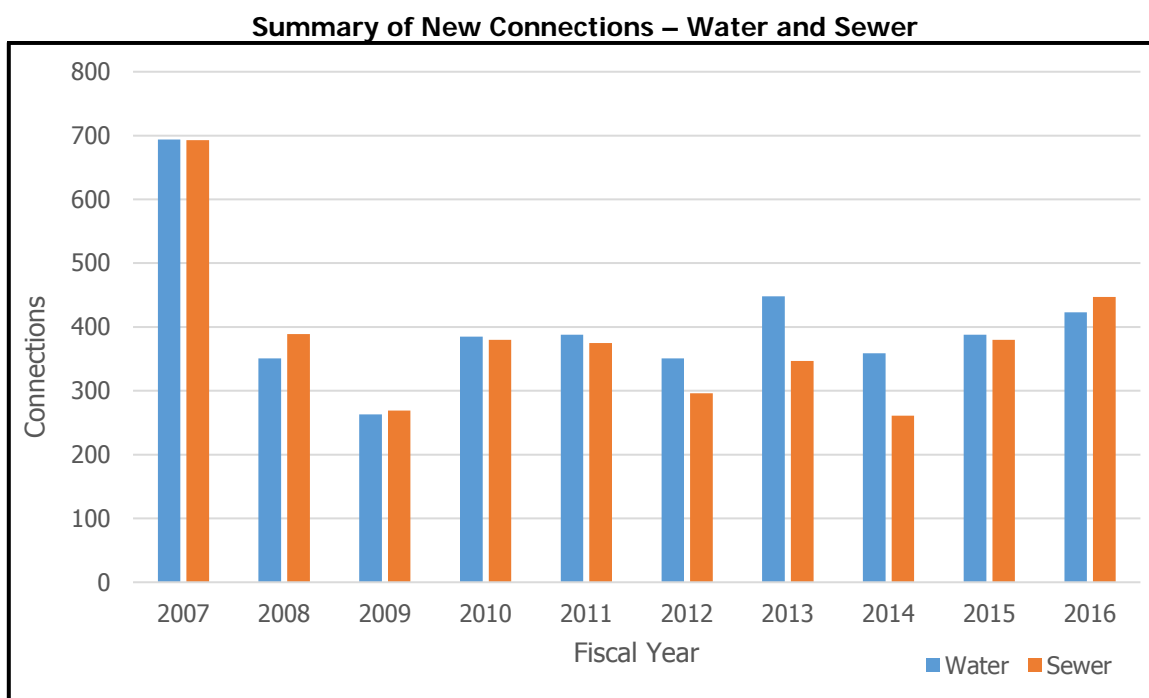
The Authority's net position increased by \$4,263,733 in 2016 from 2015. This was primarily a result of an increase in the number and value of water and sewer system dedications.

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The Authority's net position increased by \$3,109,625 in 2015 from 2014. This was a result of increased water demand primarily attributable to irrigation, an increase in the number and value of water and sewer system dedications, an increase in proffer collections, and the absence of one-time emergency infrastructure and equipment repairs. The Authority's beginning net position for 2014 was restated due to the implementation of GASB 68 and 71.



### Capital Assets

The following table summarizes the Authority's capital assets at June 30, 2016, 2015 and 2014:

<b>Summary of Capital Assets, Net</b>			
	<b>6/30/2016</b>	<b>6/30/2015</b>	<b>6/30/2014</b>
Utility plant	\$ 252,024,248	\$ 244,982,711	\$ 237,989,599
Nonutility plant	11,115,091	10,937,511	10,694,552
Intangible assets	25,004,570	25,004,570	25,004,570
Construction in progress	1,334,553	705,860	1,748,620
Less accumulated depreciation and amortization	127,862,990	120,342,588	112,854,386
Net capital assets	<u>\$ 161,615,472</u>	<u>\$ 161,288,064</u>	<u>\$ 162,582,955</u>

At the end of fiscal year 2016, the Authority had invested \$161,615,472 (net of accumulated depreciation) in a broad range of capital assets, including land and land improvements, water and sewer systems, central shop, office fixtures and equipment, automotive equipment, intangible assets and construction in progress. This amount remains relatively consistent with 2015 (increase of \$327,408), which was primarily the result of increased water and sewer system dedications during fiscal year 2016 (increasing capital assets), offset by the current year depreciation expense. During the current fiscal year, construction in progress increased by 89.1%.

**JAMES CITY SERVICE AUTHORITY**  
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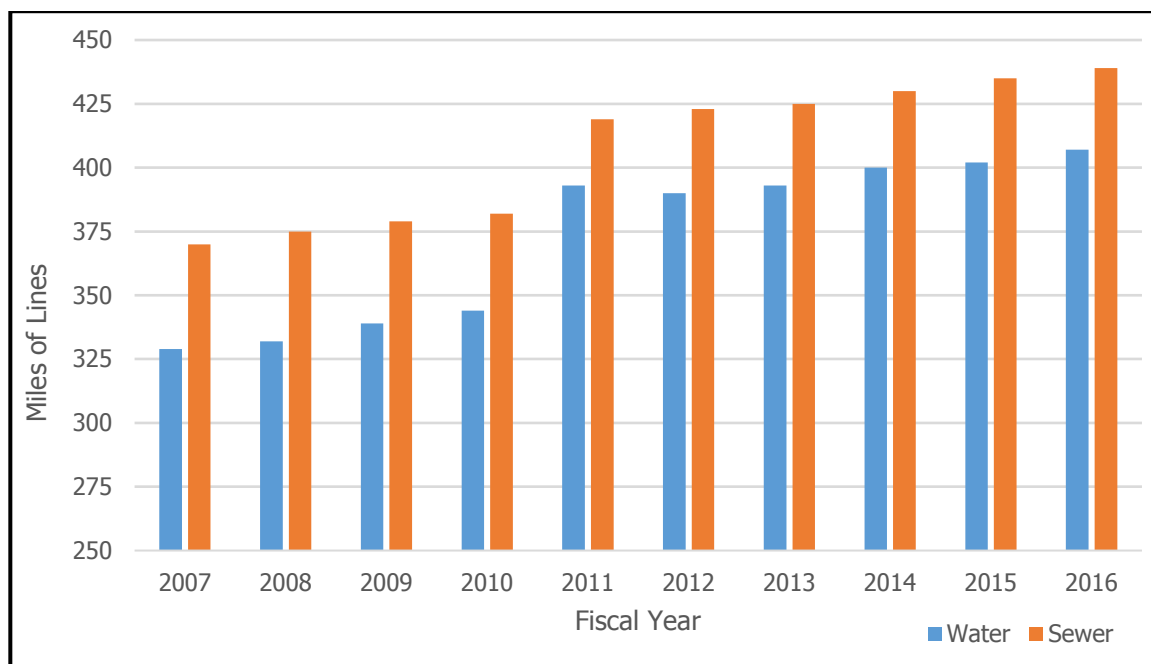
Management's Discussion and Analysis

June 30, 2016 and 2015

At the end of fiscal year 2015, the Authority had invested \$161,288,064 (net of accumulated depreciation) in capital assets. This amount represents a 0.8% net decrease from fiscal year 2014, which was primarily the result of depreciation expense during fiscal year 2015. Construction in progress decreased by 59.6% from fiscal year 2014. This was primarily due to the capitalization of a substantial rehabilitation project at Lift Station 1-5.

Further information related to the Authority's capital assets can be found in Note 3 to these financial statements.

**Water and Sewer Lines**



**Debt Administration**

At the close of the fiscal years 2016 and 2015, the Authority's total outstanding bonded debt was \$22,595,000 (before premiums) and \$24,115,000, respectively.

In August 2008, the Authority issued revenue bonds totaling \$27,120,000 to finance the purchase from the City of Newport News, Virginia of a "safe yield share" of treated water capacity from the King William Reservoir Project or an alternate water supply source. In April 2016, the Authority issued revenue refunding bonds totaling \$22,595,000 to advance refund the outstanding 2008 revenue bonds. The net proceeds were deposited in an irrevocable trust with an escrow agent to provide funds for the future debt service payments on the refunded bonds. Consequently, the 2008 revenue bonds are considered defeased and the liability for those bonds has been removed from the statement of net position. In April 2016, Standard & Poor's upgraded its rating of AA+ to AAA, and Moody's Investors Service upgraded its rating of Aa2 to Aa1 for the Authority's outstanding bonded debt.

Further information on the Authority's outstanding debt can be found in Note 6 to these financial statements.

**Economic Factors and Next Year Budgets and Rates**

During the current fiscal year, the unrestricted net position increased by \$4,110,684 to approximately \$37.0 million from 2015. The Authority did not appropriate any of this for spending as part of the fiscal year 2017 budget.



**JAMES CITY SERVICE AUTHORITY**  
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The JCSA's budget consists of five separate funds: Administration, Water, Sewer, Capital Improvements Program and Debt Service. The Administration fund gets allocated 42% to the Water fund and 58% to the Sewer fund. For financial reporting purposes, the Capital Improvements Program and Debt Service funds are allocated between the Water and Sewer funds as applicable. The fiscal year 2017 budget reflects service rates and charges recommended by the comprehensive water and sewer rate study conducted in fiscal year 2015.

The study concluded the Water Fund needs additional revenue for near term water supply enhancement projects and operating and maintenance costs. The Sewer Fund will require additional revenue beginning in fiscal year 2017 to continue meeting annual operating costs and ongoing Virginia Department of Environmental Quality (DEQ) Consent Order sewer rehabilitation and maintenance responsibilities. Based on these findings, the fiscal year 2017 budget contains the increase of a fixed charge for both water and sewer service and both a water and sewer rate increase for fiscal year 2017 as part of a multi-year plan to ensure the long term financial stability of the Authority.

The philosophy of the fixed charge is that the Authority incurs significant costs to maintain infrastructure regardless of usage and the Authority should not be completely reliant on variable revenue to cover these fixed costs. The water and sewer fixed charges are based on meter size. For a typical residential customer, the quarterly fixed charge for water is \$8.19 and for sewer is \$5.77.

The fiscal year 2017 budget contains new water and sewer service rates. In the Water Fund, the first tier (0-15,000 gallons per quarter) service rate for a typical single family residential customer increases from \$2.47 per 1,000 gallons to \$2.80. The second tier (15,001 – 30,000 gallons per quarter) rate increases from \$4.93 per 1,000 gallons to \$5.60, and the third tier (30,000+ gallons per quarter) rate increases from \$11.59 to \$13.15. The water service rate for non-residential and multi-family residential customers increases from \$3.65 per 1,000 gallons to \$4.14. The sewer service rate increases from \$2.93 per 1,000 gallons to \$2.99.

The rate changes will increase a typical 5,000 gallons per month residential customer's bill by \$2.30 per month from \$31.30 to \$33.60.

The Administration Fund budget increases by 1.3% in fiscal year 2017 from the 2016 budget. In the Water Fund, service revenue is projected to increase by 10.5% in fiscal year 2017 from the 2016 budget as a result of the rate changes. Direct expenses are budgeted to decrease by 3.5%. In the Sewer Fund, service revenue is projected to increase by 1.3% in fiscal year 2017 from the 2016 budget as a result of the rate changes. Direct expenses are budgeted to increase by 1.6%. The Capital Improvements Program budget decreases by 24.5% in fiscal year 2017 from the 2016 budget.

#### **Contacting the Authority's Financial Management**

This financial report is designed to provide our customers and creditors with a general overview of the Authority's finances and to demonstrate the Authority's accountability for the money it receives. Questions concerning this report or requests for additional information should be directed to the James City County Department of Financial and Management Services, 101-F Mounts Bay Road, P.O. Box 8784, Williamsburg, Virginia 23187-8784.

## **BASIC FINANCIAL STATEMENTS**

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**Exhibit 1**

**JAMES CITY SERVICE AUTHORITY**  
(A Component Unit of the County of James City, Virginia)  
Statements of Net Position  
June 30, 2016 and 2015

	2016	2015
<b>Assets</b>		
Current assets:		
Cash and cash equivalents (note 2)	\$ 655,568	\$ 837,750
Investments (note 2)	36,128,873	33,007,483
Restricted investments (note 2)	729,605	-
Accounts receivable, customers	2,456,377	2,574,394
Accounts receivable, other	33,218	38,520
Note receivable (note 3)	2,544	31,531
Interest receivable	125,238	88,112
Inventories	809,113	817,432
Total current assets	40,940,536	37,395,222
Noncurrent assets:		
Capital assets (note 4):		
Utility plant:		
Land	962,995	962,995
Water and sewer systems	251,061,253	244,019,716
Total utility plant	252,024,248	244,982,711
Nonutility property:		
Land	1,739,491	1,739,491
Central shop	4,892,209	4,892,209
Office fixtures and equipment	1,840,746	1,809,839
Land improvements	13,183	13,183
Automotive equipment	2,629,462	2,482,789
Total nonutility property	11,115,091	10,937,511
Intangible assets:		
Easements	4,570	4,570
Water rights	25,000,000	25,000,000
Total intangible assets	25,004,570	25,004,570
Construction in progress (note 11)	1,334,553	705,860
Less accumulated depreciation and amortization	127,862,990	120,342,588
Net capital assets	161,615,472	161,288,064
Restricted investments (note 2)	-	2,716,277
Total noncurrent assets	161,615,472	164,004,341
Total assets	202,556,008	201,399,563
<b>Deferred Outflow of Resources</b>		
Deferred charge on refunding, net (note 6)	1,815,422	-
Deferred pension contributions (note 7)	341,874	330,920
Total deferred outflows	2,157,296	330,920
Total assets and deferred outflows	<u>\$ 204,713,304</u>	<u>\$ 201,730,483</u>
<b>Liabilities</b>		
Current liabilities:		
Accounts payable, trade	\$ 326,814	\$ 385,052
Accrued salaries	14,083	21,605
Compensated absences, current portion (note 6)	287,104	268,010
Due to James City County (note 10)	633,544	1,346,004
Deposits	180,490	196,804
Interest payable	152,823	496,100
Bonds payable, current portion (note 6)	785,000	565,000
Unamortized bond premium, current portion (note 6)	63,907	-
Total current liabilities	2,443,765	3,278,575
Noncurrent liabilities:		
Advances for construction (note 5)	32,902	32,902
Other post-employment benefits (OPEB) (note 8)	277,509	243,509
Compensated absences, net of current portion (note 6)	95,701	89,343
Bonds payable, net of current portion (note 6)	21,810,000	23,550,000
Unamortized bond premium, net of current portion (note 6)	1,459,202	-
Net pension liability (note 7)	1,074,947	939,493
Total noncurrent liabilities	24,750,261	24,855,247
Total liabilities	27,194,026	28,133,822
<b>Deferred Inflow of Resources</b>		
Deferred differences between expected and actual experience (note 7)	114,381	-
Deferred pension investment experience (note 7)	348,305	803,802
Total deferred inflows	462,686	803,802
<b>Net position</b>		
Net position:		
Net investment in capital assets	139,312,785	137,173,064
Restricted for debt service	729,605	2,716,277
Unrestricted	37,014,202	32,903,518
Total net position	177,056,592	172,792,859
Total liabilities, deferred inflow of resources, and net position	<u>\$ 204,713,304</u>	<u>\$ 201,730,483</u>

See accompanying notes to basic financial statements.

**Exhibit 2**

**JAMES CITY SERVICE AUTHORITY**  
(A Component Unit of the County of James City, Virginia)  
**Statements of Revenues, Expenses, and Changes in Net Position**  
Years ended June 30, 2016 and 2015

	<u>2016</u>	<u>2015</u>
Operating revenues:		
Water and sewer services	\$ 12,774,840	\$ 12,588,470
Water supply proffers	218,987	450,262
Rental income (note 10)	326,377	325,991
Other	272,599	214,104
Total operating revenues	<u>13,592,803</u>	<u>13,578,827</u>
Operating expenses:		
Salaries (note 6)	4,347,283	4,257,924
Fringe benefits (note 6)	1,583,480	1,546,525
Operating supplies	1,094,002	836,288
Maintenance of buildings and equipment	1,670,023	2,067,464
Utilities	870,220	861,074
Contractual fees (note 10)	903,463	915,365
Other	233,233	497,803
Total operating expenses	<u>10,701,704</u>	<u>10,982,443</u>
Operating income before depreciation and amortization	2,891,099	2,596,384
Depreciation and amortization	<u>7,930,632</u>	<u>7,810,808</u>
Operating loss	<u>(5,039,533)</u>	<u>(5,214,424)</u>
Nonoperating revenues (expenses):		
Facility charges	3,243,535	3,863,650
Investment income	519,767	248,207
Gain (loss) on disposal of capital assets	(193,113)	23,497
Insurance recovery	14,219	-
Bond issuance costs	(402,364)	-
Interest, net	(744,124)	(1,095,684)
Net nonoperating revenues	<u>2,437,920</u>	<u>3,039,670</u>
Loss before capital contributions	<u>(2,601,613)</u>	<u>(2,174,754)</u>
Capital asset contributions	<u>6,865,346</u>	<u>5,284,379</u>
Changes in net position	4,263,733	3,109,625
Net position, beginning of year	172,792,859	169,683,234
Net position, end of year	<u>\$ 177,056,592</u>	<u>\$ 172,792,859</u>

See accompanying notes to basic financial statements.

**Exhibit 3**

**JAMES CITY SERVICE AUTHORITY**  
(A Component Unit of the County of James City, Virginia)  
**Statements of Cash Flows**  
Years ended June 30, 2016 and 2015

	<b>2016</b>	<b>2015</b>
Cash flows from operating activities:		
Cash received from customers	\$ 12,876,543	\$ 12,447,781
Other cash receipts	852,252	1,067,923
Cash payments to suppliers for goods and services	(5,533,320)	(4,368,094)
Cash payments for personnel services	(6,095,449)	(5,977,476)
Facility charges	3,243,535	3,863,650
Net cash provided by operating activities	<u>5,343,561</u>	<u>7,033,784</u>
Cash flows from capital and related financing activities:		
Repayments of debt	(1,814,357)	(545,000)
Interest paid	(1,085,357)	(1,104,431)
Bond issuance costs	(402,364)	-
Insurance recovery	14,219	-
Acquisition and construction of capital assets	(1,615,979)	(1,241,159)
Proceeds from sale of capital assets	30,172	33,118
Net cash used in capital and related financing activities	<u>(4,873,666)</u>	<u>(2,857,472)</u>
Cash flows from investing activities:		
Purchases of investments	(60,367,516)	(28,269,994)
Proceeds from sale of investments	59,232,798	24,103,069
Interest received	482,641	241,393
Net cash used in investing activities	<u>(652,077)</u>	<u>(3,925,532)</u>
Increase (decrease) in cash and cash equivalents	<u>(182,182)</u>	<u>250,780</u>
Cash and cash equivalents, beginning of year	837,750	586,970
Cash and cash equivalents, end of year	<u><u>\$ 655,568</u></u>	<u><u>\$ 837,750</u></u>
Reconciliation of operating loss to net cash provided by operating activities:		
Operating loss	\$ (5,039,533)	\$ (5,214,424)
Adjustments to reconcile operating loss to cash provided by operating activities:		
Depreciation and amortization	7,930,632	7,810,808
Facility charges	3,243,535	3,863,650
Change in operating assets and liabilities:		
Accounts receivable, customers and others	123,319	(104,984)
Notes receivable	28,987	29,463
Inventories	8,319	2,768
Accounts payable, trade	(58,238)	(83,377)
Accrued salaries	(7,522)	21,605
Compensated absences	25,452	(44,208)
Due to James City County	(712,460)	890,509
Deposits	(16,314)	12,398
OPEB liability	34,000	36,000
Net pension liability and related deferred inflow/outflows of resources	(216,616)	(186,424)
Total adjustments	<u>10,383,094</u>	<u>12,248,208</u>
Net cash provided by operating activities	<u><u>\$ 5,343,561</u></u>	<u><u>\$ 7,033,784</u></u>
Supplemental schedules:		
Noncash capital activities:		
Capital asset contributions	\$ 6,865,346	\$ 5,284,379
Noncash investing activity:		
Unrealized gain (loss) from change in fair value of investments	<u><u>\$ 99,188</u></u>	<u><u>\$ (166,009)</u></u>

See accompanying notes to basic financial statements.

**JAMES CITY SERVICE AUTHORITY**  
(A Component Unit of the County of James City, Virginia)

Notes to Financial Statements

June 30, 2016 and 2015

**1) Organization and Summary of Significant Accounting Policies**

The James City Service Authority (the Authority) was established on June 30, 1969, by resolution of the Board of Supervisors of James City County, Virginia (the County, or Primary Government), and was chartered by the Commonwealth of Virginia, State Corporation Commission in July 1969 to provide water and sewer service to County residents as permitted under the Code of Virginia (1950), as amended (the Enabling Act).

The Enabling Act authorizes the Authority, among other things, to: a) acquire, construct, improve, extend, operate, and maintain any water, sewer, sewage disposal, or garbage/refuse collection and disposal system; b) issue revenue bonds of the Authority, payable solely from revenues, to pay all or any part of the cost of such systems; c) fix, revise, charge, and collect rates, fees, and charges for the use of and for the services furnished or to be furnished by any system operated by the Authority; and d) enter into contracts with the Commonwealth of Virginia, or with any municipality, county, corporation, individual, or any public authority or unit thereof, relating to the services and facilities of any such system of the Authority. Further, the Enabling Act provides that the Authority is subject in all respects to the jurisdiction of the Department of Environmental Quality – Water Division (DEQ), formerly the State Water Control Board of the Commonwealth of Virginia, under the provision of the State Water Control Law.

The Authority's governing body is appointed by the County's Board of Supervisors, although the Authority is legally separate. The County's Board of Supervisors is the appointed Board of Directors of the Authority.

The County can impose its will over the Authority, significantly influencing the programs, projects, activities, or levels of service. Although a financial benefit or burden relationship may not exist, the County is financially accountable. The Authority is accounted for as a proprietary fund and its financial statements have been blended with the County's financial statements for reporting purposes.

**Basis of Accounting and Presentation**

The Authority prepares its financial statements in conformity with U.S. generally accepted accounting principles (GAAP) as applied to governmental units. The Governmental Accounting Standards Board (GASB) is the accepted standard-setting body for establishing governmental accounting and financial reporting principles. The Authority uses the economic resources management focus and the accrual basis of accounting. Under this method, revenues are recorded when earned and expenses are recorded at the time liabilities are incurred. Current assets include cash and amounts convertible to cash during the next normal operating cycle, or one year. Current liabilities include those obligations to be liquidated with current assets. The Authority generally first uses restricted assets for expenses incurred for which both restricted and unrestricted assets are available. The Authority may defer the use of restricted assets based on a review of the specific transaction.

Since the Authority is only engaged in business-type activities, it is required to present only the financial statements required for enterprise funds. The basic financial statements consist of Statements of Net Position, Statements of Revenues, Expenses and Changes in Net Position, Statements of Cash Flows and Notes to the Financial Statements.

**Cash Equivalents**

For purposes of the statements of cash flows, cash equivalents are defined as short-term, highly liquid investments that are both (a) readily convertible to known amounts of cash, and (b) so near the maturity that they present insignificant risk of changes in value because of changes in interest rates. Generally, the Authority considers investments with original maturities of three months or less to be cash equivalents.

**JAMES CITY SERVICE AUTHORITY**  
(A Component Unit of the County of James City, Virginia)

Notes to Financial Statements

June 30, 2016 and 2015

**1) Organization and Summary of Significant Accounting Policies, Continued**

**Inventories**

Inventories are valued at cost and are charged against operations on an average cost basis. They consist of water meters, pipes, and parts required to repair the utility systems.

**Capital Assets**

All direct costs of water and sewer transmission facilities constructed are capitalized. In addition, interest and amortization of bond and trustee expense, where applicable, are capitalized during the period of construction. Interest expense is reduced to the extent of any interest income earned on investment of bond proceeds. Nonutility property is capitalized at cost.

The Authority's policy is to capitalize capital assets with a cost or acquisition value at the date of donation of \$5,000 or greater. The cost of major improvements is capitalized, while the cost of maintenance and repairs, which does not improve or extend the life of an asset, is expensed. The Authority provides for depreciation of capital assets using the straight-line method at amounts estimated to amortize the cost or basis of the assets over their estimated useful lives, as follows:

Sewer systems	40 years
Water systems	30 years
Equipment and other	3-40 years

The Authority has easements and water rights that are considered intangible assets. The water rights are related to an agreement the Authority has with the City of Newport News to purchase and treat water to meet long-term water supply needs. These water rights are amortized using the straight-line depreciation method over the life of the agreement.

When capital assets are sold or retired, the related cost and accumulated depreciation are removed from the accounts and any gain or loss is included in the accompanying statements of revenues, expenses, and changes in net position.

**Unbilled Revenue**

The Authority records the amount of accrued but unbilled revenue by prorating actual subsequent billings. Amounts accrued but unbilled were approximately \$1,106,000 and \$1,196,000 at June 30, 2016 and 2015, respectively.

**Allowance for Uncollectible Accounts**

The Authority has few uncollectible receivables and does not use an allowance account. State law permits filing of liens against real property for unpaid utility charges. The write-off of bad debts only occurs when the property is sold prior to the lien process being instituted.

**Budgetary Policy**

Although a budget is not legally required to be adopted, a fiscal year budget is prepared on a modified accrual basis for management and fiscal planning purposes. Any changes to the adopted budget require Board approval. Appropriations lapse at the end of the fiscal year with the exception of capital projects which continue until completed. For the years ended June 30, 2016 and 2015, there were \$44,600 and \$26,200, respectively, in supplemental appropriations for various grants.



**JAMES CITY SERVICE AUTHORITY**  
(A Component Unit of the County of James City, Virginia)

Notes to Financial Statements

June 30, 2016 and 2015

**1) Organization and Summary of Significant Accounting Policies, Continued**

**Risk Management**

The Authority is exposed to various risks of loss related to torts; theft of, damage to, and destruction of assets; errors and omissions; injuries to employees, and natural disasters. Property, liability and worker's compensation coverages are provided through a self-insurance pool. The Authority's retention is through deductibles. Deductibles and coverage limits at June 30, 2016 were as follows:

	<u>Deductibles</u>		<u>Liability coverage limits</u>
Property	\$ 10,000		
Inland marine	1,000		
Flood	25,000		
Earthquake	25,000		
General liability and law enforcement	100,000		
Automobile:			
Liability	100,000		
Comprehensive	1,000		
Collision	1,000		
Crime	250		
Worker's compensation	None		
Property insurance:			
Valuation at functional replacement		\$ 56,698,184	
Flood (outside 100 year flood plain)		56,698,184	
Business interruption/extra expense		3,000,000	
Property in transit		5,000,000	
Increased cost of construction/ordinance demolition		20,000,000	
Back-up of sewers and drains		1,000,000	
Debris removal		20,000,000	
Pollutant clean-up and removal		500,000	
Off premises power failure		2,000,000	
Media reproduction		100,000	
Newly acquired locations for up to 120 days		20,000,000	
General liability and law enforcement		9,000,000	
Automobile liability		9,000,000	
Public officials		9,000,000	
Crime		500,000	
Worker's compensation		Statutory limits	

There have been no reductions in insurance coverages from the prior year, and settled claims have not exceeded the amount of insurance coverage in any of the past three fiscal years.

**Bond Premiums and Discounts**

Bond premiums and discounts are deferred and amortized over the terms of the related issues on a straight-line basis, which approximates the effective interest method.

**JAMES CITY SERVICE AUTHORITY**  
(A Component Unit of the County of James City, Virginia)

Notes to Financial Statements

June 30, 2016 and 2015

**1) Organization and Summary of Significant Accounting Policies, Continued**

**Operating and Nonoperating Revenue and Expenses Recognition**

Proprietary funds distinguish operating revenues and expenses from nonoperating items. Operating revenues and expenses result from providing water and sewer services. Revenues and expenses not meeting the operating definition are reported as nonoperating. These consist mainly of water and sewer facility charges, investment income, interest expense, and gain or loss on disposal of capital assets.

**Estimates**

The preparation of financial statements requires management to make estimates and assumptions that affect certain reported amounts and disclosures. Accordingly, actual results could differ from those estimates and assumptions.

**Adoption of New Accounting Statement**

Effective with the financial statements for the fiscal year ended June 30, 2016, the Authority has adopted GASB Statement No. 72, Fair Value Measurement and Application. This statement requires the use of valuation techniques which are appropriate under the circumstances and are either a market approach, a cost approach, or an income approach.

The statement establishes a hierarchy of inputs used to measure fair value consisting of three levels. Level 1 inputs are quoted prices in active markets for identical assets or liabilities. Level 2 inputs are inputs, other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly. Level 3 inputs are unobservable inputs, such as management's assumption of the default rate among underlying mortgages of a mortgage-backed security. Statement No. 72 also contains note disclosure requirements regarding the hierarchy of valuation inputs and valuation techniques that was used for the fair value measurements.

**2) Cash and Investments**

The Authority's cash and investments at June 30, 2016 and 2015, consisted of the following:

	<u>6/30/2016</u>	<u>6/30/2015</u>
Bank deposits	\$ 654,963	\$ 837,145
Petty cash	605	605
Investments	<u>36,858,478</u>	<u>35,723,760</u>
Total	<u>\$ 37,514,046</u>	<u>\$ 36,561,510</u>

**Reconciliation to Statement of Net Position:**

Cash and cash equivalents	\$ 655,568	\$ 837,750
Investments	36,128,873	33,007,483
Restricted investments	<u>729,605</u>	<u>2,716,277</u>
Total	<u>\$ 37,514,046</u>	<u>\$ 36,561,510</u>

Deposits with banks are fully covered by the Federal Deposit Insurance Corporation (FDIC) or collateralized in accordance with the Virginia Security for Public Deposits Act, Section 2.2-4400 et. seq. of the Code of Virginia.

**JAMES CITY SERVICE AUTHORITY**  
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Notes to Financial Statements

June 30, 2016 and 2015

**2) Cash and Investments, Continued**

The Authority's investments at June 30, 2016 were as follows:

<b>Investment Type</b>	<b>Cost</b>	<b>Fair Value</b>	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>
<b><i>Investments:</i></b>					
U.S. Treasury securities	\$ 16,198,777	\$ 16,328,592	\$ 16,328,592	\$ -	\$ -
Federal agency notes and bonds	6,243,569	6,218,850	-	6,218,850	-
Corporate notes and bonds	6,326,762	6,314,987	-	6,314,987	-
Commercial paper	2,084,038	2,089,218	-	2,089,218	-
Certificates of deposit	3,224,034	3,227,691	-	3,227,691	-
Federal agency collateralized mortgage obligation	1,952,505	1,949,535	-	1,949,535	-
Total	<u>\$ 36,029,685</u>	<u>\$ 36,128,873</u>	<u>\$ 16,328,592</u>	<u>\$ 19,800,281</u>	<u>\$ -</u>
<b><i>Restricted Investments:</i></b>					
Money market	<u>\$ 729,605</u>	<u>\$ 729,605</u>	N/A	N/A	N/A

	Amount	Weighted average maturity (in years)		
		Less than 1	1-2	2-7
<b>6/30/2016:</b>				
Money market funds	\$ 729,605	\$ 729,605	\$ -	\$ -
U.S. Treasury securities	16,328,592	310,630	3,834,076	12,183,886
Federal agency notes and bonds	6,218,850	50,356	4,392,166	1,776,328
Corporate notes and bonds	6,314,987	1,767,158	2,380,701	2,167,128
Commercial paper	2,089,218	2,089,218	-	-
Certificate of deposit	3,227,691	700,086	2,527,605	-
Federal agency collateralized mortgage obligation	1,949,535	-	226,823	1,722,712
Total	\$ 36,858,478	\$ 5,647,053	\$ 13,361,371	\$ 17,850,054

<b><i>6/30/2015:</i></b>				
Money market funds	\$ 2,593,852	\$ 2,593,852	\$ -	\$ -
U.S. Treasury securities	18,536,007	-	1,050,737	17,485,270
Federal agency notes and bonds	5,149,629	-	684,789	4,464,840
Corporate notes and bonds	5,965,056	-	-	5,965,056
Certificate of deposit	2,572,914	-	-	2,572,914
Municipal bonds	906,302	-	-	906,302
Total	<u>\$ 35,723,760</u>	<u>\$ 2,593,852</u>	<u>\$ 1,735,526</u>	<u>\$ 31,394,382</u>

**Investment Policy**

The JCSA Board of Directors adopted an updated Investment Policy on March 26, 2013. In accordance with the Code of Virginia and other applicable laws, including regulations, the Authority's Investment Policy (the Policy) permits investments in U.S. government obligations, municipal obligations, prime quality commercial paper, and certain corporate notes, bankers' acceptances, repurchase agreements, negotiable certificates of deposit, bank deposit notes, mutual funds that invest exclusively in securities specifically permitted under the Policy, and the State Treasurer's Local Government Investment Pool (the Virginia LGIP, a 2a-7 like pool). The fair value of the Authority's position in the LGIP is the same as the value of the pool shares. The Treasury Board of the Commonwealth of Virginia has regulatory oversight of the LGIP.

The Policy establishes limitations on the holdings of non-U.S. government obligations. The combined amount of bankers' acceptances, commercial paper, and corporate notes shall not exceed fifty percent (50%) of the total book value of the portfolio at the date of acquisition.

**JAMES CITY SERVICE AUTHORITY**  
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Notes to Financial Statements

June 30, 2016 and 2015

**2) Cash and Investments, Continued**

The maximum percentage of the portfolio (book value at the date of acquisition) permitted in each security is as follows:

Registered money market mutual funds	50% maximum
Commonwealth of Virginia LGIP	50% maximum
Repurchase agreements	50% maximum
Bankers' acceptances	35% maximum
Commercial paper	35% maximum
Negotiable certificates of deposit/bank deposit notes	20% maximum
Municipal obligations	20% maximum
Corporate notes	20% maximum

**Credit Risk**

As required by state statute, the Policy requires that commercial paper have a short-term debt rating of no less than A-1 (or its equivalent) from at least two of the following: Moody's Investors Service, Standard & Poor's, Fitch Investor's Service, and Duff and Phelps. Corporate notes must have a minimum of Aa long-term debt rating by Moody's Investors Service and a minimum of AA long-term debt rating by Standard & Poor's. Negotiable certificates of deposit and bank deposit notes maturing in less than one year must have a short-term debt rating of at least A-1 by Standard & Poor's and P-1 by Moody's Investors Service. Notes having a maturity of greater than one year must be rated AA by Standard & Poor's and Aa by Moody's Investors Service. Although state statute does not impose credit standards on repurchase agreement counterparties, bankers' acceptances, or money market mutual funds, the Authority has established stringent credit standards for these investments to minimize portfolio risk. As of June 30, 2016 and 2015, the Authority's investments rated by Standard & Poor's were as follows:

	Unrated	AAA	AA+	AA	AA-	A-1+	A-1
<b>6/30/2016:</b>							
Money market funds	\$ 729,605	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
U.S. Treasury securities	-	-	16,328,592	-	-	-	-
Federal agency notes and bonds	-	-	6,218,850	-	-	-	-
Corporate notes and bonds	-	1,047,539	1,836,052	591,805	2,839,591	-	-
Commercial paper	-	-	-	-	-	-	2,089,218
Certificate of deposit	-	-	-	-	1,301,967	1,225,638	700,086
Fed. agency coll. mortgage ob.	-	-	1,949,535	-	-	-	-
Total	<u>\$ 729,605</u>	<u>\$ 1,047,539</u>	<u>\$ 26,333,029</u>	<u>\$ 591,805</u>	<u>\$ 4,141,558</u>	<u>\$ 1,225,638</u>	<u>\$ 2,789,304</u>
<b>6/30/2015:</b>							
Money market funds	\$ 2,593,852	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
U.S. Treasury securities	-	-	18,536,008	-	-	-	-
Federal agency notes and bonds	-	-	5,149,629	-	-	-	-
Corporate notes and bonds	-	939,514	1,396,960	1,889,104	1,739,476	-	-
Certificate of deposit	122,425	-	-	-	1,750,062	700,428	-
Municipal bonds	-	-	906,302	-	-	-	-
Total	<u>\$ 2,716,277</u>	<u>\$ 939,514</u>	<u>\$ 25,988,899</u>	<u>\$ 1,889,104</u>	<u>\$ 3,489,538</u>	<u>\$ 700,428</u>	<u>\$ -</u>

**JAMES CITY SERVICE AUTHORITY**  
(A Component Unit of the County of James City, Virginia)

Notes to Financial Statements

June 30, 2016 and 2015

**2) Cash and Investments, Continued**

**Concentration of Credit Risk**

The Policy establishes guidelines on portfolio composition by issuer in order to control concentration of credit risk. No more than 5% of the Authority's portfolio will be invested in the securities of any single issuer with the following exceptions:

U.S. Treasury	100% maximum
Each money market mutual fund	50% maximum
Each federal agency	35% maximum
Each federal agency mortgage-backed security	10% maximum
Each repurchase agreement counterparty	25% maximum
Commonwealth of Virginia LGIP	50% maximum
Bank deposits	35% maximum

At June 30, 2016 and 2015, the portions of the Authority's portfolio (excluding restricted investments) that exceeded 5% of the total were:

<u>Issuer</u>	<u>% of portfolio</u>
<b><u>6/30/2016:</u></b>	
U.S. Treasury	45.2%
Federal Home Loan Banks	7.2%
Federal Home Loan Mortgage Corporation	6.9%
<b><u>6/30/2015:</u></b>	
U.S. Treasury	56.0%
Federal Home Loan Mortgage Corporation	10.0%
Federal Home Loan Banks	5.6%

**Interest Rate Risk**

As a means of limiting exposure to fair value losses arising from rising interest rates, the Policy limits the investment of short-term operating funds to an average weighted maturity of no more than 180 days, with a portion of the portfolio continuously invested in readily available funds. The operating fund core portfolio will be invested in permitted investments with a stated maturity of no more than five years from the date of purchase. To control the volatility of the core portfolio, the Authority will determine a duration target, not to exceed three years.

Proceeds from the sale of bonds must be invested in compliance with the specific requirements of the bond covenants and may be invested in securities with longer maturities, so long as the maturity does not exceed the expected disbursement date of those funds.

**Custodial Credit Risk**

The Policy requires that all investment securities purchased by the Authority or held as collateral on deposits or investments shall be held by the Authority or by a third-party custodial agent who may not otherwise be a counter party to the investment transaction. As of June 30, 2016 and 2015, all of the Authority's investments were held in a bank's trust department in the name of James City Service Authority.

**JAMES CITY SERVICE AUTHORITY**  
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Notes to Financial Statements

June 30, 2016 and 2015

**3) Note Receivable**

In September 2009, the Authority executed a promissory note with Anderson-Hughes, LLC pursuant to the Sewer Modification Contract dated September 20, 2007 for the installation of grinder pumps. The promissory note was issued for \$170,000 at 6% interest. Anderson-Hughes, LLC is required to pay \$2,508 per month until August 2016. At June 30, 2016 and 2015, the note receivable balance was \$2,544 and \$31,531, respectively.

**4) Capital Assets**

The following is a summary of changes in capital assets for the fiscal years ended June 30, 2016 and 2015:

	Balance July 1, 2015	Increases	Decreases	Balance June 30, 2016
Capital assets not being depreciated:				
Utility plant:				
Land	\$ 962,995	\$ -	\$ -	\$ 962,995
Nonutility plant:				
Land	1,739,491	-	-	1,739,491
Land improvements	13,183	-	-	13,183
Construction in progress	705,860	1,505,763	877,070	1,334,553
Intangibles - easements	4,570	-	-	4,570
Total capital assets not being depreciated	<u>3,426,099</u>	<u>1,505,763</u>	<u>877,070</u>	<u>4,054,792</u>
Capital assets being depreciated:				
Utility plant:				
Water and sewer systems	244,019,716	7,472,448	430,911	251,061,253
Nonutility plant:				
Central shop	4,892,209	-	-	4,892,209
Office fixtures and equipment	1,809,839	98,578	67,671	1,840,746
Automotive equipment	2,482,789	281,607	134,934	2,629,462
Intangible - water rights	25,000,000	-	-	25,000,000
Total capital assets being depreciated	<u>278,204,553</u>	<u>7,852,633</u>	<u>633,516</u>	<u>285,423,670</u>
Less accumulated depreciation/amortization:				
Water and sewer systems	112,007,794	6,784,156	208,159	118,583,791
Central shop	1,488,065	144,245	-	1,632,310
Office fixtures and equipment	1,109,095	135,485	67,136	1,177,444
Automotive equipment	1,903,277	253,249	134,934	2,021,592
Intangibles - water rights	3,834,356	613,497	-	4,447,853
Total accumulated depreciation/amortization	<u>120,342,588</u>	<u>7,930,632</u>	<u>410,229</u>	<u>127,862,990</u>
Total capital assets being depr./amort, net	<u>157,861,967</u>	<u>(77,999)</u>	<u>223,287</u>	<u>157,560,680</u>
Total capital assets, net	<u>\$ 161,288,064</u>	<u>\$ 1,427,764</u>	<u>\$ 1,100,357</u>	<u>\$ 161,615,472</u>

**JAMES CITY SERVICE AUTHORITY**  
(A Component Unit of the County of James City, Virginia)

Notes to Financial Statements

June 30, 2016 and 2015

**4) Capital Assets, Continued**

	Balance July 1, 2014	Increases	Decreases	Balance June 30, 2015
Capital assets not being depreciated:				
Utility plant:				
Land	\$ 962,995	\$ -	\$ -	\$ 962,995
Nonutility plant:				
Land	1,750,391	1,600	12,500	1,739,491
Land improvements	13,183	-	-	13,183
Construction in progress	1,748,620	1,773,110	2,815,870	705,860
Intangibles - easements	4,570	-	-	4,570
Total capital assets not being depreciated	<u>4,479,759</u>	<u>1,774,710</u>	<u>2,828,370</u>	<u>3,426,099</u>
Capital assets being depreciated:				
Utility plant:				
Water and sewer systems	237,026,604	7,070,270	77,158	244,019,716
Nonutility plant:				
Central shop	4,884,119	40,860	32,770	4,892,209
Office fixtures and equipment	1,696,932	129,734	16,827	1,809,839
Automotive equipment	2,349,927	338,334	205,472	2,482,789
Intangible - water rights	25,000,000	-	-	25,000,000
Total capital assets being depreciated	<u>270,957,582</u>	<u>7,579,198</u>	<u>332,227</u>	<u>278,204,553</u>
Less accumulated depreciation/amortization:				
Water and sewer systems	105,395,191	6,680,140	67,537	112,007,794
Central shop	1,377,610	143,225	32,770	1,488,065
Office fixtures and equipment	1,000,336	125,585	16,826	1,109,095
Automotive equipment	1,860,390	248,360	205,473	1,903,277
Intangibles - water rights	3,220,859	613,497	-	3,834,356
Total accumulated depreciation/amortization	<u>112,854,387</u>	<u>7,810,807</u>	<u>322,606</u>	<u>120,342,588</u>
Total capital assets being depr./amort, net	<u>158,103,197</u>	<u>(231,609)</u>	<u>9,621</u>	<u>157,861,967</u>
Total capital assets, net	<u>\$ 162,582,954</u>	<u>\$ 1,543,101</u>	<u>\$ 2,837,991</u>	<u>\$ 161,288,064</u>

**5) Advances for Construction**

Advances for construction consist of two separate agreement types. Funds can be advanced by developers for the construction of specific facilities. These agreements call for rebates, up to the amount advanced, and have no expiration date. Developers can also construct a facility, dedicate it to the Authority, and receive rebates up to the cost of the facility for up to 10 years. The Authority no longer enters into these types of agreements. As of June 30, 2016 and 2015, advances for construction consisted of:

Funds advanced	\$ 27,020
Facilities constructed	5,882
Total	<u>\$ 32,902</u>

**JAMES CITY SERVICE AUTHORITY**  
(A Component Unit of the County of James City, Virginia)

Notes to Financial Statements

June 30, 2016 and 2015

**6) Long-Term Debt**

The Authority's long-term debt activity for the fiscal years ended June 30, 2016 and 2015 was as follows:

	Balance 7/1/2015	Increases	Decreases	Balance 6/30/2016	Due within one year
Revenue bonds	\$ 24,115,000	\$ -	\$ 24,115,000	\$ -	\$ -
Refunding revenue bonds	-	22,595,000	-	22,595,000	785,000
Premium, refunding revenue bonds	-	1,533,760	10,651	1,523,109	63,907
Compensated absences	357,353	448,474	423,022	382,805	287,104
Total	<u>\$ 24,472,353</u>	<u>\$ 24,577,234</u>	<u>\$ 24,548,673</u>	<u>\$ 24,500,914</u>	<u>\$ 1,136,011</u>

	Balance 7/1/2014	Increases	Decreases	Balance 6/30/2015	Due within one year
Revenue bonds	\$ 24,660,000	\$ -	\$ 545,000	\$ 24,115,000	\$ 565,000
Compensated absences	373,913	445,120	461,680	357,353	268,010
Total	<u>\$ 25,033,913</u>	<u>\$ 445,120</u>	<u>\$ 1,006,680</u>	<u>\$ 24,472,353</u>	<u>\$ 833,010</u>

**Revenue Bonds and Refunding Revenue Bonds (including Premium)**

In August 2008, the Authority issued revenue bonds totaling \$27,120,000 to finance the purchase from the City of Newport News, Virginia of a "safe yield share" of treated water capacity from the King William Reservoir Project or an alternate water supply source. In April 2016, the Authority issued revenue refunding bonds totaling \$22,595,000 to advance refund the outstanding 2008 revenue bonds. There was a \$1,533,760 premium issued on the new bonds. The interest rate on the bonds range from 3% - 5% and the net proceeds were deposited in an irrevocable trust with an escrow agent to provide funds for the future debt service payments on the refunded bonds. Consequently, the 2008 revenue bonds are considered defeased and the liability for those bonds has been removed from the statement of net position. The reacquisition price exceeded the carrying value of the old debt by \$1,828,117 ("deferred charge on refunding"), and this amount is being amortized over the life of the new debt. The deferred charge on refunding net of accumulated amortization, was \$1,815,422 at June 30, 2016. The advance refunding reduced its total debt service payments over 24 years by \$6,956,051 and to obtain an economic gain of \$3,548,748. The refunding revenue bonds mature in various installments through 2040 with interest payable semiannually. Future maturities of principal and interest payments are as follows:

Year Ended June 30	Principal	Interest
2017	\$ 785,000	\$ 571,161
2018	605,000	749,450
2019	630,000	725,250
2020	655,000	700,050
2021	690,000	667,300
2022-2026	3,925,000	2,854,550
2027-2031	4,750,000	2,018,850
2032-2036	5,515,000	1,262,100
2037-2040	5,040,000	383,400
	<u>\$ 22,595,000</u>	<u>\$ 9,932,111</u>



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**6) Long-Term Debt, Continued**

**Compensated Absences**

Compensated absences consists of earned but unused vacation, sick leave and paid time off. The costs attributable to Authority personnel are paid by the County and reimbursed by the Authority. Upon termination and only after a minimum of 2 years of employment with the Authority, employees are entitled to receive cash payments for sick leave at 25% of accumulated values up to a maximum of \$5,000. At June 30, 2016 and 2015, compensated absences consisted of the following:

	<u>6/30/2016</u>	<u>6/30/2015</u>
Vacation	\$ 291,932	\$ 273,563
Sick	78,319	77,827
Paid-time off	12,554	5,963
Total	<u>\$ 382,805</u>	<u>\$ 357,353</u>

**7) Pension Plan**

***Pensions***

The Virginia Retirement System (VRS) Political Subdivision Retirement Plan is a multi-employer, agent plan. For purposes of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the fiduciary net position of the Authority's retirement plan and the additions to/deductions from the Authority's retirement plan's net fiduciary position have been determined on the same basis as they were reported by the VRS. For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

VRS issues a publicly available comprehensive annual financial report that includes financial statements, required supplementary information and detailed information about the fiduciary net position of the VRS plans. A copy of that report may be downloaded from their web site at <http://www.varetire.org/pdf/publications/2015-annual-report.pdf> or obtained by writing to VRS at P.O. Box 2500, Richmond, VA 23218-2500.

***Plan Description***

All full-time, salaried regular employees of the Authority are automatically covered by VRS upon employment. This plan is administered by the VRS (the System) along with plans for other employer groups in the Commonwealth of Virginia. Members earn one month of service credit for each month they are employed and for which they and their employer are paying contributions to VRS. Members are eligible to purchase prior service, based on specific criteria as defined in the *Code of Virginia*, as amended. Eligible prior service that may be purchased includes prior public service, active military service, certain periods of leave and previously refunded service.

The System administers three different benefit structures for covered employees – Plan 1, Plan 2 and Hybrid. Each of these benefit structures has a different eligibility criteria. The specific information for each plan and the eligibility for covered groups within each plan are set out below.

<b>PLAN 1</b>
---------------

***About VRS Plan 1***

Plan 1 is a defined benefit plan. The retirement benefit is based on a member's age, creditable service and average final compensation at retirement using a formula. Employees are eligible for Plan 1 if their membership date is before July 1, 2010, and they were vested as of January 1, 2013.

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**7) Pension Plan, Continued**

***Eligible Members***

Employees are in Plan 1 if their membership date is before July 1, 2010, and they were vested as of January 1, 2013.

***Hybrid Opt-In Election***

VRS non-hazardous duty covered Plan 1 members were allowed to make an irrevocable decision to opt into the Hybrid Retirement Plan during a special election window held January 1 through April 30, 2014. The Hybrid Retirement Plan's effective date for eligible VRS Plan 1 members who opted in was July 1, 2014. If eligible deferred members returned to work during the election window, they were also eligible to opt into the Hybrid Retirement Plan. Members who were eligible for an optional retirement plan (ORP) and had prior service under Plan 1 were not eligible to elect the Hybrid Retirement Plan and remain as Plan 1 or ORP.

***Retirement Contributions***

Employees contribute up to 5% of their compensation each month to their member contribution account through a pre-tax salary reduction. Some political subdivisions elected to phase in the required 5% member contribution but all employees will be paying the full 5% by July 1, 2016. Member contributions are tax-deferred until they are withdrawn as part of a retirement benefit or as a refund. The employer makes a separate actuarially determined contribution to VRS for all covered employees. VRS invests both member and employer contributions to provide funding for the future benefit payment.

***Creditable Service***

Creditable service includes active service. Members earn creditable service for each month they are employed in a covered position. It also may include credit for prior service the member has purchased or additional creditable service the member was granted. A member's total creditable service is one of the factors used to determine their eligibility for retirement and to calculate their retirement benefit. It also may count toward eligibility for the health insurance credit in retirement, if the employer offers the health insurance credit.

***Vesting***

Vesting is the minimum length of service a member needs to qualify for a future retirement benefit. Members become vested when they have at least five years (60 months) of creditable service. Vesting means members are eligible to qualify for retirement if they meet the age and service requirements for their plan. Members also must be vested to receive a full refund of their member contribution account balance if they leave employment and request a refund. Members are always 100% vested in the contributions that they make.

***Calculating the Benefit***

The Basic Benefit is calculated based on a formula using the member's average final compensation, a retirement multiplier and total service credit at retirement. It is one of the benefit payout options available to a member at retirement. An early retirement reduction factor is applied to the Basic Benefit if the member retires with a reduced retirement benefit or selects a benefit payout option other than the Basic Benefit.

***Average Final Compensation***

A member's average final compensation is the average of the 36 consecutive months of highest compensation as a covered employee.

***Service Retirement Multiplier***

The retirement multiplier is a factor used in the formula to determine a final retirement benefit. The retirement multiplier for non-hazardous duty members is 1.70%.

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**7) Pension Plan, Continued**

***Normal Retirement Age***

Age 65.

***Earliest Unreduced Retirement Eligibility (non-hazardous duty)***

Age 65 with at least five years (60 months) of creditable service or at age 50 with at least 30 years of creditable service.

***Earliest Reduced Retirement Eligibility (non-hazardous duty)***

Age 55 with at least five years (60 months) of creditable service or at age 50 with at least 10 years of creditable service.

***Cost-of-Living Adjustment (COLA) in Retirement***

The COLA matches the first 3% increase in the Consumer Price Index for all Urban Consumers (CPI-U) and half of any additional increase (up to 4%) up to a maximum COLA of 5%.

**Eligibility:**

For members who retire with an unreduced benefit or with a reduced benefit with at least 20 years of creditable service, the COLA will go into effect on July 1 after one full calendar year from the retirement date. For members who retire with a reduced benefit and who have less than 20 years of creditable service, the COLA will go into effect on July 1 after one calendar year following the unreduced retirement eligibility date.

**Exceptions to COLA Effective Dates:**

The COLA is effective July 1 following one full calendar year (January 1 to December 31) under any of the following circumstances:

- ◆ The member is within five years of qualifying for an unreduced retirement benefit as of January 1, 2013.
- ◆ The member retires on disability.
- ◆ The member retires directly from short-term or long-term disability under the Virginia Sickness and Disability Program (VSDP).
- ◆ The member is involuntarily separated from employment for causes other than job performance or misconduct and is eligible to retire under the Workforce Transition Act or the Transitional Benefits Program.
- ◆ The member dies in service and the member's survivor or beneficiary is eligible for a monthly death-in-service benefit. The COLA will go into effect on July 1 following one full calendar year (January 1 to December 31) from the date the monthly benefit begins.

***Disability Coverage***

Members who are eligible to be considered for disability retirement and retire on disability, the retirement multiplier is 1.7% on all service, regardless of when it was earned, purchased or granted. VSDP members are subject to a one-year waiting period before becoming eligible for non-work related disability benefits.

***Purchase of Prior Service***

Members may be eligible to purchase service from previous public employment, active duty military service, an eligible period of leave or VRS refunded service as creditable service in their plan. Prior creditable service counts toward vesting, eligibility for retirement and the health insurance credit. Only active members are eligible to purchase prior service. When buying service, members must purchase their most recent period of service first. Members also may be eligible to purchase periods of leave without pay.

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June 30, 2016 and 2015

**7) Pension Plan, Continued**

<b>PLAN 2</b>
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***About VRS Plan 2***

VRS Plan 2 is a defined benefit plan. The retirement benefit is based on a member's age, creditable service and average final compensation at retirement using a formula. Employees are eligible for Plan 2 if their membership date is on or after July 1, 2010, or their membership date is before July 1, 2010, and they were not vested as of January 1, 2013.

***Eligible Members***

Employees are in Plan 2 if their membership date is on or after July 1, 2010, or their membership date is before July 1, 2010, and they were not vested as of January 1, 2013.

***Hybrid Opt-In Election***

Eligible Plan 2 members were allowed to make an irrevocable decision to opt into the Hybrid Retirement Plan during a special election window held January 1 through April 30, 2014. The Hybrid Retirement Plan's effective date for eligible Plan 2 members who opted in was July 1, 2014. If eligible deferred members returned to work during the election window, they were also eligible to opt into the Hybrid Retirement Plan. Members who were eligible for an optional retirement plan (ORP) and have prior service under Plan 2 were not eligible to elect the Hybrid Retirement Plan and remain as Plan 2 or ORP.

***Retirement Contributions***

Employees contribute up to 5% of their compensation each month to their member contribution account through a pre-tax salary reduction. Some political subdivisions elected to phase in the required 5% member contribution but all employees will be paying the full 5% by July 1, 2016.

***Creditable Service***

Same as Plan 1.

***Vesting***

Same as Plan 1.

***Calculating the Benefit***

See definition under Plan 1.

***Average Final Compensation***

A member's average final compensation is the average of their 60 consecutive months of highest compensation as a covered employee.

***Service Retirement Multiplier***

Same as Plan 1 for service earned, purchased or granted prior to January 1, 2013. For non-hazardous duty members, the retirement multiplier is 1.65% for creditable service earned, purchased or granted on or after January 1, 2013.

***Normal Retirement Age***

Normal Social Security retirement age.

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**7) Pension Plan, Continued**

***Earliest Unreduced Retirement Eligibility (non-hazardous duty)***

Normal Social Security retirement age and have at least five years (60 months) of creditable service or when their age and service equal 90.

***Earliest Reduced Retirement Eligibility non-hazardous duty)***

Age 60 with at least five years (60 months) of creditable service.

***Cost-of-Living Adjustment (COLA) in Retirement***

The COLA matches the first 2% increase in the CPI-U and half of any additional increase (up to 2%), for a maximum COLA of 3%.

**Eligibility:**

Same as Plan 1.

**Exceptions to COLA Effective Dates:**

Same as Plan 1.

***Disability Coverage***

Members who are eligible to be considered for disability retirement and retire on disability, the retirement multiplier is 1.65% on all service, regardless of when it was earned, purchased or granted. VSDP members are subject to a one-year waiting period before becoming eligible for non-work related disability benefits.

***Purchase of Prior Service***

Same as Plan 1.

<b>Hybrid Retirement Plan</b>
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***About the Hybrid Retirement Plan***

The Hybrid Retirement Plan combines the features of a defined benefit plan and a defined contribution plan. Most members hired on or after January 1, 2014 are in this plan, as well as Plan 1 and Plan 2 members who were eligible and opted into the plan during a special election window. (See "Eligible Members"). The defined benefit is based on a member's age, creditable service and average final compensation at retirement using a formula. The benefit from the defined contribution component of the plan depends on the member and employer contributions made to the plan and the investment performance of those contributions. In addition to the monthly benefit payment payable from the defined benefit plan at retirement, a member may start receiving distributions from the balance in the defined contribution account, reflecting the contributions, investment gains or losses, and any required fees.

***Eligible Members***

Employees are in the Hybrid Retirement Plan if their membership date is on or after January 1, 2014. This includes members in Plan 1 or Plan 2 who elected to opt into the plan during the election window held January 1-April 30, 2014; the plan's effective date for opt-in members was July 1, 2014. Some employees are not eligible to participate in the Hybrid Retirement Plan. They include political subdivision employees who are covered by enhanced benefits for hazardous duty employees.

Those employees eligible for an optional retirement plan (ORP) must elect the ORP plan or the Hybrid Retirement Plan. If these members have prior service under Plan 1 or Plan 2, they are not eligible to elect the Hybrid Retirement Plan and must select Plan 1 or Plan 2 (as applicable) or ORP.

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**7) Pension Plan, Continued**

***Retirement Contributions***

A member's retirement benefit is funded through mandatory and voluntary contributions made by the member and the employer to both the defined benefit and the defined contribution components of the plan. Mandatory contributions are based on a percentage of the employee's creditable compensation and are required from both the member and the employer. Additionally, members may choose to make voluntary contributions to the defined contribution component of the plan, and the employer is required to match those voluntary contributions according to specified percentages.

***Creditable Service***

**Defined Benefit Component:**

Under the defined benefit component of the plan, creditable service includes active service. Members earn creditable service for each month they are employed in a covered position. It also may include credit for prior service the member has purchased or additional creditable service the member was granted. A member's total creditable service is one of the factors used to determine their eligibility for retirement and to calculate their retirement benefit. It may also count toward eligibility for the health insurance credit in retirement, if the employer offers the health insurance credit.

**Defined Contributions Component:**

Under the defined contribution component, creditable service is used to determine vesting for the employer contribution portion of the plan.

***Vesting***

**Defined Benefit Component:**

Defined benefit vesting is the minimum length of service a member needs to qualify for a future retirement benefit. Members are vested under the defined benefit component of the Hybrid Retirement Plan when they reach five years (60 months) of creditable service. Plan 1 or Plan 2 members with at least five years (60 months) of creditable service who opted into the Hybrid Retirement Plan remain vested in the defined benefit component.

**Defined Contributions Component:**

Defined contribution vesting refers to the minimum length of service a member needs to be eligible to withdraw the employer contributions from the defined contribution component of the plan. Members are always 100% vested in the contributions that they make.

Upon retirement or leaving covered employment, a member is eligible to withdraw a percentage of employer contributions to the defined contribution component of the plan, based on service. After two years, a member is 50% vested and may withdraw 50% of employer contributions. After three years, a member is 75% vested and may withdraw 75% of employer contributions. After four or more years, a member is 100% vested and may withdraw 100% of employer contributions. Distribution is not required by law until age 70½.

***Calculating the Benefit***

**Defined Benefit Component:**

See definition under Plan 1.

**Defined Contribution Component:**

The benefit is based on contributions made by the member and any matching contributions made by the employer, plus net investment earnings on those contributions.

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**7) Pension Plan, Continued**

***Average Final Compensation***

Same as Plan 2. It is used in the retirement formula for the defined benefit component of the plan.

***Service Retirement Multiplier***

The retirement multiplier for the defined benefit component is 1.0%. For members that opted into the Hybrid Retirement Plan from Plan 1 or Plan 2, the applicable multipliers for those plans will be used to calculate the retirement benefit for service credited in those plans.

***Normal Retirement Age***

**Defined Benefit Component:**

Same as Plan 2.

**Defined Contribution Component:**

Members are eligible to receive distributions upon leaving employment, subject to restrictions.

***Earliest Unreduced Retirement Eligibility***

**Defined Benefit Component:**

Normal Social Security retirement age and have at least five years (60 months) of creditable service or when their age and service equal 90.

**Defined Contribution Component:**

Members are eligible to receive distributions upon leaving employment, subject to restrictions.

***Earliest Reduced Retirement Eligibility***

**Defined Benefit Component:**

Members may retire with a reduced benefit as early as age 60 with at least five years (60 months) of creditable service.

**Defined Contribution Component:**

Members are eligible to receive distributions upon leaving employment, subject to restrictions.

***Cost-of-Living Adjustment (COLA) in Retirement***

**Defined Benefit Component:**

Same as Plan 2.

**Defined Contribution Component:**

Not applicable.

**Eligibility:**

Same as Plan 1 and Plan 2.

**Exceptions to COLA Effective Dates:**

Same as Plan 1 and Plan 2.

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**7) Pension Plan, Continued**

***Disability Coverage***

Eligible political subdivisions (including Plan 1 and Plan 2 opt-ins) participate in the Virginia Local Disability Program (VLDP) unless their local governing body provides an employer-paid comparable program for its members. Hybrid members (including Plan 1 and Plan 2 opt-ins) covered under VSDP or VLDP are subject to a one-year waiting period before becoming eligible for non-work related disability benefits.

***Purchase of Prior Service***

**Defined Benefit Component:**

Same as Plan 1 with the following exceptions: Hybrid Retirement Plan members are ineligible for ported service; the cost for purchasing refunded service is the higher of 4% of credible compensation or average final compensation; plan members have one year from their date of hire or return from leave to purchase all but refunded prior service at approximate normal cost. After that one year period, the rate for most categories of service will change to actuarial cost.

**Defined Contribution Component:**

Not applicable.

***Employees Covered by Benefit Terms***

As of the June 30, 2014 actuarial valuation, the following employees were covered by the benefit terms of the pension plan:

	<u>Number</u>
Inactive members or their beneficiaries currently receiving benefits	<u>35</u>
Inactive members:	
Vested	11
Non-vested	13
Active elsewhere in VRS	<u>31</u>
Total inactive members	<u>55</u>
Active members	<u>84</u>
Total	<u><u>174</u></u>

***Contributions***

The contributions requirement for active employees is governed by §51.1-145 of the *Code of Virginia*, as amended, but may be impacted as a result of funding options provided to political subdivisions by the Virginia General Assembly. Employees are required to contribute 5% of their compensation toward their retirement. Prior to July 1, 2012, all or part of the 5% member contribution may have been assumed by the employer. Beginning July 1, 2012, new employees were required to pay the 5% member contribution. In addition, for existing employees, employers were required to begin making the employee pay the 5% member contribution. This could be phased in over a period of up to 5 years and the employer is required to provide a salary increase equal to the amount of the increase in the employee-paid member contribution.



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**7) Pension Plan, Continued**

The Authority's contractually required contribution rate for the year ended June 30, 2016 was 8.49% of covered employee compensation. This rate was based on an actuarially determined rate from an actuarial valuation as of June 30, 2013. This rate, when combined with employee contributions, was expected to finance the costs of benefits earned by employee during the year, with an additional amount to finance any unfunded accrued liability. Contributions to the pension plan from the Authority were \$341,874 and \$330,920 for the years ended June 30, 2016 and June 30, 2015, respectively.

***Net Pension Liability***

The Authority's net pension liability was measured as of June 30, 2015. The total pension liability used to calculate the net pension liability was determined by an actuarial valuation performed as of June 30, 2014, using updated actuarial assumptions, applied to all periods included in the measurement and rolled forward to the measurement date of June 30, 2015.

***Actuarial Assumptions***

The total pension liability for general employees in the Authority's retirement plan was based on an actuarial valuation as of June 30, 2014, using the entry age normal actuarial cost method and the following assumptions, applied to all periods included in the measurement and rolled forward to the measurement date of June 30, 2015.

Inflation	2.5%
Salary increases, including inflation	3.5% - 5.35%
Investment rate of return	7%, net of pension plan investment expense, including inflation*

\*Administrative expenses as a percent of the market value of assets for the last experience study were found to be approximately 0.06% of the market assets for all of the VRS plans. This would provide an assumed investment return rate for GASB purposes of slightly more than the assumed 7.0%.

However, since the difference was minimal, and a more conservative 7.0% investment return assumption provided a projected plan net position that exceeded the projected benefit payments, the long-term expected rate of return on investments was assumed to be 7.0% to simplify preparation of pension liabilities.

Mortality rates: 14% of deaths are assumed to be service related

Largest 10:

Pre-Retirement:

RP-2000 employee mortality table projected with scale AA to 2020 with males set forward 4 years and females were set back 2 years.

Post-Retirement:

RP-2000 combined mortality table projected with scale AA to 2020 with males set forward 1 year.

Post-Disablement:

RP-2000 disability life mortality table projected to 2020 with males set back 3 years and no provision for future mortality improvement.

All Others:

Pre-Retirement:

RP-2000 employee mortality table projected with scale AA to 2020 with males set forward 4 years and females were set back 2 years.

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**7) Pension Plan, Continued**

Post-Retirement:

RP-2000 combined mortality table projected with scale AA to 2020 with males set forward 1 year.

Post-Disablement:

RP-2000 disability life mortality table projected to 2020 with males set back 3 years and no provision for future mortality improvement.

The actuarial assumptions used in the June 30, 2014 valuation were based on the results of an actuarial experience study for the period from July 1, 2008 through June 30, 2012. Changes to the actuarial assumptions as a result of the experience study are as follows:

Largest 10:

- ◆ Update mortality table
- ◆ Decrease in rates of service retirement
- ◆ Decrease in rates of disability retirement
- ◆ Reduce rates of salary increase by 0.25% per year

All Others:

- ◆ Update mortality table
- ◆ Decrease in rates of service retirement
- ◆ Decrease in rates of disability retirement
- ◆ Reduce rates of salary increase by 0.25% per year

***Long-Term Expected Rate of Return***

The long-term expected rate of return on pension investments was determined using a log-normal distribution analysis in which best-estimate ranges of expected future real rates of return (expected returns, net of pension investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target asset allocation and best estimate of arithmetic real rates of return for each major asset class are summarized in the table below:

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**7) Pension Plan, Continued**

<u>Asset Class (Strategy)</u>	<u>Target Allocation</u>	<u>Arithmetic Long-Term Expected Rate of Return</u>	<u>Weighted Average Long-Term Expected Rate of Return</u>
U.S. Equity	19.50%	6.46%	1.26%
Developed Non U.S. Equity	16.50%	6.28%	1.04%
Emerging Market Equity	6.00%	10.00%	0.60%
Fixed Income	15.00%	0.09%	0.01%
Emerging Debt	3.00%	3.51%	0.11%
Rate Sensitive Credit	4.50%	3.51%	0.16%
Non Rate Sensitive Credit	4.50%	5.00%	0.23%
Convertibles	3.00%	4.81%	0.14%
Public Real Estate	2.25%	6.12%	0.14%
Private Real Estate	12.75%	7.10%	0.91%
Private Equity	12.00%	10.41%	1.25%
Cash	1.00%	-1.50%	-0.02%
Total	<u>100.00%</u>		<u>5.83%</u>
		Inflation	<u>2.50%</u>
		*Expected arithmetic nominal return	<u>8.33%</u>

\*Using stochastic projection results provides an expected range of real rates of return over various time horizons. Looking at one year results produces an expected real return of 8.33% but also has a high standard deviation, which means there is high volatility. Over larger time horizons, the volatility declines significantly and provides a median return of 7.44%, including expected inflation of 2.50%.

***Discount Rate***

The discount rate used to measure the total pension liability was 7%. The projection of cash flows used to determine the discount rate assumed that System member contributions will be made per the VRS Statutes and the employer contributions will be made in accordance with the VRS funding policy at rates equal to the difference between actuarially determined contribution rates adopted by the VRS Board of Trustees and the member rate. Through the fiscal year ending June 30, 2018, the rate contributed by the employer for the retirement plan will be subject to the portion of the VRS Board-certified rates that are funded by the Virginia General Assembly. From July 1, 2018 on, participating employers are assumed to contribute 100% of the actuarially determined contribution rates. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current active and inactive employees. Therefore, the long-term expected rate of return was applied to all periods of projected benefit payments to determine the total pension liability.

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June 30, 2016 and 2015

**7) Pension Plan, Continued**

***Changes in Net Pension Liability***

	Total pension liability (a)	Plan fiduciary net pension (b)	Net pension liability (a) - (b)
Balances at June 30, 2014	\$ 14,197,242	\$ 13,257,749	\$ 939,493
Changes for the year:			
Service cost	430,269	-	430,269
Interest	978,647	-	978,647
Difference between expected and actual experience	(146,331)		(146,331)
Contributions - employer	-	329,381	(329,381)
Contributions - employee	-	193,349	(193,349)
Net investment income	-	612,704	(612,704)
Benefit payments, including refunds of employee contributions	(433,146)	(433,146)	-
Administrative expense	-	(8,173)	8,173
Other changes	-	(130)	130
Net changes	829,439	693,985	135,454
Balances at June 30, 2015	\$ 15,026,681	\$ 13,951,734	\$ 1,074,947

***Sensitivity of the Net Pension Liability to Changes in the Discount Rate***

The following represents the net pension liability using the stated discount rate of 7%, as well as what the net position liability would be if it were calculated using a discount rate that is one-percentage point lower or one-percentage point higher than the current rate:

	1% Decrease (6%)	Current Discount Rate (7%)	1% Increase (8%)
Net pension liability	\$ 3,188,176	\$ 1,074,947	\$ (677,716)

***Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions***

For the year ending June 30, 2016, the Authority recognized pension expense of \$123,719. At June 30, 2016 and 2015, the Authority reported deferred outflow of resources and deferred inflow of resources related to pensions from the sources:

	6/30/2016		6/30/2015	
	Deferred outflows of resources	Deferred inflows of resources	Deferred outflows of resources	Deferred inflows of resources
Difference between expected and actual experience	\$ -	\$ 114,381	\$ -	\$ -
Net difference between projected and actual earnings on plan investments	-	348,305	-	803,802
Employer contributions subsequent to the measurement date	341,874	-	330,920	-
Total	\$ 341,874	\$ 462,686	\$ 330,920	\$ 803,802

**JAMES CITY SERVICE AUTHORITY**  
(A Component Unit of the County of James City, Virginia)

Notes to Financial Statements

June 30, 2016 and 2015

**7) Pension Plan, Continued**

The \$341,874 reported as deferred outflows of resources related to pensions resulting from the Authority's contributions subsequent to the measurement date will be recognized as a reduction of the Net Pension Liability in the fiscal year ending June 30, 2017. Other amounts reported as deferred inflows of resources related to pensions will be recognized in pension expense in future reporting periods as follows:

Year Ended June 30:		
2017	\$	(169,264)
2018		(169,264)
2019		(169,262)
2020		45,104
2021		-
Thereafter		-
	\$	<u>(462,686)</u>

**8) Other Post-Employment Benefits (OPEB)**

The Authority provides other post-employment health care benefits for qualifying retired employees who are not yet eligible for Medicare through a single-employer defined benefit plan that is administered by the County. Detailed disclosures regarding the plan and the actuarial information can be found in the County's annual financial statements. The benefits, benefit levels, employee contributions and employer contributions are governed by the Authority and can be amended by the Authority through its personnel manual.

***Funding Policy***

The Authority does not intend to establish a trust to pre-fund the obligation. The anticipated growth in the net OPEB obligation is based on contributions to the benefit plan on a pay-as-you-go cost basis. The data has been projected into the future based on the assumption the current active population remains constant. Retirees contribute towards their health insurance premiums based on a blended rate and therefore, the Authority has an implicit rate obligation. The estimated contributions are based on the implicit rate subsidy payments made during the year by the retirees.

***Plan Description***

Covered full-time active employees who retire directly from the Authority and are at least 50 years of age with 15 years of service are eligible to receive post-employment health care benefits. Each year, retirees participating in the Authority's sponsored plans will be given the opportunity to change plans or drop coverage during an open enrollment period. The pre-Medicare retirees have a choice of three plans: Optima, Healthkeepers and KeyCare. The majority of the participants are in Healthkeepers. There is no coverage for post-Medicare retirees. There were 75 active employee participants at the time of the actuarial study.

***Net OPEB Obligation***

As of June 30, 2016, the net pension obligation was calculated as follows:

Annual required contribution	\$	57,000
Amortization of net OPEB obligation		(12,000)
Interest on net OPEB obligation		10,000
Annual OPEB cost		<u>55,000</u>
Contributions made		(21,000)
Increase in net OPEB obligation		34,000
Net OPEB obligation, beginning of year		243,509
Net OPEB obligation, end of year	\$	<u>277,509</u>

**JAMES CITY SERVICE AUTHORITY**  
(A Component Unit of the County of James City, Virginia)

Notes to Financial Statements

June 30, 2016 and 2015

**8) Other Post-Employment Benefits (OPEB), Continued**

***Annual OPEB Cost***

<b>Year Ended June 30,</b>	<b>Annual OPEB cost</b>	<b>Actual contribution</b>	<b>Percentage of annual OPEB cost contributed</b>	<b>Net OPEB obligation</b>
2016	\$ 55,000	\$ 21,000	38.2%	\$ 277,509
2015	45,000	9,000	20.0%	243,509
2014	43,000	7,000	16.3%	207,509

***Actuarial Methods and Assumptions***

For the actuarial valuation at June 30, 2016, the projected unit credit method was used. Under this method, benefits provided by the substantive plan (the plan as understood by the Authority and the plan members) at the time of the actuarial study are projected and their present value is determined. The present value is divided into equal parts which are earned over the period from date of hire to the full eligibility date.

The actuarial assumptions included calculations based on a discount rate of 4% for the unfunded liability, rate of inflation of 2.2%, and a payroll growth of 3%. Amortization of the initial unfunded actuarial liability is over 23 years based on a level percent of payroll method. Future increases for medical benefits are assumed to range from an initial rate of 7.5% and decrease gradually with the ultimate rate being 5.04%. It should be noted actuarial calculations reflect a long-term perspective and therefore, actuarially determined amounts are subject to revision as results are compared to past expectations and new estimates are made about the future.

All active employees who are expected to meet the plan's eligibility requirements on or before the ultimate assumed retirement age are included in the calculations. Retirees, spouses and spouse survivors who are entitled to a benefit under the provisions of the plan are also included.

***Schedule of Funding Progress***

<b>Actuarial valuation date July 1,</b>	<b>Actuarial value of assets</b>	<b>Actuarial accrued liability (AAL) project unit credit</b>	<b>Unfunded actuarial accrued liability (UAAL)</b>	<b>Funded ratio</b>	<b>Covered payroll</b>	<b>UAAL as a percentage of covered payroll</b>
2015	\$ -	\$ 528,000	\$ 528,000	0.0%	\$ 4,026,779	13.1%
2014	-	423,000	423,000	0.0%	3,897,762	10.9%
2013	-	389,000	389,000	0.0%	3,943,666	9.9%

**9) Deferred Compensation Plan**

The Authority offers its employees a deferred-compensation plan created in accordance with Internal Revenue Code Section 457. The plan, available to regular part-time and full-time Authority employees, permits them to defer 25% of their gross income up to a maximum of \$18,000 per year. The deferred compensation is not available to employees until termination, retirement, death, or an unforeseeable emergency.

**JAMES CITY SERVICE AUTHORITY**  
(A Component Unit of the County of James City, Virginia)

Notes to Financial Statements

June 30, 2016 and 2015

**9) Deferred Compensation Plan, Continued**

As required by Internal Revenue Code Section 457, all amounts of compensation deferred under the plan, all property and rights purchased with those amounts, and all income attributable to those amounts, property, or rights, are held in trust for the participants. The County acts as trustee for the plan with the choice of investment options being made by the participants.

**10) Transactions with Related Parties**

Certain financial management, accounting, and other services are provided to the Authority by the County. The charges for these services amounted to \$770,378 and \$807,844 for the years ended June 30, 2016 and 2015, respectively, and are included in the expenses under contractual fees. The Authority also owed the County \$633,544 and \$1,346,004 at June 30, 2016 and 2015, respectively, which primarily represents payroll expenses incurred by the Authority.

In addition, the County leases space in Authority buildings under ten year leases. Rent revenue was \$261,959 and \$260,928 for years ended June 30, 2016 and 2015, respectively.

**11) Commitments and Contingencies**

***Construction in Progress***

At June 30, 2016, the Authority had several major projects under construction which are presented in the accompanying financial statements as construction in progress. Below are the details for each project:

<b>Project</b>	<b>Budget</b>	<b>Expenditures to date</b>	<b>Balance of contract</b>	<b>Budget balance</b>
Sewer improvements	\$ 4,161,433	\$ 443,900	\$ 319,061	\$ 3,398,472
Water supply	16,526,620	722,217	108,493	15,695,910
Water distribution	319,792	-	-	319,792
Water transmission	500,000	34,435	10,640	454,925
Water storage	185,620	-	-	185,620
Other	1,205,717	134,001	37,851	1,033,865
	<u>\$ 22,899,182</u>	<u>\$ 1,334,553</u>	<u>\$ 476,045</u>	<u>\$ 21,088,584</u>

***Project Development Agreement – Long Term Water Supply***

The Authority entered into a project development agreement with the City of Newport News on March 25, 2008 for long-term water supply. The initial term of this agreement ends on January 1, 2050, at which time this agreement shall be automatically renewed for additional terms of 25 years. The Authority paid the City of Newport News \$25 million on December 31, 2008, which was the first installment of this agreement. The second payment of \$25 million is due by June 30, 2019. Both installment payments are considered to be for the purchase of an intangible asset (rights to water supply) and, as such, these costs will be capitalized and amortized over the remaining life of the agreement (initial term). See note 4 for more information on the intangible asset.

In addition to the installment payments, the Authority agreed to pay variable and fixed operating and maintenance costs to the City of Newport News payable by September 1 each year, based on its safe yield share of 20%.

**JAMES CITY SERVICE AUTHORITY**  
(A Component Unit of the County of James City, Virginia)

Notes to Financial Statements

June 30, 2016 and 2015

**11) Commitments and Contingencies, Continued**

The Authority did not receive any water from the City of Newport News for the years ended June 30, 2016 and 2015. Therefore, the Authority did not make a payment to the City of Newport News for the years ended June 30, 2016 and 2015, for these costs. Further, the Authority also agreed that if it receives water from the City of Newport News through this agreement, to pay for the treatment of such water at a cost of \$1.23 per 1,000 gallons. For the years ended June 30, 2016 and 2015, the Authority did not receive water from the City of Newport News under this agreement, and, as such, did not incur or pay for water treatment these fiscal years.

***Grinder Pump Maintenance***

The Authority entered into a contract with Final Phase Installations, Inc. where they will provide grinder pump maintenance. The initial term of the contract was November 1, 2011 through October 31, 2012, with the option to renew for up to 4 additional years. The contract allows for an increase based on the Consumer Price Index. For the years ended June 30, 2016 and 2015, the Authority paid \$223,783 and \$228,308, respectively, towards this contract.

***Water Storage Tank Maintenance***

The Authority entered into a contract with Superior Industrial Maintenance Company where they will provide water storage tank maintenance. The initial term of the contract was July 1, 2012 through June 30, 2013, with the option to renew for up to 4 additional years. For the years ended June 30, 2016 and 2015, the Authority paid \$127,353 and \$218,940, respectively, towards this contract.

***Regional Hybrid Consolidation Plan***

In February 2014, the Authority, HRSD and fourteen Hampton Roads localities entered into a Regional Hybrid Consolidation Plan for meeting Consent Agreement requirements to reduce sewer overflows. Under this plan, HRSD is responsible for major rehabilitation projects to repair deteriorated infrastructure and projects to increase the capacity of HRSD and locality pump stations and pipelines. HRSD will fund the work through a regional HRSD rate. The Authority keeps ownership and control of its local sewer infrastructure and is still responsible for monitoring and maintaining the local sewer system to Consent Agreement standards and fixing significant defects on an ongoing basis.

***Other***

The Authority is not currently involved in any litigation in which management deems the impact would be material to the financial statements.

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**REQUIRED SUPPLEMENTARY INFORMATION  
OTHER THAN MD&A (Unaudited)**

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**Exhibit 4**

**JAMES CITY SERVICE AUTHORITY**  
(A Component Unit of the County of James City, Virginia)  
Schedule of Changes in the Net Pension Liability and Related Ratios  
Required Supplementary Information (Unaudited)  
Years Ended June 30, 2016 and 2015 (1)

	<u>2014</u>	<u>2015</u>
<b>Total pension liability</b>		
Service cost	\$ 417,066	\$ 430,269
Interest	913,818	978,647
Changes of benefit terms	-	-
Differences between expected and actual experience	-	(146,331)
Changes in assumptions	-	-
Benefit payments, including refunds of employee contributions	(376,365)	(433,146)
<b>Net change in total pension liability</b>	<u>954,519</u>	<u>829,439</u>
<b>Total pension liability, beginning</b>	<u>13,242,723</u>	<u>14,197,242</u>
<b>Total pension liability, ending</b>	<u><u>\$ 14,197,242</u></u>	<u><u>\$ 15,026,681</u></u>
 <b>Plan fiduciary net position</b>		
Contributions - employer	\$ 308,820	\$ 329,381
Contributions - employee	197,188	193,349
Net investment income	1,802,418	612,704
Benefit payments, including refunds of employee contributions	(376,365)	(433,146)
Administrative expense	(9,511)	(8,173)
Other	95	(130)
<b>Net change in plan fiduciary net position</b>	<u>1,922,645</u>	<u>693,985</u>
<b>Plan fiduciary net position, beginning</b>	<u>11,335,104</u>	<u>13,257,749</u>
<b>Plan fiduciary net position, ending</b>	<u><u>\$ 13,257,749</u></u>	<u><u>\$ 13,951,734</u></u>
 <b>Net pension liability</b>	 <u><u>\$ 939,493</u></u>	 <u><u>\$ 1,074,947</u></u>
 <b>Plan fiduciary net position as a percentage of the total pension liability</b>	 <u>93.38%</u>	 <u>92.85%</u>
 <b>Covered-employee payroll</b>	 <u><u>\$ 3,943,666</u></u>	 <u><u>\$ 3,897,762</u></u>
 <b>Net pension liability as a percentage of the total covered-employee payroll</b>	 <u>23.82%</u>	 <u>27.58%</u>

(1) This schedule is intended to present 10 years of information. GASB 68 and 71 were implemented in fiscal year 2015, and additional years will be presented as the information becomes available.

**Exhibit 5**

**JAMES CITY SERVICE AUTHORITY**  
(A Component Unit of the County of James City, Virginia)  
Schedule of Employer Contributions  
Required Supplementary Information (Unaudited)  
Years Ended June 30, 2016 and 2015 (1)

<b>Fiscal year</b>	<b>Contractually required contribution</b>	<b>Contributions in relation to contractually required contribution</b>	<b>Contribution deficiency (excess)</b>	<b>Employer's covered employee payroll</b>	<b>Contributions as a % of covered employee payroll</b>
2015	\$ 330,920	\$ 330,920	\$ -	\$ 3,897,762	8.49%
2016	341,874	341,874	-	4,026,779	8.49%

(1) This schedule is intended to present 10 years of information. GASB 68 and 71 were implemented in fiscal year 2015, and additional years will be presented as the information becomes available.

See accompanying notes and independent auditors' report.

**JAMES CITY SERVICE AUTHORITY**  
(A Component Unit of the County of James City, Virginia)

Notes to Required Supplementary Information

June 30, 2016 and 2015

**1) Changes of benefit terms**

There have been no actuarially material changes to the System benefit provisions since the prior actuarial valuation. The 2014 valuation includes the Hybrid Retirement Plan members for the first time. The hybrid plan applies to most new employees hired on or after January 1, 2014 and not covered by enhanced hazardous duty benefits. Because this was a new benefit and the number of participants was relatively small, the impact on the liabilities as of the measurement date of June 30, 2015 is not material.

**2) Changes of assumptions**

The following changes in actuarial assumptions were made effective June 30, 2013 based on the most recent experience study of the System for the four-year period ending June 30, 2012:

Largest 10:

- ◆ Update mortality table
- ◆ Decrease in rates of service retirement
- ◆ Decrease in rates of disability retirement
- ◆ Reduce rates of salary increase by 0.25% per year

All Others (non 10 largest):

- ◆ Update mortality table
- ◆ Decrease in rates of service retirement
- ◆ Decrease in rates of disability retirement
- ◆ Reduce rates of salary increase by 0.25% per year

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## **SUPPLEMENTARY INFORMATION**



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**JAMES CITY SERVICE AUTHORITY**  
(A Component Unit of the County of James City, Virginia)  
Schedules of Net Position – by Activity  
June 30, 2016  
(with comparative totals for 2015)

	Water operations	Sewer operations	Totals	
			2016	2015
Assets				
Current assets:				
Cash and cash equivalents	\$ 301,561	\$ 354,007	\$ 655,568	\$ 837,750
Investments	14,576,015	21,552,858	36,128,873	33,007,483
Restricted investments	729,605	-	729,605	-
Accounts receivable, customers	1,164,759	1,291,618	2,456,377	2,574,394
Accounts receivable, other	33,218	-	33,218	38,520
Note receivable	2,544	-	2,544	31,531
Interest receivable	66,376	58,862	125,238	88,112
Inventories	756,953	52,160	809,113	817,432
Total current assets	17,631,031	23,309,505	40,940,536	37,395,222
Noncurrent assets:				
Capital assets:				
Utility plant:				
Land	-	962,995	962,995	962,995
Water and sewer systems	127,363,482	123,697,771	251,061,253	244,019,716
Total utility plant	127,363,482	124,660,766	252,024,248	244,982,711
Nonutility property:				
Land	1,739,491	-	1,739,491	1,739,491
Central shop	4,857,636	34,573	4,892,209	4,892,209
Office fixtures and equipment	1,332,498	508,248	1,840,746	1,809,839
Land improvements	13,183	-	13,183	13,183
Automotive equipment	2,072,595	556,867	2,629,462	2,482,789
Total nonutility property	10,015,403	1,099,688	11,115,091	10,937,511
Intangible assets:				
Easements	4,570	-	4,570	4,570
Water rights	25,000,000	-	25,000,000	25,000,000
Total intangible assets	25,004,570	-	25,004,570	25,004,570
Construction in progress	968,043	366,510	1,334,553	705,860
Less accumulated depreciation and amortization	68,210,459	59,652,531	127,862,990	120,342,588
Net capital assets	95,141,039	66,474,433	161,615,472	161,288,064
Restricted investments	-	-	-	2,716,277
Total noncurrent assets	95,141,039	66,474,433	161,615,472	164,004,341
Total assets	112,772,070	89,783,938	202,556,008	201,399,563
Deferred Outflows of Resources				
Deferred charge on refunding, net	1,815,422	-	1,815,422	-
Deferred pension contributions	143,587	198,287	341,874	330,920
Total deferred outflows	1,959,009	198,287	2,157,296	330,920
Total assets and deferred outflows	\$ 114,731,079	\$ 89,982,225	\$ 204,713,304	\$ 201,730,483
Liabilities				
Current liabilities:				
Accounts payable, trade	\$ 289,058	\$ 37,756	\$ 326,814	\$ 385,052
Accrued salaries	11,746	2,337	14,083	21,605
Compensated absences, current portion	287,104	-	287,104	268,010
Due to James City County	569,017	64,527	633,544	1,346,004
Deposits	180,490	-	180,490	196,804
Interest payable	152,823	-	152,823	496,100
Bond payable, current portion	785,000	-	785,000	565,000
Unamortized bond premium, current portion	63,907	-	63,907	-
Total current liabilities	2,339,145	104,620	2,443,765	3,278,575
Noncurrent liabilities:				
Advances for construction	5,882	27,020	32,902	32,902
Other post-employment benefits (OPEB)	149,855	127,654	277,509	243,509
Compensated absences, net of current portion	95,701	-	95,701	89,343
Bonds payable, net of current portion	21,810,000	-	21,810,000	23,550,000
Unamortized bond premium, net of current portion	1,459,202	-	1,459,202	-
Net pension liability	451,478	623,469	1,074,947	939,493
Total noncurrent liabilities	23,972,118	778,143	24,750,261	24,855,247
Total liabilities	26,311,263	882,763	27,194,026	28,133,822
Deferred Inflow of Resources				
Deferred pension investment experience	194,328	268,358	462,686	803,802
Net Position				
Net position:				
Net investment in capital assets	72,838,352	66,474,433	139,312,785	137,173,064
Restricted for debt service	729,605	-	729,605	2,716,277
Unrestricted	14,657,531	22,356,671	37,014,202	32,903,518
Total net position	88,225,488	88,831,104	177,056,592	172,792,859
Total liabilities, deferred inflow and net position	\$ 114,731,079	\$ 89,982,225	\$ 204,713,304	\$ 201,730,483

See accompanying independent auditors' report.

**Exhibit B**

**JAMES CITY SERVICE AUTHORITY**  
(A Component Unit of the County of James City, Virginia)  
Schedules of Revenues, Expenses, and Changes in Net Position – by Activity  
Year ended June 30, 2016  
(with comparative totals for year ended June 30, 2015)

	<b>Water operations</b>	<b>Sewer operations</b>	<b>Totals</b>	
			<b>2016</b>	<b>2015</b>
Operating revenues:				
Water and sewer services	\$ 6,815,616	\$ 5,959,224	\$ 12,774,840	\$ 12,588,470
Other	605,909	212,054	817,963	990,357
Total operating revenues	<u>7,421,525</u>	<u>6,171,278</u>	<u>13,592,803</u>	<u>13,578,827</u>
Operating expenses:				
Salaries	2,027,090	2,320,193	4,347,283	4,257,924
Fringe benefits	779,852	803,628	1,583,480	1,546,525
Operating supplies	676,245	417,757	1,094,002	836,288
Maintenance of buildings and equipment	490,832	1,179,191	1,670,023	2,067,464
Utilities	629,155	241,065	870,220	861,074
Contractual fees	444,546	458,917	903,463	915,365
Other	113,703	119,530	233,233	497,803
Total operating expenses	<u>5,161,423</u>	<u>5,540,281</u>	<u>10,701,704</u>	<u>10,982,443</u>
Operating income before depreciation and amortization	2,260,102	630,997	2,891,099	2,596,384
Depreciation and amortization	4,908,815	3,021,817	7,930,632	7,810,808
Operating loss	<u>(2,648,713)</u>	<u>(2,390,820)</u>	<u>(5,039,533)</u>	<u>(5,214,424)</u>
Nonoperating revenues (expenses):				
Facility charges	1,749,685	1,493,850	3,243,535	3,863,650
Investment income	389,972	129,795	519,767	248,207
Gain (loss) on disposal of capital assets	29,637	(222,750)	(193,113)	23,497
Insurance recovery	14,219	-	14,219	-
Bond issuance costs	(402,364)	-	(402,364)	-
Interest, net	(744,124)	-	(744,124)	(1,095,684)
Net nonoperating revenues	<u>1,037,025</u>	<u>1,400,895</u>	<u>2,437,920</u>	<u>3,039,670</u>
Loss before capital contributions	(1,611,688)	(989,925)	(2,601,613)	(2,174,754)
Capital asset contributions	4,321,025	2,544,321	6,865,346	5,284,379
Changes in net position	2,709,337	1,554,396	4,263,733	3,109,625
Net position, beginning of year	85,516,151	87,276,708	172,792,859	169,683,234
Net position, end of year	<u>\$ 88,225,488</u>	<u>\$ 88,831,104</u>	<u>\$ 177,056,592</u>	<u>\$ 172,792,859</u>

See accompanying independent auditors' report.

**JAMES CITY SERVICE AUTHORITY**  
(A Component Unit of the County of James City, Virginia)  
Schedule of Operating Revenues and Expenses – Budget and Actual – by Activity  
Year ended June 30, 2016

	<b>Water operations</b>		<b>Variance favorable (unfavorable)</b>	<b>Sewer operations</b>		<b>Variance favorable (unfavorable)</b>
	<b>Actual</b>	<b>Budget</b>		<b>Actual</b>	<b>Budget</b>	
Operating revenues:						
Water and sewer services	\$ 6,815,616	\$ 6,463,892	\$ 351,724	\$ 5,959,224	\$ 5,675,000	\$ 284,224
Other	605,909	265,589	340,320	212,054	206,338	5,716
Total operating revenues	<u>\$ 7,421,525</u>	<u>\$ 6,729,481</u>	<u>\$ 692,044</u>	<u>\$ 6,171,278</u>	<u>\$ 5,881,338</u>	<u>\$ 289,940</u>
Operating expenses:						
Salaries	\$ 2,027,090	\$ 2,136,468	\$ 109,378	\$ 2,320,193	\$ 2,432,839	\$ 112,646
Fringe benefits	779,852	899,094	119,242	803,628	984,017	180,389
Operating supplies	676,245	1,072,233	395,988	417,757	630,899	213,142
Maintenance of buildings and equipment *	490,832	944,055	453,223	1,179,191	1,693,451	514,260
Utilities	629,155	679,273	50,118	241,065	282,051	40,986
Contractual fees	444,546	576,708	132,162	458,917	543,422	84,505
Other	113,703	692,341	578,638	119,530	160,352	40,822
Total operating expenses	<u>\$ 5,161,423</u>	<u>\$ 7,000,172</u>	<u>\$ 1,838,749</u>	<u>\$ 5,540,281</u>	<u>\$ 6,727,031</u>	<u>\$ 1,186,750</u>

\*Includes budget from Capital Improvements Program for maintenance expenses related to the Department of Environmental Quality consent order.

See accompanying independent auditors' report.

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## **STATISTICAL SECTION**

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**JAMES CITY SERVICE AUTHORITY**  
(A Component Unit of the County of James City, Virginia)  
Statistical Section Overview

This part of the James City Service Authority's comprehensive annual financial report presents detailed information as a context for understanding what the information in the financial statements, note disclosures and required supplementary information says about the Authority's overall financial health.

**Contents**

**Financial Trends** **Tables 1-2**

These tables contain trend information to help the reader understand how the Authority's financial performance and well-being has changed over time.

**Revenue Capacity** **Tables 3-4**

These tables contain information to help the reader assess the factors affecting the Authority's ability to generate its operating revenues.

**Debt Capacity** **Tables 5-7**

These tables present information to help the reader assess the affordability of the Authority's current level of outstanding debt and its ability to issue additional debt in the future.

**Demographic & Economic Information** **Tables 8-9**

These tables offer demographic and economic indicators to help the reader understand the environment within which the Authority's financial activities take place.

**Operation Information** **Tables 10-16**

These tables contain service and infrastructure data to help the reader understand how the information in the Authority's financial report relates to the services the Authority provides and the activities it performs.

**Sources:** Unless otherwise noted, the information in these tables is derived from the comprehensive annual financial reports for the relevant year.



Table 1

**JAMES CITY SERVICE AUTHORITY**  
(A Component Unit of the County of James City, Virginia)  
Net Position  
Last Ten Fiscal Years

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<b>Net Position</b>										
Net investment in capital assets	\$ 132,145,149	\$ 134,316,001	\$ 134,314,330	\$ 135,071,435	\$ 135,641,623	\$ 134,872,139	\$ 139,966,206	\$ 137,922,955	\$ 137,173,064	\$ 139,312,785
Restricted for debt service	-	-	-	-	-	-	-	-	-	729,605
Restricted for capital projects	709,584	705,775	4,674,837	4,610,218	4,740,769	4,876,760	2,620,384	2,601,160	2,716,277	-
Unrestricted	33,151,555	35,703,438	36,591,088	36,430,621	34,057,874	34,106,903	29,699,494	29,159,119	32,903,518	37,014,202
Total net position	<u>\$ 166,006,288</u>	<u>\$ 170,725,214</u>	<u>\$ 175,580,255</u>	<u>\$ 176,112,274</u>	<u>\$ 174,440,266</u>	<u>\$ 173,855,802</u>	<u>\$ 172,286,084</u>	<u>\$ 169,683,234</u>	<u>\$ 172,792,859</u>	<u>\$ 177,056,592</u>

Table 2

**JAMES CITY SERVICE AUTHORITY**  
(A Component Unit of the County of James City, Virginia)  
Changes in Revenues, Expenses and Net Position  
Last Ten Fiscal Years

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Operating revenues:										
Water and sewer services	\$ 11,464,460	\$ 11,211,578	\$ 12,279,796	\$ 12,314,268	\$ 12,603,818	\$ 11,718,297	\$ 12,002,533	\$ 11,825,702	\$ 12,588,470	\$ 12,774,840
Rental income	187,753	181,256	135,234	144,441	171,401	144,381	164,875	160,914	325,991	326,377
Water supply proffers	530,518	502,217	138,170	52,908	125,192	26,967	13,362	57,446	450,262	218,987
Reimbursements for storm costs	161,573	-	-	-	-	349,541	-	900	-	-
Other	1,029,399	615,883	241,569	450,027	190,467	198,025	242,028	285,892	214,104	272,599
Total operating revenues	13,373,703	12,510,934	12,794,769	12,961,644	13,090,878	12,437,211	12,422,798	12,330,854	13,578,827	13,592,803
Operating expenses:										
Salaries	3,798,002	4,066,458	4,360,920	4,133,261	4,040,543	4,144,696	4,306,155	4,288,721	4,257,924	4,347,283
Fringe benefits	1,496,723	1,529,173	1,612,176	1,570,514	1,585,037	1,584,707	1,636,038	1,337,328	1,546,525	1,583,480
Operating supplies	789,553	775,892	1,014,351	866,624	888,559	899,095	822,882	882,253	836,288	1,094,002
Maintenance of buildings and equipment	1,148,217	1,715,131	1,687,340	1,969,116	3,193,116	3,065,512	3,364,910	3,501,598	2,067,464	1,670,023
Utilities	739,235	893,503	1,008,602	771,544	813,478	917,498	862,665	875,020	861,074	870,220
Contractual fees	626,437	640,618	735,132	889,869	873,110	882,505	910,491	836,634	915,365	903,463
Storm costs	161,349	-	-	-	-	359,921	-	-	-	-
Other	660,802	584,824	535,001	784,305	697,629	560,671	504,573	496,851	497,803	233,233
Total operating expenses	9,420,318	10,205,599	10,953,522	10,985,233	12,091,472	12,414,605	12,407,714	12,218,405	10,982,443	10,701,704
Operating income before depreciation and amortization	3,953,385	2,305,335	1,841,247	1,976,411	999,406	22,606	15,084	112,449	2,596,384	2,891,099
Depreciation and amortization	5,594,153	5,864,920	6,410,118	7,087,224	7,273,473	7,469,016	7,619,431	7,670,391	7,810,808	7,930,632
Operating loss	(1,640,768)	(3,559,585)	(4,568,871)	(5,110,813)	(6,274,067)	(7,446,410)	(7,604,347)	(7,557,942)	(5,214,424)	(5,039,533)
Nonoperating revenues (expenses):										
Facility charges	5,904,875	3,428,121	2,507,300	3,260,875	3,839,702	3,165,330	3,868,654	4,305,728	3,863,650	3,243,535
Investment income (loss)	1,503,939	1,995,201	3,658,420	956,056	509,675	351,929	(1,249,111)	267,061	248,207	519,767
Gain (loss) on disposal of capital assets	(2,198,500)	181,615	74,226	(251,710)	34,324	21,285	(44,507)	15,352	23,497	(193,113)
Insurance recovery	-	-	-	-	-	-	-	-	-	14,219
Bond issuance costs	-	-	-	-	-	-	-	-	-	(402,364)
Interest expense, net	(475,557)	(480,584)	(1,379,059)	(1,749,899)	(1,531,715)	(1,478,060)	(1,141,052)	(1,114,130)	(1,095,684)	(744,124)
Net nonoperating revenues	4,734,757	5,124,353	4,860,887	2,215,322	2,851,986	2,060,484	1,433,984	3,474,011	3,039,670	2,437,920
Income (loss) before contributions	3,093,989	1,564,768	292,016	(2,895,491)	(3,422,081)	(5,385,926)	(6,170,363)	(4,083,931)	(2,174,754)	(2,601,613)
Capital asset contributions	7,926,456	3,154,158	4,563,025	3,427,510	1,750,073	5,395,362	4,600,645	3,388,700	5,284,379	6,865,346
Changes in net position	\$ 11,020,445	\$ 4,718,926	\$ 4,855,041	\$ 532,019	\$ (1,672,008)	\$ 9,436	\$ (1,569,718)	\$ (695,231)	\$ 3,109,625	\$ 4,263,733

Table 3

**JAMES CITY SERVICE AUTHORITY**  
 (A Component Unit of the County of James City, Virginia)  
 Water and Sewer Rates  
 Last Ten Fiscal Years

**Quarterly Continuing Service Charges for Residential Water Service**

<b>Fiscal Year</b>	<b>Basic Charge</b>	<b>Rate per 1,000 gallons (1)</b>	<b>Quarterly Total (2)</b>	<b>% Change</b>
2007	\$ -	\$2.50 - \$3.00 - \$8.50	\$ 55.50	9.3%
2008	-	2.50 - 3.00 - 8.50	55.50	0.0%
2009	-	2.85 - 3.45 - 9.80	63.45	14.3%
2010	-	2.85 - 3.45 - 9.80	63.45	0.0%
2011	-	2.85 - 3.45 - 9.80	63.45	0.0%
2012	-	2.85 - 3.45 - 9.80	63.45	0.0%
2013	-	2.85 - 3.45 - 9.80	63.45	0.0%
2014	-	2.85 - 3.45 - 9.80	63.45	0.0%
2015	-	2.85 - 3.45 - 9.80	63.45	0.0%
2016	7.22	2.47 - 4.93 - 11.59	73.85	16.4%

**Quarterly Continuing Service Charges for Residential Sewer Service (1)**

<b>Fiscal Year</b>	<b>Basic Charge</b>	<b>Rate per 1,000 gallons</b>	<b>Quarterly Total (2)</b>	<b>% Change</b>
2007	\$ -	\$ 2.80	\$ 58.80	3.7%
2008	-	2.80	58.80	0.0%
2009	-	2.80	58.80	0.0%
2010	-	2.80	58.80	0.0%
2011	-	2.80	58.80	0.0%
2012	-	2.80	58.80	0.0%
2013	-	3.22	67.62	15.0%
2014	-	3.22	67.62	0.0%
2015	-	3.22	67.62	0.0%
2016	5.66	2.93	67.19	-0.6%

(1) Inverted Block Rate Structure:

1st Block based on 0 to 15,000 gallons used per quarter.

2nd Block based on 15,000 to 25,000 gallons used per quarter, which changed to 15,000 to 30,000 gallons used per quarter.

3rd Block based on over 25,000 gallons used per quarter, which changed to 30,000 gallons used per quarter.

(2) Assumes 21,000 gallons average quarterly use.

Source: James City Service Authority Schedule of Rates and Fees

Table 4

**JAMES CITY SERVICE AUTHORITY**  
 (A Component Unit of the County of James City, Virginia)  
 Largest Utility Customers  
 Current Year and Nine Years Ago

	2016			2007		
	Gallons Billed	Service Charges	Rank	Gallons Billed	Service Charges	Rank
Owens-Illinois *	23,592,214	\$ 123,658	1	20,915,820	**	2
Country Village Mobile Home Park (sewer only)	15,994,484	47,139	2	18,305,804	**	3
Eastern State Hospital *	15,807,284	100,971	3	35,211,500	**	1
Patriots Colony	14,398,341	94,999	4	17,937,960	**	4
Platinum Management	13,684,829	90,930	5	9,828,650	**	9
Williamsburg-James City County Public Schools *	13,153,674	86,884	6	12,007,050	**	6
Double Tree by Hilton (sewer only)	12,067,484	35,477	7	N/A	N/A	N/A
Greystone *	12,023,000	74,782	8	N/A	N/A	N/A
Windy Hill Trailer (sewer only)	9,687,348	28,575	9	12,182,492	**	5
Rolling Meadows	8,686,485	57,475	10	10,024,650	**	8
Oxford-James	-	-		10,237,800	**	7
Williamsburg-Oxford	-	-		9,762,650	**	10
Total	139,095,143	\$ 740,890		156,414,376		

\* Subject to wastewater sub-meter adjustments

\*\* Statistics not available

Source: James City Service Authority, Administration Department

**Table 5**

**JAMES CITY SERVICE AUTHORITY**  
 (A Component Unit of the County of James City, Virginia)  
 Ratio of Outstanding Debt  
 Last Ten Fiscal Years

<b>Fiscal year</b>	<b>Revenue bonds</b>	<b>Number of water connections</b>	<b>Debt per water connection</b>
2007	\$ 12,133,794	18,283	\$ 663.7
2008	11,212,670	18,770	597.4
2009	37,386,546	19,085	1,958.9
2010	35,950,422	19,368	1,856.2
2011	34,469,299	19,719	1,748.0
2012	32,938,175	20,070	1,641.2
2013	25,185,000	20,549	1,225.6
2014	24,660,000	20,858	1,182.3
2015	24,115,000	21,246	1,135.0
2016	22,595,000	21,669	1,042.7

Note: The James City Service Authority has no legal debt margin nor overlapping debt.

Source: James City Service Authority, Administration Department

Table 6

**JAMES CITY SERVICE AUTHORITY**  
 (A Component Unit of the County of James City, Virginia)  
 Revenue Bond Coverage  
 Last Ten Fiscal Years

<b>Fiscal year</b>	<b>Gross revenue</b>	<b>Direct operating expenses</b>	<b>Net revenue available for debt service</b>	<b>Principal</b>	<b>Interest</b>	<b>Total</b>	<b>Coverage</b>
2007	\$ 20,782,517	\$ 9,420,318	\$ 11,362,199	\$ 880,000	\$ 503,631	\$ 1,383,631	8.21
2008	18,115,871	10,205,599	7,910,272	905,000	479,431	1,384,431	5.71
2009	19,034,715	10,953,522	8,081,193	1,395,000	1,637,050	3,032,050	2.67
2010	17,178,575	10,985,233	6,193,342	1,440,000	1,590,562	3,030,562	2.04
2011	17,474,579	12,091,472	5,383,107	1,490,000	1,537,750	3,027,750	1.78
2012	15,975,755	12,414,605	3,561,150	1,545,000	1,483,100	3,028,100	1.18
2013	14,997,834	12,407,714	2,590,120	525,000	1,119,306	1,644,306	1.58
2014	16,918,995	12,218,405	4,700,590	545,000	1,100,931	1,645,931	2.86
2015	17,714,181	10,982,443	6,731,738	565,000	1,081,856	1,646,856	4.09
2016	17,370,324	10,701,704	6,668,620	785,000	571,161	1,356,161	4.92

Note: The James City Service Authority has no legal debt margin nor overlapping debt.

**Table 7**

**JAMES CITY SERVICE AUTHORITY**  
(A Component Unit of the County of James City, Virginia)  
Outstanding Debt for James City County  
Last Ten Fiscal Years

<b>Fiscal year</b>	<b>General obligation bonds</b>	<b>Capital leases</b>	<b>Lease revenue bonds</b>	<b>Other debt</b>	<b>Total</b>
2007	\$ 126,590,560	\$ 13,038,190	\$ 112,780,000	\$ 125,000	\$ 252,533,750
2008	118,369,735	12,126,298	107,200,000	-	237,696,033
2009	109,974,105	11,170,533	101,595,000	-	222,739,638
2010	101,414,765	10,169,895	110,275,000	-	221,859,660
2011	93,283,624	10,285,522	104,055,000	-	207,624,146
2012	86,134,103	9,235,074	104,472,000	-	199,841,177
2013	80,004,294	1,098,854	123,034,000	-	204,137,148
2014	72,164,244	984,528	114,416,000	-	187,564,772
2015	65,458,589	858,833	103,604,000	-	169,921,422
2016	49,844,842	728,456	130,451,552	-	181,024,850

**Table 8**

**JAMES CITY SERVICE AUTHORITY**  
 (A Component Unit of the County of James City, Virginia)  
 County Demographic and Economic Statistics  
 Last Ten Calendar Years

<b>Calendar year</b>	<b>Population (1)</b>	<b>Personal income (2)</b>	<b>Per capita personal income (2)</b>	<b>Unemployment percentage (1)</b>
2007	60,867	\$ 3,641,841,000	\$ 47,825	2.5%
2008	61,195	3,985,612,000	51,274	3.2%
2009	63,135	3,840,912,000	48,129	5.5%
2010	67,745	3,907,522,000	47,983	6.3%
2011	68,114	4,267,524,000	51,652	6.1%
2012	69,451	4,502,567,000	53,495	5.7%
2013	70,376	4,817,524,000	56,208	5.3%
2014	71,254	5,015,208,000	57,465	4.9%
2015	72,682	**	**	4.3%
2016	**	**	**	**

Source:

- (1) Planning Division, supplemented by data from Virginia Employment Commission (<http://www.vec.virginia.gov/>)
- (2) Data from the Bureau of Economic Analysis (<http://www.bea.gov/>), and has combined data for James City County and the City of Williamsburg
- \*\* Statistics not yet available



Table 9

**JAMES CITY SERVICE AUTHORITY**  
 (A Component Unit of the County of James City, Virginia)  
 Principal Employers in James City County  
 Current Year and Nine Years Ago

	2016			2007		
	Employees	Rank	Percentage of total County employment	Employees	Rank	Percentage of total County employment
Busch Gardens (1)	1000+	1	**	1000+	1	21.85%
Williamsburg-James City County Public Schools	1000+	2	4.86%	1000+	2	6.23%
Eastern State Hospital	500-999	3	2.73%	1000+	3	3.68%
James City County	500-999	4	2.28%	500-999	6	2.53%
Wal-Mart Distribution Center	500-999	5	1.82%	500-999	7	2.35%
Anheuser-Busch, Inc.	500-999	6	1.67%	500-999	5	3.08%
Riverside Regional Medical Center	500-999	7	1.52%	-		-
Kingsmill Resort	250-499	8	1.37%	-		-
Owens and Minor	250-499	9	1.21%	-		-
Jamestown-Yorktown Foundation	250-499	10	0.91%	500-999	8	1.91%
Williamsburg Landing	250-499	11	0.84%	250-499	10	1.03%
Williamsburg Plantation	250-499	12	0.76%	-		-
Diamond Resorts	250-499	13	0.76%	-		-
Busch Properties, Inc.	-		-	500-999	4	3.32%
Avid Medical	-		-	250-499	9	1.46%
Total			<u>20.73%</u>			<u>47.44%</u>

(1) Busch Gardens became publicly traded during fiscal year 2013, and information is not available.

Source: Economic Development, James City County and Virginia Employment Commission

Table 10

**JAMES CITY SERVICE AUTHORITY**  
 (A Component Unit of the County of James City, Virginia)  
 Schedule of Insurance in Force  
 June 30, 2016

<b>Insurer</b>	<b>Type of coverage</b>	<b>Policy number</b>	<b>Policy period</b>		<b>Annual Premium</b>
			<b>from</b>	<b>to</b>	
Virginia Association of Counties Group Self-Insurance Risk Pool (VACoRP)	General liability Property Automobile Crime Public officials' liability	VA-JA-131-10	07/01/15	07/01/16	\$ 139,794
Virginia Association of Counties Group Self-Insurance Association (VACoGSIA)	Workers' compensation	VA-JA-131D-10	07/01/15	07/01/16	67,394

Table 11

**JAMES CITY SERVICE AUTHORITY**  
 (A Component Unit of the County of James City, Virginia)  
 Full-time Employees by Function  
 Last Ten Fiscal Years

<b>Function</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
Administration	62	63	65	65	60	63	63	63	63	63
Water	14	14	15	15	15	15	15	15	15	15
Sewer	11	11	11	11	11	11	11	11	11	11
Total	<b>87</b>	<b>88</b>	<b>91</b>	<b>91</b>	<b>86</b>	<b>89</b>	<b>89</b>	<b>89</b>	<b>89</b>	<b>89</b>

Source: James City County, Fiscal Year Adopted Budgets

Table 12

**JAMES CITY SERVICE AUTHORITY**  
 (A Component Unit of the County of James City, Virginia)  
 Operating Indicators by Function  
 Last Ten Fiscal Years

<b>Function</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
Water:										
New connections	694	351	263	385	388	351	448	359	388	423
Water main breaks	42	57	37	40	44	31	25	21	26	21
Sewer:										
New connections	693	389	269	380	375	296	347	261	380	447

Source: James City Service Authority, Administration Department

Table 13

**JAMES CITY SERVICE AUTHORITY**  
 (A Component Unit of the County of James City, Virginia)  
 Capital Asset Statistics by Function  
 Last Ten Fiscal Years

Function	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Water:										
Water lines (miles)	329	332	339	344	393	390	393	400	402	407
Water customers	18,283	18,770	19,085	19,368	19,719	20,070	20,549	20,858	21,246	21,669
Storage tanks (greater than 250,000 gallons)	6	7	7	7	7	7	7	7	7	7
Average ERCs (1)	19,600	20,400	25,753	20,200	20,866	19,200	18,597	18,937	19,415	18,921
Sewer:										
Sewer lines (miles)	370	375	379	382	419	423	425	430	435	439
Gallons collected (millions)	1,680	1,727	1,765	1,833	1,598	1,771	1,739	1,862	1,897	1,863
Sewer customers	18,426	18,590	18,702	18,860	21,127	21,488	21,962	22,575	22,955	23,402

(1) Equivalent Residential Connections (ERCs) are determined based upon the rated capacity of a water meter (e.g., the average amount of water which can flow through such meter on a continuous basis) as compared to the rated capacity for a typical 5/8" residential water meter.

Source: James City Service Authority, Administration Department

**Table 14**

**JAMES CITY SERVICE AUTHORITY**  
 (A Component Unit of the County of James City, Virginia)  
 Summary of Historical Flows (MGD)  
 Last Ten Fiscal Years

<b>Function</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
Water:										
Average Day	4.9	4.9	4.8	5.0	5.1	4.8	4.7	4.7	4.7	4.7
Average Day in Month of Maximum Flow	6.5	6.3	7.1	6.8	7.4	6.4	6.1	5.9	6.1	5.9
Month of Maximum Flow	June	July	August	June	July	July	July	June	July	August
Sewer:										
Average Day	4.6	4.7	5.4	4.5	4.4	5.0	5.0	5.1	5.1	5.1

Source: James City Service Authority, Administration Department

Table 15

**JAMES CITY SERVICE AUTHORITY**  
 (A Component Unit of the County of James City, Virginia)  
 Miscellaneous Statistics

**Comparison of Area Water Bills**  
**Annual Consumption 60,000 Gallons as of June 2016**

<b>Virginia Jurisdiction</b>	<b>Water Service</b>
City of Williamsburg	\$ 307.20
City of Norfolk	437.16
City of Newport News	441.48
City of Virginia Beach	353.52
James City Service Authority	177.12

Source: James City Service Authority

**Comparison of Area Sewer Bills**  
**Annual Consumption 60,000 Gallons as of June 2016**

<b>Virginia Jurisdiction</b>	<b>Sewer Service *</b>
City of Hampton	\$ 171.60
City of Newport News	310.32
City of Virginia Beach	369.72
City of Norfolk	306.36
York County	312.00
James City Service Authority	198.48

\* Rates charged by the municipality. Residents of these municipalities pay a separate wastewater treatment fee to Hampton Roads Sanitation District of \$5.52 per 1,000 gallons.

Source: James City Service Authority

**Availability Charges for a Typical Residential Connection (1)**  
 Last Ten Fiscal Years

<b>Fiscal Year</b>	<b>Water</b>	<b>Sewer</b>	<b>Total</b>
2007	\$ 2,400	\$ 2,400	\$ 4,800
2008	4,200	2,520	6,720
2009	4,200	3,360	7,560
2010	4,200	3,360	7,560
2011	4,200	3,360	7,560
2012	4,200	3,360	7,560
2013	4,200	3,360	7,560
2014	4,200	3,360	7,560
2015	4,200	3,360	7,560
2016	4,200	3,360	7,560

(1) A system facilities charge for water service is assessed for each new separate service connection. The purpose of the charge is to defray in part the cost of providing major supply, transmission main, booster pumping and distribution facilities. A similar system facilities charge for sewer service is assessed for each new separate service connection. The current charge for a residential 5/8 inch meter is \$500 per bathroom fixture and has been in effect since 2008. The sewer service connection is also based on the size of the water meter and is \$400 per bathroom fixture and has been in effect since 2009.

Source: James City Service Authority

**JAMES CITY SERVICE AUTHORITY**  
(A Component Unit of the County of James City, Virginia)

Rates and Fees

June 30, 2016

The following are the rates and fees of James City Service Authority:

**1) Wastewater Charges**

**(a) System Facilities Charge**

A system facilities charge for wastewater collection service to be furnished through each new separate service connection which is to be made to a public sewer, regardless of who may have paid for the installation of the public sewer to which the connection is to be made, shall be paid by each applicant for service prior to the installation of service, as follows:

*Metered Water Service*

Commercial, industrial, institutional, multi-family residential, and single-family residential:

<u>Meter size (inches)</u>	<u>Charge</u>
5/8 Residential	\$ 400 per bathroom fixture
5/8 Nonresidential	2,500
3/4	3,500
1	4,000
1 1/2	7,500
2	12,000
3	24,000
4	37,500
5	75,000

*Nonmetered Water Service*

Where water is provided by an unmetered source, the following estimated charges shall be assessed:

<u>Activity, use</u>	<u>Unit</u>	<u>Charge</u>
Single-family residences	Each	\$ 300 per bathroom fixture
Single-family mobile homes	Each	1,000
Mobile homes in parks	Each lot	1,000
Two family, apartments and townhouses	Each	300 per bathroom fixture
Schools (with showers)	Student	80
Schools (without showers)	Student	50
Motels and hotels	Room	650 or minimum 2,500
Manufacturing	Msf	300 or minimum 1,200
Warehouses	Msf	100 or minimum 1,200
Service stations	Each	1,200
Camping facilities	Each space	500 or minimum 1,200
Restaurants	Seat	20 or minimum 1,200
Commercial	Msf	minimum 1,500

<u>Activity, use</u>	<u>Unit</u>	<u>Charge</u>
First	30,000 sq. ft.	\$ 500
Next	10,000 sq. ft.	450
Next	10,000 sq. ft.	400
Over	50,000 sq. ft.	350

The purpose of this charge is to defray, in part, the cost of providing force mains, pump stations, transmission mains, booster pumps, and other system facilities.



**JAMES CITY SERVICE AUTHORITY**

(A Component Unit of the County of James City, Virginia)

Rates and Fees, Continued

June 30, 2016

**(b) Local Facilities Charge**

A local facilities charge of \$1,050 for each separate connection to public sewer shall be paid by each applicant who desires to secure wastewater service therefrom, which charge shall be paid prior to the approval of the application for service; provided, however, in any instance where satisfactory evidence shows that an applicant has paid the cost of installation of the local facility to which the connection is to be made, either by installing the local facility at his expense and then conveying the same to the Authority (or its predecessors) or by reimbursing the Authority (or its predecessors) for the cost of such local facilities, the local facilities charge shall be waived. Additionally, when the Authority does not install or have a rebate agreement, the local facilities charge shall also be waived. In situations where a new wastewater system has been installed by the Authority and whereas any applicant adjacent to this new system that has an existing septic system desires to receive wastewater service therefrom, the local facilities charge shall be waived for a period of 12 months from the completion date of the new wastewater system installation.

The purpose of this charge is to defray in part the cost of installing collection mains which are necessary to provide wastewater collection service to abutting properties and which have been provided at the expense of the Authority or persons, firms, or corporations other than the applicant. The charge shall be paid prior to issuance of a plumbing permit from Building Safety and Permits.

**(c) Grinder Pump Installation and Maintenance Charge**

Any applicant for a sewer connection requiring a residential grinder pump may purchase the grinder pump (that meets Authority standards and specifications) plus ancillary parts from the Authority at cost if the grinder pump is necessary to replace an existing septic system. In addition, if the connection to the public sewer system is replacing a septic system, the applicant is eligible for the deferred-payment plan discussed in Paragraph G, Section 2 of the *James City Service Authority Regulations Governing Utility Service*.

An annual grinder pump maintenance charge of \$260 shall be paid for each separate connection to a grinder pump when the operation and maintenance of said residential grinder pump is the responsibility of the Authority. The payment for this charge will be prorated in equal amounts in the customers' utility service charge billing. The Authority shall not maintain nonresidential grinder pumps or other commercial pump stations unless such utility maintenance is deemed by the Authority to be in the interest of the public health or is necessary to protect the integrity of the system, or such facility is located within a designated Reservoir Protection Zone.

**(d) Service Connection Charge**

A service connection charge shall be paid by each applicant for each new service connection prior to the approval of the application as follows:

<u>Service installed by</u>	<u>Charge</u>
Developer, applicant	\$10 per connection inspection fee
Utility	Actual cost times 1.25, including overhead

The purpose of this charge is to defray the cost of installation or inspection of a service connection from the public sewer main in the street to the curb or property line. The service connection charge shall be waived provided the applicant has paid a local facilities charge and the sewer service line is not greater than six inches in diameter for a gravity main or two inches in diameter for a force main. In the event that the service connection charge is not waived, the local facilities charge will be applied against the service connection charge.

**JAMES CITY SERVICE AUTHORITY**  
 (A Component Unit of the County of James City, Virginia)  
 Rates and Fees, Continued  
 June 30, 2016

**(e) Retail Service Rates**

The wastewater service charge shall be based on usage from a metered water source where available. For wastewater service on an unmetered water source, a meter sized equivalent shall be used, based upon an estimated charge.

*Metered Water Source*

Metered water usage shall be reduced by a metered reading from a landscaping meter or similar device if the landscaping meter or device is approved and utilized under operating regulations adopted by Hampton Roads Sanitation District (HRSD).

A copy of the deduction meter reading provided to HRSD must be received by the Authority within 20 days prior to the end of each billing period. In the event a meter reading is not received within this time, the Authority shall bill based on total water consumption and no refund or billing adjustment shall be made.

Fixed Charge: Each customer bill shall include a Fixed Charge based upon the size of the meter serving the customer. The Fixed Charge for each billing cycle shall be calculated based on the quarterly fixed charge chart below. This Fixed Charge is for expenses associated with operating and maintaining the wastewater collection system.

<u>Meter Size</u>	<u>Quarterly Fixed Charge</u>
5/8"	\$ 5.66
3/4"	\$ 8.49
1"	\$ 14.15
1-1/2"	\$ 28.30
2"	\$ 45.28
3"	\$ 90.56
4"	\$ 141.50
6"	\$ 283.00
8"	\$ 452.80
10"	\$ 650.90

Charge for all collection and treatment of wastewater:

<u>Volume</u>		<u>Collection</u>
Per 1,000 gallons of water consumed	\$	2.93
Per 100 cubic feet of water consumed		2.20

**JAMES CITY SERVICE AUTHORITY**  
 (A Component Unit of the County of James City, Virginia)  
 Rates and Fees, Continued  
 June 30, 2016

*Nonmetered Water Source*

Where no meter exists or where meter readings are not made available by the water supplier to the Authority, the estimated charges below shall be assessed.

<b>Activity, use</b>	<b>Unit</b>	<b>Charge</b>
Single-family residences	Each	\$ 42.00
Singe-family mobile homes	Each	42.00
Mobile homes in parks	Each lot	37.25
Duplex, apartments and townhouses	Each	37.25
Schools (with showers)	Student	4.25
Schools (without showers)	Student	2.65
Motels and hotels	Room	18.55 or minimum 186.70
Manufacturing	Msf	11.00 or minimum 35.85
Warehouses	Msf	7.45 or minimum 46.50
Service stations	Each	49.95
Camping facilities	Each space	16.22 or minimum 64.25
Restaurants	Seat	4.95 or minimum 55.85
Commercial	Msf	18.55 or minimum 55.85
Churches	Each	40.65
Swimming pools	Sfe	40.65
Laundromats	Sfe	40.65
Others to be established when needed		

The purpose of the retail service charge is to defray all other costs of providing wastewater collection, and in certain cases, treatment for domestic, commercial, and industrial uses including replacement, renewals, extensions, and repayment of moneys borrowed to acquire or construct the wastewater collection transmission system.

## 2) Water Charges

### *(a) System Facilities Charge*

A system facilities charge for water service to be furnished through each new separate service connection which is to be made to a public water main, regardless of who may have paid for the installation of the public water main to which the connection is to be made, shall be paid by each applicant for service prior to the installation of the water service connection, as follows.

Commercial, industrial, institutional, multifamily, and single-family residential:

<b>Meter size (inches)</b>	<b>Charge</b>
5/8 Residential	\$500 per bathroom fixture
5/8 Nonresidential	2,500
3/4	3,500
1	4,000
1 1/2	7,500
2	12,000
3	24,000
4	37,500
6	75,000

**JAMES CITY SERVICE AUTHORITY**  
(A Component Unit of the County of James City, Virginia)

Rates and Fees, Continued

June 30, 2016

The purpose of this charge is to defray in part the cost of providing major supply, transmission main, booster pumping, and distribution storage facilities. The charge shall be paid prior to the issuance of a plumbing permit from Building Safety and Permits.

**(b) Local Facilities Charge**

A local facilities charge of \$1,300 for each separate connection to an existing water main shall be paid by each applicant who desires to secure water service therefrom, which charge shall be paid prior to the approval of the application for service; provided, however, in any instance where satisfactory evidence shows that an applicant for a connection has paid the cost of installation of the local facility to which the connection is to be made, whether by installing the local facility at his expense and then conveying the same to the Authority (or its predecessors) or by reimbursing the Authority (or its predecessors) for the cost of such local facility, the local facilities charge shall be waived.

The purpose of this charge is to defray, in part, the cost of installing mains, valves, and fire hydrants which are necessary to provide water service to abutting properties and which have been provided at the expense of the Authority or persons, firms, or corporations other than the applicant. The charge shall be paid prior to the issuance of a plumbing permit from Building Safety and Permits.

**(c) Service Connection Charge**

A service connection charge shall be paid by each applicant for each new service connection and meter installation prior to the approval of the application, as follows:

<u>Installation of connection by</u>	<u>Charge</u>
Developer	\$10 per meter inspection fee
Utility	Actual cost times 1.25, including overhead

The purpose of this charge is to defray the cost of installation or inspection of a service connection from the water main in the street to the curb or property line and the installation of a meter either at the curb or property line or within the premise.

**(d) Retail Service Charge**

Fixed Charge: Each customer bill shall include a Fixed Charge based upon the size of the meter serving the customer. The Fixed Charge for each billing cycle shall be calculated based on the quarterly fixed charge chart below. This Fixed Charge is for expenses associated with operating and maintaining the water distribution system.

<u>Meter Size</u>	<u>Quarterly Fixed Charge</u>
5/8"	\$ 7.22
3/4"	\$ 10.83
1"	\$ 18.05
1-1/2"	\$ 36.10
2"	\$ 57.76
3"	\$ 115.52
4"	\$ 180.50
6"	\$ 361.00
8"	\$ 577.60
10"	\$ 830.30

**JAMES CITY SERVICE AUTHORITY**  
 (A Component Unit of the County of James City, Virginia)  
 Rates and Fees, Continued  
 June 30, 2016

Water service shall be based upon a commodity charge for all consumption, as follows:

<b>Single Family Residential</b>			
	<b>Tier 1</b>	<b>Tier 2</b>	<b>Tier 3</b>
<u><b>Meter Size</b></u>	<u><b>(quarterly use)</b></u>	<u><b>(quarterly use)</b></u>	<u><b>(quarterly use)</b></u>
5/8"	0-15,000	15,001-30,000	30,000+
3/4"	0-22,500	22,501-45,000	45,000+
1"	0-37,500	37,501-75,000	75,000+
1-1/2"	0-75,000	75,001-150,000	150,000+
2"	0-120,000	120,001-240,000	240,000+
3"	0-240,000	240,001-480,000	480,000+
4"	0-375,000	375,001-750,000	750,000+
6"	0-750,000	750,001-1,500,000	1,500,000+
8"	0-1,200,000	1,200,001-2,400,000	2,400,000+
10"	0-1,725,000	1,725,001-3,450,000	3,450,000+
<b>Rate Per 1,000 Gallons</b>	<b>\$ 2.47</b>	<b>\$ 4.93</b>	<b>\$ 11.59</b>

<b>Multi-Family Residential and Non-Residential</b>	
<u><b>All Meter Sizes</b></u>	<u><b>All Use</b></u>
<b>Rate Per 1,000 Gallons</b>	<b>\$ 3.65</b>

The purpose of the retail service charge is to defray all costs of providing water service for domestic, commercial, and industrial uses and for firefighting purposes, including repayment of moneys borrowed to acquire or construct the water system; operation and maintenance; and renewals, replacements and extensions.

### 3) Exceptions to Local System Facilities Charges

The provisions of Regulations Governing Utility Service, Section 29 above, shall be observed when there is a conflict between Section 29 and the provisions of Sections 32(b) and 32(c) above.

### 4) Billing and Account Charges

The charges on the following pages shall be assessed for any customer billed by the Authority.

#### *(a) Account Charges*

An account charge of \$10 (\$20 if the meter is read) shall be paid for each applicant for continuing service, whether for a new account or for a transfer of account, for water and/or wastewater service. The purpose of this charge is to defray the cost incurred in clerical and bookkeeping activities, the turning on of services, and/or meter reading required for each new account or transfer of account.

#### *(b) Transaction Charge for Late Payment*

A transaction charge for late payment of 1.5% will be assessed on the balance due once the bill is delinquent and then every 30 days thereafter. The late charge will be added to a bill in the event the bill is not paid within 30 days following the date thereof.

**JAMES CITY SERVICE AUTHORITY**

(A Component Unit of the County of James City, Virginia)

Rates and Fees, Continued

June 30, 2016

**(c) Interest Charge for Late Payments with a Lien**

An interest charge for late payment of 8% simple interest on the principal (delinquent amount) due, shall be added to any account when a lien has been placed upon real estate. Such lien on any real estate may be discharged by the payment to the Authority of the total lien amount, penalty, and the interest which has accrued to the date of the payment.

**(d) Restoration of Service Charge**

Where service has been terminated on account of the nonpayment of any bill, a restoration of service charge of \$30 (\$100 for a single service wastewater customer not on metered water service) shall be paid before service is restored, except as defined in Section 17(A)(2).

The purpose of this charge is to defray the expenses of terminating and restoring services, including clerical and bookkeeping activities.

**(e) Meter Test Deposit**

A test of a water meter shall be done at the request of a water customer upon payment of a meter test deposit as defined in Regulations Governing Utility Service Section I (1). If the meter is found to be 3% or more fast, then the deposit shall be refunded. If inoperable or 25% or more slow, the deposit shall be credited against a revised billing. The deposit shall be determined by meter size, as set out in the following:

<u>Meter Size</u>	<u>Deposit</u>
5/8" to 2"	\$ 30
3" and over	80

**(f) Fire Hydrant Charge**

For customer-requested hydrants installed under the provisions of Regulations Governing Utility Service Section 21, there shall be an installation cost of actual cost plus an allowance of 25% for overhead. The applicant shall deposit with the Authority an estimated fee prepared by the Authority, subsequently adjusted at the completion of the installation with costs exceeding the estimate billed or, in case the estimate exceeds the cost, refunded to the applicant.

The purpose of this charge is to assess to the user the cost of installing fire hydrants for the benefit of the applicant.

**(g) Temporary Water Service Charge**

Under the provisions of Section 22, an applicant for temporary service shall pay, upon application, for the estimated costs of installing, replacing, and removing the facilities which are required to furnish such services plus an allowance of 25% for overhead. The applicant shall receive a refund if the estimate exceeds the actual. The applicant shall also pay service charges and all charges caused by a late payment or nonpayment. The applicant may also be required to post a deposit as described in Regulations Governing Utility Service Section 6.

**(h) Fire Connection Detector Check Meter Charge**

Fire connection detector check meters shall be read and billed at least annually or on a more frequent basis, as determined by the Authority. Rates governing normal water usage shall be assessed.

**JAMES CITY SERVICE AUTHORITY**  
(A Component Unit of the County of James City, Virginia)

Rates and Fees, Continued

June 30, 2016

Fire connection detector check meters monitor nonfire flow usage from a fire connection and there should be little or no water activity.

**5) Multiple Charges Bills**

All charges and fees above are in addition to charges and fees assessed and owed to Newport News Waterworks, HRSD, or any other private or municipal utility.

**6) No Free Service**

There shall be no utility service provided to any customer without the assessment of service charges.

**7) Plan Review Fee**

The following page indicates the charges that shall be assessed for the appropriate plan. The purpose of this charge is to defray cost incurred for time used to provide engineer technical review.

**JAMES CITY SERVICE AUTHORITY**  
 (A Component Unit of the County of James City, Virginia)  
 Rates and Fees, Continued  
 June 30, 2016

Document	Collection
Rezoning:	
5 acres or less	\$ 100
Greater than 5; but less than 10 acres	150
Greater than 10 acres	200
Special use permits:	
General	200
Family subdivision	50
Wireless communication facilities	50
Other	50
Site plans:	
Administrative review:	
Residential structure (multi-family)	300 plus \$5 per unit
Nonresidential structure	300
Mixed use structure	200 plus \$5 per residential unit
Utility easement plat service	300
Planning commission review:	
Residential structure (multi-family)	300 plus \$5 per unit
Nonresidential structure	300
Mixed use structure	300 plus \$5 per residential unit
Utility easement plat service	300
Amendment to an approved plan:	
Residential structure (multi-family)	150 plus \$2 per unit
Nonresidential structure	150
Mixed use structure	150 plus \$2 per residential unit
Utility easement plat service	150
Each additional review after second resubmission	150
Master plan review:	
Initial review	600
Revision of plan	600
Conceptual plan for water and sewer:	
General	100
Master utility plans and modeling	300
Each additional review after second resubmission	150
Subdivision plan review:	
No public improvements required	75
Public improvements required	300 per plan plus \$5 per lot
Wastewater pumping station	2,000
Well facility	3,000
Each additional review after second resubmission	150

## 8) Inspection

There shall be an inspection fee of \$25 for the third and subsequent inspections for water and sewer service connections. These will include, but are not limited to, water meter box installations, water and sewer service line connections, and grinder pump installations. This charge will be paid prior to the third/or subsequent inspections. The purpose of this fee is to defray the expense of making multiple on-site inspections to correct previously identified deficiencies.



**JAMES CITY SERVICE AUTHORITY**  
(A Component Unit of the County of James City, Virginia)  
Rates and Fees, Continued  
June 30, 2016

**9) Inspection Fee for Water and Sewer Lines**

There shall be a fee for the inspection of public water and sewer installations. Such fee shall be \$2.87 per foot for every foot of water main and sewer main constructed and shall be submitted at the time of filing an application for a land disturbance permit.

**10) Sub-Meter Account Charge**

An account charge of \$18 shall be paid annually by each customer who has established a sub-meter account. The payment for this charge will be prorated in equal amounts in the customer utility service charge billing.

## **COMPLIANCE SECTION**

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## **Independent Auditors' Report on Internal Control over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with Government Auditing Standards**

Board of Directors  
James City Service Authority  
Williamsburg, Virginia

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of James City Service Authority as of and for the year ended June 30, 2016, and the related notes to the financial statements, which collectively comprise James City Service Authority's basic financial statements, and have issued our report thereon dated November 29, 2016.

### ***Internal Control over Financial Reporting***

In planning and performing our audit of the financial statements, we considered James City Service Authority's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of James City Service Authority's internal control. Accordingly, we do not express an opinion on the effectiveness of James City Service Authority's internal control.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct misstatements on a timely basis. A material weakness is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A significant deficiency is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control over financial reporting was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or, significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

### ***Compliance and Other Matters***

As part of obtaining reasonable assurance about whether James City Service Authority's financial statements are free of material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

***Purpose of this Report***

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purposes.

*Dixon Hughes Goodman LLP*

**Newport News, Virginia  
November 29, 2016**

## **Independent Auditors' Report on Compliance with Commonwealth of Virginia Laws, Regulations, Contracts and Grants**

Board of Directors  
James City Service Authority  
Williamsburg, Virginia

We have audited the financial statements of the James City Service Authority, as of and for the year ended June 30, 2016, and have issued our report thereon November 29, 2016.

We conducted our audit in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and *Specifications for Audits of Boards, Commissions and Authorities*, issued by the Auditor of Public Accounts of the Commonwealth of Virginia. Those standards and specifications require that we plan and perform the audit to obtain reasonable assurance about whether the general-purpose financial statements are free of material misstatement.

Compliance with Commonwealth of Virginia laws, regulations, contracts and grants applicable to the James City Service Authority, is the responsibility of the James City Service Authority's management. As part of obtaining reasonable assurance about whether the financial statements are free of material misstatement, we performed tests of the James City Service Authority's compliance with certain provisions of the Commonwealth of Virginia's laws, regulations, contracts, and grants. However, the objective of our audit of the financial statements was not to provide an opinion on overall compliance with such provisions. Accordingly, we do not express such an opinion.

Following is a summary of the Commonwealth of Virginia's laws, regulations, contracts and grants for which we performed tests of compliance:

### Code of Virginia

- Cash and Investments
- Conflicts of Interest
- Retirement Systems
- Procurement
- Unclaimed Property

The results of our tests disclosed two instances of noncompliance with the provisions referred to in the preceding paragraph. These instances are discussed in the Schedule of Findings and Responses as Findings 16-1 and 16-2. With respect to items not tested, nothing came to our attention that caused us to believe that the James City Service Authority had not complied, in all material respects, with those provisions.

This report is intended solely for the information and use of the Board of Directors and management of James City Service Authority, and the Auditor of Public Accounts and all applicable state agencies and is not intended to be, and should not be, used by anyone other than these specified parties.

*Dixon Hughes Goodman LLP*

**Newport News, Virginia**  
**November 29, 2016**

**JAMES CITY SERVICE AUTHORITY**  
(A Component Unit of the County of James City, Virginia)

Schedule of Findings and Responses  
June 30, 2016

**1. Summary of Auditors' Results**

- a. An unmodified opinion was issued on the financial statements.
- b. There were no deficiencies noted in internal control to disclose.
- c. The audit disclosed no items of noncompliance material to the financial statements.

**2. Findings Relating to the Financial Statements which are Required to be Reported in Accordance with Government Auditing Standards**

None

**3. State Compliance Findings**

**Finding 16-1**

**Condition:** During fiscal year 2016, The State and Local Government Conflict of Interests Act contained in Chapter 31 of Title 2.2 of the Code of Virginia requires certain local government officials to file certain disclosure forms with the clerk of the governing body by December 15, 2015 and June 15, 2016.

**Criteria:** Three statements of economic interest forms were not filed timely.

**Effect:** The Authority was not in compliance with the State and Local Government Conflict of Interest Act.

**Recommendation:** The Authority should take steps to ensure that each local official files the required forms in a timely manner.

**Management's response:** Management will ensure compliance going forward.



**JAMES CITY SERVICE AUTHORITY**  
(A Component Unit of the County of James City, Virginia)

Schedule of Findings and Responses, Continued  
June 30, 2016

**Finding 16-2**

**Condition:** Chapter 14 of Title 30 of the Code of Virginia requires audited entities to publish in a newspaper of general circulation in the locality of the entity, a summary statement of financial condition. This statement should include, at a minimum, total assets, liabilities and fund balances; total revenues, expenses, and other sources or uses; and the resulting net change in fund balances.

**Criteria:** A financial statement summary is not being published in a local newspaper.

**Effect:** The Authority was not in compliance with the Code of Virginia, Chapter 14 of Title 30.

**Recommendation:** The Authority should take steps to ensure that a summary statement of financial condition, that meets the minimum requirements, is published in a local newspaper.

**Management's response:** Management will ensure compliance going forward.

**4. Status of Prior Year State Compliance Findings**

None

**ITEM SUMMARY**

DATE: 12/13/2016

TO: The Board of Supervisors

FROM: Teresa J. Fellows, Administrative Coordinator

SUBJECT: VDOT Quarterly Update

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**ATTACHMENTS:**

	Description	Type
▣	Quarterly Report	Cover Memo

**REVIEWERS:**

Department	Reviewer	Action	Date
Board Secretary	Fellows, Teresa	Approved	12/1/2016 - 8:46 AM

James City Board of Supervisor's Meeting

December 13, 2016

**Maintenance Accomplishments for Quarter (Sep 1 to Nov 30)**

We completed 309 of 372 maintenance work orders this quarter with 63 outstanding (83% complete).

39 - Drainage

18 - Roadway/Sign

6 - Vegetation

Residency Direct Line 757-253-5138/VDOT's Customer Service Center **1-800-FOR-ROAD (1-800-367-7623)**

**A few highlights of the accomplishments are:**

Sidewalk replacement in Stonehouse Glen

Ditching on Greensprings Road, Derby Lane, and Huntingdon Drive

Sinkhole repair in Springhill, Rain Tree, St. Georges Hundred, and Berkleys Green Subdivisions

Cut Sight distance on Centerville Road, Route 60, and Route 143

Trimmed trees on Route 132, Route 5, and Brick Bat Road

County wide Mowing – Fourth Primary and Secondary mowing/litter removal cycle completed Nov 23rd.

**Calendar Year 2017 Paving Program**

*Plant Mix* - Primary Routes: Rte 602 Fenton Mill Rd., Rte 776 Greensprings Plantation Dr.

Secondary Routes: Rte 1628 Crosscut Ct., Rte 1629 Timber Lane, Rte 5000 Monticello Ave, Rte 1570

Longhill Gate Rd, Rte 1677 Meadowlake Dr, Rte 1678 Thomas Higgs Ct, and Rte 1679 Old Lawn Way.

*State of Good Repair* – Route 31

**Current Projects**

**Pasture Circle Slope Repair (UPC 106845)**

Replace 30" culvert and repair Outfall – construction ongoing

**Route 5 Slope Repair (UPC 106842)**

Repair eastbound roadway side slope and twin 30" culvert outfall – construction ongoing

**Route 5000 Roadway Repairs**

**Longhill Road Widening (UPC 100921)**

Longhill Road Project from Rte 199 to Old Towne Rd. – 19 million Smart Scale project started Preliminary Engineering, Right of Way starts in 2017, and Construction starts in 2018 with completion scheduled for December 2020. Public Hearing scheduled for December 6, 2016 from 4-7 PM at Lafayette High School.

**I-64 Widening Segment 1 (UPC 104905)**

The Base Scope includes additional 12' wide travel lanes and 12' wide shoulder lanes within the existing median space, existing bridge repair and widening, and patching of the existing mainline pavement along with a ¾" THMACO overlay. The bid includes a 2" overlay and the extension of acceleration and deceleration lanes at the Ft. Eustis Interchange. Projected date to shift traffic to the inside lanes is March 2017. The project completion date remains in December of 2017.

**I-64 Widening Segment 2 (UPC 106665)**

The I-64 segment 2 project is a 12' wide travel and shoulder lanes in each direction. Work started with strengthening and stabilizing the right shoulders in preparation to shift the travel lanes over. Median barriers are scheduled to be installed after shoulder stabilization, at which time the travel lanes will be shifted to the right and the workzone speed limit of 55 mph will go into effect. The project is scheduled for completion in May 2019.

**I-64 Widening Segment 3 (UPC 106689)**

The I-64 segment 3 project is a 12' wide travel and 11' wide shoulder in each direction. Preliminary engineering is currently ongoing. Projected release of the Request For Quotes (RFQ) is March 15, 2017. Award is projected for December 2017 and start of construction in January 2022.

**Ferry Projects Update**

New 70 vehicle ferry boat is still on schedule for Fall of 2018.

Dolphin replacement utilizing composite dolphins is currently under construction.

Ferry transfer bridges replacement on the JCC side is re-scheduled for construction in 2017.

**Traffic Studies (Completed)**

- Sep 26 - Racefield Road Speed Limit resolution of 35 mph in Rural Rustic Road segment with Curve Advisory Warning signs of 15 mph
- Oct 3 - Crosswalk review at Rte 199 and Rte 31
- Oct 7 - Install Flex Poles at Rte 60 East entrance onto Rte 199 WB
- Oct 11 - Install No Outlet sign at Sir Thomas Way
- Oct 18 - Install No Parking signs on Eagle Way across from Jamestown High School
- Oct 19 - Speed Limit review for Cedar Point Rd establishing 25 mph
- Oct 20 - Speed Limit signs per resolution of 25 mph for Fieldcrest Subdivision
- Oct 24 - Lane Striping on Rte 199 at Rte 637 Mounts Bay Rd acceleration lane

**Projects in Development**

Brookwood Drive at Rte 199 (UPC 102948) – construct additional dedicated left turn lane in 2017

Skiffs Creek Connector (UPC 100200) – construct 2 lane road connecting Rte 60 to Rte 143 current pre-scope estimate is \$50,503,700.

News Road and Centerville Road Project (UPC 102944) – construct signalized intersection with turn lanes

**ITEM SUMMARY**

DATE: 12/13/2016

TO: The Board of Supervisors

FROM: Bryan J. Hill, County Administrator

SUBJECT: General Services Update

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**REVIEWERS:**

Department	Reviewer	Action	Date
Economic Development Authority	Fellows, Teresa	Approved	12/6/2016 - 1:53 PM

**ITEM SUMMARY**

DATE: 12/13/2016

TO: The Board of Supervisors

FROM: Teresa J. Fellows, Administrative Coordinator

SUBJECT: Minutes Adoption - November 8, 2016

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**ATTACHMENTS:**

	Description	Type
▣	110816 BOS Minutes	Minutes

**REVIEWERS:**

Department	Reviewer	Action	Date
Board Secretary	Fellows, Teresa	Approved	12/1/2016 - 8:45 AM

**MINUTES**  
**JAMES CITY COUNTY BOARD OF SUPERVISORS**  
**REGULAR MEETING**  
**County Government Center Board Room**  
**101 Mounts Bay Road, Williamsburg, VA 23185**  
**November 8, 2016**  
**6:30 PM**

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**A. CALL TO ORDER**

**B. ROLL CALL**

John J. McGlennon, Vice Chairman, Roberts District  
Ruth M. Larson, Berkeley District  
Kevin D. Onizuk, Jamestown District  
P. Sue Sadler, Stonehouse District  
Michael J. Hipple, Chairman, Powhatan District

Bryan J. Hill, County Administrator  
Adam R. Kinsman, County Attorney

**C. MOMENT OF SILENCE**

**D. PLEDGE OF ALLEGIANCE**

1. Pledge Leader - Mackenzie Britt, a 3rd-grade student at Stonehouse Elementary and a resident of the Stonehouse District.

**E. PUBLIC COMMENT - Until 7 p.m.**

No registered speakers.

**F. PRESENTATIONS**

At 6:55 p.m., Mr. Hipple recessed the Board for a brief break.

At 7 p.m., Mr. Hipple reconvened the Board of Supervisors.

**G. CONSENT CALENDAR**

A motion to Approve was made by Ms. Larson and the motion result was Passed.

AYES: 5 NAYS: 0 ABSTAIN: 0 ABSENT: 0  
Ayes: McGlennon, Larson, Onizuk, Sadler, Hipple

1. Minutes Adoption - October 25, 2016, Regular Meeting
2. Grant Award - Naloxone for Law Enforcement
3. Grant Award - Office of Emergency Medical Services System Initiative Award - \$2,856

4. Grant Award - Citizen Preparedness - \$18,420
5. Personnel Policy & Procedure Manual Chapter 4 Update

## **H. PUBLIC HEARING(S)**

1. Case No. SUP-0025-2016. Richardson Family Subdivision

Ms. Savannah Pietrowski, Planner I, addressed the Board giving an overview of the staff report included in the Agenda Packet.

As there were no questions for staff, Mr. Hipple opened the Public Hearing.

As no one wished to speak to the case, Mr. Hipple closed the Public Hearing.

A motion to Approve was made by Mr. McGlennon and the motion result was Passed.

AYES: 5 NAYS: 0 ABSTAIN: 0 ABSENT: 0

Ayes: McGlennon, Larson, Onizuk, Sadler, Hipple

2. Case No. ZO-0002-2016. B-1, General Business District. Amendments to Setback Requirements and Building Coverage Limits; and Case No. ZO-0003-2016. LB, Limited Business District. Amendments to Setback Requirements and Building Coverage Limits

Mr. Paul Holt, Planning Director, addressed the Board stating that these are the cases that the Board had previously deferred. Staff continues to work on the requested information and recommends an indefinite deferral. At such a time as these items are ready for Board consideration, the cases will be re-advertised and a public hearing held.

As there were no questions for staff, Mr. Hipple opened the Public Hearing.

As no one wished to speak to the case, Mr. Hipple closed the Public Hearing.

A motion to Approve the Deferral Request was made by Ms. Larson and the motion result was Passed.

AYES: 5 NAYS: 0 ABSTAIN: 0 ABSENT: 0

Ayes: McGlennon, Larson, Onizuk, Sadler, Hipple

3. Case No. ZO-0010-2016. Zoning Ordinance Amendments to Allow Mobile Food Vending Vehicles (Food Trucks) in the M-1, Limited Business/Industrial District, the M-2, General Industrial District, the PUD-C, Planned Unit Development-Commercial District and the PL, Public Land District

Ms. Roberta Sulouff, Planner I, addressed the Board giving an overview of the staff report included in the Agenda Packet.

Mr. John Wright, Planning Commission Representative, echoed the comments made by Ms. Sulouff. The item was unanimously approved by the Planning Commission.

As there were no questions for staff, Mr. Hipple opened the Public Hearing.

As no one wished to speak to the case, Mr. Hipple closed the Public Hearing.



Mr. Onizuk stated that he is excited to see these changes go through. The area is trying to become a food and beverage destination and this will be a big compliment to what we currently offer.

Mr. McGlennon thanked the Planning Commission and staff for their work on bringing this item to fruition.

A motion to Approve was made by Ms. Sadler and the motion result was Passed.

AYES: 5 NAYS: 0 ABSTAIN: 0 ABSENT: 0  
Ayes: McGlennon, Larson, Onizuk, Sadler, Hipple

4. Case No. ZO-0011-2016. Wireless Communications Facilities and Towers

Ms. Savannah Pietrowski, Planner I, addressed the Board giving an overview of the staff report included in the Agenda Packet.

Mr. McGlennon stated that to clarify, the majority of these changes are being driven by changes to Federal Regulations.

Ms. Pietrowski stated correct.

Mr. John Wright, Planning Commission Representative, echoed the comments made by Ms. Pietrowski. The item was unanimously approved by the Planning Commission.

As there were no other questions for staff, Mr. Hipple opened the Public Hearing.

As no one wished to speak to the case, Mr. Hipple closed the Public Hearing.

A motion to Approve was made by Mr. McGlennon and the motion result was Passed.

AYES: 5 NAYS: 0 ABSTAIN: 0 ABSENT: 0  
Ayes: McGlennon, Larson, Onizuk, Sadler, Hipple

5. Case No. Z-0009-2016. 124 and 130 Riverview Plantation Drive

Mr. Alex Baruch, Planner I, provided a video presentation overview of the staff report included in the Agenda Packet.

Mr. Wright, Planning Commission Representative, stated that this case is very unique as it is a request to rezone about five acres from residential to agricultural in the middle of a planned neighborhood. He stated that the Planning Commission was divided and approved the application by a vote of 4 to 3.

As there were no other questions for staff at this time, Mr. Hipple opened the Public Hearing.

1. Drs. Teresa and Chris Dewitt, 124 Riverview Plantation Drive, applicants, provided a history of the property, noting its agricultural origins and that the original Riverview Subdivision plan included a riding stable among the recreational amenities. Dr. Teresa Dewitt discussed the conservation easement on 130 Riverview Plantation Road and noted that the conditions proffered with this rezoning would formalize the status of the easement. Dr. Teresa Dewitt shared

details of the proposed barn and noted that the barn would be kept architecturally consistent with the existing buildings. Dr. Teresa Dewitt noted that waste and soiled bedding would be bagged and removed from the property twice weekly to minimize odor and proliferation of vermin. Dr. Teresa Dewitt further stated that the barn would not require extensive clearing or grading and that the paddocks would be rotated and managed to allow recovery of the grass.

Ms. Larson asked if the applicants were aware of the zoning of the property and the Homeowners Association (HOA) Covenants when they purchased the property.

The applicants stated yes.

Mr. McGlennon asked what guarantee is there that any future owners will follow the same management and care plan for the property.

The applicant stated that the farm narrative is part of the proffers and would convey with the property to future owners.

2. Ms. Morgan Dewitt, 124 Riverview Plantation Drive, addressed the Board in support of the application by sharing the request she submitted to the HOA. Ms. Dewitt noted that the property and the horses would be well maintained and would be an asset to the community.
3. Mr. Kenneth Barnhart, 220 Sherwood Forrest, representing the Riverview Plantation HOA, addressed the Board in opposition of the request to rezone the properties. Mr. Barnhart noted that the HOA has no question about the applicants' maintenance of their property or their ability to care for the horses. Mr. Barnhart stated that the HOA does not agree with the analysis that the use is compatible with the location and the surrounding development. Mr. Barnhart noted there has been a substantial outpouring of concerns from the community about impact on the surrounding properties and the precedent that the rezoning would set. Mr. Barnhart stated that the HOA Board requests that the Board of Supervisors recommend denial of the rezoning application.

Mr. Onizuk asked if the applicants are members of the HOA and if the covenants apply to the subject property.

Mr. Barnhart stated that the deeds for the two subject parcels do not have the covenants on them. Mr. Barnhart stated that the deeds for all the other parcels do have the covenants. Mr. Barnhart noted that the properties are part of Section III of Riverview Plantation and there are covenants for Section III. Mr. Barnhart stated that it is not clear if the Section III covenants apply to the subject properties; however, it is clear that the intent is for Riverview Plantation to be a residential community.

Mr. McGlennon asked if membership in the HOA was voluntary.

Mr. Barnhart stated yes, it is voluntary.

Ms. Sadler asked how many homes are in the community.

Mr. Barnhart stated around 107 lots and 95 homes.

4. Ms. Jane Nichols, 102 Four Mile Tree, addressed the Board in opposition to the rezoning. Ms. Nichols presented a petition signed by 87 homeowners which

represents a majority of the residents. Ms. Nichols expressed concerns about the appropriateness of the use in the community, the impacts on individuals allergic to horses, impacts on air quality. Ms. Nichols requested that the Board recommend denial of the rezoning request.

5. Ms. Faye Dillman, 127 Wichita Lane, addressed the Board in support of the rezoning and the voluntary proffers. The voluntary proffers demonstrate the applicant's desire to continue the historic preservation and their commitment to the setting.
6. Mr. William Jaissle, 126 Four Mile Tree, addressed the Board in opposition to the rezoning. Mr. Jaissle opposes the introduction of horses into a residential community and would argue that an agricultural use in the very center of an R-1 zone does not conform to residential development standards contained in the James City County Comprehensive Plan.
7. Ms. Angie McDonough, 712 E. Tazewells Way, addressed the Board in opposition to the rezoning. Ms. McDonough does not believe that having horses in the middle of the community will be an enhancement to the community. She asked if any other residential communities have been subjected to spot rezoning's to agriculture.
8. Ms. Karen Greenwood, 2875 Forge Road, addressed the Board in support of the rezoning and voluntary proffers. She stated that the applicants have proven themselves to be conscientious and responsible horse owners.
9. Ms. Kate Diehl, 216 Riverview Plantation Drive, addressed the Board in support of the rezoning and voluntary proffers. She believes that the applicants should be allowed to use their property as they see fit and the horses would be a nice addition to the neighborhood.

As no one else was registered to speak, Mr. Hipple closed the Public Hearing.

Questions were raised about the easement on the property and whether or not it is valid and enforceable.

Mr. Baruch stated that there is a recorded scenic easement attached to the Deed of the 3.5 acre parcel.

General discussion ensued about the uses inherent to A-1 versus R-1 that would follow by the rezoning.

The Board discussed the expectations that are set by zoning designations, versus the right to petition for a zoning change. It was recognized that it is a balancing act between the individual property owner and the other residents of the neighborhood. The general consensus of the Board was to side with the expectations of the residents of the community.

A motion to Deny was made by Mr. Onizuk and the motion result was Passed.

AYES: 5 NAYS: 0 ABSTAIN: 0 ABSENT: 0  
Ayes: McGlennon, Larson, Onizuk, Sadler, Hipple

## **I. BOARD CONSIDERATION(S)**

### **1. Renaming Mid County Park to Veterans Park**

Mr. John Carnifax, Director of Parks & Recreation, addressed the Board giving an overview of the memorandum included in the Agenda Packet. He highlighted the results of the public input, in which the majority was in favor of the renaming.

A motion to Approve was made by Mr. Onizuk and the motion result was Passed.

AYES: 5 NAYS: 0 ABSTAIN: 0 ABSENT: 0  
Ayes: McGlennon, Larson, Onizuk, Sadler, Hipple

### **2. Initiating Resolution - Group Homes**

Mr. Jason Purse, Assistant County Administrator, addressed the Board giving an overview of the memorandum included in the Agenda Packet.

A motion to Approve was made by Mr. Onizuk and the motion result was Passed.

AYES: 5 NAYS: 0 ABSTAIN: 0 ABSENT: 0  
Ayes: McGlennon, Larson, Onizuk, Sadler, Hipple

## **J. BOARD REQUESTS AND DIRECTIVES**

Mr. McGlennon gave a brief overview of the community events that he attended during the past two weeks.

Ms. Larson asked that Mr. Hill discuss the application Pulse Point with Fire Chief Ashe. She highlighted the School Liaison Committee meeting that was held the previous week. She also briefly discussed the School's Capital Improvements Program and that the entrance and exit to the School's Administrative Offices had been corrected.

Ms. Sadler echoed Ms. Larson's comments about the School Liaison meeting. She briefly discussed her community appearances during the past two weeks, including the Volunteer Fire Department banquet at Fire Station 1.

Mr. Hipple stated that the Richmond Transportation Planning Organization invited him to join its recent meeting to learn what has worked well for the Hampton Roads Transportation Planning Organization and Hampton Roads Planning District Commission. He also stated that the Organizational meeting will be coming up soon and asked the Board members to think about any changes to the meeting organization that they would like to bring forward and discuss.

## **K. REPORTS OF THE COUNTY ADMINISTRATOR**

### **1. County Administrator's Report**

Between November 5-20, 2016 and January 2-15, 2017, James City County residents may drop-off leaves free of charge at the Jolly Pond Convenience Center daily between 7 a.m. and 5 p.m. Leaves will only be accepted in clear bags no larger than lawn or leaf-size (40 gallons or less). Leaves from commercial lawn service companies will be accepted by

Convenience Center staff with a letter from the resident containing the resident's name, address and telephone number.

The County will provide one round of curbside leaf collection. Please note that the schedule has changed from previous years. An interactive map can be found on the website where residents can type in their address to determine the appropriate collection date.

The Williamsburg Harvest Festival has been going on all week. Over 35 events are happening in the community, including the County's event, Bountiful Brews & Bites.

**L. PUBLIC COMMENT**

1. Mr. Joseph Swanenburg, 3026 The Pointe Drive, addressed the Board in regard to the boat ramp at the Brickyard down in Chickahominy Haven off Forge Road. It is owned by the County and is offered as a public boat ramp, but there is not a dock. He questioned the liability to the County if someone was to be injured by inadequate facilities.

Mr. Hipple asked Mr. Hill and Mr. Kinsman to look into the issue with the boat ramp to assess the potential liability.

**M. CLOSED SESSION**

**N. ADJOURNMENT**

1. Adjourn until 4 p.m. on November 22, 2016, for the Work Session

A motion to Adjourn was made by Mr. McGlennon and the motion result was Passed.

AYES: 5 NAYS: 0 ABSTAIN: 0 ABSENT: 0  
Ayes: McGlennon, Larson, Onizuk, Sadler, Hipple

At 8:55 p.m., Mr. Hipple adjourned the Board.

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Bryan J. Hill  
County Administrator

**ITEM SUMMARY**

DATE: 12/13/2016

TO: The Board of Supervisors

FROM: Scott J. Thomas, Director of Engineering and Resource Protection

SUBJECT: Chesapeake Bay Preservation Ordinance Violation

Resolution of Chesapeake Bay Preservation Ordinance Violations at 2483 Sanctuary Drive.

**ATTACHMENTS:**

	Description	Type
▣	Memorandum	Cover Memo
▣	Resolution	Cover Memo
▣	Notice of Violation, PIN 4420300021	Backup Material
▣	Notice of Violation, PIN 4420100016A	Backup Material
▣	Notice of Violation, PIN 4420100028	Backup Material
▣	Governor's Land Foundation Correspondence	Backup Material
▣	Location Map	Exhibit
▣	Consent Agreement	Backup Material
▣	Restoration Agreement	Backup Material
▣	Restoration Plan	Backup Material
▣	1999 Civil Charge Policy	Backup Material
▣	Civil Charge Matrix	Backup Material

**REVIEWERS:**

Department	Reviewer	Action	Date
Engineering & Resource Protection	Thomas, Scott	Approved	11/23/2016 - 3:06 PM
Development Management	Holt, Paul	Approved	11/23/2016 - 3:08 PM
Publication Management	Babbitt, Katterina	Approved	11/23/2016 - 3:26 PM
Legal Review	Kinsman, Adam	Approved	12/1/2016 - 2:32 PM
Board Secretary	Fellows, Teresa	Approved	12/1/2016 - 2:51 PM
Board Secretary	Purse, Jason	Approved	12/6/2016 - 9:26 AM
Board Secretary	Fellows, Teresa	Approved	12/6/2016 - 9:37 AM

## MEMORANDUM

DATE: December 13, 2016

TO: The Board of Supervisors

FROM: Scott J. Thomas, Director of Engineering and Resource Protection  
Adam Kinsman, County Attorney

SUBJECT: Chesapeake Bay Preservation Ordinance Violation - Civil Charge  
Ronald and Dana Hess, 2483 Sanctuary Drive

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Attached is a resolution for consideration by the Board of Supervisors involving a violation of the County's Chesapeake Bay Preservation Ordinance at 2483 Sanctuary Drive and adjacent parcels, further identified as James City County Real Estate Tax Parcel Nos. 4420300021, 4420100028 and 4420100016A. The case involved the clearing of vegetation within a defined Chesapeake Bay Preservation Area (CBPA), Resource Protection Area (RPA) on these three parcels. This work was done without obtaining an approved plan of development, erosion and sediment control plan, land-disturbing permit and/or Chesapeake Bay exception. Total disturbance within the RPA was approximately 0.75 acres.

The first subject parcel, zoned R-4, encompassing 1.72 acres, within which an area of approximately 0.25 acres of RPA was disturbed. The second subject parcel, zoned R-4, encompassing 2.57 acres, within which an area of approximately 0.05 acres of RPA was disturbed. The third subject parcel, zoned R-4, encompassing 201 acres, within which an area of approximately 0.45 acres of RPA was disturbed. The second and third parcels also have recorded Natural Open Space easements to help Governor's Land meet stormwater compliance requirements by remaining in a natural, undisturbed state.

On or about July 11, 2016, County staff received a report of unauthorized activity at the subject parcels. County staff visited the site on July 15, 2016, and observed complete understory removal within portions of the RPA. Following the site visit, staff performed research on the parcel using County records and GIS mapping. GIS mapping clearly showed vegetation in and around the RPA throughout the period, from 2000 through 2015. Subsequently, County staff sent a Notice of Violation (NOV) to the parcel owner on August 1, 2016. Staff then met with the parcel owners at the County government complex on August 19, 2016, to discuss the NOV.

In accordance with provisions of the Ordinance, the owner and County mutually came to terms to resolve and settle the violation through the County's civil charge process. The owner voluntarily signed a consent agreement and entered into a Chesapeake Bay Restoration Agreement with the County on October 28, 2016, and prepared a Chesapeake Bay Restoration Plan to restore impacted RPA on the three parcels. The restoration plan was submitted and approved with minor comments on October 11, 2016. The restoration plan includes a total of 70 trees and 220 shrub plantings in the restoration area and includes a mixture of oak, maple, magnolia, dogwood and wax myrtle, all native to Virginia. As part of the Chesapeake Bay Restoration Agreement, the owner is required to post a performance surety to guarantee implementation of plantings, consistent with the approved restoration plan and work must be completed by June 30, 2017.

The resolution and attachments present additional specific details of the violation. Under the provisions of the Ordinance, the Board may accept civil charges for each violation up to \$10,000. The Owner has agreed to the recommended civil charge of \$3,000 for violation of Sections 23-7, 23-9 and 23-10 of the County's Chesapeake Bay Preservation Ordinance.

The Chesapeake Bay Ordinance Civil Penalty Procedures Policy, endorsed by the Board in August 1999, was used by staff for guidance in determining the civil charge amount. The policy considers the degree of water quality

impact and the degree of noncompliance involved in the case. In this particular case, the owner has been very cooperative with staff throughout the settlement process. The civil charge amount was based on a summation of the three parcels, and ranged from significant to minor water quality impact and a minor degree of noncompliance depending upon the parcel, using the civil charge determination matrix.

Staff recommends adoption of the attached resolution establishing the civil charges for the Chesapeake Bay Ordinance violation presented.

SJT/AK/kb  
CA-SanctuaryDrive-mem

Attachments:

1. Resolution
2. Notice of Violation, PIN 4420300021
3. Notice of Violation, PIN 4420100016A
4. Notice of Violation, PIN 4420100028
5. Governor's Land Foundation Correspondence
6. Location Map
7. Consent Agreement
8. Restoration Agreement
9. Restoration Plan
10. 1999 Civil Charge Policy
11. Civil Charge Matrix



## **RESOLUTION**

### **CHESAPEAKE BAY PRESERVATION ORDINANCE VIOLATION – CIVIL CHARGE –**

#### **RONALD AND DANA HESS, 2483 SANCTUARY DRIVE**

- WHEREAS, Ronald and Dana Hess are the owners of a certain parcel of land commonly known as 2483 Sanctuary Drive, Williamsburg, Virginia, designated as Parcel No. 4420300021 within James City County Real Estate Tax Map system; and
- WHEREAS, Governor's Land Foundation is the owner of a certain parcel of land commonly known as Parcel 11 Major Open Space, designated as Parcel No. 4420100028 within James City County Real Estate Tax Map system; and
- WHEREAS, Governor's Land Foundation is the owner of a certain parcel of land commonly known as 201 Acre Conservation Easement, designated as Parcel No. 4420100016A within James City County Real Estate Tax Map system; and
- WHEREAS, all three parcels of land shall herein be referred to as the ("Property"); and
- WHEREAS, on or about July 11, 2016, Ronald and Dana Hess caused clearing within a defined Chesapeake Bay Preservation Area (CBPA) on the Property without prior approval of a plan of development, erosion and sediment control plan, land disturbing permit and/or Chesapeake Bay exception; and caused impact to Resource Protection Area (RPA); and
- WHEREAS, Ronald and Dana Hess have executed a Consent Agreement and a Chesapeake Bay Restoration Agreement with the County agreeing to implement, in a timely manner, native tree and shrub plantings in accordance with an approved Chesapeake Bay Restoration Plan in order to remedy a violation of the County's Chesapeake Bay Preservation Ordinance. The owner has posted sufficient surety guaranteeing plantings in accordance with the approved restoration plan to restore RPA on the Property; and
- WHEREAS, Ronald and Dana Hess have agreed to pay a total of \$3,000 to the County as a civil charge under the County's Chesapeake Bay Preservation Ordinance; and
- WHEREAS, the James City County Board of Supervisors is willing to accept the restoration of the impacted RPA and the civil charge in full settlement of the Chesapeake Bay Preservation Ordinance violation, in accordance with Section 23-18 of the Code of the County of James City.
- NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of James City County, Virginia, hereby authorizes and directs the County Administrator to accept the \$3,000 civil charge from Ronald and Dana Hess as full settlement of the Chesapeake Bay Preservation Ordinance violations at the Property.

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Michael J. Hipple  
Chairman, Board of Supervisors

ATTEST:

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Bryan J. Hill  
Clerk to the Board

	<u>AYE</u>	<u>NAY</u>	<u>ABSTAIN</u>
MCGLENNON	_____	_____	_____
LARSON	_____	_____	_____
ONIZUK	_____	_____	_____
SADLER	_____	_____	_____
HIPPLE	_____	_____	_____

Adopted by the Board of Supervisors of James City County, Virginia, this 13th day of December, 2016.

CA-SanctuaryDrive-res



**Development Management**  
101-A Mounts Bay Road  
P.O. Box 8784  
Williamsburg, VA 23187-8784  
P: 757-253-6671  
F: 757-253-6822  
devman@james-city.va.us  
[jamescitycountyva.gov](http://jamescitycountyva.gov)

**Building Safety and Permits**  
757-253-6620

**Engineering and Resource Protection**  
757-253-6670

**Planning**  
757-253-6685

**Zoning Enforcement**  
757-253-6671

**NOTICE OF VIOLATION**  
of James City County's Environmental Regulations

August 1, 2016

Ronald and Dana Hess  
2483 Sanctuary Drive  
Williamsburg, VA 23188

Re: **Chesapeake Bay Preservation Ordinance Violation**  
**2483 Sanctuary Drive**  
**James City County PIN 4420300021**  
**CBV-17-001**

Dear Mr. and Mrs. Hess:

On or about July 15, 2016, representatives of the James City County Engineering and Resource Protection Division inspected the property known as 2483 Sanctuary Drive after a complaint was filed at the County for work occurring within the resource protection area (RPA) on this property. There is no active exception request on file in our office for the clearing that has taken place on this property within the RPA. Section 23-7 of the James City County Chesapeake Bay Preservation Ordinance, which regulates activities within the RPA, prohibits removal of vegetation without approval from the Engineering and Resource Protection Division. Therefore, the activity is a violation of the CBPO, subject to a Civil Penalty of up to \$5,000.00 for each day of the violation. Please see the attached map for a general location of the violation area.

Please be advised that this is an official notification that the clearing within the limits of the RPA buffer is a CBPO violation. In order to rectify this violation, please contact our office at your earliest convenience to arrange for a meeting with representatives of the Engineering and Resource Protection Division staff to discuss restoring the RPA buffer by entering into a Chesapeake Bay Restoration Agreement with new tree and shrub planting native to Virginia. You may also be responsible for a one-time payment of a civil charge, the amount of which is to be determined by the County.

Per Section 23-17 of the Chesapeake Bay Preservation Ordinance, the "owner of property subject to an administrative decision, order or requirement under this chapter may appeal by submitting a written application for review to the board no later than 30 days from the rendering of such decision, order or requirement. The board shall hear the appeal as soon as practical after receipt of the application." The Board that this section refers to is the Chesapeake Bay Board.

Please contact our office at 757-253-6670 to discuss this matter within the next 30 days. After 30 days from the date of this letter, the matter is no longer appealable to the Chesapeake Bay Board.

Sincerely,



Michael Woolson  
Senior Watershed Planner  
Engineering and Resource Protection Division

cc: Scott Thomas, Engineering and Resource Protection Division Director, via email  
Max Hlavin, Assistant County Attorney, via email  
Paul Holt, Development Manager, via email  
Christy Parrish, Zoning Administrator, via email





**Development Management**  
101-A Mounts Bay Road  
P.O. Box 8784  
Williamsburg, VA 23187-8784  
P: 757-253-6671  
F: 757-253-6822  
devman@james-city.va.us  
jamescitycountyva.gov

**Building Safety and Permits**  
757-253-6620

**Engineering and Resource Protection**  
757-253-6670

**Planning**  
757-253-6685

**Zoning Enforcement**  
757-253-6671

**NOTICE OF VIOLATION**  
of James City County's Environmental Regulations

August 1, 2016

Mrs. Lisa Smith  
2700 Two Rivers Road  
Williamsburg, VA 23185

Re: **Chesapeake Bay Preservation Ordinance Violation  
Behind 2483 Sanctuary Drive  
James City County PIN 4420100016A  
CBV-17-003**

Dear Mrs. Smith:

On or about July 15, 2016, representatives of the James City County Engineering and Resource Protection Division inspected the property behind 2483 Sanctuary Drive after a complaint was filed at the County for work occurring within the resource protection area (RPA) and a recorded Natural Open Space easement on this property. There is no active exception request on file in our office for the clearing that has taken place on this property within the RPA or easement. Section 23-7 of the James City County Chesapeake Bay Preservation Ordinance, which regulates activities within the RPA, prohibits removal of vegetation without approval from the Engineering and Resource Protection Division. Therefore, the activity is a violation of the CBPO, subject to a Civil Penalty of up to \$5,000.00 for each day of the violation. Please see the attached map for a general location of the violation area. Furthermore, the activity is in violation of restriction #5 of the recorded Deed of Easement. A copy of the recorded deed is provided for your records.

Please be advised that this is an official notification that the clearing within the limits of the RPA buffer is a CBPO violation. In order to rectify this violation, please contact our office at your earliest convenience to arrange for a meeting with representatives of the Engineering and Resource Protection Division staff to discuss restoring the RPA buffer by entering into a Chesapeake Bay Restoration Agreement with new tree and shrub planting native to Virginia. You may also be responsible for a one-time payment of a civil charge, the amount of which is to be determined by the County.

Per Section 23-17 of the Chesapeake Bay Preservation Ordinance, the "owner of property subject to an administrative decision, order or requirement under this chapter may appeal by submitting a written application for review to the board no later than 30 days from the rendering of such decision, order or requirement. The

board shall hear the appeal as soon as practical after receipt of the application.” The Board that this section refers to is the Chesapeake Bay Board.

Please contact our office at 757-253-6670 to discuss this matter within the next 30 days. After 30 days from the date of this letter, the matter is no longer appealable to the Chesapeake Bay Board.

Sincerely,



Michael Woolson  
Senior Watershed Planner  
Engineering and Resource Protection Division

cc: Scott Thomas, Engineering and Resource Protection Division Director, via email  
Max Hlavin, Assistant County Attorney, via email  
Paul Holt, Development Manager, via email  
Christy Parrish, Zoning Administrator, via email

**Development Management**

101-A Mounts Bay Road  
P.O. Box 8784  
Williamsburg, VA 23187-8784  
P: 757-253-6671  
F: 757-253-6822  
devman@james-city.va.us  
jamescitycountyva.gov

**Building Safety and Permits**  
757-253-6620

**Engineering and Resource Protection**  
757-253-6670

**Planning**  
757-253-6685

**Zoning Enforcement**  
757-253-6671

**NOTICE OF VIOLATION**  
of James City County's Environmental Regulations

August 1, 2016

Mrs. Lisa Smith  
2700 Two Rivers Road  
Williamsburg, VA 23185

Re: **Chesapeake Bay Preservation Ordinance Violation  
Behind 2483 Sanctuary Drive  
James City County PIN 4420100028  
CBV-17-002**

Dear Mrs. Smith:

On or about July 15, 2016, representatives of the James City County Engineering and Resource Protection Division inspected the property behind 2483 Sanctuary Drive after a complaint was filed at the County for work occurring within the resource protection area (RPA) and a recorded Natural Open Space easement on this property. There is no active exception request on file in our office for the clearing that has taken place on this property within the RPA or easement. Section 23-7 of the James City County Chesapeake Bay Preservation Ordinance, which regulates activities within the RPA, prohibits removal of vegetation without approval from the Engineering and Resource Protection Division. Therefore, the activity is a violation of the CBPO, subject to a Civil Penalty of up to \$5,000.00 for each day of the violation. Please see the attached map for a general location of the violation area. Furthermore, the activity is in violation of restriction #5 of the recorded Deed of Easement. A copy of the recorded deed is provided for your records.

Please be advised that this is an official notification that the clearing within the limits of the RPA buffer is a CBPO violation. In order to rectify this violation, please contact our office at your earliest convenience to arrange for a meeting with representatives of the Engineering and Resource Protection Division staff to discuss restoring the RPA buffer by entering into a Chesapeake Bay Restoration Agreement with new tree and shrub planting native to Virginia. You may also be responsible for a one-time payment of a civil charge, the amount of which is to be determined by the County.

Per Section 23-17 of the Chesapeake Bay Preservation Ordinance, the "owner of property subject to an administrative decision, order or requirement under this chapter may appeal by submitting a written application for review to the board no later than 30 days from the rendering of such decision, order or requirement. The



board shall hear the appeal as soon as practical after receipt of the application.” The Board that this section refers to is the Chesapeake Bay Board.

Please contact our office at 757-253-6670 to discuss this matter within the next 30 days. After 30 days from the date of this letter, the matter is no longer appealable to the Chesapeake Bay Board.

Sincerely,



Michael Woolson  
Senior Watershed Planner  
Engineering and Resource Protection Division

cc: Scott Thomas, Engineering and Resource Protection Division Director, via email  
Max Hlavin, Assistant County Attorney, via email  
Paul Holt, Development Manager, via email  
Christy Parrish, Zoning Administrator, via email



# GOVERNOR'S LAND FOUNDATION

August 5, 2016

Ronald and Dana Hess  
2483 Sanctuary Drive  
Williamsburg, VA 23185

Ronald L. Hess  
2483 Sanctuary Drive  
Williamsburg, VA 23185

Re: Notice of Violations from James City County  
JCC Parcel ID: 4420100026  
Lot No. 21, Whitaker Island "B"

Engineering & Resource Protection  
SEP 01 2016

Mailed Certified, Return Receipt Requested, and First Class Mail

RECEIVED

Dear Ronald and Dana Hess:

Governor's Land Foundation ("GLF") has received written notifications dated August 1, 2016 from James City County ("JCC") regarding violations in the Resource Protection Area and in the Conservation Easement. GLF has also been notified in writing, and verbally, by JCC of the potential penalties of up to \$5,000 per day per violation and an additional \$20,000 per violation. GLF has received these notices because GLF owns the adjacent property where unauthorized clearing was done without prior approval from JCC and GLF. GLF has enclosed copies of the correspondence from JCC for your convenience.

The referenced lot is also in violation of the following GLF Design Standards, Sections 4.1.2 (a), 4.1.2 (b) and 4.1.2 (h). Copies of these guidelines are also enclosed for your convenience.

Due to the seriousness of the alleged violations, GLF Board of Directors ("BOD") has scheduled a fact finding hearing on Monday, August 22, 2016 at 10:15 AM at the GLF office. You will be allowed to be present to address the BOD, and if you so desire, to bring an attorney with you. This fact finding hearing will take place with or without your attendance.

The BOD will act in accordance with Section 55-515, Compliance with Declaration, and Section 55-513, Adoption and Enforcement of Rules, of the Virginia Property Owners' Association Act ("POAA"). The BOD will also act in accordance with the GLF Declaration, Sections 3.4, 6.2 (d), 12.1 (a) and 12.1 (h). These sections of the POAA and the GLF Declaration enables the BOD to assess you charges for the violations, suspend your right to use the GLF facilities and to vote on GLF matters. It also enables GLF to collect all related costs to GLF that are associated to remedy these violations; including but not limited to, any fines assessed to GLF and attorney costs.

Please contact the GLF office at 253-6976 if you have any questions regarding this matter.

Sincerely,



Lisa Smith, AMS, LSM, PCAM  
General Manager on behalf of the  
Governor's Land Foundation Board of Directors

Enclosures: Notices of Violations from JCC and GLF Design Standards Section 4.1.2

**Lisa Smith**

---

**From:** Dana Hess <danahess@cox.net>  
**Sent:** Sunday, August 21, 2016 3:25 PM  
**To:** Lisa Smith  
**Subject:** Update on JCC violations

Hello Lisa,

I just wanted to follow up with you before tomorrow's Board hearing. Ron and I did meet with Scott Thomas the Resource Protection Director on Friday August 19th. Michael Woolson was expected to be there but was unable to attend.

In our conversation with Mr. Thomas we expressed our desire to do whatever steps are necessary to correct the mistakes we made in the rpa buffer. He and Michael Woolson are scheduled to come out to assess the area and determine what replanting needs to be done on Friday, August 26th.

In our meeting we also took ownership of any violations that occurred on Governor's Land property. He is aware that we are willing to take the corrective measures to ensure the Governor's Land property is no longer in violation as well.

Ron and I will both be able to attend the Board's fact finding hearing. We will see you tomorrow at 10:15.

Respectfully,  
Dana Hess

# GOVERNOR'S LAND FOUNDATION

August 24, 2016

Ronald and Dana Hess  
2483 Sanctuary Drive  
Williamsburg, VA 23185

Re: Fact Finding Hearing Results  
JCC Parcel ID: 4420100026  
Lot No. 21, Whitaker Island "B"

Mailed Certified, Return Receipt Requested, and First Class Mail

Dear Ronald and Dana Hess:

In accordance with Section 55-515, Compliance with Declaration, and Section 55-513, Adoption and Enforcement of Rules, of the Virginia Property Owners' Association Act ("POAA"), Governor's Land Foundation ("GLF") Board of Directors ("BOD") voted on August 22, 2016 to require a landscape plan be submitted to the Architectural Review Board ("ARB") within sixty (60) days from the date of this letter. This landscape plan shall be in compliance with James City County regulations for the re-planting of the unauthorized removal of plant material within the Deed of Easement. Enclosed is an ARB application and a copy of the recorded Deed of Easement for your convenience.

The GLF BOD would like to thank you for your attendance at the meeting and your cooperation regarding this matter.

Please contact the GLF office at 253-6976 if you have any questions.

Sincerely,



Lisa Smith, AMS, LSM, PCAM  
General Manager on behalf of the  
Governor's Land Foundation Board of Directors

Enclosures: ARB application and recorded Deed of Easement





GLF



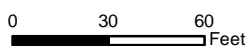
Hess



Parcel Lines



1 inch = 60 feet



## James City County Violation Map



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.

Copyright James City County GIS Office 11/23/2016  
M:\Departments\Environmental\Mike\FranklinHess.mxd





## Chesapeake Bay Preservation Civil Charge Consent Agreement

THIS AGREEMENT, made on this 17<sup>th</sup> day of OCT. 2016, by and between  
Ronald and Dana Hess  
2483 Sanctuary Drive  
\_\_\_\_\_, ("OWNER") and the COUNTY OF  
JAMES CITY, VIRGINIA, ("COUNTY").

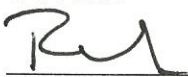
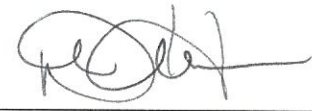
WHEREAS, the Owner of that certain parcel of land known and identified as;  
2483 Sanctuary Drive  
\_\_\_\_\_, has  
violated or has caused a violation of the James City County Chesapeake Bay Preservation Ordinance, Chapter 23 of the  
County Code, by clearing all understory on parcels identified as 4420300021, 4420100016A and 4420100028  
\_\_\_\_\_ on that  
aforementioned parcel.

NOW, THEREFORE, to resolve this violation the parties hereto agree as follows:

1. The Owner hereby agrees to provide for the payment of a civil charge in the amount of  
\$3,000, for the violation of the ordinance described above.
2. In consideration of the Owner's payment of the civil charge, the County agrees to accept the civil charge as the  
final resolution of this violation and in consideration of this executed agreement the County will not prosecute  
the Owner under the civil penalty provision provided for within the ordinance.

Once the consent agreement is executed, the County will proceed with processing the civil charge in accordance with the  
provisions of Section 23-18(b) of the Chesapeake Bay Preservation ordinance. This includes scheduling the case on the  
consent calendar at an upcoming Board of Supervisor regular meeting.


OWNER:

COUNTY OF JAMES CITY, VIRGINIA

By: 

Approved as to form:

  
County Attorney



## Chesapeake Bay Restoration Agreement

THIS AGREEMENT by and between Ronald and Dana Hess  
residing at 2483 Sanctuary Drive, Williamsburg, VA 23185 (the "Owner"),  
and the County of James City, Virginia, a political subdivision of the Commonwealth of Virginia (the "County").

WHEREAS, the Owner is (are) the owner(s) of a certain tract of land located at 2483 Sanctuary Drive  
, (the "Property") located in the County; and

WHEREAS, restoration of vegetation within portions of the Property is the responsibility of the Owner and  
required by the County as shown on a plan designated as RPA Buffer Mitigation Exhibit  
at 2483 Sanctuary Dr., dated October 7, 2016, and prepared  
by Timothy Schmidt, Licensed Land Surveyors,  
Professional Engineers, Owner or Designer; and

WHEREAS, the Owner has posted sufficient bond, letter of credit, certified or cashier's check, or escrow fund  
(collectively the "Security Instrument"), pursuant to existing ordinances, approved as to form by the County Attorney,  
and with surety satisfactory to the County in the amount of  
Ten Thousand dollars and no cents (\$ 10,000.00)  
guaranteeing the installation of the aforementioned improvements before June 30, 2017.

NOW, THEREFORE, THIS AGREEMENT WITNESSETH that for and in consideration of the premises and the  
covenants and agreements herein contained, the parties agree as follows:

1. The Owner does covenant and agree that it will, without cost to the County on or before  
June 30, 2017, construct to the approval of the County all physical improvements as  
required by the Chesapeake Bay Preservation Ordinance of the County, or shown on the development plans approved by  
the County. If, in the sole judgment of the County, circumstances beyond the control of the Owner prevent the Owner  
from completing the improvements in the time set forth herein, then the County may, at its sole discretion, grant an  
extension of time for completion of said improvements and in such instance the County shall require an amended  
Security Instrument approved as to form by the County Attorney, and with surety satisfactory to the County in an amount  
to guarantee the installation of the aforementioned improvements.

2. It is mutually understood and agreed that in the event the Owner fails to properly complete the physical  
improvements provided hereinabove, the County may complete, or cause to have completed, the same and render a bill  
therefore to the Owner who shall be liable to the County for all proper costs so incurred by the County, or the County  
may draw the amount necessary from the surety to complete or cause to have completed the same. The Owner hereby  
grants the County, its agents and contractor, access to the property to install any improvements required under this  
Agreement.

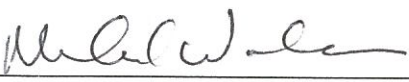
3. In the event the County calls, collects, or otherwise draws on the Security Instrument pledged under this  
Agreement, the Owner agrees to either pay, or have the County use the proceeds of the draw to pay a reasonable  
administrative fee of \$35.00, plus any costs actually incurred by the County in drawing on the Security Instrument. The  
charge for an administrative fee plus costs shall apply regardless of whether the County later accepts a renewal or  
amendment of the Security Instrument.

4. It is mutually understood and agreed that this Agreement does not relieve the Owner of any responsibilities or requirements placed upon them by the various ordinances of the County applicable to such development of the property, and the development of the Property will be done in strict accordance with such ordinances.

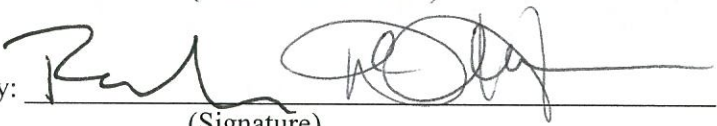
5. It is mutually understood and agreed that if the Owner shall faithfully execute each and all requirements of the Chesapeake Bay Preservation Ordinance and the provisions of this Agreement, and shall indemnify, protect, and save harmless the County from all loss, damage, expense, or cost by reason of any claim, suit, or action instituted against the County or its agents or employees thereof, on account of, or in consequence of any breach on the part of the Owner, then the Security Instrument shall be released by the County to the Owner.

IN WITNESS WHEREOF, the parties hereto, being first duly authorized, have affixed their signatures on the date first above written.


ATTEST:

  
\_\_\_\_\_  
(Signature)

Owner: Ronald L. Hess Jr. & Dana M. Hess, owners  
(Print Name & Title)

By:   
\_\_\_\_\_  
(Signature)

Approved as to form:

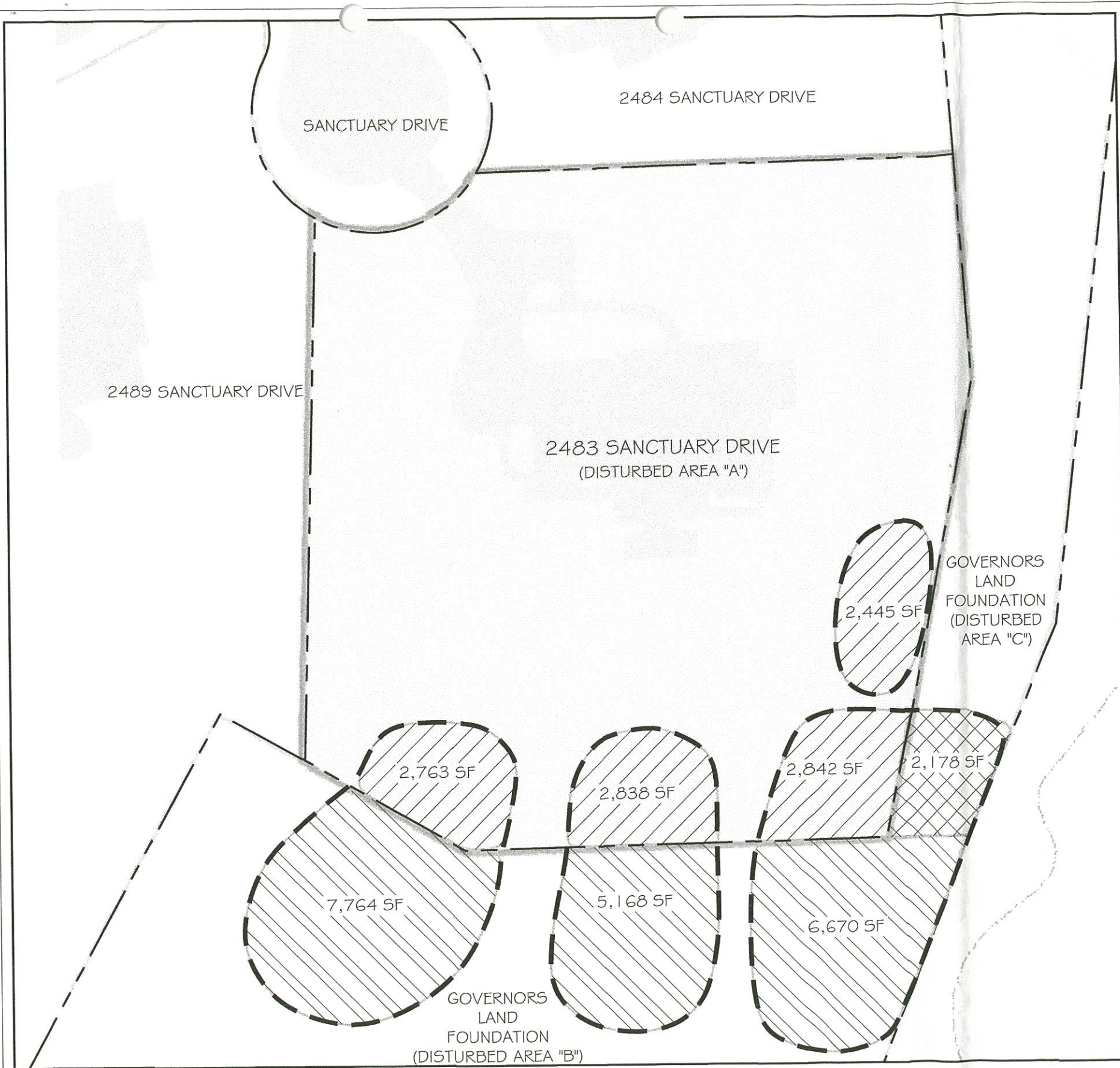
  
\_\_\_\_\_  
County Attorney

COUNTY OF JAMES CITY, VIRGINIA

By:   
\_\_\_\_\_  
County Agent

DATE: 10/28/10





# REVEGETATION TABULATIONS:



Disturbed Area "A": 0.25 Ac  
(2,445 SF; 2,842 SF; 2,838 SF; & 2,763 SF)  
Proposed Plantings:  
25 Trees and  
75 Shrubs & Perennials

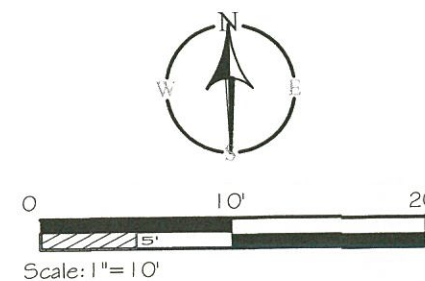


Disturbed Area "B": 0.45 Ac  
(7,764 SF; 5,168 SF; & 6,670 SF)  
Proposed Plantings:  
40 Trees and  
140 Shrubs & Perennials



Disturbed Area "C": 0.05 Ac  
(2,178 SF)  
Proposed Plantings:  
5 Trees and  
15 Shrubs & Perennials

Engineering & Resource Protection  
OCT 11 2016  
RECEIVED



APPROVED  
WOW  
10/11/16



CBV-17-001

## RPA BUFFER MITIGATION EXHIBIT at 2483 SANCTUARY DRIVE

Date: October 7, 2016

GLA Project #: 2016-23

Sheet 1 of 2



GENERAL NOTES:

1. ALL PLANT MATERIALS SHALL MEET THE MINIMUM STANDARDS & SPECIFICATIONS DESCRIBED IN THE "AMERICAN STANDARD FOR NURSERY STOCK," LATEST EDITION, PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
2. ALL PLANT MATERIAL SHALL BE INSTALLED AS SPECIFIED IN THE "VNLA STANDARDIZED LANDSCAPE SPECIFICATIONS", LATEST EDITION.
3. THE CONTRACTOR SHALL SUPPLY ALL NEW PLANT MATERIAL IN QUANTITIES SUFFICIENT TO COMPLETE ALL PLANTING SHOWN ON THE DRAWINGS. WHERE DISCREPANCIES EXIST BETWEEN THE PLANS & THE PLANT LIST, THE PLANS SHALL TAKE PRECEDENCE. IN THE EVENT WHERE A BASEMAP DISCREPANCY AFFECTS PLANT QUANTITIES, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER OR LANDSCAPE ARCHITECT PRIOR TO COMPLETING INSTALLATION.
4. GROUPINGS OF PLANTS SHALL BE MULCHED IN CONTINUOUS BEDS.
5. ALL INSTALLED PLANT MATERIAL SHALL BE SUBJECT TO REGULAR MAINTENANCE, INCLUDING WATERING, MULCHING, FERTILIZING, PRUNING, INSECT & DISEASE CONTROL, AND WEED CONTROL.
6. CONTRACTORS ARE RESPONSIBLE FOR LOCATING & AVOIDING ALL UTILITIES & ALL UTILITY EASEMENTS DURING CONSTRUCTION & PLANTING OPERATIONS.

PLANT SCHEDULE - DISTURBED AREA 'A'

QTY.	BOTANICAL NAME	COMMON NAME	SIZE
TREES:			
5 15 5	ACER RUBRUM MAGNOLIA VIRGINIANA QUERCUS SPP.	RED MAPLE SWEETBAY MAGNOLIA OAK	5-6' HT. 5-6' HT. 5-6' HT.
SHRUBS & PERENNIALS:			
15 15 10 15 10 10	CORNUS BAILEY ILEX VERTICILLATA MISCANTHUS SPP. MYRICA CERIFERA PANICUM SPP. RUDBECKIA SPP.	BAILEY DOGWOOD VIRGINIA SWEETSPIRE MAIDEN GRASS SOUTHERN WAXMYRTLE SWITCHGRASS RUDBECKIA	18-21" HT./W 18-21" HT./W 3 GAL. CONT. 18-21" HT./W 3 GAL. CONT. 1 GAL. CONT.

Engineering & Resource Protection  
OCT 11 2016  
RECEIVED

PLANT SCHEDULE - DISTURBED AREA 'B'

QTY.	BOTANICAL NAME	COMMON NAME	SIZE
TREES:			
7 30 8	ACER RUBRUM MAGNOLIA VIRGINIANA QUERCUS SPP.	RED MAPLE SWEETBAY MAGNOLIA OAK	5-6' HT. 5-6' HT. 5-6' HT.
SHRUBS & PERENNIALS:			
20 25 25 25 25 20	CORNUS BAILEY ILEX VERTICILLATA MISCANTHUS SPP. MYRICA CERIFERA PANICUM SPP. VIBURNUM OPULUS	BAILEY DOGWOOD VIRGINIA SWEETSPIRE MAIDEN GRASS SOUTHERN WAXMYRTLE SWITCHGRASS EASTERN SNOWBALL VIBURNUM	18-21" HT./W 18-21" HT./W 3 GAL. CONT. 18-21" HT./W 3 GAL. CONT. 18-21" HT./W

PLANT SCHEDULE - DISTURBED AREA 'C'

QTY.	BOTANICAL NAME	COMMON NAME	SIZE
TREES:			
5	MAGNOLIA VIRGINIANA	SWEETBAY MAGNOLIA	5-6' HT.
SHRUBS & PERENNIALS:			
5 5 5	ILEX VERTICILLATA MISCANTHUS SPP. PANICUM SPP.	VIRGINIA SWEETSPIRE MAIDEN GRASS SWITCHGRASS	18-21" HT./W 3 GAL. CONT. 3 GAL. CONT.



CBV-17-001

RPA BUFFER MITIGATION EXHIBIT  
at 2483 SANCTUARY DRIVE



**Chesapeake Bay Preservation Ordinance Civil Penalty Procedures**  
(As adopted by the Board of Supervisors - August 19, 1999)

**Principle**

All violations of the Ordinance will be prosecuted to obtain an acceptable remedy. All RPAs and associated buffers that are disturbed without an exception or waiver granted in accordance with the provisions of the Ordinance will be restored on a 2:1 replacement basis.

**Process**

The process will be to document the violation with a Notice Of Violation that states the conditions necessary to bring their site into compliance with the Ordinance. If there is a failure to follow the terms stipulated in the Notice, the County will file suit to take the violator to court where civil penalties of up to \$5000 per day can be assessed. However, if the violator cooperates with all provisions of the Notice and remedies the violation, we will not file suit. An exception would be if we can determine that the violation was intentional as would be the case if we had prior contact with the violator regarding the matter of the RPA restrictions.

**Penalty**

In order to serve as a deterrent, even in the event of a cooperative restoration settlement, civil charges will be sought. Under current state law, the Board of Supervisors must approve all civil charges. The amount of the civil charge recommended will be dependent on the violation's impact on water quality and the degree of non-compliance. Violations that are more severe and will take longer to be restored to an acceptable condition will have larger charges recommended by staff. Violations comprising less than 100 square feet of disturbance or the removal of no more than three trees will not have a civil charge recommended unless there have been prior violations by the violator. The maximum civil charge is \$10,000 per violation.

The following table presents a matrix that will guide staff recommendations on the establishment of a civil charge for a specific violation. The amounts presented are not absolute and are intended to be a guide. Each violation will have several unique characteristics that will require the exercise of judgment in arriving at a civil charge. Charges in each case could vary by up to 100% depending on the specific circumstances involved.

<u>Civil Charge Determination</u>				
Water Quality Impact	Significant	\$5000	\$7500	\$10,000
	Moderate	\$1500	\$3000	\$4500
	Minor	\$500	\$1000	\$1500
		Minor	Moderate	Major
Degree of Non-Compliance				

#### Water Quality Impact

The impact of a given violation will be determined based on several factors. It involves more than just the square footage of impact; it also addresses the relative environmental value of the resource lost. Factors that will be considered as they relate to the violation's impact on water quality include the size of the violation, the number of trees and other vegetation removed, the size and maturity of the vegetation removed, the amount of tree canopy removed, the amount of ground disturbance involved, etc. Mitigating factors that will be considered are whether the vegetation removed would have qualified for removal if a request was made in accordance with the Ordinance. The Ordinance allows for the removal of vegetation weakened by age, storm, fire or other natural causes or vegetation that is dead, diseased or dying. These factors will be used to determine how much of the functional value of the buffer was lost and how long it will take for the function to be recovered.

#### Degree of Non-compliance

This factor will be used to assess the motivation behind the violation. Factors that will be considered in assessing the degree of non-compliance are degree of willfulness, history of non-compliance, and cooperation. Unintentional violations that are cooperatively restored will not be charged the same as intentional violations that are difficult to resolve.

## **Civil Charge Determination**

Water Quality Impact	Significant	\$5,000	\$7,500	\$10,000
	Moderate	\$1,500	\$3,000	\$ 4,500
	Minor	\$500	\$1,000	\$ 1,500

Minor      Moderate      Major

Degree of Non-Compliance

**ITEM SUMMARY**

DATE: 12/13/2016

TO: The Board of Supervisors

FROM: Scott J. Thomas, Director of Engineering and Resource Protection

SUBJECT: Chesapeake Bay Preservation Ordinance Violation

Resolution of Chesapeake Bay Preservation Ordinance Violations at 2984 Kitchum's Close.

**ATTACHMENTS:**

	Description	Type
▣	Memorandum	Cover Memo
▣	Resolution	Resolution
▣	Notice of Violation, PIN 4421000002	Backup Material
▣	Notice of Violation, PIN 4421000001B	Backup Material
▣	Notice of Violation, PIN 4421000001C	Backup Material
▣	Governor's Land Foundation Correspondence	Backup Material
▣	Location Map	Exhibit
▣	Consent Agreement	Backup Material
▣	Restoration Agreement	Backup Material
▣	Restoration Plan	Backup Material
▣	1999 Civil Charge Policy	Backup Material
▣	Civil Charge Matrix	Backup Material

**REVIEWERS:**

Department	Reviewer	Action	Date
Engineering & Resource Protection	Thomas, Scott	Approved	11/23/2016 - 2:47 PM
Development Management	Holt, Paul	Approved	11/23/2016 - 2:57 PM
Publication Management	Babbitt, Katterina	Approved	11/23/2016 - 3:15 PM
Legal Review	Kinsman, Adam	Approved	12/1/2016 - 2:33 PM
Board Secretary	Fellows, Teresa	Approved	12/1/2016 - 2:51 PM
Board Secretary	Purse, Jason	Approved	12/6/2016 - 9:26 AM
Board Secretary	Fellows, Teresa	Approved	12/6/2016 - 9:37 AM

## MEMORANDUM

DATE: December 13, 2016

TO: The Board of Supervisors

FROM: Scott J. Thomas, Director of Engineering and Resource Protection  
Adam Kinsman, County Attorney

SUBJECT: Chesapeake Bay Preservation Ordinance Violation - Civil Charge  
John Franklin, 2984 Kitchum's Close

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Attached is a resolution for consideration by the Board of Supervisors involving a violation of the County's Chesapeake Bay Preservation Ordinance at 2984 Kitchum's Close and adjacent parcels, further identified as James City County Real Estate Tax Parcel Nos. 4421000002, 4421000001B and 4421000001C. The case involved the clearing of vegetation within a defined Chesapeake Bay Preservation Area (CBPA) and Resource Protection Area (RPA) on these three parcels. This work was done without obtaining an approved plan of development, erosion and sediment control plan, land disturbing permit and/or Chesapeake Bay exception. Total disturbance within the RPA was approximately 3.3 acres.

The first subject parcel, zoned R-4, encompassing 10.32 acres, within which an area of approximately 2.15 acres of RPA was disturbed. The second subject parcel, zoned R-4, encompassing 7.71 acres, within which an area of approximately 0.05 acres of RPA was disturbed. The third subject parcel, zoned R-4, encompassing 7.1 acres, within which an area of approximately 1.1 acres of RPA was disturbed. The second and third parcels also have recorded Natural Open Space easements to help Governor's Land meet stormwater compliance requirements by remaining in a natural, undisturbed state.

On or about July 11, 2016, County staff received a report of unauthorized activity at the subject parcels. County staff visited the site on July 15, 2016, and observed complete understory removal within portions of the RPA. Following the site visit, staff performed research on the parcel using County records and GIS mapping. GIS mapping clearly showed vegetation in and around the RPA throughout the period, from 2000 through 2015. Subsequently, County staff sent a Notice of Violation (NOV) to the parcel owners on August 1, 2016. Staff then met with the parcel owner at the County Government Complex on August 25, 2016, to discuss the NOV.

In accordance with provisions of the Ordinance, the owner and County mutually came to terms to resolve and settle the violation through the County's civil charge process. The owner voluntarily signed a consent agreement and entered into a Chesapeake Bay Restoration Agreement with the County on October 28, 2016, and prepared a Chesapeake Bay Restoration Plan to restore impacted RPA on the three parcels. The restoration plan was submitted and approved on October 21, 2016. The restoration plan includes a total of 1,400 shrub plantings in the restoration area, all native to Virginia. As part of the Chesapeake Bay Restoration Agreement, the owner is required to post a performance surety to guarantee implementation of plantings consistent with the approved restoration plan and work must be completed by June 30, 2017.

The resolution and attachments present additional specific details of the violation. Under the provisions of the Ordinance, the Board may accept civil charges for each violation of up to \$10,000. The Owner has agreed to the recommended civil charge of \$17,500 for violation of Sections 23-7, 23-9 and 23-10 of the County's Chesapeake Bay Preservation Ordinance.

The Chesapeake Bay Ordinance Civil Penalty Procedures Policy, endorsed by the Board in August 1999, was used by staff as guidance in determining the civil charge amount. The policy considers the degree of water quality impact and the degree of noncompliance involved in the case. In this particular case, the owner has been

cooperative with staff throughout the settlement process. The civil charge amount was based on a summation of the three parcels, and ranged from significant to moderate water quality impact and a moderate degree of noncompliance depending upon the parcel, using the civil charge determination matrix.

Staff recommends adoption of the attached resolution, establishing the civil charges for the Chesapeake Bay Ordinance violation presented.

SJT/AK/kb  
CA-Kitchum'sClose-mem

Attachments:

1. Resolution
2. Notice of Violation, PIN 4421000002
3. Notice of Violation, PIN 4421000001B
4. Notice of Violation, PIN 4421000001C
5. Governor's Land Foundation Correspondence
6. Location Map
7. Consent Agreement
8. Restoration Agreement
9. Restoration Plan
10. 1999 Civil Charge Policy
11. Civil Charge Matrix

## **RESOLUTION**

### **CHESAPEAKE BAY PRESERVATION ORDINANCE VIOLATION – CIVIL CHARGE –**

#### **JOHN FRANKLIN, 2984 KITCHUM’S CLOSE**

- WHEREAS, John Franklin is the owner of a certain parcel of land commonly known as 2984 Kitchum’s Close, Williamsburg, Virginia, designated as Parcel No. 4421000002 within James City County Real Estate Tax Map system; and
- WHEREAS, Governor’s Land Foundation is the owner of a certain parcel of land commonly known as Major Open Space 34 Block C Kitchum’s Close, designated as Parcel No. 4421000001B within James City County Real Estate Tax Map system; and
- WHEREAS, Governor’s Land Foundation is the owner of a certain parcel of land commonly known as Major Open Space 35 Block C Kitchum’s Close, designated as Parcel No. 4421000001C within James City County Real Estate Tax Map system; and
- WHEREAS, all three parcels of land shall herein be referred to as the (“Property”); and
- WHEREAS, on or about July 11, 2016, John Franklin caused clearing within a defined Chesapeake Bay Preservation Area (CBPA) on the Property without prior approval of a plan of development, erosion and sediment control plan, land disturbing permit and/or Chesapeake Bay exception; and caused impact to a Resource Protection Area (RPA); and
- WHEREAS, John Franklin has executed a Consent Agreement and a Chesapeake Bay Restoration Agreement with the County agreeing to implement, in a timely manner, native shrub plantings in accordance with an approved Chesapeake Bay Restoration Plan in order to remedy a violation of the County’s Chesapeake Bay Preservation Ordinance. The owner has posted sufficient surety guaranteeing plantings in accordance with the approved restoration plan to restore RPA on the Property; and
- WHEREAS, John Franklin has agreed to pay a total of \$17,500 to the County as a civil charge under the County’s Chesapeake Bay Preservation Ordinance; and
- WHEREAS, the James City County Board of Supervisors is willing to accept the restoration of the impacted RPA and the civil charge in full settlement of the Chesapeake Bay Preservation Ordinance violation, in accordance with Section 23-18 of the Code of the County of James City.
- NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of James City County, Virginia, hereby authorizes and directs the County Administrator to accept the \$17,500 civil charge from John Franklin as full settlement of the Chesapeake Bay Preservation Ordinance violations at the Property.



---

Michael J. Hipple  
Chairman, Board of Supervisors

ATTEST:

---

Bryan J. Hill  
Clerk to the Board

	<u>AYE</u>	<u>NAY</u>	<u>ABSTAIN</u>
MCGLENNON	_____	_____	_____
LARSON	_____	_____	_____
ONIZUK	_____	_____	_____
SADLER	_____	_____	_____
HIPPLE	_____	_____	_____

Adopted by the Board of Supervisors of James City County, Virginia, this 13th day of December, 2016.

CA-Kitchum'sClose-res



**Development Management**  
101-A Mounts Bay Road  
P.O. Box 8784  
Williamsburg, VA 23187-8784  
P: 757-253-6671  
F: 757-253-6822  
devman@james-city.va.us  
jamescitycountyva.gov

**Building Safety and Permits**  
757-253-6620

**Engineering and Resource Protection**  
757-253-6670

**Planning**  
757-253-6685

**Zoning Enforcement**  
757-253-6671

**NOTICE OF VIOLATION**  
of James City County's Environmental Regulations

August 1, 2016

Mr. and Mrs. John Franklin  
2984 Kitchum's Close  
Williamsburg, VA 23185

Re: **Chesapeake Bay Preservation Ordinance Violation**  
**2984 Kitchum's Close**  
**James City County PIN 4421000002**  
**CBV-17-006**

Dear Mrs. Smith:

On or about July 15, 2016, representatives of the James City County Engineering and Resource Protection Division inspected the property behind 2483 Sanctuary Drive after a complaint was filed at the County for work occurring within the resource protection area (RPA) and a recorded Natural Open Space easement on this property. There is no active exception request on file in our office for the clearing that has taken place on this property within the RPA or easement. Section 23-7 of the James City County Chesapeake Bay Preservation Ordinance, which regulates activities within the RPA, prohibits removal of vegetation without approval from the Engineering and Resource Protection Division. Therefore, the activity is a violation of the CBPO, subject to a Civil Penalty of up to \$5,000.00 for each day of the violation. Please see the attached map for a general location of the violation area.

Please be advised that this is an official notification that the clearing within the limits of the RPA buffer is a CBPO violation. In order to rectify this violation, please contact our office at your earliest convenience to arrange for a meeting with representatives of the Engineering and Resource Protection Division staff to discuss restoring the RPA buffer by entering into a Chesapeake Bay Restoration Agreement with new tree and shrub planting native to Virginia. You may also be responsible for a one-time payment of a civil charge, the amount of which is to be determined by the County.

Per Section 23-17 of the Chesapeake Bay Preservation Ordinance, the "owner of property subject to an administrative decision, order or requirement under this chapter may appeal by submitting a written application for review to the board no later than 30 days from the rendering of such decision, order or requirement. The board shall hear the appeal as soon as practical after receipt of the application." The Board that this section refers to is the Chesapeake Bay Board.

Please contact our office at 757-253-6670 to discuss this matter within the next 30 days. After 30 days from the date of this letter, the matter is no longer appealable to the Chesapeake Bay Board.

Sincerely,



Michael Woolson  
Senior Watershed Planner  
Engineering and Resource Protection Division

cc: Scott Thomas, Engineering and Resource Protection Division Director, via email  
Max Hlavin, Assistant County Attorney, via email  
Paul Holt, Development Manager, via email  
Christy Parrish, Zoning Administrator, via email

**Development Management**

101-A Mounts Bay Road  
P.O. Box 8784  
Williamsburg, VA 23187-8784  
P: 757-253-6671  
F: 757-253-6822  
devman@james-city.va.us  
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**Building Safety and Permits**  
757-253-6620

**Engineering and Resource Protection**  
757-253-6670

**Planning**  
757-253-6685

**Zoning Enforcement**  
757-253-6671

**NOTICE OF VIOLATION**  
of James City County's Environmental Regulations

August 1, 2016

Mrs. Lisa Smith  
2700 Two Rivers Road  
Williamsburg, VA 23185

Re: **Chesapeake Bay Preservation Ordinance Violation  
Behind 2984 Kitchum's Close  
James City County PIN 4421000001B  
CBV-17-004**

Dear Mrs. Smith:

On or about July 15, 2016, representatives of the James City County Engineering and Resource Protection Division inspected the property behind 2483 Sanctuary Drive after a complaint was filed at the County for work occurring within the resource protection area (RPA) and a recorded Natural Open Space easement on this property. There is no active exception request on file in our office for the clearing that has taken place on this property within the RPA or easement. Section 23-7 of the James City County Chesapeake Bay Preservation Ordinance, which regulates activities within the RPA, prohibits removal of vegetation without approval from the Engineering and Resource Protection Division. Therefore, the activity is a violation of the CBPO, subject to a Civil Penalty of up to \$5,000.00 for each day of the violation. Please see the attached map for a general location of the violation area. Furthermore, the activity is in violation of restriction #5 of the recorded Deed of Easement. A copy of the recorded deed is provided for your records.

Please be advised that this is an official notification that the clearing within the limits of the RPA buffer is a CBPO violation. In order to rectify this violation, please contact our office at your earliest convenience to arrange for a meeting with representatives of the Engineering and Resource Protection Division staff to discuss restoring the RPA buffer by entering into a Chesapeake Bay Restoration Agreement with new tree and shrub planting native to Virginia. You may also be responsible for a one-time payment of a civil charge, the amount of which is to be determined by the County.

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board shall hear the appeal as soon as practical after receipt of the application.” The Board that this section refers to is the Chesapeake Bay Board.

Please contact our office at 757-253-6670 to discuss this matter within the next 30 days. After 30 days from the date of this letter, the matter is no longer appealable to the Chesapeake Bay Board.

Sincerely,



Michael Woolson  
Senior Watershed Planner  
Engineering and Resource Protection Division

cc: Scott Thomas, Engineering and Resource Protection Division Director, via email  
Max Hlavin, Assistant County Attorney, via email  
Paul Holt, Development Manager, via email  
Christy Parrish, Zoning Administrator, via email

**Development Management**

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757-253-6620

**Engineering and Resource Protection**  
757-253-6670

**Planning**  
757-253-6685

**Zoning Enforcement**  
757-253-6671

**NOTICE OF VIOLATION**  
of James City County's Environmental Regulations

August 1, 2016

Mrs. Lisa Smith  
2700 Two Rivers Road  
Williamsburg, VA 23185

Re: **Chesapeake Bay Preservation Ordinance Violation  
Behind 2984 Kitchum's Close  
James City County PIN 4421000001C  
CBV-17-005**

Dear Mrs. Smith:

On or about July 15, 2016, representatives of the James City County Engineering and Resource Protection Division inspected the property behind 2483 Sanctuary Drive after a complaint was filed at the County for work occurring within the resource protection area (RPA) and a recorded Natural Open Space easement on this property. There is no active exception request on file in our office for the clearing that has taken place on this property within the RPA or easement. Section 23-7 of the James City County Chesapeake Bay Preservation Ordinance, which regulates activities within the RPA, prohibits removal of vegetation without approval from the Engineering and Resource Protection Division. Therefore, the activity is a violation of the CBPO, subject to a Civil Penalty of up to \$5,000.00 for each day of the violation. Please see the attached map for a general location of the violation area. Furthermore, the activity is in violation of restriction #5 of the recorded Deed of Easement. A copy of the recorded deed is provided for your records.

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Please contact our office at 757-253-6670 to discuss this matter within the next 30 days. After 30 days from the date of this letter, the matter is no longer appealable to the Chesapeake Bay Board.

Sincerely,



Michael Woolson  
Senior Watershed Planner  
Engineering and Resource Protection Division

cc: Scott Thomas, Engineering and Resource Protection Division Director, via email  
Max Hlavin, Assistant County Attorney, via email  
Paul Holt, Development Manager, via email  
Christy Parrish, Zoning Administrator, via email

# GOVERNOR'S LAND FOUNDATION

August 5, 2016

John A. Franklin  
710 Denbigh Blvd., Suite 2D  
Newport News, VA 23608

John Franklin  
710 Denbigh Blvd., Suite 2D  
Newport News, VA 23608

Engineering & Resource Protection  
SEP 01 2016

Re: Notice of Violations from James City County  
JCC Parcel ID: 4421000001B  
Lot No. 2, Kitchum's Pond "C"

John Franklin  
2984 Kitchum's Close  
Williamsburg, VA 23185

RECEIVED

Mailed Certified, Return Receipt Requested, and First Class Mail

Dear John Franklin:

Governor's Land Foundation ("GLF") has received written notifications dated August 1, 2016 from James City County ("JCC") regarding violations in the Resource Protection Area and in the Conservation Easement. GLF has also been notified in writing, and verbally, by JCC of the potential penalties of up to \$5,000 per day per violation and an additional \$20,000 per violation. GLF has received these notices because GLF owns the adjacent property where unauthorized clearing was done without prior approval from JCC and GLF. GLF has enclosed copies of the correspondence from JCC for your convenience.

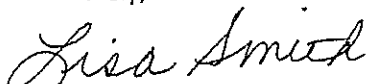
The referenced lot is also in violation of the following GLF Design Standards, Sections 4.1.2 (a), 4.1.2 (b) and 4.1.2 (h). Copies of these guidelines are also enclosed for your convenience.

Due to the seriousness of the alleged violations, GLF Board of Directors ("BOD") has scheduled a fact finding hearing on Monday, August 22, 2016 at 11:00 AM at the GLF office. You will be allowed to be present to address the BOD, and if you so desire, to bring an attorney with you. This fact finding hearing will take place with or without your attendance.

The BOD will act in accordance with Section 55-515, Compliance with Declaration, and Section 55-513, Adoption and Enforcement of Rules, of the Virginia Property Owners' Association Act ("POAA"). The BOD will also act in accordance with the GLF Declaration, Sections 3.4, 6.2 (d), 12.1 (a) and 12.1 (h). These sections of the POAA and the GLF Declaration enables the BOD to assess you charges for the violations, suspend your right to use the GLF facilities and to vote on GLF matters. It also enables GLF to collect all related costs to GLF that are associated to remedy these violations; including but not limited to, any fines assessed to GLF and attorney costs.

Please contact the GLF office at 253-6976 if you have any questions regarding this matter.

Sincerely,



Lisa Smith, AMS, LSM, PCAM  
General Manager on behalf of the  
Governor's Land Foundation Board of Directors

Enclosures: Notices of Violations from JCC and GLF Design Standards Section 4.1.2  
cc: 2984 Kitchum's Close, Williamsburg, Va 23185





# GOVERNOR'S LAND FOUNDATION

August 24, 2016

John A. Franklin  
2984 Kitchum's Close  
Williamsburg, VA 23185

Re: Fact Finding Hearing Results  
JCC Parcel ID: 4421000001B  
Lot No. 2, Kitchum's Pond "C"

Mailed Certified, Return Receipt Requested, and First Class Mail

Dear John Franklin:

In accordance with Section 55-515, Compliance with Declaration, and Section 55-513, Adoption and Enforcement of Rules, of the Virginia Property Owners' Association Act ("POAA"), Governor's Land Foundation ("GLF") Board of Directors ("BOD") voted on August 22, 2016 that the unauthorized maintenance within the recorded Deed of Easement that has been carried out by you, and as so stated to the GLF BOD by you at the August 22 meeting, must cease and desist immediately. GLF has included a copy of the recorded Deed of Easement with this letter for your convenience.

Please contact the GLF office at 253-6976 if you have any questions regarding this matter.

Sincerely,



Lisa Smith, AMS, LSM, PCAM  
General Manager on behalf of the  
Governor's Land Foundation Board of Directors

Enclosure: Recorded Deed of Easement

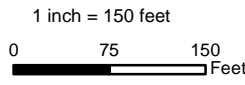




 GLF

 Franklin

 Parcel Lines



# James City County Violation Map



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.

Copyright James City County GIS Office 11/23/2016  
M:\Departments\Environmental\Mike\Franklin\Franklin.mxd





## Chesapeake Bay Preservation Civil Charge Consent Agreement

THIS AGREEMENT, made on this 20 day of Oct 2016, by and between  
John Franklin, residing at  
710 Denbigh Boulevard, Suite 2D, Newport News, Virginia 23608, ("OWNER") and the COUNTY OF  
JAMES CITY, VIRGINIA, ("COUNTY").

WHEREAS, the Owner of that certain parcel of land known and identified as;  
2984 Kitchums Close, has  
violated or has caused a violation of the James City County Chesapeake Bay Preservation Ordinance, Chapter 23 of the  
County Code, by clearing understory vegetation on parcels identified as 442100002, 442100001B and 442100001C  
on that  
aforementioned parcel.

NOW, THEREFORE, to resolve this violation the parties hereto agree as follows:

1. The Owner hereby agrees to provide for the payment of a civil charge in the amount of  
\$17,500, for the violation of the ordinance described above.
2. In consideration of the Owner's payment of the civil charge, the County agrees to accept the civil charge as the  
final resolution of this violation and in consideration of this executed agreement the County will not prosecute  
the Owner under the civil penalty provision provided for within the ordinance.

Once the consent agreement is executed, the County will proceed with processing the civil charge in accordance with the  
provisions of Section 23-18(b) of the Chesapeake Bay Preservation ordinance. This includes scheduling the case on the  
consent calendar at an upcoming Board of Supervisor regular meeting.

OWNER:

COUNTY OF JAMES CITY, VIRGINIA

By:

Approved as to form:

County Attorney



## Chesapeake Bay Restoration Agreement

THIS AGREEMENT by and between John Franklin,  
residing at 710 Denbigh Boulevard, Suite 2D Newport News, Virginia 23608 (the "Owner"),  
and the County of James City, Virginia, a political subdivision of the Commonwealth of Virginia (the "County").

WHEREAS, the Owner is (are) the owner(s) of a certain tract of land located at 2984 Kitchums Close,  
(the "Property") located in the County; and

WHEREAS, restoration of vegetation within portions of the Property is the responsibility of the Owner and  
required by the County as shown on a plan designated as Restoration Plan, dated Oct 21st 2016, and prepared  
by Boyd Nursery's, Licensed Land Surveyors,  
Professional Engineers, Owner or Designer; and

WHEREAS, the Owner has posted sufficient bond, letter of credit, certified or cashier's check, or escrow fund  
(collectively the "Security Instrument"), pursuant to existing ordinances, approved as to form by the County Attorney,  
and with surety satisfactory to the County in the amount of  
Twenty Thousand dollars and no cents (\$ 20,000.00)  
guaranteeing the installation of the aforementioned improvements before June 30, 2017.

NOW, THEREFORE, THIS AGREEMENT WITNESSETH that for and in consideration of the premises and the  
covenants and agreements herein contained, the parties agree as follows:

1. The Owner does covenant and agree that it will, without cost to the County on or before  
June 30, 2017, construct to the approval of the County all physical improvements as  
required by the Chesapeake Bay Preservation Ordinance of the County, or shown on the development plans approved by  
the County. If, in the sole judgment of the County, circumstances beyond the control of the Owner prevent the Owner  
from completing the improvements in the time set forth herein, then the County may, at its sole discretion, grant an  
extension of time for completion of said improvements and in such instance the County shall require an amended  
Security Instrument approved as to form by the County Attorney, and with surety satisfactory to the County in an amount  
to guarantee the installation of the aforementioned improvements.

2. It is mutually understood and agreed that in the event the Owner fails to properly complete the physical  
improvements provided hereinabove, the County may complete, or cause to have completed, the same and render a bill  
therefore to the Owner who shall be liable to the County for all proper costs so incurred by the County, or the County  
may draw the amount necessary from the surety to complete or cause to have completed the same. The Owner hereby  
grants the County, its agents and contractor, access to the property to install any improvements required under this  
Agreement.

3. In the event the County calls, collects, or otherwise draws on the Security Instrument pledged under this  
Agreement, the Owner agrees to either pay, or have the County use the proceeds of the draw to pay a reasonable  
administrative fee of \$35.00, plus any costs actually incurred by the County in drawing on the Security Instrument. The  
charge for an administrative fee plus costs shall apply regardless of whether the County later accepts a renewal or  
amendment of the Security Instrument.

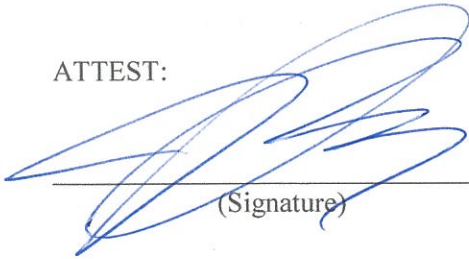


4. It is mutually understood and agreed that this Agreement does not relieve the Owner of any responsibilities or requirements placed upon them by the various ordinances of the County applicable to such development of the property, and the development of the Property will be done in strict accordance with such ordinances.

5. It is mutually understood and agreed that if the Owner shall faithfully execute each and all requirements of the Chesapeake Bay Preservation Ordinance and the provisions of this Agreement, and shall indemnify, protect, and save harmless the County from all loss, damage, expense, or cost by reason of any claim, suit, or action instituted against the County or its agents or employees thereof, on account of, or in consequence of any breach on the part of the Owner, then the Security Instrument shall be released by the County to the Owner.

IN WITNESS WHEREOF, the parties hereto, being first duly authorized, have affixed their signatures on the date first above written.

ATTEST:

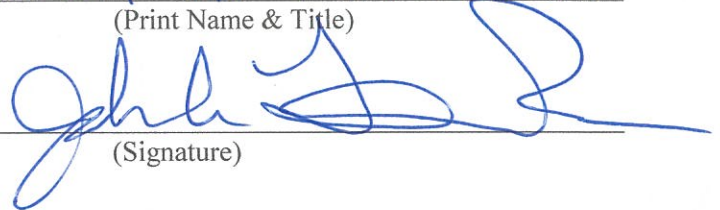
  
(Signature)

Owner:

John A. Franklin

(Print Name & Title)

By:

  
(Signature)

Approved as to form:

COUNTY OF JAMES CITY, VIRGINIA



County Attorney

By:



County Agent

DATE:

10/21/15

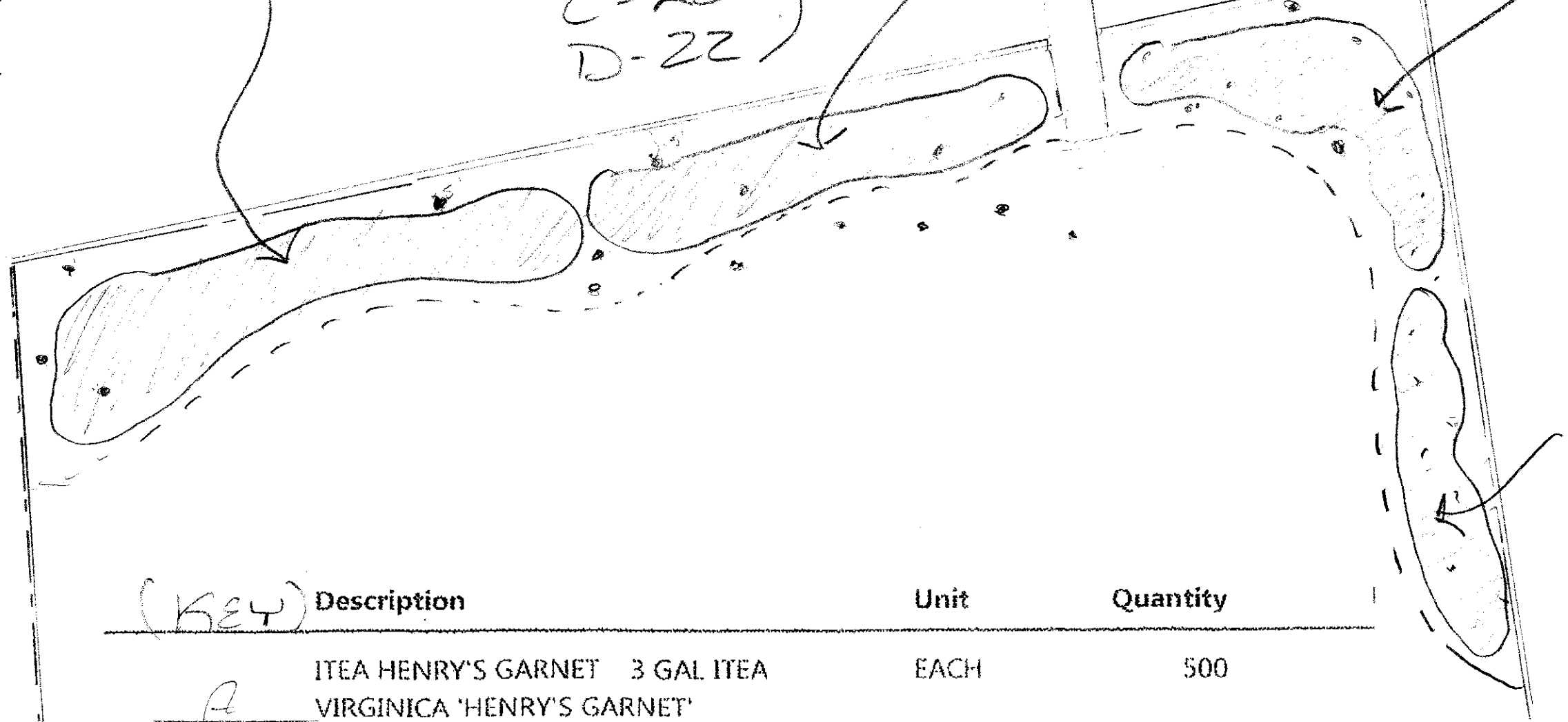
Engineering & Resource Protection  
OCT 21 2016  
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A-107  
B-100  
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D-23

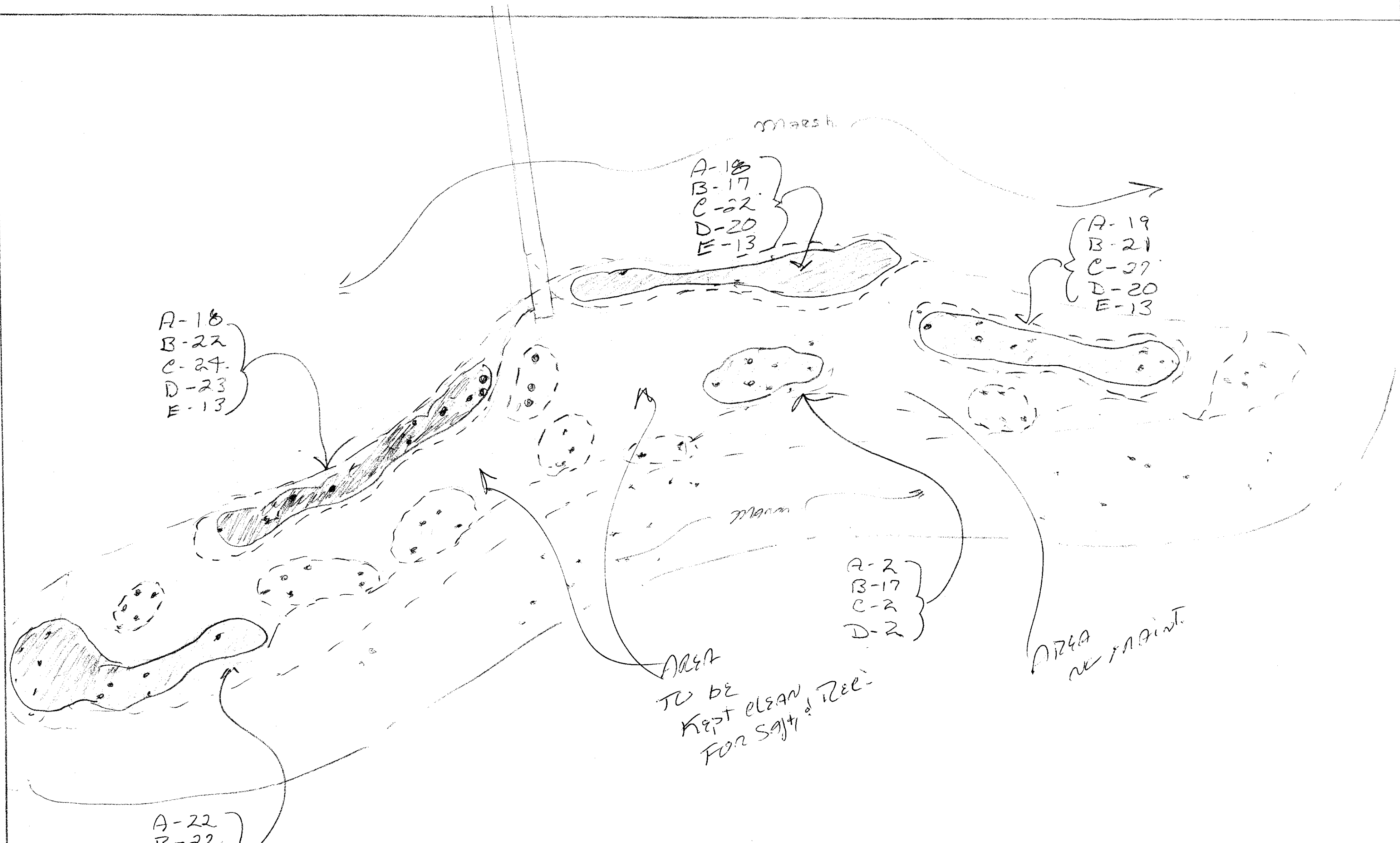
A-108  
B-101  
C-20  
D-23



(KEY)	Description	Unit	Quantity
<u>A</u>	ITEA HENRY'S GARNET 3 GAL ITEA VIRGINICA 'HENRY'S GARNET'	EACH	500
<u>B</u>	HOLLY GLABRA Densa INKBERRY 3 GAL ILEX GLABRA 'Densa'	EACH	500
<u>C</u>	HOLLY SPARKLEBERRY 3 GAL ILEX VERTICILLATA 'SPARKLEBERRY'	EACH	175
<u>D</u>	HOLLY WINTER RED 3 GAL ILEX VERTICILLATA 'WINTER RED'	EACH	175
<u>E</u>	HOLLY APOLLO MALE 3 GAL ILEX VERTICILLATA 'APOLLO'	EACH	50

NR 5006E

FRANKLIN RESTORATION - BACKYARD - BORD NURSERY INC.



FRANKLIN RESTORATION PLAN - ISLAND -

**Chesapeake Bay Preservation Ordinance Civil Penalty Procedures**  
(As adopted by the Board of Supervisors - August 19, 1999)

**Principle**

All violations of the Ordinance will be prosecuted to obtain an acceptable remedy. All RPAs and associated buffers that are disturbed without an exception or waiver granted in accordance with the provisions of the Ordinance will be restored on a 2:1 replacement basis.

**Process**

The process will be to document the violation with a Notice Of Violation that states the conditions necessary to bring their site into compliance with the Ordinance. If there is a failure to follow the terms stipulated in the Notice, the County will file suit to take the violator to court where civil penalties of up to \$5000 per day can be assessed. However, if the violator cooperates with all provisions of the Notice and remedies the violation, we will not file suit. An exception would be if we can determine that the violation was intentional as would be the case if we had prior contact with the violator regarding the matter of the RPA restrictions.

**Penalty**

In order to serve as a deterrent, even in the event of a cooperative restoration settlement, civil charges will be sought. Under current state law, the Board of Supervisors must approve all civil charges. The amount of the civil charge recommended will be dependent on the violation's impact on water quality and the degree of non-compliance. Violations that are more severe and will take longer to be restored to an acceptable condition will have larger charges recommended by staff. Violations comprising less than 100 square feet of disturbance or the removal of no more than three trees will not have a civil charge recommended unless there have been prior violations by the violator. The maximum civil charge is \$10,000 per violation.

The following table presents a matrix that will guide staff recommendations on the establishment of a civil charge for a specific violation. The amounts presented are not absolute and are intended to be a guide. Each violation will have several unique characteristics that will require the exercise of judgment in arriving at a civil charge. Charges in each case could vary by up to 100% depending on the specific circumstances involved.

<u>Civil Charge Determination</u>				
<b>Water Quality Impact</b>	Significant	\$5000	\$7500	\$10,000
	Moderate	\$1500	\$3000	\$4500
	Minor	\$500	\$1000	\$1500
		Minor	Moderate	Major
<b>Degree of Non-Compliance</b>				



#### Water Quality Impact

The impact of a given violation will be determined based on several factors. It involves more than just the square footage of impact; it also addresses the relative environmental value of the resource lost. Factors that will be considered as they relate to the violation's impact on water quality include the size of the violation, the number of trees and other vegetation removed, the size and maturity of the vegetation removed, the amount of tree canopy removed, the amount of ground disturbance involved, etc. Mitigating factors that will be considered are whether the vegetation removed would have qualified for removal if a request was made in accordance with the Ordinance. The Ordinance allows for the removal of vegetation weakened by age, storm, fire or other natural causes or vegetation that is dead, diseased or dying. These factors will be used to determine how much of the functional value of the buffer was lost and how long it will take for the function to be recovered.

#### Degree of Non-compliance

This factor will be used to assess the motivation behind the violation. Factors that will be considered in assessing the degree of non-compliance are degree of willfulness, history of non-compliance, and cooperation. Unintentional violations that are cooperatively restored will not be charged the same as intentional violations that are difficult to resolve.

## **Civil Charge Determination**

Water Quality Impact	Significant	\$5,000	\$7,500	\$10,000
	Moderate	\$1,500	\$3,000	\$ 4,500
	Minor	\$500	\$1,000	\$ 1,500

Minor      Moderate      Major

Degree of Non-Compliance

**ITEM SUMMARY**

DATE: 12/13/2016

TO: The Board of Supervisors

FROM: Scott J. Thomas, Director of Engineering and Resource Protection

SUBJECT: Dedication of a Street in Section 3 of the White Hall Subdivision

---

Initiation of a street acceptance into the Virginia Secondary System of Highways.

**ATTACHMENTS:**

	Description	Type
▣	mem	Cover Memo
▣	res	Resolution
▣	VDOT Form AM-4.3	Exhibit
▣	Map	Exhibit

**REVIEWERS:**

Department	Reviewer	Action	Date
Engineering & Resource Protection	Thomas, Scott	Approved	11/16/2016 - 10:48 AM
Development Management	Holt, Paul	Approved	11/16/2016 - 11:53 AM
Publication Management	Burcham, Nan	Approved	11/16/2016 - 1:55 PM
Legal Review	Kinsman, Adam	Approved	11/16/2016 - 1:55 PM
Board Secretary	Fellows, Teresa	Approved	11/23/2016 - 7:56 AM
Board Secretary	Purse, Jason	Approved	12/6/2016 - 9:26 AM
Board Secretary	Fellows, Teresa	Approved	12/6/2016 - 9:37 AM

## MEMORANDUM

DATE: December 13, 2016

TO: The Board of Supervisors

FROM: Scott J. Thomas, Director of Engineering and Resource Protection

SUBJECT: Dedication of a Street in Section 3 of the White Hall Subdivision

---

Attached is a resolution requesting acceptance of a street in Section 3 of the White Hall Subdivision which is proposed as public right-of-way into the State Secondary Highway System. The street proposed for acceptance is shown in red on the attached map. The street has been inspected and approved by representatives of the Virginia Department of Transportation (VDOT) as meeting the minimum requirements for secondary roadways.

VDOT's Secondary Street Acceptance Requirements (SSAR), effective March 2009 and updated December 2011, outline processes on how streets are designed, constructed and officially accepted for maintenance as part of the secondary system of state highways. Upon the satisfactory completion of construction of streets, VDOT advises and coordinates with the local governing body of the street's readiness for acceptance through the use of VDOT's Form AM-4.3. As part of the initial acceptance process, the County Board of Supervisors must request, by resolution, that VDOT accept the street for maintenance as part of the secondary system of state highways. Administrative procedures outlined in the SSAR/24VAC30-92-70 lists criteria for street acceptance and what information is required on the local resolution. Once the resolution is approved, the signed Form AM-4.3 and the resolution are then returned to VDOT. VDOT then officially notifies the locality of the street's acceptance into the secondary system of state highways and the effective date of such action. This notification serves as the start of VDOT maintenance responsibility. As part of the process, the County will hold an appropriate amount of subdivision or public improvement surety for the roadway, as required by local ordinances, until the acceptance process is complete. Also, within 30 days of the local governing body's request (resolution), VDOT requires a maintenance surety to be posted by the developer to guarantee performance of the street for one year from the date of acceptance.

Staff recommends the adoption of the attached resolution.

SJT/nb  
WhiteHallSec3StDed-mem

Attachments

## RESOLUTION

### DEDICATION OF A STREET IN SECTION 3 OF THE WHITE HALL SUBDIVISION

WHEREAS, the street described on the attached AM-4.3, fully incorporated herein by reference, is shown on plats recorded in the Clerk's Office of the Circuit Court of James City County; and

WHEREAS, the Residency Administrator for the Virginia Department of Transportation (VDOT) advised the Board that the street meets the requirements established by the Subdivision Street Acceptance Requirements of VDOT; and

WHEREAS, the County and VDOT entered into an agreement on July 1, 1994, for comprehensive stormwater detention which applies to this request for addition.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of James City County, Virginia, hereby requests VDOT to add the street described in the attached Additions Form AM-4.3 to the secondary system of state highways, pursuant to §33.2-705 of the Code of Virginia, and the Department's Subdivision Street Acceptance Requirements.

BE IT FURTHER RESOLVED the Board guarantees a clear and unrestricted right-of-way, as described and any necessary easements for cuts, fills and drainage.

BE IT FURTHER RESOLVED that a certified copy of this resolution be forwarded to the Residency Administrator for VDOT.

\_\_\_\_\_  
Michael J. Hipple  
Chairman, Board of Supervisors

ATTEST:

VOTES

AYE      NAY      ABSTAIN

MCGLENNON  
LARSON  
ONIZUK  
SADLER  
HIPPLE

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

\_\_\_\_\_  
Bryan J. Hill  
Clerk to the Board

Adopted by the Board of Supervisors of James City County, Virginia, this 13th day of December, 2016.

WhiteHallSec3StDed-res

In the County of James City

By resolution of the governing body adopted December 13, 2016

The following VDOT Form AM-4.3 is hereby attached and incorporated as part of the governing body's resolution for changes in the secondary system of state highways.

A Copy Testee

Signed (County Official): \_\_\_\_\_

## Report of Changes in the Secondary System of State Highways

### **Project/Subdivision White Hall Section 3**

#### **Type Change to the Secondary System of State Highways:**

#### **Addition**

The following additions to the Secondary System of State Highways, pursuant to the statutory provision or provisions cited, are hereby requested; the right of way for which, including additional easements for cuts, fills and drainage, as required, is hereby guaranteed:

Reason for Change: New subdivision street

Pursuant to Code of Virginia Statute: §33.2-705

#### **Street Name and/or Route Number**

#### **◆ Sheldon Branch Place, State Route Number 1814**

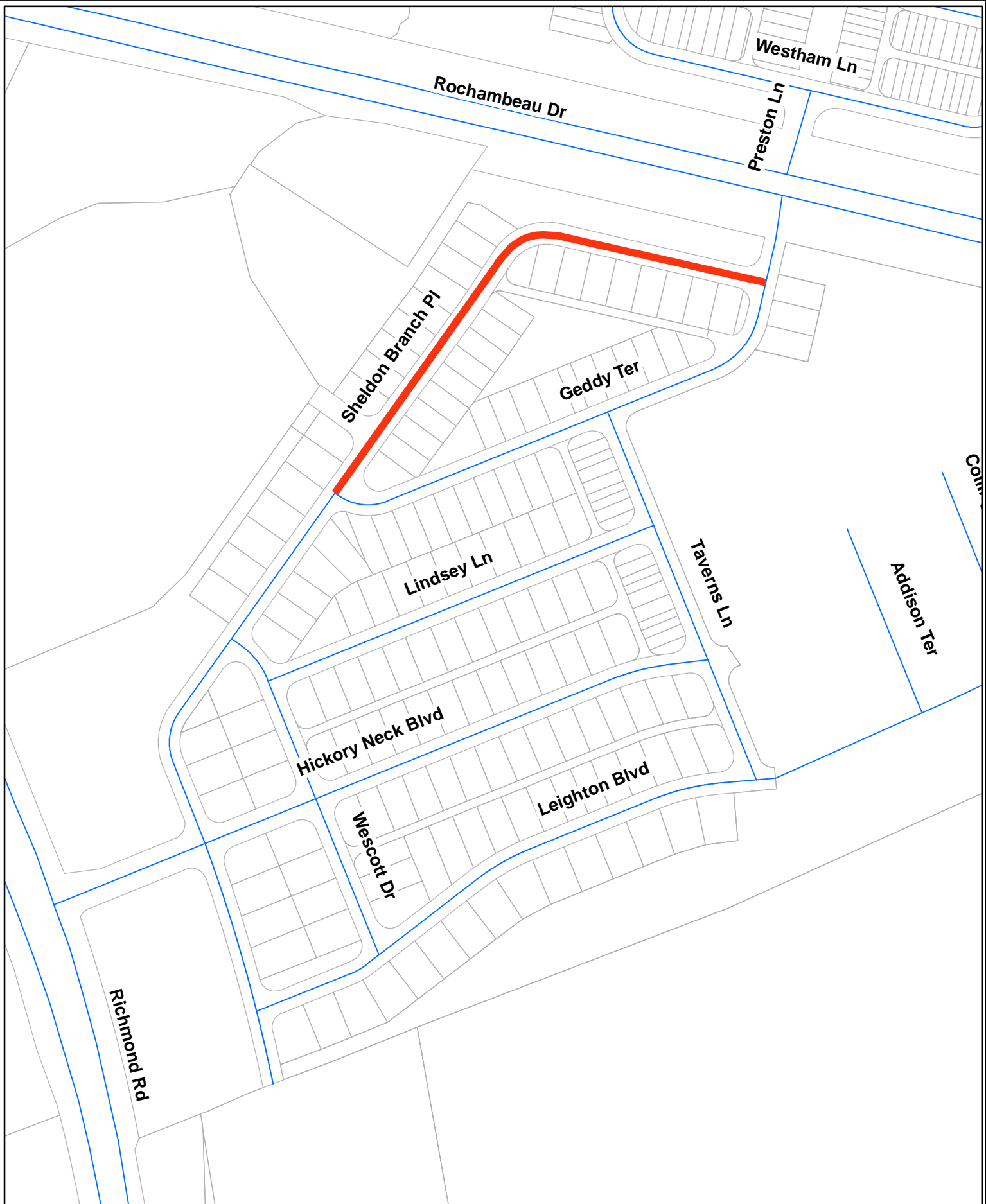
Old Route Number: 0

- From: Geddy Terrace (Route 1815)

To: Geddy Terrace (Route 1815), a distance of: 0.24 miles.


Recordation Reference: N/A

Right of Way width (feet) = 50



**Dedication of a Street in Section 3  
of the White Hall Subdivision**

**Legend**

 Streets to be Dedicated



1 inch = 282 feet

**ITEM SUMMARY**

DATE: 12/13/2016

TO: The Board of Supervisors

FROM: Bradley J. Rinehimer, Police Chief

SUBJECT: Authorization for One Temporary Overhire Police Officer Position

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A James City County police officer received orders for military deployment from October 28, 2016 through December 2, 2017. The reduced staffing of patrol officers within the police department adversely affects service delivery. With the incumbent officer on deployment, his budgeted salary will be available to pay for one temporary police officer overhire position. If approved, the overhire position will remain in effect until the deployed officer returns and a police officer vacancy occurs, at which time the overhire will transition into the vacancy.

**ATTACHMENTS:**

	Description	Type
▣	mem	Cover Memo
▣	res	Resolution

**REVIEWERS:**

Department	Reviewer	Action	Date
Police	Rinehimer, Bradley	Approved	11/17/2016 - 12:58 PM
Police	Rinehimer, Bradley	Approved	11/17/2016 - 12:59 PM
Publication Management	Burcham, Nan	Approved	11/17/2016 - 1:50 PM
Legal Review	Kinsman, Adam	Approved	11/18/2016 - 3:46 PM
Board Secretary	Teague, Patrick	Approved	11/28/2016 - 8:05 AM
Board Secretary	Purse, Jason	Approved	12/6/2016 - 9:25 AM
Board Secretary	Fellows, Teresa	Approved	12/6/2016 - 9:37 AM



## MEMORANDUM

DATE: December 13, 2016

TO: The Board of Supervisors

FROM: Bradley J. Rinehimer, Police Chief

SUBJECT: Authorization for One Temporary Police Officer Overhire Position

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A James City County Police Officer is militarily deployed from October 28, 2016 – December 13, 2017. The period of his absence is approximately nine months. Reduced staffing within the Police Department adversely affects service delivery, especially in Patrol. Financial & Management Services (FMS) confirmed that funding exists within the current Police Department budget to pay for a temporary full-time regular police officer overhire position through June 30, 2017. It is anticipated that there will be funding available in the FY 18 budget due to the absence of the incumbent officer for military deployment and turnover throughout the year.

When the employee returns to full-time employment in December 2017 and if the Police Department is fully staffed, the overhire position will remain in effect until a Police Officer vacancy occurs, at which time the overhire will transition into the vacancy.

Staff recommends adoption of the attached resolution to create a temporary full-time regular Police Officer overhire position.

BJR/nb  
TmpPOOvrhire-mem

Attachment

**RESOLUTION**

**AUTHORIZATION FOR ONE TEMPORARY POLICE OFFICER OVERHIRE POSITION**

WHEREAS, a James City County Police Officer has been militarily deployed from October 28, 2016 until December 2, 2017; and

WHEREAS, the reduced staffing of patrol officers within the Police Department adversely affects service delivery; and

WHEREAS, funds are available within the existing Police Department budget to create a temporary overhire position.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of James City County, Virginia, hereby establishes one full-time regular Police Officer overhire position. The overhire will remain in effect until the deployed officer returns and a Police Officer vacancy occurs, at which time the overhire will transition into the vacancy.

\_\_\_\_\_  
Michael J. Hipple  
Chairman, Board of Supervisors

ATTEST:

\_\_\_\_\_  
Bryan J. Hill  
Clerk to the Board

	VOTES		
	<u>AYE</u>	<u>NAY</u>	<u>ABSTAIN</u>
MCGLENNON	_____	_____	_____
LARSON	_____	_____	_____
ONIZUK	_____	_____	_____
SADLER	_____	_____	_____
HIPPLE	_____	_____	_____

Adopted by the Board of Supervisors of James City County, Virginia, this 13th day of December, 2016.

TmpPOOverhire-res

**ITEM SUMMARY**

DATE: 12/13/2016

TO: The Board of Supervisors

FROM: Nathan R. Green, Commonwealth Attorney

SUBJECT: Grant Award - Commonwealth Attorney - Virginia Domestic Violence Victim Fund - \$55,471

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**ATTACHMENTS:**

	Description	Type
▣	Grant Award - Commonwealth Attorney - Virginia Domestic Violence Victim Fund - \$55,471	Cover Memo
▣	Grant Award - Commonwealth Attorney - Virginia Domestic Violence Victim Fund - \$55,471	Resolution

**REVIEWERS:**

Department	Reviewer	Action	Date
Budget	Fellows, Teresa	Approved	11/23/2016 - 8:01 AM
Financial Management	Mellen, Sue	Approved	12/2/2016 - 12:51 PM
Publication Management	Babbitt, Katterina	Approved	12/2/2016 - 1:31 PM
Legal Review	Kinsman, Adam	Approved	12/6/2016 - 9:17 AM
Board Secretary	Fellows, Teresa	Approved	12/6/2016 - 9:17 AM
Board Secretary	Purse, Jason	Approved	12/6/2016 - 9:26 AM
Board Secretary	Fellows, Teresa	Approved	12/6/2016 - 9:45 AM

## MEMORANDUM

DATE: December 13, 2016

TO: The Board of Supervisors

FROM: Nathan R. Green, Commonwealth Attorney

SUBJECT: Grant Award – Commonwealth Attorney – Virginia Domestic Violence Victim Fund – \$55,471

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The Commonwealth Attorney has been awarded a \$55,471 grant (state share \$41,030 and County match \$14,441) from the Virginia Domestic Violence Victim Fund through the State Department of Criminal Justice Services. The Grant will fund the personnel costs to upgrade a .50 FTE attorney position to full-time (1.0 FTE) to assist in the prosecution of misdemeanors and felonies involving domestic violence, sexual abuse, stalking and family abuse. The Commonwealth Attorney has been successful in obtaining this grant in previous years and plans to apply for this grant in the future.

The County match is available in the Commonwealth Attorney's General Fund account.

The attached resolution appropriates these funds to the Special Projects/Grant Fund through June 30, 2017.

Staff recommends approval of the attached resolution.

NRG/kb  
GA-DomVioFY17-mem

Attachment

## RESOLUTION

### GRANT AWARD – COMMONWEALTH ATTORNEY –

### VIRGINIA DOMESTIC VIOLENCE VICTIM FUND – \$55,471

WHEREAS, the Commonwealth Attorney for the City of Williamsburg and James City County has been awarded a \$55,471 grant, which is awarded annually from the Virginia Domestic Violence Victim Fund (state share \$41,030; County match \$14,441) through the State Department of Criminal Justice Services (DCJS); and

WHEREAS, this grant would fund the personnel costs to upgrade a .50 FTE position to full-time (1.0 FTE); and

WHEREAS, this position assists in the prosecution of misdemeanors and felonies involving domestic violence, sexual abuse, stalking and family abuse beginning July 1, 2016, through June 30, 2017; and

WHEREAS, the grant requires a local match of \$14,441, which is available in the Commonwealth Attorney's General Fund account.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of James City County, Virginia, hereby authorizes the upgrade of a .50 FTE position to full-time (1.0 FTE) and authorizes the additional appropriation to the Special Projects/Grants Fund for FY17 purposes described below:

Revenues:

Virginia Domestic Violence Victim Fund - DCJS	\$41,030
James City County Matching Funds	<u>14,441</u>
Total	<u>\$55,471</u>

Expenditure:

Virginia Domestic Violence Victim Fund	<u>\$55,471</u>
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Michael J. Hipple  
Chairman, Board of Supervisors

ATTEST:

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Bryan J. Hill  
Clerk to the Board

	VOTES		
	<u>AYE</u>	<u>NAY</u>	<u>ABSTAIN</u>
MCGLENNON	_____	_____	_____
LARSON	_____	_____	_____
SADLER	_____	_____	_____
ONIZUK	_____	_____	_____
HIPPLE	_____	_____	_____

Adopted by the Board of Supervisors of James City County, Virginia, this 13th day of December, 2016.

GA-DomVioFY17-res

**ITEM SUMMARY**

DATE: 12/13/2016

TO: The Board of Supervisors

FROM: Adam R. Kinsman, County Attorney

SUBJECT: Heritage Humane Society Contract for Animal Shelter Management Services

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Update to 2006 Heritage Humane Society Contract for Animal Shelter Management Services.

**ATTACHMENTS:**

	Description	Type
▣	Memo	Cover Memo
▣	Resolution	Resolution

**REVIEWERS:**

Department	Reviewer	Action	Date
Attorney	Kinsman, Adam	Approved	11/22/2016 - 6:39 PM
Publication Management	Colonna, Tina	Approved	11/23/2016 - 8:22 AM
Legal Review	Kinsman, Adam	Approved	12/1/2016 - 2:35 PM
Board Secretary	Fellows, Teresa	Approved	12/1/2016 - 2:51 PM
Board Secretary	Purse, Jason	Approved	12/6/2016 - 9:26 AM
Board Secretary	Fellows, Teresa	Approved	12/6/2016 - 9:45 AM

## MEMORANDUM

DATE: December 13, 2016  
TO: The Board of Supervisors  
FROM: Adam R. Kinsman, County Attorney  
SUBJECT: Heritage Humane Society Contract for Animal Shelter Management Services

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Heritage Humane Society ("Heritage") provides certain animal control functions to the County on a contract basis. The last contract was dated May 24, 2006, and negotiations have been ongoing in order to update the terms. An amended contract has been drafted to the satisfaction of the County Attorney, the Financial Management Services, and Animal Control as well as Heritage Humane Society. The major changes to the 2006 contract are as follows:

- Annual review of the contract is required by an oversight team;
- County assumes no liability of surrendered animals and Heritage retains all surrender fees;
- Requirements regarding Heritage employees handling euthanasia drugs;
- Animals released to Heritage by Animal Control become property of Heritage;
- Donations made expressly to Heritage or expressly to the County shall be kept separate;
- Heritage must file monthly reports with Animal Control;
- County shall be responsible for certain utilities, and certain services, and training shall be accessible by Heritage employees;
- Contract rate shall be fixed at \$1.00 per County resident as of July 1 of each year; and
- Contract term shall initially be five (5) years with an option to renew for eight (8) terms of five (5) years each.

The contract shall be effective on July 1, 2017.

I recommend adoption of the attached resolution which authorizes the County Administrator to execute the Heritage Humane Society Contract for Animal Shelter Management Services.

ARK/kb  
HHSCContract-mem

Attachments



**RESOLUTION**

**HERITAGE HUMANE SOCIETY**

**CONTRACT FOR ANIMAL SHELTER MANAGEMENT SERVICES**

WHEREAS, Heritage Humane Society (“Heritage”) provides certain Animal Shelter Management Services to the County under the terms of a contract dated May 24, 2006; and

WHEREAS, the County and Heritage have drafted an updated contract; and

WHEREAS, the draft contract is amenable to the County and Heritage.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of James City County, Virginia, does hereby authorize and direct the County Administrator to sign the amended Heritage Humane Society Contract for Animal Shelter Management Services.

\_\_\_\_\_  
Michael J. Hipple  
Chairman, Board of Supervisors

ATTEST:

VOTES  
AYE   NAY  
ABSTAIN

\_\_\_\_\_  
Bryan J. Hill  
Clerk to the Board

MCGLENNON	_____	_____	_____
LARSON	_____	_____	_____
ONIZUK	_____	_____	_____
SADLER	_____	_____	_____
HIPPLE	_____	_____	_____

Adopted by the Board of Supervisors of James City County, Virginia, this 13th day of December, 2016.

HHSContract-res

**ITEM SUMMARY**

DATE: 12/13/2016

TO: The Board of Supervisors

FROM: Max Hlavin, Assistant County Attorney

SUBJECT: Memorandum of Understanding for economic development at the James City County Marina

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**ATTACHMENTS:**

	Description	Type
▣	Memorandum	Cover Memo
▣	Resolution	Resolution
▣	MOA	Exhibit
▣	County-EDA Lease	Backup Material

**REVIEWERS:**

Department	Reviewer	Action	Date
Attorney	Hlavin, Maxwell	Approved	12/6/2016 - 2:36 PM
Attorney	Fellows, Teresa	Approved	12/6/2016 - 4:09 PM

## MEMORANDUM

DATE: December 13, 2016

TO: The Board of Supervisors

FROM: Max Hlavin, Assistant County Attorney

SUBJECT: Memorandum of Agreement with the Economic Development Authority

---

The attached Memorandum of Agreement (MOA) memorializes the agreement between the County and the Economic Development Authority (EDA) with regards to the contribution of funds to encourage economic development at the James City County Marina. The repayment mechanism for both the County and the EDA is set out in the existing lease between the two entities, which is referenced in the MOA. Adoption of the resolution authorizes County Administration to execute the MOA and transfer the already-appropriated funds on a reimbursement basis.

MH/tlc  
MOA-EDA-mem

Attachments

**RESOLUTION**

**MEMORANDUM OF AGREEMENT WITH THE JAMES CITY COUNTY ECONOMIC**

**DEVELOPMENT AUTHORITY**

WHEREAS, the James City County Economic Development Authority (EDA) and Board of Supervisors of James City County, Virginia, desire a Memorandum of Agreement (MOA) to set forth the parameters of the funding relationship between the County and the EDA with regard to an economic development project; and

WHEREAS, the EDA and Board of Supervisors of James City County, Virginia, believe supporting the economic development project to be in the best interests of the economic vitality of the County.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of James City County, Virginia, hereby authorizes the County Administrator to execute the attached MOA by and between the EDA and the County of James City, Virginia.

BE IT FURTHER RESOLVED that the Board of Supervisors of James City County, Virginia, hereby authorizes the transfer of funds consistent with the attached MOA.

\_\_\_\_\_  
Michael J. Hipple  
Chairman, Board of Supervisors

ATTEST:

VOTES

AYE      NAY      ABSTAIN

MCGLENNON

\_\_\_\_\_

LARSON

\_\_\_\_\_

ONIZUK

\_\_\_\_\_

SADLER

\_\_\_\_\_

HIPPLE

\_\_\_\_\_

\_\_\_\_\_  
Bryan J. Hill  
Clerk to the Board

Adopted by the Board of Supervisors of James City County, Virginia, this 13th day of December, 2016.

MOUJCCEDA-res

**MEMORANDUM OF AGREEMENT**  
**Between**  
**The County of James City and the Economic Development Authority**  
**of the County of James City**

This Agreement is made and entered into this \_\_\_\_ day of \_\_\_\_\_, 2016 by and between the County of James City (the “County”) and the Economic Development Authority of the County of James City (the “EDA”).

WHEREAS, the parties are desirous in utilizing their monies to secure an economic development project (the “Project”) on a certain portion of the parcel of land commonly known as the James City County Marina, located at 2054 Jamestown Road, and further identified as JCC Real Estate Tax Map No. 4640100012 (the “Property”); and

WHEREAS, on August 2, 2016, the County leased the Property to the EDA for the purposes of the Project, which lease is attached to this Agreement as Exhibit A and is made a part hereof.

NOW, THEREFORE, it is mutually agreed as follows:

- a. The EDA shall contribute up to two hundred and fifty thousand dollars (\$250,000) of its funds towards the Project;
- b. The County shall contribute up to five hundred thousand dollars (\$500,000) to the EDA for the Project;
- c. Funds shall be transferred from the County to the EDA on a reimbursement basis with the County funds being obligated for two-thirds (2/3) of each actually-incurred expense in furtherance of the Project;
- d. The County and the EDA shall split revenue from the Project as outlined in Exhibit A, as such lease may be amended;
- e. It is understood that both parties are represented by the County Attorney’s Office and each party has been informed by counsel of the potential conflicts that may arise from such common representation and by signing this agreement consents to such representation.

This Agreement shall be in effect from and after the date of execution and shall remain in effect until superseded, amended or rescinded in writing by the parties.

WITNESS the following signatures:

THE COUNTY OF JAMES CITY

By: \_\_\_\_\_  
Bryan J. Hill  
County Administrator

Approved as to Form:

\_\_\_\_\_  
County Attorney

ECONOMIC DEVELOPMENT  
AUTHORITY OF JAMES CITY COUNTY

By: \_\_\_\_\_  
Thomas Tingle  
Chairman

## DEED OF LEASE

This Deed of Lease (the "Lease") is dated the 2<sup>nd</sup> day of August, 2016, between the COUNTY OF JAMES CITY, VIRGINIA, a political subdivision of the Commonwealth of Virginia (the "County"), and the JAMES CITY COUNTY ECONOMIC DEVELOPMENT AUTHORITY, a political subdivision of the Commonwealth of Virginia (the "EDA").

## WITNESSETH

1. **Premises.** For and in consideration of the terms, conditions, covenants, promises and agreements herein made, the County leases to the EDA the following real property, together with the right of ingress and egress, in the County of James City, Virginia, subject, however, to all easements, restrictions and covenants of record. The property is more particularly described as:

A portion of 2054 Jamestown Road, Williamsburg, Virginia 23185, further identified as Tax Parcel Number 4640100012 (in its entirety referred to as the "Marina"), as more particularly described on Exhibit A, which is attached to and made a part of this Lease (the leased portions collectively referred to as the "Premises"). The Premises leased to EDA shall include an exclusive interest in the top floor of the building shown in red on Exhibit A (the leased floor referred to as, the "Building"), an exclusive interest in an area shown in blue on Exhibit A (the "Open Area"), a non-exclusive interest in a shared area that provides access and parking as shown in green on Exhibit A (the "Shared Area"), and all rights appurtenant to the Premises, including, without limitation, stormwater drainage rights, and ingress and egress easements which are insurable under a leasehold title insurance policy.

2. **Term.** The term of this Lease shall be five (5) years (the "Initial Term") commencing on the date of full execution of a sublease between the EDA and a subtenant (the "Commencement Date"). In order for this Lease to have effect, the Commencement Date must occur within three (3) months of the execution of this Lease. If the Commencement Date does not occur within such three (3) month period, this Lease shall automatically terminate and neither the County nor the EDA shall have any obligation to fulfil any condition of this Lease. The EDA shall provide written notice of the Commencement Date to the County. The Initial Term shall end on the fifth (5<sup>th</sup>) anniversary of the Commencement Date (the "Expiration Date"). Provided the EDA is not in default, this Lease will automatically renew for up to three (3) additional terms of five (5) years each (each a "Renewal Term"). The Initial Term in conjunction with any Renewal Term of this Lease is referred to as the "Term." The conclusion of the Term of this Lease is referred to as the "Final Expiration Date."

3. **Rent.** The EDA shall pay the County the sum of One Dollar (\$1.00) per annum. Rent shall be due on the Commencement Date and each anniversary thereof. If the EDA subleases all or a portion of the Premises to one or more subtenants, then after the Expiration Date, and during any Renewal Term, the EDA shall remit to the County one half (1/2) of the rent paid to the EDA by any subtenant(s).

4. **Use of Premises.** The EDA covenants to sublease the Premises only for Economic Development opportunities which will enhance the Marina and for no other purpose, subject to

and in accordance with all applicable zoning and other governmental regulations. The EDA will only use the Shared Area in a manner that does not interfere with the access, use and enjoyment of the Shared Area by the County or other tenants and licensees.

5. Quiet Enjoyment. Within thirty (30) days of receiving notice of the Commencement Date, the County shall cause any other tenants or licensees on the Premises to vacate, unless otherwise agreed to in writing by the EDA. So long as the EDA observes and keeps all the covenants, agreements, and conditions of this Lease, the County covenants that the EDA shall have quiet and peaceful use and enjoyment of the Premises throughout the Term, subject to the exceptions, reservations, and conditions of this Lease.

6. Assignment and Subletting. The EDA may sublease the Premises or any portion thereof for Economic Development opportunities which will enhance the Marina. The subtenant shall not interfere with the use and enjoyment of the Shared Area by the County or other tenants and licensees. The EDA shall give the County written notice of any sublease, which notice shall include a copy of any sublease agreement and contact information for the subtenant.

7. Access by the County. The County and its representatives may enter the Premises at any time to make emergency repairs, preserve the Premises pursuant to this Lease, or to abate any nuisance, hazard, or unlawful conditions. Except in the case of an emergency, the County shall give the EDA and any subtenant reasonable advance notice of not less than twenty-four (24) hours before seeking access to the Premises. The County agrees to use reasonable efforts to minimize interference with the operations of the EDA or any subtenant on the Premises.

8. Insurance. Beginning on the Commencement Date and continuing during the Term of this Lease, the County, at the County's expense, shall keep in force with an insurance company authorized to transact business in Virginia an insurance policy with fire and extended coverage, and flood insurance on the Building written at the full replacement cost and agreed amount endorsements (with a deductible of not more than \$5,000) and providing rent or income loss coverage for a period of up to twelve (12) months. The County shall maintain, with respect to the Premises, commercial liability and property damage insurance endorsed to cover personal injury. The coverage for each occurrence shall be at least \$1,000,000.00, with a general aggregate limit of at least \$2,000,000.00. Each liability policy shall, without limitation, name the EDA as an additional insured.

The EDA shall ensure that any subtenant obtain and maintain fire and extended coverage, and flood insurance on the contents of the Premises, including any improvements or alterations made by the subtenant in an amount sufficient so that no co-insurance penalty shall be invoked in case of loss. The EDA shall ensure that any subtenant obtain and maintain at all times during the Term, for the protection of the County and the EDA, Liability Insurance (Comprehensive General Liability or Commercial General Liability) including Contractual Liability Insurance, with a combined personal injury and property damage limit of not less than One Million Dollars (\$1,000,000.00) for each occurrence and not less than Two Million Dollars (\$2,000,000.00) in the aggregate, insuring against all liability of the subtenant and its representatives arising out of and in connection with subtenant's use or occupancy of the Premises. The County and the EDA and their officers, agents, and employees shall be named as additional insureds on any insurance policy maintained by a subtenant of the EDA.



9. Compliance with Laws.

(a) The County agrees that the Building and other improvements at the Premises shall be delivered on the Commencement Date in compliance with all applicable building codes and other federal, state and municipal laws, ordinances and regulations (collectively "Laws"), for their current use, if any. The EDA shall at all times comply with all Laws relating to its use and/or occupancy of the Premises, and, subsequent to the Commencement Date, the EDA shall make, or cause its subtenant(s) to make, such repairs, replacements, improvements and installations as may be necessary to comply with Laws if required as a result of the EDA's or its subtenants' use of the Premises. The EDA shall have no obligation to make any improvements or repairs to bring the Premises or Building into compliance with Laws unless required by a change initiated by the EDA after the Commencement Date.

(b) The County represents and warrants to the EDA that, to the best of its knowledge, the Premises is in compliance with all applicable Laws relating to Hazardous Materials and that the Premises is free of any and all such Hazardous Materials. The EDA agrees to comply, and to cause all its employees, agents, contractors, invitees, customers and any other persons occupying or present on the Premises with the consent of the EDA to comply, with all Laws relating to Hazardous Materials with respect to any use by the EDA of such Hazardous Materials. Notwithstanding the foregoing or any other provision of this Lease to the contrary, the EDA shall not be responsible or liable for any Hazardous Materials at the Premises as of the Commencement Date. "Hazardous Materials" are defined as those substances, materials, and wastes, including, but not limited to, those substances, materials and wastes listed in the United States Department of Transportation Hazardous Materials Table (49 CFR Part 172.101) or by the Environmental Protection Agency as hazardous substances (40 CFR Part 302.4) and amendments thereto, or such substances, materials and wastes, which are or become regulated under any applicable local, state or federal law, including, without limitation, any material, waste or substance which is (i) petroleum, (ii) asbestos, (iii) polychlorinated biphenyls, (iv) designated as a Hazardous Substance pursuant to Section 311 of the Clean Water Act of 1977 (33 U.S.C. § 1321) or listed pursuant to Section 307 of the Clean Water Act of 1977 (33 U.S.C. § 1317), (v) defined as a hazardous waste pursuant to Section 1004 of the Resource Conservation and Recovery Act of 1976 (42 U.S.C. § 6903), or (vi) defined as a hazardous substance pursuant to Section 101 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (42 U.S.C. § 9601). The foregoing covenants and agreements of the County and the EDA shall survive the Term, and the County and the EDA shall immediately notify the other party of their receipt of any report, citation, notice or other writing by, to or from any governmental or quasi-governmental authority and power to regulate or oversee any of the foregoing activities or in any way related to or connected with Hazardous Materials on the Premises.

(c) The EDA shall be responsible for compliance with, or cause its subtenant(s) to comply with, the Americans with Disabilities Act, as it now exists and as it may hereafter be amended (the "ADA") with respect to the interior, non-structural portions of the Building, any construction, renovations or alterations performed by the EDA or its subtenants and any compliance required due to the EDA's or its subtenants' specific use or the specific employees of the EDA or its subtenants. The EDA shall not be responsible to the County for complying with any laws or regulations except to the extent a violation of such regulation or law first occurred by act or omission of the EDA or the EDA's agents or invitees following the Commencement Date.

10. Maintenance, Repairs, Utilities and Other Costs.

(a) Utilities: Following the Commencement Date, all utilities serving the Building shall be the responsibility of the EDA or any subtenant and shall be separately metered in the EDA or subtenant's name. The cost of separately metering the Building shall be the responsibility of the EDA or its subtenant.

(b) Shared Area: The County shall be responsible for the maintenance, improvement, or repair of the Shared Area at all times.

(c) Building: The EDA or its subtenant shall be responsible for the routine maintenance of all aspects of the Building, including usual upkeep, paint, janitorial service, light bulbs, etc. The County shall be responsible for the repair or replacement of all other aspects of the Building, excepting only the electric heat pump/air conditioning unit, which the EDA accepts "AS IS." The County shall not repair or replace the existing electric heat pump/air conditioning unit in the Building. The County shall not be responsible for making any improvements to the Building, or for the maintenance, repair, or replacement of any improvements made by the EDA or its subtenant pursuant to Section 11 of this Lease. The County shall not allow the areas of the Marina buildings not leased to the EDA to fall into disrepair. Notwithstanding anything herein to the contrary, the County shall not be obligated to make any repairs in excess of \$10,000.00 in any fiscal year. Should the Building need repairs that exceed \$10,000.00 in any fiscal year, the County Administrator may, in his sole discretion, authorize repairs that exceed that amount. Alternatively, the County Administrator may call a meeting with the Chair of the EDA to negotiate in good faith to determine (1) if the repairs are absolutely necessary and (2) if they are, what amount of the cost should be apportioned between the County and the EDA. If the County Administrator and the Chair cannot come to an agreement, the County Administrator may: (1) deny to fund such repairs, or (2) fund only a portion of the repairs requested.

(d) Open Area: The EDA or its subtenant shall be responsible for the maintenance, repair, or improvement of the Open Area.

The County shall not be liable (and shall assess the costs thereof to the EDA) when any repair or replacement of the Premises is made necessary by the negligent or willful acts or omission of the EDA, its subtenant, or the EDA or subtenant's agents, invitees, or employees. Any maintenance, repair, or replacement of the Premises not required to be made or incurred by the EDA pursuant to this Agreement shall be paid and performed by the County.

11. Improvements.

(a) The EDA or its subtenant may make interior, non-structural alterations, additions, or improvements ("Improvements") to the Building under the following conditions:

(i) Internal Improvements: The EDA or its subtenant may make non-structural Improvements to the interior of the Building without first obtaining the written consent of the County.

(ii) External Improvements: The EDA or its subtenant may make non-structural Improvements to the exterior of the Building without first obtaining the written consent of the County so long as such Improvements are in compliance with

the County-approved site plan and that the color of the Building or any fixture thereto is of a neutral or muted earth tone color that complements the Marina. Any disagreement shall be handled per Section 11(c)(iii) of the Lease. The EDA or its subtenant may request written approval for any external Improvement and the County shall use reasonable efforts to make a determination approving, conditionally approving, or denying the external Improvement within five (5) business days after receipt thereof.

(iii) Structural Improvements: The EDA or its subtenant may only make structural Improvements to the interior or exterior of the Building after obtaining the written consent of the County. If the EDA or its subtenant wishes to undertake structural Improvements to the Building, the EDA or its subtenant shall give the County a written preliminary description and construction drawings of any such proposed Improvement. The County agrees to use reasonable efforts to make a determination approving, conditionally approving, or denying the structural Improvement within ten (10) business days after receipt thereof.

(iv) The time limits set forth in subparagraphs (ii) and (iii) above are intended only to apply to conceptual approvals granted by County Administration and shall not modify any otherwise applicable approval procedure, including, but not limited to, Building Safety and Permits, Community Development, Fire and Life Safety, and the Health Department.

Upon completion of any Building Improvement, the EDA or its subtenant shall provide the County with a set of as-built construction plans for the County's review and approval. The EDA or its subtenant shall bear the cost of all Building Improvements made pursuant hereto and shall bear full responsibility for the maintenance and repair thereof.

(b) The County reserves the right to erect, use, connect to, maintain and repair pipes, ducts, conduits, cable, plumbing, vents and wires in, to and through the Premises, but not the Building, to the extent that the County deems necessary or appropriate for the proper operation and maintenance of the Marina (including the servicing of other tenants and licensees in the Marina) and the right at all times to transmit water, heat, air-conditioning and electric current through such pipes, ducts, conduits, cables, plumbing, vents and wires. The County agrees to not unreasonably interfere with the business of the EDA or any subtenant on the Premises in exercising its ability to ensure the proper operation and maintenance of the Marina.

(c) The EDA or its subtenant may construct a new building in the Open Area (the "Facility") subject to the following conditions:

(i) The EDA or its subtenant shall use due diligence and act in good faith to agree with the County Administrator, or his designee, on the final master site plan and design development plans for the Facility (the "Design"). Such plans shall include a construction schedule. The Design shall define the exact improvements that the EDA or its subtenant covenants to construct on the Open Area.

(ii) The County Administrator, or his designee, shall approve the Design in order to ensure consistency and maintain the quality and character of the Marina. Such approvals shall not be unreasonably withheld. Any proposed additions or changes to the Design prior to construction shall be approved in like fashion. No construction shall be undertaken until the Design has been approved in accordance with these provisions.

(iii) In case of disagreement with respect to material compliance with the Design, the County Administrator, or his designee, shall advise the EDA and any subtenant in writing of the material deficiency claimed. If the claimed deficiency is not cured by the EDA or its subtenant within thirty (30) days (or such longer period as may be reasonably necessary provided the EDA or its subtenant has begun to commence curing within thirty (30) days and diligently pursues the completion of the curing thereafter), the EDA shall be deemed in material default hereunder and the County may take whatever action it is entitled to as provided by law or equity.

(iv) Construction of the Facility shall be performed by a contractor selected by the EDA or its subtenant. The EDA or its subtenant shall not discriminate against any prospective contractor based upon race, sex, religion, or national origin.

(v) The EDA or its subtenant may make Improvements to the Facility under the following conditions:

1) Internal Improvements: The EDA or its subtenant may make non-structural Improvements to the interior of the Facility without first obtaining the written consent of the County.

2) External Improvements: The EDA or its subtenant may make non-structural Improvements to the exterior of the Facility without first obtaining the written consent of the County so long as such Improvements are consistent with the Design and are of a neutral or muted earth tone color that compliments the Marina. Any disagreement shall be handled per Section 11(c)(iii) of the Lease. The EDA or its subtenant may request written approval for any external Improvement and the County shall use reasonable efforts to make a determination approving, conditionally approving, or denying the external Improvement within five (5) business days after receipt thereof.

3) Structural Improvements: The EDA or its subtenant may only make structural Improvements to the interior or exterior of the Facility after obtaining the written consent of the County. If the EDA or its subtenant wishes to undertake structural Improvements to the Facility, the EDA or its subtenant shall give the County a written preliminary description and construction drawings of any such proposed Improvement. The County agrees to use reasonable

efforts to make a determination approving, conditionally approving, or denying the structural Improvement within ten (10) business days after receipt thereof.

4) The time limits set forth in subparagraphs (2) and (3) above are intended only to apply to conceptual approvals granted by County Administration and shall not modify any otherwise applicable approval procedure, including, but not limited to, Building Safety and Permits, Community Development, Fire and Life Safety, and the Health Department.

Upon completion of any Facility Improvement, the EDA or its subtenant shall provide the County with a set of as-built construction plans for the County's review and approval. The EDA or its subtenant shall bear the cost of all Improvements made pursuant hereto and shall bear full responsibility for the maintenance and repair thereof.

(vi) During the construction of the Facility, the EDA or its subtenant shall cooperate and consult with the County Administrator, or his designee, and shall allow them to inspect the Open Area as they deem appropriate.

(vii) The EDA or its subtenant shall construct the Facility in a good workmanlike manner that is consistent with and in accordance with the plans and specifications approved by the County. Once constructed, the EDA or its subtenant shall maintain and operate the Facility at its sole expense in good order, in a sanitary, safe, and high-quality condition. All maintenance shall be performed in a professional manner.

(viii) Throughout the Term, the EDA or its subtenant shall, without any cost or expense to the County: i) take good care of and keep in good order and repair, or cause the same to be done, inside and out, the Facility, all alterations, renovations, replacements, substitutions, changes and additions therein or thereto and the roofs and foundations thereof, all fixtures and appurtenances therein and thereto, all machinery and equipment therein, including without limitation, all machinery, pipes, plumbing, wiring, gas, steam and electrical fittings, sidewalks, water, sewer and gas connections, heating equipment, air conditioning equipment and machinery, and all other fixtures, machinery and equipment installed in or connected with the Facility or used in their operations; ii) make all repairs inside and outside, ordinary and extraordinary, structural or otherwise, necessary to preserve the Facility in good order and condition; iii) promptly pay or cause the payment of the expense of such repairs; iv) not cause or permit any waste to the Facility or Open Area; v) on the leased Premises, keep the sidewalks, curbs and parking areas in good repair and reasonably free from snow, ice, dirt and rubbish; vi) give prompt written notice to the County of any fire or casualty that may occur; vii) permit the County to enter the Facility and Open Area after appropriate notice

as provided in Section 7 to the EDA or its subtenant under the circumstances (which may be contemporaneous with the County's entry in case of an emergency) to make repairs to the Facility, to restore the same after damage or destruction by fire or other casualty or by partial condemnation, to complete repairs commenced but not completed by the EDA or its subtenant, to repair, at or before the end of the Term, all injury done by the installation or removal of the EDA or its subtenant's equipment, machinery, furniture, trade fixtures and property, and/or to comply with all orders and requirements of any governmental authority applicable to the Facility and to any occupation thereof, where, in the County's reasonable judgment, such entry is necessary to prevent waste, physical deterioration, safety hazards and/or other circumstances that threaten the value of the Open Space and the Marina, and where the EDA or its subtenant is in default of its covenants and obligations herein with respect to any of the foregoing matters.

(ix) Nothing in this Lease shall imply any duty or obligation upon the part of the County to do any work or to make any alterations, repairs (including, but not limited to, repairs and other restoration work made necessary due to any fire, other casualty or partial condemnation, irrespective of the sufficiency or availability of any fire or other insurance proceeds, or any award in condemnation, which may be payable in respect thereof), additions or improvements of any kind whatsoever to the Facility. The performance thereof by the County shall not constitute a waiver of the EDA or its subtenant's default in failing to perform the same.

(x) At the Final Expiration Date, ownership of the Facility and any Improvements made thereto shall transfer to the County. The EDA agrees to execute any documents necessary to effect such transfer.

(d) The EDA or its subtenant may, with the prior written consent of the County, make improvements to the landscaping in the Open Area, such as, but not limited to, the installation of sod, mulch, plants, trees, benches, water features, etc. ("Landscape Improvements"). Any request for Landscape Improvements shall be submitted to the County in writing along with plans illustrating the location and type of plantings and improvements proposed. Such plans shall be submitted by the EDA or its subtenant to the County for review and approval by the appropriate County departments. The County shall, in writing, approve, conditionally approve, or deny the Landscape Improvements within thirty (30) days of receipt of the request and illustrative plans.

12. No Liens on the Premises. The EDA or its subtenant shall keep the Premises free from any liens arising out of any work performed, materials furnished, or obligations incurred by or on behalf of the EDA or its subtenant. Should any claim of lien or other lien be filed against the Premises by reason of any act or omission of the EDA or its subtenant or any of the EDA or its subtenant's agents, employees, contractors, or representatives, then the EDA or its subtenant shall cause the same to be canceled and discharged of record by bond or otherwise within thirty (30) days after the filing thereof. Should the EDA or its subtenant fail to discharge such lien within such thirty (30) day period, then the County may discharge the same, in which event the EDA or its subtenant shall reimburse the County, on demand, the amount of the lien or the amount of the bond, if greater, plus all reasonable administrative costs incurred by the County in connection

therewith. The remedies provided herein shall be in addition to the other remedies available to the County under this Lease or otherwise. The EDA or its subtenant shall have no power to do any act or make any contract that may create or be the foundation of any lien, mortgage, or other encumbrance upon the reversionary or other estate of the County, or any interest of the County in the Premises. NO CONSTRUCTION LIENS OR OTHER LIENS FOR ANY LABOR, SERVICES, OR MATERIALS FURNISHED TO THE PREMISES SHALL ATTACH TO OR AFFECT THE INTEREST OF THE COUNTY IN AND TO THE PREMISES.

13. Damage or Destruction.

(a) If all or any part of the Building shall be destroyed or damaged by fire or other casualty required to be insured against under this Lease, then the County shall, as promptly as feasible, repair such damage and restore the Building as nearly as possible to the condition that existed immediately prior to the occurrence of such casualty. The County shall not be obligated to repair, restore, or replace any fixture, improvement, alteration, furniture, or other property owned, installed, or made by the EDA or any subtenant, all of which shall be repaired, restored, or replaced by the EDA or its subtenant. If, because of the substantial extent of the damage or destruction, the County should decide not to repair or restore the Premises, the County may terminate this Lease forthwith at the County's sole option by giving the EDA a written notice of its intention to terminate within thirty (30) days after the date of the fire, flood, or other casualty.

(b) The EDA shall immediately notify the County of any damage to the Premises caused by fire, flood, or any other casualty.

(c) No damage, compensation, or claim shall be payable by the County for inconvenience, loss of business, or annoyance arising from any repair or restoration of any portion of the Premises due to fire or other casualty.

14. Termination. Either party may terminate this Lease with written notice to the other party not less than sixty (60) days prior to the expiration of the Initial Term or any Renewal Term.

15. Events of Default. The failure by either the County or the EDA to satisfy any of the covenants, agreements, or conditions of this Lease shall be deemed to be an event of default ("Event of Default") under this Lease. Upon any Event of Default, the non-defaulting party shall provide written notice to the defaulting party. Upon receiving notice of an Event of Default, the defaulting party may (1) cure the default within thirty (30) days, or (2) request a meeting with the non-defaulting party's representative to find a mutually agreeable solution within thirty (30) days. For purposes of this Lease, the representatives for the County and the EDA shall be the County Administrator and the Chairman of the EDA, respectively.

16. Default Remedies. If either party fails to (1) cure an Event of Default within thirty (30) days, or (2) make progress towards a mutually-agreeable solution within thirty (30) days, the other party may provide notice of termination, effective thirty (30) days thereafter. In the case of any uncured default, termination, re-entry, expiration or dispossession of possession by summary proceedings or otherwise, the EDA shall remain liable only for all Rent and direct and documented damages that may be due or sustained by the County up to the time this Lease terminates or the County re-enters the Premises, whichever occurs earlier, and the performance of all other obligations of the EDA accruing under this Lease through such date (collectively "Accrued

Damages”). The County agrees to use reasonable good faith efforts to cooperate with the EDA in re-leasing the Premises and minimizing the damages suffered by the County and payable by the EDA.

17. Notices. All notices or other communications to be given under this Lease shall be made in writing and shall be deemed duly given upon delivery to the following applicable addresses either (i) in person or by reputable private courier (with receipt therefor); (ii) by certified or registered mail, return receipt requested; or (iii) by Federal Express or other reputable overnight courier service.

COUNTY

EDA

County Administrator  
Post Office Box 8784  
101 Mounts Bay Rd.  
Williamsburg, Virginia 23187

Chairman, Economic Development Authority  
Post Office Box 8784  
101 Mounts Bay Rd.  
Williamsburg, Virginia 23187

With a copy to:

With a copy to:

County Attorney  
Post Office Box 8784  
101 Mounts Bay Rd.  
Williamsburg, Virginia 23187

Russell Seymour, Economic Dev. Dir.  
Post Office Box 8784  
101 Mounts Bay Rd.  
Williamsburg, Virginia 23187

Any addresses may be changed by written notice duly given by either party to the other.

18. Governing Law. This Lease shall be governed by and construed in accordance with the laws of the Commonwealth of Virginia.

19. Successors and Assigns. The provisions of this Lease shall bind and inure to the benefit of each of the parties and their respective successors and assigns.

20. Attorney’s Fees. If the County and the EDA are involved in any litigation regarding the performance of their obligations under this Lease, then each party shall be responsible for all legal fees and expenses incurred by such party in connection with such litigation.

21. Estoppel Certificate. Within ten (10) days after receipt of a request, the County and the EDA agree to deliver to the other party a duly executed and acknowledged instrument certifying to the party’s best knowledge (i) whether this Lease is in full force and effect (and if not, why); (ii) as to the existence of any default, including the nature or extent of such default; (iii) whether there are any defenses, counterclaims or offsets to such default; (iv) whether there has been any modification or amendment to this Lease, and specifying the nature of such modification; (v) as to the commencement and expiration dates of the Term; (vi) as to the date to which Rent has been paid; and (vii) as to such other matters relating to this Lease as may be reasonably requested that do not modify or otherwise alter the rights under this Lease of the party executing the estoppel certificate. Any such certificate may be conclusively relied upon by the requesting party and by



any other person to whom it has been exhibited or delivered, and the contents of the certificate shall be binding upon the party executing such certificate.

22. Final Understanding; Captions; Pronouns. This Lease represents the final understanding and complete agreement between the County and the EDA. This Lease cannot be modified except by a writing signed by the County and the EDA. The captions in this Lease are for purposes of reference only and shall not limit or define the meaning of the provisions of this Lease. Where the context requires, the use of any gender shall include all genders, and the singular shall include the plural and vice-versa.

23. Amendment. This Lease may be amended by written agreement of both parties.

24. Common Representation. The County and the EDA understand that both parties to this Lease are represented by the James City County Attorney's Office (the "Attorney") and have each been informed by the Attorney of the potential conflicts that may arise from such common representation and consents to such common representation. In the event of any dispute between the County and the EDA regarding this Lease, the Attorney shall withdraw from representing either the County or the EDA in such dispute.

WITNESS the following signatures and seals:

COUNTY OF JAMES CITY, VIRGINIA:

  
\_\_\_\_\_  
Bryan Hill, County Administrator

ECONOMIC DEVELOPMENT AUTHORITY OF JAMES CITY COUNTY:

  
\_\_\_\_\_  
Robin Carson, Vice Chairman

**ITEM SUMMARY**

DATE: 12/13/2016

TO: The Board of Supervisors

FROM: Roberta Sulouff, Planner

SUBJECT: ZO-0013-2016. Zoning Ordinance Amendments to Permit Mobile Food Vending Vehicles (Food Trucks) in the B-1, General Business District

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**ATTACHMENTS:**

	Description	Type
▣	Staff Report	Staff Report
▣	Strikethrough Draft Ordinance Language - B-1 Use List (Section 24-390)	Ordinance
▣	Clean-Copy Draft Ordinance Language - B-1 Use List (Section 24-390)	Backup Material
▣	Unapproved minutes from the November 2, 2016, Planning Commission meeting	Backup Material
▣	Adopted Special Regulations Section 24-49	Backup Material
▣	Letter of Support from the James City County Economic Development Authority, dated September 14, 2016	Backup Material
▣	Restaurant Map	Backup Material

**REVIEWERS:**

Department	Reviewer	Action	Date
Planning	Holt, Paul	Approved	11/18/2016 - 3:39 PM
Development Management	Holt, Paul	Approved	11/18/2016 - 3:40 PM
Publication Management	Babbitt, Katterina	Approved	11/18/2016 - 3:46 PM
Legal Review	Kinsman, Adam	Approved	11/18/2016 - 4:03 PM
Board Secretary	Fellows, Teresa	Approved	11/23/2016 - 7:58 AM
Board Secretary	Purse, Jason	Approved	12/6/2016 - 9:27 AM
Board Secretary	Fellows, Teresa	Approved	12/6/2016 - 9:38 AM

## **MEMORANDUM**

DATE: December 13, 2016

TO: The Board of Supervisors

FROM: Roberta Sulouff, Planner

SUBJECT: Case No. ZO-0013-2016. Zoning Ordinance Amendments to Permit Mobile Food Vending Vehicles (Food Trucks) in the B-1, General Business District

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### **History**

At its February 9, 2016 work session, the Board of Supervisors asked staff and the Planning Commission to research the issue of food trucks and to begin a discussion of what may be the best fit for this use in James City County. A formal initiating resolution was adopted by the Board at its April 12 meeting, initiating the consideration of Zoning Ordinance amendments to permit food trucks in the M-1, Limited Business/Industrial, M-2, General Industrial and PUD-C, Planned Unit Development-Commercial Districts. Over the course of the following months, staff received a request from the Board to expand that research to the PL, Public Land District as well. Following meetings to research and discuss draft language in May, August and September 2016, the Policy Committee voted 4-0 at its September 15 meeting, to recommend approval of draft ordinance language allowing food trucks to operate in the M-1, M-2, PL and PUD-C districts subject to proposed administrative procedures and performance standards. On November 8, 2016, the Board of Supervisors voted 5-0 to adopt the proposed amendments.

On September 27 the Board of Supervisors adopted an initiating resolution for the consideration of amendments to expand the scope of this work by allowing food trucks to operate in the B-1, General Business District. Over the course of the Policy Committee's initial work on this issue, the committee indicated its desire to draft a set of regulations that could pertain to additional zoning districts should there be a later desire to allow food trucks to operate in districts other than M-1, M-2, PUD-C and PL. In later meetings, the committee reaffirmed that desire as it edited draft ordinance language, noting several times that the proposed permitting process and draft regulations could eventually apply to a number of districts.

Staff met with the Policy Committee at its October 13 meeting to receive feedback on research and draft ordinance language. Additionally, staff conducted an online survey targeted to local restaurant owners as well as potential food truck operators. Staff contacted potential food truck operators and owners of existing restaurants within 0.5 miles of any area zoned B-1 via email and the postal service. This correspondence included a link to an online questionnaire, an attached copy of the draft regulations and a map showing existing restaurants and areas zoned B-1. A public input meeting was held on October 17 to discuss the results of that survey and to facilitate additional public comment related to the proposed draft Ordinance language. At this meeting, the Policy Committee voted 4-0 to recommend forwarding consideration of these amendments to the Planning Commission.

### **Draft Ordinance**

Draft language is included as Attachment No. 1 and accomplishes the following:

- In the B-1, General Business Districts, adds "mobile food vending vehicles" as a permitted use in accordance with the proposed language in Section 24-49. Section 24-49 is included as Attachment No. 2

and remains as adopted at the November 8, 2016, Board of Supervisors meeting. No changes are proposed to this section as a result of permitting food trucks in the B-1 district.

### **Recommendation**

At its November 2, 2016 meeting, the Planning Commission voted to recommend approval of the proposed amendments by a vote of 6-1. Staff recommends the James City County Board of Supervisors approve the attached amendments to the Zoning Ordinance.

RS/nb

ZO-13-16FoodTruckAmend-mem

### Attachments:

1. Strikethrough Draft Ordinance Language - B-1 Use List (Section 24-390)
2. Clean-Copy Draft Ordinance Language - B-1 Use List (Section 24-390)
3. Unapproved minutes from the November 2, 2016, Planning Commission meeting
3. Adopted Special Regulations Section 24-49
4. Letter of Support from the James City County Economic Development Authority, dated September 14, 2016.
5. Restaurant Map

ORDINANCE NO. \_\_\_\_\_

AN ORDINANCE TO AMEND AND REORDAIN CHAPTER 24, ZONING, OF THE CODE OF THE COUNTY OF JAMES CITY, VIRGINIA, BY AMENDING ARTICLE V, DISTRICTS; DIVISION 10, GENERAL BUSINESS DISTRICT, B-1; SECTION 24-390, USE LIST.

BE IT ORDAINED by the Board of Supervisors of the County of James City, Virginia, that Chapter 24, Zoning, is hereby amended and reordained by amending Article V, Districts; Division 10, General Business District, B-1; Section 24-390, Use list.

**Chapter 24. Zoning**

**Article V. Districts**

**Division 10. General Business District, B-1**

**Sec. 24-390. Use list.**

Reference section 24-11 for special use permit requirements for certain commercial uses and exemptions.

In the General Business District, B-1, structures to be erected or land to be used, shall be for one or more of the following uses:

Use Category	Use List	Permitted Uses	Specially Permitted Uses
Residential	An apartment or living quarters for a guard, caretaker, proprietor or the person employed on the premises, which is clearly secondary to the commercial use of the property	P	
Commercial	Accessory uses and structures, as defined in section 24-2	P	
	Adult day care centers	P	
	Amphitheaters		SUP
	Antique shops	P	
	Arts and crafts, hobby and handicraft shops	P	
	Auction houses	P	
	Bakeries or fish markets	P	
	Banks and other financial institutions	P	
	Barber and beauty salons	P	
	Business and professional offices	P	
	Campgrounds		SUP
	Catering and meal preparation	P	

	Child day care centers	P	
	Contractor offices (with storage of materials and equipment limited to a fully enclosed building)	P	
	Convenience stores which sell and dispense fuel in accordance with section 24-38		SUP
	Convention centers		SUP
	Country clubs and golf courses, public or private		SUP
	Drug stores	P	
	Dry cleaners and laundries	P	
	Farmer's market	P	
	Feed, seed and farm supply stores	P	
	Firearms sales and service	P	
	Firing and shooting ranges, limited to a fully enclosed building		SUP
	Flea markets		SUP
	Funeral homes	P	
	Gift and souvenir stores	P	
	Grocery stores	P	
	Health and exercise clubs, fitness centers	P	
	Heliports and helistops, as an accessory use		SUP
	Hospitals		SUP
	Hotels and motels	P	
	Indoor centers of amusement including billiard halls, arcades, pool rooms, bowling alleys, dance clubs and bingo halls	P	
	Indoor sport facilities (excluding firing and shooting ranges)	P	
	Indoor theaters	P	
	Janitorial service establishments	P	
	Kennels and animal boarding facilities	P	
	Limousine services (with maintenance limited to a fully enclosed building)	P	
	Lodges, civic clubs, fraternal organizations and service clubs	P	
	Lumber and building supply (with storage limited to a fully enclosed building or screened from view with landscaping and fencing with a maximum height of 12 feet)	P	
	Machinery sales and service (with storage and repair limited to a fully enclosed building)	P	

	Marinas, docks, piers, yacht clubs, boat basins, boat storage and servicing, repair and sale facilities for the same; if fuel is sold, then in accordance with section 24-38	P	
	Marine or waterfront businesses to include the receipt, storage and transshipment of waterborne commerce or seafood receiving, packaging or distribution	P	
	Medical clinics or offices	P	
	<i>Mobile food vending vehicles in accordance with Section 24-49</i>	<i>P</i>	
	Museums	P	
	New and/or rebuilt automotive parts sales (with storage limited to a fully enclosed building)	P	
	Nursing homes		SUP
	Off-street parking as required by article II, division 2 of this chapter	P	
	Office supply stores	P	
	Outdoor centers of amusement, including miniature golf, bumper boats and waterslide parks		SUP
	Outdoor sports facilities, including golf driving ranges, batting cages and skate parks		SUP
	Parking lots, structures or garages	P	
	Pet stores and pet supply sales	P	
	Photography, artist and sculptor stores and studios	P	
	Plumbing and electrical supply and sales (with storage limited to a fully enclosed building)	P	
	Printing, mailing, lithographing, engraving, photocopying, blueprinting and publishing establishments	P	
	Radio and television stations and accessory antenna or towers which are 60 feet or less in height	P	
	Research, development and design facilities or laboratories	P	
	Restaurants, including fast food restaurants, tea rooms, coffee shops, and taverns	P	
	Retail and service stores, including the following stores: alcohol, appliances, books, cabinets, cameras, candy, carpet, coin, department, dressmaking, electronics, florist, furniture, furrier, garden supply, gift, gourmet foods, greeting cards, handicrafts, hardware, home appliance, health and beauty aids, ice cream, jewelry, locksmith, music, office supply, optical goods, paint, pet, photography, picture framing, plant supply, secretarial services, shoes, sporting goods, stamps, tailor, tobacco and pipes, toys,	P	

	travel agencies, upholstery, variety, wearing apparel and yard goods		
	Retail food stores	P	
	Security service offices	P	
	Small-scale alcohol production	P	
	Taxi service	P	
	Theme parks greater than 10 acres in size		SUP
	Tourist homes	P	
	Vehicle repair and service, including tire, transmission, glass, body and fender, and other automotive product sales, new and/or rebuilt (with major repair limited to a fully enclosed building and storage of parts and vehicles screened from adjacent property by landscaping and fencing)	P	
	Vehicle and trailer sales and services (with major repair limited to a fully enclosed building)	P	
	Vehicle rentals	P	
	Vehicle service stations; if fuel is sold, then in accordance with section 24-38		SUP
	Veterinary hospitals (with all activities limited to a fully enclosed building with the exception of supervised animal exercise while on a leash)	P	
	Wholesale and warehousing (with storage limited to a fully enclosed building)	P	
Civic	Fire stations	P	
	Governmental offices	P	
	Libraries	P	
	Nonemergency medical transport		SUP
	Places of public assembly	P	
	Post offices	P	
	Schools		SUP
Utility	Antennas and towers, self-supported, which are 60 feet or less in height	P	
	Antennas or towers in excess of 60 feet in height		SUP
	Electrical generation facilities (public or private), steam generation facilities, and electrical substations with a capacity of 5,000 kilovolt amperes or more and electrical transmission lines capable of transmitting 69 kilovolts or more		SUP



	Railroad facilities including tracks, bridges and stations. Spur lines which are to serve and are accessory to existing or proposed development adjacent to existing railroad rights-of-way and track and safety improvements in existing railroad rights-of-way, are permitted generally and shall not require a special use permit		SUP
	Telephone exchanges and telephone switching stations	P	
	Tower mounted wireless communications facilities in accordance with division 6, Wireless Communications Facilities, in excess of 60 feet in height		SUP
	Transmission pipelines, public or private, including pumping stations and accessory storage, for natural gas, propane gas, petroleum products, chemicals, slurry coal and any other gases, liquids or solids. Extensions for private connections to existing pipelines, which are intended to serve an individual residential or commercial customer and which are accessory to existing or proposed development, are permitted generally and shall not require a special use permit		SUP
	Wireless communications facilities that utilize alternative mounting structures, or are camouflaged and comply with division 6, Wireless Communications Facilities	P	
	Water facilities, public or private and sewer facilities (public), including, but not limited to, treatment plants, pumping stations, storage facilities and transmission mains, wells and associated equipment such as pumps to be owned and operated by political jurisdictions. However, the following are permitted generally and shall not require a special use permit:		SUP
	(a) Private connections to existing mains that are intended to serve an individual customer and that are accessory to existing or proposed development, with no additional connections to be made to the line; and		
	(b) Distribution lines and local facilities within a development, including pump stations		
Open	Timbering, in accordance with section 24-43	P	
Industrial Uses	Processing, assembly and manufacture of light industrial products or components, with all storage, processing, assembly and manufacture conducted indoors or under cover, with no dust, noise, odor or other objectionable effect.		SUP
	Waste disposal facilities		SUP

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Michael J. Hipple  
Chairman, Board of Supervisors

ATTEST:

---

Bryan J. Hill  
Clerk to the Board

	VOTES		
	<u>AYE</u>	<u>NAY</u>	<u>ABSTAIN</u>
MCGLENNON	_____	_____	_____
LARSON	_____	_____	_____
ONIZUK	_____	_____	_____
SADLER	_____	_____	_____
HIPPLE	_____	_____	_____

Adopted by the Board of Supervisors of James City County, Virginia, this 13th day of December, 2016.

ZO-13-16FoodTruckAmend-ord

ORDINANCE NO. \_\_\_\_\_

AN ORDINANCE TO AMEND AND REORDAIN CHAPTER 24, ZONING, OF THE CODE OF THE COUNTY OF JAMES CITY, VIRGINIA, BY AMENDING ARTICLE V, DISTRICTS; DIVISION 10, GENERAL BUSINESS DISTRICT, B-1; SECTION 24-390, USE LIST.

BE IT ORDAINED by the Board of Supervisors of the County of James City, Virginia, that Chapter 24, Zoning, is hereby amended and reordained by amending Article V, Districts; Division 10, General Business District, B-1; Section 24-390, Use list.

**Chapter 24. Zoning**

**Article V. Districts**

**Division 10. General Business District, B-1**

**Sec. 24-390. Use list.**

Reference section 24-11 for special use permit requirements for certain commercial uses and exemptions.

In the General Business District, B-1, structures to be erected or land to be used, shall be for one or more of the following uses:

Use Category	Use List	Permitted Uses	Specially Permitted Uses
Residential	An apartment or living quarters for a guard, caretaker, proprietor or the person employed on the premises, which is clearly secondary to the commercial use of the property	P	
Commercial	Accessory uses and structures, as defined in section 24-2	P	
	Adult day care centers	P	
	Amphitheaters		SUP
	Antique shops	P	
	Arts and crafts, hobby and handicraft shops	P	
	Auction houses	P	
	Bakeries or fish markets	P	
	Banks and other financial institutions	P	
	Barber and beauty salons	P	
	Business and professional offices	P	
	Campgrounds		SUP
	Catering and meal preparation	P	

	Child day care centers	P	
	Contractor offices (with storage of materials and equipment limited to a fully enclosed building)	P	
	Convenience stores which sell and dispense fuel in accordance with section 24-38		SUP
	Convention centers		SUP
	Country clubs and golf courses, public or private		SUP
	Drug stores	P	
	Dry cleaners and laundries	P	
	Farmer's market	P	
	Feed, seed and farm supply stores	P	
	Firearms sales and service	P	
	Firing and shooting ranges, limited to a fully enclosed building		SUP
	Flea markets		SUP
	Funeral homes	P	
	Gift and souvenir stores	P	
	Grocery stores	P	
	Health and exercise clubs, fitness centers	P	
	Heliports and helistops, as an accessory use		SUP
	Hospitals		SUP
	Hotels and motels	P	
	Indoor centers of amusement including billiard halls, arcades, pool rooms, bowling alleys, dance clubs and bingo halls	P	
	Indoor sport facilities (excluding firing and shooting ranges)	P	
	Indoor theaters	P	
	Janitorial service establishments	P	
	Kennels and animal boarding facilities	P	
	Limousine services (with maintenance limited to a fully enclosed building)	P	
	Lodges, civic clubs, fraternal organizations and service clubs	P	
	Lumber and building supply (with storage limited to a fully enclosed building or screened from view with landscaping and fencing with a maximum height of 12 feet)	P	
	Machinery sales and service (with storage and repair limited to a fully enclosed building)	P	

	Marinas, docks, piers, yacht clubs, boat basins, boat storage and servicing, repair and sale facilities for the same; if fuel is sold, then in accordance with section 24-38	P	
	Marine or waterfront businesses to include the receipt, storage and transshipment of waterborne commerce or seafood receiving, packaging or distribution	P	
	Medical clinics or offices	P	
	Mobile food vending vehicles in accordance with Section 24-49	P	
	Museums	P	
	New and/or rebuilt automotive parts sales (with storage limited to a fully enclosed building)	P	
	Nursing homes		SUP
	Off-street parking as required by article II, division 2 of this chapter	P	
	Office supply stores	P	
	Outdoor centers of amusement, including miniature golf, bumper boats and waterslide parks		SUP
	Outdoor sports facilities, including golf driving ranges, batting cages and skate parks		SUP
	Parking lots, structures or garages	P	
	Pet stores and pet supply sales	P	
	Photography, artist and sculptor stores and studios	P	
	Plumbing and electrical supply and sales (with storage limited to a fully enclosed building)	P	
	Printing, mailing, lithographing, engraving, photocopying, blueprinting and publishing establishments	P	
	Radio and television stations and accessory antenna or towers which are 60 feet or less in height	P	
	Research, development and design facilities or laboratories	P	
	Restaurants, including fast food restaurants, tea rooms, coffee shops, and taverns	P	
	Retail and service stores, including the following stores: alcohol, appliances, books, cabinets, cameras, candy, carpet, coin, department, dressmaking, electronics, florist, furniture, furrier, garden supply, gift, gourmet foods, greeting cards, handicrafts, hardware, home appliance, health and beauty aids, ice cream, jewelry, locksmith, music, office supply, optical goods, paint, pet, photography, picture framing, plant supply, secretarial services, shoes, sporting goods, stamps, tailor, tobacco and pipes, toys,	P	

	travel agencies, upholstery, variety, wearing apparel and yard goods		
	Retail food stores	P	
	Security service offices	P	
	Small-scale alcohol production	P	
	Taxi service	P	
	Theme parks greater than 10 acres in size		SUP
	Tourist homes	P	
	Vehicle repair and service, including tire, transmission, glass, body and fender, and other automotive product sales, new and/or rebuilt (with major repair limited to a fully enclosed building and storage of parts and vehicles screened from adjacent property by landscaping and fencing)	P	
	Vehicle and trailer sales and services (with major repair limited to a fully enclosed building)	P	
	Vehicle rentals	P	
	Vehicle service stations; if fuel is sold, then in accordance with section 24-38		SUP
	Veterinary hospitals (with all activities limited to a fully enclosed building with the exception of supervised animal exercise while on a leash)	P	
	Wholesale and warehousing (with storage limited to a fully enclosed building)	P	
Civic	Fire stations	P	
	Governmental offices	P	
	Libraries	P	
	Nonemergency medical transport		SUP
	Places of public assembly	P	
	Post offices	P	
	Schools		SUP
Utility	Antennas and towers, self-supported, which are 60 feet or less in height	P	
	Antennas or towers in excess of 60 feet in height		SUP
	Electrical generation facilities (public or private), steam generation facilities, and electrical substations with a capacity of 5,000 kilovolt amperes or more and electrical transmission lines capable of transmitting 69 kilovolts or more		SUP

	Railroad facilities including tracks, bridges and stations. Spur lines which are to serve and are accessory to existing or proposed development adjacent to existing railroad rights-of-way and track and safety improvements in existing railroad rights-of-way, are permitted generally and shall not require a special use permit		SUP
	Telephone exchanges and telephone switching stations	P	
	Tower mounted wireless communications facilities in accordance with division 6, Wireless Communications Facilities, in excess of 60 feet in height		SUP
	Transmission pipelines, public or private, including pumping stations and accessory storage, for natural gas, propane gas, petroleum products, chemicals, slurry coal and any other gases, liquids or solids. Extensions for private connections to existing pipelines, which are intended to serve an individual residential or commercial customer and which are accessory to existing or proposed development, are permitted generally and shall not require a special use permit		SUP
	Wireless communications facilities that utilize alternative mounting structures, or are camouflaged and comply with division 6, Wireless Communications Facilities	P	
	Water facilities, public or private and sewer facilities (public), including, but not limited to, treatment plants, pumping stations, storage facilities and transmission mains, wells and associated equipment such as pumps to be owned and operated by political jurisdictions. However, the following are permitted generally and shall not require a special use permit:		SUP
	(a) Private connections to existing mains that are intended to serve an individual customer and that are accessory to existing or proposed development, with no additional connections to be made to the line; and		
	(b) Distribution lines and local facilities within a development, including pump stations		
Open	Timbering, in accordance with section 24-43	P	
Industrial Uses	Processing, assembly and manufacture of light industrial products or components, with all storage, processing, assembly and manufacture conducted indoors or under cover, with no dust, noise, odor or other objectionable effect.		SUP
	Waste disposal facilities		SUP

**Unapproved Minutes of the November 2, 2016  
Planning Commission Meeting**

**ZO-0013-2016. Zoning Ordinance Amendments to Permit Mobile Food Vending Vehicles (Food Trucks) in the B-1, General Business District**

Ms. Roberta Sulouff provided a report to the Commission on the Zoning Ordinance amendments to permit mobile food vending vehicles in the B-1, General Business District. Ms. Sulouff stated that on September 27 the Board of Supervisors adopted an initiating resolution for the consideration of amendments to allow food trucks to operate in B-1, General Business District. Ms. Sulouff stated that the additional amendments were an expansion of the work done to develop performance standards for mobile food vending vehicles and allow them to operate in the M-1, M-2, PUC-C and PL Districts. Ms. Sulouff stated that the Policy Committee met twice in October to consider draft language. Ms. Sulouff stated that staff incorporated feedback from those meetings as well as the results of the Business Community Survey and feedback from the public meeting in the draft ordinance. Ms. Sulouff stated that no changes to the performance standards are proposed; only amendments to make mobile food vending vehicles a permitted use in the B-1 District. Ms. Sulouff stated that staff recommends that the Commission recommend approval of the amendments to the Board of Supervisors.

Mr. O'Connor opened the floor for questions from the Commission.

Mr. Richardson inquired when the Board of Supervisors would consider the amendments.

Ms. Sulouff stated that the ordinance amendments would be seen by the Board at their December meeting.

Mr. Wright inquired about who would be required to give permission to use the property in the instance of a shopping center where the storefronts are leased.

Ms. Sulouff stated that only the owner of the shopping center would be required to give permission.

Mr. Holt clarified that where there are restaurants on outparcels, those parcels are subdivided out. Mr. Holt noted that food trucks would not be able to operate within 100 feet of any restaurant, whether on an outparcel or one of the in-line shops.

Ms. Bledsoe commended staff and the Policy Committee for their efforts in moving the ordinance amendments forward.

Mr. O'Connor opened the public hearing.

Mr. Tim Harris, 117 Argall Town Lane, representing the Economic Development Authority, addressed the Commission in support of the amendments. Mr. Harris noted that the amendments put the County on competitive footing with adjacent localities. Mr. Harris further noted that food trucks are important amenity for younger residents. Mr. Harris stated that food trucks support the



growing craft brewery industry and will help the County grow as a food destination by encouraging new and innovative food offerings.

As no one further wished to speak, Mr. O'Connor closed the public hearing.

Mr. O'Connor opened the floor for discussion by the Commission.

Mr. Krapf made a motion to recommend approval of the ordinance amendments.

Mr. Wright stated that he supported food trucks in the M-1, M-2, PUD-C and PL district to allow these businesses an opportunity to grow. Mr. Wright further stated that he believed allowing food trucks in the B-1 District would disadvantage the existing brick and mortar restaurants which have higher operational costs. Mr. Wright stated that he would not support the amendments.

Mr. Schmidt stated that he is supportive of the current amendment but would be hesitant to support further amendments until enough time passes to evaluate the impact of the current amendments.

Ms. Bledsoe noted that craft breweries cannot sell food and that as the industry grows in James City County, being able to provide food trucks in the B-1 District will be very important. Ms. Bledsoe stated that she supports the amendments.

Mr. O'Connor stated that he sees food trucks as a complimentary use and not competitive to brick and mortar restaurants as each fills a different niche.

On a roll call vote, the Commission voted to recommend approval of ZO-0013-2016. Zoning Ordinance Amendments to Permit Mobile Food Vending Vehicles (Food Trucks) in the B-1, General Business District (6-0). Ayes: Schmidt, Richardson, Basic, Bledsoe, Krapf, O'Connor. Nay: Wright.

NOV 08 2016

Board of Supervisors  
James City County, VA

**Chapter 24. Zoning**

**Article II. Special Regulations**

**Division I. In General**

***Sec. 24-49. Mobile food vending vehicles (food trucks)***

*In order to protect the health, safety and welfare of the citizens of James City County and to ensure that the unique aesthetic characteristics of the area are maintained, the following regulations shall apply to the permitting and operation of mobile food vending vehicles ("food trucks") on public and private property within certain zoning districts of the county. These regulations shall not apply to the operation of food trucks operating in conjunction with a special event, for which a special event permit would be required per chapter 14 of James City County Code, or to food trucks operating in conjunction with a privately catered event not serving the general public.*

*(a) Administration. The operation of food trucks on appropriately zoned properties shall be permitted by administrative permit. Written application for a mobile food vendor permit shall be made to the zoning administrator or his designee. Such application shall be on forms provided by the county and shall be accompanied by the following:*


- (1) A copy of a valid health permit from the Virginia Department of Health stating that food truck operation meets all applicable standards. A valid health permit must be maintained for the duration of the permit.*
- (2) Verification of Fire Department inspection and approval.*
- (3) Written documentation of the consent of the owner(s) of the property or properties on which the food truck will be operated.*

*Upon review and determination that the proposed food truck operation complies with the standards set forth in this section, the zoning office shall issue a permit. Any permit that is found in violation or not in compliance with this section may be revoked. The administrative permit shall be issued for a period not to exceed one (1) year, at which time the operator may apply to renew their permit. At any time during the one (1) year permit period, the operator may amend an approved permit application to include additional vending locations by submitting written documentation to the zoning administrator of the consent of the owner(s) of the newly proposed property or properties.*

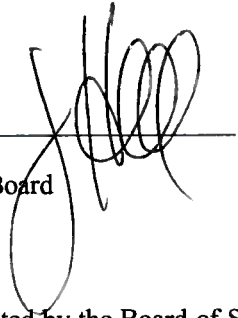
*(b) General Operational Requirements. The following standards and conditions shall apply to all food truck operations:*

- (1) Parking: food trucks shall not park, with the intent of vending, along public rights-of-way, or in designated handicapped parking spaces. Food trucks shall not obstruct pedestrian or bicycle access or passage, impede traffic or parking lot circulation or create safety or visibility problems for vehicles and pedestrians.*
- (2) Hours of Operation: Food trucks shall operate only during the operational hours of the establishment on the premises.*

- (1) *Parking: food trucks shall not park, with the intent of vending, along public rights-of-way, or in designated handicapped parking spaces. Food trucks shall not obstruct pedestrian or bicycle access or passage, impede traffic or parking lot circulation or create safety or visibility problems for vehicles and pedestrians.*
- (2) *Hours of Operation: Food trucks shall operate only during the operational hours of the establishment on the premises.*
- (3) *Permitting: The operator shall display, in a prominent location visible to potential customers, a copy of a valid business license and a copy of a valid health permit.*
- (4) *Setbacks: Food trucks shall be parked at least one hundred (100) feet from any off-site residential dwelling or the main entrance of any existing off-site restaurant establishment.*
- (5) *Signage: Not more than one (a) A-frame signs may be used in conjunction with the food truck operation. Such signs shall not exceed six (6) square feet in area (e.g., each face of the A-frame) and four (4) feet in height, shall be positioned within thirty (30) feet of the food truck and shall not be placed within a public road right-of-way. Signage that is permanently affixed to the food truck shall be permitted; however, flags, banners, flashing signs or other decorative appurtenances, whether attached or detached, shall not be allowed.*
- (6) *Lighting: No lighting shall be displayed on the exterior of the food truck. If a food truck is operating after dark, appropriate lighting may be used to illuminate the menu board and the customer waiting area adjacent to the vehicle. Such lighting shall be provided in accordance with section 24-132 of James City County Code and shall not produce light trespass onto adjacent roadways or properties or into the night sky.*
- (7) *Noise: The volume of any background music played from the food truck shall be limited so as not to be plainly audible beyond the property boundaries of the site where the food truck is located, or at a distance of one hundred (100) feet from the vehicle, whichever is less.*
- (8) *Trash: Operators must provide at least one trash receptacle within ten (10) feet of their food truck.*
- (9) *Liquid Waste: No liquid wastes used in the operation of the food truck or food vending shall be allowed to be discharged from the food truck except into an approved sewerage system as permitted by law.*
- (10) *One (1) station for items such as condiments and paper products and the like, may be set up next to the food truck. Such station may be covered by a roll-out awning extending from the food truck or by a temporary canopy not exceeding ten (10) feet by ten (10) feet in size.*

  
Michael J. Hipple  
Chairman, Board of Supervisors

ATTEST:

  
Bryan J. Hill  
Clerk to the Board

	VOTES		
	<u>AYE</u>	<u>NAY</u>	<u>ABSTAIN</u>
MCGLENNON	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LARSON	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ONIZUK	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SADLER	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HIPPLE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Adopted by the Board of Supervisors of James City County, Virginia, this 8th day of November,  
2016.



Economic Development Authority  
101-D Mounts Bay Road  
PO Box 8784  
Williamsburg, VA 23187  
P: 757-253-6607  
[yesjamescitycountyva.com](http://yesjamescitycountyva.com)

September 14, 2016

Mr. Richard Krapf  
Chair, Policy Committee  
James City County Planning Commission  
PO Box 8784  
Williamsburg, VA 23187

Dear Mr. Krapf:

On behalf of the James City County Economic Development Authority (EDA), I would like to commend county staff and the Planning Commission for their work drafting the Mobile Food Vending Vehicle (Food Truck) ordinance. Food trucks are growing in acceptance and popularity across the country, and more recently across Hampton Roads. The EDA is supportive of allowing the operation of food trucks in James City County.

As currently proposed, the ordinance applies to the M-1, M-2, PUD-C and PL zoning districts. This would allow reasonably priced and accessible dining options to the employees of our industrial parks and visitors to our public spaces and County parks.

Furthermore, food trucks provide dining options to visitors of craft beer and distillery operations. As breweries and distilleries are currently permitted by-right in the M-1, M-2 and B-1 zoning districts, the EDA unanimously recommends that the ordinance be expanded to include B-1 districts. This would provide consistency for both food truck operators and brewery and distillery operations, and support the symbiotic relationship between these two business sectors.

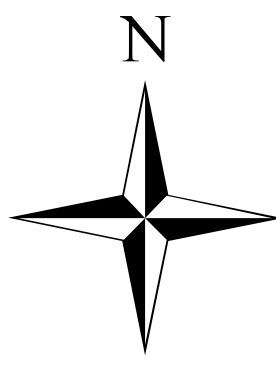
The EDA is excited about this new opportunity in James City County, which can encourage food service entrepreneurs to offer diverse and interesting food options and provide a lower-cost start up model for new businesses, who may transition their success into brick and mortar operations. I am pleased to offer the EDA's support for the proposed Mobile Food Vending Vehicle ordinance, and strongly encourage you to consider including the B-1 district into the ordinance.

Sincerely,

Thomas G. Tingle  
Chairman, EDA

Cc: JCC Planning Staff  
JCC County Administration





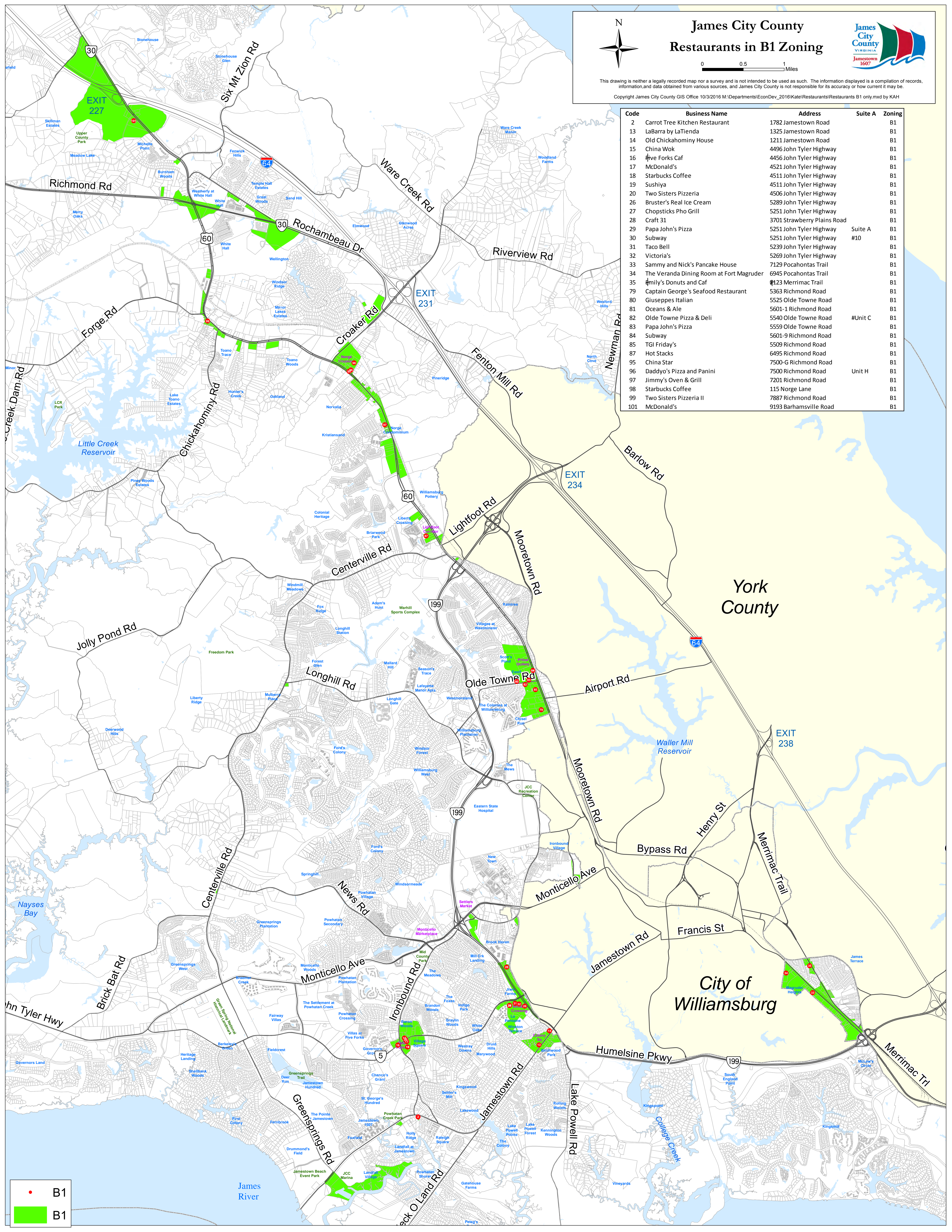
James City County  
Restaurants in B1 Zoning



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.

Copyright James City County GIS Office 10/3/2016 M:\Departments\EconDev\_2016\Kate\Restaurants\Restaurants B1 only.mxd by KAH

Code	Business Name	Address	Suite A	Zoning
2	Carrot Tree Kitchen Restaurant	1782 Jamestown Road		B1
13	LaBarra by LaTienda	1325 Jamestown Road		B1
14	Old Chickahominy House	1211 Jamestown Road		B1
15	China Wok	4496 John Tyler Highway		B1
16	Five Forks Caf	4456 John Tyler Highway		B1
17	McDonald's	4521 John Tyler Highway		B1
18	Starbucks Coffee	4511 John Tyler Highway		B1
19	Sushiya	4511 John Tyler Highway		B1
20	Two Sisters Pizzeria	4506 John Tyler Highway		B1
26	Bruster's Real Ice Cream	5289 John Tyler Highway		B1
27	Chopsticks Pho Grill	5251 John Tyler Highway		B1
28	Craft 31	3701 Strawberry Plains Road		B1
29	Papa John's Pizza	5251 John Tyler Highway	Suite A	B1
30	Subway	5251 John Tyler Highway	#10	B1
31	Taco Bell	5239 John Tyler Highway		B1
32	Victoria's	5269 John Tyler Highway		B1
33	Sammy and Nick's Pancake House	7129 Pocahontas Trail		B1
34	The Veranda Dining Room at Fort Magruder	6945 Pocahontas Trail		B1
35	Emily's Donuts and Caf	4123 Merrimac Trail		B1
79	Captain George's Seafood Restaurant	5363 Richmond Road		B1
80	Giuseppes Italian	5525 Olde Towne Road		B1
81	Oceans & Ale	5601-1 Richmond Road		B1
82	Olde Towne Pizza & Deli	5540 Olde Towne Road	#Unit C	B1
83	Papa John's Pizza	5559 Olde Towne Road		B1
84	Subway	5601-9 Richmond Road		B1
85	TGI Friday's	5509 Richmond Road		B1
87	Hot Stacks	6495 Richmond Road		B1
95	China Star	7500-G Richmond Road		B1
96	Daddy's Pizza and Panini	7500 Richmond Road	Unit H	B1
97	Jimmy's Oven & Grill	7201 Richmond Road		B1
98	Starbucks Coffee	115 Norge Lane		B1
99	Two Sisters Pizzeria II	7887 Richmond Road		B1
101	McDonald's	9193 Barhamsville Road		B1



B1

B1



**ITEM SUMMARY**

DATE: 12/13/2016

TO: The Board of Supervisors

FROM: Roberta Sulouff, Planner

SUBJECT: SUP-0015-2016. Lafayette High School Auxiliary Gym

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**ATTACHMENTS:**

	Description	Type
▣	res	Resolution
▣	Staff Report	Staff Report
▣	Unapproved Minutes from the November 2, 2016, Planning Commission Meeting	Backup Material
▣	Location Map	Backup Material
▣	Master Plan	Backup Material
▣	Illustrative Building Elevations	Backup Material

**REVIEWERS:**

Department	Reviewer	Action	Date
Planning	Holt, Paul	Approved	11/18/2016 - 3:36 PM
Development Management	Holt, Paul	Approved	11/18/2016 - 3:36 PM
Publication Management	Burcham, Nan	Approved	11/18/2016 - 3:47 PM
Legal Review	Kinsman, Adam	Approved	11/18/2016 - 4:01 PM
Board Secretary	Fellows, Teresa	Approved	11/23/2016 - 7:58 AM
Board Secretary	Purse, Jason	Approved	12/6/2016 - 9:27 AM
Board Secretary	Fellows, Teresa	Approved	12/6/2016 - 9:45 AM

## **RESOLUTION**

### **CASE NO. SUP-0015-2016. LAFAYETTE HIGH SCHOOL AUXILIARY GYMNASIUM**

WHEREAS, the Board of Supervisors of James City County, Virginia, has adopted by ordinance specific land uses that shall be subjected to a Special Use Permit (SUP) process; and

WHEREAS, Mr. Carroll Collins, of Kimley Horn and Associates Inc., on behalf of the Williamsburg-James City County School Board, has applied for an SUP to allow for operation of a school use and the construction of an approximately 10,000 square foot auxiliary gymnasium and associated infrastructure on property located at 4460 Longhill Road, further identified as James City County Real Estate Tax Map No. 3230100001 as shown on a plan titled "Lafayette High School for James City County, Master Plan" dated September 20, 2016, prepared by Kimley Horn and Associates, Inc.; and

WHEREAS, a public hearing was advertised, adjoining property owners were notified and a hearing was conducted on Case No. SUP-0015-2016; and

WHEREAS, the Planning Commission, following its public hearing on November 2, 2016, recommended approval of this application by a vote of 7-0. At the same meeting, the Planning Commission approved a resolution finding the proposal consistent with the Comprehensive Plan adopted in 2015, "Toward 2035: Leading the Way," by a vote of 7-0.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of James City County, Virginia, after consideration of the factors in Section 24-9 of the James City County Code, approves the existing school use, thereby bringing the school use into conformance with the County's zoning ordinance.

BE IT FURTHER RESOLVED that the Board of Supervisors of James City County, Virginia, after consideration of the factors in Section 24-9 of the James City County Code, does hereby approve the issuance of Case No. SUP-0015-2016 as described herein subject to the conditions below:

1. Master Plan and Use. This SUP shall be valid for the existing school use, construction of an approximately 10,000 square foot gymnasium and other minor improvements to the site located at 4460 Longhill Road and further identified as James City County Real Estate Tax Map No. 3230100001 (the "Property"). Development of the Property shall occur generally as shown on the Master Plan prepared by Kimley-Horn and Associates, Inc., entitled "Lafayette High School for James City County, Master Plan" dated September 20, 2016, with any deviations considered per Section 24-23(a)(2) of the Zoning Ordinance.
2. Water Conservation. The Williamsburg-James City County School Board (the "Owner") shall be responsible for developing and enforcing water conservation standards to be submitted to and approved by the James City Service Authority prior to final site plan approval of the gymnasium. The standards shall include, but shall not be limited to, such water conservation measures as limitations on the installation and use of irrigation systems and irrigation wells, the use of approved landscaping materials including the use of drought resistant native and other adopted low water use landscaping materials and warm season turf where appropriate and the use of water conserving fixtures and appliances to promote water conservation and minimize the use of public water resources.



3. Archaeological Study. If an archeological site is discovered during land disturbing activities, a Phase I Archaeological Study for any disturbed area shall be submitted to the Director of Planning for his review and approval. All construction work involving subsurface disturbance will be halted in the area of the site and in the surrounding area where further subsurface remains can reasonably be expected to occur and the Owner shall immediately notify the County of the discovery. After completion of the Phase I Archaeological Study, construction work may continue in the project area outside the discovered archeological site(s). A treatment plan shall be submitted and approved by the Director of Planning for all sites in the Phase I study that are recommended for a Phase II evaluation and/or identified as being eligible for inclusion on the National Register of Historic Places. If a Phase II study is undertaken, such a study shall be approved by the Director of Planning and a treatment plan for said sites shall be submitted to, and approved by, the Director of Planning for sites that are determined to be eligible for inclusion on the National Register of Historic Places and/or those sites that require a Phase III study. If in the Phase III study, a site is determined eligible for nomination to the National Register of Historic Places and said site is to be preserved in place, the treatment plan shall include nomination of the site to the National Register of Historic Places. If a Phase III study is undertaken for said sites, such studies shall be approved by the Director of Planning prior to resuming land disturbing activities within the study areas. All Phase I, Phase II and Phase III studies shall meet the Virginia Department of Historic Resources' *Guidelines for Preparing Archaeological Resource Management Reports* and the Secretary of the Interior's *Standards and Guidelines for Archaeological Documentation*, as applicable, and shall be conducted under the supervision of a qualified archaeologist who meets the qualifications set forth in the Secretary of the Interior's *Professional Qualification Standards*. All approved treatment plans shall be incorporated into the plan of development for the Property and the clearing, grading or construction activities thereon.

If any archaeological site is determined to meet the National Register Criteria (36 CFR Part 60), the Owner shall prepare a plan for its avoidance, protection, recovery of information or destruction without data recovery. The plan shall be approved by the County prior to implementation. Work in the affected area shall not proceed until either, (a) the development and implementation of appropriate data recovery or other recommended mitigation procedures, or (b) the determination is made that the location remains are not eligible for inclusion on the National Register.

4. Commencement of Construction. If construction of the gymnasium has not commenced within 36 months from the issuance of this SUP, the SUP shall become void. Construction shall be defined as obtaining permits for building construction and footings and/or foundation has passed required inspections.
5. Severance Clause. This SUP is not severable. Invalidation of any word, phrase, clause, sentence or paragraph shall invalidate the remainder.

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Michael J. Hipple  
Chairman, Board of Supervisors

ATTEST:

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Bryan J. Hill  
Clerk to the Board

	VOTES		
	<u>AYE</u>	<u>NAY</u>	<u>ABSTAIN</u>
MCGLENNON	_____	_____	_____
LARSON	_____	_____	_____
ONIZUK	_____	_____	_____
SADLER	_____	_____	_____
HIPPLE	_____	_____	_____

Adopted by the Board of Supervisors of James City County, Virginia, this 13th day of December, 2016.

CA-SUP-0015-16LafayetteHS-res

**SPECIAL USE PERMIT-0015-2016. Lafayette High School Auxiliary Gym**  
**Staff Report for the December 13, 2016, Board of Supervisors Public Hearing**

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**SUMMARY FACTS**

Applicant: Mr. Carroll E. Collins, Kimley Horn and Associates, Inc.

Land Owner: Williamsburg-James City County Public Schools (WJCC)

Proposal: To allow for the construction of  $\pm 10,000$  square foot auxiliary gymnasium and associated infrastructure. If approved, this Special Use Permit (SUP) will also bring the existing school use into conformance with the Zoning Ordinance.

Location: 4460 Longhill Road

Tax Map/Parcel No.: 3230100001

Project Acreage: +/- 49.76 acres

Zoning: PL, Public Lands

Comprehensive Plan: Federal, state and County land

Primary Service Area: Inside

**PUBLIC HEARING DATES**

Planning Commission: November 2, 2016, 7:00 p.m.  
Board of Supervisors: December 13, 2016, 6:30 p.m.

Staff Contact: Roberta Sulouff, Planner

**FACTORS FAVORABLE**

1. With the proposed conditions, staff finds the proposal compatible with surrounding zoning and development and consistent with the adopted Comprehensive Plan.
2. The request would bring the existing school use into conformance with the Zoning Ordinance.
3. The project does not provide for any extra student capacity and is not projected to generate any new traffic impacts.
4. This project has funding under the current Capital Improvements Program.

**FACTORS UNFAVORABLE**

Staff finds no unfavorable factors.

**SUMMARY STAFF RECOMMENDATION**

Approval, subject to the proposed conditions.

**PLANNING COMMISSION RECOMMENDATION**

At its November 2, 2016 meeting, the Planning Commission recommended approval of this application by a vote of 7-0. The Commission also adopted a resolution finding the proposal consistent with the adopted Comprehensive Plan per Section 15.2-2232 of the Code of Virginia.

**PROJECT DESCRIPTION**

The application, if approved, would permit the construction of

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*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.*

**SPECIAL USE PERMIT-0015-2016. Lafayette High School Auxiliary Gym**  
**Staff Report for the December 13, 2016, Board of Supervisors Public Hearing**

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±10,000 square foot auxiliary gymnasium and an associated fire lane and walkway. The proposed addition will mainly be used for physical education classes during the school day, as well as an on-site practice facility for school sports. If approved, this SUP will also bring the existing school use into conformance with the Zoning Ordinance.

**PLANNING AND ZONING HISTORY**

Lafayette High School did not require an SUP when it initially opened; however, the school site was rezoned to the Public Land District in 2007, where schools are a specially permitted use. Though the school is a legally nonconforming use, an SUP is required for any expansion. Approval of this SUP will also bring the existing school use into conformance with the zoning ordinance and permit the referenced improvements to the site.

**SURROUNDING ZONING AND DEVELOPMENT**

- The zoning of surrounding properties generally to the northeast and east are R-2, General Residential, while properties to the south are zoned R-8, Rural Residential, to the west are zoned R-4, Residential Planned Community, and to the Northwest are zoned PL, Public Lands.
- The property is generally bounded by the Season's Trace subdivision to the north and east, by Longhill Road to the south, by the Mallard Hills subdivision to the west and by the Warhill Sports Complex to the northwest.

**COMPREHENSIVE PLAN**

The property is designated federal, state and County land on the adopted Comprehensive Plan Land Use Map. Land uses in this

designation are publicly owned and include County offices and facilities and larger utility sites. Staff finds the proposed improvements consistent with the Comprehensive Plan as they are accessory to a recommended land use.

**PUBLIC IMPACTS**

1. Anticipated Impact on Public Facilities and Services:

- a. Traffic: This project proposes no additional student capacity and will be used mainly for classes during school hours as well as an on-site practice facility for students attending the school. As such, staff finds that the proposal will not generate any additional peak hour trips to or from the school.

2. Nearby and Surrounding Properties: No impacts anticipated.

3. Environmental: There is a Resource Protection Area (RPA) located on this property, however the limits of this proposal fall outside of the RPA.

4. Cultural and Historical Resources: While this area is not identified as archeologically sensitive by the adopted Comprehensive Plan, a condition has been added to ensure that an archaeological study will be completed should any objects of potential archaeological significance be found during the development of the site.

**PROPOSED SUP CONDITIONS**

- Proposed conditions are included in the attached resolution.

**STAFF RECOMMENDATION**

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*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.*

**SPECIAL USE PERMIT-0015-2016. Lafayette High School Auxiliary Gym**  
**Staff Report for the December 13, 2016, Board of Supervisors Public Hearing**

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Staff finds the proposal to be compatible with surrounding development and consistent with the adopted Comprehensive Plan and Zoning Ordinance. Staff recommends the Board of Supervisors approve this application, subject to the conditions listed in the attached resolution.

RS/kb  
CA-SUP-0015-16LafayetteHS

Attachments:

1. Resolution
2. Unapproved Minutes from the November 2, 2016, Planning Commission Meeting
3. Location Map
4. Master Plan
5. Illustrative Building Elevations

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*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.*

**Unapproved Minutes of the November 2, 2016  
Planning Commission Meeting**

**SUP-0015-2016, Lafayette High School Auxiliary Gym**

Ms. Roberta Sulouff, Planner I, presented a report to the Commission on the request for a Special Use Permit to allow the construction of an auxiliary gym at Lafayette High School. Ms. Sulouff stated that the application, if approved, would permit the construction of an approximately 10,000 square foot auxiliary gymnasium and an associated infrastructure. Ms. Sulouff stated that Lafayette High School did not require an SUP when it initially opened; however, the school site was rezoned to the Public Land District in 2007, where schools are a specially permitted use. Ms. Sulouff stated that while the school is a legally nonconforming use, an SUP is required for any expansion. Ms. Sulouff further stated that the SUP would also bring the existing school use into conformance with the Zoning Ordinance and allow for the improvements to the property. Ms. Sulouff stated that Section 15.2-2232 of the Code of Virginia states, in part, that no public building or public structure be constructed or authorized unless the Planning Commission finds the location of the proposed facility “substantially” consistent with the adopted Comprehensive Plan. Ms. Sulouff stated that the Comprehensive Plan designates the Lafayette site as Federal, State and County land. Ms. Sulouff further stated that staff finds the proposed improvements consistent with the Comprehensive Plan as they are accessory to a recommended land use. Ms. Sulouff stated that staff recommends that the Commission adopt the resolution finding the location of proposed facility consistent with Section 15.2-2232 of the Code of Virginia and recommend approval of the Special Use Permit to the Board of Supervisors.

Mr. O’Connor opened the public hearing.

As no one wished to speak, Mr. O’Connor closed the public hearing.

Mr. O’Connor opened the floor for discussion by the Commission.

Mr. Richardson made a motion to find the location of proposed facility consistent with the Comprehensive Plan and to adopt the resolution.

On a roll call vote the Commission voted to find the location of the facility consistent with the Comprehensive Plan and adopt the associated resolution (7-0).

Mr. Richardson made a motion to recommend approval of SUP-0015-2016.

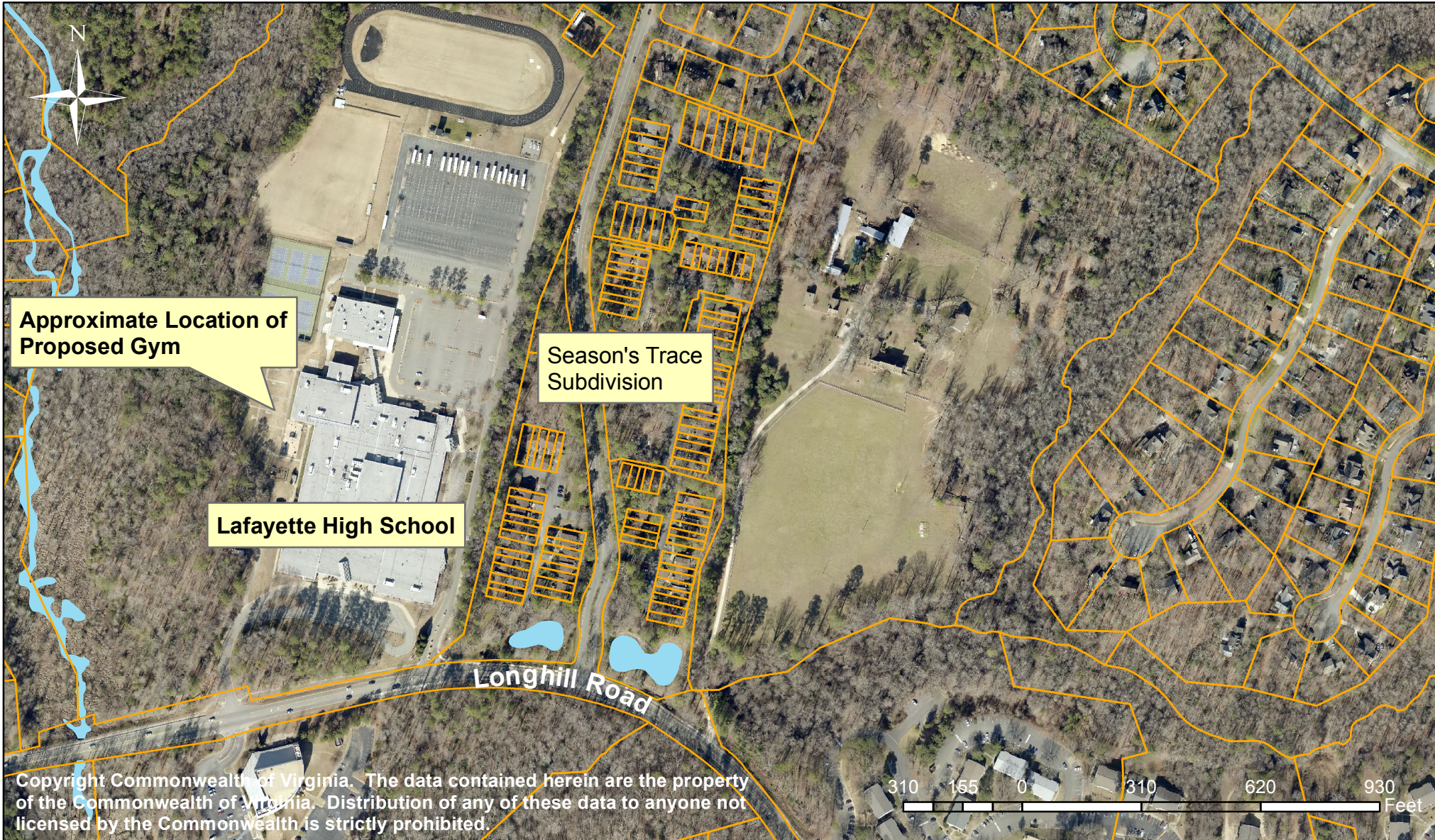
On a roll call vote, the Commission voted to recommend approval of SUP-0015-2016, Lafayette High School Auxiliary Gym (7-0).



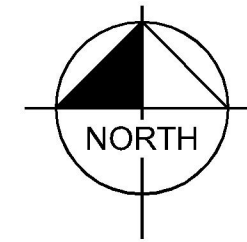
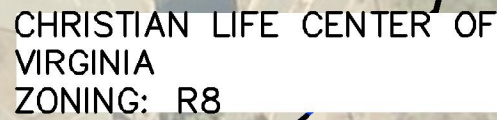
# JCC Case No. SUP-0015-2016

## Lafayette High School

### Auxiliary Gym

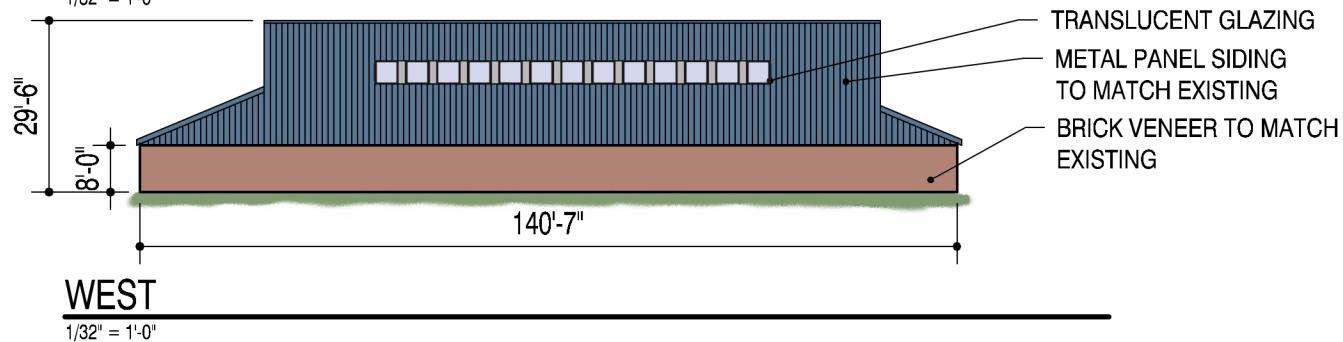
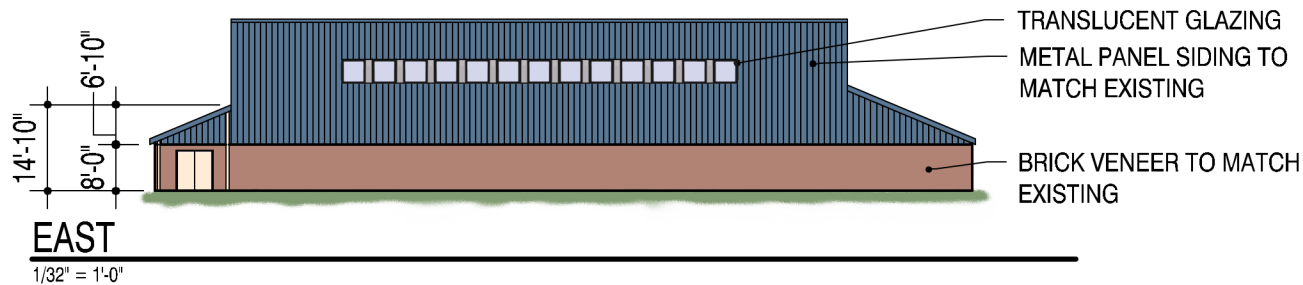
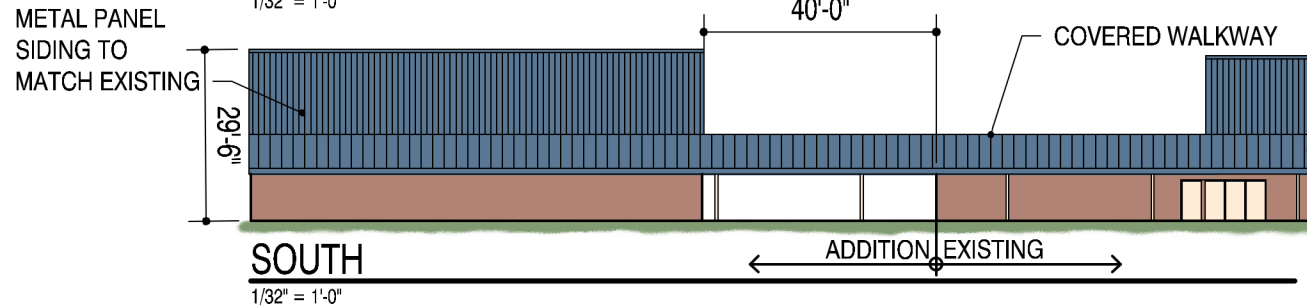
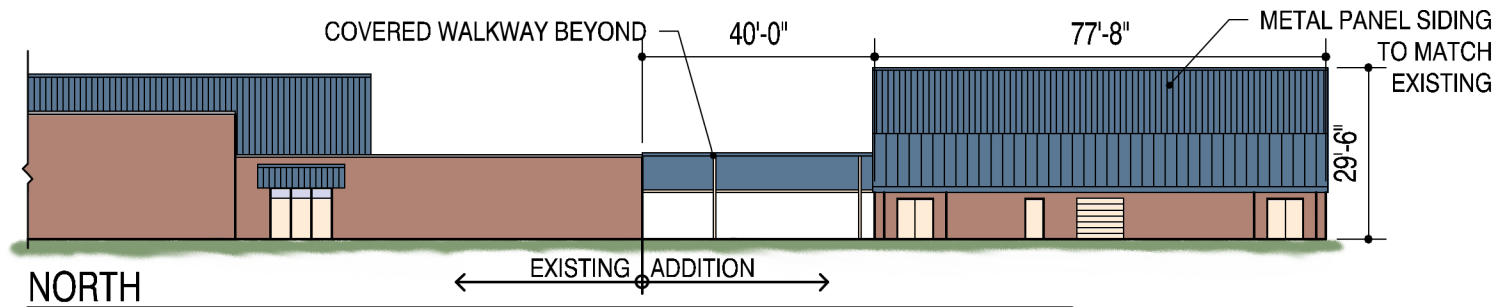






## BY





# LAFAYETTE HIGH SCHOOL - AUXILIARY GYM ADDITION

ELEVATIONS

SCALE: 1/32" = 1'-0"

SEPTEMBER 20, 2016



**ITEM SUMMARY**

DATE: 12/13/2016

TO: The Board of Supervisors

FROM: Jose Ribeiro, Senior Planner II

SUBJECT: SUP-0014-2016/MP-0002-2016. Warhill Sports Complex Master Plan and SUP Amendment

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**ATTACHMENTS:**

	Description	Type
▣	Staff report	Resolution
▣	Resolution	Resolution
▣	Unapproved Minutes from the November 2, 2016, Planning Commission meeting	Minutes
▣	Location Map	Exhibit
▣	List of proposed amendments to the Master Plan	Backup Material
▣	Proposed Master Plan	Exhibit
▣	Adopted Master Plan	Exhibit
▣	Traffic Impact Analysis	Exhibit
▣	Service Road Location Map	Exhibit
▣	Correspondence from citizens	Exhibit

**REVIEWERS:**

Department	Reviewer	Action	Date
Planning	Holt, Paul	Approved	11/18/2016 - 3:34 PM
Development Management	Holt, Paul	Approved	11/18/2016 - 3:34 PM
Publication Management	Babbitt, Katterina	Approved	11/18/2016 - 3:42 PM
Legal Review	Kinsman, Adam	Approved	11/18/2016 - 3:59 PM
Board Secretary	Fellows, Teresa	Approved	11/23/2016 - 7:57 AM
Board Secretary	Purse, Jason	Approved	12/6/2016 - 9:27 AM
Board Secretary	Fellows, Teresa	Approved	12/6/2016 - 9:45 AM

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**SPECIAL USE PERMIT-0014-2016/MASTER PLAN-0002-2016. Warhill Sports Complex Master Plan and SUP Amendment**  
**Staff Report for the December 13, 2016, Board of Supervisors Public Hearing**

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**SUMMARY FACTS**

Applicant:	Mr. John Carnifax, Director of the Parks & Recreation Department
Land Owner:	James City County
Proposal:	To amend the Special Use Permit (SUP) and Master Plan for the Warhill Sports Complex to allow for the addition of a running center building, a Williamsburg Area Transit Authority (WATA) bus transfer station, the relocation of a proposed indoor sports facility (community gym) and other minor revisions.
Location:	5700 and 5720 Warhill Trail
Tax Map/Parcel Nos.:	3210100012 and 3210100012A
Project Acreage:	+/- 442.23 and 3.00 acres, respectively
Zoning:	PL, Public Lands
Comprehensive Plan:	Open space or recreation and federal, state and County land
Primary Service Area:	Inside
<b>PUBLIC HEARING DATES</b>	
Planning Commission:	October 5, 2016, 7:00 p.m. (deferred by staff)
Planning Commission:	November 2, 2016, 7:00 p.m.

Board of Supervisors: December 13, 2016, 6:30 p.m.

Staff Contact: Jose Ribeiro, Senior Planner II

**FACTORS FAVORABLE**

1. The proposal is compatible with surrounding zoning and development.
2. The proposal is consistent with the Comprehensive Plan adopted in 2015, "Toward 2035: Leading the Way."
3. On September 21, 2016, the Parks & Recreation Advisory Commission approved the proposed amendment to the Warhill Sports Complex.

**FACTORS UNFAVORABLE**

1. With the attached (SUP) conditions, staff finds that there are no unfavorable factors.
2. Staff has received correspondence from residents of Longhill Gate and Mallard Hill subdivisions concerned with traffic at the Longhill Road/Warhill Trail intersection.

**SUMMARY STAFF RECOMMENDATION**

Approval, subject to the conditions in the attached resolution.

**PLANNING COMMISSION RECOMMENDATION**

At its November 2, 2016 meeting, the Planning Commission recommended approval of this application by a vote of 6-1. The Planning Commission also approved, by a vote of 6-1, a resolution to

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**SPECIAL USE PERMIT-0014-2016/MASTER PLAN-0002-2016. Warhill Sports Complex Master Plan and SUP Amendment**  
**Staff Report for the December 13, 2016, Board of Supervisors Public Hearing**

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find the proposal consistent with the adopted Comprehensive Plan (per Section 15.2-2232 of the Code of Virginia).

### **PLANNING AND ZONING HISTORY**

- The Board of Supervisors approved Z-0001-1998/SUP-0004-1998 on April 28, 1998. This allowed development of the site as a recreational complex.
- The Board of Supervisors approved MP-0005-2003/SUP-0017-2003 for the amendment of the Warhill Sports Complex Master Plan on July 13, 2004. The amended Master Plan proposed a multipurpose field complex, an indoor sports facility, picnic areas, greenway access to Centerville Road, paved multiuse trails, a controlled secondary park access to Centerville Road, a BMX park and un-programmed open space.
- The Development Review Committee approved a request for a Master Plan consistency (C-0008-2016) on February 24, 2016. This allowed the construction of two indoor swimming pools at the Williamsburg Indoors Sports Complex.
- The Development Review Committee approved a request for Master Plan consistency (C-0014-2016) for a community garden under the power lines on May 25, 2016.

### **PROJECT DESCRIPTION**

Mr. John Carnifax, Director of the County Parks & Recreation Department has submitted a request to amend the adopted Master Plan for the Warhill Sports Complex. Major revisions to the Master Plan include the following improvements (for a summary of all changes to the Master Plan please refer to Attachment No. 4):

- *Relocation of the Indoor Sports Facility (community gym) labeled "G2" on the revised Master Plan.*

The community gym was originally planned next to the basketball courts. As proposed by this amendment, the facility would be relocated to an area next to the Sanford Wanner Stadium. The relocation would allow access to the community gym off a fully signalized intersection at Centerville Road and Opportunity Way. Further, compatibility of uses between the proposed gym and the stadium and proximity to existing parking areas, were reasons that factored in the decision to relocate the community gym.

- *The addition of the Williamsburg Running Center labeled as "AA" on the revised Master Plan.*

The proposed Williamsburg Running Center is the result of a proposed public-private partnership between James City County and the Williamsburg Running Center, funded by the Rick Platt Foundation (a nonprofit organization), to host a permanent facility at the Warhill Sports Complex that will support running events and preserve the history and future development of local running programs.

The proposed Running Center includes a new building which will serve as a base of operations for athletes, officials and spectators; a museum for honoring local athletes, office and storage for County staff, concessions, restrooms and parking for buses. The Running Center will also include a new start and finish field which can serve as a multi-use field for other sports activities as well. Ballfields (labeled as "B" on the revised Master Plan) will remain unaffected by the proposed Running Center.

- *The addition of a Williamsburg Area Transit Authority (WATA) Transfer Station, labeled as "BB" on the revised Master Plan.*

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**SPECIAL USE PERMIT-0014-2016/MASTER PLAN-0002-2016. Warhill Sports Complex Master Plan and SUP Amendment**  
**Staff Report for the December 13, 2016, Board of Supervisors Public Hearing**

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WATA is currently operating out of a transfer area at one of its stops (Walmart Supercenter site at 7321 Rochambeau Drive). However, this location is only temporary and there are plans to relocate to an area along Stadium Road within the Warhill Sports Complex site. According to WATA, the proposed location for the transfer station is ideal as it would provide a central point for transit services for its service area. The transfer station would consist of a small building for a customer service center, bus shelters and parking for buses and vehicles.

**SURROUNDING ZONING AND DEVELOPMENT**

- Located west of Route 199, south of Centerville Road (Route 614) and north of Longhill Road (Route 612), adjacent to Warhill and Lafayette High Schools.
- Surrounding zoning designations include:
  - a. R-8, Rural Residential to the north and west (Camelot and vacant lands).
  - b. R-2, General Residential to the east (Villages of Westminster, Scott's Pond, Winter Park) and to the south (Season's Trace, Longhill Gate).
  - c. R-4, Residential Planned Community to the south (Mallard Hill).
  - d. PL, Public Land to the south (Lafayette High School) and north (Warhill High School).

**COMPREHENSIVE PLAN**

1. The 2035 Comprehensive Plan Land Use Map designates the

Warhill Sports Complex as mostly Open Space or Recreation with smaller areas designated as federal, state and County land. The 2035 Comprehensive Plan defines Open Space or Recreation lands as large, undeveloped areas used for recreation, historical or cultural resources or open space. Areas designated as state, federal and County land include publicly owned lands. Staff finds that the proposed improvements to Warhill Sports Complex are consistent with both designations.

2. Both Longhill and Centerville Roads are listed as suburban Community Character Corridors in the 2035 Comprehensive Plan. The proposed improvements will not be visible from these rights-of-way.
3. Surrounding Comprehensive Plan designations include:
  - a. Federal, state and County land to the north and south.
  - b. Low Density Residential to the east and west.

**PUBLIC IMPACTS**

1. Anticipated Impact on Public Facilities and Services:
  - a. *Streets.* The proposed improvements to the Warhill Sports Complex will continue to utilize the existing unsignalized access point at the Longhill Road/Warhill Trail/Longhill Gate Road intersection and the signalized access point at Centerville Road/Opportunity Way intersection. A Traffic Impact Analysis (TIA) was submitted by the applicant and reviewed by the Virginia Department of Transportation (VDOT), who concurred with the recommendations of the analysis and made additional comments.

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*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.*

**Staff Report for the December 13, 2016, Board of Supervisors Public Hearing**

*The Longhill Road/Warhill Trail/Longhill Gate Road Intersection.*

According to the TIA (Attachment No. 7), at the unsignalized Longhill Road intersection, the southbound approach (exiting the park) currently operates at a Level of Service (LOS) F during the weekday p.m. and Saturday peak hours, but operates at acceptable levels during non-peak hours.

In order to address this existing deficiency at the Longhill Road intersection, the TIA recommends the following:

- Signalization or manual traffic control (police officer or similar) should be considered;
- Lengthening of the southbound right-turn lane on Warhill Trail; and
- Potential realignment of the residential driveway west of the intersection to align with Blue Bill Run at the Mallard Hill subdivision.

Regarding a traffic signal, the Manual for Uniform Traffic Control Devices, indicates that the Longhill Road intersection does meet the peak hour warrant, but does not meet the 8- or 4-hour warrant. VDOT typically does not allow signalization based only on the peak hour warrant. However, there is the need for some type of traffic control measures to mitigate peak hour impacts. Accordingly, SUP Condition No. 6 requires a Traffic Management Plan (TMP) to be submitted yearly addressing the circulation and queuing of vehicles within the project area. The TMP shall consist of measures such as, but not limited to, parking lot usage, signage, pavement markings or other vehicle

control/directional devices and manual traffic control (police officer or similar) at the intersection of Warhill Trail and Longhill Road.

The recommended lengthening of the southbound right-turn lane on Warhill Trail is addressed by SUP Condition No. 4. The recommendation to realign the residential driveway west of the intersection with Blue Bill Run is not specifically addressed at this time by this application as it would not fundamentally improve the current conditions at the intersection. However, this recommendation is likely to be addressed by the future implementation of the Longhill Road Corridor Study (adopted by the Board of Supervisors on October 14, 2014). The Corridor Study proposes the signalization of this intersection at which point the residential driveway west of the intersection would have to be relocated to avoid a conflict with the location of a traffic signal. Although the implementation of the improvements in this section of the corridor is based on available funding and its timeline is currently to be determined, staff will keep monitoring this recommendation as part of a TIA required to be submitted within five years (or less) from the date of approval of this application (SUP Condition No. 7).

Residents of Mallard Hill and Longhill Gate subdivisions have expressed concerns with this application in regards to traffic at the Longhill Road intersection, vehicles blocking intersections along Warhill Trail during queuing times and the general safety of vehicles traveling at opposite directions using a single-turn lane to access the Sports Complex and Longhill Gate subdivision. Staff note that with or without future development of the Sports Complex, the Longhill Road/Warhill Trail intersection operates at a LOS F. According to the TIA, the Running Center will generate low

daily trips during peak hours. The proposed community gym and the WATA transfer station will generate higher daily trips during peak hours, but these facilities will be accessed through Centerville Road. In order to limit impacts associated with vehicles blocking the intersection of residential streets along Warhill Trail during times of queuing, SUP No. 5 requires installation of signs and/or pavement markings to not block these intersections on Warhill Trail. Regarding concerns associated with turning movements onto the Sports Complex and Longhill Gate Road through a single-turning lane, staff notes that this intersection was previously improved in the late 1990s by realigning the entrance of the Longhill Gate subdivision with the entrance of the Sports Complex. This realigned intersection was designed and constructed to VDOT standards.

*The Centerville Road and Opportunity Way Intersection, Right-Turn Movements from Centerville Road onto Richmond Road and Westbound Route 199 Ramp.*

The TIA for the Sports Complex did not recommend improvements to these intersections. However, VDOT has commented on the projected LOS for 2030 right-turn movements at the Centerville Road/Opportunity, Centerville Road/Richmond Road and Richmond Road/Westbound Route 199 ramp intersections. All three of these intersections currently have dedicated right-turn lanes. All three of these intersections are projected to have an overall LOS D during the weekday p.m. peak hour, which in the past, has been found acceptable for this area of the County. The SUP Condition requiring submittal of a TIA will allow staff to keep monitoring the LOS for this intersection, including the right-turn movements.

*The Service Road*

In order to improve traffic flow, access and connectivity between the northern and southern portions of the Sports Complex, the Department of Parks & Recreation has proposed opening the service road (Attachment No. 8) year-round from 6 a.m. to 10 p.m. Currently, the service road is only opened during the spring and fall peak periods of use.

- b. *Schools/Fire/Utilities.* No impacts anticipated. The site is served by public water and sewer. Prior to final site plan approval for the proposed improvements, the applicant must submit a Water Conservation Plan (SUP Condition No. 10).
- c. *Environmental/Cultural/Historic.* Development of the proposed improvements are subject to the provisions of the adopted Powhatan Creek Watershed Management Plan, the Master Stormwater Management Plan for the Warhill Tract and compliance with the County's Special Stormwater Criteria.

According to the Archaeological Assessment of James City County, the park area is designated as a "moderately sensitive area." SUP Condition No. 2 requires the applicant to comply with the County's adopted Archaeological Policy.

- d. *Nearby and Surrounding Properties.* The attached SUP conditions are proposed to mitigate impacts to nearby and surrounding properties, specifically impacts associated with visual screening and noise generation.

**PROPOSED CONDITIONS**

- The full text of the proposed conditions is provided in the attached resolution.

**STAFF RECOMMENDATION**

Staff finds the proposal to be compatible with surrounding zoning and development and that it is consistent with the Comprehensive Plan adopted in 2015, “Toward 2035: Leading the Way.”

On September 21, 2016, the Parks & Recreation Advisory Commission approved the proposed amendments to the Master Plan.

Staff recommends the Board of Supervisors approve this application subject to the conditions in the attached resolution.

JR/nb  
SUP14-16MP02-16WarhillSC

Attachments:

1. Resolution
2. Unapproved Minutes from November 2, 2016, Planning Commission meeting
3. Location Map
4. List of proposed amendments to the Master Plan
5. Proposed Master Plan
6. Adopted Master Plan
7. Warhill Sports Complex Expansion Traffic Impact Analysis, dated September 19, 2016
8. Location Map showing the service road
9. Correspondence from citizens

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*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.*



## **RESOLUTION**

### **CASE NO. SUP-0014-2016/MP-0002-2016. WARHILL SPORTS COMPLEX**

#### **MASTER PLAN AND SUP AMENDMENT**

WHEREAS, the Board of Supervisors of James City County, Virginia, has adopted by ordinance specific land uses that shall be subjected to a Special Use Permit (SUP) process; and

WHEREAS, James City County (the "Owner") owns properties located at 5700 and 5720 Warhill Trail, further identified as James City County Real Estate Tax Map Parcel Nos. 3210100012 and 3210100012A, respectively; and

WHEREAS, on behalf of the owner, Mr. John Carnifax, Director of the Parks & Recreation Department has applied for an SUP and Master Plan amendment to allow for the addition of a running center building, a Williamsburg Area Transit Authority (WATA) bus transfer station, the relocation of a proposed indoor sports facility and other minor revisions, as shown on the exhibit titled "2016 Warhill Sports Complex Master Plan" and dated September 19, 2016; and

WHEREAS, a public hearing was advertised, adjoining property owners notified and a hearing conducted on Case No. SUP-0014-2016/MP-0002-2016; and

WHEREAS, the Planning Commission, following its public hearing on November 2, 2016, recommended approval of this application by a vote of 6-1. At the same meeting, the Planning Commission approved a resolution finding the proposal consistent with the Comprehensive Plan by a vote of 6-1.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of James City County, Virginia, after consideration of the factors in Section 24-9 of the James City County Code, does hereby approve the issuance of Case No. SUP-0014-2016/MP-0002-2016, as described herein with the following conditions:

1. *Master Plan and Use:* This Special Use Permit (the "SUP") shall be valid for the Warhill Sports Complex Community Recreation facility (the "Project"). The Project is located at 5700 and 5720 Warhill Road, further identified as James City County Real Estate Tax Map Nos. 3210100012 and 3210100012A, respectively (the "Properties"). Development of the Properties shall be completed in accordance with the "2016 Warhill Sports Complex Master Plan," dated September 19, 2016, (the "Master Plan"), with any deviations considered per Section 24-23(a)(2) of the Zoning Ordinance.
2. *Archaeology:* A Phase I Archaeological Study for the Properties shall be submitted to the Director of Planning for review and approval prior to land disturbance for the Project. A treatment plan shall be submitted and approved by the Director of Planning for all sites in the Phase I study that are recommended for a Phase II evaluation and/or

identified as eligible for inclusion on the National Register of Historic Places. If a Phase II study is undertaken, such a study shall be approved by the Director of Planning and a treatment plan for said sites shall be submitted to, and approved by, the Director of Planning for sites that are determined to be eligible for inclusion on the National Register of Historic Places and/or those sites that require a Phase III study. If in the Phase III study, a site is determined eligible for nomination to the National Register of Historic Places and said site is to be preserved in place, the treatment plan shall include nomination of the site to the National Register of Historic Places. If a Phase III study is undertaken for said sites, such studies shall be approved by the Director of Planning prior to land disturbance within the study areas. All Phase I, Phase II and Phase III studies shall meet the Virginia Department of Historic Resources' Guidelines for Preparing Archaeological Resource Management Reports and the Secretary of the Interior's Standards and Guidelines for Archaeological Documentation, as applicable, and shall be conducted under the supervision of a qualified archaeologist who meets the qualifications set forth in the Secretary of the Interior's Professional Qualification Standards. All approved treatment plans shall be incorporated into the plan of development for the Properties and the clearing, grading or construction activities thereon. This condition shall be interpreted in accordance with the County's Archaeological Policy adopted by the County on September 22, 1998.

3. Buffer: A minimum 150-foot buffer shall be maintained along the exterior boundary lines of James City County Real Estate Tax Map No. 3210100012. This buffer shall remain undisturbed with the exception of breaks for roadways and pedestrian connections, utilities, walking and hiking trails and other uses specifically approved by the Development Review Committee.
4. Road Improvements: The southbound right-turn lane on Warhill Trail shall be lengthened to 125 feet prior to June 30, 2022. The Planning Director shall have the authority to delay requiring the completion of the road improvement beyond June 30, 2022, if construction of the athletic fields labeled "B", "E" and "F" on the revised Master Plan have not been completed prior to June 30, 2022.
5. Intersection Signage: Measures to prevent blocking of intersections during times of queuing on Warhill Trail Road, such as signage and/or paint markings on the pavement at the Warhill Trail intersection with Blue Bill Run and Beaver Run Roads, shall be installed within one year of the issuance of this SUP.
6. Traffic Management Plan ("TMP"): Beginning on January 31, 2017, and every January 31 of each year thereafter, a TMP addressing the circulation and queuing of vehicles within the Project area shall be submitted to the Virginia Department of Transportation (VDOT) and to the Director of Planning or his designee for his review and approval. The TMP shall consist of measures such as, but not limited to, parking lot usage, signage, pavement markings or other vehicle control/directional devices and manual traffic control (police officer or similar) at the intersection of Warhill Trail and Longhill Road. The TPM shall be submitted until such time as physical improvements to the intersection of Longhill Road/Warhill Trail, or other improvements, result in operation of the Longhill Road/Warhill Trail intersection at a Level of Service "D" or better, as approved by VDOT and the Director of Planning.
7. Traffic Impact Study: A traffic impact study shall be submitted to the County within five (5) years of the issuance of this SUP amendment, or at such time as the traffic study is required by VDOT. The Director of Planning shall have the authority to delay requiring the traffic study to be submitted beyond the five (5)-year time period if

construction of the athletic fields labeled “B”, “E” and “F” on the revised Master Plan have not been completed within five years of issuance of this SUP amendment.

8. Outdoor Speakers: All outdoor speakers used on the Properties shall be oriented generally towards the interior of the Properties and away from exterior property lines.
9. Lighting: A lighting plan shall be reviewed and approved by the Director of Planning or his designee for any lighting proposed adjacent to any athletic fields. This plan shall indicate that no glare, is cast onto adjacent properties. “Glare” shall be defined as more than 0.1 foot candle at the boundary of the Properties or any direct view of the lighting source from the adjoining properties. All other lighting shall comply with Zoning Ordinance, Article II, Special Regulations, Division 7, Outdoor Lighting.
10. Water Conservation Plan: Prior to final development plan approval, water conservation standards shall be submitted to and approved by the James City Service Authority. The standards shall include, but not be limited to water conservation measures such as limitations on the installation and use of irrigation systems and irrigation wells, the use of approved landscaping materials including the use of drought resistant native and other adopted low water use landscaping materials and warm season turf where appropriate, and the use of water conserving fixtures and appliances to promote water conservation and minimize the use of public water resources.
11. Bus Transfer Station Access: Access to the proposed bus transfer station by all fixed-route busses shall be limited to the intersection of Opportunity Way and Centerville Road. The intent of this condition is to ensure regular bus routes do not enter the Properties through the Warhill Trail/Longhill Road intersection entrance.
12. Pedestrian Accommodation: Within three (3) months from the date the bus transfer station starts to service the public, a raised crosswalk shall be provided by the Williamsburg Area Transit Authority (WATA) connecting the proposed bus transfer station to the existing pedestrian accommodation along Stadium Road. Prior to start of service WATA shall notify the Director of Planning of the date the bus transfer station starts to service the public.
13. Severability: This SUP is not severable. Invalidation of any word, phrase, clause, sentence or paragraph shall invalidate the remainder.

ATTEST:		<hr/>		
		Michael J. Hipple Chairman, Board of Supervisors		
		VOTES		
		<u>AYE</u>	<u>NAY</u>	<u>ABSTAIN</u>
	MCGLENNON	_____	_____	_____
	LARSON	_____	_____	_____
	ONIZUK	_____	_____	_____
	SADLER	_____	_____	_____
	HIPPLE	_____	_____	_____
	<hr/>			
	Bryan J. Hill			
	Clerk to the Board			

Adopted by the Board of Supervisors of James City County, Virginia, this 13th day of December, 2016.

SUP14-16MP02-16WarhillSC-res

**Unapproved Minutes of the November 2, 2016  
Planning Commission Meeting**

**SUP-0014-2016/MP-0002-2016, Warhill Sports Complex Master Plan Amendment**

Mr. José Ribeiro, Senior Planner II, presented a report to the Commission on the request to amend the Special Use Permit and Master Plan for the Warhill Sports Complex to allow the addition of a running center building, a Williamsburg Area Transit Authority bus transfer station, the relocation of a proposed indoor sports facility and other minor changes.

Mr. Ribeiro stated that traffic impacts were among the primary concerns. Mr. Ribeiro stated that according to the Traffic Impact Analysis, the intersection with Longhill Road for traffic exiting the complex currently operates at a Level of Service F during the weekday p.m. and Saturday peak hours, but operates at acceptable levels during non-peak hours. Mr. Ribeiro stated that the TIA provided several recommendations to remedy the deficiency including signalization or manual traffic control, lengthening of the southbound right-turn lane on Warhill Trail, and potential realignment of the residential driveway west of the intersection to align with Blue Bill Run at the Mallard Hill subdivision. Mr. Ribeiro further stated that while the intersection meets the warrants for a traffic signal during peak hours, it does not meet the warrants at other times. Mr. Ribeiro further stated that VDOT does not typically approve traffic signals when only peak hour warrants are met. Mr. Ribeiro stated that one of the SUP conditions would require a traffic management plan to be submitted and reviewed and updated yearly. Mr. Ribeiro stated that the proposed running center and the WATA transfer facility are anticipated to generate higher daily trips during peak hours; however, these facilities will be accessed through Centerville Road. Mr. Ribeiro further noted that an SUP condition has been included to require signage and or pavement markings indicating that the intersections with the residential neighborhoods must not be blocked.

Mr. Ribeiro stated that staff finds the proposal to be compatible with surrounding zoning and development and that it is consistent with the Comprehensive Plan. Mr. Ribeiro stated that on September 21, 2016, the Parks & Recreation Advisory Commission approved the proposed amendments to the Master Plan. Mr. Ribeiro stated that staff recommends the Planning Commission recommend approval of this application to the Board of Supervisors.

Mr. Ribeiro stated that it is also necessary that the Commission make a determination regarding consistency with Section 15.2-2232 of the Code of Virginia which requires the location of the park to be consistent with the Comprehensive Plan.

Mr. John Carnifax, Director of Parks and Recreation, made a presentation to the Commission to clarify some of the questions and concerns that have come forward. Mr. Carnifax stated that the proposed pool would be used predominantly for high school and local swim team practice and would not generate large traffic impacts. Mr. Carnifax noted that, due to the nature of sports facilities, some traffic delays at peak times will be unavoidable. Mr. Carnifax noted that having the service road open 6 a.m. to 9 p.m. year-round will have a positive effect on the traffic flow. Mr. Carnifax stated that in addition to potential traffic improvements, staff has asked tournament directors to stagger their games since the turnover between games contributes greatly to the traffic delays.

Mr. O'Connor opened the floor to questions from the Commission.

Mr. Wright inquired if any consideration has been given to allowing traffic to enter only from Longhill Road and exit only from Opportunity Way on tournament days.

Mr. Carnifax stated that the option has not been discussed; however, staff would be willing to consider it.

Mr. Schmidt inquired if the County has the authority to make the decision to leave the service road open all the time.

Mr. Carnifax stated that Opportunity Way up to the Wanner Stadium is maintained by VDOT; however the County has the authority to open and close the service road as necessary.

Mr. Wright inquired if the County would need to bring the service road up to VDOT standards.

Mr. Carnifax stated that improvements are not needed at this time; however, maintenance will be needed in the future as the road is used more. Mr. Carnifax noted that the intent is to keep this a road for park users entering or exiting the park and not a general thoroughfare.

Mr. Holt noted that because the service road is a private right-of-way it would be possible for the County to establish traffic calming measures to address speed concerns.

Mr. Richardson inquired about an extra southbound right turn lane on Warhill Trail and how it might mitigate traffic flow.

Mr. Steve Schmidt, Timmons Group, stated that lengthening the turn lane would allow right-turning traffic to get past the vehicles stacked for the left turn lane.

Mr. Danny Schmidt inquired if thought had been given to providing an acceleration lane on Longhill Road for the right-turning traffic to address sight distance concerns.

Mr. Steve Schmidt stated that consideration has been given to moving the stop bar forward to address the concern. Mr. Schmidt noted that consideration was not given to the acceleration lane due to the residential drive immediately adjacent to the intersection. Mr. Schmidt further stated that the future widening of Longhill Road would negate any lane improvements done on Longhill Road.

Mr. Basic inquired about the rationale for potentially delaying the road improvement specified in SUP Condition #4.

Mr. Holt stated that it would depend on if the Board of Supervisors funded the work in the CIP.

Ms. Bledsoe inquired when the next traffic impact analysis would be conducted.

Mr. Ribeiro responded that a traffic study will be required within five years of approval of the SUP.

Ms. Bledsoe inquired about the expectations for the Traffic Management Plan

Mr. Ribeiro stated that the intent is to ensure that the traffic impacts are reviewed on a yearly basis and steps are taken to address the issues.

Mr. Holt noted that the Traffic Management Plan would allow for proactive planning for manual traffic control such as having police officers direct traffic at peak times until a time when permanent measures are fully warranted.

Ms. Bledsoe inquired why peak hour impacts are not sufficient to warrant a traffic signal.

Mr. Steve Schmidt stated that traffic signals have both benefits and consequences. Mr. Schmidt stated that one of the consequences is stopping through traffic. Mr. Schmidt stated that VDOT typically will not approve a traffic signal unless it is warranted throughout the entire course of the day. Mr. Schmidt stated that the possibility of installing a signal to operate only at peak hours and flash during off-peak times was discussed; however, VDOT was not inclined to approve that option at this time.

Mr. Wright inquired about the timeframe for construction of the running center, community gym and WATA facility.

Mr. Carnifax stated that none of the projects are currently funded; however, the County is pursuing private partnership options for constructing the running center and Community gym.

Mr. Josh Mohr, Deputy Executive Director of WATA, stated that WATA is currently working to fund the project and that it could be in their budget as early as FY 18. Mr. Mohr stated that it would be at least four years until construction begins.

Mr. Holt noted that the SUP would limit bus access to using only Opportunity Way and that no busses would use Warhill Trail.

Mr. Richardson inquired whether the locality could fund and install a signal without VDOT concurrence.

Mr. Holt stated that VDOT would have to approve the signal.

Mr. Basic requested elaboration on the traffic management plan.

Mr. Carnifax stated that the plan would include having an officer direct traffic at Warhill Trail during peak hours, striping if approved, at the intersections with Mallard Hill, opening the service road for a set time every day and staggering use of the fields for tournaments and practices. Mr. Carnifax noted that many of the items are budgetary items and will require financial resources.

Mr. O'Connor opened the public hearing.

Mr. Gregory Carpenter, 5516 N. Mallard Run, addressed the Commission on concerns about the traffic that would be generated by the WATA transfer station. Mr. Carpenter inquired why the transfer station was needed in that location.

Ms. Vicky Schmidt, 5513 N. Mallard Run addressed the Commission on concerns about additional traffic and excessive speed. Ms. Schmidt requested that the County consider options for traffic calming measures on Warhill Trail.

LTC (RET) Stephen Slyfield, 5509 S. Mallard Run, addressed the Commission on the need for a traffic signal, traffic calming measures and concerns about sight distance.

Mr. James Prins, 8317 Barons Court, addressed the Commission on behalf of the Longhill Gate Homeowners Association. Mr. Prins expressed concerns about alignment of the intersection including the single center turn lane on Longhill Road, and conflicts with turning movements into and out of the subdivision and the Warhill Sport Complex. Mr. Prins noted that painting lines for the turning paths reduce some of the safety issues. Mr. Prins further noted that aligning the entrance for Longhill gate with the entrance for the Sports Complex was done in 1999 in support of meeting the warrants for a traffic signal. Mr. Prins requested that the County use its influence with VDOT to have the traffic signal included in the plans for the Longhill Road improvements.

Mr. James Gable, 4808 Blue Bill run, addressed the Commission on concerns about traffic impacts once all the features included in the existing Master Plan are built out. Mr. Gable noted that the peak traffic is heavier later in the summer than the times chosen for the traffic analysis.

Mr. Christopher Owens, 5533 Swan Road, addressed the Commission on concerns about speeding issues, traffic volume and the level of service at the intersection. Mr. Owens noted that a traffic signal is the only way to truly resolve issues at the intersection. Mr. Owens further noted that the service road should be open at all time the Warhill Sports Complex is open.

As no one further wished to speak, Mr. O'Connor closed the public hearing.

Mr. O'Connor opened the floor for discussion by the Commission.

Mr. Krapf inquired if the safety concern about the single left turn lane was examined during the traffic impact analysis or during staff review.

Mr. Holt stated that the crash data was considered. Mr. Holt further stated that when the entrance was realigned, it was done to VDOT standards in terms of the geometry.

Mr. Steve Schmidt stated that the crash data for the five years between 2010 and 2015 was reviewed and that ten crashes occurred within 200 feet of the intersection. Mr. Schmidt noted that eight involved vehicles and two involved pedestrians. Mr. Schmidt stated that staff also reviewed the police reports to determine what common factors might exist. Mr. Schmidt stated that based on the police reports, the common left turn lane was not the cause of the crashes.

Mr. Wright inquired where VDOT maintenance ends on Warhill Trail.



Mr. Holt stated that VDOT maintenance extends to the roundabout at the soccer fields.

Mr. Wright inquired if VDOT approval would be required for traffic calming measures on Warhill Trail.

Mr. Holt confirmed.

Mr. O'Connor requested that Mr. Mohr address the question on the need for the WATA transfer facility at that location.

Mr. Mohr stated that the previous transfer center was at the old Outlet Mall. Mr. Mohr stated that ATA was able to negotiate a temporary location in the Wal-Mart area. Mr. Mohr emphasized that the current location could not be permanent. Mr. Mohr stated that the facility at the Warhill sports Complex would provide a safer place for passengers to transfer from one bus to another or wait for a connection. Mr. Mohr stated that WATA hoped that the new facility would be staffed to answer questions and sell passes.

Mr. Schmidt stated that he supports the option of having the service road open every day. Mr. Schmidt further stated that he would recommend that staff look at providing additional signage indicating that the road is open.

Mr. Richardson stated that the Warhill Sports Complex was planned and built to allow for growth and additional future facilities. Mr. Richardson stated that he understand VDOT's position on the signalization of the intersection; however, he believes that making the intersection less stressful to negotiate would benefit the individuals who must negotiate the intersection to use the complex.

Mr. Schmidt stated that he would support considering traffic calming measures for Warhill Trail, particularly in the area where pedestrians cross.

Mr. Krapf noted that there are really only two items being added to the Master Plan, the WATA Transfer Station and the running Center. Mr. Krapf stated that he would support the Master plan amendment. Mr. Krapf stated that he appreciated the efforts of staff in crafting the SUP conditions and address the concerns brought forward at the previous meeting.

Mr. Basic stated that he believes that expanding the Warhill sports Complex will be beneficial and that the central location is essential. Mr. Basic further stated that he does not believe the next traffic impact analysis should be based on build out of certain facilities because the County is growing and will be drawing more users whether there are new facilities or not. Mr. Basic stated that he is prepared to support the application; however, the Commission, the Board and the community need to work together to address the traffic issues before the facilities are constructed.

Mr. Wright stated that he can support the application which will allow for additional facilities at a future date; however, it appears that there is already a situation with traffic and safety that needs to be addressed more immediately by the Police Department.

Ms. Bledsoe stated that she concurs that there are two separate issues with the expansion of the park and the existing traffic concerns. Ms. Bledsoe stated that she is concerned that allowing the expansion of the Warhill Sports Complex will compound the existing problem. Ms. Bledsoe stated that she has concerns about approving the application due to the existing traffic concerns.

Mr. O'Connor stated that the amendments do not constitute a major expansion and that he could support the application.

Mr. Holt noted that Section 15.2-2232 of the Code of Virginia states, in part, that no public building or public structure be constructed or authorized unless the Planning Commission finds the location of the proposed facility "substantially" consistent with the adopted Comprehensive Plan. Mr. Holt stated that the Commission would need to make a finding of consistency prior to voting on the SUP and Master Plan Amendment.

Mr. Basic made a motion to find the location of the proposed facilities consistent with the Comprehensive Plan.

On a roll call vote the Commission voted to find the location of the facilities consistent with the Comprehensive Plan and adopt the associated resolution (6-1). Ayes: Schmidt, Richardson, Basic, Wright, Krapf, O'Connor. Nay: Bledsoe.

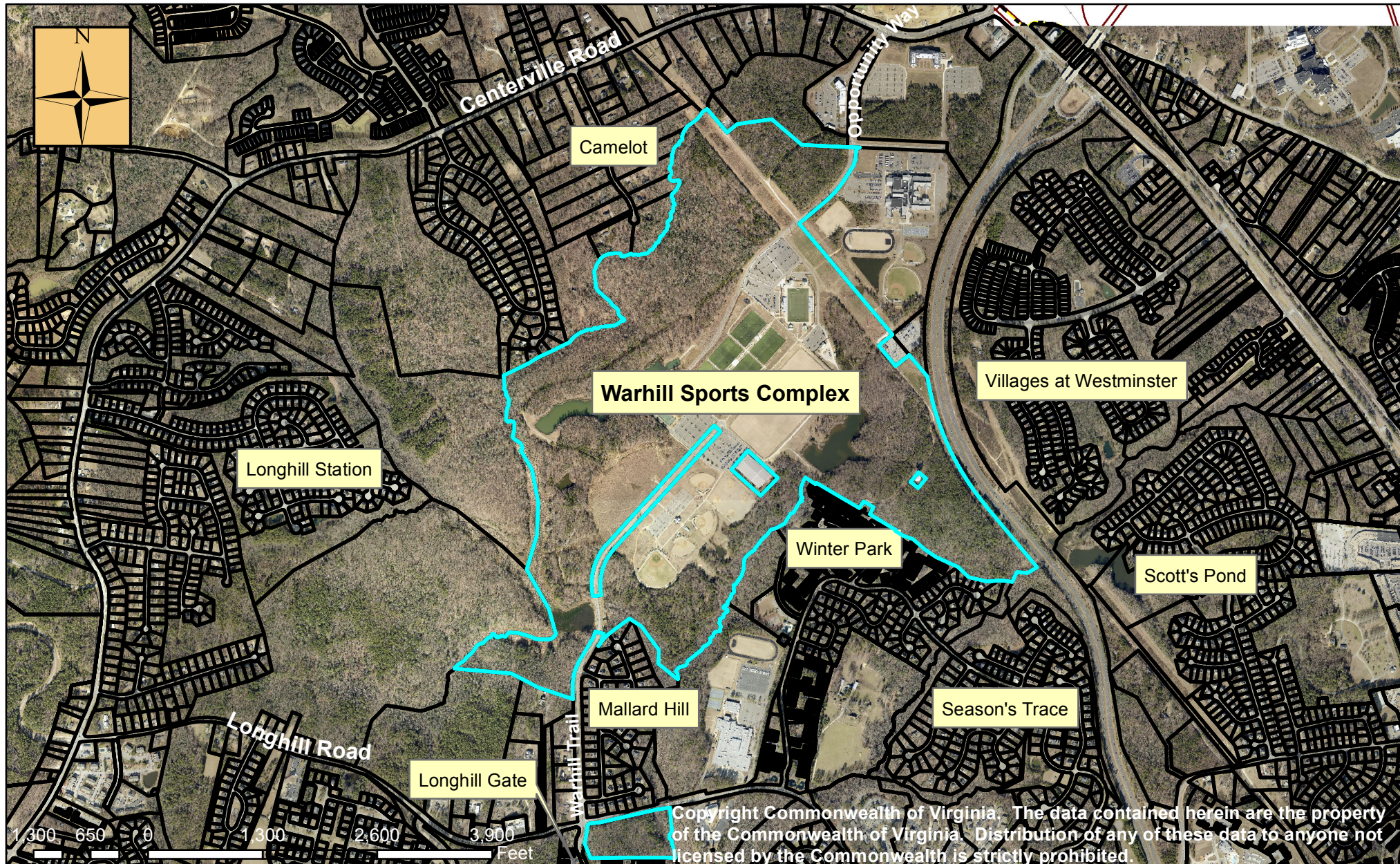
Mr. Krapf moved to recommend approval of the SUP and Master Plan Amendment.

On a roll call vote the Commission voted to recommend approval of SUP-0014-2016/MP-0002-2016, Warhill Sports Complex Master Plan Amendment (6-1). Ayes: Schmidt, Richardson, Basic, Wright, Krapf, O'Connor. Nay: Bledsoe



# JCC-SUP-0014-2016/MP-0002-2016

## Warhill Sports Complex





## Summary of proposed revisions to the adopted Warhill Sport Complex Master Plan

1. Addition of a running center ( “AA” on the proposed 2016 master plan) consisting of a multi-purpose room, office space, restrooms and a multi-sports field;
2. Addition of a WATA bus transfer station (“BB” on the proposed 2016 master plan);
3. Relocation of the indoor sports facility (“G2” on the proposed 2016 master plan and in the adopted 2004 Master Plan) closer to the football stadium and the parking in that area. The indoor sports facility is envisioned as a multipurpose facility with emphasis on volleyball and basketball practices and tournaments; and
4. Other changes include:
  - a. The removal of the paved multi-use trail and shared parking from a power line easement (“N1” on the adopted 2004 Master Plan). According to the applicant, sufficient parking is available at the Warhill High School and Thomas Nelson Community College;
  - b. The removal of picnic areas (“H” and “I” on the adopted Master Plan). According to the applicant, picnic shelters and passive recreation facilities will be added to Freedom Park, as needed; and
  - c. The removal of the greenway access to Centerville Road (“K2” on the adopted Master Plan). This parcel was sold and has been developed and therefore unavailable as a third entrance.



# 2016 Warhill Sports Complex 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
- 6 Multiuse Fields with Synthetic Turf
- 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 Facility** □

**J1, J2, J3, J4, J5, J6**

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

**L- Paved Multiuse Trail** in utility corridor

**M- Paved Multiuse Trails** around Soccer Complex- 1 mile  
□ and Baseball/Softball Complex- 1-mile

**N2- Unprogrammed Open Space** capable of supporting additional stadium parking.

**N3- Dominion Power Substation**

**Q- BMX Park**

**AA - Running Center**, multi-purpose room, office space, restrooms, multiuse filed area

**BB – Williamsburg Area Transport**

1 inch = 972 feet

0 950 1,900 Feet

9/19/2016



# Warhill Sports Complex 2004 Master Plan



- A Baseball Complex**  
5 Baseball Fields, lighted  
1 Multiuse Field for T ball  
Parking 250 400 Spaces  
Concessions/Venue House Building
- B Softball Complex**  
4 Large Softball/Baseball Fields  
Parking 250 400 Spaces  
Concessions/Venue House Building
- C Soccer Complex**  
2 Soccer Fields, adjustable orientation  
Parking 400 Spaces  
Concessions/Venue House Building
- D Stadium Complex**  
Baseball, Soccer, Track and Field, lighted  
600 1000 Stadium parking, some shared, some available on the utility corridor (N1)
- E Sports Field Complex**  
2 Multi purpose Fields 1 mile  
1 Lighted Competition Field  
10 Trackers for 500  
Concessions/Venue House Building  
Parking 160 Spaces
- F Multi purpose Field Complex**  
8 Multi purpose Fields, adjustable orientation, lighted  
Hockey 400 Spaces  
Concessions/Venue House Building
- G1 Existing WHS Building**  
**G2 Proposed Indoor Sports/Track/Field Facility**

- H Picnic Area**  
4 (or more) Picnic Shelters  
Loop Road with Parking on shoulder  
Access to 3 Ponds  
Picnic Benches  
Nature Trail around Pond  
Playground  
Volleyball and Basketball Courts  
Flowerbeds  
Multi Purpose Fields and Open Meadows  
Nature Center with Reptile House  
Walking Platforms and Piers
- I Picnic Area**  
Picnic Shelters  
Loop Road with Access to Pond  
Picnic Benches  
Parking Shelters on the Loop  
Nature Trail around Pond  
Playground  
Open Meadows  
Walking 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, 5.5 Miles around park perimeter with connections to Lafayette High School, Houses Thru, and other neighborhood**  
**K2 Greenway access to Centerville Road**

- L Travel Multiuse Trail on utility corridor**  
**M Travel Multiuse Trail 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 Highway 1 to Highway 101 corridor**  
**N2 Unprogrammed Open Space capable of supporting additional stadium parking**  
**N3 Recreation Power Substation**  
**O1 Two options for a secondary park access to Centerville Road for peak expansion, stadium and future high school development. Vehicular control reached in present cut through in Centerville Road, but open for secondary emergency access in accordance with the VDOT 11th Agreement**  
**P Maintenance area 1/2 acre for maintenance, storage, and park headquarters/visitor information**  
**Q BMX Park**  
**Master Plan Summary**  
1996 Master Plan included A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, AA, AB, AC, AD, AE, AF, AG, AH, AI, AJ, AK, AL, AM, AN, AO, AP, AQ, AR, AS, AT, AU, AV, AW, AX, AY, AZ, BA, BB, BC, BD, BE, BF, BG, BH, BI, BJ, BK, BL, BM, BN, BO, BP, BQ, BR, BS, BT, BU, BV, BW, BX, BY, BZ, CA, CB, CC, CD, CE, CF, CG, CH, CI, CJ, CK, CL, CM, CN, CO, CP, CQ, CR, CS, CT, CU, CV, CW, CX, CY, CZ, DA, DB, DC, DD, DE, DF, DG, DH, DI, DJ, DK, DL, DM, DN, DO, DP, DQ, DR, DS, DT, DU, DV, DW, DX, DY, DZ, EA, EB, EC, ED, EE, EF, EG, EH, EI, EJ, EK, EL, EM, EN, EO, EP, EQ, ER, ES, ET, EU, EV, EW, EX, EY, EZ, FA, FB, FC, FD, FE, FF, FG, FH, FI, FJ, FK, FL, FM, FN, FO, FP, FQ, FR, FS, FT, FU, FV, FW, FX, FY, FZ, GA, GB, GC, GD, GE, GF, GG, GH, GI, GJ, GK, GL, GM, GN, GO, GP, GQ, GR, GS, GT, GU, GV, GW, GX, GY, GZ, HA, HB, HC, HD, HE, HF, HG, HH, HI, HJ, HK, HL, HM, HN, HO, HP, HQ, HR, HS, HT, HU, HV, HW, HX, HY, HZ, IA, IB, IC, ID, IE, IF, IG, IH, II, IJ, IK, IL, IM, IN, IO, IP, IQ, IR, IS, IT, IU, IV, IW, IX, IY, IZ, JA, JB, JC, JD, JE, JF, JG, JH, JI, JJ, JK, JL, JM, JN, JO, JP, JQ, JR, JS, JT, JU, JV, JW, JX, JY, JZ, KA, KB, KC, KD, KE, KF, KG, KH, KI, KJ, KL, KM, KN, KO, KP, KQ, KR, KS, KT, KU, KV, KW, KX, KY, KZ, LA, LB, LC, LD, LE, LF, LG, LH, LI, LJ, LK, LL, LM, LN, LO, LP, LQ, LR, LS, LT, LU, LV, LW, LX, LY, LZ, MA, MB, MC, MD, ME, MF, MG, MH, MI, MJ, MK, ML, MM, MN, MO, MP, MQ, MR, MS, MT, MU, MV, MW, MX, MY, MZ, NA, NB, NC, ND, NE, NF, NG, NH, NI, NJ, NK, NL, NM, NN, NO, NP, NQ, NR, NS, NT, NU, NV, NW, NX, NY, NZ, OA, OB, OC, OD, OE, OF, OG, OH, OI, OJ, OK, OL, OM, ON, OO, OP, OQ, OR, OS, OT, OU, OV, OW, OX, OY, OZ, PA, PB, PC, PD, PE, PF, PG, PH, PI, PJ, PK, PL, PM, PN, PO, PP, PQ, PR, PS, PT, PU, PV, PW, PX, PY, PZ, QA, QB, QC, QD, QE, QF, QG, QH, QI, QJ, QK, QL, QM, QN, QO, QP, QQ, QR, QS, QT, QU, QV, QW, QX, QY, QZ, RA, RB, RC, RD, RE, RF, RG, RH, RI, RJ, RK, RL, RM, RN, RO, RP, RQ, RR, RS, RT, RU, RV, RW, RX, RY, RZ, SA, SB, SC, SD, SE, SF, SG, SH, SI, SJ, SK, SL, SM, SN, SO, SP, SQ, SR, SS, ST, SU, SV, SW, SX, SY, SZ, TA, TB, TC, TD, TE, TF, TG, TH, TI, TJ, TK, TL, TM, TN, TO, TP, TQ, TR, TS, TT, TU, TV, TW, TX, TY, TZ, UA, UB, UC, UD, UE, UF, UG, UH, UI, UJ, UK, UL, UM, UN, UO, UP, UQ, UR, US, UT, UU, UV, UW, UX, UY, UZ, VA, VB, VC, VD, VE, VF, VG, VH, VI, VJ, VK, VL, VM, VN, VO, VP, VQ, VR, VS, VT, VU, VW, VX, VY, VZ, WA, WB, WC, WD, WE, WF, WG, WH, WI, WJ, WK, WL, WM, WN, WO, WP, WQ, WR, WS, WT, WU, WV, WW, WX, WY, WZ, XA, XB, XC, XD, XE, XF, XG, XH, XI, XJ, XK, XL, XM, XN, XO, XP, XQ, XR, XS, XT, XU, XV, XW, XX, XY, XZ, YA, YB, YC, YD, YE, YF, YG, YH, YI, YJ, YK, YL, YM, YN, YO, YP, YQ, YR, YS, YT, YU, YV, YW, YX, YY, YZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH, ZI, ZJ, ZK, ZL, ZM, ZN, ZO, ZP, ZQ, ZR, ZS, ZT, ZU, ZV, ZW, ZX, ZY, ZZ

1" = 1/4 mile (400 feet)

# Warhill Sports Complex Expansion Traffic Impact Analysis

James City County, Virginia

September 19, 2016

*Prepared for:*  
James City County







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## 1 EXECUTIVE SUMMARY

This report presents the findings of the traffic impact analysis prepared in support of the revised Master Plan and the proposed expansion of the Warhill Sports Complex. The sports complex is a James City County Parks and Recreation facility that is generally located west of Route 199, south of Centerville Road (Route 614), and north of Longhill Road (Route 612) in James City County, VA as shown on Figure 1-1 (all figures are located at the end of the chapter).

The County is in the process of updating the 2004 Master Plan for the complex to include several new uses, in addition to the remaining unbuilt uses. See Appendix A for the proposed Master Plan.

For purposes of this analysis, the expansion of the complex was assumed to include the following:

- 14 outdoor athletic fields;
- Public gymnasium with three (3) basketball courts;
- Pool expansion;
- Running complex; and
- Williamsburg Area Transit Association (WATA) transfer station.

There are several other uses shown on the proposed Master Plan for the sports complex that will not be significant generators of traffic (i.e. multi-use trails, open space, etc.) and therefore are not explicitly included in the TIA relative to site-generated traffic.

The proposed expansion will utilize the existing access points to the sports complex; no changes in access points or types are proposed with this project. The sports complex is served by two access points; a full movement, signalized access point at the Centerville Road/Opportunity Way intersection (which serves the northern portion of the complex) and a full movement, unsignalized access point at the Longhill Road/Warhill Trail/Longhill Gate Road intersection (which serves the southern portion of the complex).

The northern and southern portions of the complex are connected by an access road that is gated (closed) at all times except for weeknights and weekends during the spring and fall peak periods of use; this connection is not well marked and appears to be used on a somewhat limited basis.

When complete, the expansion of the sports complex is estimated to generate an additional 382 weekday PM peak hour trips and 653 Saturday peak hour trips; this translates into 1,694 daily weekday trips and 2,629 daily Saturday trips.

The purpose of this analysis is to determine the impact of the proposed development on the surrounding roadway network in the year 2036.

Analyses were completed for the 2016 existing traffic volumes, the 2030 background volumes (without expansion), and the 2030 total future volumes (with expansion). Further, to provide a planning level analysis (for informational purposes only), a buildout plus 6 years (2036) scenario was analyzed using both 2036 background volumes and 2036 future total volumes. The buildout plus 6 years scenario is designed to help the County and VDOT with long range planning in the study area.

The scope of this study was developed in conjunction with James City County and Virginia Department of Transportation (VDOT) staff at a scoping meeting held on February 9, 2016 and subsequent correspondence.

The following steps were taken to determine the potential traffic impacts associated with this project:

1. Data Collection – Weekday PM (4:00 – 6:00), and Saturday (10:00 AM – 2:00 PM) peak hour turning movement counts were collected at the five (5) existing intersections within the study area. The counts were conducted on a typical weekday and Saturday when public schools were in session.
2. Traffic Growth – In accordance with the *Longhill Road Corridor Study* and historic VDOT traffic data, a 1% annual growth rate was applied to U.S. Route 60 and Longhill Road east of Warhill Trail while a 2% annual growth rate was applied to Centerville Road and Longhill Road west of Warhill Trail. No growth was applied to the other study roadways.
3. Other Development Trips – The trips that will be generated by the Lightfoot Marketplace development were added to the Centerville Road/Opportunity Way intersection.
4. Trip Generation – Traffic generated by the proposed development was estimated using the 9<sup>th</sup> edition of the Institute of Transportation Engineers' *Trip Generation Manual*.
5. Traffic Distributions – The distribution of trips generated by the proposed developed was based on the existing traffic volumes, the nature of the use, and local knowledge.
6. Traffic Projections – Future traffic volumes were determined using the existing traffic counts, the growth rates discussed above, the trips generated by Lightfoot Marketplace, and the trips generated by the site.
7. Traffic Capacity Analysis – Level of service calculations for existing, background, and future conditions were performed using SYNCHRO Version 9.1 (Build 907, Rev 6). The following intersections were analyzed:
  - U.S. Route 60/Centerville Road (signalized);
  - U.S. Route 60/Route 199 Eastbound Ramps (signalized);
  - U.S. Route 60/Route 199 Westbound Ramps (signalized);
  - Centerville Road/Opportunity Way (signalized); and
  - Longhill Road/Warhill Trail/Longhill Gate Road (unsignalized).
8. Queuing Analysis – The 95<sup>th</sup> percentile queue lengths (Synchro) and maximum queues (SimTraffic) were reviewed at the intersections listed above.
9. Signal Warrant Analysis – A review of the MUTCD signal warrants was conducted at the Longhill Road/Warhill Trail/Longhill Gate Road intersection.

This traffic impact analysis (TIA) has been prepared in accordance with (1) the procedures outlined in the Virginia Department of Transportation's (VDOT) Traffic Impact Analysis Regulations (henceforth referred to as Chapter 527), (2) the VDOT *Traffic Operations and Safety Analysis Manual (TOSAM)*, and (3) the Scope of Study agreed upon between James City County, VDOT, and Timmons Group (see Appendix B for the scoping agreement).

Based on the operational analyses the following is offered:

- The study area included the following intersections:
  - U.S. Route 60/Route 199 Eastbound Ramps (signalized);
  - U.S. Route 60/Route 199 Westbound Ramps (signalized);
  - U.S. Route 60/Centerville Road (signalized);
  - Centerville Road/Opportunity Way (signalized); and
  - Longhill Road/Warhill Trail (unsignalized).
- Existing weekday PM and Saturday peak hour traffic counts were conducted at the intersections on a Thursday and Saturday in May when public schools were in session and the sports complex fields were in use.
- For purposes of this analysis, the expansion of the sports complex was assumed to be completed by 2030.
- The TIA examined both the PM peak hour and Saturday peak hour under existing (2016) conditions, background (2030) conditions, and future total (2030) conditions with the proposed expansion of the sports complex. Additionally, a buildout plus six years (2036) scenario was analyzed for both background and future total conditions for planning purposes only.
- The expansion of the complex was assumed to include:
  - 14 outdoor athletic fields;
  - Public gymnasium with three (3) basketball courts;
  - Pool expansion;
  - Running complex; and
  - WATA transfer station
- There are several other uses shown on the Master Plan for the sports complex that will not be significant generators of traffic (i.e. multi-use trails, open space, etc.) and therefore are not explicitly included in the TIA.
- The expansion of the sports complex is estimated to generate an additional 382 weekday PM peak hour trips and 653 Saturday peak hour trips; this translates into 1,694 daily weekday trips and 2,629 daily Saturday trips.
- The study intersections generally operate at acceptable LOS under existing conditions with the exception of the Longhill Road/Warhill Trail intersection.
  - Under existing conditions, the intersection fails during both the PM and Saturday peak hours and a traffic signal is needed for the intersection to operate at acceptable levels of service.
  - During non-peak hours, the intersection operates acceptably.
  - A traffic signal at this location was recommended at this intersection in the *Longhill Road Corridor Study*.



- Traffic entering the park is split equally between the two (2) entrances, while exiting traffic is skewed toward the Opportunity Way entrance (and traffic signal) due to the delays encountered at Longhill Road.



## 2 BACKGROUND INFORMATION

### 2.1 DESCRIPTION OF ON-SITE DEVELOPMENT

James City County is in the process of updating the Master Plan for the Warhill Sports Complex. The sports complex is a James City County Parks and Recreation facility that is generally located west of Route 199, south of Centerville Road (Route 614), and north of Longhill Road (Route 612) in James City County, Virginia as shown on Figure 1-1.

The County is updating the 2004 Master Plan for the complex to include several new uses in addition to the remaining unbuilt uses. The proposed Master Plan is included in Appendix A.

For purposes of this analysis, the expansion of the complex was assumed to include the following:

- 14 outdoor athletic fields;
- Public gymnasium with 3 basketball courts;
- Pool expansion;
- Running complex; and
- WATA transfer station.

There are several other uses shown on the proposed Master Plan for the sports complex that will not be significant generators of traffic (i.e. multi-use trails, open space, etc.) and therefore are not explicitly included in the TIA.

The proposed expansion will utilize the existing access points to the sports complex; no changes in access points or types are proposed with this project. The sports complex is served by two access points; a full movement, signalized access point at the Centerville Road/Opportunity Way intersection (which serves the northern portion of the complex) and a full movement, unsignalized access point at the Longhill Road/Warhill Trail/Longhill Gate Road intersection (which serves the southern portion of the complex).

The northern and southern portions of the complex are connected by an access road that is gated (closed) at all times except for weeknights and weekends during the spring and fall peak periods of use.

The study intersections are listed below and shown on Figure 1-1.

### 2.2 STUDY LIMITS

As agreed upon in the scoping agreement, the study limits include the following existing intersections:

1. U.S. Route 60/Centerville Road (signalized);
2. U.S. Route 60/Route 199 Eastbound Ramps (signalized);
3. U.S. Route 60/Route 199 Westbound Ramps (signalized);
4. Centerville Road/Opportunity Way (signalized); and
5. Longhill Road/Warhill Trail (unsignalized).

## 2.3 EXISTING ROADWAYS NETWORK

U.S. Route 60 (Richmond Road) is a four-lane, median divided principal arterial roadway within the study area with an average daily traffic (ADT) of 20,000 vehicles based on the latest available data (2015). This section has a posted speed limit of 45 miles per hour.

Route 199 (Humelsine Parkway) is a four-lane, median divided limited access facility within the study area with an ADT of 25,000 vehicles based on the latest available data (2015).

This section of Route 199 connects I-64 to the north with U.S. Route 60 to the south and serves as a southern bypass to the City of Williamsburg. The ramps with U.S. Route 60 are signalized.

Centerville Road (Route 614) is a two-lane undivided minor arterial roadway throughout most of the study area. From Opportunity Way to U.S. Route 60, Centerville Road is a four-lane median divided roadway. According to the latest available data (2015), this section of Centerville Road has an ADT of 9,300 vehicles.

This section of Centerville Road connects Monticello Avenue to the southeast with U.S. Route 60 to the northwest and has a posted speed limit of 45 miles per hour.

Longhill Road (Route 612) is a two-lane undivided minor arterial roadway within the study area with an ADT of 7,300 vehicles based on the latest available data (2015).

This section of Longhill Road connects Centerville Road to the west with Route 199 to the east and has a posted speed limit of 45 miles per hour.

The remaining study roadways are two-lane, undivided roadways with posted speed limits of 25 miles per hour.

## 2.4 FUTURE IMPROVEMENTS

There are no known planned or funded improvements that will impact the study intersections within the timeframe of this analysis.

Longhill Road is anticipated to be widened to four lanes throughout the study area, but James City County has indicated that this improvement will occur beyond the timeframe of this analysis and therefore was not included.

There are two recently completed road improvements to study intersections:

- An additional lane was added to the northbound approach (Route 199 off-ramp) to the U.S. Route 60/Route 199 Westbound intersection to create separate left and right turn lanes.
- In conjunction with the Lightfoot Marketplace development, a second westbound left turn lane was added to the Centerville Road/Opportunity Way intersection.

## 2.5 OTHER MODES OF TRANSPORTATION

In accordance with Chapter 527 regulations, this study also reviews the potential for walking, bicycling, and transit trips to and from the area.

Currently, there are sidewalks and/or multi-use trails on at least one side of all of the study roadways. Internal to the site, there is a multi-use path along both Opportunity Way and Warhill Trail.

The Williamsburg Area Transit Authority (WATA) provides bus service throughout the study area and a future transfer station is proposed within the Warhill Sports Complex.

While there is potential (and facilities) for trips to and from the site to be made via walking, bicycle, and transit, to be conservative, no reduction in trips was taken for other modes of transportation.

### 3 EXISTING CONDITIONS ANALYSIS

#### 3.1 EXISTING TRAFFIC VOLUMES

Existing peak hour turning movement counts were collected at each of the study intersections during PM (4:00 – 6:00), and Saturday (10:00 AM – 2:00 PM) peak hour timeframes. The counts were conducted on a typical weekday and Saturday when public schools were in session and the existing fields at the sports complex were in full use. The counts included heavy vehicles by movement and pedestrian counts.

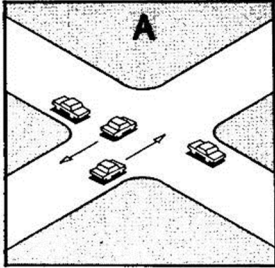
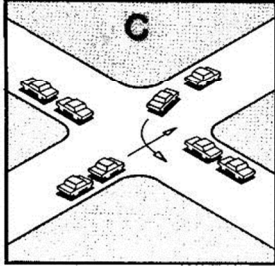
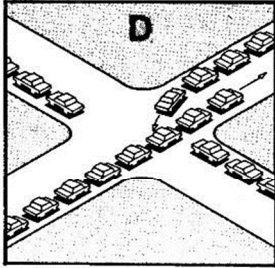
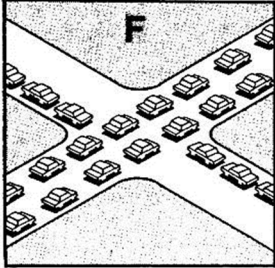
Since the study intersections are not completely contiguous, Timmons Group did not choose a common peak hour for the intersections. The existing traffic data with individual intersection peak hours is summarized on Figure 3-1. The complete traffic data is included in Appendix C.

The data indicates that the peak hour of the individual intersections are generally consistent in the PM. On Saturday, the Longhill Road/Warhill Trail/Longhill Gate Road intersection peaks from 10:15 to 11:15 AM while the other intersections peak later (12:30 to 1:30 PM).

#### 3.2 CAPACITY ANALYSES

Capacity analysis allows traffic engineers to determine the impacts of traffic on the surrounding roadway network. The Transportation Research Board's (TRB) *Highway Capacity Manual* (HCM) methodologies govern how the capacity analyses are conducted and how the results are interpreted. There are six letter grades of Levels of Service (LOS) from A to F, with LOS A representing the best operating conditions and LOS F the worst operating conditions. Table 3-1 shows in detail how each of these levels of service are interpreted.

**Table 3-1: Level of Service Definitions**

Level of Service	Roadway Segments or Controlled Access Highways	Intersections	
A	Free flow, low traffic density.	No vehicle waits longer than one signal indication.	
B	Delay is not unreasonable, stable traffic flow.	On a rare occasion motorists wait through more than one signal indication.	
C	Stable condition, movements somewhat restricted due to higher volumes, but not objectionable for motorists.	Intermittently drivers wait through more than one signal indication, and occasionally backups may develop behind left turning vehicles, traffic flow still stable and acceptable.	
D	Movements more restricted, queues and delays may occur during short peaks, but lower demands occur often enough to permit clearing, thus preventing excessive backups.	Delays at intersections may become extensive with some, especially left-turning vehicles waiting two or more signal indications, but enough cycles with lower demand occur to permit periodic clearance, thus preventing excessive backups.	
E	Actual capacity of the roadway involves delay to all motorists due to congestion.	Very long queues may create lengthy delays, especially for left-turning vehicles.	
F	Forced flow with demand volumes greater than capacity resulting in complete congestion. Volumes drop to zero in extreme cases.	Backups from locations downstream restrict or prevent movement of vehicles out of approach creating a storage area during part or all of an hour.	

SOURCE: "A Policy on Design of Design of Urban Highways and Arterial Streets" - AASHTO, 1973 based upon material published in "Highway Capacity Manual", National Academy of Sciences, 1965.

For signalized and unsignalized intersections, level of service is defined in terms of **delay**, a measure of driver discomfort, frustration, fuel consumption and lost travel time. Table 3-2 summarizes the delay associated with each LOS category:

**Table 3-2: Signalized and Unsignalized Intersection Level of Service Criteria**

Signalized Intersections		Unsignalized Intersections	
Level of Service	Control Delay per Vehicle (sec/veh)	Level of Service	Average Control Delay (sec/veh)
A	$\leq 10$	A	0 to 10
B	$> 10$ to $\leq 20$	B	$> 10$ to $\leq 15$
C	$> 20$ to $\leq 35$	C	$> 15$ to $\leq 25$
D	$> 35$ to $\leq 55$	D	$> 25$ to $\leq 35$
E	$> 55$ to $\leq 80$	E	$> 35$ to $\leq 50$
F	$> 80$	F	$> 50$

*Source: Exhibit 16-2 and Exhibit 17-2 from TRB's "Highway Capacity Manual 2000"*

Capacity analyses were performed to assess existing (2016), background (2030), and future (2030) operational conditions. The signalized and unsignalized intersections were analyzed using SYNCHRO Version 9.1 (Build 907, Rev 6) based on HCM 2000 methodologies with the following assumptions:

- Level terrain;
- 12-foot lane widths;
- No parking activity or bus stops;
- Existing peak hour factor as determined by the traffic counts (by intersection);
- Heavy vehicle percentage as determined by the traffic counts (by movement); and
- Traffic signals timing data provided by VDOT. Given the length of buildout (14 years), the cycle length and timings were optimized in all future scenarios.

The existing lane use and traffic control at the study intersections is shown on Figure 3-2.



### 3.3 2016 EXISTING TRAFFIC CONDITIONS

Table 3-3 summarizes the 2016 existing intersection LOS, delay, 95<sup>th</sup> percentile (Synchro) and maximum (SimTraffic) queue lengths based on the 2016 existing peak hour traffic volumes shown on Figure 3-1, the existing lane geometry shown on Figure 3-2, and the existing traffic signal timings. The 2016 existing PM and Saturday peak hour intersection LOS is shown on Figure 3-3. The corresponding SYNCHRO worksheets are included in Appendix D.

As shown on Table 3-3, each of the signalized study intersections currently operates at an overall LOS C or better. Several turn lanes or side-street approaches operate at LOS E during at least one of the peak hours. Similarly, the majority of 95<sup>th</sup> percentile (Synchro) and maximum (SimTraffic) queues are contained within the available storage, with several left or right turn lane queues extending beyond the available storage in one or both peak hours.

At the unsignalized Longhill Road/Warhill Trail/Longhill Gate Road intersection, the southbound approach (exiting the park) operates at LOS F during both peak hours with queues that extend beyond the available storage.

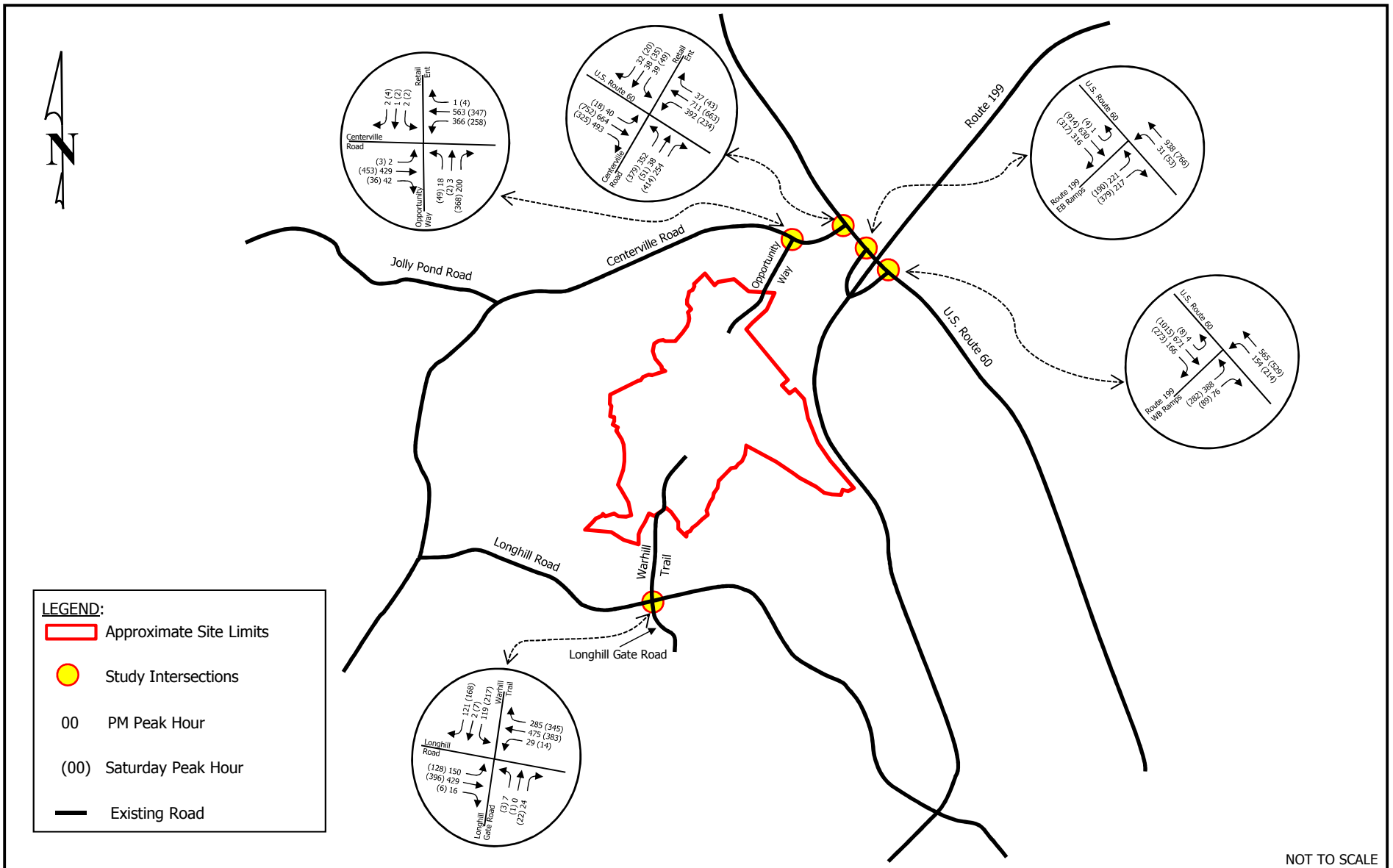
**Table 3-3: Intersection Level of Service, Delay, and Queue Summary  
2016 Existing Conditions**

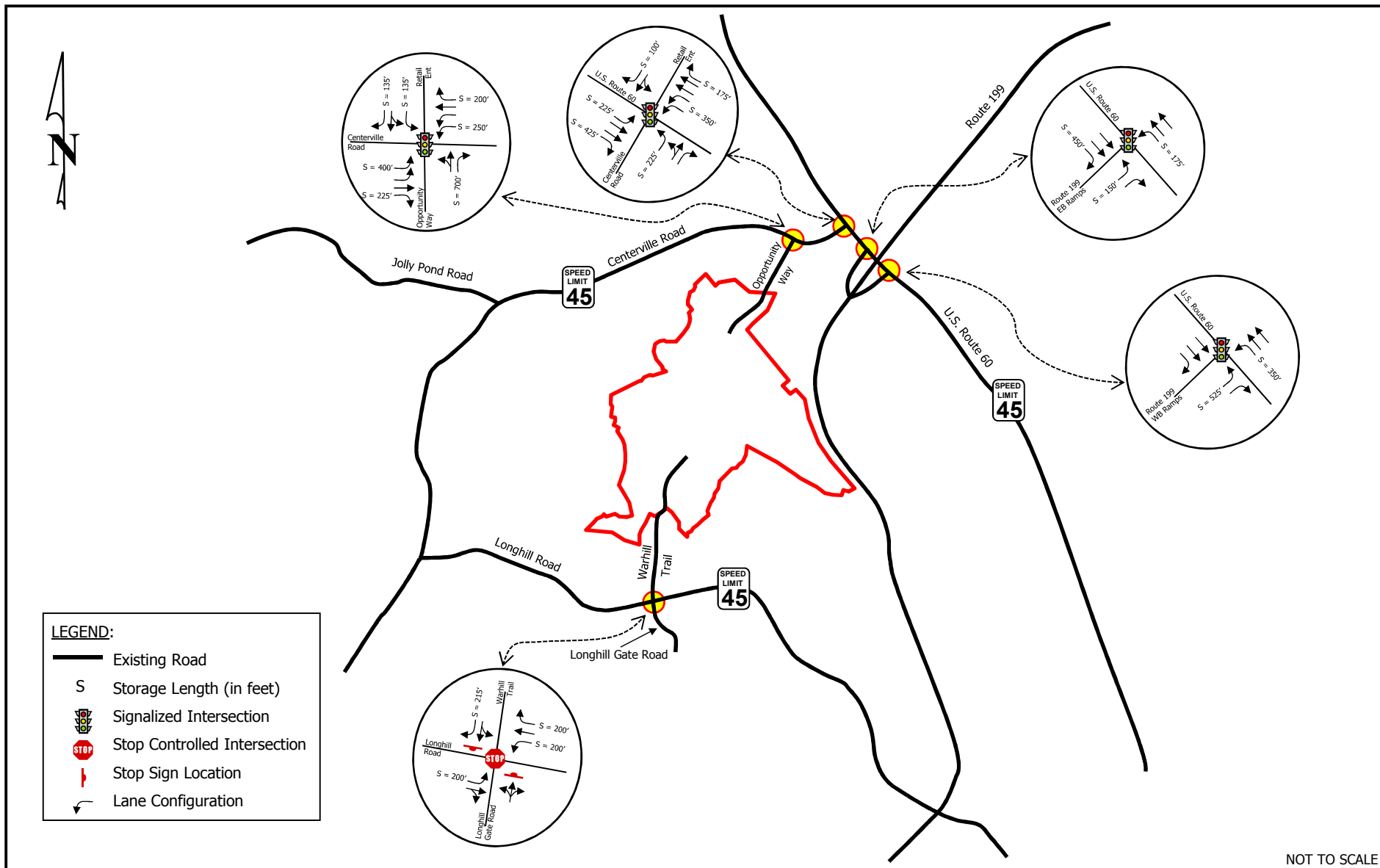
Intersection and Type of Control	Movement and Approach	Number of Lane	Turn Lane Storage (ft)	PM Peak Hour			Saturday Peak Hour				
				HCM 2000 Delay <sup>1</sup> (sec/veh)	LOS <sup>1</sup>	SYNCHRO 95th Percentile Queue Length (ft)	SimTraffic Max Queue Length (ft) <sup>(2)</sup>	Delay <sup>1</sup> (sec/veh)	LOS <sup>1</sup>	SYNCHRO 95th Percentile Queue Length (ft)	SimTraffic Max Queue Length (ft) <sup>(2)</sup>
1. US Route 60 (E-W) at Centerville Road (NB)/ Retail Entrance (SB) Signalized	EB Left	1	225	51.5	D	65	102	57.0	E	37	62
	EB Thru	2		34.2	C	297	293	29.8	C	314	341
	EB Right <sup>(3)</sup>	1	425	0.6	A	0	223	0.3	A	0	136
	EB Approach			21.0	C	--	--	21.5	C	--	--
	WB Left	2	350	40.1	D	#258	241	36.9	D	94	159
	WB Thru	2		28.2	C	352	299	22.3	C	296	266
	WB Right	1	175	18.8	B	m0	184	16.9	B	m6	185
	WB Approach			32.0	C	--	--	25.7	C	--	--
	NB Left	1	225	55.5	E	#280	185	54.9	D	#286	213
	NB Thru-Left	1		55.5	E	#282	229	55.6	E	#293	253
	NB Right	1		39.6	D	75	183	41.3	D	129	257
	NB Approach			49.2	D	--	--	48.4	D	--	--
	SB Thru-Left	1		54.2	D	107	146	54.6	D	109	140
	SB Right	1	100	46.6	D	0	66	46.5	D	0	87
SB Approach			51.9	D	--	--	53.0	D	--	--	
Overall			32.0	C	--	--	31.7	C	--	--	
2. US Route 60 (E-W) at Route 199 EB Ramps (N-S) Signalized	EB Thru	2		24.0	C	198	276	13.9	B	211	361
	EB Right	1	450	74.2	E	82	181	16.4	B	30	166
	EB Approach			40.7	D	--	--	14.6	B	--	--
	WB Left	1	175	54.6	D	m45	118	49.2	D	m59	115
	WB Thru	2		9.2	A	361	265	6.7	A	247	197
	WB Approach			10.7	B	--	--	9.4	A	--	--
	NB Left	1	150	50.8	D	231	174	51.0	D	200	174
	NB Right	1		37.4	D	57	389	43.2	D	144	350
	NB Approach			44.2	D	--	--	45.8	D	--	--
	Overall			29.0	C	--	--	19.7	B	--	--
3. US Route 60 (E-W) at Route 199 WB Ramps (N-S) Signalized	EB Thru	2		26.1	C	201	318	29.0	C	456	390
	EB Right	1		28.8	C	38	120	42.0	D	72	148
	EB Approach			26.6	C	--	--	31.7	C	--	--
	WB Left	1	350	55.6	E	182	238	62.8	E	#293	299
	WB Thru	2		11.6	B	133	221	7.7	A	114	194
	WB Approach			21.0	C	--	--	23.5	C	--	--
	NB Left	1	525	47.7	D	#452	447	54.7	D	295	346
	NB Right	1		28.6	C	36	69	34.9	C	41	96
	NB Approach			44.5	D	--	--	49.9	D	--	--
Overall			28.7	C	--	--	32.0	C	--	--	
4. Centerville Road (E-W) at Opportunity Way (NB)/ Retail Entrance (SB) Signalized	EB Left	2	400	41.3	D	4	29	39.2	D	5	27
	EB Thru	1		21.3	C	#377	262	21.7	C	#368	314
	EB Right	1	225	14.4	B	0	126	14.6	B	0	120
	EB Approach			20.7	C	--	--	21.3	C	--	--
	WB Left	2	250	43.3	D	#180	154	34.0	C	#135	129
	WB Thru	1		13.3	B	#446	222	11.5	B	239	189
	WB Right	1	200	7.9	A	0	2	9.1	A	0	20
	WB Approach			25.1	C	--	--	21.0	C	--	--
	NB Thru-Left	1		35.2	D	32	42	31.9	C	60	69
	NB Right	1	700	35.3	D	52	95	31.8	C	79	172
	NB Approach			35.3	D	--	--	31.8	C	--	--
	SB Left	1	135	41.4	D	5	23	40.0	D	8	12
	SB Thru-Left	1		42.5	D	8	13	39.8	D	8	23
	SB Right	1	135	42.8	D	8	17	43.8	D	13	23
	SB Approach			42.4	D	--	--	41.9	D	--	--
Overall			25.3	C	--	--	24.2	C	--	--	
5. Longhill Road (E-W) at Longhill Road (NB)/ Warhill Trail (SB) Unsignalized	EB Left	1	200	11.2	B	22	108	10.2	B	15	90
	EB Thru-Right	1		0.0	A	0	0	0.0	A	0	0
	EB Approach			2.8	A	--	--	2.5	A	--	--
	WB Left	1	200	8.6	A	3	36	8.2	A	1	23
	WB Thru	1		0.0	A	0	3	0.0	A	0	0
	WB Right	1	200	0.0	A	0	42	0.0	A	0	52
	WB Approach			0.3	A	--	--	0.2	A	--	--
	NB Left-Thru-Right	1		30.5	D	18	52	16.6	C	7	47
	NB Approach			30.5	D	--	--	16.6	C	--	--
	SB Thru-Left	1		544.3	F	569	412	481.7	F	780	1032
	SB Right	1	215	544.3	F	569	199	481.7	F	780	240
SB Approach			544.3	F	--	--	481.7	F	--	--	

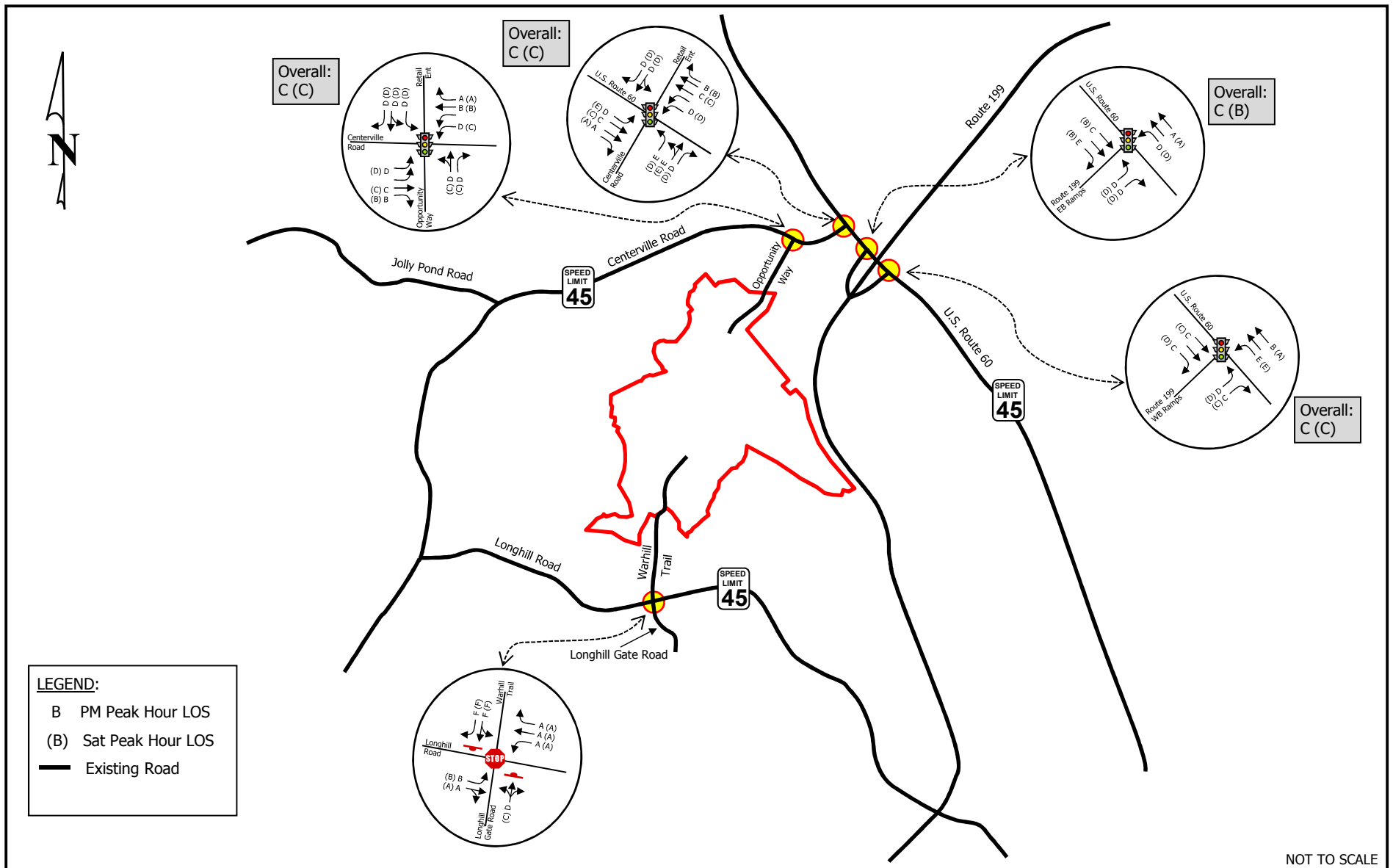
<sup>1</sup> Overall intersection LOS and delay reported for signalized intersections and roundabouts only.<sup>2</sup> When more than one lane is present, the highest maximum queue is reported.<sup>3</sup> Eastbound right is channelized and operates under Yield control (not subject to traffic signal control).

# - 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

m - Volume for 95th percentile queue is metered by upstream signal.







## 4 2030 BACKGROUND CONDITIONS AND ANALYSIS

The background 2030 volumes were analyzed assuming existing intersection geometry and traffic controls in conjunction with projected background traffic volumes. Background traffic volumes are comprised of the existing traffic counts, trips from adjacent developments in the area, and background traffic growth.

### 4.1 ADJACENT DEVELOPMENT TRIPS

There is one (1) approved/unbuilt development in the study area that will be built by 2030. Lightfoot Marketplace, a redevelopment of the Williamsburg Outlet Mall, is currently under construction. At full development, Lightfoot Marketplace will consist of 136,122 square feet of retail space. A traffic impact analysis was completed for the development in 2013 by Bryant B. Goodloe, P.C. That study looked at AM and PM peak hours but did not include a Saturday peak hour analysis.

The trips that will be generated by the Lightfoot Marketplace were obtained from the TIA (for the PM peak hour) and estimated using the 9<sup>th</sup> edition of the Institute of Transportation Engineers' (ITE) *Trip Generation Manual* (for the Saturday peak hour). The trips are shown in Table 4-1.

**Table 4-1: Lightfoot Marketplace Trip Generation**

LAND USE	ITE CODE	AMOUNT	UNITS	WEEKDAY PM PEAK HOUR <sup>(1)</sup>				SATURDAY Midday Peak Hour <sup>(2)</sup>			
				ADT	IN	OUT	TOTAL	ADT	IN	OUT	TOTAL
Shopping Center	820	49,634	s.f.	4,307	195	203	398	2,480	124	115	239
Supermarket	850	58,000	s.f.	5,930	311	286	597	10,300	315	303	618
Pharmacy w/Drive-thru <sup>(3)</sup>	881	15,000	s.f.	1,322	78	78	156	1,230	60	63	123
High-Turnover Sit-Down Restaurant	932	13,488	s.f.	1,715	89	62	151	2,136	101	89	190
Total Proposed Trips				13,274	673	629	1,302	16,147	600	569	1,170
Pass-by Trips		25%		3,319	168	157	326	4,037	150	142	292
<b>Net "New" Trips</b>				<b>9,955</b>	<b>505</b>	<b>472</b>	<b>976</b>	<b>12,110</b>	<b>450</b>	<b>427</b>	<b>878</b>

Notes:

(1) PM Trip generation source: Lightfoot Marketplace TIA (12/6/2013) prepared by Bryant B. Goodloe, P.C.

(2) Saturday Trip generation source: Institute of Transportation Engineers' Trip Generation Manual 9th Edition (2012).

(3) Saturday ADT assumed at 10x peak hour since ITE has no Saturday ADT information for this use.

The fourth leg (northern approach) of the Centerville Road/Opportunity Way serves as a main entrance to Lightfoot Marketplace. Therefore, the trips shown in Table 4-1 were distributed to the Centerville Road/Opportunity Way intersection based on the information contained within the Lightfoot Marketplace TIA. The resulting Lightfoot Marketplace Trips are shown on Figure 4-1.

### 4.2 BACKGROUND TRAFFIC GROWTH

Background traffic growth accounts for development outside the study area and is estimated based on historic traffic data, census data, and other available traffic models/studies. In this case, the background traffic growth for both Longhill Road and Centerville Road was obtained from the *Longhill Road Corridor Study* prepared by Kimley-Horn in 2014. That study incorporated an annual growth rate of 2% on Centerville Road and Longhill Road west of Warhill Trail. East of Warhill Trail, the annual growth rate was 1%. It is important to note that the growth rates in the *Longhill Road Corridor Study* explicitly accounted for trips from other developments.

The study did not discuss a growth rate for U.S. Route 60. Based on historic VDOT traffic counts, the traffic on U.S. Route 60 has declined from 2010 (25,000 ADT) to 2015 (20,000 ADT). This trend is not likely to continue and therefore, to be conservative, a 1% annual growth rate was applied to U.S. Route 60 and the ramps from Route 199 onto U.S. Route 60. Similar to the *Longhill Road Corridor Study*, this growth rate accounts for trips from other developments (including Lightfoot Marketplace) outside the turning movements at the entrance discussed above.

#### 4.3 2030 BACKGROUND TRAFFIC VOLUMES

The growth rates discussed above were compounded annually over the 14-year period for project buildout and applied to the study roadways. The growth was added to the existing traffic volumes (Figure 3-1) and the Lightfoot Marketplace Trips (Figure 4-1) and the resulting 2030 background volumes are shown on Figure 4-2.

#### 4.4 2030 BACKGROUND TRAFFIC VOLUME CAPACITY ANALYSIS

Table 4-2 summarizes the 2030 background intersection LOS, delay, 95<sup>th</sup> percentile (Synchro) and maximum (SimTraffic) queue lengths based on the 2030 background peak hour traffic volumes shown on Figure 4-2, the existing lane geometry (Figure 3-2), and optimized traffic signal timings. The 2030 background PM and Saturday peak hour intersection LOS is shown on Figure 4-3. The corresponding SYNCHRO worksheets are included in Appendix D.

As indicated in Table 4-2, under 2030 background conditions, the growth in background traffic will cause an increase in delay and queueing at the study intersections. Each signalized intersection will have multiple lanes/approaches that operate at LOS E during at least one of the peak hours.

At the Centerville Road/Opportunity Way intersection, the east and westbound queues increase and begin to encroach upon other intersections. This is primarily due to the high through traffic volumes (500-750 vehicles in each direction) and the single through lane in each direction. Should the annual 2% growth rate be realized, long range consideration should be given to widening Centerville Road to two (2) through lanes in each direction through the Centerville Road/Opportunity Way intersection. A widened Centerville Road will also allow more green time to be given to the side streets which will help alleviate the delay/queue on those approaches. The James City County Comprehensive Plans lists this section of Centerville Road as one to “watch for widening”.

As noted under existing conditions, the unsignalized Longhill Road/Warhill Trail/Longhill Gate Road intersection, the southbound approach (exiting the park) will operate at LOS F during both peak hours with queues that extend beyond the available storage. Consideration should be given to the installation of a traffic signal at this intersection. The *Longhill Road Corridor Study* also indicated the need for a traffic signal at this location.

**Table 4-2: Intersection Level of Service, Delay, and Queue Summary  
2030 Background Conditions**

Intersection and Type of Control	Movement and Approach	Number of Lane	Turn Lane Storage (ft)	PM Peak Hour			Saturday Peak Hour				
				HCM 2000 Delay <sup>1</sup> (sec/veh)	LOS <sup>1</sup>	SYNCHRO 95th Percentile Queue Length (ft)	SimTraffic Max Queue Length (ft) <sup>(2)</sup>	Delay <sup>1</sup> (sec/veh)	LOS <sup>1</sup>	SYNCHRO 95th Percentile Queue Length (ft)	SimTraffic Max Queue Length (ft) <sup>(2)</sup>
1. US Route 60 (E-W) at Centerville Road (NB)/ Retail Entrance (SB) Signalized	EB Left	1	225	73.0	E	68	97	69.5	E	38	162
	EB Thru	2		36.6	D	366	376	38.4	D	390	418
	EB Right <sup>(3)</sup>	1	425	0.7	A	0	312	0.4	A	0	262
	EB Approach			22.8	C	--	--	27.5	C	--	--
	WB Left	2	350	49.8	D	#253	319	61.8	E	#159	200
	WB Thru	2		25.7	C	390	365	20.3	C	348	267
	WB Right	1	175	16.6	B	m0	183	19.8	B	1	182
	WB Approach			33.8	C	--	--	30.6	C	--	--
	NB Left	1	225	59.4	E	#295	213	41.2	D	251	213
	NB Thru-Left	1		60.4	E	#302	235	40.9	D	250	335
	NB Right	1		39.2	D	84	175	60.8	E	#383	290
	NB Approach			51.7	D	--	--	50.8	D	--	--
	SB Thru-Left	1		78.8	E	#131	133	61.7	E	#136	137
	SB Right	1	100	48.7	D	0	102	47.4	D	0	54
	SB Approach			69.8	E	--	--	58.9	E	--	--
	Overall			34.4	C	--	--	36.1	D	--	--
2. US Route 60 (E-W) at Route 199 EB Ramps (N-S) Signalized	EB Thru	2		16.9	B	365	280	15.5	B	231	409
	EB Right	1	450	60.6	E	234	124	7.8	A	m12	188
	EB Approach			31.5	C	--	--	13.5	B	--	--
	WB Left	1	175	45.5	D	m53	147	53.1	D	m75	142
	WB Thru	2		6.4	A	265	268	13.7	B	m312	244
	WB Approach			7.7	A	--	--	16.3	B	--	--
	NB Left	1	150	49.9	D	256	174	37.8	D	210	174
	NB Right	1		37.3	D	104	435	60.0	E	#370	454
	NB Approach			43.7	D	--	--	52.6	D	--	--
	Overall			24.0	C	--	--	22.9	C	--	--
3. US Route 60 (E-W) at Route 199 WB Ramps (N-S) Signalized	EB Thru	2		41.8	D	394	335	35.2	D	#397	507
	EB Right	1		87.1	F	141	128	46.1	D	m64	218
	EB Approach			50.7	D	--	--	37.5	D	--	--
	WB Left	1	350	62.6	E	#246	235	78.2	E	#341	327
	WB Thru	2		13.0	B	180	256	7.8	A	118	327
	WB Approach			23.6	C	--	--	28.1	C	--	--
	NB Left	1	525	55.4	E	#482	448	77.4	E	#423	427
	NB Right	1		27.4	C	36	81	35.2	D	46	104
	NB Approach			50.8	D	--	--	67.2	E	--	--
	Overall			41.1	D	--	--	39.2	D	--	--
4. Centerville Road (E-W) at Opportunity Way (NB)/ Retail Entrance (SB) Signalized	EB Left	2	400	85.0	F	#152	373	51.6	D	#110	425
	EB Thru	1		35.9	D	#632	519	42.9	D	#734	851
	EB Right	1	225	19.5	B	0	250	20.3	C	0	250
	EB Approach			45.8	D	--	--	43.5	D	--	--
	WB Left	2	250	59.7	E	#246	289	62.7	E	#195	194
	WB Thru	1		35.0	C	#879	587	26.8	C	449	370
	WB Right	1	200	13.9	B	0	225	18.8	B	0	225
	WB Approach			42.1	D	--	--	38.6	D	--	--
	NB Thru-Left	1		54.2	D	59	76	40.1	D	81	108
	NB Right	1	700	53.1	D	65	110	55.8	E	221	231
	NB Approach			53.3	D	--	--	53.5	D	--	--
	SB Left	1	135	55.6	E	153	139	46.1	D	126	124
	SB Thru-Left	1		55.6	E	155	198	46.2	D	130	176
	SB Right	1	135	62.4	E	160	151	49.1	D	133	154
	SB Approach			58.0	E	--	--	47.2	D	--	--
	Overall			46.2	D	--	--	44.3	D	--	--
5. Longhill Road (E-W) at Longhill Road (NB)/ Warhill Trail (SB) Unsignalized	EB Left	1	200	11.8	B	25	106	10.6	B	16	96
	EB Thru-Right	1		0.0	A	0	2	0.0	A	0	0
	EB Approach			2.4	A	--	--	2.1	A	--	--
	WB Left	1	200	9.1	A	3	31	8.7	A	1	28
	WB Thru	1		0.0	A	0	49	0.0	A	0	2
	WB Right	1	200	0.0	A	0	42	0.0	A	0	33
	WB Approach			0.3	A	--	--	0.1	A	--	--
	NB Left-Thru-Right	1		48.6	E	30	50	20.8	C	9	45
	NB Approach			48.6	E	--	--	20.8	C	--	--
	SB Thru-Left	1		Err	F	Err	672	835.5	F	949	1437
SB Right	1	215	Err	F	Err	240	835.5	F	949	240	
SB Approach			Err	F	--	--	835.5	F	--	--	

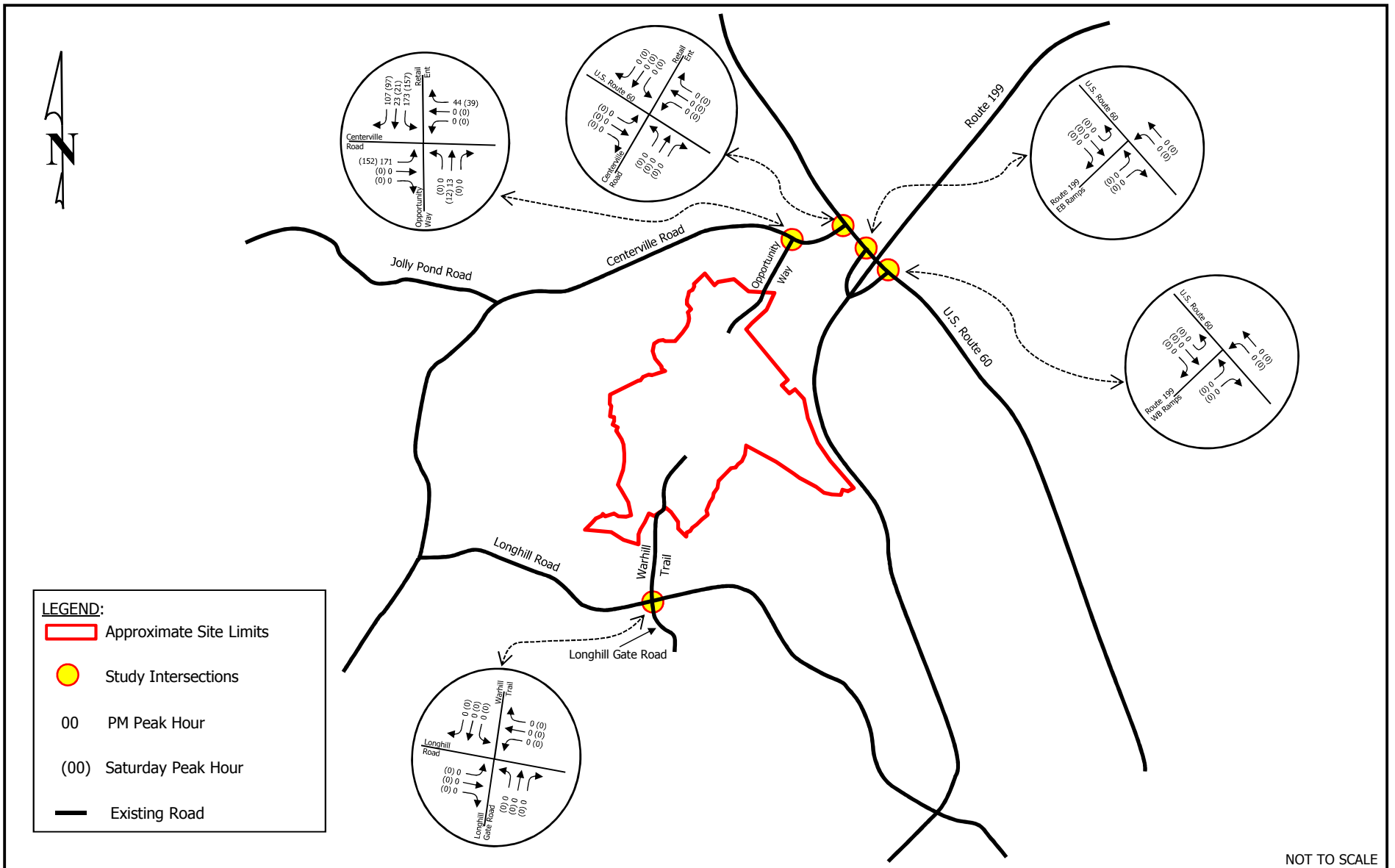
<sup>1</sup> Overall intersection LOS and delay reported for signalized intersections and roundabouts only.<sup>2</sup> When more than one lane is present, the highest maximum queue is reported.<sup>3</sup> Eastbound right is channelized and operates under Yield control (not subject to traffic signal control).

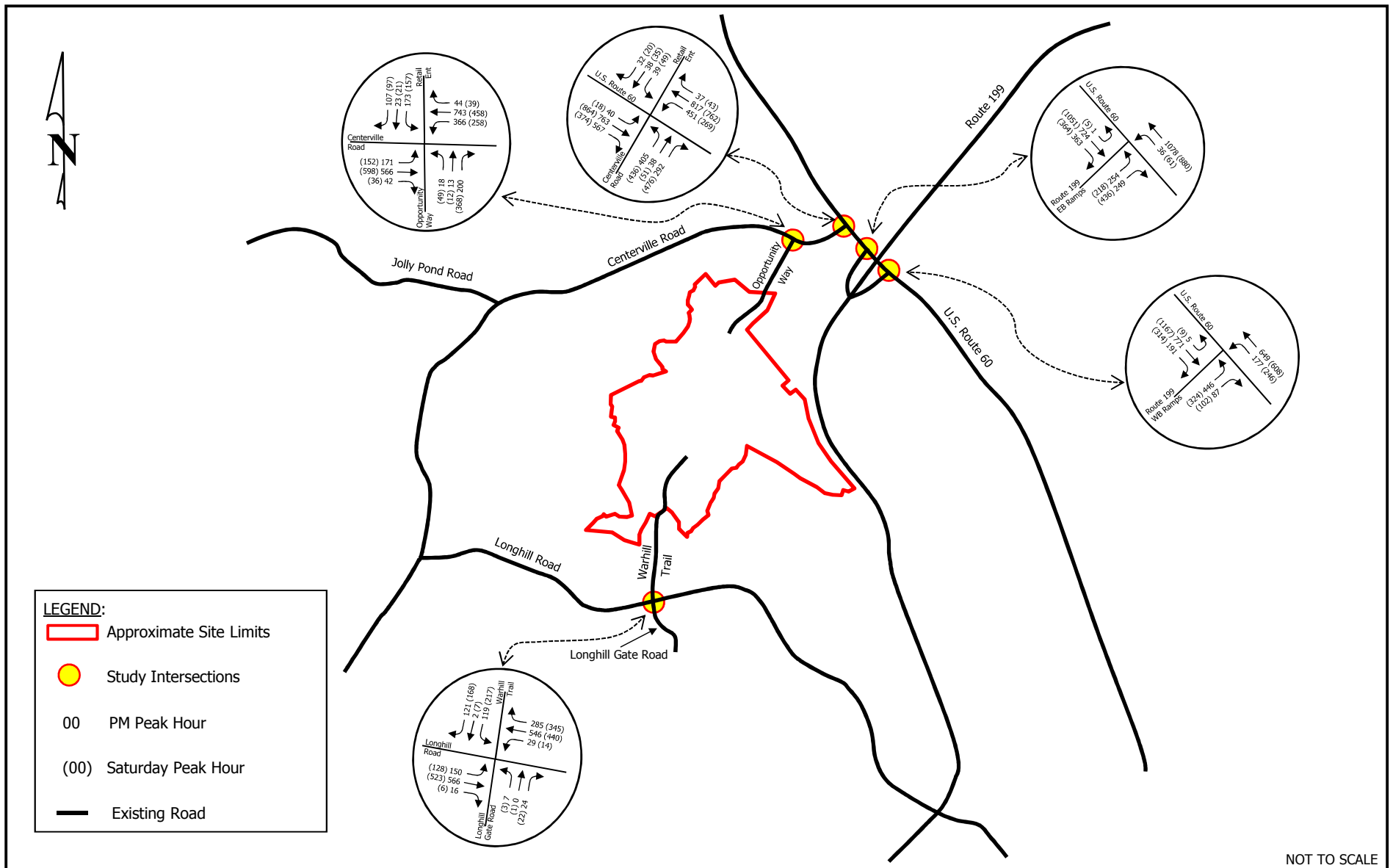
Err LOS/Queue cannot be calculated by Synchro

# - 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

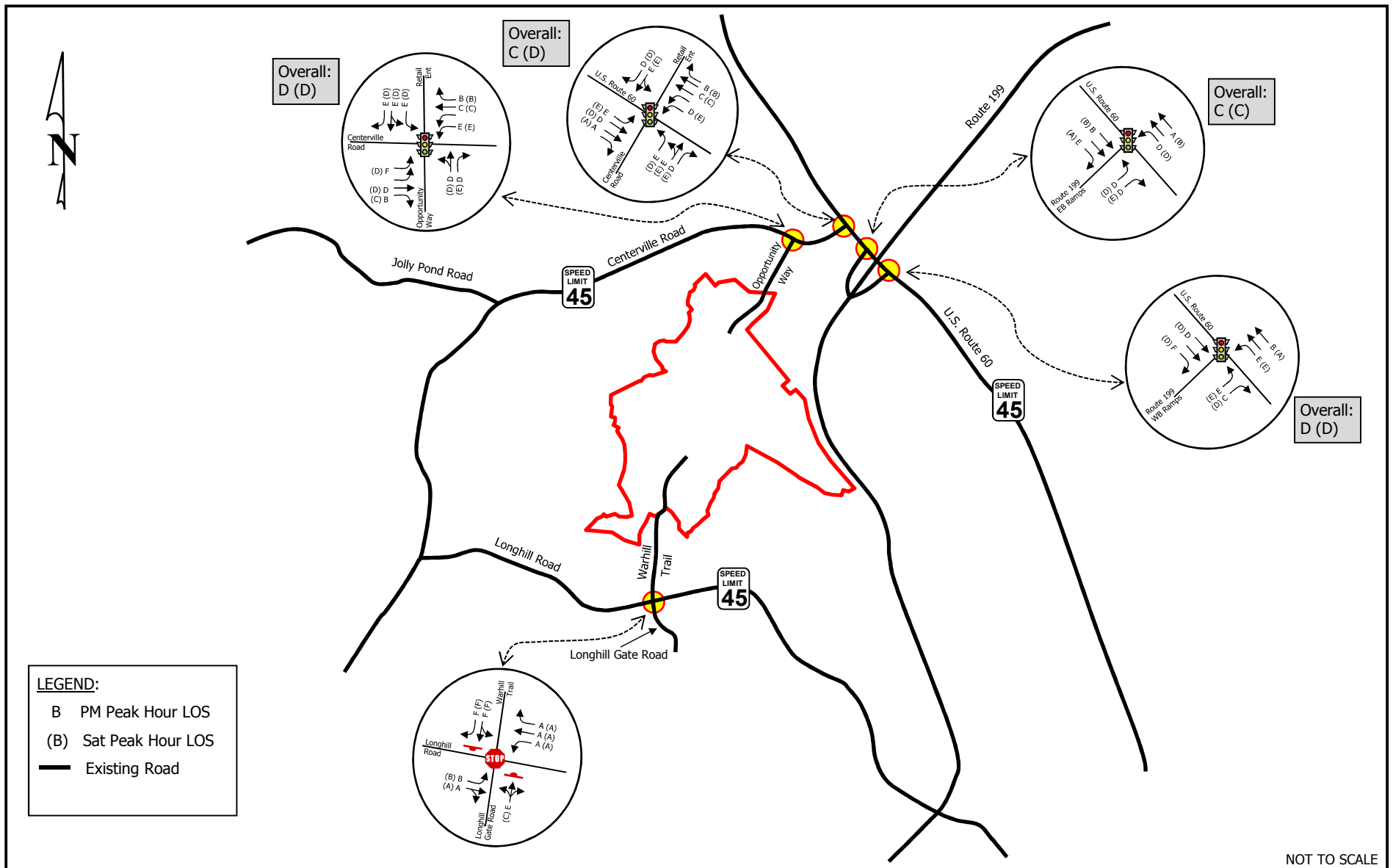
m - Volume for 95th percentile queue is metered by upstream signal.







NOT TO SCALE



## 5 SITE TRIP GENERATION AND DISTRIBUTION

Site traffic for the proposed development was estimated based on the site characteristics and subsequently distributed to the surrounding roadway network.

For purposes of this analysis, the expansion of the complex was assumed to include the following:

- 14 outdoor athletic fields;
- Public gymnasium with three (3) basketball courts;
- Pool expansion;
- Running complex; and
- WATA transfer station.

There are several other uses shown on the proposed Master Plan for the sports complex that will not be significant generators of traffic (i.e. multi-use trails, open space, etc.) and therefore are not explicitly included in the TIA.

The proposed expansion will utilize the existing access points to the sports complex; no changes in access points or types are proposed with this project. The sports complex is served by two access points; a full movement, signalized access point at the Centerville Road/Opportunity Way intersection (which serves the northern portion of the complex) and a full movement, unsignalized access point at the Longhill Road/Warhill Trail/Longhill Gate Road intersection (which serves the southern portion of the complex).

The northern and southern portions of the complex are connected by an access road that is gated (closed) at all times except for weeknights and weekends during the spring and fall peak periods of use.

### 5.1 TRIP GENERATION

The site-generated traffic volumes shown in Table 5-1 was estimated using the 9<sup>th</sup> edition of the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*.

**Table 5-1: Trip Generation Summary**

LAND USE	ITE CODE	AMOUNT	UNITS	WEEKDAY PM PEAK HOUR				SATURDAY Midday Peak Hour			
				ADT	IN	OUT	TOTAL	ADT	IN	OUT	TOTAL
Soccer Complex <sup>(1)</sup>	488	14	Fields	999	166	82	248	1,644	204	221	425
Gymnasium <sup>(2)</sup>		3	Courts	214	36	17	53	352	44	47	91
Pool Addition <sup>(3)</sup>		1	Pool	143	23	12	35	235	29	32	61
Running Complex <sup>(4)</sup>		3,000	S.F.	40	20	0	20	100	50	0	50
WATA Transfer Station <sup>(5)</sup>		1	Station	298	13	13	26	298	13	13	26
<b>Total Proposed Trips</b>				<b>1,694</b>	<b>258</b>	<b>124</b>	<b>382</b>	<b>2,629</b>	<b>340</b>	<b>313</b>	<b>653</b>

**Notes:**

- (1) Trip generation source: Institute of Transportation Engineers' Trip Generation Manual 9th Edition (2012). All fields shown on Master Plan were assumed to be soccer fields for trip generation purposes only.
- (2) Public gymnasium would include 3 basketball courts with minimal seating. For trip generation purposes, the 3 courts were assumed to be the equivalent of 3 soccer fields (Land Use Code 488) as ITE has no data for a stand alone gymnasium.
- (3) Pool expansion would include a 25 meter competitive pool. For trip generation purposes, the pool was assumed to be the equivalent of 2 soccer fields (ITE Land Use Code 488) as ITE has no data for a stand alone pool facility.
- (4) Running complex trips based on data provided by County. Weekday ADT/PM peak hour assumed to be for local running club workouts (20 attendees). Saturday peak hour assumed to be for high school home meet (96 athletes on 2 buses plus 48 other attendees). Other events may draw more traffic but on-site parking may limit other uses during those events.
- (5) WATA transfer station trip generation based on data provided by WATA. Station will be served by 4 lines with each line serviced at most twice per hour and 74 times per day which equates to 16 hourly trips (8 in and 8 out) and 148 ADT. Transfer station includes 15 parking spaces which were assumed to turn over every 3 hours (i.e. 33% every hour). Parking space ADT = 5 turnovers/space/day = 5 turnovers \* 2 trips (1 in and 1 out) \* 15 spaces = 150 ADT.

As shown on Table 5-1, when complete, the expansion of the sports complex is estimated to generate an additional 382 weekday PM peak hour trips and 653 Saturday peak hour trips; this translates into 1,694 daily weekday trips and 2,629 daily Saturday trips.

## 5.2 TRIP DISTRIBUTIONS

The distribution of trips generated by the expansion was based on the existing travel patterns, the nature of the use, and local knowledge. It was assumed that weekday trips will be more local in nature while Saturday trips will be more regional in nature, due in part to out of town trips coming in for sports tournaments. Therefore, both a local and regional trip distribution was developed.

The following weekday/local directional distributions were assumed:

- To/From the West on U.S. Route 60 – 15%
- To/From the East on U.S. Route 60 – 25%
- To/From the South on Route 199 – 20%
- To/From the North on Route 199 – 15%
- To/From the South on Centerville Road – 15%
- Local traffic (south of Longhill Road) – 10%

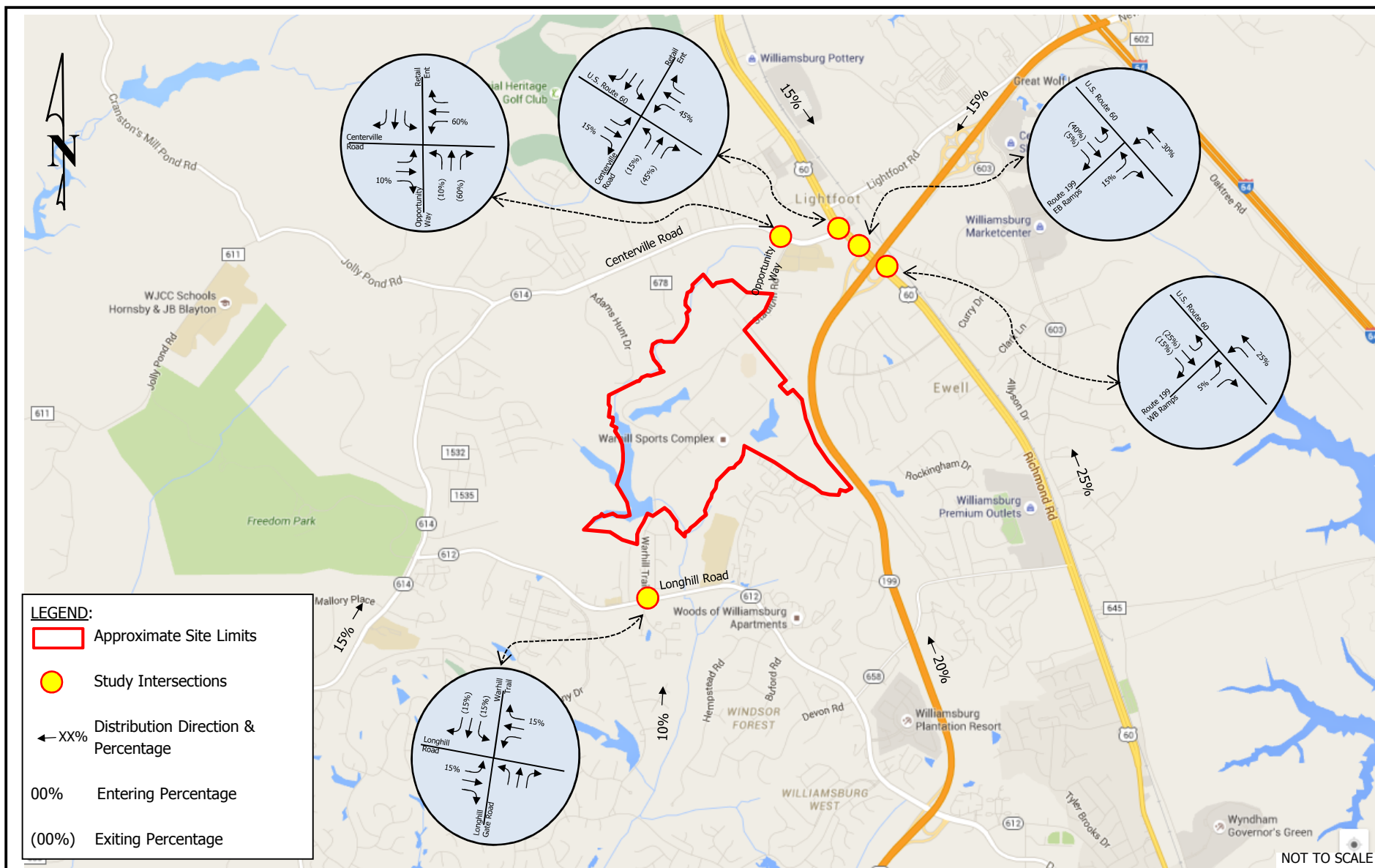
The following weekend/regional directional distributions were assumed:

- To/From the West on U.S. Route 60 – 10%
- To/From the East on U.S. Route 60 – 20%
- To/From the South on Route 199 – 15%
- To/From the North on Route 199 (from I-64) – 50%
- To/From the South on Centerville Road – 5%

The directional distributions were then applied to the study intersections and site entrances as shown on Figure 5-1 (local) and Figure 5-2 (regional).

## 5.3 SITE TRIP ASSIGNMENTS

The trip distribution percentages for the site generated trips were applied to the trip generation estimates shown in Table 5-1 to assign the trips to the surrounding roadway network. The resulting site generated trips are shown in Figure 5-3.



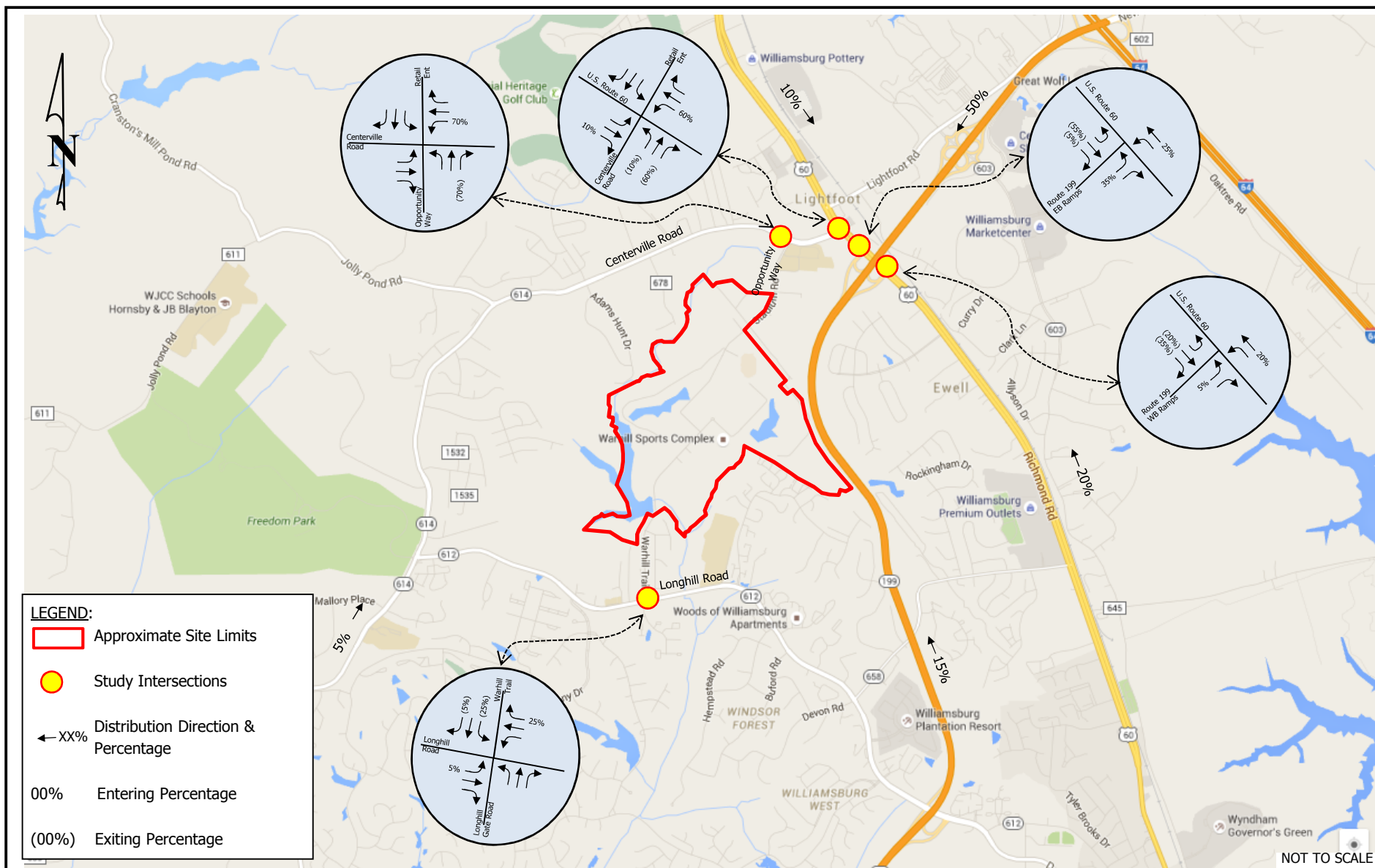


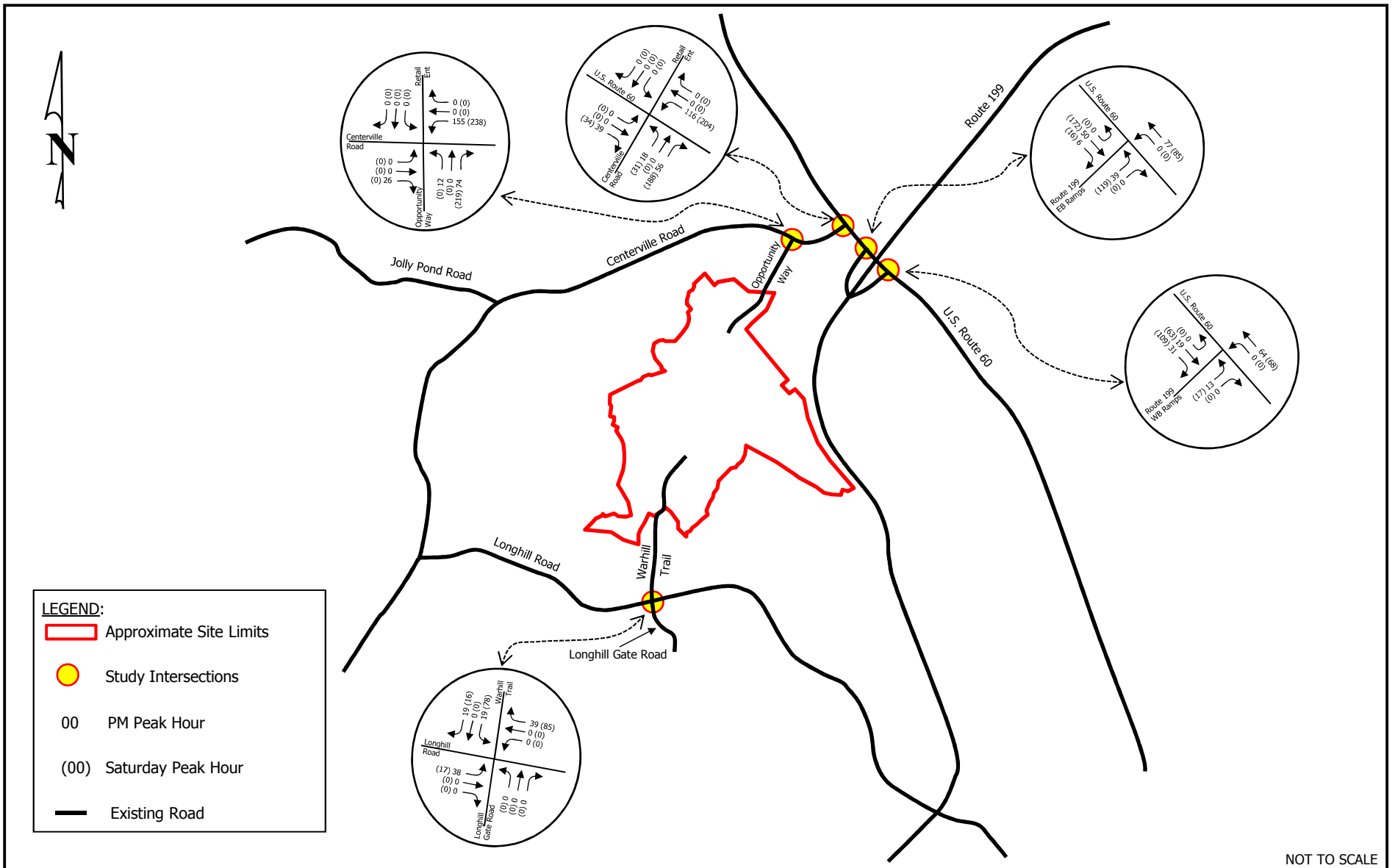
**TIMMONS GROUP**  
YOUR VISION ACHIEVED THROUGH OURS.

## Warhill Sports Complex Site Trip Distributions – Local (PM)

Figure  
5-1









## **6 ANALYSIS OF 2030 CONDITIONS WITH DEVELOPMENT**

To complete the analysis of the 2030 total future conditions (with the proposed expansion), the estimated site trips were added to the background 2030 volumes. The projected volumes were then used to complete the capacity analysis.

### **6.1 2030 TOTAL TRAFFIC VOLUMES**

To generate the 2030 total future traffic volumes, the site trips shown in Figure 5-3 were added to the background 2030 traffic volumes shown in Figure 4-2. The resulting 2030 total future volumes are shown in Figure 6-1.

### **6.2 CAPACITY ANALYSES**

Table 6-1 summarizes the 2030 total future intersection LOS, delay, 95<sup>th</sup> percentile (Synchro) and maximum (SimTraffic) queue lengths based on the 2030 total future peak hour traffic volumes shown on Figure 6-1, the existing lane geometry (Figure 3-2), and optimized traffic signal timings. The 2030 total future PM and Saturday peak hour intersection LOS is shown on Figure 6-2. The corresponding SYNCHRO worksheets are included in Appendix F.

As indicated in Table 6-1, under 2030 total future conditions, each of the study intersections will operate at comparable LOS and queueing to background conditions. The 95th percentile and maximum queues will increase slightly with the addition of site traffic.

At the unsignalized Longhill Road/Warhill Trail/Longhill Gate Road intersection, the southbound approach (exiting the park) will continue to operate at LOS F during both peak hours with queues that extend beyond the available storage. Consideration should be given to the installation of a traffic signal at this intersection.

With signalization, the intersection will operate at an acceptable LOS. However, the southbound queue will extend beyond the available storage. An extension of the southbound right turn lane should be considered. Further, with signalization, the potential realignment of the residential driveway just west of the intersection to align with Blue Bill Run should be considered.

Should a traffic signal not be warranted at the intersection, consideration should be given to alternative traffic control in the form of manual traffic control (police officer or other certified personnel) in the peak hours.

Currently, traffic utilizes both entrances proportionally to enter the Warhill Sports Complex. However, exiting traffic utilizes the northern entrance (Opportunity Way) at a higher rate than the southern entrance (Warhill Trail) due to the operations at the Warhill Road intersection. Should a traffic signal or manual traffic control be implemented, it is likely that traffic will shift to the southern entrance which in turn will help the capacity/queueing at the northern intersections.

### **6.3 INTERNAL ACCESS ROAD**

The internal access road is gated and currently open only on weeknights and weekends in the Spring/Fall. The access road will provide a link between the northern and southern portions and consideration should be given to opening the road on a more permanent basis to allow traffic to use either entrance. However, the benefit of opening the road will only be realized in the event of a traffic signal or manual control at the Warhill Road entrance.

**Table 6-1: Intersection Level of Service, Delay, and Queue Summary  
2030 Total Future Conditions**

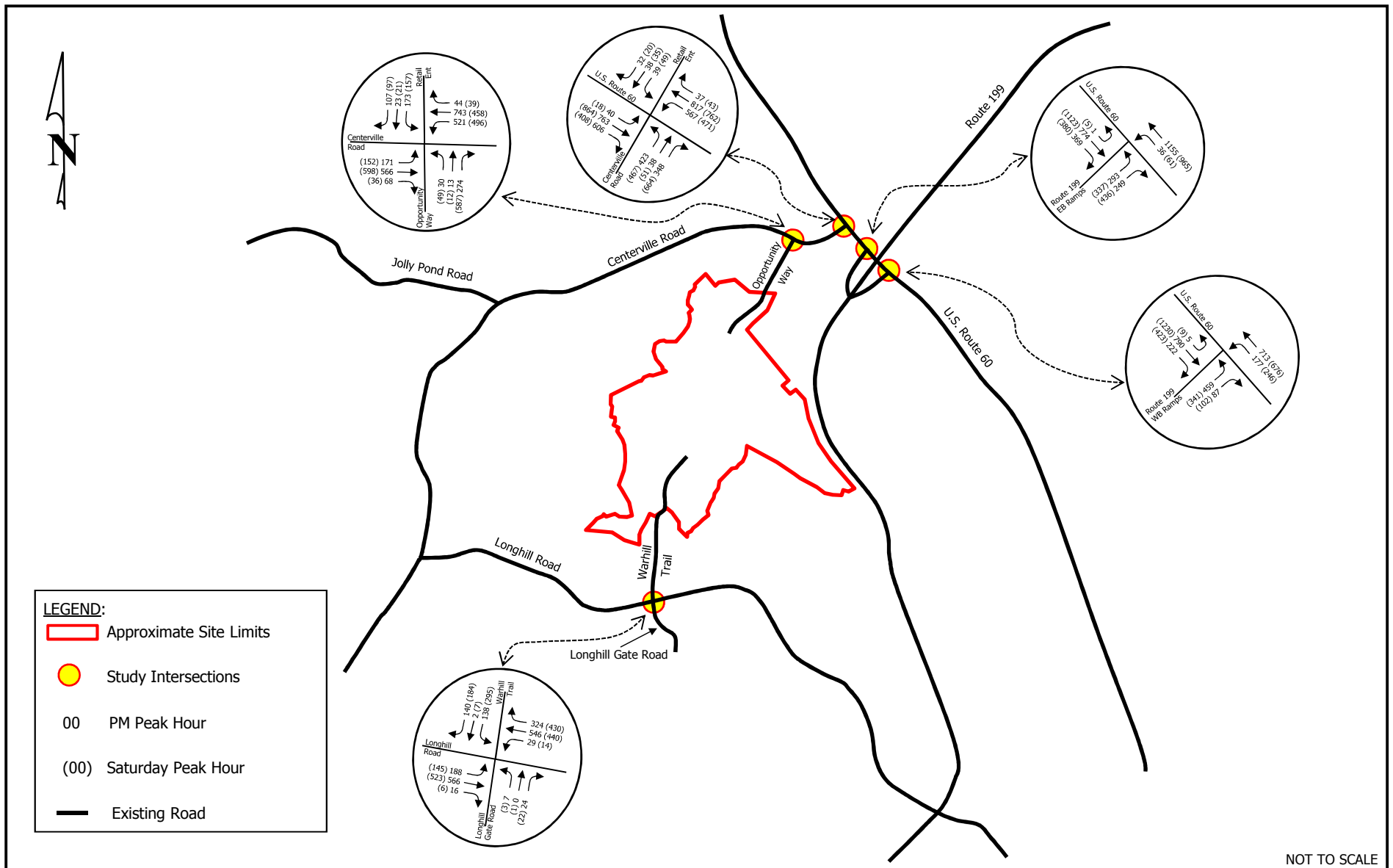
Intersection and Type of Control	Movement and Approach	Number of Lane	Turn Lane Storage (ft)	PM Peak Hour			Saturday Peak Hour				
				HCM 2000 Delay <sup>1</sup> (sec/veh)	LOS <sup>1</sup>	SYNCHRO 95th Percentile Queue Length (ft)	SimTraffic Max Queue Length (ft) <sup>(2)</sup>	Delay <sup>1</sup> (sec/veh)	LOS <sup>1</sup>	SYNCHRO 95th Percentile Queue Length (ft)	SimTraffic Max Queue Length (ft) <sup>(2)</sup>
1. US Route 60 (E-W) at Centerville Road (NB)/ Retail Entrance (SB) Signalized	EB Left	1	225	73.0	E	68	194	69.5	E	38	249
	EB Thru	2		43.2	D	#384	728	68.5	E	#468	756
	EB Right <sup>(3)</sup>	1	425	0.8	A	0	398	0.4	A	0	450
	EB Approach			25.8	C	--	--	47.0	D	--	--
	WB Left	2	350	48.2	D	#312	315	98.6	F	#288	361
	WB Thru	2		25.1	C	389	324	22.4	C	271	454
	WB Right	1	175	16.6	B	m0	199	22.4	C	m0	112
	WB Approach			34.1	C	--	--	50.5	D	--	--
	NB Left	1	225	68.0	E	#3217	240	34.1	C	254	220
	NB Thru-Left	1		68.0	E	#331	379	34.1	C	258	235
	NB Right	1		40.1	D	100	228	105.4	F	#621	482
	NB Approach			56.0	E	--	--	74.2	E	--	--
	SB Thru-Left	1		70.5	E	#143	142	107.4	F	#160	154
	SB Right	1	100	48.3	D	0	98	49.3	D	0	79
	SB Approach			63.9	E	--	--	96.1	F	--	--
	Overall			36.6	D	--	--	57.8	E	--	--
2. US Route 60 (E-W) at Route 199 EB Ramps (N-S) Signalized	EB Thru	2		20.3	C	391	292	15.5	B	m186	405
	EB Right	1	450	78.3	E	m220	143	12.7	B	m186	166
	EB Approach			39.0	D	--	--	14.8	B	--	--
	WB Left	1	175	44.3	D	m54	138	63.5	E	m85	182
	WB Thru	2		7.9	A	306	333	14.9	B	m340	332
	WB Approach			9.0	A	--	--	17.8	B	--	--
	NB Left	1	150	49.1	D	287	174	47.4	D	330	175
	NB Right	1		36.1	D	130	458	58.3	E	#387	617
	NB Approach			43.1	D	--	--	53.5	D	--	--
	Overall			27.4	C	--	--	24.8	C	--	--
3. US Route 60 (E-W) at Route 199 WB Ramps (N-S) Signalized	EB Thru	2		39.8	D	404	357	35.6	D	412	478
	EB Right	1		86.3	F	150	142	49.4	D	m80	248
	EB Approach			49.9	D	--	--	39.1	D	--	--
	WB Left	1	350	67.0	E	#258	263	111.4	F	#364	345
	WB Thru	2		13.9	B	206	308	8.1	A	128	491
	WB Approach			24.5	C	--	--	35.7	D	--	--
	NB Left	1	525	54.6	D	#494	475	89.4	F	#464	448
	NB Right	1		26.8	C	36	96	35.1	D	47	237
	NB Approach			50.2	D	--	--	76.9	E	--	--
	Overall			40.7	D	--	--	43.6	D	--	--
4. Centerville Road (E-W) at Opportunity Way (NB)/ Retail Entrance (SB) Signalized	EB Left	2	400	83.2	F	#162	424	70.8	E	119	425
	EB Thru	1		48.9	D	#760	741	86.2	F	#893	1627
	EB Right	1	225	24.1	C	0	250	32.8	C	0	250
	EB Approach			54.1	D	--	--	80.7	F	--	--
	WB Left	2	250	61.5	E	#374	456	97.2	F	#391	533
	WB Thru	1		34.0	C	#893	670	35.1	D	502	446
	WB Right	1	200	14.3	B	0	225	25.2	C	0	225
	WB Approach			44.3	D	--	--	65.7	E	--	--
	NB Thru-Left	1		58.7	E	80	98	45.5	D	96	393
	NB Right	1	700	57.8	E	82	194	125.6	F	#667	624
	NB Approach			61.7	E	--	--	70.5	E	--	--
	SB Left	1	135	57.9	E	169	155	118.0	F	156	153
	SB Thru-Left	1		61.6	E	171	207	70.9	E	162	204
	SB Right	1	135	69.5	E	#187	158	79.4	E	164	160
	SB Approach			64.4	E	--	--	73.8	E	--	--
	Overall			51.0	D	--	--	83.4	F	--	--
5. Longhill Road (E-W) at Longhill Road (NB)/ Warhill Trail (SB) Unsignalized	EB Left	1	200	12.8	B	35	151	11.3	B	21	119
	EB Thru-Right	1		0.0	A	0	2	0.0	A	0	0
	EB Approach			3.1	A	--	--	2.4	A	--	--
	WB Left	1	200	9.1	A	3	31	8.7	A	1	27
	WB Thru	1		0.0	A	0	4	0.0	A	0	0
	WB Right	1	200	0.0	A	0	53	0.0	A	0	52
	WB Approach			0.3	A	--	--	0.1	A	--	--
	NB Left-Thru-Right	1		69.0	F	40	80	22.3	C	10	44
	NB Approach			69.0	F	--	--	22.3	C	--	--
	SB Thru-Left	1		Err	F	Err	1452	961.2	F	989	1520
	SB Right	1	215	Err	F	Err	240	961.2	F	989	240
	SB Approach			Err	F	--	--	961.2	F	--	--

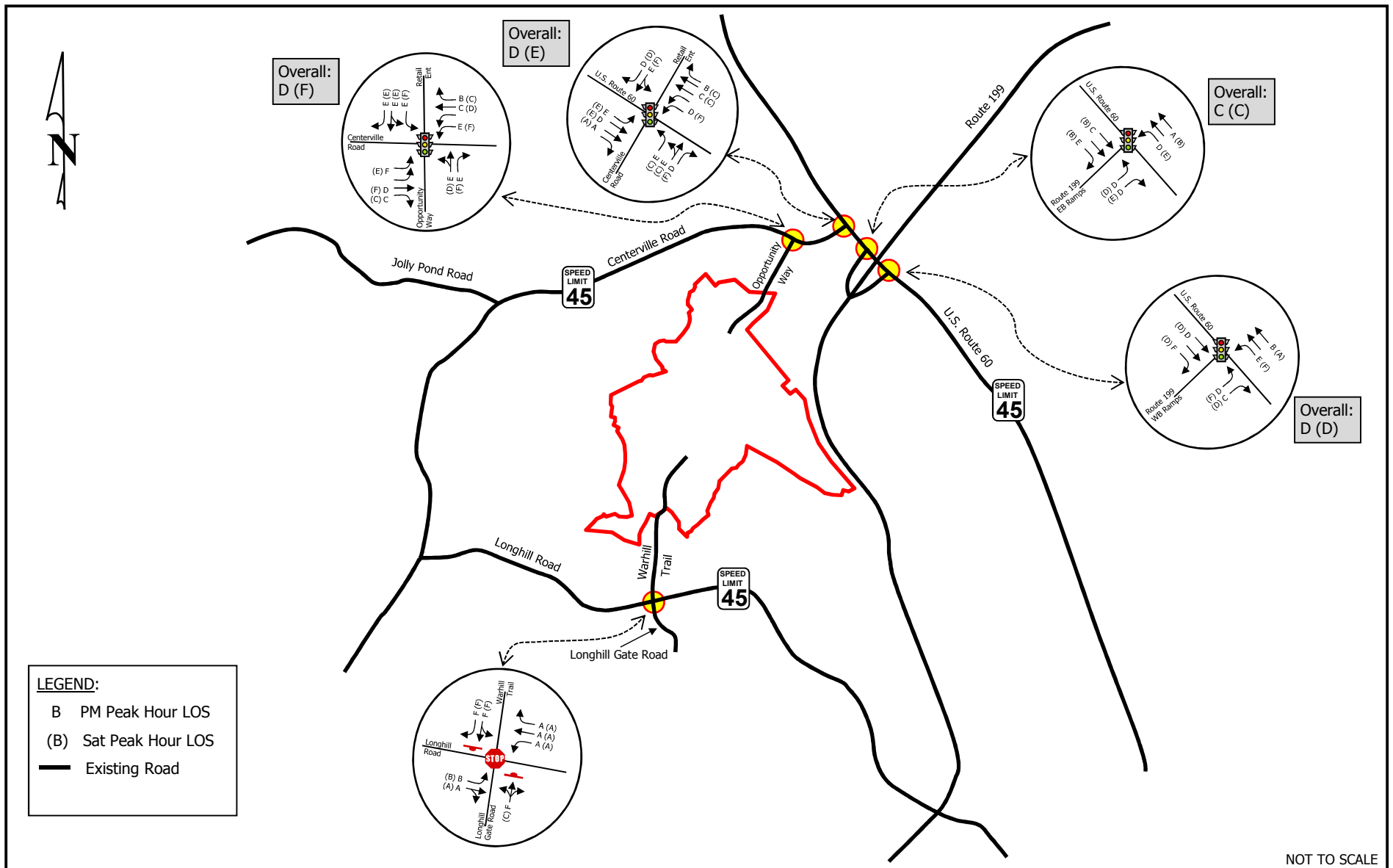
<sup>1</sup> Overall intersection LOS and delay reported for signalized intersections and roundabouts only.<sup>2</sup> When more than one lane is present, the highest maximum queue is reported.<sup>3</sup> Eastbound right is channelized and operates under Yield control (not subject to traffic signal control).

Err LOS/Queue cannot be calculated by Synchro

# - 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

m - Volume for 95th percentile queue is metered by upstream signal.





## **7 2036 BACKGROUND CONDITIONS AND ANALYSIS**

For planning purposes only, a buildout plus 6 years (2036) analysis was completed. The background 2036 volumes were analyzed assuming existing intersection geometry and traffic controls in conjunction with projected background traffic volumes. Background traffic volumes are comprised of the existing traffic counts, trips from other developments in the area, and background traffic growth.

### **7.1 2036 BACKGROUND TRAFFIC VOLUMES**

The growth rates discussed above was compounded annually for the 20-year period and applied to the study roadways. The growth was added to the existing traffic volumes (Figure 3-1) and the Lightfoot Marketplace Trips (Figure 4-1) and the resulting 2036 background volumes are shown on Figure 7-1.

### **7.2 2036 BACKGROUND TRAFFIC VOLUME CAPACITY ANALYSIS**

Table 7-1 summarizes the 2036 background intersection LOS, delay, 95<sup>th</sup> percentile (Synchro) and maximum (SimTraffic) queue lengths based on the 2036 background peak hour traffic volumes shown on Figure 7-1, the existing lane geometry (Figure 3-2), and optimized traffic signal timings. The 2036 background PM and Saturday peak hour intersection LOS is shown on Figure 7-2. The corresponding SYNCHRO worksheets are included in Appendix G.

As indicated in Table 7-1, under 2036 background conditions, the growth in existing traffic will cause an increase in delay and queueing at the study intersections. Each signalized intersection will have multiple lanes/approaches that operate at LOS E or F during at least one of the peak hours.

As indicated under 2030 conditions, should the 2% annual growth rate be realized, long range consideration should be given to widening Centerville Road to two (2) through lanes in each direction through the Centerville Road/Opportunity Way intersection.

The unsignalized Longhill Road/Warhill Trail/Longhill Gate Road intersection will continue to deteriorate.

**Table 7-1: Intersection Level of Service, Delay, and Queue Summary  
2036 Background Conditions**

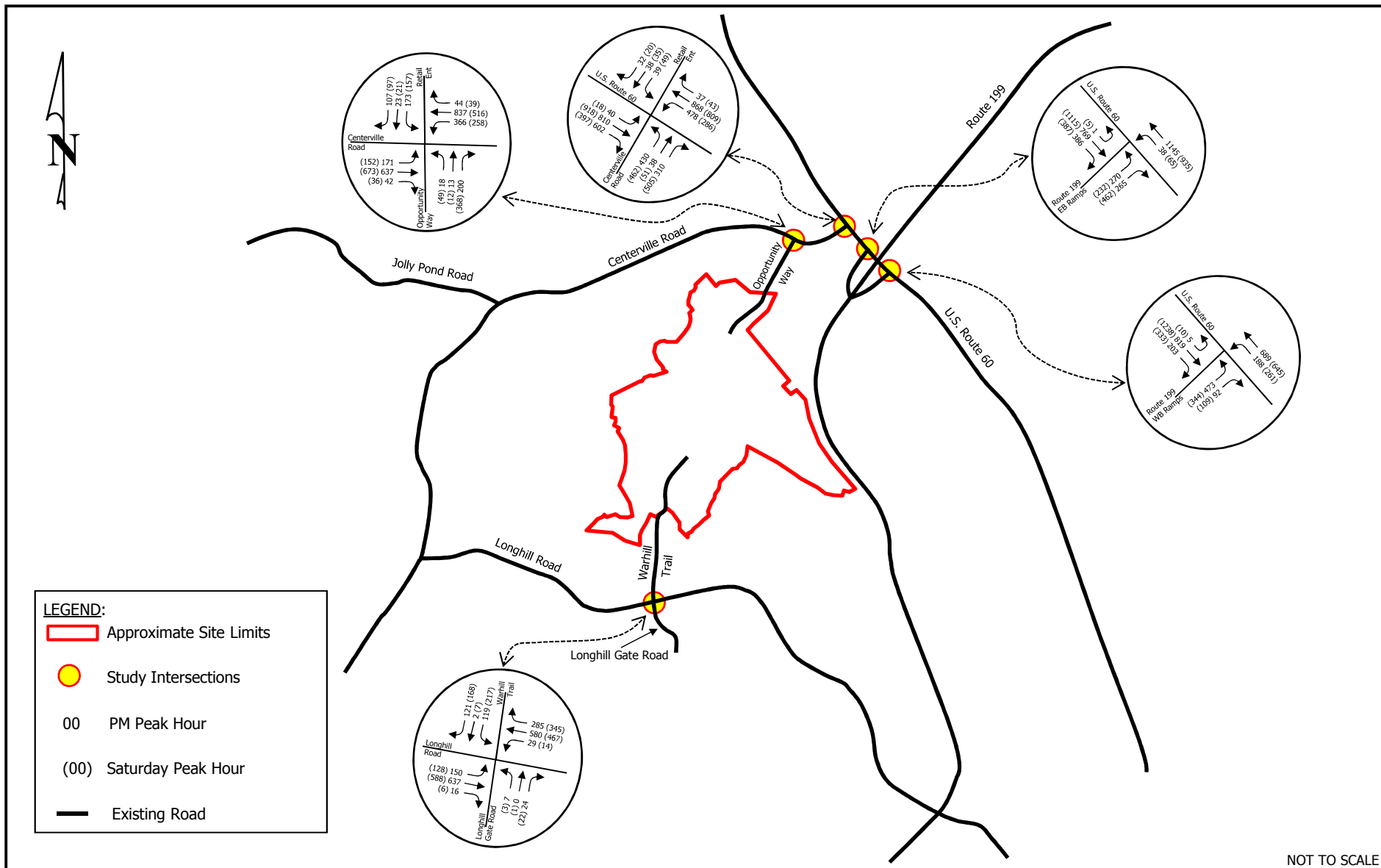
Intersection and Type of Control	Movement and Approach	Number of Lane	Turn Lane Storage (ft)	PM Peak Hour			Saturday Peak Hour				
				HCM 2000 Delay <sup>1</sup> (sec/veh)	LOS <sup>1</sup>	SYNCHRO 95th Percentile Queue Length (ft)	SimTraffic Max Queue Length (ft) <sup>(2)</sup>	Delay <sup>1</sup> (sec/veh)	LOS <sup>1</sup>	SYNCHRO 95th Percentile Queue Length (ft)	SimTraffic Max Queue Length (ft) <sup>(2)</sup>
1. US Route 60 (E-W) at Centerville Road (NB)/ Retail Entrance (SB) Signalized	EB Left	1	225	73.0	E	68	179	69.5	E	38	185
	EB Thru	2		39.7	D	#425	492	42.5	D	408	455
	EB Right <sup>(3)</sup>	1	425	0.8	A	0	367	0.4	A	0	275
	EB Approach			24.5	C	--	--	30.3	C	--	--
	WB Left	2	350	49.4	D	#266	330	81.1	F	#188	240
	WB Thru	2		24.6	C	420	330	20.9	C	367	279
	WB Right	1	175	16.6	B	m0	183	20.8	C	m12	155
	WB Approach			33.0	C	--	--	36.0	D	--	--
	NB Left	1	225	64.0	E	#322	238	37.8	D	258	200
	NB Thru-Left	1		64.4	E	#327	272	38.0	D	264	219
	NB Right	1		39.2	D	90	251	67.9	E	#460	324
	NB Approach			54.2	D	--	--	52.8	D	--	--
	SB Thru-Left	1		86.3	F	#131	125	80.3	F	#160	166
	SB Right	1	100	49.0	D	0	68	48.5	D	0	98
SB Approach			75.2	E	--	--	74.1	E	--	--	
Overall			35.4	D	--	--	39.8	D	--	--	
2. US Route 60 (E-W) at Route 199 EB Ramps (N-S) Signalized	EB Thru	2		19.3	B	390	287	17.7	B	m258	453
	EB Right	1	450	74.2	E	248	142	10.8	B	m9	302
	EB Approach			37.6	D	--	--	15.9	B	--	--
	WB Left	1	175	47.8	D	m55	126	75.8	E	m#91	182
	WB Thru	2		7.4	A	310	305	16.0	B	m328	258
	WB Approach			8.6	A	--	--	19.9	B	--	--
	NB Left	1	150	49.6	D	269	174	35.4	D	221	174
	NB Right	1		36.9	D	114	408	62.0	E	#432	475
	NB Approach			43.3	D	--	--	53.1	D	--	--
	Overall			26.8	C	--	--	25.2	C	--	--
3. US Route 60 (E-W) at Route 199 WB Ramps (N-S) Signalized	EB Thru	2		44.1	D	417	377	38.6	D	#594	564
	EB Right	1		84.2	F	131	150	43.3	D	m65	247
	EB Approach			52.0	D	--	--	39.6	D	--	--
	WB Left	1	350	69.4	E	#267	246	108.7	F	#380	348
	WB Thru	2		14.0	B	193	249	8.3	A	126	293
	WB Approach			25.8	C	--	--	37.2	D	--	--
	NB Left	1	525	57.9	E	#529	472	83.2	F	#458	465
	NB Right	1		26.6	C	37	92	34.6	C	47	234
	NB Approach			52.8	D	--	--	71.5	E	--	--
	Overall			42.9	D	--	--	43.8	D	--	--
4. Centerville Road (E-W) at Opportunity Way (NB)/ Retail Entrance (SB) Signalized	EB Left	2	400	109.9	F	#168	396	52.8	D	#110	425
	EB Thru	1		39.0	D	#797	623	65.5	E	#868	1387
	EB Right	1	225	18.9	B	0	250	20.7	C	0	250
	EB Approach			52.3	D	--	--	61.4	E	--	--
	WB Left	2	250	66.7	E	#265	472	65.4	E	#195	173
	WB Thru	1		42.1	D	#1074	789	29.9	C	#539	431
	WB Right	1	200	13.1	B	0	225	19.1	B	0	205
	WB Approach			48.3	D	--	--	40.7	D	--	--
	NB Thru-Left	1		59.6	E	63	84	39.9	D	81	95
	NB Right	1	700	58.3	E	66	120	57.6	E	236	225
	NB Approach			61.9	E	--	--	55.1	E	--	--
	SB Left	1	135	58.5	E	166	146	47.0	D	126	138
	SB Thru-Left	1		62.2	E	168	198	47.1	D	130	180
	SB Right	1	135	70.4	E	#180	157	50.3	D	133	153
	SB Approach			65.0	E	--	--	48.2	D	--	--
	Overall			52.4	D	--	--	51.6	D	--	--
5. Longhill Road (E-W) at Longhill Road (NB)/ Warhill Trail (SB) Unsignalized	EB Left	1	200	12.1	B	26	115	10.7	B	16	118
	EB Thru-Right	1		0.0	A	0	2	0.0	A	0	0
	EB Approach			2.3	A	--	--	1.9	A	--	--
	WB Left	1	200	9.4	A	3	39	8.9	A	1	28
	WB Thru	1		0.0	A	0	0	0.0	A	0	2
	WB Right	1	200	0.0	A	0	49	0.0	A	0	54
	WB Approach			0.3	A	--	--	0.1	A	--	--
	NB Left-Thru-Right	1		64.5	F	38	56	23.7	C	11	50
	NB Approach			64.5	F	--	--	23.7	C	--	--
	SB Thru-Left	1		Err	F	Err	962	Err	F	Err	1523
	SB Right	1	215	Err	F	Err	240	Err	F	Err	240
	SB Approach			Err	F	--	--	Err	F	--	--

<sup>1</sup> Overall intersection LOS and delay reported for signalized intersections and roundabouts only.<sup>2</sup> When more than one lane is present, the highest maximum queue is reported.<sup>3</sup> Eastbound right is channelized and operates under Yield control (not subject to traffic signal control).

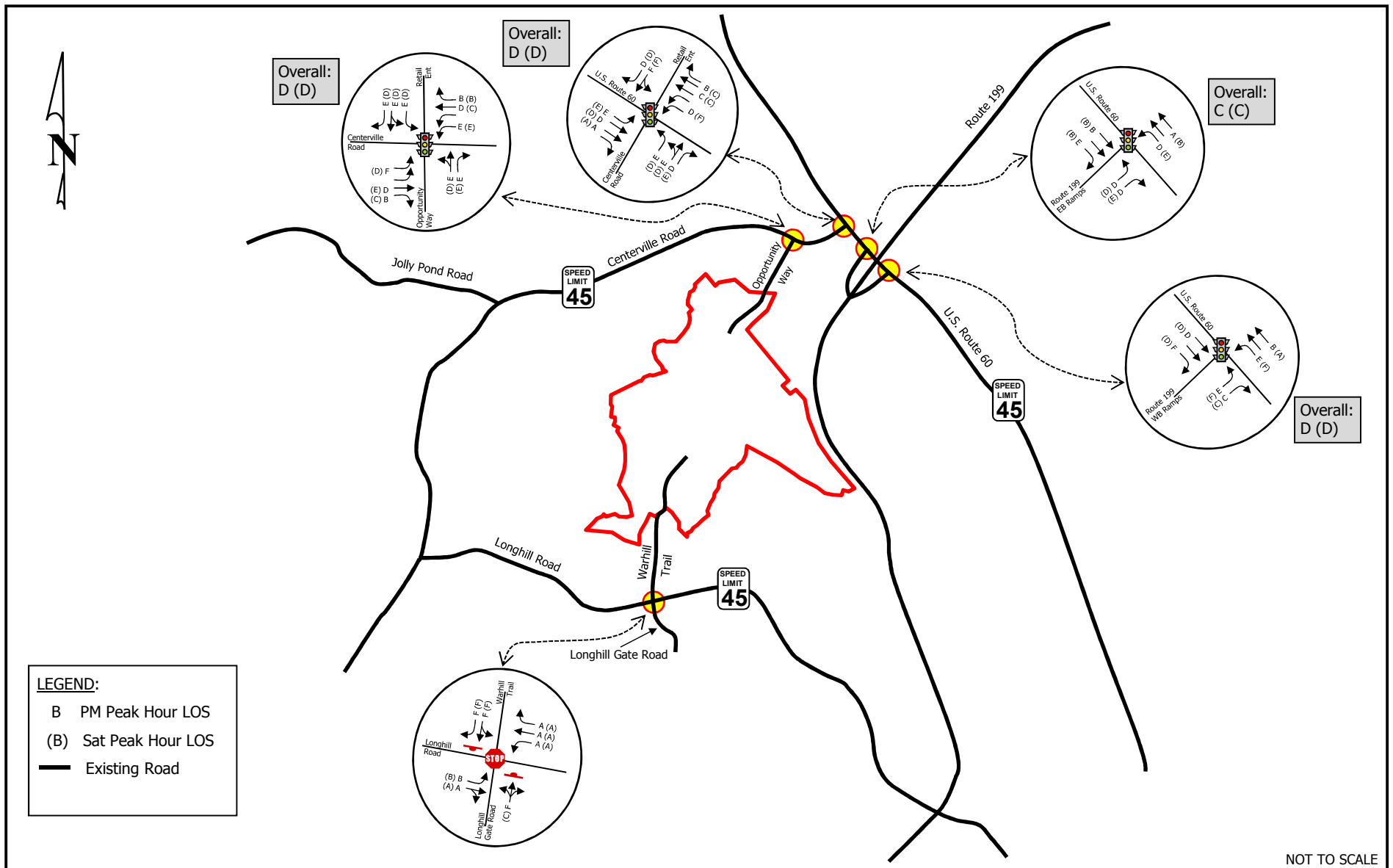
Err LOS/Queue cannot be calculated by Synchro

# - 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

m - Volume for 95th percentile queue is metered by upstream signal.



NOT TO SCALE





## **8 ANALYSIS OF 2036 CONDITIONS WITH DEVELOPMENT**

To complete the analysis of the 2036 total future conditions (with the proposed expansion), the estimated site trips were added to the background 2036 volumes. The projected volumes were then used to complete the capacity analysis.

### **8.1 2036 TOTAL TRAFFIC VOLUMES**

To generate the 2036 total future traffic volumes, the site trips shown in Figure 5-3 were added to the background 2036 traffic volumes shown in Figure 7-1. The resulting 2036 total future volumes are shown in Figure 8-1.

### **8.2 CAPACITY ANALYSES**

Table 8-1 summarizes the 2036 total future intersection LOS, delay, 95<sup>th</sup> percentile (Synchro) and maximum (SimTraffic) queue lengths based on the 2036 future peak hour traffic volumes shown on Figure 8-1, the existing lane geometry (Figure 3-2), and optimized traffic signal timings. The 2036 future PM and Saturday peak hour intersection LOS is shown on Figure 8-2. The corresponding SYNCHRO worksheets are included in Appendix H.

As indicated in Table 8-1, under 2036 future conditions, each of the study intersections will operate at comparable LOS and queueing to background conditions. The 95<sup>th</sup> percentile and maximum queues will increase slightly with the addition of site traffic.

At the unsignalized Longhill Road/Warhill Trail/Longhill Gate Road intersection, the southbound approach (exiting the park) will continue to operate at LOS F during both peak hours with queues that extend beyond the available storage. Consideration should be given to the installation of a traffic signal at this intersection.

With signalization, the intersection will operate at acceptable LOS. However, the southbound queue will extend beyond the available storage; an extension of the southbound right turn lane should be considered. Further, with signalization, the potential realignment of the residential driveway just west of the intersection to align with Blue Bill Run should be considered.

Should a traffic signal not be warranted at the intersection, consideration should be given to alternative traffic control in the form of manual traffic control (police officer or other certified personnel) in the peak hours.

**Table 8-1: Intersection Level of Service, Delay, and Queue Summary  
2036 Total Future Conditions**

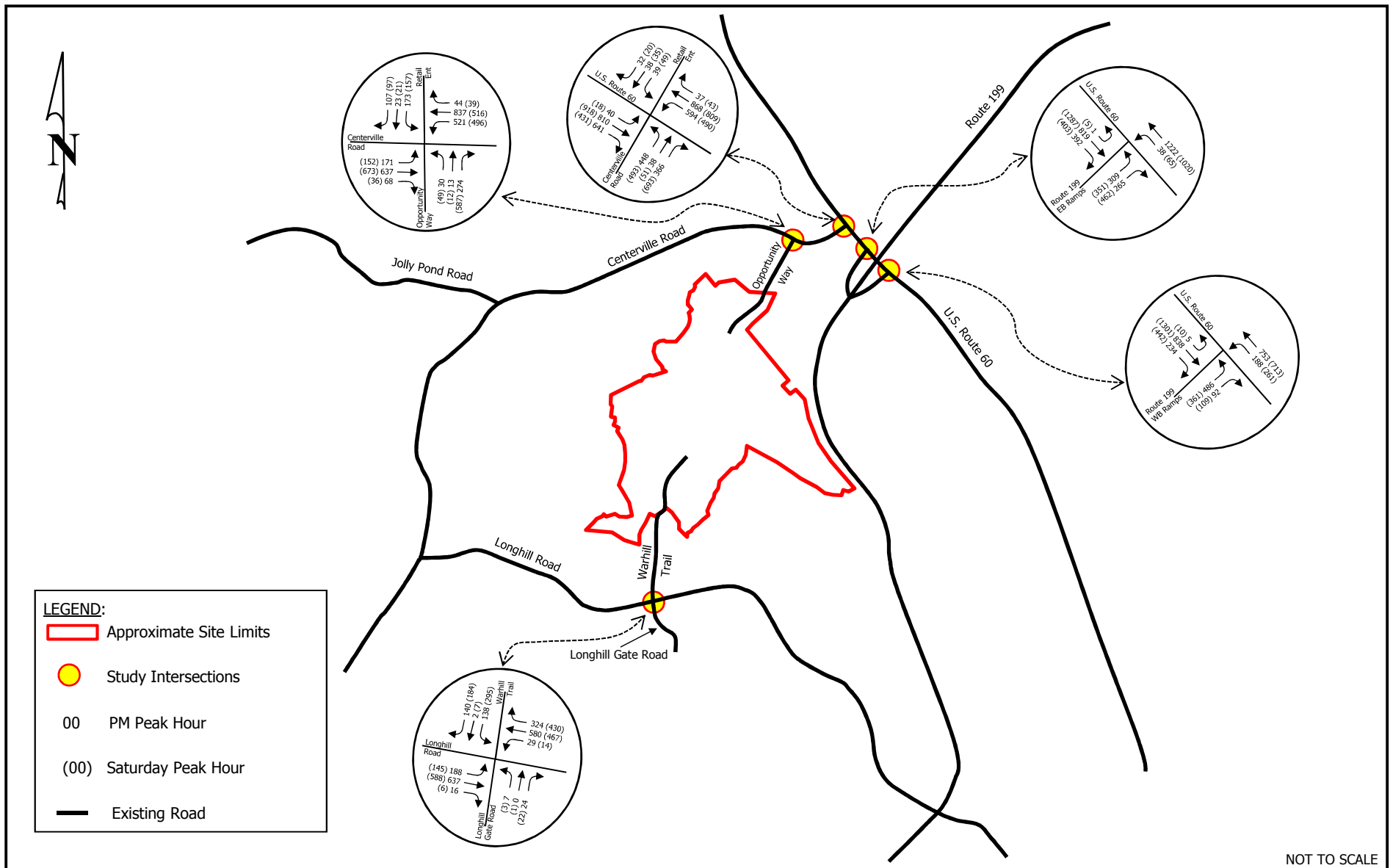
Intersection and Type of Control	Movement and Approach	Number of Lane	Turn Lane Storage (ft)	PM Peak Hour			Saturday Peak Hour				
				HCM 2000 Delay <sup>1</sup> (sec/veh)	LOS <sup>1</sup>	SYNCHRO 95th Percentile Queue Length (ft)	SimTraffic Max Queue Length (ft) <sup>(2)</sup>	Delay <sup>1</sup> (sec/veh)	LOS <sup>1</sup>	SYNCHRO 95th Percentile Queue Length (ft)	SimTraffic Max Queue Length (ft) <sup>(2)</sup>
1. US Route 60 (E-W) at Centerville Road (NB)/ Retail Entrance (SB) Signalized	EB Left	1	225	73.0	E	68	198	69.5	E	38	226
	EB Thru	2		46.8	D	#425	440	73.5	E	#500	1166
	EB Right <sup>(3)</sup>	1	425	0.9	A	0	401	0.4	A	0	450
	EB Approach			27.8	C	--	--	50.4	D	--	--
	WB Left	2	350	52.6	D	#337	331	116.5	F	#305	375
	WB Thru	2		23.9	C	412	369	19.0	B	274	664
	WB Right	1	175	16.4	B	m0	185	21.8	C	m0	107
	WB Approach			35.1	D	--	--	54.7	D	--	--
	NB Left	1	225	71.8	E	#353	242	35.9	D	272	231
	NB Thru-Left	1		71.3	E	#354	395	35.9	D	275	376
	NB Right	1		41.0	D	137	240	140.5	F	#674	893
	NB Approach			58.4	E	--	--	94.5	F	--	--
	SB Thru-Left	1		86.3	F	#155	145	107.4	F	#160	180
	SB Right	1	100	49.0	D	0	79	49.3	D	0	79
	SB Approach			75.2	E	--	--	96.1	F	--	--
	Overall			38.5	D	--	--	66.5	E	--	--
2. US Route 60 (E-W) at Route 199 EB Ramps (N-S) Signalized	EB Thru	2		20.8	C	414	334	15.0	B	m209	444
	EB Right	1	450	78.6	E	m214	169	8.0	A	m1	226
	EB Approach			39.5	D	--	--	13.3	B	--	--
	WB Left	1	175	51.8	D	m55	164	71.0	E	m#100	189
	WB Thru	2		9.0	A	326	376	18.5	B	m353	320
	WB Approach			10.2	B	--	--	21.6	C	--	--
	NB Left	1	150	49.3	D	304	174	45.3	D	#365	175
	NB Right	1		35.7	D	141	499	71.1	E	#483	653
	NB Approach			43.1	D	--	--	59.9	E	--	--
Overall			28.1	C	--	--	26.4	C	--	--	
3. US Route 60 (E-W) at Route 199 WB Ramps (N-S) Signalized	EB Thru	2		42.9	D	427	368	37.8	D	m#621	528
	EB Right	1		81.1	F	142	176	43.0	D	m78	293
	EB Approach			51.2	D	--	--	39.1	D	--	--
	WB Left	1	350	69.4	E	#267	271	130.4	F	#392	368
	WB Thru	2		14.9	B	219	272	8.3	A	142	579
	WB Approach			25.7	C	--	--	41.0	D	--	--
	NB Left	1	525	57.7	E	#540	509	103.6	F	#488	496
	NB Right	1		26.1	C	37	280	35.0	C	47	280
	NB Approach			52.6	D	--	--	87.7	F	--	--
Overall			42.3	D	--	--	46.8	D	--	--	
4. Centerville Road (E-W) at Opportunity Way (NB)/ Retail Entrance (SB) Signalized	EB Left	2	400	118.5	F	#178	425	70.8	E	119	425
	EB Thru	1		59.7	E	#932	954	89.0	F	#997	1937
	EB Right	1	225	23.4	C	0	250	29.6	C	0	250
	EB Approach			68.4	E	--	--	83.3	F	--	--
	WB Left	2	250	78.5	E	#409	632	133.7	F	#418	793
	WB Thru	1		47.4	D	#1165	890	35.2	D	569	640
	WB Right	1	200	14.1	B	0	225	23.7	C	0	225
	WB Approach			57.9	E	--	--	81.2	F	--	--
	NB Thru-Left	1		58.8	E	80	99	47.6	D	98	1234
	NB Right	1	700	60.8	E	116	168	188.3	F	#747	724
	NB Approach			60.6	E	--	--	174.9	F	--	--
	SB Left	1	135	64.5	E	173	146	70.5	E	156	155
	SB Thru-Left	1		64.6	E	176	207	70.9	E	162	211
	SB Right	1	135	73.7	E	#194	159	79.4	E	164	159
	SB Approach			67.7	E	--	--	73.8	E	--	--
Overall			62.4	E	--	--	102.6	F	--	--	
5. Longhill Road (E-W) at Longhill Road (NB)/ Warhill Trail (SB) Unsignalized	EB Left	1	200	13.3	B	37	175	11.5	B	21	132
	EB Thru-Right	1		0.0	A	0	87	0.0	A	0	0
	EB Approach			3.0	A	--	--	2.3	A	--	--
	WB Left	1	200	9.4	A	3	44	8.9	A	1	24
	WB Thru	1		0.0	A	0	3	0.0	A	0	0
	WB Right	1	200	0.0	A	0	61	0.0	A	0	54
	WB Approach			0.3	A	--	--	0.1	A	--	--
	NB Left-Thru-Right	1		97.6	F	52	66	26.3	D	12	47
	NB Approach			97.6	F	--	--	26.3	D	--	--
	SB Thru-Left	1		Err	F	Err	1497	Err	F	Err	1523
	SB Right	1	215	Err	F	Err	240	Err	F	Err	240
SB Approach			Err	F	--	--	Err	F	--	--	

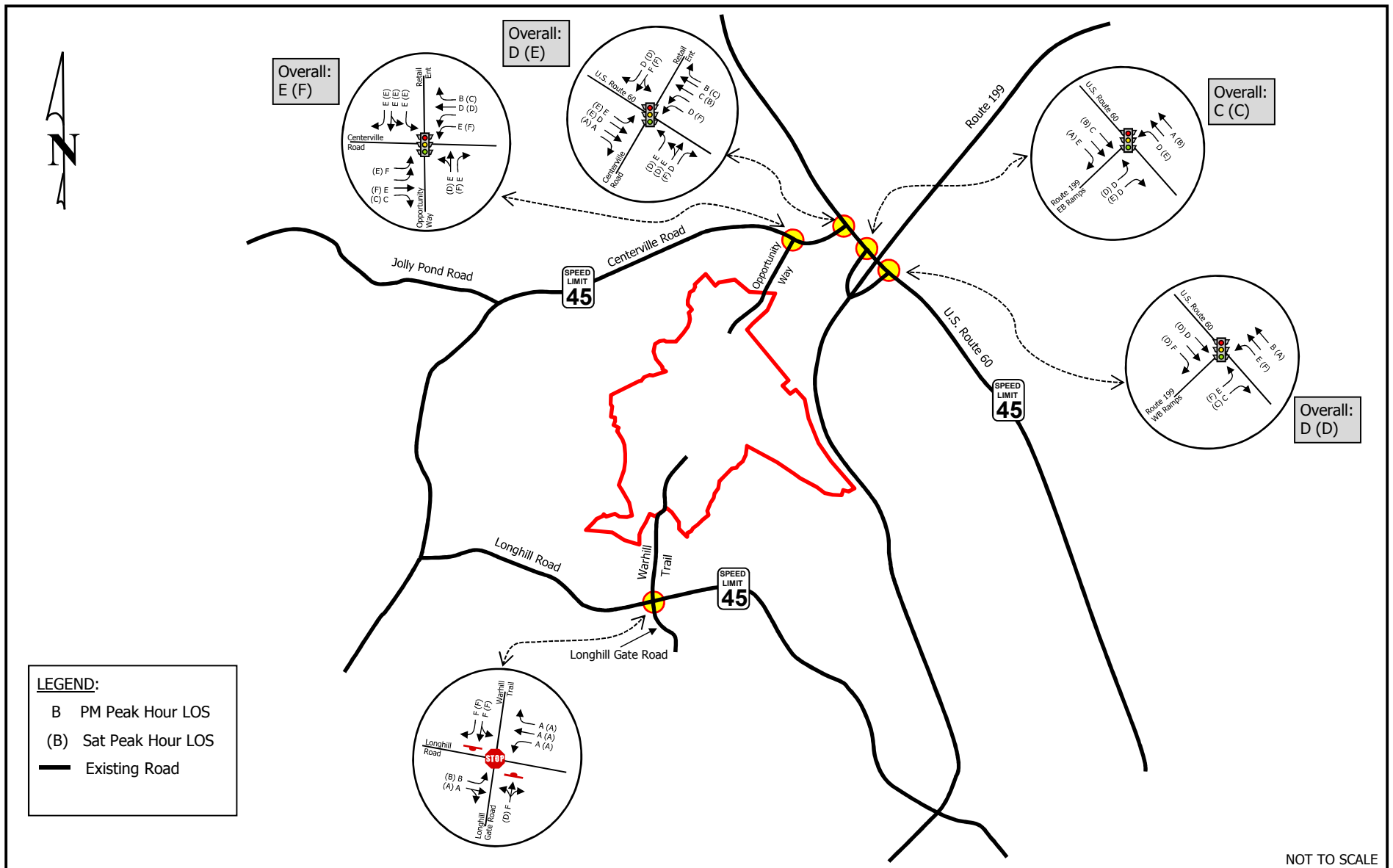
<sup>1</sup> Overall intersection LOS and delay reported for signalized intersections and roundabouts only.<sup>2</sup> When more than one lane is present, the highest maximum queue is reported.<sup>3</sup> Eastbound right is channelized and operates under Yield control (not subject to traffic signal control).

Err LOS/Queue cannot be calculated by Synchro

# - 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

m - Volume for 95th percentile queue is metered by upstream signal.





## 9 MUTCD Traffic Signal Warrant Analysis

The *Manual for Uniform Traffic Control Devices* (MUTCD) lists nine (9) warrants (or thresholds) that indicate if a traffic signal may be appropriate for an intersection. A review of several of these warrants was conducted for the Longhill Road/Warhill Trail/Longhill Gate Road intersection.

The warrant analyses were conducted following procedures from the 2009 edition of the *Manual on Uniform Traffic Control Devices* (MUTCD). Warrants 1, 2, and 3 of the nine signal warrants outlined in the 2009 MUTCD were considered for the analyses. Warrants 1, 2, and 3 are described in detail below. The other six (6) warrants are not applicable to this intersection.

The 100% volume thresholds were used to complete the analyses with all side street right turns excluded per VDOT policy. VDOT typically prefers Warrant 1 be met for installation of a traffic signal.

### Warrant 1, Eight-Hour Vehicular Volume

This warrant is intended for application at locations where a large volume of intersecting traffic is the principal reason to consider installing a traffic control signal.

The need for a traffic control signal is considered when for each of any eight (8) hours of an average day, volume thresholds for both the mainline (total of both approaches) and side street (higher of the two approaches) are met.

Given the nature of the sports complex use, traffic is predominately geared toward peak hours, especially on weekdays. While the volume thresholds will be met during those peak hours, it is unlikely that the thresholds will be met over the remaining hours of the day.

### Warrant 2, Four-Hour Vehicular Volume

This warrant is intended to be applied where the volume of intersecting traffic is the principal reason to consider installing a traffic signal.

The need for a traffic control signal can be considered when, for each of any four (4) hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the minor street approach all fall above the applicable curve (on MUTCD Figure 4C-1) for the existing combination of approach lanes.

Similar to Warrant 1, given the nature of the sports complex use, traffic is predominately geared toward peak hours, especially on weekdays. While the volume thresholds will be met during those peak hours, it is unlikely that the thresholds will be met over the remaining hours of the day.

**Warrant 3, Peak Hour**

This warrant is intended for use at a location where traffic conditions are such that for a minimum of one (1) hour of an average day, the minor street traffic suffers undue delay when entering or crossing the major street.

The need for a traffic control signal can be considered if the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the minor street approach for one (1) hour of an average day falls above the applicable curve (on MUTCD Figure 4C-2) for the existing combination of approach lanes.

The 2016 existing volumes (and all future scenarios) meet this warrant.

## 10 CONCLUSIONS AND RECOMMENDATIONS

Based on the operational analyses the following is offered:

- The study area included the following intersections:
  - U.S. Route 60/Route 199 Eastbound Ramps (signalized);
  - U.S. Route 60/Route 199 Westbound Ramps (signalized);
  - U.S. Route 60/Centerville Road (signalized);
  - Centerville Road/Opportunity Way (signalized); and
  - Longhill Road/Warhill Trail (unsignalized).
- Existing weekday PM and Saturday peak hour traffic counts were conducted at the intersection on a Thursday and Saturday in May when public schools were in session (Thursday) and the sports complex fields were in full use.
- For purposes of this analysis, the expansion of the sports complex was assumed to be completed by 2030.
- The TIA examined both the PM peak hour and Saturday peak hour under existing (2016) conditions, background (2030) conditions, and total future (2030) conditions with the proposed expansion of the sports complex. Additionally, a buildout plus six years (2036) scenario was analyzed for both background and total future conditions for planning purposes only.
- The expansion of the complex was assumed to include:
  - 14 outdoor athletic fields;
  - Public gymnasium with three (3) basketball courts;
  - Pool expansion;
  - Running complex; and
  - WATA transfer station
- There are a few other uses shown on the Master Plan for the sports complex that will not be significant generators of traffic (i.e. multi-use trails, open space, etc.) and therefore are not included in the TIA.
- The expansion of the sports complex is estimated to generate an additional 382 weekday PM peak hour trips and 653 Saturday peak hour trips; this translates into 1,694 daily weekday trips and 2,629 daily Saturday trips.

- The study intersections generally operate at acceptable LOS under existing conditions with the exception of the Longhill Road/Warhill Trail intersection.
  - Under existing conditions, the intersection fails during both the PM and Saturday peak hours and a traffic signal is needed for the intersection to operate at acceptable levels of service.
  - During non-peak hours, the intersection operates acceptably.
  - A traffic signal at this location was called for at this intersection in the *Longhill Road Corridor Study*.
- Traffic entering the park is split equally between the two (2) entrances, while exiting traffic is skewed toward the Opportunity Way entrance (and traffic signal) due to the delays encountered at Longhill Road.
- The widening of Longhill Road to 4-lanes was **not** assumed in the TIA due to the timeframe of those improvements.
- Should background traffic grow at the assumed 2% annual rate, consideration should be given to widening of Centerville Road to 4-lanes through the study area.
- The majority of the study intersections can accommodate the traffic generated by the expansion of the sports complex.
- The following improvements to the Longhill Road/Warhill Trail/Longhill Gate Road intersection should be considered under existing and future conditions:
  - Signalization of the intersection; since the issue is limited to peak hours, manual traffic control (police officer or similar) during those hours should be considered.
  - Lengthening of the southbound right turn lane to accommodate queues; this improvement will be needed closer to full buildout of the complex.
  - Potential realignment of the residential driveway just west of the intersection to align with Blue Bill Run.
- A review of the MUTCD traffic signal warrants indicates the Longhill Road/Warhill Trail/Longhill Gate Road intersection will **not** meet Warrant 1 (8-hour warrant) or Warrant 2 (4-hour warrant). The intersection will meet Warrant 3 (peak hour warrant) but VDOT typically does not allow signalization based on the peak hour warrant only.
- Should a traffic signal be installed at the intersection, consideration should be given to opening the internal access road on a regular basis to allow traffic to utilize both exits at the complex. If a traffic signal is not installed, the opening of the internal access road on a regular basis will be of limited value.



**Appendix A**  
**Warhill Sports Complex**  
**Proposed Master Plan**

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# 2016 Warhill Sports Complex 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 Facility**

**H- Unprogrammed Open Space**

**I- Unprogrammed Open Space**

**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

**L- Paved Multiuse Trail** in utility corridor

**M- Paved Multiuse Trails** around Soccer Complex- 1 mile  
and Baseball/Softball Complex- 1-mile

**N1- Existing Paved Multiuse Trail**

**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- Running Center**, multi-purpose room, office space, restrooms, multi-sports field

**Q- BMX Park**

1 inch = 700 feet  
0 700 1,400 Feet

8/23/2016

## **Appendix B**

# **Scoping Correspondence**

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## PRE-SCOPE OF WORK MEETING FORM

### Information on the Project Traffic Impact Analysis Base Assumptions

The applicant is responsible for entering the relevant information and submitting the form to VDOT and the locality no less than three (3) business days prior to the meeting. If a form is not received by this deadline, the scope of work meeting may be postponed.

#### Contact Information

Consultant Name:	Timmons Group - Scott Dunn/Steve Schmidt
Tele:	804-200-6955
E-mail:	scott.dunn@timmons.com/steve.schmidt@timmons.com
Developer/Owner Name:	James City County - Paul Holt, AICP, CNU-A
Tele:	757-253-6685
E-mail:	paul.holt@jamescitycountyva.gov

#### Project Information

Project Name:	Warhill Sports Complex Expansion	Locality/County:	James City County, Virginia	
Project Location: (Attach regional and site specific location map)	The site is generally located west of Route 199, south of Centerville Road (Route 614), and north of Longhill Road (Route 612) as shown on the attached Figure 1.			
Submission Type	Comp Plan <input checked="" type="checkbox"/>	Rezoning <input type="checkbox"/>	Site Plan <input type="checkbox"/>	Subd Plat <input type="checkbox"/>
Project Description: (Including details on the land use, acreage, phasing, access location, etc. Attach additional sheet if necessary)	James City County is updating the Master Plan for the Warhill Sports Complex to include several new uses in addition to the uses shown on the Master Plan that have yet to be built. Future uses include additional athletic fields (up to 14 fields per the Master Plan), a 7,500 seat indoor basketball facility (includes 6 basketball courts), a 25 meter competition pool addition to the WISC building, a running complex (includes 3,000 S.F. of indoor multi-purpose space), a WATA transfer station and miscellaneous other park uses. The project is expected to be built in phases over the next 20 years and be completed by 2036. Access to the site will be provided by the exiting entrances on Opportunity Way and Warhill Trail.			
Proposed Use(s): (Check all that apply; attach additional pages as necessary)	Residential <input type="checkbox"/>	Commercial <input type="checkbox"/>	Mixed Use <input type="checkbox"/>	Other <input checked="" type="checkbox"/>

It is important for the applicant to provide sufficient information to county and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

	<b>Residential Uses(s)</b> Number of Units: _____ ITE LU Code(s): _____  <b>Commercial Use(s)</b> ITE LU Code(s): _____ _____ _____ Square Ft or Other Variable: _____	_____ _____ _____ <b>Other Use(s)</b> ITE LU Code(s): 488 Other Non- ITE uses _____ Independent Variable(s): _____ _____ _____		
Total Peak Hour Trip Projection:	Less than 100 <input type="checkbox"/>	100 – 499 <input type="checkbox"/>	500 – 999 <input checked="" type="checkbox"/>	1,000 or more <input type="checkbox"/>
<b>Traffic Impact Analysis Assumptions</b>				
Study Period	Existing Year: 2016	Build-out Year: 2036	Design Year: 2042	
Study Area Boundaries (Attach map)	North: U.S. Route 60 (Richmond Road)	South: Longhill Road (Route 612)		
	East: Route 199	West: Centerville Road (Route 614)		
External Factors That Could Affect Project (Planned road improvements, other nearby developments)	Route 199/U.S. Route 60 Interchange Ramp improvement			
Consistency With Comprehensive Plan (Land use, transportation plan)	The James City County Comprehensive Plan calls for the site to be open space/recreation. The proposed uses are consistent with that designation.			
Available Traffic Data (Historical, forecasts)	Historical VDOT data County traffic data at the Warhill Sports Complex entrances Forecasts from the Longhill Road Corridor Study			
Trip Distribution (Attach sketch)	Road Name: see attached sketch	Road Name:		
	Road Name:	Road Name:		
Annual Vehicle Trip Growth Rate:	2.0% Centerville Road; 2.0% Longhill Road W of Warhill; 1.0% Longhill E of Warhill - see notes section	Peak Period for Study (check all that apply)	<input type="checkbox"/> AM <input checked="" type="checkbox"/> PM <input checked="" type="checkbox"/> SAT	
		Peak Hour of the Generator		
Study Intersections	1. Centerville Road (Route 614/Opportunity Way	6.		

It is important for the applicant to provide sufficient information to county and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

and/or Road Segments (Attach additional sheets as necessary)	2.U.S. Route 60/Centerville Road (Route 614)	7.
	3.U.S. Route 60/Route 199 NB Ramps	8.
	4.U.S. Route 60/Route 199 SB Ramps	9.
	5.Longhill Road (Route 612)/Warhill Trail/Longhill Gate Road	10.
Trip Adjustment Factors	Internal allowance: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Reduction: _____% trips	Pass-by allowance: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Reduction: _____% trips
Software Methodology	<input checked="" type="checkbox"/> Synchro <input type="checkbox"/> HCS (v.2000/+) <input type="checkbox"/> aaSIDRA <input type="checkbox"/> CORSIM <input type="checkbox"/> Other _____	
Traffic Signal Proposed or Affected (Analysis software to be used, progression speed, cycle length)	Centerville Road (Route 614)/Opportunity Way U.S. Route 60/Centerville Road (Route 614) U.S. Route 60/Route 199 NB Ramps U.S. Route 60/Route 199 SB Ramps Longhill Road (Route 612)/Warhill Trail/Longhill Gate Road (potential signal)	
Improvement(s) Assumed or to be Considered	Route 199/U.S. Route 60 Interchange Ramp improvement	
Background Traffic Studies Considered	Longhill Road Corridor Study (2014) Lightfoot Marketplace TIA (2013)	
Plan Submission	<input checked="" type="checkbox"/> Master Development Plan (MDP) <input type="checkbox"/> Generalized Development Plan (GDP) <input type="checkbox"/> Preliminary/Sketch Plan <input type="checkbox"/> Other Plan type (Final Site, Subd. Plan)	
Additional Issues to be Addressed	<input checked="" type="checkbox"/> Queuing analysis <input type="checkbox"/> Actuation/Coordination <input type="checkbox"/> Weaving analysis <input type="checkbox"/> Merge analysis <input type="checkbox"/> Bike/Ped Accommodations <input type="checkbox"/> Intersection(s) <input type="checkbox"/> TDM Measures <input type="checkbox"/> Other _____	

**NOTES on ASSUMPTIONS:** 1. Trip generation methods/assumptions to be discussed at scoping. Due to the nature of the uses, ITE has limited to no data available for many of the uses. See notes on trip generation table for further details. Trip generation table only includes uses that would be significant generators. Others (i.e. walking trails, picnic areas) would generate trips on an irregular basis and were not included.

2. Two different trip distributions are proposed. Local distribution would apply to the uses/trips that would occur for the weekday PM peak hour and are based on the distributions in the Lightfoot Marketplace TIA, the

It is important for the applicant to provide sufficient information to county and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

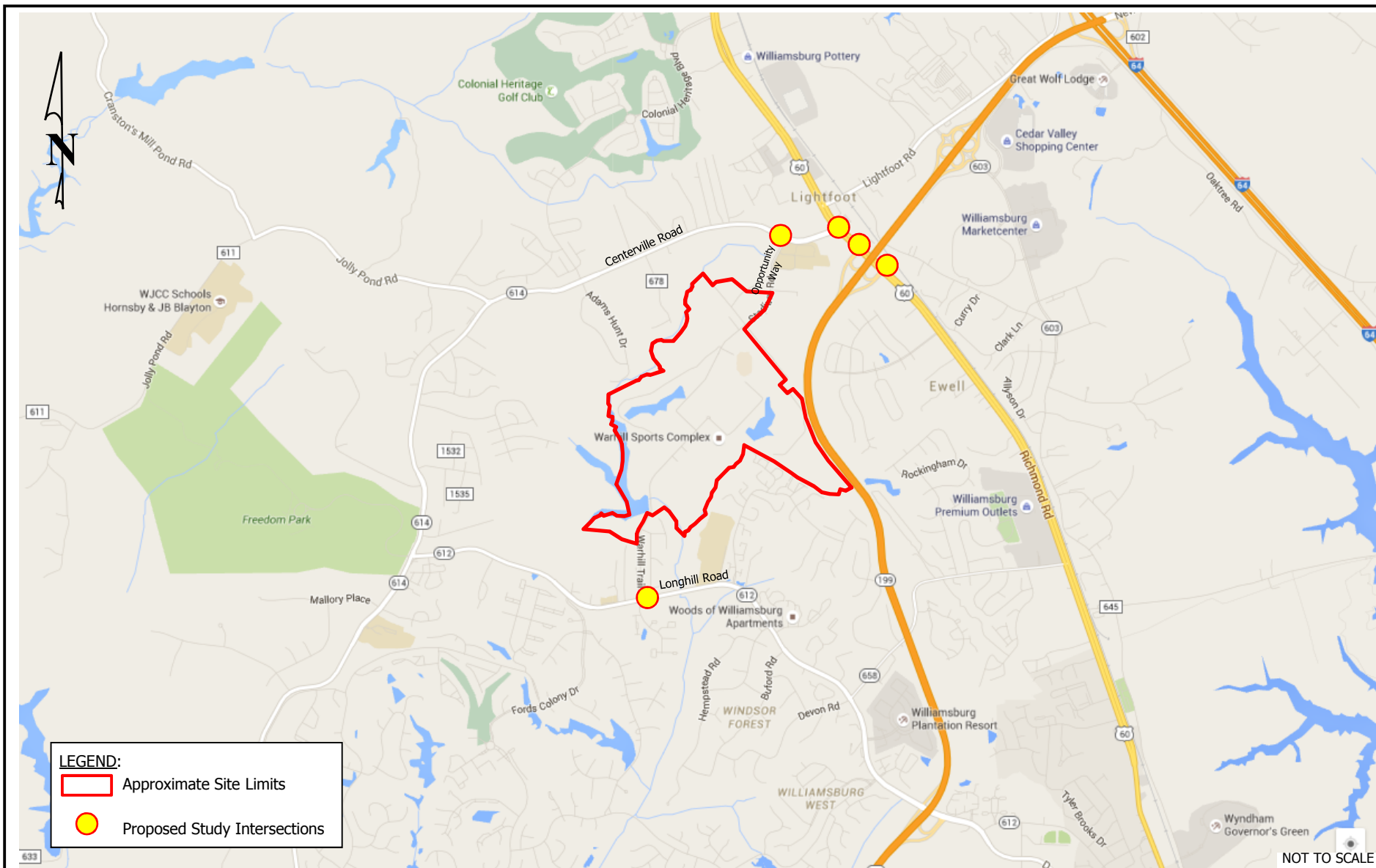
residential development surrounding the site, the road network and engineering judgement. Regional (or event) distributions would apply to the Saturday peak hour and would put a focus on out of town visitors along with hotel stays.

3. Annual growth rate is pulled directly from the Longhill Road Corridor Study. It is important to note that the Longhill growth rates include trips from other developments. Likewise, if these growth rates are approved/used for this TIA, no additional trips from other developments will be considered.

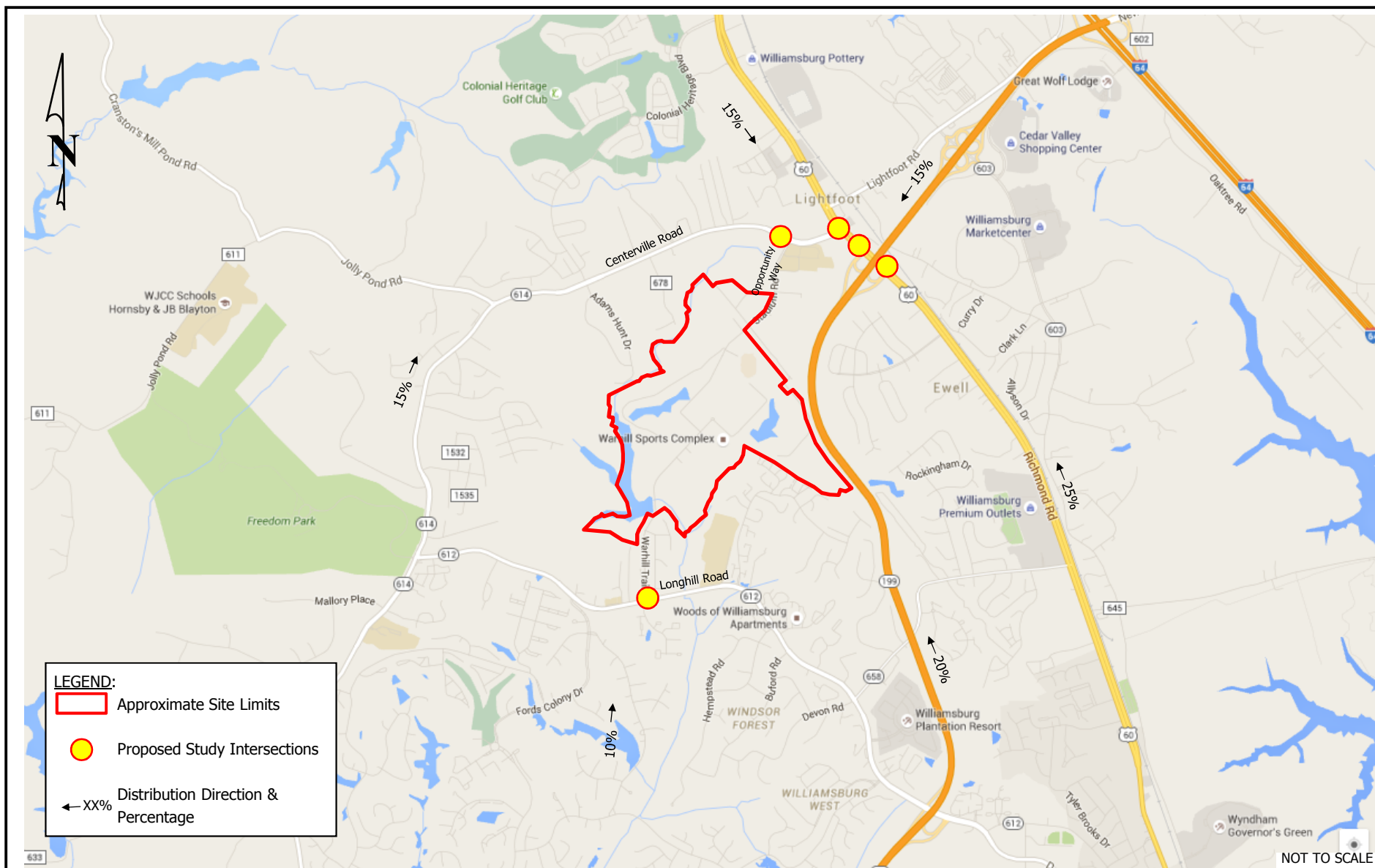
4. Traffic data will be collected on a weekday (Tuesday/Wednesday/or Thursday) for the PM peak hour and for a Saturday peak hour when the fields are in use.

SIGNED:  DATE: 2/4/16  
Applicant or Consultant

PRINT NAME: Stephan Schmidt  
Applicant or Consultant







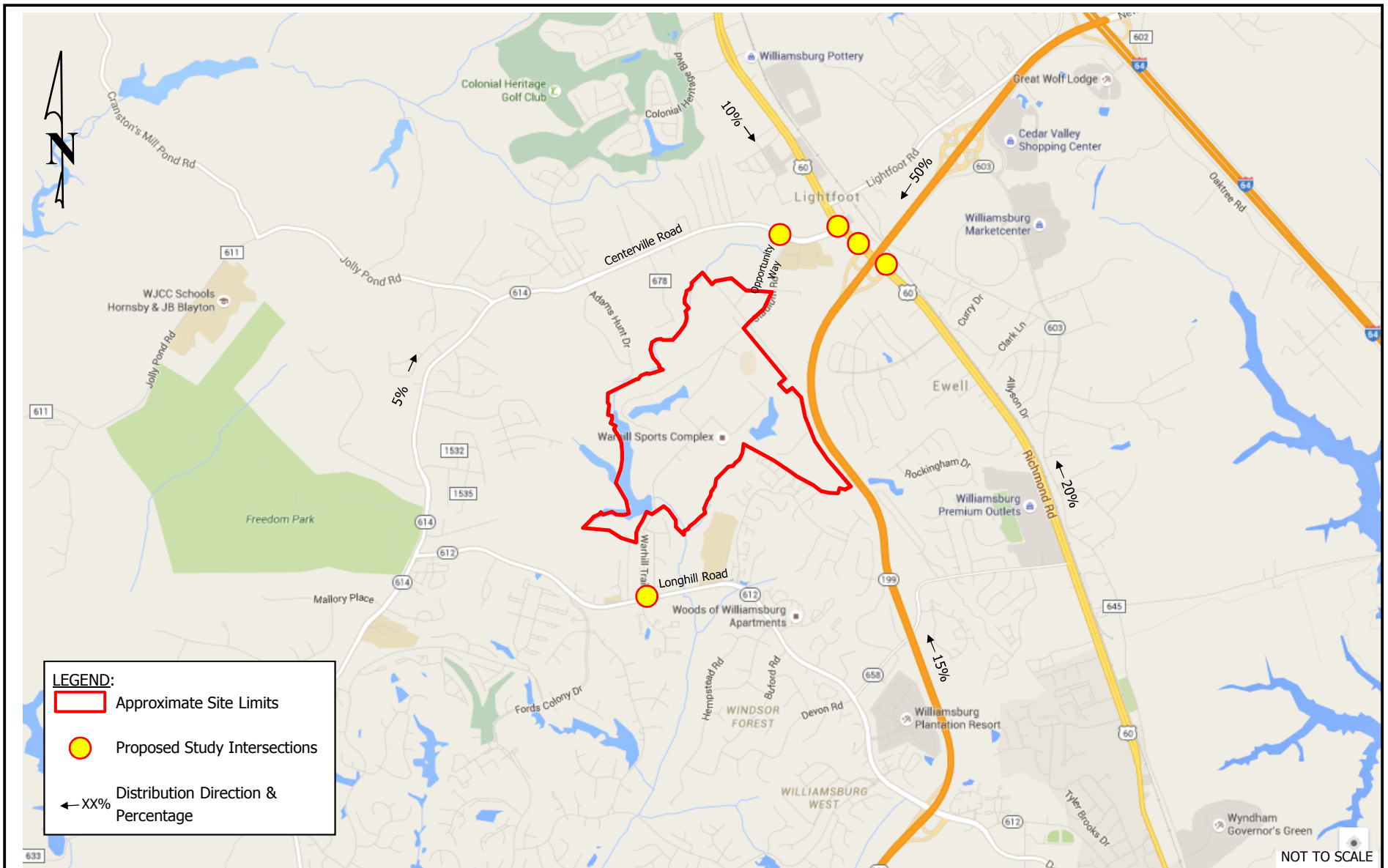


Table 1

Trip Generation Summary  
Warhill Sports Complex - James City County, Virginia

<u>LAND USE</u>	<u>ITE CODE</u>	<u>AMOUNT</u>	<u>UNITS</u>	<u>WEEKDAY PM PEAK HOUR</u>				<u>SATURDAY Midday Peak Hour</u>			
				<u>ADT</u>	<u>IN</u>	<u>OUT</u>	<u>TOTAL</u>	<u>ADT</u>	<u>IN</u>	<u>OUT</u>	<u>TOTAL</u>
Soccer Complex <sup>(1)</sup>	488	14	Fields	999	166	82	248	1,644	204	221	425
Basketball Arena <sup>(2)</sup>		7,500	Seats	6,818	511	51	562	6,818	87	95	182
Pool Addition <sup>(3)</sup>		1	Pool	214	36	17	53	352	44	47	91
Running Complex <sup>(4)</sup>		3,000	S.F.	40	20	0	20	100	50	0	50
WATA Transfer Station <sup>(5)</sup>		1	Station	298	13	13	26	298	13	13	26
Total Proposed Trips				8,369	746	163	909	9,212	398	376	774

## Notes:

- (1) Trip generation source: Institute of Transportation Engineers' Trip Generation Manual 9th Edition (2012). All fields shown on Master Plan were assumed to be soccer fields for trip generation purposes only.
- (2) All trip generation estimates assume AVO of 2.2. PM trip generation assumes event time would start outside of adjacent street peak hour and that at most 15% of attendees would arrive during PM peak. PM outbound assumed to be 10% of inbound. No events were assumed for Sat midday peak hour but courts may be used for clinics/games. Saturday midday peak hour trip generated using soccer complex rates (6 courts ("fields")).
- (3) Pool addition would include a 25 meter competitive pool. For trip generation purposes, the pool was assumed to be 3 soccer fields.
- (4) Running complex trips based on data provided by County. Weekday ADT/PM peak hour assumed to be for local running club workouts (20 attendees). Saturday peak hour assumed to be for high school home meet (96 athletes on 2 buses plus 48 other attendees). Other events may draw more traffic but on-site parking may limit other uses during those events.
- (5) WATA transfer station trip generation based on data provided by WATA. Station will be served by 4 lines with each line serviced at most twice per hour and 74 times per day which equates to 16 hourly trips (8 in and 8 out) and 148 ADT. Transfer station includes 15 parking spaces which were assumed to turn over every 3 hours (i.e. 33% every hour). Parking space ADT = 5 turnovers/space/day = 5 turnovers \* 2 trips (1 in and 1 out) \* 15 spaces = 150 ADT.

## **Appendix C**

### **Existing Traffic Counts**

---

# Peggy Malone & Associates, Inc.

## (888) 247-8602

File Name : 1-Opportunity Way and Centerville Rd. SAT

Site Code :

Start Date : 5/14/2016

Page No : 1

Groups Printed- Car

	Opportunity Way Southbound					Centerville Rd. Westbound					Opportunity Way Northbound					Centerville Rd. Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
10:00 AM	0	0	1	0	1	1	73	63	5	142	57	1	2	0	60	5	111	0	0	116	319
10:15 AM	2	0	0	0	2	0	65	74	8	147	53	0	5	0	58	13	125	0	0	138	345
10:30 AM	0	0	1	0	1	0	68	57	7	132	93	1	4	0	98	20	114	1	0	135	366
10:45 AM	0	0	0	0	0	0	91	62	10	163	74	1	5	0	80	16	109	0	2	127	370
Total	2	0	2	0	4	1	297	256	30	584	277	3	16	0	296	54	459	1	2	516	1400
11:00 AM	0	0	0	0	0	0	81	60	8	149	83	0	11	0	94	9	104	1	0	114	357
11:15 AM	0	0	0	0	0	1	80	54	6	141	45	0	7	0	52	12	111	0	0	123	316
11:30 AM	2	0	0	0	2	0	91	50	9	150	63	0	7	0	70	7	121	0	0	128	350
11:45 AM	0	0	0	0	0	0	90	86	9	185	83	0	7	1	91	10	107	1	0	118	394
Total	2	0	0	0	2	1	342	250	32	625	274	0	32	1	307	38	443	2	0	483	1417
12:00 PM	1	0	1	0	2	2	89	68	2	161	88	0	15	0	103	7	84	0	0	91	357
12:15 PM	0	0	0	0	0	0	82	42	2	126	75	0	8	0	83	7	87	0	0	94	303
12:30 PM	1	1	0	0	2	3	79	51	2	135	99	2	17	0	118	4	125	0	0	129	384
12:45 PM	0	1	2	0	3	0	80	63	6	149	69	0	8	0	77	13	110	3	0	126	355
Total	2	2	3	0	7	5	330	224	12	571	331	2	48	0	381	31	406	3	0	440	1399
01:00 PM	1	0	0	0	1	1	94	62	2	159	120	0	11	0	131	8	104	0	0	112	403
01:15 PM	2	0	0	0	2	0	91	69	2	162	80	0	12	0	92	11	108	0	0	119	375
01:30 PM	0	0	0	0	0	0	81	81	1	163	70	0	3	0	73	14	107	1	1	123	359
01:45 PM	0	2	0	0	2	0	102	54	3	159	55	0	6	0	61	14	94	0	0	108	330
Total	3	2	0	0	5	1	368	266	8	643	325	0	32	0	357	47	413	1	1	462	1467
Grand Total	9	4	5	0	18	8	1337	996	82	2423	1207	5	128	1	1341	170	1721	7	3	1901	5683
Apprch %	50	22.2	27.8	0		0.3	55.2	41.1	3.4		90	0.4	9.5	0.1		8.9	90.5	0.4	0.2		
Total %	0.2	0.1	0.1	0	0.3	0.1	23.5	17.5	1.4	42.6	21.2	0.1	2.3	0	23.6	3	30.3	0.1	0.1	33.5	

	Opportunity Way Southbound				Centerville Rd. Westbound				Opportunity Way Northbound				Centerville 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 10:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:30 PM																	
12:30 PM	1	1	0	2	3	79	51	133	99	2	17	118	4	125	0	129	382
12:45 PM	0	1	2	3	0	80	63	143	69	0	8	77	13	110	3	126	349
01:00 PM	1	0	0	1	1	94	62	157	120	0	11	131	8	104	0	112	401
01:15 PM	2	0	0	2	0	91	69	160	80	0	12	92	11	108	0	119	373
Total Volume	4	2	2	8	4	344	245	593	368	2	48	418	36	447	3	486	1505
% App. Total	50	25	25		0.7	58	41.3		88	0.5	11.5		7.4	92	0.6		
PHF	.500	.500	.250	.667	.333	.915	.888	.927	.767	.250	.706	.798	.692	.894	.250	.942	.938

Peggy Malone & Associates, Inc.  
(888) 247-8602

File Name : 1-Opportunity Way and Centerville Rd. SAT  
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Groups Printed- Truck

	Opportunity Way Southbound					Centerville Rd. Westbound					Opportunity Way Northbound					Centerville Rd. Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
10:00 AM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	2
10:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
10:30 AM	0	0	0	0	0	0	1	1	0	2	0	0	1	0	1	0	0	0	0	0	3
10:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	2	0	0	2	4
Total	0	0	0	0	0	0	3	2	0	5	0	0	2	0	2	0	5	0	0	5	12
11:00 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4
11:15 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
11:30 AM	0	0	0	0	0	0	1	1	0	2	0	0	1	0	1	0	3	0	0	3	6
11:45 AM	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	0	0	0	0	0	3
Total	0	0	0	0	0	0	6	2	0	8	0	0	1	0	1	0	7	0	0	7	16
12:00 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	4
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
12:30 PM	0	0	0	0	0	0	1	1	0	2	0	0	1	0	1	0	0	0	0	0	3
12:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4
Total	0	0	0	0	0	0	5	1	0	6	0	0	1	0	1	0	6	0	0	6	13
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4
01:30 PM	0	0	0	0	0	0	1	1	0	2	1	0	1	0	2	0	2	0	0	2	6
01:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
Total	0	0	0	0	0	0	4	1	0	5	1	0	1	0	2	0	6	0	0	6	13
Grand Total	0	0	0	0	0	0	18	6	0	24	1	0	5	0	6	0	24	0	0	24	54
Apprch %	0	0	0	0	0	0	75	25	0		16.7	0	83.3	0		0	100	0	0		
Total %	0	0	0	0	0	0	33.3	11.1	0	44.4	1.9	0	9.3	0	11.1	0	44.4	0	0	44.4	

	Opportunity Way Southbound				Centerville Rd. Westbound				Opportunity Way Northbound				Centerville 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 10:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 10:45 AM																	
10:45 AM	0	0	0	0	0	1	0	1	0	0	1	1	0	2	0	2	4
11:00 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	3	0	3	4
11:15 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	3
11:30 AM	0	0	0	0	0	1	1	2	0	0	1	1	0	3	0	3	6
Total Volume	0	0	0	0	0	5	1	6	0	0	2	2	0	9	0	9	17
% App. Total	0	0	0	0	0	83.3	16.7		0	0	100		0	100	0		
PHF	.000	.000	.000	.000	.000	.625	.250	.750	.000	.000	.500	.500	.000	.750	.000	.750	.708

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	Opportunity Way Southbound					Centerville Rd. Westbound					Opportunity Way Northbound					Centerville Rd. Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch % Total %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		

[illegible]

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# Peggy Malone & Associates, Inc.

## (888) 247-8602

File Name : 1-Opportunity Way and Centerville Rd. SAT

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Groups Printed- Car - Truck

	Opportunity Way Southbound					Centerville Rd. Westbound					Opportunity Way Northbound					Centerville Rd. Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
10:00 AM	0	0	1	0	1	1	73	64	5	143	57	1	2	0	60	5	112	0	0	117	321
10:15 AM	2	0	0	0	2	0	66	74	8	148	53	0	5	0	58	13	127	0	0	140	348
10:30 AM	0	0	1	0	1	0	69	58	7	134	93	1	5	0	99	20	114	1	0	135	369
10:45 AM	0	0	0	0	0	0	92	62	10	164	74	1	6	0	81	16	111	0	2	129	374
Total	2	0	2	0	4	1	300	258	30	589	277	3	18	0	298	54	464	1	2	521	1412
11:00 AM	0	0	0	0	0	0	82	60	8	150	83	0	11	0	94	9	107	1	0	117	361
11:15 AM	0	0	0	0	0	1	82	54	6	143	45	0	7	0	52	12	112	0	0	124	319
11:30 AM	2	0	0	0	2	0	92	51	9	152	63	0	8	0	71	7	124	0	0	131	356
11:45 AM	0	0	0	0	0	0	92	87	9	188	83	0	7	1	91	10	107	1	0	118	397
Total	2	0	0	0	2	1	348	252	32	633	274	0	33	1	308	38	450	2	0	490	1433
12:00 PM	1	0	1	0	2	2	92	68	2	164	88	0	15	0	103	7	85	0	0	92	361
12:15 PM	0	0	0	0	0	0	82	42	2	126	75	0	8	0	83	7	89	0	0	96	305
12:30 PM	1	1	0	0	2	3	80	52	2	137	99	2	18	0	119	4	125	0	0	129	387
12:45 PM	0	1	2	0	3	0	81	63	6	150	69	0	8	0	77	13	113	3	0	129	359
Total	2	2	3	0	7	5	335	225	12	577	331	2	49	0	382	31	412	3	0	446	1412
01:00 PM	1	0	0	0	1	1	94	62	2	159	120	0	11	0	131	8	104	0	0	112	403
01:15 PM	2	0	0	0	2	0	92	69	2	163	80	0	12	0	92	11	111	0	0	122	379
01:30 PM	0	0	0	0	0	0	82	82	1	165	71	0	4	0	75	14	109	1	1	125	365
01:45 PM	0	2	0	0	2	0	104	54	3	161	55	0	6	0	61	14	95	0	0	109	333
Total	3	2	0	0	5	1	372	267	8	648	326	0	33	0	359	47	419	1	1	468	1480
Grand Total	9	4	5	0	18	8	1355	1002	82	2447	1208	5	133	1	1347	170	1745	7	3	1925	5737
Apprch %	50	22.2	27.8	0		0.3	55.4	40.9	3.4		89.7	0.4	9.9	0.1		8.8	90.6	0.4	0.2		
Total %	0.2	0.1	0.1	0	0.3	0.1	23.6	17.5	1.4	42.7	21.1	0.1	2.3	0	23.5	3	30.4	0.1	0.1	33.6	
Car	9	4	5	0	18	8	1337	996	82	2423	1207	5	128	1	1341	170	1721	7	3	1901	5683
% Car	100	100	100	0	100	100	98.7	99.4	100	99	99.9	100	96.2	100	99.6	100	98.6	100	100	98.8	99.1
Truck	0	0	0	0	0	0	18	6	0	24	1	0	5	0	6	0	24	0	0	24	54
% Truck	0	0	0	0	0	0	1.3	0.6	0	1	0.1	0	3.8	0	0.4	0	1.4	0	0	1.2	0.9

	Opportunity Way Southbound				Centerville Rd. Westbound				Opportunity Way Northbound				Centerville 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 10:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:30 PM																	
12:30 PM	1	1	0	2	3	80	52	135	99	2	18	119	4	125	0	129	385
12:45 PM	0	1	2	3	0	81	63	144	69	0	8	77	13	113	3	129	353
01:00 PM	1	0	0	1	1	94	62	157	120	0	11	131	8	104	0	112	401
01:15 PM	2	0	0	2	0	92	69	161	80	0	12	92	11	111	0	122	377
Total Volume	4	2	2	8	4	347	246	597	368	2	49	419	36	453	3	492	1516
% App. Total	50	25	25		0.7	58.1	41.2		87.8	0.5	11.7		7.3	92.1	0.6		
PHF	.500	.500	.250	.667	.333	.923	.891	.927	.767	.250	.681	.800	.692	.906	.250	.953	.945

Peggy Malone & Associates, Inc.  
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Groups Printed- Car

	Opportunity Way Southbound					Centerville Rd. Westbound					Opportunity Way Northbound					Centerville Rd. Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	2	0	0	0	2	1	100	37	2	140	43	0	7	0	50	6	90	0	0	96	288
04:15 PM	0	0	0	0	0	0	117	38	6	161	41	0	3	0	44	9	106	0	0	115	320
04:30 PM	1	0	1	0	2	0	130	40	5	175	25	0	2	0	27	0	95	0	0	95	299
04:45 PM	0	0	0	0	0	0	115	48	3	166	31	0	6	0	37	5	123	1	0	129	332
Total	3	0	1	0	4	1	462	163	16	642	140	0	18	0	158	20	414	1	0	435	1239
05:00 PM	1	0	0	0	1	0	123	76	3	202	56	0	3	0	59	11	85	1	0	97	359
05:15 PM	0	1	2	0	3	1	165	132	1	299	62	2	1	0	65	12	84	0	0	96	463
05:30 PM	0	0	0	0	0	0	140	92	2	234	50	1	7	0	58	12	131	0	0	143	435
05:45 PM	0	0	0	0	0	0	99	57	1	157	35	0	5	0	40	13	92	0	0	105	302
Total	1	1	2	0	4	1	527	357	7	892	203	3	16	0	222	48	392	1	0	441	1559
Grand Total	4	1	3	0	8	2	989	520	23	1534	343	3	34	0	380	68	806	2	0	876	2798
Apprch %	50	12.5	37.5	0		0.1	64.5	33.9	1.5		90.3	0.8	8.9	0		7.8	92	0.2	0		
Total %	0.1	0	0.1	0	0.3	0.1	35.3	18.6	0.8	54.8	12.3	0.1	1.2	0	13.6	2.4	28.8	0.1	0	31.3	

	Opportunity Way Southbound				Centerville Rd. Westbound				Opportunity Way Northbound				Centerville 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	0	0	0	0	0	115	48	163	31	0	6	37	5	123	<b>1</b>	129	329
05:00 PM	<b>1</b>	0	0	1	0	123	76	199	56	0	3	59	11	85	1	97	356
05:15 PM	0	<b>1</b>	<b>2</b>	<b>3</b>	<b>1</b>	<b>165</b>	<b>132</b>	<b>298</b>	<b>62</b>	<b>2</b>	<b>1</b>	<b>65</b>	<b>12</b>	84	0	96	<b>462</b>
05:30 PM	0	0	0	0	0	140	92	232	50	1	<b>7</b>	58	12	<b>131</b>	0	<b>143</b>	433
Total Volume	1	1	2	4	1	543	348	892	199	3	17	219	40	423	2	465	1580
% App. Total	25	25	50		0.1	60.9	39		90.9	1.4	7.8		8.6	91	0.4		
PHF	.250	.250	.250	.333	.250	.823	.659	.748	.802	.375	.607	.842	.833	.807	.500	.813	.855

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Groups Printed- Truck

	Opportunity Way Southbound					Centerville Rd. Westbound					Opportunity Way Northbound					Centerville Rd. Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	5	1	0	6	1	0	0	0	1	2	8	1	0	11	18
04:15 PM	0	0	0	0	0	0	5	1	0	6	1	0	0	0	1	0	5	2	0	7	14
04:30 PM	0	0	0	0	0	0	5	4	0	9	2	0	2	0	4	4	3	0	0	7	20
04:45 PM	0	0	0	0	0	0	4	6	0	10	1	0	0	0	1	0	3	0	0	3	14
Total	0	0	0	0	0	0	19	12	0	31	5	0	2	0	7	6	19	3	0	28	66
05:00 PM	1	0	0	0	1	0	6	0	0	6	0	0	0	0	0	1	2	0	0	3	10
05:15 PM	0	0	0	0	0	0	5	2	0	7	0	0	0	0	0	0	1	0	0	1	8
05:30 PM	0	0	0	0	0	0	5	1	0	6	0	0	1	0	1	1	0	0	0	1	8
05:45 PM	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	0	2	0	0	2	5
Total	1	0	0	0	1	0	18	4	0	22	0	0	1	0	1	2	5	0	0	7	31
Grand Total	1	0	0	0	1	0	37	16	0	53	5	0	3	0	8	8	24	3	0	35	97
Apprch %	100	0	0	0		0	69.8	30.2	0		62.5	0	37.5	0		22.9	68.6	8.6	0		
Total %	1	0	0	0	1	0	38.1	16.5	0	54.6	5.2	0	3.1	0	8.2	8.2	24.7	3.1	0	36.1	

	Opportunity Way Southbound				Centerville Rd. Westbound				Opportunity Way Northbound				Centerville 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	5	1	6	1	0	0	1	2	8	1	11	18
04:15 PM	0	0	0	0	0	5	1	6	1	0	0	1	0	5	2	7	14
04:30 PM	0	0	0	0	0	5	4	9	2	0	2	4	4	3	0	7	20
04:45 PM	0	0	0	0	0	4	6	10	1	0	0	1	0	3	0	3	14
Total Volume	0	0	0	0	0	19	12	31	5	0	2	7	6	19	3	28	66
% App. Total	0	0	0		0	61.3	38.7		71.4	0	28.6		21.4	67.9	10.7		
PHF	.000	.000	.000	.000	.000	.950	.500	.775	.625	.000	.250	.438	.375	.594	.375	.636	.825

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Groups Printed- Pedestrians

[illegible][illegible]

# Peggy Malone & Associates, Inc.

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Groups Printed- Car - Truck

	Opportunity Way Southbound					Centerville Rd. Westbound					Opportunity Way Northbound					Centerville Rd. Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	2	0	0	0	2	1	105	38	2	146	44	0	7	0	51	8	98	1	0	107	306
04:15 PM	0	0	0	0	0	0	122	39	6	167	42	0	3	0	45	9	111	2	0	122	334
04:30 PM	1	0	1	0	2	0	135	44	5	184	27	0	4	0	31	4	98	0	0	102	319
04:45 PM	0	0	0	0	0	0	119	54	3	176	32	0	6	0	38	5	126	1	0	132	346
Total	3	0	1	0	4	1	481	175	16	673	145	0	20	0	165	26	433	4	0	463	1305
05:00 PM	2	0	0	0	2	0	129	76	3	208	56	0	3	0	59	12	87	1	0	100	369
05:15 PM	0	1	2	0	3	1	170	134	1	306	62	2	1	0	65	12	85	0	0	97	471
05:30 PM	0	0	0	0	0	0	145	93	2	240	50	1	8	0	59	13	131	0	0	144	443
05:45 PM	0	0	0	0	0	0	101	58	1	160	35	0	5	0	40	13	94	0	0	107	307
Total	2	1	2	0	5	1	545	361	7	914	203	3	17	0	223	50	397	1	0	448	1590
Grand Total	5	1	3	0	9	2	1026	536	23	1587	348	3	37	0	388	76	830	5	0	911	2895
Apprch %	55.6	11.1	33.3	0		0.1	64.7	33.8	1.4		89.7	0.8	9.5	0		8.3	91.1	0.5	0		
Total %	0.2	0	0.1	0	0.3	0.1	35.4	18.5	0.8	54.8	12	0.1	1.3	0	13.4	2.6	28.7	0.2	0	31.5	
Car	4	1	3	0	8	2	989	520	23	1534	343	3	34	0	380	68	806	2	0	876	2798
% Car	80	100	100	0	88.9	100	96.4	97	100	96.7	98.6	100	91.9	0	97.9	89.5	97.1	40	0	96.2	96.6
Truck	1	0	0	0	1	0	37	16	0	53	5	0	3	0	8	8	24	3	0	35	97
% Truck	20	0	0	0	11.1	0	3.6	3	0	3.3	1.4	0	8.1	0	2.1	10.5	2.9	60	0	3.8	3.4

	Opportunity Way Southbound				Centerville Rd. Westbound				Opportunity Way Northbound				Centerville 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	0	0	0	0	0	119	54	173	32	0	6	38	5	126	1	132	343
05:00 PM	2	0	0	2	0	129	76	205	56	0	3	59	12	87	1	100	366
05:15 PM	0	1	2	3	1	170	134	305	62	2	1	65	12	85	0	97	470
05:30 PM	0	0	0	0	0	145	93	238	50	1	8	59	13	131	0	144	441
Total Volume	2	1	2	5	1	563	357	921	200	3	18	221	42	429	2	473	1620
% App. Total	40	20	40		0.1	61.1	38.8		90.5	1.4	8.1		8.9	90.7	0.4		
PHF	.250	.250	.250	.417	.250	.828	.666	.755	.806	.375	.563	.850	.808	.819	.500	.821	.862

# Peggy Malone & Associates, Inc.

## (888) 247-8602

File Name : 2-US 60 and Centerville Rd. SAT  
 Site Code :  
 Start Date : 5/14/2016  
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Groups Printed- Car

	US 60 Southbound					Centerville Rd. Westbound					US 60 Northbound					Centerville Rd. Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
10:00 AM	82	142	5	0	229	8	11	11	0	30	13	108	51	0	172	64	13	97	0	174	605
10:15 AM	74	148	7	1	230	6	5	7	0	18	9	123	59	0	191	78	12	88	0	178	617
10:30 AM	75	180	15	2	272	7	16	7	0	30	11	104	45	1	161	95	19	97	0	211	674
10:45 AM	100	178	6	1	285	8	4	10	0	22	14	135	56	3	208	92	1	82	0	175	690
Total	331	648	33	4	1016	29	36	35	0	100	47	470	211	4	732	329	45	364	0	738	2586
11:00 AM	85	179	7	1	272	4	6	4	0	14	7	110	56	1	174	103	4	87	2	196	656
11:15 AM	77	153	6	2	238	7	3	6	0	16	7	145	53	2	207	72	11	82	0	165	626
11:30 AM	77	169	5	0	251	8	11	11	0	30	9	136	65	1	211	91	9	87	1	188	680
11:45 AM	104	205	10	0	319	8	6	3	0	17	4	174	72	1	251	97	12	89	0	198	785
Total	343	706	28	3	1080	27	26	24	0	77	27	565	246	5	843	363	36	345	3	747	2747
12:00 PM	85	169	15	3	272	12	4	13	0	29	12	155	61	1	229	89	6	81	0	176	706
12:15 PM	71	194	8	1	274	12	4	9	0	25	11	177	47	2	237	72	13	67	0	152	688
12:30 PM	85	195	3	0	283	7	10	11	0	28	9	135	45	1	190	125	8	87	0	220	721
12:45 PM	72	201	3	1	277	5	12	13	0	30	10	152	62	1	225	90	20	89	0	199	731
Total	313	759	29	5	1106	36	30	46	0	112	42	619	215	5	881	376	47	324	0	747	2846
01:00 PM	82	175	2	1	260	3	5	10	0	18	14	180	58	2	254	98	9	107	0	214	746
01:15 PM	83	172	6	2	263	4	7	15	0	26	10	187	63	2	262	100	13	93	0	206	757
01:30 PM	101	187	6	3	297	11	6	13	0	30	5	173	53	0	231	73	11	74	0	158	716
01:45 PM	85	179	10	0	274	6	9	7	0	22	9	170	58	2	239	78	10	69	0	157	692
Total	351	713	24	6	1094	24	27	45	0	96	38	710	232	6	986	349	43	343	0	735	2911
Grand Total	1338	2826	114	18	4296	116	119	150	0	385	154	2364	904	20	3442	1417	171	1376	3	2967	11090
Apprch %	31.1	65.8	2.7	0.4		30.1	30.9	39	0		4.5	68.7	26.3	0.6		47.8	5.8	46.4	0.1		
Total %	12.1	25.5	1	0.2	38.7	1	1.1	1.4	0	3.5	1.4	21.3	8.2	0.2	31	12.8	1.5	12.4	0	26.8	

	US 60 Southbound				Centerville Rd. Westbound				US 60 Northbound				Centerville 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 10:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:30 PM																	
12:30 PM	85	195	3	283	7	10	11	28	9	135	45	189	125	8	87	220	720
12:45 PM	72	201	3	276	5	12	13	30	10	152	62	224	90	20	89	199	729
01:00 PM	82	175	2	259	3	5	10	18	14	180	58	252	98	9	107	214	743
01:15 PM	83	172	6	261	4	7	15	26	10	187	63	260	100	13	93	206	753
Total Volume	322	743	14	1079	19	34	49	102	43	654	228	925	413	50	376	839	2945
% App. Total	29.8	68.9	1.3		18.6	33.3	48		4.6	70.7	24.6		49.2	6	44.8		
PHF	.947	.924	.583	.953	.679	.708	.817	.850	.768	.874	.905	.889	.826	.625	.879	.953	.978

Peggy Malone & Associates, Inc.  
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File Name : 2-US 60 and Centerville Rd. SAT  
Site Code :  
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Groups Printed- Truck

	US 60 Southbound					Centerville Rd. Westbound					US 60 Northbound					Centerville Rd. Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
10:00 AM	0	1	0	0	1	0	0	0	0	0	2	3	0	0	5	1	0	1	0	2	8
10:15 AM	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	0	0	2	0	2	7
10:30 AM	1	2	0	0	3	0	0	2	0	2	0	1	0	0	1	0	0	0	0	0	6
10:45 AM	1	2	0	0	3	0	0	0	0	0	0	1	0	0	1	0	0	2	0	2	6
Total	2	8	0	0	10	0	0	2	0	2	2	7	0	0	9	1	0	5	0	6	27
11:00 AM	1	3	0	0	4	0	0	0	0	0	1	1	0	0	2	3	0	0	0	3	9
11:15 AM	1	5	0	0	6	0	0	0	0	0	0	3	0	0	3	0	0	1	0	1	10
11:30 AM	2	2	0	0	4	0	0	0	0	0	0	2	0	0	2	2	0	1	0	3	9
11:45 AM	1	1	1	0	3	0	0	0	0	0	0	2	2	0	4	0	0	0	0	0	7
Total	5	11	1	0	17	0	0	0	0	0	1	8	2	0	11	5	0	2	0	7	35
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	1	0	0	0	1	4
12:15 PM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	2	0	2	5
12:30 PM	2	2	0	0	4	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	6
12:45 PM	1	2	0	0	3	0	0	0	0	0	0	2	0	0	2	1	1	0	0	2	7
Total	3	6	0	0	9	0	0	0	0	0	0	5	3	0	8	2	1	2	0	5	22
01:00 PM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
01:15 PM	0	3	0	0	3	1	1	0	0	2	0	4	0	0	4	0	0	3	0	3	12
01:30 PM	2	2	0	0	4	0	0	0	0	0	0	3	0	0	3	1	0	1	0	2	9
01:45 PM	2	0	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
Total	4	7	0	0	11	1	1	0	0	2	0	9	0	0	9	1	0	4	0	5	27
Grand Total	14	32	1	0	47	1	1	2	0	4	3	29	5	0	37	9	1	13	0	23	111
Apprch %	29.8	68.1	2.1	0		25	25	50	0		8.1	78.4	13.5	0		39.1	4.3	56.5	0		
Total %	12.6	28.8	0.9	0	42.3	0.9	0.9	1.8	0	3.6	2.7	26.1	4.5	0	33.3	8.1	0.9	11.7	0	20.7	

	US 60 Southbound				Centerville Rd. Westbound				US 60 Northbound				Centerville 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 10:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:00 AM																	
11:00 AM	1	3	0	4	0	0	0	0	1	1	0	2	3	0	0	3	9
11:15 AM	1	5	0	6	0	0	0	0	0	3	0	3	0	0	1	1	10
11:30 AM	2	2	0	4	0	0	0	0	0	2	0	2	2	0	1	3	9
11:45 AM	1	1	1	3	0	0	0	0	0	2	2	4	0	0	0	0	7
Total Volume	5	11	1	17	0	0	0	0	1	8	2	11	5	0	2	7	35
% App. Total	29.4	64.7	5.9		0	0	0		9.1	72.7	18.2		71.4	0	28.6		
PHF	.625	.550	.250	.708	.000	.000	.000	.000	.250	.667	.250	.688	.417	.000	.500	.583	.875



File Name : 2-US 60 and Centerville Rd. SAT  
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	US 60 Southbound					Centerville Rd. Westbound					US 60 Northbound					Centerville Rd. Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approch % Total %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		

[illegible]

File Name : 2-US 60 and Centerville Rd. SAT  
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# Peggy Malone & Associates, Inc.

## (888) 247-8602

File Name : 2-US 60 and Centerville Rd. SAT  
 Site Code :  
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Groups Printed- Car - Truck

	US 60 Southbound					Centerville Rd. Westbound					US 60 Northbound					Centerville Rd. Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
10:00 AM	82	143	5	0	230	8	11	11	0	30	15	111	51	0	177	65	13	98	0	176	613
10:15 AM	74	151	7	1	233	6	5	7	0	18	9	125	59	0	193	78	12	90	0	180	624
10:30 AM	76	182	15	2	275	7	16	9	0	32	11	105	45	1	162	95	19	97	0	211	680
10:45 AM	101	180	6	1	288	8	4	10	0	22	14	136	56	3	209	92	1	84	0	177	696
Total	333	656	33	4	1026	29	36	37	0	102	49	477	211	4	741	330	45	369	0	744	2613
11:00 AM	86	182	7	1	276	4	6	4	0	14	8	111	56	1	176	106	4	87	2	199	665
11:15 AM	78	158	6	2	244	7	3	6	0	16	7	148	53	2	210	72	11	83	0	166	636
11:30 AM	79	171	5	0	255	8	11	11	0	30	9	138	65	1	213	93	9	88	1	191	689
11:45 AM	105	206	11	0	322	8	6	3	0	17	4	176	74	1	255	97	12	89	0	198	792
Total	348	717	29	3	1097	27	26	24	0	77	28	573	248	5	854	368	36	347	3	754	2782
12:00 PM	85	169	15	3	272	12	4	13	0	29	12	155	64	1	232	90	6	81	0	177	710
12:15 PM	71	196	8	1	276	12	4	9	0	25	11	178	47	2	238	72	13	69	0	154	693
12:30 PM	87	197	3	0	287	7	10	11	0	28	9	137	45	1	192	125	8	87	0	220	727
12:45 PM	73	203	3	1	280	5	12	13	0	30	10	154	62	1	227	91	21	89	0	201	738
Total	316	765	29	5	1115	36	30	46	0	112	42	624	218	5	889	378	48	326	0	752	2868
01:00 PM	82	177	2	1	262	3	5	10	0	18	14	181	58	2	255	98	9	107	0	214	749
01:15 PM	83	175	6	2	266	5	8	15	0	28	10	191	63	2	266	100	13	96	0	209	769
01:30 PM	103	189	6	3	301	11	6	13	0	30	5	176	53	0	234	74	11	75	0	160	725
01:45 PM	87	179	10	0	276	6	9	7	0	22	9	171	58	2	240	78	10	69	0	157	695
Total	355	720	24	6	1105	25	28	45	0	98	38	719	232	6	995	350	43	347	0	740	2938
Grand Total	1352	2858	115	18	4343	117	120	152	0	389	157	2393	909	20	3479	1426	172	1389	3	2990	11201
Apprch %	31.1	65.8	2.6	0.4		30.1	30.8	39.1	0		4.5	68.8	26.1	0.6		47.7	5.8	46.5	0.1		
Total %	12.1	25.5	1	0.2	38.8	1	1.1	1.4	0	3.5	1.4	21.4	8.1	0.2	31.1	12.7	1.5	12.4	0	26.7	
Car	1338	2826	114	18	4296	116	119	150	0	385	154	2364	904	20	3442	1417	171	1376	3	2967	11090
% Car	99	98.9	99.1	100	98.9	99.1	99.2	98.7	0	99	98.1	98.8	99.4	100	98.9	99.4	99.4	99.1	100	99.2	99
Truck	14	32	1	0	47	1	1	2	0	4	3	29	5	0	37	9	1	13	0	23	111
% Truck	1	1.1	0.9	0	1.1	0.9	0.8	1.3	0	1	1.9	1.2	0.6	0	1.1	0.6	0.6	0.9	0	0.8	1

	US 60 Southbound				Centerville Rd. Westbound				US 60 Northbound				Centerville 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 10:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:30 PM																	
12:30 PM	87	197	3	287	7	10	11	28	9	137	45	191	125	8	87	220	726
12:45 PM	73	203	3	279	5	12	13	30	10	154	62	226	91	21	89	201	736
01:00 PM	82	177	2	261	3	5	10	18	14	181	58	253	98	9	107	214	746
01:15 PM	83	175	6	264	5	8	15	28	10	191	63	264	100	13	96	209	765
Total Volume	325	752	14	1091	20	35	49	104	43	663	228	934	414	51	379	844	2973
% App. Total	29.8	68.9	1.3		19.2	33.7	47.1		4.6	71	24.4		49.1	6	44.9		
PHF	.934	.926	.583	.950	.714	.729	.817	.867	.768	.868	.905	.884	.828	.607	.886	.959	.972

Peggy Malone & Associates, Inc.  
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File Name : 2-US 60 and Centerville Rd. THU  
Site Code :  
Start Date : 5/12/2016  
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Groups Printed- Car

	US 60 Southbound					Centerville Rd. Westbound					US 60 Northbound					Centerville Rd. Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	90	145	11	0	246	7	8	9	0	24	11	154	46	0	211	64	4	64	0	132	613
04:15 PM	86	157	12	1	256	8	11	9	0	28	9	177	63	0	249	50	16	76	0	142	675
04:30 PM	101	155	11	0	267	7	9	13	0	29	9	169	63	0	241	62	1	55	0	118	655
04:45 PM	106	152	12	0	270	8	8	12	0	28	10	174	55	2	241	65	7	80	0	152	691
Total	383	609	46	1	1039	30	36	43	0	109	39	674	227	2	942	241	28	275	0	544	2634
05:00 PM	110	173	9	1	293	8	9	7	0	24	11	190	83	3	287	61	9	80	1	151	755
05:15 PM	152	181	9	2	344	6	14	8	0	28	6	185	131	2	324	59	9	81	0	149	845
05:30 PM	118	154	7	0	279	9	7	12	0	28	10	153	97	0	260	68	13	103	1	185	752
05:45 PM	96	158	8	0	262	3	7	12	0	22	5	127	53	4	189	48	12	68	0	128	601
Total	476	666	33	3	1178	26	37	39	0	102	32	655	364	9	1060	236	43	332	2	613	2953
Grand Total	859	1275	79	4	2217	56	73	82	0	211	71	1329	591	11	2002	477	71	607	2	1157	5587
Apprch %	38.7	57.5	3.6	0.2		26.5	34.6	38.9	0		3.5	66.4	29.5	0.5		41.2	6.1	52.5	0.2		
Total %	15.4	22.8	1.4	0.1	39.7	1	1.3	1.5	0	3.8	1.3	23.8	10.6	0.2	35.8	8.5	1.3	10.9	0	20.7	

	US 60 Southbound				Centerville Rd. Westbound				US 60 Northbound				Centerville 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	106	152	<b>12</b>	270	8	8	<b>12</b>	<b>28</b>	10	174	55	239	65	7	80	152	689
05:00 PM	110	173	9	292	8	9	7	24	<b>11</b>	<b>190</b>	83	284	61	9	80	150	750
05:15 PM	<b>152</b>	<b>181</b>	9	<b>342</b>	6	<b>14</b>	8	28	6	185	<b>131</b>	<b>322</b>	59	9	81	149	<b>841</b>
05:30 PM	118	154	7	279	<b>9</b>	7	12	28	10	153	97	260	<b>68</b>	<b>13</b>	<b>103</b>	<b>184</b>	751
Total Volume	486	660	37	1183	31	38	39	108	37	702	366	1105	253	38	344	635	3031
% App. Total	41.1	55.8	3.1		28.7	35.2	36.1		3.3	63.5	33.1		39.8	6	54.2		
PHF	.799	.912	.771	.865	.861	.679	.813	.964	.841	.924	.698	.858	.930	.731	.835	.863	.901

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Groups Printed- Truck

	US 60 Southbound					Centerville Rd. Westbound					US 60 Northbound					Centerville Rd. Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	2	9	0	0	11	0	0	0	0	0	0	2	2	0	4	4	0	4	0	8	23
04:15 PM	2	9	0	0	11	0	0	0	0	0	1	1	3	0	5	0	1	3	0	4	20
04:30 PM	3	2	0	0	5	0	0	0	0	0	1	1	6	0	8	2	0	4	0	6	19
04:45 PM	2	2	0	0	4	0	0	0	0	0	0	4	7	0	11	1	0	2	0	3	18
Total	9	22	0	0	31	0	0	0	0	0	2	8	18	0	28	7	1	13	0	21	80
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	2	5	0	7	0	0	3	0	3	10
05:15 PM	3	2	0	0	5	0	0	0	0	0	0	0	4	0	4	0	0	1	0	1	10
05:30 PM	2	0	0	0	2	1	0	0	0	1	0	3	3	0	6	0	0	0	0	0	9
05:45 PM	1	2	0	0	3	0	0	0	0	0	0	0	2	0	2	0	1	1	0	2	7
Total	6	4	0	0	10	1	0	0	0	1	0	5	14	0	19	0	1	5	0	6	36
Grand Total	15	26	0	0	41	1	0	0	0	1	2	13	32	0	47	7	2	18	0	27	116
Apprch %	36.6	63.4	0	0		100	0	0	0		4.3	27.7	68.1	0		25.9	7.4	66.7	0		
Total %	12.9	22.4	0	0	35.3	0.9	0	0	0	0.9	1.7	11.2	27.6	0	40.5	6	1.7	15.5	0	23.3	

	US 60 Southbound				Centerville Rd. Westbound				US 60 Northbound				Centerville 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	2	9	0	11	0	0	0	0	0	2	2	4	4	0	4	8	23
04:15 PM	2	9	0	11	0	0	0	0	1	1	3	5	0	1	3	4	20
04:30 PM	3	2	0	5	0	0	0	0	1	1	6	8	2	0	4	6	19
04:45 PM	2	2	0	4	0	0	0	0	0	4	7	11	1	0	2	3	18
Total Volume	9	22	0	31	0	0	0	0	2	8	18	28	7	1	13	21	80
% App. Total	29	71	0		0	0	0		7.1	28.6	64.3		33.3	4.8	61.9		
PHF	.750	.611	.000	.705	.000	.000	.000	.000	.500	.500	.643	.636	.438	.250	.813	.656	.870

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	US 60 Southbound					Centerville Rd. Westbound					US 60 Northbound					Centerville Rd. Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach % Total %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		

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File Name : 2-US 60 and Centerville Rd. THU  
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Groups Printed- Car - Truck

	US 60 Southbound					Centerville Rd. Westbound					US 60 Northbound					Centerville Rd. Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	92	154	11	0	257	7	8	9	0	24	11	156	48	0	215	68	4	68	0	140	636
04:15 PM	88	166	12	1	267	8	11	9	0	28	10	178	66	0	254	50	17	79	0	146	695
04:30 PM	104	157	11	0	272	7	9	13	0	29	10	170	69	0	249	64	1	59	0	124	674
04:45 PM	108	154	12	0	274	8	8	12	0	28	10	178	62	2	252	66	7	82	0	155	709
Total	392	631	46	1	1070	30	36	43	0	109	41	682	245	2	970	248	29	288	0	565	2714
05:00 PM	110	173	9	1	293	8	9	7	0	24	11	192	88	3	294	61	9	83	1	154	765
05:15 PM	155	183	9	2	349	6	14	8	0	28	6	185	135	2	328	59	9	82	0	150	855
05:30 PM	120	154	7	0	281	10	7	12	0	29	10	156	100	0	266	68	13	103	1	185	761
05:45 PM	97	160	8	0	265	3	7	12	0	22	5	127	55	4	191	48	13	69	0	130	608
Total	482	670	33	3	1188	27	37	39	0	103	32	660	378	9	1079	236	44	337	2	619	2989
Grand Total	874	1301	79	4	2258	57	73	82	0	212	73	1342	623	11	2049	484	73	625	2	1184	5703
Apprch %	38.7	57.6	3.5	0.2		26.9	34.4	38.7	0		3.6	65.5	30.4	0.5		40.9	6.2	52.8	0.2		
Total %	15.3	22.8	1.4	0.1	39.6	1	1.3	1.4	0	3.7	1.3	23.5	10.9	0.2	35.9	8.5	1.3	11	0	20.8	
Car	859	1275	79	4	2217	56	73	82	0	211	71	1329	591	11	2002	477	71	607	2	1157	5587
% Car	98.3	98	100	100	98.2	98.2	100	100	0	99.5	97.3	99	94.9	100	97.7	98.6	97.3	97.1	100	97.7	98
Truck	15	26	0	0	41	1	0	0	0	1	2	13	32	0	47	7	2	18	0	27	116
% Truck	1.7	2	0	0	1.8	1.8	0	0	0	0.5	2.7	1	5.1	0	2.3	1.4	2.7	2.9	0	2.3	2

	US 60 Southbound				Centerville Rd. Westbound				US 60 Northbound				Centerville 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	108	154	<b>12</b>	274	8	8	<b>12</b>	28	10	178	62	250	66	7	82	155	707
05:00 PM	110	173	9	292	8	9	7	24	<b>11</b>	<b>192</b>	88	291	61	9	83	153	760
05:15 PM	<b>155</b>	<b>183</b>	9	<b>347</b>	6	<b>14</b>	8	28	6	185	<b>135</b>	<b>326</b>	59	9	82	150	<b>851</b>
05:30 PM	120	154	7	281	<b>10</b>	7	12	<b>29</b>	10	156	100	266	<b>68</b>	<b>13</b>	<b>103</b>	<b>184</b>	760
Total Volume	493	664	37	1194	32	38	39	109	37	711	385	1133	254	38	350	642	3078
% App. Total	41.3	55.6	3.1		29.4	34.9	35.8		3.3	62.8	34		39.6	5.9	54.5		
PHF	.795	.907	.771	.860	.800	.679	.813	.940	.841	.926	.713	.869	.934	.731	.850	.872	.904



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Groups Printed- Car

	US 60 Southbound				US 60 Northbound				Rt. 199 SB Ramps Eastbound				
Start Time	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
10:00 AM	48	189	0	237	132	5	1	138	82	43	0	125	500
10:15 AM	54	180	1	235	139	9	1	149	69	49	0	118	502
10:30 AM	77	209	1	287	140	16	0	156	63	38	0	101	544
10:45 AM	84	201	0	285	167	8	1	176	64	33	0	97	558
Total	263	779	2	1044	578	38	3	619	278	163	0	441	2104
11:00 AM	80	201	0	281	140	7	0	147	60	30	0	90	518
11:15 AM	64	165	1	230	162	12	2	176	57	39	0	96	502
11:30 AM	73	205	0	278	158	5	2	165	72	56	0	128	571
11:45 AM	77	201	3	281	201	5	0	206	73	39	0	112	599
Total	294	772	4	1070	661	29	4	694	262	164	0	426	2190
12:00 PM	88	191	1	280	188	7	1	196	101	42	0	143	619
12:15 PM	78	190	0	268	184	4	2	190	86	53	0	139	597
12:30 PM	97	220	1	318	162	17	1	180	106	37	0	143	641
12:45 PM	66	260	2	328	159	5	3	167	89	52	0	141	636
Total	329	861	4	1194	693	33	7	733	382	184	0	566	2493
01:00 PM	77	206	0	283	205	15	1	221	78	48	0	126	630
01:15 PM	75	219	1	295	230	10	1	241	103	53	0	156	692
01:30 PM	69	199	4	272	187	11	2	200	90	29	0	119	591
01:45 PM	62	197	0	259	190	13	1	204	80	42	0	122	585
Total	283	821	5	1109	812	49	5	866	351	172	0	523	2498
Grand Total	1169	3233	15	4417	2744	149	19	2912	1273	683	0	1956	9285
Apprch %	26.5	73.2	0.3		94.2	5.1	0.7		65.1	34.9	0		
Total %	12.6	34.8	0.2	47.6	29.6	1.6	0.2	31.4	13.7	7.4	0	21.1	

	US 60 Southbound			US 60 Northbound			Rt. 199 SB Ramps Eastbound			
Start Time	Right	Thru	App. Total	Thru	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 12:30 PM										
12:30 PM	<b>97</b>	220	317	162	<b>17</b>	179	<b>106</b>	37	143	639
12:45 PM	66	<b>260</b>	<b>326</b>	159	5	164	89	52	141	631
01:00 PM	77	206	283	205	15	220	78	48	126	629
01:15 PM	75	219	294	<b>230</b>	10	<b>240</b>	103	<b>53</b>	<b>156</b>	<b>690</b>
Total Volume	315	905	1220	756	47	803	376	190	566	2589
% App. Total	25.8	74.2		94.1	5.9		66.4	33.6		
PHF	.812	.870	.936	.822	.691	.836	.887	.896	.907	.938

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Groups Printed- Truck

	US 60 Southbound				US 60 Northbound				Rt. 199 SB Ramps Eastbound				
Start Time	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
10:00 AM	0	2	0	2	2	0	0	2	0	3	0	3	7
10:15 AM	0	3	0	3	2	0	0	2	1	1	0	2	7
10:30 AM	1	2	0	3	1	1	0	2	4	0	0	4	9
10:45 AM	1	1	0	2	1	0	0	1	0	0	0	0	3
Total	2	8	0	10	6	1	0	7	5	4	0	9	26
11:00 AM	3	3	0	6	2	1	0	3	1	0	0	1	10
11:15 AM	1	3	0	4	4	0	0	4	1	0	0	1	9
11:30 AM	1	4	0	5	3	0	0	3	2	0	0	2	10
11:45 AM	0	1	0	1	4	0	0	4	2	1	0	3	8
Total	5	11	0	16	13	1	0	14	6	1	0	7	37
12:00 PM	0	1	0	1	0	0	0	0	1	2	0	3	4
12:15 PM	0	1	0	1	0	1	0	1	1	0	0	1	3
12:30 PM	0	3	0	3	2	0	0	2	2	0	0	2	7
12:45 PM	1	2	0	3	2	0	0	2	0	0	0	0	5
Total	1	7	0	8	4	1	0	5	4	2	0	6	19
01:00 PM	1	1	0	2	2	0	0	2	0	0	0	0	4
01:15 PM	0	3	0	3	4	0	0	4	1	0	0	1	8
01:30 PM	1	1	0	2	3	0	0	3	2	0	0	2	7
01:45 PM	1	1	0	2	1	0	0	1	2	0	0	2	5
Total	3	6	0	9	10	0	0	10	5	0	0	5	24
Grand Total	11	32	0	43	33	3	0	36	20	7	0	27	106
Apprch %	25.6	74.4	0		91.7	8.3	0		74.1	25.9	0		
Total %	10.4	30.2	0	40.6	31.1	2.8	0	34	18.9	6.6	0	25.5	

	US 60 Southbound			US 60 Northbound			Rt. 199 SB Ramps Eastbound			
Start Time	Right	Thru	App. Total	Thru	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:00 AM										
11:00 AM	3	3	6	2	1	3	1	0	1	10
11:15 AM	1	3	4	4	0	4	1	0	1	9
11:30 AM	1	4	5	3	0	3	2	0	2	10
11:45 AM	0	1	1	4	0	4	2	1	3	8
Total Volume	5	11	16	13	1	14	6	1	7	37
% App. Total	31.2	68.8		92.9	7.1		85.7	14.3		
PHF	.417	.688	.667	.813	.250	.875	.750	.250	.583	.925

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Groups Printed- Car - Truck

	US 60 Southbound				US 60 Northbound				Rt. 199 SB Ramps Eastbound				
Start Time	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
10:00 AM	48	191	0	239	134	5	1	140	82	46	0	128	507
10:15 AM	54	183	1	238	141	9	1	151	70	50	0	120	509
10:30 AM	78	211	1	290	141	17	0	158	67	38	0	105	553
10:45 AM	85	202	0	287	168	8	1	177	64	33	0	97	561
Total	265	787	2	1054	584	39	3	626	283	167	0	450	2130
11:00 AM	83	204	0	287	142	8	0	150	61	30	0	91	528
11:15 AM	65	168	1	234	166	12	2	180	58	39	0	97	511
11:30 AM	74	209	0	283	161	5	2	168	74	56	0	130	581
11:45 AM	77	202	3	282	205	5	0	210	75	40	0	115	607
Total	299	783	4	1086	674	30	4	708	268	165	0	433	2227
12:00 PM	88	192	1	281	188	7	1	196	102	44	0	146	623
12:15 PM	78	191	0	269	184	5	2	191	87	53	0	140	600
12:30 PM	97	223	1	321	164	17	1	182	108	37	0	145	648
12:45 PM	67	262	2	331	161	5	3	169	89	52	0	141	641
Total	330	868	4	1202	697	34	7	738	386	186	0	572	2512
01:00 PM	78	207	0	285	207	15	1	223	78	48	0	126	634
01:15 PM	75	222	1	298	234	10	1	245	104	53	0	157	700
01:30 PM	70	200	4	274	190	11	2	203	92	29	0	121	598
01:45 PM	63	198	0	261	191	13	1	205	82	42	0	124	590
Total	286	827	5	1118	822	49	5	876	356	172	0	528	2522
Grand Total	1180	3265	15	4460	2777	152	19	2948	1293	690	0	1983	9391
Apprch %	26.5	73.2	0.3		94.2	5.2	0.6		65.2	34.8	0		
Total %	12.6	34.8	0.2	47.5	29.6	1.6	0.2	31.4	13.8	7.3	0	21.1	
Car	1169	3233	15	4417	2744	149	19	2912	1273	683	0	1956	9285
% Car	99.1	99	100	99	98.8	98	100	98.8	98.5	99	0	98.6	98.9
Truck	11	32	0	43	33	3	0	36	20	7	0	27	106
% Truck	0.9	1	0	1	1.2	2	0	1.2	1.5	1	0	1.4	1.1

	US 60 Southbound			US 60 Northbound			Rt. 199 SB Ramps Eastbound			
Start Time	Right	Thru	App. Total	Thru	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 12:30 PM										
12:30 PM	<b>97</b>	223	320	164	<b>17</b>	181	<b>108</b>	37	145	646
12:45 PM	67	<b>262</b>	<b>329</b>	161	5	166	89	52	141	636
01:00 PM	78	207	285	207	15	222	78	48	126	633
01:15 PM	75	222	297	<b>234</b>	10	<b>244</b>	104	<b>53</b>	<b>157</b>	<b>698</b>
Total Volume	317	914	1231	766	47	813	379	190	569	2613
% App. Total	25.8	74.2		94.2	5.8		66.6	33.4		
PHF	.817	.872	.935	.818	.691	.833	.877	.896	.906	.936

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Groups Printed- Car

	US 60 Southbound				US 60 Northbound				Rt. 199 SB Ramps Eastbound				
Start Time	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
04:00 PM	64	154	0	218	194	7	1	202	46	29	0	75	495
04:15 PM	57	139	1	197	190	6	1	197	44	40	0	84	478
04:30 PM	73	159	0	232	202	4	2	208	60	43	0	103	543
04:45 PM	65	150	0	215	207	5	0	212	51	39	0	90	517
Total	259	602	1	862	793	22	4	819	201	151	0	352	2033
05:00 PM	92	151	0	243	237	8	0	245	47	53	0	100	588
05:15 PM	85	162	1	248	264	11	1	276	55	80	0	135	659
05:30 PM	75	157	1	233	189	15	0	204	42	47	0	89	526
05:45 PM	59	150	0	209	149	7	0	156	47	39	0	86	451
Total	311	620	2	933	839	41	1	881	191	219	0	410	2224
Grand Total	570	1222	3	1795	1632	63	5	1700	392	370	0	762	4257
Apprch %	31.8	68.1	0.2		96	3.7	0.3		51.4	48.6	0		
Total %	13.4	28.7	0.1	42.2	38.3	1.5	0.1	39.9	9.2	8.7	0	17.9	

	US 60 Southbound			US 60 Northbound			Rt. 199 SB Ramps 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 04:30 PM										
04:30 PM	73	159	232	202	4	206	<b>60</b>	43	103	541
04:45 PM	65	150	215	207	5	212	51	39	90	517
05:00 PM	<b>92</b>	151	243	237	8	245	47	53	100	588
05:15 PM	85	<b>162</b>	<b>247</b>	<b>264</b>	<b>11</b>	<b>275</b>	55	<b>80</b>	<b>135</b>	<b>657</b>
Total Volume	315	622	937	910	28	938	213	215	428	2303
% App. Total	33.6	66.4		97	3		49.8	50.2		
PHF	.856	.960	.948	.862	.636	.853	.888	.672	.793	.876

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Groups Printed- Truck

	US 60 Southbound				US 60 Northbound				Rt. 199 SB Ramps Eastbound				
Start Time	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
04:00 PM	0	12	0	12	2	0	0	2	1	3	0	4	18
04:15 PM	0	9	0	9	3	0	0	3	1	2	0	3	15
04:30 PM	0	4	0	4	6	0	0	6	2	2	0	4	14
04:45 PM	1	2	0	3	11	0	0	11	0	0	0	0	14
Total	1	27	0	28	22	0	0	22	4	7	0	11	61
05:00 PM	0	0	0	0	8	0	0	8	2	1	0	3	11
05:15 PM	0	2	0	2	3	0	0	3	0	3	0	3	8
05:30 PM	0	0	0	0	3	0	0	3	2	1	0	3	6
05:45 PM	1	1	0	2	1	0	0	1	0	1	0	1	4
Total	1	3	0	4	15	0	0	15	4	6	0	10	29
Grand Total	2	30	0	32	37	0	0	37	8	13	0	21	90
Apprch %	6.2	93.8	0		100	0	0		38.1	61.9	0		
Total %	2.2	33.3	0	35.6	41.1	0	0	41.1	8.9	14.4	0	23.3	

	US 60 Southbound			US 60 Northbound			Rt. 199 SB Ramps 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	12	12	2	0	2	1	3	4	18
04:15 PM	0	9	9	3	0	3	1	2	3	15
04:30 PM	0	4	4	6	0	6	2	2	4	14
04:45 PM	1	2	3	11	0	11	0	0	0	14
Total Volume	1	27	28	22	0	22	4	7	11	61
% App. Total	3.6	96.4		100	0		36.4	63.6		
PHF	.250	.563	.583	.500	.000	.500	.500	.583	.688	.847

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Groups Printed- Car - Truck

Start Time	US 60 Southbound				US 60 Northbound				Rt. 199 SB Ramps Eastbound				Int. Total
	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	
04:00 PM	64	166	0	230	196	7	1	204	47	32	0	79	513
04:15 PM	57	148	1	206	193	6	1	200	45	42	0	87	493
04:30 PM	73	163	0	236	208	4	2	214	62	45	0	107	557
04:45 PM	66	152	0	218	218	5	0	223	51	39	0	90	531
Total	260	629	1	890	815	22	4	841	205	158	0	363	2094
05:00 PM	92	151	0	243	245	8	0	253	49	54	0	103	599
05:15 PM	85	164	1	250	267	11	1	279	55	83	0	138	667
05:30 PM	75	157	1	233	192	15	0	207	44	48	0	92	532
05:45 PM	60	151	0	211	150	7	0	157	47	40	0	87	455
Total	312	623	2	937	854	41	1	896	195	225	0	420	2253
Grand Total	572	1252	3	1827	1669	63	5	1737	400	383	0	783	4347
Apprch %	31.3	68.5	0.2		96.1	3.6	0.3		51.1	48.9	0		
Total %	13.2	28.8	0.1	42	38.4	1.4	0.1	40	9.2	8.8	0	18	
Car	570	1222	3	1795	1632	63	5	1700	392	370	0	762	4257
% Car	99.7	97.6	100	98.2	97.8	100	100	97.9	98	96.6	0	97.3	97.9
Truck	2	30	0	32	37	0	0	37	8	13	0	21	90
% Truck	0.3	2.4	0	1.8	2.2	0	0	2.1	2	3.4	0	2.7	2.1

	US 60 Southbound			US 60 Northbound			Rt. 199 SB Ramps 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 04:30 PM										
04:30 PM	73	163	236	208	4	212	62	45	107	555
04:45 PM	66	152	218	218	5	223	51	39	90	531
05:00 PM	92	151	243	245	8	253	49	54	103	599
05:15 PM	85	164	249	267	11	278	55	83	138	665
Total Volume	316	630	946	938	28	966	217	221	438	2350
% App. Total	33.4	66.6		97.1	2.9		49.5	50.5		
PHF	.859	.960	.950	.878	.636	.869	.875	.666	.793	.883

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Groups Printed- Car

	US 60 Southbound				US 60 Northbound				Rt. 199 NB Ramps Eastbound				
Start Time	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
10:00 AM	62	205	2	269	90	33	1	124	18	43	1	62	455
10:15 AM	64	189	0	253	93	33	4	130	20	50	0	70	453
10:30 AM	66	204	1	271	128	47	1	176	16	43	0	59	506
10:45 AM	72	195	2	269	104	31	0	135	18	58	0	76	480
Total	264	793	5	1062	415	144	6	565	72	194	1	267	1894
11:00 AM	55	203	2	260	95	34	1	130	17	56	0	73	463
11:15 AM	51	174	1	226	107	33	0	140	17	63	0	80	446
11:30 AM	47	220	2	269	115	55	0	170	13	52	0	65	504
11:45 AM	54	229	0	283	135	29	1	165	17	69	1	87	535
Total	207	826	5	1038	452	151	2	605	64	240	1	305	1948
12:00 PM	53	225	3	281	144	41	0	185	17	58	0	75	541
12:15 PM	50	237	0	287	123	39	1	163	9	60	1	70	520
12:30 PM	76	271	4	351	106	46	0	152	21	69	0	90	593
12:45 PM	60	266	1	327	104	47	0	151	26	63	0	89	567
Total	239	999	8	1246	477	173	1	651	73	250	1	324	2221
01:00 PM	58	220	1	279	155	55	0	210	23	74	0	97	586
01:15 PM	75	253	2	330	157	55	0	212	19	73	0	92	634
01:30 PM	68	229	0	297	142	52	3	197	15	62	1	78	572
01:45 PM	64	204	1	269	137	43	1	181	18	74	0	92	542
Total	265	906	4	1175	591	205	4	800	75	283	1	359	2334
Grand Total	975	3524	22	4521	1935	673	13	2621	284	967	4	1255	8397
Apprch %	21.6	77.9	0.5		73.8	25.7	0.5		22.6	77.1	0.3		
Total %	11.6	42	0.3	53.8	23	8	0.2	31.2	3.4	11.5	0	14.9	

	US 60 Southbound			US 60 Northbound			Rt. 199 NB Ramps Eastbound			
Start Time	Right	Thru	App. Total	Thru	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 12:30 PM										
12:30 PM	<b>76</b>	<b>271</b>	<b>347</b>	106	46	152	21	69	90	589
12:45 PM	60	266	326	104	47	151	<b>26</b>	63	89	566
01:00 PM	58	220	278	155	<b>55</b>	210	23	<b>74</b>	<b>97</b>	585
01:15 PM	75	253	328	<b>157</b>	55	<b>212</b>	19	73	92	<b>632</b>
Total Volume	269	1010	1279	522	203	725	89	279	368	2372
% App. Total	21	79		72	28		24.2	75.8		
PHF	.885	.932	.921	.831	.923	.855	.856	.943	.948	.938

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Groups Printed- Truck

	US 60 Southbound				US 60 Northbound				Rt. 199 NB Ramps Eastbound				
Start Time	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
10:00 AM	0	2	0	2	1	6	0	7	0	0	0	0	9
10:15 AM	1	3	0	4	3	5	0	8	0	0	0	0	12
10:30 AM	0	6	0	6	2	0	0	2	1	0	0	1	9
10:45 AM	1	0	0	1	0	3	0	3	0	0	0	0	4
Total	2	11	0	13	6	14	0	20	1	0	0	1	34
11:00 AM	1	3	0	4	2	2	0	4	1	1	0	2	10
11:15 AM	1	3	0	4	4	2	0	6	1	0	0	1	11
11:30 AM	3	3	0	6	2	2	0	4	0	1	0	1	11
11:45 AM	0	3	0	3	2	4	0	6	0	2	0	2	11
Total	5	12	0	17	10	10	0	20	2	4	0	6	43
12:00 PM	1	1	0	2	0	4	0	4	0	0	0	0	6
12:15 PM	1	2	0	3	0	6	0	6	0	1	0	1	10
12:30 PM	0	2	0	2	1	3	0	4	0	1	0	1	7
12:45 PM	1	1	0	2	2	3	0	5	0	0	0	0	7
Total	3	6	0	9	3	16	0	19	0	2	0	2	30
01:00 PM	0	1	0	1	1	2	0	3	0	1	0	1	5
01:15 PM	3	1	0	4	3	3	0	6	0	1	0	1	11
01:30 PM	0	3	0	3	1	4	0	5	0	2	1	3	11
01:45 PM	0	3	0	3	0	5	0	5	0	1	0	1	9
Total	3	8	0	11	5	14	0	19	0	5	1	6	36
Grand Total	13	37	0	50	24	54	0	78	3	11	1	15	143
Apprch %	26	74	0		30.8	69.2	0		20	73.3	6.7		
Total %	9.1	25.9	0	35	16.8	37.8	0	54.5	2.1	7.7	0.7	10.5	

	US 60 Southbound			US 60 Northbound			Rt. 199 NB Ramps Eastbound			
Start Time	Right	Thru	App. Total	Thru	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:00 AM										
11:00 AM	1	<b>3</b>	4	2	2	4	<b>1</b>	1	<b>2</b>	10
11:15 AM	1	3	4	<b>4</b>	2	<b>6</b>	1	0	1	<b>11</b>
11:30 AM	<b>3</b>	3	<b>6</b>	2	2	4	0	1	1	11
11:45 AM	0	3	3	2	<b>4</b>	6	0	<b>2</b>	2	11
Total Volume	5	12	17	10	10	20	2	4	6	43
% App. Total	29.4	70.6		50	50		33.3	66.7		
PHF	.417	1.00	.708	.625	.625	.833	.500	.500	.750	.977

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Groups Printed- Car - Truck

	US 60 Southbound				US 60 Northbound				Rt. 199 NB Ramps Eastbound				Int. Total
	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	
Start Time													
10:00 AM	62	207	2	271	91	39	1	131	18	43	1	62	464
10:15 AM	65	192	0	257	96	38	4	138	20	50	0	70	465
10:30 AM	66	210	1	277	130	47	1	178	17	43	0	60	515
10:45 AM	73	195	2	270	104	34	0	138	18	58	0	76	484
Total	266	804	5	1075	421	158	6	585	73	194	1	268	1928
11:00 AM	56	206	2	264	97	36	1	134	18	57	0	75	473
11:15 AM	52	177	1	230	111	35	0	146	18	63	0	81	457
11:30 AM	50	223	2	275	117	57	0	174	13	53	0	66	515
11:45 AM	54	232	0	286	137	33	1	171	17	71	1	89	546
Total	212	838	5	1055	462	161	2	625	66	244	1	311	1991
12:00 PM	54	226	3	283	144	45	0	189	17	58	0	75	547
12:15 PM	51	239	0	290	123	45	1	169	9	61	1	71	530
12:30 PM	76	273	4	353	107	49	0	156	21	70	0	91	600
12:45 PM	61	267	1	329	106	50	0	156	26	63	0	89	574
Total	242	1005	8	1255	480	189	1	670	73	252	1	326	2251
01:00 PM	58	221	1	280	156	57	0	213	23	75	0	98	591
01:15 PM	78	254	2	334	160	58	0	218	19	74	0	93	645
01:30 PM	68	232	0	300	143	56	3	202	15	64	2	81	583
01:45 PM	64	207	1	272	137	48	1	186	18	75	0	93	551
Total	268	914	4	1186	596	219	4	819	75	288	2	365	2370
Grand Total	988	3561	22	4571	1959	727	13	2699	287	978	5	1270	8540
Apprch %	21.6	77.9	0.5		72.6	26.9	0.5		22.6	77	0.4		
Total %	11.6	41.7	0.3	53.5	22.9	8.5	0.2	31.6	3.4	11.5	0.1	14.9	
Car	975	3524	22	4521	1935	673	13	2621	284	967	4	1255	8397
% Car	98.7	99	100	98.9	98.8	92.6	100	97.1	99	98.9	80	98.8	98.3
Truck	13	37	0	50	24	54	0	78	3	11	1	15	143
% Truck	1.3	1	0	1.1	1.2	7.4	0	2.9	1	1.1	20	1.2	1.7

	US 60 Southbound			US 60 Northbound			Rt. 199 NB Ramps Eastbound			Int. Total
	Right	Thru	App. Total	Thru	Left	App. Total	Right	Left	App. Total	
Start Time										
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 12:30 PM										
12:30 PM	76	<b>273</b>	<b>349</b>	107	49	156	21	70	91	596
12:45 PM	61	267	328	106	50	156	<b>26</b>	63	89	573
01:00 PM	58	221	279	156	57	213	23	<b>75</b>	<b>98</b>	590
01:15 PM	<b>78</b>	254	332	<b>160</b>	<b>58</b>	<b>218</b>	19	74	93	<b>643</b>
Total Volume	273	1015	1288	529	214	743	89	282	371	2402
% App. Total	21.2	78.8		71.2	28.8		24	76		
PHF	.875	.929	.923	.827	.922	.852	.856	.940	.946	.934

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Groups Printed- Car

	US 60 Southbound				US 60 Northbound				Rt. 199 NB Ramps Eastbound				
Start Time	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
04:00 PM	49	153	2	204	123	41	0	164	17	75	1	93	461
04:15 PM	34	150	0	184	116	36	0	152	12	81	2	95	431
04:30 PM	35	186	0	221	122	28	1	151	23	77	1	101	473
04:45 PM	43	145	1	189	128	39	0	167	13	89	0	102	458
Total	161	634	3	798	489	144	1	634	65	322	4	391	1823
05:00 PM	48	155	2	205	132	47	0	179	25	104	0	129	513
05:15 PM	37	176	1	214	169	32	1	202	15	105	0	120	536
05:30 PM	43	155	0	198	121	43	0	164	16	65	0	81	443
05:45 PM	34	170	0	204	92	31	0	123	18	77	0	95	422
Total	162	656	3	821	514	153	1	668	74	351	0	425	1914
Grand Total	323	1290	6	1619	1003	297	2	1302	139	673	4	816	3737
Apprch %	20	79.7	0.4		77	22.8	0.2		17	82.5	0.5		
Total %	8.6	34.5	0.2	43.3	26.8	7.9	0.1	34.8	3.7	18	0.1	21.8	

	US 60 Southbound			US 60 Northbound			Rt. 199 NB Ramps 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 04:30 PM										
04:30 PM	35	<b>186</b>	<b>221</b>	122	28	150	23	77	100	471
04:45 PM	43	145	188	128	39	167	13	89	102	457
05:00 PM	<b>48</b>	155	203	132	<b>47</b>	179	<b>25</b>	104	<b>129</b>	511
05:15 PM	37	176	213	<b>169</b>	32	<b>201</b>	15	<b>105</b>	120	<b>534</b>
Total Volume	163	662	825	551	146	697	76	375	451	1973
% App. Total	19.8	80.2		79.1	20.9		16.9	83.1		
PHF	.849	.890	.933	.815	.777	.867	.760	.893	.874	.924



Peggy Malone & Associates, Inc.  
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File Name : 4-US 60 and Rt. 199 NB Ramps THU  
Site Code :  
Start Date : 5/12/2016  
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Groups Printed- Truck

Start Time	US 60 Southbound				US 60 Northbound				Rt. 199 NB Ramps Eastbound				Int. Total
	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	
04:00 PM	3	8	1	12	1	2	0	3	1	1	0	2	17
04:15 PM	3	7	0	10	2	0	0	2	0	1	0	1	13
04:30 PM	2	4	0	6	3	3	0	6	0	3	0	3	15
04:45 PM	0	2	0	2	7	2	0	9	0	5	0	5	16
Total	8	21	1	30	13	7	0	20	1	10	0	11	61
05:00 PM	0	2	0	2	3	0	0	3	0	3	0	3	8
05:15 PM	1	1	0	2	2	1	0	3	0	1	0	1	6
05:30 PM	0	2	0	2	2	3	0	5	0	1	0	1	8
05:45 PM	1	0	0	1	1	0	0	1	0	1	0	1	3
Total	2	5	0	7	8	4	0	12	0	6	0	6	25
Grand Total	10	26	1	37	21	11	0	32	1	16	0	17	86
Apprch %	27	70.3	2.7		65.6	34.4	0		5.9	94.1	0		
Total %	11.6	30.2	1.2	43	24.4	12.8	0	37.2	1.2	18.6	0	19.8	

Start Time	US 60 Southbound			US 60 Northbound			Rt. 199 NB Ramps Eastbound			Int. Total
	Right	Thru	App. Total	Thru	Left	App. Total	Right	Left	App. Total	
04:00 PM	<b>3</b>	<b>8</b>	<b>11</b>	1	2	3	<b>1</b>	1	2	<b>16</b>
04:15 PM	3	7	10	2	0	2	0	1	1	13
04:30 PM	2	4	6	3	<b>3</b>	6	0	3	3	15
04:45 PM	0	2	2	<b>7</b>	2	<b>9</b>	0	<b>5</b>	<b>5</b>	16
Total Volume	8	21	29	13	7	20	1	10	11	60
% App. Total	27.6	72.4		65	35		9.1	90.9		
PHF	.667	.656	.659	.464	.583	.556	.250	.500	.550	.938

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

File Name : 4-US 60 and Rt. 199 NB Ramps THU  
Site Code :  
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File Name : 4-US 60 and Rt. 199 NB Ramps THU  
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	US 60 Southbound				US 60 Northbound				Rt. 199 NB Ramps Eastbound				
Start Time	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	1	1	1
Total	0	0	0	0	0	0	0	0	0	0	1	1	1
Grand Total	0	0	0	0	0	0	0	0	0	0	1	1	1
Apprch %	0	0	0		0	0	0		0	0	100		
Total %	0	0	0	0		0	0	0	0	0	100	100	

[illegible]

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File Name : 4-US 60 and Rt. 199 NB Ramps THU  
Site Code :  
Start Date : 5/12/2016  
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Groups Printed- Car - Truck

	US 60 Southbound				US 60 Northbound				Rt. 199 NB Ramps Eastbound				Int. Total
	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	
Start Time													
04:00 PM	52	161	3	216	124	43	0	167	18	76	1	95	478
04:15 PM	37	157	0	194	118	36	0	154	12	82	2	96	444
04:30 PM	37	190	0	227	125	31	1	157	23	80	1	104	488
04:45 PM	43	147	1	191	135	41	0	176	13	94	0	107	474
Total	169	655	4	828	502	151	1	654	66	332	4	402	1884
05:00 PM	48	157	2	207	135	47	0	182	25	107	0	132	521
05:15 PM	38	177	1	216	171	33	1	205	15	106	0	121	542
05:30 PM	43	157	0	200	123	46	0	169	16	66	0	82	451
05:45 PM	35	170	0	205	93	31	0	124	18	78	0	96	425
Total	164	661	3	828	522	157	1	680	74	357	0	431	1939
Grand Total	333	1316	7	1656	1024	308	2	1334	140	689	4	833	3823
Apprch %	20.1	79.5	0.4		76.8	23.1	0.1		16.8	82.7	0.5		
Total %	8.7	34.4	0.2	43.3	26.8	8.1	0.1	34.9	3.7	18	0.1	21.8	
Car	323	1290	6	1619	1003	297	2	1302	139	673	4	816	3737
% Car	97	98	85.7	97.8	97.9	96.4	100	97.6	99.3	97.7	100	98	97.8
Truck	10	26	1	37	21	11	0	32	1	16	0	17	86
% Truck	3	2	14.3	2.2	2.1	3.6	0	2.4	0.7	2.3	0	2	2.2

	US 60 Southbound			US 60 Northbound			Rt. 199 NB Ramps Eastbound			Int. Total
	Right	Thru	App. Total	Thru	Left	App. Total	Right	Left	App. Total	
Start Time										
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	37	<b>190</b>	<b>227</b>	125	31	156	23	80	103	486
04:45 PM	43	147	190	135	41	176	13	94	107	473
05:00 PM	<b>48</b>	157	205	135	<b>47</b>	182	<b>25</b>	<b>107</b>	<b>132</b>	519
05:15 PM	38	177	215	<b>171</b>	33	<b>204</b>	15	106	121	<b>540</b>
Total Volume	166	671	837	566	152	718	76	387	463	2018
% App. Total	19.8	80.2		78.8	21.2		16.4	83.6		
PHF	.865	.883	.922	.827	.809	.880	.760	.904	.877	.934

# Peggy Malone & Associates, Inc.

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File Name : 5-Longhill Gate\_Warhill Trail and Longhill Rd. SAT

Site Code :

Start Date : 5/14/2016

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Groups Printed- Car

	Warhill Trail Southbound					Longhill Rd. Westbound					Longhill Gate Rd. Northbound					Longhill Rd. Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
10:00 AM	28	2	64	0	94	69	59	1	0	129	8	1	1	0	10	1	86	30	0	117	350
10:15 AM	46	3	48	0	97	108	82	3	0	193	8	0	0	0	8	1	116	39	0	156	454
10:30 AM	45	1	52	0	98	78	104	4	0	186	6	0	2	0	8	2	94	26	0	122	414
10:45 AM	51	2	69	0	122	89	86	0	0	175	3	0	1	0	4	3	95	31	0	129	430
Total	170	8	233	0	411	344	331	8	0	683	25	1	4	0	30	7	391	126	0	524	1648
11:00 AM	26	1	47	1	75	69	108	7	0	184	5	1	0	0	6	0	85	32	0	117	382
11:15 AM	33	2	56	0	91	64	81	2	0	147	9	0	2	0	11	2	108	25	0	135	384
11:30 AM	33	5	61	0	99	65	92	6	0	163	11	0	0	0	11	3	118	12	0	133	406
11:45 AM	41	3	60	0	104	51	81	6	0	138	9	1	3	0	13	0	115	26	0	141	396
Total	133	11	224	1	369	249	362	21	0	632	34	2	5	0	41	5	426	95	0	526	1568
12:00 PM	38	5	53	0	96	79	89	8	0	176	15	0	1	0	16	1	106	24	0	131	419
12:15 PM	31	3	68	0	102	80	81	2	0	163	4	0	0	0	4	1	84	26	0	111	380
12:30 PM	49	2	97	0	148	74	86	3	0	163	10	0	2	0	12	1	92	19	0	112	435
12:45 PM	27	1	66	0	94	72	75	4	0	151	6	0	3	0	9	0	101	25	0	126	380
Total	145	11	284	0	440	305	331	17	0	653	35	0	6	0	41	3	383	94	0	480	1614
01:00 PM	47	4	58	0	109	71	96	2	0	169	7	0	3	0	10	4	90	24	0	118	406
01:15 PM	30	0	81	0	111	68	91	3	0	162	3	0	1	0	4	1	77	25	0	103	380
01:30 PM	23	2	60	0	85	42	80	3	0	125	10	0	1	0	11	2	62	15	0	79	300
01:45 PM	14	0	52	0	66	54	94	3	0	151	3	0	0	0	3	0	71	23	0	94	314
Total	114	6	251	0	371	235	361	11	0	607	23	0	5	0	28	7	300	87	0	394	1400
Grand Total	562	36	992	1	1591	1133	1385	57	0	2575	117	3	20	0	140	22	1500	402	0	1924	6230
Apprch %	35.3	2.3	62.4	0.1		44	53.8	2.2	0		83.6	2.1	14.3	0		1.1	78	20.9	0		
Total %	9	0.6	15.9	0	25.5	18.2	22.2	0.9	0	41.3	1.9	0	0.3	0	2.2	0.4	24.1	6.5	0	30.9	

	Warhill Trail Southbound				Longhill Rd. Westbound				Longhill Gate Rd. 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 10:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 10:15 AM																	
10:15 AM	46	3	48	97	108	82	3	193	8	0	0	8	1	116	39	156	454
10:30 AM	45	1	52	98	78	104	4	186	6	0	2	8	2	94	26	122	414
10:45 AM	51	2	69	122	89	86	0	175	3	0	1	4	3	95	31	129	430
11:00 AM	26	1	47	74	69	108	7	184	5	1	0	6	0	85	32	117	381
Total Volume	168	7	216	391	344	380	14	738	22	1	3	26	6	390	128	524	1679
% App. Total	43	1.8	55.2		46.6	51.5	1.9		84.6	3.8	11.5		1.1	74.4	24.4		
PHF	.824	.583	.783	.801	.796	.880	.500	.956	.688	.250	.375	.813	.500	.841	.821	.840	.925

Peggy Malone & Associates, Inc.  
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File Name : 5-Longhill Gate\_Warhill Trail and Longhill Rd. SAT  
Site Code :  
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Groups Printed- Truck

	Warhill Trail Southbound					Longhill Rd. Westbound					Longhill Gate Rd. Northbound					Longhill Rd. Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	0	1
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
10:45 AM	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	3	0	0	0	3
Total	0	0	0	0	0	1	3	0	0	4	0	0	0	0	0	0	5	0	0	0	5
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
11:15 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	1	1	0	2	0	0	1	0	1	0	1	0	0	0	1
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
Total	0	0	0	0	0	0	3	1	0	4	0	0	1	0	1	0	4	0	0	0	4
12:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	1	0	0	0	1
12:30 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
12:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	0	2
Total	0	0	1	0	1	0	5	0	0	5	0	0	0	0	0	0	4	0	0	0	4
01:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1
01:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Total	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4	0	0	0	4
Grand Total	0	0	1	0	1	1	13	1	0	15	0	0	1	0	1	0	17	0	0	0	17
Apprch %	0	0	100	0		6.7	86.7	6.7	0		0	0	100	0		0	100	0	0	0	
Total %	0	0	2.9	0	2.9	2.9	38.2	2.9	0	44.1	0	0	2.9	0	2.9	0	50	0	0	0	50

	Warhill Trail Southbound				Longhill Rd. Westbound				Longhill Gate Rd. 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 10:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 10:45 AM																	
10:45 AM	0	0	0	0	1	1	0	2	0	0	0	0	0	3	0	3	5
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
11:15 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
11:30 AM	0	0	0	0	0	1	1	2	0	0	1	1	0	1	0	1	4
Total Volume	0	0	0	0	1	4	1	6	0	0	1	1	0	5	0	5	12
% App. Total	0	0	0	0	16.7	66.7	16.7		0	0	100		0	100	0		
PHF	.000	.000	.000	.000	.250	.500	.250	.750	.000	.000	.250	.250	.000	.417	.000	.417	.600

Peggy Malone & Associates, Inc.  
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File Name : 5-Longhill Gate\_Warhill Trail and Longhill Rd. SAT

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### Groups Printed- Bicycles on Crosswalk

[illegible][illegible]

Peggy Malone & Associates, Inc.  
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File Name : 5-Longhill Gate\_Warhill Trail and Longhill Rd. SAT

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Groups Printed- Pedestrians

[illegible][illegible]



# Peggy Malone & Associates, Inc.

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File Name : 5-Longhill Gate\_Warhill Trail and Longhill Rd. SAT

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Groups Printed- Car - Truck

	Warhill Trail Southbound					Longhill Rd. Westbound					Longhill Gate Rd. Northbound					Longhill Rd. Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
10:00 AM	28	2	64	0	94	69	59	1	0	129	8	1	1	0	10	1	86	30	0	117	350
10:15 AM	46	3	48	0	97	108	84	3	0	195	8	0	0	0	8	1	117	39	0	157	457
10:30 AM	45	1	52	0	98	78	104	4	0	186	6	0	2	0	8	2	95	26	0	123	415
10:45 AM	51	2	69	0	122	90	87	0	0	177	3	0	1	0	4	3	98	31	0	132	435
Total	170	8	233	0	411	345	334	8	0	687	25	1	4	0	30	7	396	126	0	529	1657
11:00 AM	26	1	47	1	75	69	108	7	0	184	5	1	0	0	6	0	86	32	0	118	383
11:15 AM	33	2	56	0	91	64	83	2	0	149	9	0	2	0	11	2	108	25	0	135	386
11:30 AM	33	5	61	0	99	65	93	7	0	165	11	0	1	0	12	3	119	12	0	134	410
11:45 AM	41	3	60	0	104	51	81	6	0	138	9	1	3	0	13	0	117	26	0	143	398
Total	133	11	224	1	369	249	365	22	0	636	34	2	6	0	42	5	430	95	0	530	1577
12:00 PM	38	5	53	0	96	79	90	8	0	177	15	0	1	0	16	1	106	24	0	131	420
12:15 PM	31	3	68	0	102	80	84	2	0	166	4	0	0	0	4	1	85	26	0	112	384
12:30 PM	49	2	98	0	149	74	86	3	0	163	10	0	2	0	12	1	93	19	0	113	437
12:45 PM	27	1	66	0	94	72	76	4	0	152	6	0	3	0	9	0	103	25	0	128	383
Total	145	11	285	0	441	305	336	17	0	658	35	0	6	0	41	3	387	94	0	484	1624
01:00 PM	47	4	58	0	109	71	97	2	0	170	7	0	3	0	10	4	91	24	0	119	408
01:15 PM	30	0	81	0	111	68	92	3	0	163	3	0	1	0	4	1	78	25	0	104	382
01:30 PM	23	2	60	0	85	42	80	3	0	125	10	0	1	0	11	2	63	15	0	80	301
01:45 PM	14	0	52	0	66	54	94	3	0	151	3	0	0	0	3	0	72	23	0	95	315
Total	114	6	251	0	371	235	363	11	0	609	23	0	5	0	28	7	304	87	0	398	1406
Grand Total	562	36	993	1	1592	1134	1398	58	0	2590	117	3	21	0	141	22	1517	402	0	1941	6264
Apprch %	35.3	2.3	62.4	0.1		43.8	54	2.2	0		83	2.1	14.9	0		1.1	78.2	20.7	0		
Total %	9	0.6	15.9	0	25.4	18.1	22.3	0.9	0	41.3	1.9	0	0.3	0	2.3	0.4	24.2	6.4	0	31	
Car	562	36	992	1	1591	1133	1385	57	0	2575	117	3	20	0	140	22	1500	402	0	1924	6230
% Car	100	100	99.9	100	99.9	99.9	99.1	98.3	0	99.4	100	100	95.2	0	99.3	100	98.9	100	0	99.1	99.5
Truck	0	0	1	0	1	1	13	1	0	15	0	0	1	0	1	0	17	0	0	17	34
% Truck	0	0	0.1	0	0.1	0.1	0.9	1.7	0	0.6	0	0	4.8	0	0.7	0	1.1	0	0	0.9	0.5

	Warhill Trail Southbound				Longhill Rd. Westbound				Longhill Gate Rd. 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 10:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 10:15 AM																	
10:15 AM	46	3	48	97	108	84	3	195	8	0	0	8	1	117	39	157	457
10:30 AM	45	1	52	98	78	104	4	186	6	0	2	8	2	95	26	123	415
10:45 AM	51	2	69	122	90	87	0	177	3	0	1	4	3	98	31	132	435
11:00 AM	26	1	47	74	69	108	7	184	5	1	0	6	0	86	32	118	382
Total Volume	168	7	216	391	345	383	14	742	22	1	3	26	6	396	128	530	1689
% App. Total	43	1.8	55.2		46.5	51.6	1.9		84.6	3.8	11.5		1.1	74.7	24.2		
PHF	.824	.583	.783	.801	.799	.887	.500	.951	.688	.250	.375	.813	.500	.846	.821	.844	.924

# Peggy Malone & Associates, Inc.

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File Name : 5-Longhill Gate\_Warhill Trail and Longhill Rd. THU

Site Code :

Start Date : 5/12/2016

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Groups Printed- Car

	Warhill Trail Southbound					Longhill Rd. Westbound					Longhill Gate Rd. Northbound					Longhill Rd. Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	7	0	15	0	22	39	114	7	0	160	3	1	0	0	4	2	124	13	0	139	325
04:15 PM	8	0	16	0	24	42	112	5	0	159	2	1	0	0	3	1	103	14	0	118	304
04:30 PM	8	1	18	0	27	38	104	4	0	146	5	0	0	0	5	0	103	7	0	110	288
04:45 PM	20	0	24	0	44	42	137	8	0	187	3	0	4	0	7	4	110	17	0	131	369
Total	43	1	73	0	117	161	467	24	0	652	13	2	4	0	19	7	440	51	0	498	1286
05:00 PM	33	0	33	1	67	64	114	5	0	183	9	0	1	0	10	6	84	26	0	116	376
05:15 PM	39	1	17	0	57	99	119	7	0	225	7	0	1	0	8	4	112	73	0	189	479
05:30 PM	29	1	44	0	74	80	95	9	0	184	5	0	1	0	6	2	110	34	0	146	410
05:45 PM	16	0	36	0	52	53	104	4	0	161	4	1	0	0	5	0	71	22	0	93	311
Total	117	2	130	1	250	296	432	25	0	753	25	1	3	0	29	12	377	155	0	544	1576
Grand Total	160	3	203	1	367	457	899	49	0	1405	38	3	7	0	48	19	817	206	0	1042	2862
Apprch %	43.6	0.8	55.3	0.3		32.5	64	3.5	0		79.2	6.2	14.6	0		1.8	78.4	19.8	0		
Total %	5.6	0.1	7.1	0	12.8	16	31.4	1.7	0	49.1	1.3	0.1	0.2	0	1.7	0.7	28.5	7.2	0	36.4	

	Warhill Trail Southbound				Longhill Rd. Westbound				Longhill Gate Rd. 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	20	0	24	44	42	<b>137</b>	8	187	3	0	<b>4</b>	7	4	110	17	131	369
05:00 PM	33	0	33	66	64	114	5	183	<b>9</b>	0	1	<b>10</b>	<b>6</b>	84	26	116	375
05:15 PM	<b>39</b>	<b>1</b>	17	57	<b>99</b>	119	7	<b>225</b>	7	0	1	8	4	<b>112</b>	<b>73</b>	<b>189</b>	<b>479</b>
05:30 PM	29	1	<b>44</b>	<b>74</b>	80	95	<b>9</b>	184	5	0	1	6	2	110	34	146	410
Total Volume	121	2	118	241	285	465	29	779	24	0	7	31	16	416	150	582	1633
% App. Total	50.2	0.8	49		36.6	59.7	3.7		77.4	0	22.6		2.7	71.5	25.8		
PHF	.776	.500	.670	.814	.720	.849	.806	.866	.667	.000	.438	.775	.667	.929	.514	.770	.852

Peggy Malone & Associates, Inc.  
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File Name : 5-Longhill Gate\_Warhill Trail and Longhill Rd. THU  
Site Code :  
Start Date : 5/12/2016  
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Groups Printed- Truck

	Warhill Trail Southbound					Longhill Rd. Westbound					Longhill Gate Rd. Northbound					Longhill Rd. Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	1	0	2	0	3	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	8
04:15 PM	0	0	1	0	1	0	4	0	0	4	0	1	0	0	1	1	4	2	0	7	13
04:30 PM	0	0	1	0	1	1	4	0	0	5	0	0	0	0	0	0	5	0	0	5	11
04:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	6	0	0	6	8
Total	1	0	4	0	5	1	12	0	0	13	0	1	0	0	1	1	18	2	0	21	40
05:00 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	1	0	0	1	5
05:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	5	0	0	5	6
05:30 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	4
05:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	5
Total	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	11	0	0	11	20
Grand Total	1	0	4	0	5	1	21	0	0	22	0	1	0	0	1	1	29	2	0	32	60
Apprch %	20	0	80	0		4.5	95.5	0	0		0	100	0	0		3.1	90.6	6.2	0		
Total %	1.7	0	6.7	0	8.3	1.7	35	0	0	36.7	0	1.7	0	0	1.7	1.7	48.3	3.3	0	53.3	

	Warhill Trail Southbound				Longhill Rd. Westbound				Longhill Gate Rd. 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	1	0	2	3	0	2	0	2	0	0	0	0	0	3	0	3	8
04:15 PM	0	0	1	1	0	4	0	4	0	1	0	1	1	4	2	7	13
04:30 PM	0	0	1	1	1	4	0	5	0	0	0	0	0	5	0	5	11
04:45 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	6	0	6	8
Total Volume	1	0	4	5	1	12	0	13	0	1	0	1	1	18	2	21	40
% App. Total	20	0	80		7.7	92.3	0		0	100	0		4.8	85.7	9.5		
PHF	.250	.000	.500	.417	.250	.750	.000	.650	.000	.250	.000	.250	.250	.750	.250	.750	.769

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File Name : 5-Longhill Gate\_Warhill Trail and Longhill Rd. THU

Site Code :

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### Groups Printed- Bicycles on Crosswalk

[illegible][illegible]

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File Name : 5-Longhill Gate\_Warhill Trail and Longhill Rd. THU

Site Code :

Start Date : 5/12/2016

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### Groups Printed- Pedestrians

[illegible][illegible]

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File Name : 5-Longhill Gate\_Warhill Trail and Longhill Rd. THU

Site Code :

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Groups Printed- Car - Truck

	Warhill Trail Southbound					Longhill Rd. Westbound					Longhill Gate Rd. Northbound					Longhill Rd. Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	8	0	17	0	25	39	116	7	0	162	3	1	0	0	4	2	127	13	0	142	333
04:15 PM	8	0	17	0	25	42	116	5	0	163	2	2	0	0	4	2	107	16	0	125	317
04:30 PM	8	1	19	0	28	39	108	4	0	151	5	0	0	0	5	0	108	7	0	115	299
04:45 PM	20	0	24	0	44	42	139	8	0	189	3	0	4	0	7	4	116	17	0	137	377
Total	44	1	77	0	122	162	479	24	0	665	13	3	4	0	20	8	458	53	0	519	1326
05:00 PM	33	0	33	1	67	64	118	5	0	187	9	0	1	0	10	6	85	26	0	117	381
05:15 PM	39	1	17	0	57	99	120	7	0	226	7	0	1	0	8	4	117	73	0	194	485
05:30 PM	29	1	44	0	74	80	98	9	0	187	5	0	1	0	6	2	111	34	0	147	414
05:45 PM	16	0	36	0	52	53	105	4	0	162	4	1	0	0	5	0	75	22	0	97	316
Total	117	2	130	1	250	296	441	25	0	762	25	1	3	0	29	12	388	155	0	555	1596
Grand Total	161	3	207	1	372	458	920	49	0	1427	38	4	7	0	49	20	846	208	0	1074	2922
Apprch %	43.3	0.8	55.6	0.3		32.1	64.5	3.4	0		77.6	8.2	14.3	0		1.9	78.8	19.4	0		
Total %	5.5	0.1	7.1	0	12.7	15.7	31.5	1.7	0	48.8	1.3	0.1	0.2	0	1.7	0.7	29	7.1	0	36.8	
Car	160	3	203	1	367	457	899	49	0	1405	38	3	7	0	48	19	817	206	0	1042	2862
% Car	99.4	100	98.1	100	98.7	99.8	97.7	100	0	98.5	100	75	100	0	98	95	96.6	99	0	97	97.9
Truck	1	0	4	0	5	1	21	0	0	22	0	1	0	0	1	1	29	2	0	32	60
% Truck	0.6	0	1.9	0	1.3	0.2	2.3	0	0	1.5	0	25	0	0	2	5	3.4	1	0	3	2.1

	Warhill Trail Southbound				Longhill Rd. Westbound				Longhill Gate Rd. 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	20	0	24	44	42	<b>139</b>	8	189	3	0	<b>4</b>	7	4	116	17	137	377
05:00 PM	33	0	33	66	64	118	5	187	<b>9</b>	0	1	<b>10</b>	<b>6</b>	85	26	117	380
05:15 PM	<b>39</b>	<b>1</b>	17	57	<b>99</b>	120	7	<b>226</b>	7	0	1	8	4	<b>117</b>	<b>73</b>	<b>194</b>	<b>485</b>
05:30 PM	29	1	<b>44</b>	<b>74</b>	80	98	<b>9</b>	187	5	0	1	6	2	111	34	147	414
Total Volume	121	2	118	241	285	475	29	789	24	0	7	31	16	429	150	595	1656
% App. Total	50.2	0.8	49		36.1	60.2	3.7		77.4	0	22.6		2.7	72.1	25.2		
PHF	.776	.500	.670	.814	.720	.854	.806	.873	.667	.000	.438	.775	.667	.917	.514	.767	.854

**Appendix D**  
**SYNCHRO Analysis of 2016**  
**Existing Conditions**

---

## Queues

## Warhill Sports Complex

## 1: Centerville Road/Retail Entrance &amp; US Route 60

9/13/2016



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	44	738	548	436	790	41	215	218	282	85	36
v/c Ratio	0.34	0.61	0.35	0.79	0.50	0.05	0.77	0.77	0.56	0.51	0.11
Control Delay	54.4	34.5	0.6	45.8	29.7	0.1	61.9	61.8	9.6	57.5	0.7
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	54.4	34.5	0.6	45.8	29.7	0.1	61.9	61.8	9.6	57.5	0.7
Queue Length 50th (ft)	30	257	0	145	286	0	149	152	0	58	0
Queue Length 95th (ft)	65	297	0	#258	352	m0	#280	#282	75	107	0
Internal Link Dist (ft)		1392			654			1277		188	
Turn Bay Length (ft)	225		425	350		175	225				100
Base Capacity (vph)	217	1285	1583	554	1583	820	296	299	511	214	357
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.57	0.35	0.79	0.50	0.05	0.73	0.73	0.55	0.40	0.10

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.


























# HCM Signalized Intersection Capacity Analysis

## 1: Centerville Road/Retail Entrance & US Route 60

Warhill Sports Complex

9/13/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	664	493	392	711	37	352	38	254	39	38	32
Future Volume (vph)	40	664	493	392	711	37	352	38	254	39	38	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.5	6.0	4.0	8.0	6.0	6.0	8.0	8.0	8.0		7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.95	0.95	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	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.98	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	1681	1701	1583		1817	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.98	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	1681	1701	1583		1817	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)	44	738	548	436	790	41	391	42	282	43	42	36
RTOR Reduction (vph)	0	0	0	0	0	24	0	0	235	0	0	33
Lane Group Flow (vph)	44	738	548	436	790	17	215	218	47	0	85	3
Turn Type	Prot	NA	Free	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		4	4		3	3	
Permitted Phases			Free			6			4			3
Actuated Green, G (s)	7.1	35.9	110.0	17.8	46.1	46.1	18.4	18.4	18.4		8.9	8.9
Effective Green, g (s)	7.1	35.9	110.0	17.8	46.1	46.1	18.4	18.4	18.4		8.9	8.9
Actuated g/C Ratio	0.06	0.33	1.00	0.16	0.42	0.42	0.17	0.17	0.17		0.08	0.08
Clearance Time (s)	8.5	6.0		8.0	6.0	6.0	8.0	8.0	8.0		7.0	7.0
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)	114	1155	1583	555	1483	663	281	284	264		147	128
v/s Ratio Prot	0.02	c0.21		c0.13	c0.22		0.13	c0.13			0.05	
v/s Ratio Perm			c0.35			0.01			0.03			0.00
v/c Ratio	0.39	0.64	0.35	0.79	0.53	0.03	0.77	0.77	0.18		0.58	0.02
Uniform Delay, d1	49.4	31.5	0.0	44.3	23.9	18.8	43.7	43.8	39.3		48.7	46.5
Progression Factor	1.00	1.00	1.00	0.76	1.13	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.2	2.7	0.6	6.5	1.2	0.1	11.7	11.7	0.3		5.4	0.1
Delay (s)	51.5	34.2	0.6	40.1	28.2	18.8	55.5	55.5	39.6		54.2	46.6
Level of Service	D	C	A	D	C	B	E	E	D		D	D
Approach Delay (s)		21.0			32.0			49.2			51.9	
Approach LOS		C			C			D			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			32.0			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)			29.5			
Intersection Capacity Utilization			65.3%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

Queues  
2: Rt 199 SB Ramps & US Route 60

Warhill Sports Complex  
9/13/2016



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	717	359	35	1066	251	247
v/c Ratio	0.36	0.33	0.28	0.44	0.75	0.49
Control Delay	25.4	12.2	53.9	10.1	55.4	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.4	12.2	53.9	10.1	55.4	7.9
Queue Length 50th (ft)	234	138	23	186	169	0
Queue Length 95th (ft)	198	82	m45	361	231	57
Internal Link Dist (ft)	654			692	612	
Turn Bay Length (ft)		450	175		150	
Base Capacity (vph)	1980	1077	273	2412	432	572
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.33	0.13	0.44	0.58	0.43

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 2: Rt 199 SB Ramps & US Route 60

Warhill Sports Complex

9/13/2016



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations		↔↗	↖	↖	↗↗	↖	↖
Traffic Volume (vph)	1	630	316	31	938	221	217
Future Volume (vph)	1	630	316	31	938	221	217
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	8.0	6.0	8.5	8.5
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00
Frt		1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)		3539	1583	1770	3539	1770	1583
Flt Permitted		0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)		3377	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	1	716	359	35	1066	251	247
RTOR Reduction (vph)	0	0	159	0	0	0	200
Lane Group Flow (vph)	0	717	200	35	1066	251	47
Turn Type	Perm	NA	Perm	Prot	NA	Prot	Perm
Protected Phases		2		1	6	4	
Permitted Phases	2		2				4
Actuated Green, G (s)		61.3	61.3	5.3	74.6	20.9	20.9
Effective Green, g (s)		61.3	61.3	5.3	74.6	20.9	20.9
Actuated g/C Ratio		0.56	0.56	0.05	0.68	0.19	0.19
Clearance Time (s)		6.0	6.0	8.0	6.0	8.5	8.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		1881	882	85	2400	336	300
v/s Ratio Prot				0.02	c0.30	c0.14	
v/s Ratio Perm		0.21	0.13				0.03
v/c Ratio		0.38	0.23	0.41	0.44	0.75	0.16
Uniform Delay, d1		13.7	12.3	50.8	8.2	42.1	37.2
Progression Factor		1.71	5.97	1.02	1.07	1.00	1.00
Incremental Delay, d2		0.5	0.5	2.9	0.5	8.8	0.2
Delay (s)		24.0	74.2	54.6	9.2	50.8	37.4
Level of Service		C	E	D	A	D	D
Approach Delay (s)		40.7			10.7	44.2	
Approach LOS		D			B	D	

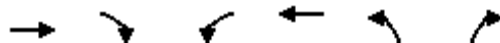
### Intersection Summary

HCM 2000 Control Delay	29.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Queues  
3: Rt 199 NB Ramps & US Route 60

Warhill Sports Complex  
9/13/2016



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	744	160	166	609	417	82
v/c Ratio	0.60	0.25	0.71	0.29	0.83	0.16
Control Delay	27.1	6.0	62.5	11.9	51.9	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.1	6.0	62.5	11.9	51.9	7.3
Queue Length 50th (ft)	282	0	113	112	267	0
Queue Length 95th (ft)	201	38	182	133	#452	36
Internal Link Dist (ft)	692			817	473	
Turn Bay Length (ft)			350		525	
Base Capacity (vph)	1331	689	273	2221	505	510
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.23	0.61	0.27	0.83	0.16

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 3: Rt 199 NB Ramps & US Route 60

Warhill Sports Complex

9/13/2016



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations		↔↔↔	↔	↔	↔↔	↔	↔
Traffic Volume (vph)	4	671	166	154	566	388	76
Future Volume (vph)	4	671	166	154	566	388	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	8.0	6.0	8.0	8.0
Lane Util. Factor		0.91	0.91	1.00	0.95	1.00	1.00
Frt		1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)		3377	1441	1770	3539	1770	1583
Flt Permitted		0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)		3216	1441	1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	4	722	178	166	609	417	82
RTOR Reduction (vph)	0	2	99	0	0	0	59
Lane Group Flow (vph)	0	742	61	166	609	417	23
Turn Type	Perm	NA	Perm	Prot	NA	Prot	Perm
Protected Phases		2		1	6	4	
Permitted Phases	2		2				4
Actuated Green, G (s)		42.2	42.2	14.5	64.7	31.3	31.3
Effective Green, g (s)		42.2	42.2	14.5	64.7	31.3	31.3
Actuated g/C Ratio		0.38	0.38	0.13	0.59	0.28	0.28
Clearance Time (s)		6.0	6.0	8.0	6.0	8.0	8.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		1233	552	233	2081	503	450
v/s Ratio Prot				c0.09	0.17	c0.24	
v/s Ratio Perm		c0.23	0.04				0.01
v/c Ratio		0.60	0.11	0.71	0.29	0.83	0.05
Uniform Delay, d1		27.2	21.8	45.8	11.3	36.8	28.6
Progression Factor		0.88	1.30	1.00	1.00	1.00	1.00
Incremental Delay, d2		2.1	0.4	9.9	0.4	10.8	0.0
Delay (s)		26.1	28.8	55.6	11.6	47.7	28.6
Level of Service		C	C	E	B	D	C
Approach Delay (s)		26.6			21.0	44.5	
Approach LOS		C			C	D	

### Intersection Summary

HCM 2000 Control Delay	28.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Queues  
4: Oppurtunity Way/Retail Entrance & Centerville Road

Warhill Sports Complex

9/13/2016



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	2	499	49	426	655	1	24	233	1	2	2
v/c Ratio	0.01	0.68	0.06	0.70	0.54	0.00	0.13	0.62	0.01	0.01	0.02
Control Delay	35.0	25.5	0.2	36.7	12.7	0.0	32.0	12.6	34.0	34.5	34.5
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	35.0	25.5	0.2	36.7	12.7	0.0	32.0	12.6	34.0	34.5	34.5
Queue Length 50th (ft)	0	160	0	86	97	0	9	0	0	1	1
Queue Length 95th (ft)	4	#377	0	#180	#446	0	32	52	5	8	8
Internal Link Dist (ft)		2559			1277		1985			173	
Turn Bay Length (ft)	400		225	250		200		700	135		135
Base Capacity (vph)	242	737	779	605	1211	1091	655	731	379	390	357
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.68	0.06	0.70	0.54	0.00	0.04	0.32	0.00	0.01	0.01

Intersection Summary
























# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 4: Oppurtunity Way/Retail Entrance & Centerville Road

Warhill Sports Complex

9/13/2016






















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	429	42	366	563	1	18	3	200	2	1	2
Future Volume (vph)	2	429	42	366	563	1	18	3	200	2	1	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	6.0	6.0	7.5	6.0	6.0		7.5	7.5	6.5	6.5	6.5
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	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	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00	0.95	0.98	1.00
Satd. Flow (prot)	3433	1863	1583	3433	1863	1583		1785	1583	1681	1726	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00	0.95	0.98	1.00
Satd. Flow (perm)	3433	1863	1583	3433	1863	1583		1785	1583	1681	1726	1583
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	2	499	49	426	655	1	21	3	233	2	1	2
RTOR Reduction (vph)	0	0	29	0	0	0	0	0	212	0	0	0
Lane Group Flow (vph)	2	499	20	426	655	1	0	24	21	1	2	2
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases			6			2			4			3
Actuated Green, G (s)	0.8	34.2	34.2	12.6	46.5	46.5		7.3	7.3	1.0	1.0	1.0
Effective Green, g (s)	0.8	34.2	34.2	12.6	46.5	46.5		7.3	7.3	1.0	1.0	1.0
Actuated g/C Ratio	0.01	0.41	0.41	0.15	0.56	0.56		0.09	0.09	0.01	0.01	0.01
Clearance Time (s)	7.0	6.0	6.0	7.5	6.0	6.0		7.5	7.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	33	771	655	523	1048	891		157	139	20	20	19
v/s Ratio Prot	0.00	0.27		c0.12	c0.35			c0.01		0.00	0.00	
v/s Ratio Perm			0.01			0.00			0.01			c0.00
v/c Ratio	0.06	0.65	0.03	0.81	0.62	0.00		0.15	0.15	0.05	0.10	0.11
Uniform Delay, d1	40.5	19.4	14.4	33.9	12.2	7.9		34.8	34.8	40.3	40.4	40.4
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	0.8	1.9	0.0	9.5	1.2	0.0		0.5	0.5	1.0	2.2	2.4
Delay (s)	41.3	21.3	14.4	43.3	13.3	7.9		35.2	35.3	41.4	42.5	42.8
Level of Service	D	C	B	D	B	A		D	D	D	D	D
Approach Delay (s)		20.7			25.1			35.3			42.4	
Approach LOS		C			C			D			D	
Intersection Summary												
HCM 2000 Control Delay	25.3			HCM 2000 Level of Service			C					
HCM 2000 Volume to Capacity ratio	0.63											
Actuated Cycle Length (s)	82.6			Sum of lost time (s)			27.5					
Intersection Capacity Utilization	58.7%			ICU Level of Service			B					
Analysis Period (min)	15											
c Critical Lane Group												

# HCM Unsignalized Intersection Capacity Analysis

## 5: Longhill Gate Road/Warhill Trail & Longhill Road

Warhill Sports Complex

9/13/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	429	16	29	475	285	7	0	24	119	2	121
Future Volume (Veh/h)	150	429	16	29	475	285	7	0	24	119	2	121
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	176	505	19	34	559	335	8	0	28	140	2	142
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)	9											
Median type	None			None								
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	894			524			1566	1828	514	1512	1503	559
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	894			524			1566	1828	514	1512	1503	559
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 %	77			97			85	100	95	0	98	73
cM capacity (veh/h)	759			1043			52	57	560	75	90	529
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1					
Volume Total	176	524	34	559	335	36	284					
Volume Left	176	0	34	0	0	8	140					
Volume Right	0	19	0	0	335	28	142					
cSH	759	1700	1043	1700	1700	177	139					
Volume to Capacity	0.23	0.31	0.03	0.33	0.20	0.20	2.04					
Queue Length 95th (ft)	22	0	3	0	0	18	569					
Control Delay (s)	11.2	0.0	8.6	0.0	0.0	30.5	544.3					
Lane LOS	B		A			D	F					
Approach Delay (s)	2.8		0.3			30.5	544.3					
Approach LOS						D	F					
Intersection Summary												
Average Delay	81.1											
Intersection Capacity Utilization	56.7%			ICU Level of Service				B				
Analysis Period (min)	15											



Intersection: 1: Centerville Road/Retail Entrance & US Route 60

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	T	R	L	LT	R
Maximum Queue (ft)	102	259	293	223	230	241	298	299	184	185	229	183
Average Queue (ft)	26	148	182	98	120	131	152	166	34	95	119	63
95th Queue (ft)	70	232	269	202	208	222	264	277	134	166	195	134
Link Distance (ft)		1396	1396				650	650			1225	1225
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	225			425	350	350			175	225		
Storage Blk Time (%)		1			0	0	0	7	0	0	0	
Queuing Penalty (veh)		0			0	1	0	3	0	0	1	

Intersection: 1: Centerville Road/Retail Entrance & US Route 60

Movement	SB	SB
Directions Served	LT	R
Maximum Queue (ft)	146	66
Average Queue (ft)	54	14
95th Queue (ft)	114	41
Link Distance (ft)	192	
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		100
Storage Blk Time (%)	3	
Queuing Penalty (veh)	1	

Intersection: 2: Rt 199 SB Ramps & US Route 60

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	UT	T	R	L	T	T	L	R
Maximum Queue (ft)	258	276	181	118	265	235	174	389
Average Queue (ft)	123	138	70	29	119	107	132	104
95th Queue (ft)	237	252	140	74	221	199	192	269
Link Distance (ft)	650	650			689	689		625
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			450	175			150	
Storage Blk Time (%)					2		10	0
Queuing Penalty (veh)					1		22	0

Intersection: 3: Rt 199 NB Ramps & US Route 60

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	UT	TR	R	L	T	T	L	R
Maximum Queue (ft)	307	318	120	238	221	178	447	69
Average Queue (ft)	125	141	33	114	103	54	242	27
95th Queue (ft)	249	261	79	197	184	129	384	55
Link Distance (ft)	689	689	689		860	860		496
Upstream Blk Time (%)							0	
Queuing Penalty (veh)							0	
Storage Bay Dist (ft)				350			525	
Storage Blk Time (%)							0	
Queuing Penalty (veh)							0	

Intersection: 4: Oppurtunity Way/Retail Entrance & Centerville Road

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	L	T	R	LT	R	L	LT	R
Maximum Queue (ft)	29	262	126	129	154	222	2	42	95	23	13	17
Average Queue (ft)	2	120	21	58	85	62	0	11	42	1	1	1
95th Queue (ft)	14	211	71	109	135	155	2	33	72	9	9	9
Link Distance (ft)		2587			1225	1225		2008			194	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	400		225	250			200		700	135		135
Storage Blk Time (%)		1	0			0						
Queuing Penalty (veh)		0	0			0						

Intersection: 5: Longhill Gate Road/Warhill Trail & Longhill Road

Movement	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	L	T	R	LTR	LT	R
Maximum Queue (ft)	108	36	3	42	52	412	199
Average Queue (ft)	46	8	0	7	18	128	64
95th Queue (ft)	87	27	2	28	42	343	183
Link Distance (ft)			1476		644	1477	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	200	200		200			215
Storage Blk Time (%)						12	0
Queuing Penalty (veh)						15	0

Network Summary

Network wide Queuing Penalty: 44

## Queues

## Warhill Sports Complex

9/13/2016

## 1: Centerville Road/Retail Entrance &amp; US Route 60



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	19	775	335	241	684	44	219	225	427	87	21
v/c Ratio	0.18	0.57	0.21	0.62	0.38	0.05	0.76	0.77	0.72	0.51	0.07
Control Delay	52.1	31.1	0.3	40.9	21.4	0.6	61.2	61.9	13.6	57.8	0.4
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	52.1	31.1	0.3	40.9	21.4	0.6	61.2	61.9	13.6	57.8	0.4
Queue Length 50th (ft)	13	250	0	73	214	0	150	154	20	59	0
Queue Length 95th (ft)	37	314	0	94	296	m6	#286	#293	129	109	0
Internal Link Dist (ft)		1392			654			1277		188	
Turn Bay Length (ft)	225		425	350		175	225				100
Base Capacity (vph)	217	1381	1583	436	1802	905	300	304	604	214	357
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.56	0.21	0.55	0.38	0.05	0.73	0.74	0.71	0.41	0.06

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.
























m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 1: Centerville Road/Retail Entrance & US Route 60







Warhill Sports Complex

9/13/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	752	325	234	663	43	379	51	414	49	35	20
Future Volume (vph)	18	752	325	234	663	43	379	51	414	49	35	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.5	6.0	4.0	8.0	6.0	6.0	8.0	8.0	8.0		7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.95	0.95	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	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.97	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	1681	1704	1583		1810	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.97	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	1681	1704	1583		1810	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)	19	775	335	241	684	44	391	53	427	51	36	21
RTOR Reduction (vph)	0	0	0	0	0	24	0	0	325	0	0	19
Lane Group Flow (vph)	19	775	335	241	684	20	219	225	102	0	87	2
Turn Type	Prot	NA	Free	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		4	4		3	3	
Permitted Phases			Free			6			4			3
Actuated Green, G (s)	3.2	40.8	110.0	12.4	49.5	49.5	18.8	18.8	18.8		9.0	9.0
Effective Green, g (s)	3.2	40.8	110.0	12.4	49.5	49.5	18.8	18.8	18.8		9.0	9.0
Actuated g/C Ratio	0.03	0.37	1.00	0.11	0.45	0.45	0.17	0.17	0.17		0.08	0.08
Clearance Time (s)	8.5	6.0		8.0	6.0	6.0	8.0	8.0	8.0		7.0	7.0
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)	51	1312	1583	386	1592	712	287	291	270		148	129
v/s Ratio Prot	0.01	c0.22		c0.07	c0.19		0.13	c0.13			c0.05	
v/s Ratio Perm			0.21			0.01			0.06			0.00
v/c Ratio	0.37	0.59	0.21	0.62	0.43	0.03	0.76	0.77	0.38		0.59	0.01
Uniform Delay, d1	52.4	27.9	0.0	46.6	20.6	16.8	43.5	43.6	40.4		48.7	46.4
Progression Factor	1.00	1.00	1.00	0.73	1.04	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	4.5	2.0	0.3	3.0	0.8	0.1	11.4	12.0	0.9		5.9	0.0
Delay (s)	57.0	29.8	0.3	36.9	22.3	16.9	54.9	55.6	41.3		54.6	46.5
Level of Service	E	C	A	D	C	B	D	E	D		D	D
Approach Delay (s)		21.5			25.7			48.4			53.0	
Approach LOS		C			C			D			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			31.5			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)			29.5			
Intersection Capacity Utilization			68.9%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

Queues  
2: Rt 199 SB Ramps & US Route 60

Warhill Sports Complex  
9/13/2016

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	976	337	56	815	202	403
v/c Ratio	0.50	0.32	0.39	0.33	0.70	0.75
Control Delay	15.2	3.2	52.5	7.3	55.9	17.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.2	3.2	52.5	7.3	55.9	17.7
Queue Length 50th (ft)	166	0	36	123	136	43
Queue Length 95th (ft)	211	30	m59	247	200	144
Internal Link Dist (ft)	654			692	612	
Turn Bay Length (ft)		450	175		150	
Base Capacity (vph)	1942	1055	273	2495	426	634
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.32	0.21	0.33	0.47	0.64

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 2: Rt 199 SB Ramps & US Route 60

Warhill Sports Complex

9/13/2016



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations		↔↔	↔	↔	↔↔	↔	↔
Traffic Volume (vph)	4	914	317	53	766	190	379
Future Volume (vph)	4	914	317	53	766	190	379
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	8.0	6.0	8.5	8.5
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00
Frt		1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)		3538	1583	1770	3539	1770	1583
Flt Permitted		0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)		3371	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	4	972	337	56	815	202	403
RTOR Reduction (vph)	0	0	147	0	0	0	280
Lane Group Flow (vph)	0	976	190	56	815	202	123
Turn Type	Perm	NA	Perm	Prot	NA	Prot	Perm
Protected Phases		2		1	6	4	
Permitted Phases	2		2				4
Actuated Green, G (s)		61.9	61.9	7.7	77.6	17.9	17.9
Effective Green, g (s)		61.9	61.9	7.7	77.6	17.9	17.9
Actuated g/C Ratio		0.56	0.56	0.07	0.71	0.16	0.16
Clearance Time (s)		6.0	6.0	8.0	6.0	8.5	8.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		1896	890	123	2496	288	257
v/s Ratio Prot				0.03	c0.23	c0.11	
v/s Ratio Perm		c0.29	0.12				0.08
v/c Ratio		0.51	0.21	0.46	0.33	0.70	0.48
Uniform Delay, d1		14.8	11.9	49.1	6.2	43.5	41.8
Progression Factor		0.89	1.34	0.95	1.03	1.00	1.00
Incremental Delay, d2		0.8	0.4	2.5	0.3	7.5	1.4
Delay (s)		13.9	16.4	49.2	6.7	51.0	43.2
Level of Service		B	B	D	A	D	D
Approach Delay (s)		14.6			9.4	45.8	
Approach LOS		B			A	D	







### Intersection Summary

HCM 2000 Control Delay	19.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Queues  
3: Rt 199 NB Ramps & US Route 60

Warhill Sports Complex  
9/13/2016

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1100	294	230	569	303	96
v/c Ratio	0.75	0.34	0.83	0.24	0.82	0.24
Control Delay	30.3	6.6	69.7	8.2	59.5	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.3	6.6	69.7	8.2	59.5	8.2
Queue Length 50th (ft)	346	14	154	78	203	0
Queue Length 95th (ft)	456	72	#293	114	295	41
Internal Link Dist (ft)	692			817	473	
Turn Bay Length (ft)			350		525	
Base Capacity (vph)	1458	853	287	2349	434	460
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.34	0.80	0.24	0.70	0.21

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 3: Rt 199 NB Ramps & US Route 60

Warhill Sports Complex

9/13/2016



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations		↕↕	↗	↖	↕↕	↗	↖
Traffic Volume (vph)	8	1015	273	214	529	282	89
Future Volume (vph)	8	1015	273	214	529	282	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	8.0	6.0	8.0	8.0
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00
Frt		1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)		3538	1583	1770	3539	1770	1583
Flt Permitted		0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)		3360	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	9	1091	294	230	569	303	96
RTOR Reduction (vph)	0	0	167	0	0	0	76
Lane Group Flow (vph)	0	1100	127	230	569	303	20
Turn Type	Perm	NA	Perm	Prot	NA	Prot	Perm
Protected Phases		2		1	6	4	
Permitted Phases	2		2				4
Actuated Green, G (s)		47.7	47.7	17.3	73.0	23.0	23.0
Effective Green, g (s)		47.7	47.7	17.3	73.0	23.0	23.0
Actuated g/C Ratio		0.43	0.43	0.16	0.66	0.21	0.21
Clearance Time (s)		6.0	6.0	8.0	6.0	8.0	8.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		1457	686	278	2348	370	330
v/s Ratio Prot				c0.13	0.16	c0.17	
v/s Ratio Perm		c0.33	0.08				0.01
v/c Ratio		0.75	0.19	0.83	0.24	0.82	0.06
Uniform Delay, d1		26.2	19.2	44.9	7.4	41.5	34.8
Progression Factor		0.98	2.16	1.00	1.00	1.00	1.00
Incremental Delay, d2		3.2	0.5	17.9	0.2	13.2	0.1
Delay (s)		29.0	42.0	62.8	7.7	54.7	34.9
Level of Service		C	D	E	A	D	C
Approach Delay (s)		31.7			23.5	49.9	
Approach LOS		C			C	D	

### Intersection Summary

HCM 2000 Control Delay	32.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Queues  
4: Oppurtunity Way/Retail Entrance & Centerville Road

Warhill Sports Complex

9/13/2016



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	3	477	38	272	365	4	54	387	2	2	4
v/c Ratio	0.01	0.72	0.06	0.53	0.33	0.00	0.23	0.71	0.01	0.01	0.03
Control Delay	35.3	26.7	0.2	33.3	10.8	0.0	30.3	11.7	34.5	34.5	34.5
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	35.3	26.7	0.2	33.3	10.8	0.0	30.3	11.7	34.5	34.5	34.5
Queue Length 50th (ft)	0	144	0	48	48	0	19	0	1	1	1
Queue Length 95th (ft)	5	#368	0	#135	239	0	60	79	8	8	13
Internal Link Dist (ft)		2559			1277		1985			173	
Turn Bay Length (ft)	400		225	250		200		700	135		135
Base Capacity (vph)	270	903	859	524	1137	1035	727	876	423	445	398
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.53	0.04	0.52	0.32	0.00	0.07	0.44	0.00	0.00	0.01

Intersection Summary
























# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 4: Oppurtunity Way/Retail Entrance & Centerville Road

Warhill Sports Complex

9/13/2016





















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	453	36	258	347	4	49	2	368	2	2	4
Future Volume (vph)	3	453	36	258	347	4	49	2	368	2	2	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	6.0	6.0	7.5	6.0	6.0		7.5	7.5	6.5	6.5	6.5
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	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	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	3433	1863	1583		1777	1583	1681	1770	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1583	3433	1863	1583		1777	1583	1681	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	477	38	272	365	4	52	2	387	2	2	4
RTOR Reduction (vph)	0	0	23	0	0	2	0	0	343	0	0	0
Lane Group Flow (vph)	3	477	15	272	365	2	0	54	44	2	2	4
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases			6			2			4			3
Actuated Green, G (s)	0.7	29.8	29.8	10.0	39.6	39.6		8.7	8.7	0.9	0.9	0.9
Effective Green, g (s)	0.7	29.8	29.8	10.0	39.6	39.6		8.7	8.7	0.9	0.9	0.9
Actuated g/C Ratio	0.01	0.39	0.39	0.13	0.51	0.51		0.11	0.11	0.01	0.01	0.01
Clearance Time (s)	7.0	6.0	6.0	7.5	6.0	6.0		7.5	7.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	31	721	613	446	959	815		201	179	19	20	18
v/s Ratio Prot	0.00	c0.26		c0.08	0.20			c0.03		0.00	0.00	
v/s Ratio Perm			0.01			0.00			0.03			c0.00
v/c Ratio	0.10	0.66	0.02	0.61	0.38	0.00		0.27	0.24	0.11	0.10	0.22
Uniform Delay, d1	37.8	19.4	14.6	31.6	11.3	9.1		31.2	31.1	37.6	37.6	37.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	2.3	0.0	2.4	0.3	0.0		0.7	0.7	2.4	2.2	6.2
Delay (s)	39.2	21.7	14.6	34.0	11.5	9.1		31.9	31.8	40.0	39.8	43.8
Level of Service	D	C	B	C	B	A		C	C	D	D	D
Approach Delay (s)		21.3			21.0			31.8			41.9	
Approach LOS		C			C			C			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			24.2				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.57									
Actuated Cycle Length (s)			76.9				Sum of lost time (s)			27.5		
Intersection Capacity Utilization			67.5%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

# HCM Unsignalized Intersection Capacity Analysis

## 5: Longhill Gate Road/Warhill Trail & Longhill Road

Warhill Sports Complex

9/13/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	128	396	6	14	383	345	3	1	22	217	7	168
Future Volume (Veh/h)	128	396	6	14	383	345	3	1	22	217	7	168
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)	139	430	7	15	416	375	3	1	24	236	8	183
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)	9											
Median type	None			None								
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	791			437			1253	1532	434	1178	1161	416
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	791			437			1253	1532	434	1178	1161	416
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 %	83			99			97	99	96	0	95	71
cM capacity (veh/h)	829			1123			88	96	622	138	160	637
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1					
Volume Total	139	437	15	416	375	28	427					
Volume Left	139	0	15	0	0	3	236					
Volume Right	0	7	0	0	375	24	183					
cSH	829	1700	1123	1700	1700	337	219					
Volume to Capacity	0.17	0.26	0.01	0.24	0.22	0.08	1.95					
Queue Length 95th (ft)	15	0	1	0	0	7	780					
Control Delay (s)	10.2	0.0	8.2	0.0	0.0	16.6	481.7					
Lane LOS	B		A			C	F					
Approach Delay (s)	2.5		0.2			16.6	481.7					
Approach LOS						C	F					
Intersection Summary												
Average Delay			113.1									
Intersection Capacity Utilization			56.3%		ICU Level of Service				B			
Analysis Period (min)			15									

Intersection: 1: Centerville Road/Retail Entrance & US Route 60

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	T	R	L	LT	R
Maximum Queue (ft)	62	294	341	136	149	159	255	266	185	213	253	257
Average Queue (ft)	9	167	203	32	68	76	129	139	28	107	131	127
95th Queue (ft)	40	264	307	103	126	130	223	237	106	181	211	228
Link Distance (ft)		1396	1396				650	650			1225	1225
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	225			425	350	350			175	225		
Storage Blk Time (%)		2	0					3	0	0	0	
Queuing Penalty (veh)		0	0					1	0	0	0	

Intersection: 1: Centerville Road/Retail Entrance & US Route 60

Movement	SB	SB
Directions Served	LT	R
Maximum Queue (ft)	140	87
Average Queue (ft)	60	11
95th Queue (ft)	120	45
Link Distance (ft)	192	
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		100
Storage Blk Time (%)	4	0
Queuing Penalty (veh)	1	0

Intersection: 2: Rt 199 SB Ramps & US Route 60

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	UT	T	R	L	T	T	L	R
Maximum Queue (ft)	328	361	166	115	190	197	174	350
Average Queue (ft)	173	197	66	46	84	83	119	139
95th Queue (ft)	307	333	126	93	160	167	190	281
Link Distance (ft)	650	650			701	701		625
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			450	175			150	
Storage Blk Time (%)					0		6	3
Queuing Penalty (veh)					0		24	6

Intersection: 3: Rt 199 NB Ramps & US Route 60

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	UT	T	R	L	T	T	L	R
Maximum Queue (ft)	386	390	148	299	194	124	346	96
Average Queue (ft)	175	190	55	154	77	40	187	36
95th Queue (ft)	325	333	112	256	149	89	300	74
Link Distance (ft)	701	701	701		860	860		495
Upstream Blk Time (%)	0	0						
Queuing Penalty (veh)	0	0						
Storage Bay Dist (ft)				350			525	
Storage Blk Time (%)				0				
Queuing Penalty (veh)				0				

Intersection: 4: Oppurtunity Way/Retail Entrance & Centerville Road

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	L	T	R	LT	R	L	LT	R
Maximum Queue (ft)	27	314	120	113	129	189	20	69	172	12	23	23
Average Queue (ft)	3	154	20	47	74	72	1	23	79	1	3	3
95th Queue (ft)	16	256	75	93	117	150	9	55	139	6	15	16
Link Distance (ft)		2587			1225	1225		2008			194	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	400		225	250			200		700	135		135
Storage Blk Time (%)		2				0						
Queuing Penalty (veh)		1				0						

Intersection: 5: Longhill Gate Road/Warhill Trail & Longhill Road

Movement	EB	WB	WB	NB	SB	SB
Directions Served	L	L	R	LTR	LT	R
Maximum Queue (ft)	90	23	52	47	1032	240
Average Queue (ft)	39	3	9	16	495	155
95th Queue (ft)	73	16	33	38	1235	316
Link Distance (ft)				644	1477	
Upstream Blk Time (%)					7	
Queuing Penalty (veh)					0	
Storage Bay Dist (ft)	200	200	200			215
Storage Blk Time (%)					51	0
Queuing Penalty (veh)					86	1

Network Summary

Network wide Queuing Penalty: 121

# **Appendix E**

## **SYNCHRO Analysis of 2030**

### **Background Conditions**

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## Queues

## Warhill Sports Complex

9/13/2016

## 1: Centerville Road/Retail Entrance &amp; US Route 60



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	44	848	630	501	908	41	243	249	324	85	36
v/c Ratio	0.41	0.70	0.40	0.86	0.51	0.05	0.82	0.83	0.60	0.64	0.10
Control Delay	61.4	36.8	0.7	53.0	25.1	0.1	65.6	66.6	9.9	71.8	0.5
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	61.4	36.8	0.7	53.0	25.1	0.1	65.6	66.6	9.9	71.8	0.5
Queue Length 50th (ft)	30	290	0	158	303	0	172	176	4	59	0
Queue Length 95th (ft)	68	366	0	#253	390	m0	#295	#302	84	#131	0
Internal Link Dist (ft)		1392			654			1277		188	
Turn Bay Length (ft)	225		425	350		175	225				100
Base Capacity (vph)	112	1215	1583	595	1770	893	320	324	558	137	371
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.70	0.40	0.84	0.51	0.05	0.76	0.77	0.58	0.62	0.10

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.
























m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 1: Centerville Road/Retail Entrance & US Route 60

Warhill Sports Complex

9/13/2016

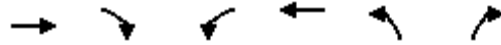
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	763	567	451	817	37	405	38	292	39	38	32
Future Volume (vph)	40	763	567	451	817	37	405	38	292	39	38	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.5	6.0	4.0	8.0	6.0	6.0	8.0	8.0	8.0		7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.95	0.95	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	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.98	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	1681	1699	1583		1817	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.98	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	1681	1699	1583		1817	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)	44	848	630	501	908	41	450	42	324	43	42	36
RTOR Reduction (vph)	0	0	0	0	0	22	0	0	261	0	0	34
Lane Group Flow (vph)	44	848	630	501	908	19	243	249	63	0	85	2
Turn Type	Prot	NA	Free	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		4	4		3	3	
Permitted Phases			Free			6			4			3
Actuated Green, G (s)	4.2	36.2	110.0	18.6	50.1	50.1	19.5	19.5	19.5		6.7	6.7
Effective Green, g (s)	4.2	36.2	110.0	18.6	50.1	50.1	19.5	19.5	19.5		6.7	6.7
Actuated g/C Ratio	0.04	0.33	1.00	0.17	0.46	0.46	0.18	0.18	0.18		0.06	0.06
Clearance Time (s)	8.5	6.0		8.0	6.0	6.0	8.0	8.0	8.0		7.0	7.0
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)	67	1164	1583	580	1611	720	297	301	280		110	96
v/s Ratio Prot	0.02	c0.24		c0.15	0.26		0.14	c0.15			0.05	
v/s Ratio Perm			c0.40			0.01			0.04			0.00
v/c Ratio	0.66	0.73	0.40	0.86	0.56	0.03	0.82	0.83	0.23		0.77	0.02
Uniform Delay, d1	52.2	32.6	0.0	44.5	21.9	16.5	43.5	43.6	38.8		50.9	48.6
Progression Factor	1.00	1.00	1.00	0.87	1.11	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	20.8	4.0	0.7	11.1	1.2	0.1	15.9	16.8	0.4		27.9	0.1
Delay (s)	73.0	36.6	0.7	49.8	25.7	16.6	59.4	60.4	39.2		78.8	48.7
Level of Service	E	D	A	D	C	B	E	E	D		E	D
Approach Delay (s)		22.8			33.8			51.7			69.8	
Approach LOS		C			C			D			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			34.4			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.79									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)			29.5			
Intersection Capacity Utilization			71.2%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												



Queues  
2: Rt 199 SB Ramps & US Route 60

Warhill Sports Complex

9/13/2016



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	824	413	41	1225	289	283
v/c Ratio	0.43	0.39	0.32	0.53	0.77	0.56
Control Delay	17.9	9.5	45.6	7.0	53.9	13.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.9	9.5	45.6	7.0	53.9	13.9
Queue Length 50th (ft)	281	165	27	108	194	40
Queue Length 95th (ft)	365	234	m53	265	256	104
Internal Link Dist (ft)	654			692	612	
Turn Bay Length (ft)		450	175		150	
Base Capacity (vph)	1905	1073	132	2319	539	631
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.38	0.31	0.53	0.54	0.45

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 2: Rt 199 SB Ramps & US Route 60

Warhill Sports Complex

9/13/2016



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations		↔↗	↗	↗	↔↗	↗	↗
Traffic Volume (vph)	1	724	363	36	1078	254	249
Future Volume (vph)	1	724	363	36	1078	254	249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	8.0	6.0	8.5	8.5
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00
Frt		1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)		3539	1583	1770	3539	1770	1583
Flt Permitted		0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)		3377	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	1	823	412	41	1225	289	283
RTOR Reduction (vph)	0	0	193	0	0	0	169
Lane Group Flow (vph)	0	824	220	41	1225	289	114
Turn Type	Perm	NA	Perm	Prot	NA	Prot	Perm
Protected Phases		2		1	6	4	
Permitted Phases	2		2				4
Actuated Green, G (s)		58.6	58.6	5.5	72.1	23.4	23.4
Effective Green, g (s)		58.6	58.6	5.5	72.1	23.4	23.4
Actuated g/C Ratio		0.53	0.53	0.05	0.66	0.21	0.21
Clearance Time (s)		6.0	6.0	8.0	6.0	8.5	8.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		1799	843	88	2319	376	336
v/s Ratio Prot				0.02	c0.35	c0.16	
v/s Ratio Perm		0.24	0.14				0.07
v/c Ratio		0.46	0.26	0.47	0.53	0.77	0.34
Uniform Delay, d1		15.9	13.9	50.8	10.0	40.8	36.7
Progression Factor		1.02	4.30	0.83	0.57	1.00	1.00
Incremental Delay, d2		0.6	0.6	3.4	0.8	9.1	0.6
Delay (s)		16.9	60.6	45.5	6.4	49.9	37.3
Level of Service		B	E	D	A	D	D
Approach Delay (s)		31.5			7.7	43.7	
Approach LOS		C			A	D	

### Intersection Summary

HCM 2000 Control Delay	24.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Queues  
3: Rt 199 NB Ramps & US Route 60

Warhill Sports Complex  
9/13/2016



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	834	205	190	698	480	94
v/c Ratio	0.68	0.29	0.79	0.35	0.90	0.17
Control Delay	43.6	14.8	69.5	13.7	58.0	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.6	14.8	69.5	13.7	58.0	6.2
Queue Length 50th (ft)	308	76	128	137	314	0
Queue Length 95th (ft)	394	141	#246	180	#482	36
Internal Link Dist (ft)	692			817	473	
Turn Bay Length (ft)			350		525	
Base Capacity (vph)	1235	710	251	2023	579	581
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.29	0.76	0.35	0.83	0.16

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 3: Rt 199 NB Ramps & US Route 60

Warhill Sports Complex

9/13/2016



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations		↕↕	↗	↖	↕↕	↗	↖
Traffic Volume (vph)	5	771	191	177	649	446	87
Future Volume (vph)	5	771	191	177	649	446	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	8.0	6.0	8.0	8.0
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00
Frt		1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)		3538	1583	1770	3539	1770	1583
Flt Permitted		0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)		3365	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	5	829	205	190	698	480	94
RTOR Reduction (vph)	0	0	130	0	0	0	66
Lane Group Flow (vph)	0	834	75	190	698	480	28
Turn Type	Perm	NA	Perm	Prot	NA	Prot	Perm
Protected Phases		2		1	6	4	
Permitted Phases	2		2				4
Actuated Green, G (s)		40.0	40.0	14.9	62.9	33.1	33.1
Effective Green, g (s)		40.0	40.0	14.9	62.9	33.1	33.1
Actuated g/C Ratio		0.36	0.36	0.14	0.57	0.30	0.30
Clearance Time (s)		6.0	6.0	8.0	6.0	8.0	8.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		1223	575	239	2023	532	476
v/s Ratio Prot				c0.11	0.20	c0.27	
v/s Ratio Perm		c0.25	0.05				0.02
v/c Ratio		0.68	0.13	0.79	0.35	0.90	0.06
Uniform Delay, d1		29.6	23.4	46.1	12.6	36.9	27.4
Progression Factor		1.31	3.71	1.00	1.00	1.00	1.00
Incremental Delay, d2		2.8	0.4	16.5	0.5	18.5	0.1
Delay (s)		41.8	87.1	62.6	13.0	55.4	27.4
Level of Service		D	F	E	B	E	C
Approach Delay (s)		50.7			23.6	50.8	
Approach LOS		D			C	D	

### Intersection Summary

HCM 2000 Control Delay	41.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

## Queues

## Warhill Sports Complex

## 4: Oppurtunity Way/Retail Entrance &amp; Centerville Road

9/13/2016



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	199	658	49	426	864	51	36	233	113	115	124
v/c Ratio	0.87	0.81	0.06	0.83	0.89	0.06	0.28	0.71	0.59	0.60	0.69
Control Delay	90.6	40.2	0.1	64.5	39.0	0.1	58.7	19.0	64.6	64.5	72.0
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	90.6	40.2	0.1	64.5	39.0	0.1	58.7	19.0	64.6	64.5	72.0
Queue Length 50th (ft)	80	443	0	168	580	0	27	0	88	89	93
Queue Length 95th (ft)	#152	#632	0	#246	#879	0	59	65	153	155	160
Internal Link Dist (ft)		2559			1277		1985			173	
Turn Bay Length (ft)	400		225	250		200		700	135		135
Base Capacity (vph)	228	811	801	524	975	895	391	524	223	226	210
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.81	0.06	0.81	0.89	0.06	0.09	0.44	0.51	0.51	0.59

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
























Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 4: Oppurtunity Way/Retail Entrance & Centerville Road





















Warhill Sports Complex

9/13/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	566	42	366	743	44	18	13	200	173	23	107
Future Volume (vph)	171	566	42	366	743	44	18	13	200	173	23	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	6.0	6.0	7.5	6.0	6.0		7.5	7.5	6.5	6.5	6.5
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	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	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00	0.95	0.96	1.00
Satd. Flow (prot)	3433	1863	1583	3433	1863	1583		1810	1583	1681	1704	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00	0.95	0.96	1.00
Satd. Flow (perm)	3433	1863	1583	3433	1863	1583		1810	1583	1681	1704	1583
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	199	658	49	426	864	51	21	15	233	201	27	124
RTOR Reduction (vph)	0	0	28	0	0	24	0	0	216	0	0	0
Lane Group Flow (vph)	199	658	21	426	864	27	0	36	17	113	115	124
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases			6			2			4			3
Actuated Green, G (s)	8.0	52.5	52.5	18.2	63.2	63.2		8.6	8.6	13.7	13.7	13.7
Effective Green, g (s)	8.0	52.5	52.5	18.2	63.2	63.2		8.6	8.6	13.7	13.7	13.7
Actuated g/C Ratio	0.07	0.44	0.44	0.15	0.52	0.52		0.07	0.07	0.11	0.11	0.11
Clearance Time (s)	7.0	6.0	6.0	7.5	6.0	6.0		7.5	7.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	227	811	689	518	977	830		129	112	191	193	179
v/s Ratio Prot	0.06	0.35		c0.12	c0.46			c0.02		0.07	0.07	
v/s Ratio Perm			0.01			0.02			0.01			c0.08
v/c Ratio	0.88	0.81	0.03	0.82	0.88	0.03		0.28	0.15	0.59	0.60	0.69
Uniform Delay, d1	55.8	29.7	19.4	49.6	25.4	13.9		53.0	52.5	50.7	50.8	51.4
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	29.2	6.2	0.0	10.2	9.6	0.0		1.2	0.6	4.8	4.9	11.0
Delay (s)	85.0	35.9	19.5	59.7	35.0	13.9		54.2	53.1	55.6	55.6	62.4
Level of Service	F	D	B	E	D	B		D	D	E	E	E
Approach Delay (s)		45.8			42.1			53.3			58.0	
Approach LOS		D			D			D			E	
Intersection Summary												
HCM 2000 Control Delay	46.2			HCM 2000 Level of Service			D					
HCM 2000 Volume to Capacity ratio	0.84											
Actuated Cycle Length (s)	120.5			Sum of lost time (s)			27.5					
Intersection Capacity Utilization	72.3%			ICU Level of Service			C					
Analysis Period (min)	15											
c Critical Lane Group												

# HCM Unsignalized Intersection Capacity Analysis 5: Longhill Gate Road/Warhill Trail & Longhill Road

Warhill Sports Complex  
9/13/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	566	16	29	546	285	7	0	24	119	2	121
Future Volume (Veh/h)	150	566	16	29	546	285	7	0	24	119	2	121
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	176	666	19	34	642	335	8	0	28	140	2	142
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)	9											
Median type	None			None								
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	977			685			1810	2072	676	1756	1747	642
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	977			685			1810	2072	676	1756	1747	642
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 %	75			96			76	100	94	0	97	70
cM capacity (veh/h)	706			908			33	39	454	49	62	474
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1					
Volume Total	176	685	34	642	335	36	284					
Volume Left	176	0	34	0	0	8	140					
Volume Right	0	19	0	0	335	28	142					
cSH	706	1700	908	1700	1700	118	91					
Volume to Capacity	0.25	0.40	0.04	0.38	0.20	0.31	3.12					
Queue Length 95th (ft)	25	0	3	0	0	30	Err					
Control Delay (s)	11.8	0.0	9.1	0.0	0.0	48.6	Err					
Lane LOS	B		A			E	F					
Approach Delay (s)	2.4		0.3			48.6	Err					
Approach LOS						E	F					
Intersection Summary												
Average Delay			1297.4									
Intersection Capacity Utilization			60.4%	ICU Level of Service					B			
Analysis Period (min)			15									

Intersection: 1: Centerville Road/Retail Entrance & US Route 60

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	T	R	L	LT	R
Maximum Queue (ft)	97	317	376	312	282	319	365	344	183	213	235	175
Average Queue (ft)	22	172	225	146	137	173	190	198	37	117	137	77
95th Queue (ft)	64	266	336	272	247	286	328	316	139	189	209	153
Link Distance (ft)		1396	1396				650	650			1225	1225
Upstream Blk Time (%)							0					
Queuing Penalty (veh)							1					
Storage Bay Dist (ft)	225			425	350	350			175	225		
Storage Blk Time (%)		1	0	0	0	1	0	11	0	0	0	
Queuing Penalty (veh)		1	0	1	0	3	1	4	0	0	1	

Intersection: 1: Centerville Road/Retail Entrance & US Route 60

Movement	SB	SB
Directions Served	LT	R
Maximum Queue (ft)	133	102
Average Queue (ft)	56	17
95th Queue (ft)	109	54
Link Distance (ft)	192	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		100
Storage Blk Time (%)	2	0
Queuing Penalty (veh)	1	0

Intersection: 2: Rt 199 SB Ramps & US Route 60

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	UT	T	R	L	T	T	L	R
Maximum Queue (ft)	254	280	124	147	268	230	174	435
Average Queue (ft)	82	101	42	36	114	95	142	145
95th Queue (ft)	210	234	91	95	219	199	198	340
Link Distance (ft)	650	650			701	701		625
Upstream Blk Time (%)								0
Queuing Penalty (veh)								0
Storage Bay Dist (ft)			450	175			150	
Storage Blk Time (%)					2		14	0
Queuing Penalty (veh)					1		35	1



Intersection: 3: Rt 199 NB Ramps & US Route 60

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	UT	T	R	L	T	T	L	R
Maximum Queue (ft)	323	335	128	235	256	208	448	81
Average Queue (ft)	183	199	53	127	129	74	269	29
95th Queue (ft)	316	323	105	207	223	161	403	62
Link Distance (ft)	701	701	701		860	860		495
Upstream Blk Time (%)							0	
Queuing Penalty (veh)							0	
Storage Bay Dist (ft)				350			525	
Storage Blk Time (%)							0	
Queuing Penalty (veh)							0	

Intersection: 4: Oppurtunity Way/Retail Entrance & Centerville Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	L	T	R	L	L	T	R	LT	R	L	LT
Maximum Queue (ft)	138	373	519	250	208	289	587	225	76	110	139	198
Average Queue (ft)	55	104	249	42	110	139	302	51	23	49	57	86
95th Queue (ft)	113	232	410	162	191	238	528	187	59	86	114	157
Link Distance (ft)			2587			1225	1225		2008			194
Upstream Blk Time (%)												1
Queuing Penalty (veh)												0
Storage Bay Dist (ft)	400	400		225	250			200		700	135	
Storage Blk Time (%)			11	0	0	1	20	0			1	2
Queuing Penalty (veh)			24	0	0	2	9	0			1	4

Intersection: 4: Oppurtunity Way/Retail Entrance & Centerville Road

Movement	SB
Directions Served	R
Maximum Queue (ft)	151
Average Queue (ft)	74
95th Queue (ft)	142
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	135
Storage Blk Time (%)	2
Queuing Penalty (veh)	3

Intersection: 5: Longhill Gate Road/Warhill Trail & Longhill Road

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	L	R	LTR	LT	R
Maximum Queue (ft)	106	2	31	49	50	672	240
Average Queue (ft)	46	0	9	7	18	252	100
95th Queue (ft)	83	2	27	30	41	661	256
Link Distance (ft)		1287			644	1477	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	200		200	200			215
Storage Blk Time (%)						29	0
Queuing Penalty (veh)						35	0

Network Summary

Network wide Queuing Penalty: 129

## Queues

## Warhill Sports Complex

9/13/2016

## 1: Centerville Road/Retail Entrance &amp; US Route 60



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	19	891	386	277	786	44	251	251	491	87	21
v/c Ratio	0.22	0.77	0.24	0.78	0.49	0.05	0.64	0.63	0.92	0.66	0.07
Control Delay	56.3	39.9	0.4	66.7	18.9	0.1	45.1	44.7	45.6	73.6	0.5
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	56.3	39.9	0.4	66.7	18.9	0.1	45.1	44.7	45.6	73.6	0.5
Queue Length 50th (ft)	13	309	0	77	138	0	162	162	195	61	0
Queue Length 95th (ft)	38	390	0	#159	348	1	251	250	#383	#136	0
Internal Link Dist (ft)		1392			654			1277		188	
Turn Bay Length (ft)	225		425	350		175	225				100
Base Capacity (vph)	88	1152	1583	355	1595	825	443	448	576	135	297
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.77	0.24	0.78	0.49	0.05	0.57	0.56	0.85	0.64	0.07

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
























Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 1: Centerville Road/Retail Entrance & US Route 60

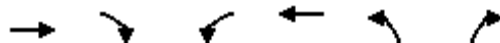
Warhill Sports Complex

9/13/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	864	374	269	762	43	436	51	476	49	35	20
Future Volume (vph)	18	864	374	269	762	43	436	51	476	49	35	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.5	6.0	4.0	8.0	6.0	6.0	8.0	8.0	8.0		7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.95	0.95	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	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.97	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	1681	1702	1583		1810	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.97	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	1681	1702	1583		1810	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)	19	891	386	277	786	44	449	53	491	51	36	21
RTOR Reduction (vph)	0	0	0	0	0	26	0	0	165	0	0	19
Lane Group Flow (vph)	19	891	386	277	786	18	251	251	326	0	87	2
Turn Type	Prot	NA	Free	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		4	4		3	3	
Permitted Phases			Free			6			4			3
Actuated Green, G (s)	2.2	35.9	110.0	11.3	44.5	44.5	25.8	25.8	25.8		8.0	8.0
Effective Green, g (s)	2.2	35.9	110.0	11.3	44.5	44.5	25.8	25.8	25.8		8.0	8.0
Actuated g/C Ratio	0.02	0.33	1.00	0.10	0.40	0.40	0.23	0.23	0.23		0.07	0.07
Clearance Time (s)	8.5	6.0		8.0	6.0	6.0	8.0	8.0	8.0		7.0	7.0
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)	35	1155	1583	352	1431	640	394	399	371		131	115
v/s Ratio Prot	0.01	c0.25		c0.08	c0.22		0.15	0.15			c0.05	
v/s Ratio Perm			0.24			0.01			c0.21			0.00
v/c Ratio	0.54	0.77	0.24	0.79	0.55	0.03	0.64	0.63	0.88		0.66	0.01
Uniform Delay, d1	53.4	33.4	0.0	48.2	25.1	19.7	37.9	37.8	40.6		49.7	47.3
Progression Factor	1.00	1.00	1.00	1.07	0.75	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	16.1	5.0	0.4	10.2	1.4	0.1	3.4	3.1	20.2		12.0	0.0
Delay (s)	69.5	38.4	0.4	61.8	20.3	19.8	41.2	40.9	60.8		61.7	47.4
Level of Service	E	D	A	E	C	B	D	D	E		E	D
Approach Delay (s)		27.5			30.6			50.8			58.9	
Approach LOS		C			C			D			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			36.1			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.81									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)			29.5			
Intersection Capacity Utilization			75.9%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

Queues  
2: Rt 199 SB Ramps & US Route 60

Warhill Sports Complex  
9/13/2016



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1123	387	65	936	232	464
v/c Ratio	0.65	0.39	0.54	0.42	0.54	0.91
Control Delay	16.3	1.6	55.7	14.8	40.4	48.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.3	1.6	55.7	14.8	40.4	48.1
Queue Length 50th (ft)	192	4	36	258	139	208
Queue Length 95th (ft)	231	m12	m75	m312	210	#370
Internal Link Dist (ft)	654			692	612	
Turn Bay Length (ft)		450	175		150	
Base Capacity (vph)	1719	997	124	2217	506	573
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.39	0.52	0.42	0.46	0.81

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 2: Rt 199 SB Ramps & US Route 60

Warhill Sports Complex

9/13/2016



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations		↕↕	↗	↖	↕↕	↖	↗
Traffic Volume (vph)	5	1051	364	61	880	218	436
Future Volume (vph)	5	1051	364	61	880	218	436
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	8.0	6.0	8.5	8.5
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00
Frt		1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)		3538	1583	1770	3539	1770	1583
Flt Permitted		0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)		3366	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	5	1118	387	65	936	232	464
RTOR Reduction (vph)	0	0	195	0	0	0	128
Lane Group Flow (vph)	0	1123	192	65	936	232	336
Turn Type	Perm	NA	Perm	Prot	NA	Prot	Perm
Protected Phases		2		1	6	4	
Permitted Phases	2		2				4
Actuated Green, G (s)		54.6	54.6	6.3	68.9	26.6	26.6
Effective Green, g (s)		54.6	54.6	6.3	68.9	26.6	26.6
Actuated g/C Ratio		0.50	0.50	0.06	0.63	0.24	0.24
Clearance Time (s)		6.0	6.0	8.0	6.0	8.5	8.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		1670	785	101	2216	428	382
v/s Ratio Prot				0.04	c0.26	0.13	
v/s Ratio Perm		c0.33	0.12				c0.21
v/c Ratio		0.67	0.24	0.64	0.42	0.54	0.88
Uniform Delay, d1		20.9	15.9	50.8	10.4	36.4	40.2
Progression Factor		0.67	0.46	0.82	1.26	1.00	1.00
Incremental Delay, d2		1.4	0.5	11.7	0.5	1.4	19.9
Delay (s)		15.5	7.8	53.1	13.7	37.8	60.0
Level of Service		B	A	D	B	D	E
Approach Delay (s)		13.5			16.3	52.6	
Approach LOS		B			B	D	

### Intersection Summary

HCM 2000 Control Delay	22.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	74.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Queues  
3: Rt 199 NB Ramps & US Route 60

Warhill Sports Complex  
9/13/2016



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1265	338	265	654	348	110
v/c Ratio	0.88	0.39	0.92	0.28	0.95	0.27
Control Delay	35.9	7.7	83.1	8.0	79.2	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.9	7.7	83.1	8.0	79.2	8.6
Queue Length 50th (ft)	348	38	186	91	244	0
Queue Length 95th (ft)	#397	m64	#341	118	#423	46
Internal Link Dist (ft)	692			817	473	
Turn Bay Length (ft)			350		525	
Base Capacity (vph)	1442	862	289	2353	370	417
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.39	0.92	0.28	0.94	0.26

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 3: Rt 199 NB Ramps & US Route 60

Warhill Sports Complex

9/13/2016



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations		↔↔	↔	↔	↔↔	↔	↔
Traffic Volume (vph)	9	1167	314	246	608	324	102
Future Volume (vph)	9	1167	314	246	608	324	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	8.0	6.0	8.0	8.0
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00
Frt		1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)		3538	1583	1770	3539	1770	1583
Flt Permitted		0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)		3356	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	10	1255	338	265	654	348	110
RTOR Reduction (vph)	0	0	182	0	0	0	87
Lane Group Flow (vph)	0	1265	156	265	654	348	23
Turn Type	Perm	NA	Perm	Prot	NA	Prot	Perm
Protected Phases		2		1	6	4	
Permitted Phases	2		2				4
Actuated Green, G (s)		47.3	47.3	17.9	73.2	22.8	22.8
Effective Green, g (s)		47.3	47.3	17.9	73.2	22.8	22.8
Actuated g/C Ratio		0.43	0.43	0.16	0.67	0.21	0.21
Clearance Time (s)		6.0	6.0	8.0	6.0	8.0	8.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		1443	680	288	2355	366	328
v/s Ratio Prot				c0.15	0.18	c0.20	
v/s Ratio Perm		c0.38	0.10				0.01
v/c Ratio		0.88	0.23	0.92	0.28	0.95	0.07
Uniform Delay, d1		28.7	19.8	45.3	7.6	43.0	35.1
Progression Factor		1.03	2.30	1.00	1.00	1.00	1.00
Incremental Delay, d2		5.7	0.6	32.8	0.3	34.3	0.1
Delay (s)		35.2	46.1	78.2	7.8	77.4	35.2
Level of Service		D	D	E	A	E	D
Approach Delay (s)		37.5			28.1	67.2	
Approach LOS		D			C	E	

### Intersection Summary

HCM 2000 Control Delay	39.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	160	629	38	272	482	41	65	387	92	95	102
v/c Ratio	0.62	0.89	0.05	0.83	0.64	0.06	0.24	0.87	0.49	0.50	0.58
Control Delay	61.1	48.6	0.1	70.4	32.1	0.2	41.7	36.4	55.4	55.6	60.1
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	61.1	48.6	0.1	70.4	32.1	0.2	41.7	36.4	55.4	55.6	60.1
Queue Length 50th (ft)	55	396	0	95	260	0	39	96	63	65	67
Queue Length 95th (ft)	#110	#734	0	#195	449	0	81	221	126	130	133
Internal Link Dist (ft)		2559			1277		1985			173	
Turn Bay Length (ft)	400		225	250		200		700	135		135
Base Capacity (vph)	262	720	713	328	765	747	445	578	257	260	242
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.87	0.05	0.83	0.63	0.05	0.15	0.67	0.36	0.37	0.42

#### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.













Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 4: Oppurtunity Way/Retail Entrance & Centerville Road

Warhill Sports Complex

9/13/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	152	598	36	258	458	39	49	12	368	157	21	97
Future Volume (vph)	152	598	36	258	458	39	49	12	368	157	21	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	6.0	6.0	7.5	6.0	6.0		7.5	7.5	6.5	6.5	6.5
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	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	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00	0.95	0.96	1.00
Satd. Flow (prot)	3433	1863	1583	3433	1863	1583		1791	1583	1681	1704	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00	0.95	0.96	1.00
Satd. Flow (perm)	3433	1863	1583	3433	1863	1583		1791	1583	1681	1704	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	160	629	38	272	482	41	52	13	387	165	22	102
RTOR Reduction (vph)	0	0	23	0	0	24	0	0	209	0	0	0
Lane Group Flow (vph)	160	629	15	272	482	17	0	65	178	92	95	102
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases			6			2			4			3
Actuated Green, G (s)	8.0	40.4	40.4	10.1	43.0	43.0		15.8	15.8	11.8	11.8	11.8
Effective Green, g (s)	8.0	40.4	40.4	10.1	43.0	43.0		15.8	15.8	11.8	11.8	11.8
Actuated g/C Ratio	0.08	0.38	0.38	0.10	0.41	0.41		0.15	0.15	0.11	0.11	0.11
Clearance Time (s)	7.0	6.0	6.0	7.5	6.0	6.0		7.5	7.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	260	712	605	328	758	644		267	236	187	190	176
v/s Ratio Prot	0.05	c0.34		c0.08	c0.26			0.04		0.05	0.06	
v/s Ratio Perm			0.01			0.01			c0.11			c0.06
v/c Ratio	0.62	0.88	0.02	0.83	0.64	0.03		0.24	0.75	0.49	0.50	0.58
Uniform Delay, d1	47.3	30.4	20.3	46.9	25.0	18.8		39.6	43.0	44.1	44.1	44.5
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	4.3	12.5	0.0	15.7	1.8	0.0		0.5	12.8	2.0	2.1	4.6
Delay (s)	51.6	42.9	20.3	62.7	26.8	18.8		40.1	55.8	46.1	46.2	49.1
Level of Service	D	D	C	E	C	B		D	E	D	D	D
Approach Delay (s)		43.5			38.6			53.5			47.2	
Approach LOS		D			D			D			D	





















### Intersection Summary

HCM 2000 Control Delay	44.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	105.6	Sum of lost time (s)	27.5
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

# HCM Unsignalized Intersection Capacity Analysis 5: Longhill Gate Road/Warhill Trail & Longhill Road

Warhill Sports Complex  
9/13/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	128	523	6	14	440	345	3	1	22	217	7	168
Future Volume (Veh/h)	128	523	6	14	440	345	3	1	22	217	7	168
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)	139	568	7	15	478	375	3	1	24	236	8	183
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)	9											
Median type	None			None								
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	853			575			1453	1732	572	1378	1361	478
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	853			575			1453	1732	572	1378	1361	478
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 %	82			98			95	99	95	0	93	69
cM capacity (veh/h)	786			998			61	71	520	98	120	587
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1					
Volume Total	139	575	15	478	375	28	427					
Volume Left	139	0	15	0	0	3	236					
Volume Right	0	7	0	0	375	24	183					
cSH	786	1700	998	1700	1700	255	157					
Volume to Capacity	0.18	0.34	0.02	0.28	0.22	0.11	2.72					
Queue Length 95th (ft)	16	0	1	0	0	9	949					
Control Delay (s)	10.6	0.0	8.7	0.0	0.0	20.8	835.5					
Lane LOS	B		A			C	F					
Approach Delay (s)	2.1		0.1			20.8	835.5					
Approach LOS						C	F					
Intersection Summary												
Average Delay				176.2								
Intersection Capacity Utilization				60.3%	ICU Level of Service				B			
Analysis Period (min)				15								

Intersection: 1: Centerville Road/Retail Entrance & US Route 60

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	T	R	L	LT	R
Maximum Queue (ft)	162	363	418	262	184	200	261	267	182	213	335	290
Average Queue (ft)	15	218	259	50	90	109	132	144	23	117	145	163
95th Queue (ft)	80	331	376	155	159	180	225	240	98	188	282	274
Link Distance (ft)		1396	1396				650	650			1225	1225
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	225			425	350	350			175	225		
Storage Blk Time (%)		8	0	0				4	0	0	0	
Queuing Penalty (veh)		1	1	0				2	0	0	1	

Intersection: 1: Centerville Road/Retail Entrance & US Route 60

Movement	SB	SB
Directions Served	LT	R
Maximum Queue (ft)	137	54
Average Queue (ft)	60	9
95th Queue (ft)	118	34
Link Distance (ft)	192	
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		100
Storage Blk Time (%)	4	
Queuing Penalty (veh)	1	

Intersection: 2: Rt 199 SB Ramps & US Route 60

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	UT	T	R	L	T	T	L	R
Maximum Queue (ft)	388	409	188	142	244	230	174	454
Average Queue (ft)	225	245	81	54	105	100	134	181
95th Queue (ft)	361	377	145	105	198	197	203	365
Link Distance (ft)	650	650			701	701		625
Upstream Blk Time (%)								0
Queuing Penalty (veh)								0
Storage Bay Dist (ft)			450	175			150	
Storage Blk Time (%)		0		0	1		8	7
Queuing Penalty (veh)		0		0	1		34	16

Intersection: 3: Rt 199 NB Ramps & US Route 60

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	UT	T	R	L	T	T	L	R
Maximum Queue (ft)	489	507	218	327	327	211	427	104
Average Queue (ft)	236	253	63	194	99	56	231	41
95th Queue (ft)	420	428	122	313	246	177	381	84
Link Distance (ft)	701	701	701		860	860		495
Upstream Blk Time (%)	0	0					1	
Queuing Penalty (veh)	0	0					0	
Storage Bay Dist (ft)				350			525	
Storage Blk Time (%)				2	0		1	
Queuing Penalty (veh)				6	0		1	

Intersection: 4: Oppurtunity Way/Retail Entrance & Centerville Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	L	T	R	L	L	T	R	LT	R	L	LT
Maximum Queue (ft)	110	425	851	250	167	194	370	225	108	231	124	176
Average Queue (ft)	45	161	465	52	79	108	204	39	39	110	47	74
95th Queue (ft)	91	414	917	196	145	171	334	149	86	195	97	141
Link Distance (ft)			2587			1225	1225		2008			194
Upstream Blk Time (%)												0
Queuing Penalty (veh)												0
Storage Bay Dist (ft)	400	400		225	250			200		700	135	
Storage Blk Time (%)		0	35	0			10	0			0	1
Queuing Penalty (veh)		0	65	0			4	0			0	3

Intersection: 4: Oppurtunity Way/Retail Entrance & Centerville Road

Movement	SB
Directions Served	R
Maximum Queue (ft)	154
Average Queue (ft)	67
95th Queue (ft)	131
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	135
Storage Blk Time (%)	1
Queuing Penalty (veh)	1

Intersection: 5: Longhill Gate Road/Warhill Trail & Longhill Road

Movement	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	L	T	R	LTR	LT	R
Maximum Queue (ft)	96	28	2	33	45	1473	240
Average Queue (ft)	42	5	0	6	15	1007	199
95th Queue (ft)	80	20	2	25	37	1830	336
Link Distance (ft)			1476		644	1477	
Upstream Blk Time (%)						33	
Queuing Penalty (veh)						0	
Storage Bay Dist (ft)	200	200		200			215
Storage Blk Time (%)						83	0
Queuing Penalty (veh)						139	1

Network Summary

Network wide Queuing Penalty: 277

**Appendix F**  
**SYNCHRO Analysis of 2030**  
**Total Future Conditions**

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## Queues

## Warhill Sports Complex

## 1: Centerville Road/Retail Entrance &amp; US Route 60

9/13/2016



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	44	848	673	630	908	41	254	258	387	85	36
v/c Ratio	0.41	0.82	0.43	0.90	0.53	0.05	0.87	0.87	0.66	0.73	0.10
Control Delay	61.4	44.1	0.8	51.1	24.3	0.1	72.8	73.3	11.1	84.0	0.6
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	61.4	44.1	0.8	51.1	24.3	0.1	72.8	73.3	11.1	84.0	0.6
Queue Length 50th (ft)	30	297	0	185	292	0	184	187	8	60	0
Queue Length 95th (ft)	68	#384	0	#312	389	m0	#327	#331	100	#143	0
Internal Link Dist (ft)		1392			654			1277		188	
Turn Bay Length (ft)	225		425	350		175	225				100
Base Capacity (vph)	112	1041	1583	717	1719	873	305	308	593	117	357
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.81	0.43	0.88	0.53	0.05	0.83	0.84	0.65	0.73	0.10

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.


























# HCM Signalized Intersection Capacity Analysis

## 1: Centerville Road/Retail Entrance & US Route 60







Warhill Sports Complex

9/13/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	763	606	567	817	37	423	38	348	39	38	32
Future Volume (vph)	40	763	606	567	817	37	423	38	348	39	38	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.5	6.0	4.0	8.0	6.0	6.0	8.0	8.0	8.0		7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.95	0.95	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	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.98	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	1681	1699	1583		1817	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.98	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	1681	1699	1583		1817	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)	44	848	673	630	908	41	470	42	387	43	42	36
RTOR Reduction (vph)	0	0	0	0	0	22	0	0	308	0	0	34
Lane Group Flow (vph)	44	848	673	630	908	19	254	258	79	0	85	2
Turn Type	Prot	NA	Free	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		4	4		3	3	
Permitted Phases			Free			6			4			3
Actuated Green, G (s)	4.2	32.3	110.0	22.5	50.1	50.1	19.1	19.1	19.1		7.1	7.1
Effective Green, g (s)	4.2	32.3	110.0	22.5	50.1	50.1	19.1	19.1	19.1		7.1	7.1
Actuated g/C Ratio	0.04	0.29	1.00	0.20	0.46	0.46	0.17	0.17	0.17		0.06	0.06
Clearance Time (s)	8.5	6.0		8.0	6.0	6.0	8.0	8.0	8.0		7.0	7.0
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)	67	1039	1583	702	1611	720	291	295	274		117	102
v/s Ratio Prot	0.02	c0.24		c0.18	0.26		0.15	c0.15			0.05	
v/s Ratio Perm			c0.43			0.01			0.05			0.00
v/c Ratio	0.66	0.82	0.43	0.90	0.56	0.03	0.87	0.87	0.29		0.73	0.02
Uniform Delay, d1	52.2	36.1	0.0	42.6	21.9	16.5	44.3	44.3	39.5		50.5	48.2
Progression Factor	1.00	1.00	1.00	0.85	1.09	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	20.8	7.1	0.8	11.9	1.2	0.1	23.8	23.7	0.6		20.0	0.1
Delay (s)	73.0	43.2	0.8	48.2	25.1	16.6	68.0	68.0	40.1		70.5	48.3
Level of Service	E	D	A	D	C	B	E	E	D		E	D
Approach Delay (s)		25.8			34.1			56.0			63.9	
Approach LOS		C			C			E			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			36.6				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			110.0				Sum of lost time (s)			29.5		
Intersection Capacity Utilization			75.0%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

Queues  
2: Rt 199 SB Ramps & US Route 60

Warhill Sports Complex  
9/13/2016

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	881	419	41	1313	333	283
v/c Ratio	0.50	0.41	0.36	0.59	0.79	0.56
Control Delay	21.6	10.7	48.6	8.6	52.5	17.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.6	10.7	48.6	8.6	52.5	17.8
Queue Length 50th (ft)	307	176	26	117	222	66
Queue Length 95th (ft)	391	m220	m54	306	287	130
Internal Link Dist (ft)	654			692	612	
Turn Bay Length (ft)		450	175		150	
Base Capacity (vph)	1750	1022	114	2228	555	613
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.41	0.36	0.59	0.60	0.46

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 2: Rt 199 SB Ramps & US Route 60

Warhill Sports Complex

9/13/2016



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations		↕↕	↗	↖	↕↕	↗	↖
Traffic Volume (vph)	1	774	369	36	1155	293	249
Future Volume (vph)	1	774	369	36	1155	293	249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	8.0	6.0	8.5	8.5
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00
Frt		1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)		3539	1583	1770	3539	1770	1583
Flt Permitted		0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)		3377	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	1	880	419	41	1312	333	283
RTOR Reduction (vph)	0	0	208	0	0	0	130
Lane Group Flow (vph)	0	881	211	41	1313	333	153
Turn Type	Perm	NA	Perm	Prot	NA	Prot	Perm
Protected Phases		2		1	6	4	
Permitted Phases	2		2				4
Actuated Green, G (s)		55.3	55.3	6.0	69.3	26.2	26.2
Effective Green, g (s)		55.3	55.3	6.0	69.3	26.2	26.2
Actuated g/C Ratio		0.50	0.50	0.05	0.63	0.24	0.24
Clearance Time (s)		6.0	6.0	8.0	6.0	8.5	8.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		1697	795	96	2229	421	377
v/s Ratio Prot				0.02	c0.37	c0.19	
v/s Ratio Perm		0.26	0.13				0.10
v/c Ratio		0.52	0.26	0.43	0.59	0.79	0.41
Uniform Delay, d1		18.4	15.7	50.3	12.0	39.3	35.3
Progression Factor		1.06	4.96	0.83	0.58	1.00	1.00
Incremental Delay, d2		0.7	0.5	2.6	1.0	9.8	0.7
Delay (s)		20.3	78.3	44.3	7.9	49.1	36.1
Level of Service		C	E	D	A	D	D
Approach Delay (s)		39.0			9.0	43.1	
Approach LOS		D			A	D	

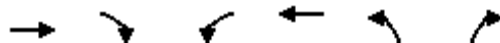
### Intersection Summary

HCM 2000 Control Delay	27.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Queues  
3: Rt 199 NB Ramps & US Route 60

Warhill Sports Complex  
9/13/2016



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	854	239	190	767	494	94
v/c Ratio	0.71	0.33	0.82	0.38	0.90	0.17
Control Delay	41.3	13.6	74.4	14.6	57.3	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.3	13.6	74.4	14.6	57.3	6.0
Queue Length 50th (ft)	308	91	130	158	322	0
Queue Length 95th (ft)	404	150	#258	206	#494	36
Internal Link Dist (ft)	692			817	473	
Turn Bay Length (ft)			350		525	
Base Capacity (vph)	1216	725	237	1994	595	594
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.33	0.80	0.38	0.83	0.16

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 3: Rt 199 NB Ramps & US Route 60

Warhill Sports Complex

9/13/2016



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations		↔↔	↔	↔	↔↔	↔	↔
Traffic Volume (vph)	5	790	222	177	713	459	87
Future Volume (vph)	5	790	222	177	713	459	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	8.0	6.0	8.0	8.0
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00
Frt		1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)		3538	1583	1770	3539	1770	1583
Flt Permitted		0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)		3364	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	5	849	239	190	767	494	94
RTOR Reduction (vph)	0	0	153	0	0	0	65
Lane Group Flow (vph)	0	854	86	190	767	494	29
Turn Type	Perm	NA	Perm	Prot	NA	Prot	Perm
Protected Phases		2		1	6	4	
Permitted Phases	2		2				4
Actuated Green, G (s)		39.6	39.6	14.4	62.0	34.0	34.0
Effective Green, g (s)		39.6	39.6	14.4	62.0	34.0	34.0
Actuated g/C Ratio		0.36	0.36	0.13	0.56	0.31	0.31
Clearance Time (s)		6.0	6.0	8.0	6.0	8.0	8.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		1211	569	231	1994	547	489
v/s Ratio Prot				c0.11	0.22	c0.28	
v/s Ratio Perm		c0.25	0.05				0.02
v/c Ratio		0.71	0.15	0.82	0.38	0.90	0.06
Uniform Delay, d1		30.2	23.8	46.6	13.4	36.4	26.7
Progression Factor		1.21	3.60	1.00	1.00	1.00	1.00
Incremental Delay, d2		3.1	0.5	20.5	0.6	18.2	0.1
Delay (s)		39.8	86.3	67.0	13.9	54.6	26.8
Level of Service		D	F	E	B	D	C
Approach Delay (s)		49.9			24.5	50.2	
Approach LOS		D			C	D	

Intersection Summary			
HCM 2000 Control Delay	40.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

## Queues

## Warhill Sports Complex

## 4: Oppurtunity Way/Retail Entrance &amp; Centerville Road

9/13/2016



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	199	658	79	606	864	51	50	319	113	115	124
v/c Ratio	0.84	0.89	0.11	0.87	0.86	0.06	0.36	0.78	0.62	0.62	0.72
Control Delay	90.0	52.7	0.3	65.3	37.8	0.1	65.2	20.4	72.3	72.3	80.8
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	90.0	52.7	0.3	65.3	37.8	0.1	65.2	20.4	72.3	72.3	80.8
Queue Length 50th (ft)	89	517	0	264	617	0	42	6	98	100	104
Queue Length 95th (ft)	#162	#760	0	#374	#893	0	80	82	169	171	#187
Internal Link Dist (ft)		2559			1277		1985			173	
Turn Bay Length (ft)	400		225	250		200		700	135		135
Base Capacity (vph)	237	772	764	698	1029	933	359	565	206	209	194
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.85	0.10	0.87	0.84	0.05	0.14	0.56	0.55	0.55	0.64

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
























Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 4: Oppurtunity Way/Retail Entrance & Centerville Road





















Warhill Sports Complex

9/13/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	566	68	521	743	44	30	13	274	173	23	107
Future Volume (vph)	171	566	68	521	743	44	30	13	274	173	23	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	6.0	6.0	7.5	6.0	6.0		7.5	7.5	6.5	6.5	6.5
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	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	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00	0.95	0.96	1.00
Satd. Flow (prot)	3433	1863	1583	3433	1863	1583		1800	1583	1681	1704	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00	0.95	0.96	1.00
Satd. Flow (perm)	3433	1863	1583	3433	1863	1583		1800	1583	1681	1704	1583
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	199	658	79	606	864	51	35	15	319	201	27	124
RTOR Reduction (vph)	0	0	48	0	0	24	0	0	288	0	0	0
Lane Group Flow (vph)	199	658	31	606	864	27	0	50	31	113	115	124
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases			6			2			4			3
Actuated Green, G (s)	9.0	52.1	52.1	26.6	70.2	70.2		10.2	10.2	14.3	14.3	14.3
Effective Green, g (s)	9.0	52.1	52.1	26.6	70.2	70.2		10.2	10.2	14.3	14.3	14.3
Actuated g/C Ratio	0.07	0.40	0.40	0.20	0.54	0.54		0.08	0.08	0.11	0.11	0.11
Clearance Time (s)	7.0	6.0	6.0	7.5	6.0	6.0		7.5	7.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	236	742	631	698	1000	850		140	123	183	186	173
v/s Ratio Prot	0.06	0.35		c0.18	c0.46			c0.03		0.07	0.07	
v/s Ratio Perm			0.02			0.02			0.02			c0.08
v/c Ratio	0.84	0.89	0.05	0.87	0.86	0.03		0.36	0.25	0.62	0.62	0.72
Uniform Delay, d1	60.2	36.6	24.1	50.4	26.1	14.2		57.1	56.7	55.6	55.6	56.2
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	23.0	12.4	0.0	11.1	7.9	0.0		1.6	1.1	6.1	6.0	13.2
Delay (s)	83.2	48.9	24.1	61.5	34.0	14.3		58.7	57.8	61.7	61.6	69.5
Level of Service	F	D	C	E	C	B		E	E	E	E	E
Approach Delay (s)		54.1			44.3			57.9			64.4	
Approach LOS		D			D			E			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			51.0				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.84									
Actuated Cycle Length (s)			130.7				Sum of lost time (s)			27.5		
Intersection Capacity Utilization			73.4%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

# HCM Unsignalized Intersection Capacity Analysis 5: Longhill Gate Road/Warhill Trail & Longhill Road

Warhill Sports Complex  
9/13/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	188	566	16	29	546	324	7	0	24	138	2	140
Future Volume (Veh/h)	188	566	16	29	546	324	7	0	24	138	2	140
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	221	666	19	34	642	381	8	0	28	162	2	165
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)	9											
Median type	None			None								
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1023			685			1911	2208	676	1846	1837	642
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1023			685			1911	2208	676	1846	1837	642
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 %	67			96			66	100	94	0	96	65
cM capacity (veh/h)	679			908			24	29	454	39	49	474
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1					
Volume Total	221	685	34	642	381	36	329					
Volume Left	221	0	34	0	0	8	162					
Volume Right	0	19	0	0	381	28	165					
cSH	679	1700	908	1700	1700	90	73					
Volume to Capacity	0.33	0.40	0.04	0.38	0.22	0.40	4.48					
Queue Length 95th (ft)	35	0	3	0	0	40	Err					
Control Delay (s)	12.8	0.0	9.1	0.0	0.0	69.0	Err					
Lane LOS	B		A			F	F					
Approach Delay (s)	3.1		0.3			69.0	Err					
Approach LOS						F	F					
Intersection Summary												
Average Delay	1415.5											
Intersection Capacity Utilization	63.6%			ICU Level of Service				B				
Analysis Period (min)	15											



Intersection: 1: Centerville Road/Retail Entrance & US Route 60

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	T	R	L	LT	R
Maximum Queue (ft)	194	534	728	398	309	315	324	319	199	240	379	228
Average Queue (ft)	34	214	277	196	171	184	170	183	33	120	146	97
95th Queue (ft)	119	454	568	352	272	283	271	278	126	205	292	192
Link Distance (ft)		1396	1396				650	650			1225	1225
Upstream Blk Time (%)		0	0								0	
Queuing Penalty (veh)		0	0								0	
Storage Bay Dist (ft)	225			425	350	350			175	225		
Storage Blk Time (%)		5	1	0	0	0	0	9	0	0	1	
Queuing Penalty (veh)		2	9	0	0	1	0	3	0	1	2	

Intersection: 1: Centerville Road/Retail Entrance & US Route 60

Movement	SB	SB
Directions Served	LT	R
Maximum Queue (ft)	142	98
Average Queue (ft)	55	16
95th Queue (ft)	113	52
Link Distance (ft)	192	
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		100
Storage Blk Time (%)	3	0
Queuing Penalty (veh)	1	0

Intersection: 2: Rt 199 SB Ramps & US Route 60

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	UT	T	R	L	T	T	L	R
Maximum Queue (ft)	288	292	143	138	333	295	174	458
Average Queue (ft)	111	133	46	37	143	111	150	169
95th Queue (ft)	258	274	100	100	272	225	199	383
Link Distance (ft)	650	650			701	701		625
Upstream Blk Time (%)								0
Queuing Penalty (veh)								0
Storage Bay Dist (ft)			450	175			150	
Storage Blk Time (%)				0	4		17	0
Queuing Penalty (veh)				0	2		44	1

Intersection: 3: Rt 199 NB Ramps & US Route 60

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	UT	T	R	L	T	T	L	R
Maximum Queue (ft)	357	351	142	263	308	228	475	96
Average Queue (ft)	190	205	58	126	145	82	265	32
95th Queue (ft)	332	338	118	210	254	178	415	74
Link Distance (ft)	701	701	701		860	860		495
Upstream Blk Time (%)							0	
Queuing Penalty (veh)							0	
Storage Bay Dist (ft)				350			525	
Storage Blk Time (%)					0		0	
Queuing Penalty (veh)					0		0	

Intersection: 4: Oppurtunity Way/Retail Entrance & Centerville Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	L	T	R	L	L	T	R	LT	R	L	LT
Maximum Queue (ft)	146	424	741	250	274	456	670	225	98	194	155	207
Average Queue (ft)	62	136	333	70	172	206	311	35	34	72	61	97
95th Queue (ft)	127	329	620	223	269	339	577	147	79	138	123	184
Link Distance (ft)			2587			1225	1225		2008			194
Upstream Blk Time (%)												2
Queuing Penalty (veh)												0
Storage Bay Dist (ft)	400	400		225	250			200		700	135	
Storage Blk Time (%)		0	21	0	1	3	19	0			0	4
Queuing Penalty (veh)		0	51	0	2	10	9	0			1	9

Intersection: 4: Oppurtunity Way/Retail Entrance & Centerville Road

Movement	SB
Directions Served	R
Maximum Queue (ft)	158
Average Queue (ft)	87
95th Queue (ft)	158
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	135
Storage Blk Time (%)	3
Queuing Penalty (veh)	6

Intersection: 5: Longhill Gate Road/Warhill Trail & Longhill Road

Movement	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	TR	L	T	R	LTR	LT	R
Maximum Queue (ft)	151	2	31	4	53	80	1452	240
Average Queue (ft)	61	0	9	0	12	21	1027	177
95th Queue (ft)	113	2	28	3	39	61	1830	342
Link Distance (ft)		1287		1476		644	1477	
Upstream Blk Time (%)							40	
Queuing Penalty (veh)							0	
Storage Bay Dist (ft)	200		200		200			215
Storage Blk Time (%)	0						87	0
Queuing Penalty (veh)	0						122	1

Network Summary

Network wide Queuing Penalty: 277

## Queues

## Warhill Sports Complex

9/13/2016

## 1: Centerville Road/Retail Entrance &amp; US Route 60



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	19	891	421	486	786	44	265	269	685	87	21
v/c Ratio	0.22	0.99	0.27	1.04	0.54	0.06	0.54	0.54	1.06	0.89	0.06
Control Delay	56.6	69.1	0.4	97.4	20.0	0.1	37.8	37.8	76.4	117.0	0.3
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	56.6	69.1	0.4	97.4	20.0	0.1	37.8	37.8	76.4	117.0	0.3
Queue Length 50th (ft)	13	330	0	~171	113	0	165	168	~391	62	0
Queue Length 95th (ft)	38	#468	0	#288	271	m0	254	258	#621	#160	0
Internal Link Dist (ft)		1392			654			1277		188	
Turn Bay Length (ft)	225		425	350		175	225				100
Base Capacity (vph)	86	900	1583	468	1461	772	489	494	647	98	344
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.99	0.27	1.04	0.54	0.06	0.54	0.54	1.06	0.89	0.06

## Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.
























m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 1: Centerville Road/Retail Entrance & US Route 60

Warhill Sports Complex

9/13/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	864	408	471	762	43	467	51	664	49	35	20
Future Volume (vph)	18	864	408	471	762	43	467	51	664	49	35	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.5	6.0	4.0	8.0	6.0	6.0	8.0	8.0	8.0		7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.95	0.95	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	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.97	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	1681	1701	1583		1810	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.97	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	1681	1701	1583		1810	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)	19	891	421	486	786	44	481	53	685	51	36	21
RTOR Reduction (vph)	0	0	0	0	0	28	0	0	186	0	0	20
Lane Group Flow (vph)	19	891	421	486	786	16	265	269	499	0	87	1
Turn Type	Prot	NA	Free	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		4	4		3	3	
Permitted Phases			Free			6			4			3
Actuated Green, G (s)	2.2	28.0	110.0	15.0	40.3	40.3	32.0	32.0	32.0		6.0	6.0
Effective Green, g (s)	2.2	28.0	110.0	15.0	40.3	40.3	32.0	32.0	32.0		6.0	6.0
Actuated g/C Ratio	0.02	0.25	1.00	0.14	0.37	0.37	0.29	0.29	0.29		0.05	0.05
Clearance Time (s)	8.5	6.0		8.0	6.0	6.0	8.0	8.0	8.0		7.0	7.0
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)	35	900	1583	468	1296	579	489	494	460		98	86
v/s Ratio Prot	0.01	c0.25		c0.14	0.22		0.16	0.16			c0.05	
v/s Ratio Perm			0.27			0.01			c0.31			0.00
v/c Ratio	0.54	0.99	0.27	1.04	0.61	0.03	0.54	0.54	1.08		0.89	0.01
Uniform Delay, d1	53.4	40.9	0.0	47.5	28.4	22.3	32.8	32.9	39.0		51.7	49.2
Progression Factor	1.00	1.00	1.00	1.05	0.73	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	16.1	27.7	0.4	48.9	1.8	0.1	1.2	1.2	66.4		55.8	0.1
Delay (s)	69.5	68.5	0.4	98.6	22.4	22.4	34.1	34.1	105.4		107.4	49.3
Level of Service	E	E	A	F	C	C	C	C	F		F	D
Approach Delay (s)		47.0			50.5			74.2			96.1	
Approach LOS		D			D			E			F	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			57.8			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			1.03									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)			29.5			
Intersection Capacity Utilization			87.5%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

Queues  
2: Rt 199 SB Ramps & US Route 60

Warhill Sports Complex  
9/13/2016



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1200	404	65	1027	359	464
v/c Ratio	0.71	0.41	0.60	0.47	0.79	0.91
Control Delay	16.2	1.6	62.0	15.9	51.1	49.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.2	1.6	62.0	15.9	51.1	49.0
Queue Length 50th (ft)	188	2	41	293	228	220
Queue Length 95th (ft)	m186	m1	m#85	m340	330	#387
Internal Link Dist (ft)	654			692	612	
Turn Bay Length (ft)		450	175		150	
Base Capacity (vph)	1694	997	109	2166	522	569
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.41	0.60	0.47	0.69	0.82

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 2: Rt 199 SB Ramps & US Route 60

Warhill Sports Complex

9/13/2016



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations		↑↑	↑	↑	↑↑	↑	↑
Traffic Volume (vph)	5	1123	380	61	965	337	436
Future Volume (vph)	5	1123	380	61	965	337	436
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	8.0	6.0	8.5	8.5
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00
Frt		1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)		3538	1583	1770	3539	1770	1583
Flt Permitted		0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)		3365	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	5	1195	404	65	1027	359	464
RTOR Reduction (vph)	0	0	207	0	0	0	108
Lane Group Flow (vph)	0	1200	197	65	1027	359	356
Turn Type	Perm	NA	Perm	Prot	NA	Prot	Perm
Protected Phases		2		1	6	4	
Permitted Phases	2		2				4
Actuated Green, G (s)		53.7	53.7	5.6	67.3	28.2	28.2
Effective Green, g (s)		53.7	53.7	5.6	67.3	28.2	28.2
Actuated g/C Ratio		0.49	0.49	0.05	0.61	0.26	0.26
Clearance Time (s)		6.0	6.0	8.0	6.0	8.5	8.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		1642	772	90	2165	453	405
v/s Ratio Prot				0.04	c0.29	0.20	
v/s Ratio Perm		c0.36	0.12				c0.22
v/c Ratio		0.73	0.26	0.72	0.47	0.79	0.88
Uniform Delay, d1		22.4	16.5	51.4	11.7	38.2	39.3
Progression Factor		0.68	0.77	0.82	1.22	1.00	1.00
Incremental Delay, d2		0.3	0.1	21.6	0.6	9.2	19.0
Delay (s)		15.5	12.7	63.5	14.9	47.4	58.3
Level of Service		B	B	E	B	D	E
Approach Delay (s)		14.8			17.8	53.5	
Approach LOS		B			B	D	
<b>Intersection Summary</b>							
HCM 2000 Control Delay		24.8		HCM 2000 Level of Service		C	
HCM 2000 Volume to Capacity ratio		0.79					
Actuated Cycle Length (s)		110.0		Sum of lost time (s)		22.5	
Intersection Capacity Utilization		81.4%		ICU Level of Service		D	
Analysis Period (min)		15					
c Critical Lane Group							

Queues  
3: Rt 199 NB Ramps & US Route 60

Warhill Sports Complex  
9/13/2016



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1333	455	265	727	367	110
v/c Ratio	0.89	0.48	1.03	0.31	0.99	0.26
Control Delay	36.0	7.4	111.3	8.1	90.5	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.0	7.4	111.3	8.1	90.5	8.8
Queue Length 50th (ft)	311	46	~201	100	~280	0
Queue Length 95th (ft)	412	m80	#364	128	#464	47
Internal Link Dist (ft)	692			817	473	
Turn Bay Length (ft)			350		525	
Base Capacity (vph)	1525	953	257	2380	369	416
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.48	1.03	0.31	0.99	0.26

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.



# HCM Signalized Intersection Capacity Analysis

## 3: Rt 199 NB Ramps & US Route 60

Warhill Sports Complex

9/13/2016



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations		↕↕	↗	↖	↕↕	↗	↖
Traffic Volume (vph)	9	1230	423	246	676	341	102
Future Volume (vph)	9	1230	423	246	676	341	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	8.0	6.0	8.0	8.0
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00
Frt		1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)		3538	1583	1770	3539	1770	1583
Flt Permitted		0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)		3355	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	10	1323	455	265	727	367	110
RTOR Reduction (vph)	0	0	237	0	0	0	87
Lane Group Flow (vph)	0	1333	218	265	727	367	23
Turn Type	Perm	NA	Perm	Prot	NA	Prot	Perm
Protected Phases		2		1	6	4	
Permitted Phases	2		2				4
Actuated Green, G (s)		49.1	49.1	16.0	73.1	22.9	22.9
Effective Green, g (s)		49.1	49.1	16.0	73.1	22.9	22.9
Actuated g/C Ratio		0.45	0.45	0.15	0.66	0.21	0.21
Clearance Time (s)		6.0	6.0	8.0	6.0	8.0	8.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		1497	706	257	2351	368	329
v/s Ratio Prot				c0.15	0.21	c0.21	
v/s Ratio Perm		c0.40	0.14				0.01
v/c Ratio		0.89	0.31	1.03	0.31	1.00	0.07
Uniform Delay, d1		28.0	19.6	47.0	7.8	43.5	35.0
Progression Factor		1.05	2.49	1.00	1.00	1.00	1.00
Incremental Delay, d2		6.2	0.8	64.4	0.3	45.9	0.1
Delay (s)		35.6	49.4	111.4	8.1	89.4	35.1
Level of Service		D	D	F	A	F	D
Approach Delay (s)		39.1			35.7	76.9	
Approach LOS		D			D	E	

### Intersection Summary

HCM 2000 Control Delay	43.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	88.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	160	629	38	522	482	41	65	618	92	95	102
v/c Ratio	0.62	1.00	0.06	0.98	0.62	0.06	0.16	1.05	0.60	0.61	0.70
Control Delay	77.4	85.7	0.2	97.2	38.5	0.2	47.3	78.1	80.5	81.0	90.2
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	77.4	85.7	0.2	97.2	38.5	0.2	47.3	78.1	80.5	81.0	90.2
Queue Length 50th (ft)	78	~628	0	264	370	0	51	~419	91	93	97
Queue Length 95th (ft)	119	#893	0	#391	502	0	96	#667	156	162	164
Internal Link Dist (ft)		2559			1277		1985			173	
Turn Bay Length (ft)	400		225	250		200		700	135		135
Base Capacity (vph)	279	626	654	530	780	739	414	591	182	184	171
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	1.00	0.06	0.98	0.62	0.06	0.16	1.05	0.51	0.52	0.60

## Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
























Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 4: Oppurtunity Way/Retail Entrance & Centerville Road

Warhill Sports Complex

9/13/2016





















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	152	598	36	496	458	39	49	12	587	157	21	97
Future Volume (vph)	152	598	36	496	458	39	49	12	587	157	21	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	6.0	6.0	7.5	6.0	6.0		7.5	7.5	6.5	6.5	6.5
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	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	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00	0.95	0.96	1.00
Satd. Flow (prot)	3433	1863	1583	3433	1863	1583		1791	1583	1681	1704	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00	0.95	0.96	1.00
Satd. Flow (perm)	3433	1863	1583	3433	1863	1583		1791	1583	1681	1704	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	160	629	38	522	482	41	52	13	618	165	22	102
RTOR Reduction (vph)	0	0	25	0	0	24	0	0	225	0	0	0
Lane Group Flow (vph)	160	629	13	522	482	17	0	65	393	92	95	102
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases			6			2			4			3
Actuated Green, G (s)	11.1	49.6	49.6	22.8	61.8	61.8		34.1	34.1	13.6	13.6	13.6
Effective Green, g (s)	11.1	49.6	49.6	22.8	61.8	61.8		34.1	34.1	13.6	13.6	13.6
Actuated g/C Ratio	0.08	0.34	0.34	0.15	0.42	0.42		0.23	0.23	0.09	0.09	0.09
Clearance Time (s)	7.0	6.0	6.0	7.5	6.0	6.0		7.5	7.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	258	626	531	530	780	662		413	365	154	157	145
v/s Ratio Prot	0.05	c0.34		c0.15	0.26			0.04		0.05	0.06	
v/s Ratio Perm			0.01			0.01			c0.25			c0.06
v/c Ratio	0.62	1.00	0.02	0.98	0.62	0.03		0.16	1.08	0.60	0.61	0.70
Uniform Delay, d1	66.2	49.0	32.8	62.2	33.6	25.2		45.3	56.7	64.4	64.4	65.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.6	37.2	0.0	34.9	1.5	0.0		0.2	68.8	6.1	6.4	14.4
Delay (s)	70.8	86.2	32.8	97.2	35.1	25.2		45.5	125.6	70.5	70.9	79.4
Level of Service	E	F	C	F	D	C		D	F	E	E	E
Approach Delay (s)		80.7			65.7			118.0			73.8	
Approach LOS		F			E			F			E	
Intersection Summary												
HCM 2000 Control Delay	83.4			HCM 2000 Level of Service			F					
HCM 2000 Volume to Capacity ratio	0.99											
Actuated Cycle Length (s)	147.6			Sum of lost time (s)			27.5					
Intersection Capacity Utilization	89.4%			ICU Level of Service			E					
Analysis Period (min)	15											
c Critical Lane Group												

# HCM Unsignalized Intersection Capacity Analysis

## 5: Longhill Gate Road/Warhill Trail & Longhill Road

Warhill Sports Complex

9/13/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	523	6	14	440	430	3	1	22	217	7	168
Future Volume (Veh/h)	145	523	6	14	440	430	3	1	22	217	7	168
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)	158	568	7	15	478	467	3	1	24	236	8	183
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)	9											
Median type	None			None								
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	945			575			1491	1862	572	1416	1399	478
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	945			575			1491	1862	572	1416	1399	478
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 %	78			98			95	98	95	0	93	69
cM capacity (veh/h)	726			998			55	56	520	89	108	587
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1					
Volume Total	158	575	15	478	467	28	427					
Volume Left	158	0	15	0	0	3	236					
Volume Right	0	7	0	0	467	24	183					
cSH	726	1700	998	1700	1700	236	143					
Volume to Capacity	0.22	0.34	0.02	0.28	0.27	0.12	2.99					
Queue Length 95th (ft)	21	0	1	0	0	10	989					
Control Delay (s)	11.3	0.0	8.7	0.0	0.0	22.3	961.2					
Lane LOS	B		A			C	F					
Approach Delay (s)	2.4		0.1			22.3	961.2					
Approach LOS						C	F					
Intersection Summary												
Average Delay	192.3											
Intersection Capacity Utilization	60.3%			ICU Level of Service				B				
Analysis Period (min)	15											

Intersection: 1: Centerville Road/Retail Entrance & US Route 60

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	T	R	L	LT	R
Maximum Queue (ft)	249	664	756	450	353	361	454	435	112	220	235	482
Average Queue (ft)	32	360	415	180	249	254	196	165	17	116	135	279
95th Queue (ft)	156	664	757	469	386	395	500	404	64	186	207	454
Link Distance (ft)		1396	1396				650	650			1225	1225
Upstream Blk Time (%)							1	0				
Queuing Penalty (veh)							7	1				
Storage Bay Dist (ft)	225			425	350	350			175	225		
Storage Blk Time (%)	0	32	11	0	5	11	0	1	0	0	0	
Queuing Penalty (veh)	0	6	47	1	19	43	1	1	0	0	1	

Intersection: 1: Centerville Road/Retail Entrance & US Route 60

Movement	SB	SB
Directions Served	LT	R
Maximum Queue (ft)	154	79
Average Queue (ft)	69	12
95th Queue (ft)	136	47
Link Distance (ft)	192	
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		100
Storage Blk Time (%)	8	
Queuing Penalty (veh)	2	

Intersection: 2: Rt 199 SB Ramps & US Route 60

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	UT	T	R	L	T	T	L	R
Maximum Queue (ft)	388	405	166	182	332	258	175	617
Average Queue (ft)	225	250	74	65	160	145	161	323
95th Queue (ft)	340	367	127	139	261	235	204	607
Link Distance (ft)	650	650			701	701		625
Upstream Blk Time (%)								3
Queuing Penalty (veh)								0
Storage Bay Dist (ft)			450	175			150	
Storage Blk Time (%)		0		0	4		23	11
Queuing Penalty (veh)		0		0	3		99	37

Intersection: 3: Rt 199 NB Ramps & US Route 60

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	UT	T	R	L	T	T	L	R
Maximum Queue (ft)	478	476	248	345	491	400	448	237
Average Queue (ft)	251	265	94	227	163	101	269	54
95th Queue (ft)	433	440	186	370	463	378	440	182
Link Distance (ft)	701	701	701		860	860		495
Upstream Blk Time (%)					0	0	2	1
Queuing Penalty (veh)					0	0	0	0
Storage Bay Dist (ft)				350			525	
Storage Blk Time (%)				8	0		2	1
Queuing Penalty (veh)				26	0		2	3

Intersection: 4: Oppurtunity Way/Retail Entrance & Centerville Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	L	T	R	L	L	T	R	LT	R	L	LT
Maximum Queue (ft)	143	425	1627	250	275	533	446	225	393	624	153	204
Average Queue (ft)	58	288	1044	61	220	292	242	39	72	354	54	107
95th Queue (ft)	119	568	1961	219	312	508	388	153	329	631	121	187
Link Distance (ft)			2587			1225	1225		2008			194
Upstream Blk Time (%)			3									3
Queuing Penalty (veh)			0									0
Storage Bay Dist (ft)	400	400		225	250			200		700	135	
Storage Blk Time (%)		0	59	0	4	16	16	0	0	1	0	6
Queuing Penalty (veh)		0	110	0	10	39	6	0	0	1	0	10

Intersection: 4: Oppurtunity Way/Retail Entrance & Centerville Road

Movement	SB
Directions Served	R
Maximum Queue (ft)	160
Average Queue (ft)	84
95th Queue (ft)	159
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	135
Storage Blk Time (%)	5
Queuing Penalty (veh)	8

Intersection: 5: Longhill Gate Road/Warhill Trail & Longhill Road

Movement	EB	WB	WB	NB	SB	SB
Directions Served	L	L	R	LTR	LT	R
Maximum Queue (ft)	119	27	52	44	1520	240
Average Queue (ft)	49	5	13	15	1287	215
95th Queue (ft)	94	20	38	38	1849	332
Link Distance (ft)				644	1477	
Upstream Blk Time (%)					64	
Queuing Penalty (veh)					0	
Storage Bay Dist (ft)	200	200	200			215
Storage Blk Time (%)					96	0
Queuing Penalty (veh)					161	1

Network Summary

Network wide Queuing Penalty: 644

**Appendix G**  
**SYNCHRO Analysis of 2036**  
**Background Conditions**

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## Queues

## Warhill Sports Complex

9/13/2016

## 1: Centerville Road/Retail Entrance &amp; US Route 60



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	44	900	669	531	964	41	258	262	344	85	36
v/c Ratio	0.41	0.76	0.42	0.87	0.55	0.05	0.85	0.86	0.62	0.66	0.10
Control Delay	61.4	39.7	0.8	52.1	24.0	0.1	69.2	69.4	10.2	74.6	0.5
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	61.4	39.7	0.8	52.1	24.0	0.1	69.2	69.4	10.2	74.6	0.5
Queue Length 50th (ft)	30	317	0	158	313	0	185	188	6	59	0
Queue Length 95th (ft)	68	#425	0	#266	420	m0	#322	#327	90	#131	0
Internal Link Dist (ft)		1392			654			1277		188	
Turn Bay Length (ft)	225		425	350		175	225				100
Base Capacity (vph)	112	1178	1583	626	1764	891	320	324	571	132	368
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.76	0.42	0.85	0.55	0.05	0.81	0.81	0.60	0.64	0.10

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.
























m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 1: Centerville Road/Retail Entrance & US Route 60







Warhill Sports Complex

9/13/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	810	602	478	868	37	430	38	310	39	38	32
Future Volume (vph)	40	810	602	478	868	37	430	38	310	39	38	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.5	6.0	4.0	8.0	6.0	6.0	8.0	8.0	8.0		7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.95	0.95	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	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.98	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	1681	1698	1583		1817	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.98	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	1681	1698	1583		1817	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)	44	900	669	531	964	41	478	42	344	43	42	36
RTOR Reduction (vph)	0	0	0	0	0	22	0	0	273	0	0	34
Lane Group Flow (vph)	44	900	669	531	964	19	258	262	71	0	85	2
Turn Type	Prot	NA	Free	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		4	4		3	3	
Permitted Phases			Free			6			4			3
Actuated Green, G (s)	4.2	35.3	110.0	19.5	50.1	50.1	19.8	19.8	19.8		6.4	6.4
Effective Green, g (s)	4.2	35.3	110.0	19.5	50.1	50.1	19.8	19.8	19.8		6.4	6.4
Actuated g/C Ratio	0.04	0.32	1.00	0.18	0.46	0.46	0.18	0.18	0.18		0.06	0.06
Clearance Time (s)	8.5	6.0		8.0	6.0	6.0	8.0	8.0	8.0		7.0	7.0
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)	67	1135	1583	608	1611	720	302	305	284		105	92
v/s Ratio Prot	0.02	c0.25		c0.15	0.27		0.15	c0.15			0.05	
v/s Ratio Perm			c0.42			0.01			0.04			0.00
v/c Ratio	0.66	0.79	0.42	0.87	0.60	0.03	0.85	0.86	0.25		0.81	0.02
Uniform Delay, d1	52.2	34.0	0.0	44.0	22.4	16.5	43.7	43.7	38.7		51.2	48.9
Progression Factor	1.00	1.00	1.00	0.87	1.04	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	20.8	5.7	0.8	11.2	1.4	0.1	20.3	20.6	0.5		35.1	0.1
Delay (s)	73.0	39.7	0.8	49.4	24.6	16.6	64.0	64.4	39.2		86.3	49.0
Level of Service	E	D	A	D	C	B	E	E	D		F	D
Approach Delay (s)		24.5			33.0			54.2			75.2	
Approach LOS		C			C			D			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			35.4				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.84									
Actuated Cycle Length (s)			110.0				Sum of lost time (s)			29.5		
Intersection Capacity Utilization			73.9%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

Queues  
2: Rt 199 SB Ramps & US Route 60

Warhill Sports Complex  
9/13/2016

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	875	439	43	1301	307	301
v/c Ratio	0.47	0.41	0.36	0.57	0.78	0.57
Control Delay	20.2	10.8	47.6	8.0	53.4	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.2	10.8	47.6	8.0	53.4	14.6
Queue Length 50th (ft)	306	196	27	115	205	47
Queue Length 95th (ft)	390	248	m55	310	269	114
Internal Link Dist (ft)	654			692	612	
Turn Bay Length (ft)		450	175		150	
Base Capacity (vph)	1875	1074	133	2282	522	622
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.41	0.32	0.57	0.59	0.48

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 2: Rt 199 SB Ramps & US Route 60

Warhill Sports Complex

9/13/2016



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations		↔↔	↔	↔	↔↔	↔	↔
Traffic Volume (vph)	1	769	386	38	1145	270	265
Future Volume (vph)	1	769	386	38	1145	270	265
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	8.0	6.0	8.5	8.5
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00
Frt		1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)		3539	1583	1770	3539	1770	1583
Flt Permitted		0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)		3377	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	1	874	439	43	1301	307	301
RTOR Reduction (vph)	0	0	208	0	0	0	171
Lane Group Flow (vph)	0	875	231	43	1301	307	130
Turn Type	Perm	NA	Perm	Prot	NA	Prot	Perm
Protected Phases		2		1	6	4	
Permitted Phases	2		2				4
Actuated Green, G (s)		57.9	57.9	5.1	71.0	24.5	24.5
Effective Green, g (s)		57.9	57.9	5.1	71.0	24.5	24.5
Actuated g/C Ratio		0.53	0.53	0.05	0.65	0.22	0.22
Clearance Time (s)		6.0	6.0	8.0	6.0	8.5	8.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		1777	833	82	2284	394	352
v/s Ratio Prot				0.02	c0.37	c0.17	
v/s Ratio Perm		0.26	0.15				0.08
v/c Ratio		0.49	0.28	0.52	0.57	0.78	0.37
Uniform Delay, d1		16.7	14.4	51.3	10.9	40.2	36.2
Progression Factor		1.12	5.09	0.83	0.59	1.00	1.00
Incremental Delay, d2		0.7	0.6	5.1	0.9	9.4	0.7
Delay (s)		19.3	74.2	47.8	7.4	49.6	36.9
Level of Service		B	E	D	A	D	D
Approach Delay (s)		37.6			8.6	43.3	
Approach LOS		D			A	D	

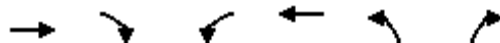
### Intersection Summary

HCM 2000 Control Delay	26.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Queues  
3: Rt 199 NB Ramps & US Route 60

Warhill Sports Complex  
9/13/2016



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	886	218	202	741	509	99
v/c Ratio	0.75	0.31	0.85	0.37	0.92	0.18
Control Delay	45.2	13.5	76.5	14.4	60.5	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.2	13.5	76.5	14.4	60.5	6.1
Queue Length 50th (ft)	325	83	141	152	336	0
Queue Length 95th (ft)	417	131	#267	193	#529	37
Internal Link Dist (ft)	692			817	473	
Turn Bay Length (ft)			350		525	
Base Capacity (vph)	1192	701	246	1989	580	585
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.31	0.82	0.37	0.88	0.17

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 3: Rt 199 NB Ramps & US Route 60

Warhill Sports Complex

9/13/2016



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations		↕↕	↗	↖	↕↕	↗	↖
Traffic Volume (vph)	5	819	203	188	689	473	92
Future Volume (vph)	5	819	203	188	689	473	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	8.0	6.0	8.0	8.0
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00
Frt		1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)		3538	1583	1770	3539	1770	1583
Flt Permitted		0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)		3365	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	5	881	218	202	741	509	99
RTOR Reduction (vph)	0	0	141	0	0	0	68
Lane Group Flow (vph)	0	886	77	202	741	509	31
Turn Type	Perm	NA	Perm	Prot	NA	Prot	Perm
Protected Phases		2		1	6	4	
Permitted Phases	2		2				4
Actuated Green, G (s)		38.8	38.8	14.9	61.7	34.3	34.3
Effective Green, g (s)		38.8	38.8	14.9	61.7	34.3	34.3
Actuated g/C Ratio		0.35	0.35	0.14	0.56	0.31	0.31
Clearance Time (s)		6.0	6.0	8.0	6.0	8.0	8.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		1186	558	239	1985	551	493
v/s Ratio Prot				c0.11	0.21	c0.29	
v/s Ratio Perm		c0.26	0.05				0.02
v/c Ratio		0.75	0.14	0.85	0.37	0.92	0.06
Uniform Delay, d1		31.3	24.2	46.4	13.4	36.6	26.6
Progression Factor		1.28	3.46	1.00	1.00	1.00	1.00
Incremental Delay, d2		3.9	0.5	23.0	0.5	21.3	0.1
Delay (s)		44.1	84.2	69.4	14.0	57.9	26.6
Level of Service		D	F	E	B	E	C
Approach Delay (s)		52.0			25.8	52.8	
Approach LOS		D			C	D	

### Intersection Summary

HCM 2000 Control Delay	42.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	84.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Queues  
4: Oppurtunity Way/Retail Entrance & Centerville Road

Warhill Sports Complex

9/13/2016



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	199	741	49	426	973	51	36	233	113	115	124
v/c Ratio	0.95	0.85	0.06	0.84	0.94	0.05	0.30	0.72	0.62	0.62	0.72
Control Delay	112.1	42.9	0.1	70.9	44.9	0.1	64.7	20.3	71.8	71.6	80.3
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	112.1	42.9	0.1	70.9	44.9	0.1	64.7	20.3	71.8	71.6	80.3
Queue Length 50th (ft)	89	556	0	185	750	0	30	0	97	98	103
Queue Length 95th (ft)	#168	#797	0	#265	#1074	0	63	66	166	168	#180
Internal Link Dist (ft)		2559			1277		1985			173	
Turn Bay Length (ft)	400		225	250		200		700	135		135
Base Capacity (vph)	209	869	837	510	1037	939	359	500	205	208	193
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.85	0.06	0.84	0.94	0.05	0.10	0.47	0.55	0.55	0.64

Intersection Summary


# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 4: Oppurtunity Way/Retail Entrance & Centerville Road

Warhill Sports Complex

9/13/2016





















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↑	↘	↔	↑	↘		↗	↘	↘	↗	↘
Traffic Volume (vph)	171	637	42	366	837	44	18	13	200	173	23	107
Future Volume (vph)	171	637	42	366	837	44	18	13	200	173	23	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	6.0	6.0	7.5	6.0	6.0		7.5	7.5	6.5	6.5	6.5
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	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	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00	0.95	0.96	1.00
Satd. Flow (prot)	3433	1863	1583	3433	1863	1583		1810	1583	1681	1704	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00	0.95	0.96	1.00
Satd. Flow (perm)	3433	1863	1583	3433	1863	1583		1810	1583	1681	1704	1583
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	199	741	49	426	973	51	21	15	233	201	27	124
RTOR Reduction (vph)	0	0	26	0	0	23	0	0	217	0	0	0
Lane Group Flow (vph)	199	741	23	426	973	28	0	36	16	113	115	124
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases			6			2			4			3
Actuated Green, G (s)	8.0	61.3	61.3	19.3	73.1	73.1		8.8	8.8	14.3	14.3	14.3
Effective Green, g (s)	8.0	61.3	61.3	19.3	73.1	73.1		8.8	8.8	14.3	14.3	14.3
Actuated g/C Ratio	0.06	0.47	0.47	0.15	0.56	0.56		0.07	0.07	0.11	0.11	0.11
Clearance Time (s)	7.0	6.0	6.0	7.5	6.0	6.0		7.5	7.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	209	870	739	505	1037	881		121	106	183	185	172
v/s Ratio Prot	0.06	0.40		c0.12	c0.52			c0.02		0.07	0.07	
v/s Ratio Perm			0.01			0.02			0.01			c0.08
v/c Ratio	0.95	0.85	0.03	0.84	0.94	0.03		0.30	0.15	0.62	0.62	0.72
Uniform Delay, d1	61.4	30.9	18.9	54.5	27.0	13.1		58.3	57.7	55.8	55.9	56.5
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	48.5	8.1	0.0	12.2	15.2	0.0		1.4	0.6	6.1	6.3	13.8
Delay (s)	109.9	39.0	18.9	66.7	42.1	13.1		59.6	58.3	61.9	62.2	70.4
Level of Service	F	D	B	E	D	B		E	E	E	E	E
Approach Delay (s)		52.3			48.3			58.5			65.0	
Approach LOS		D			D			E			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			52.4				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			131.2				Sum of lost time (s)			27.5		
Intersection Capacity Utilization			77.2%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												



# HCM Unsignalized Intersection Capacity Analysis 5: Longhill Gate Road/Warhill Trail & Longhill Road

Warhill Sports Complex

9/13/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	637	16	29	580	285	7	0	24	119	2	121
Future Volume (Veh/h)	150	637	16	29	580	285	7	0	24	119	2	121
Sign Control	Free				Free				Stop		Stop	
Grade	0%				0%				0%		0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	176	749	19	34	682	335	8	0	28	140	2	142
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)	9											
Median type	None			None								
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1017			768			1932	2196	758	1879	1870	682
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1017			768			1932	2196	758	1879	1870	682
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 %	74			96			69	100	93	0	96	68
cM capacity (veh/h)	682			846			26	32	407	39	51	450
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1					
Volume Total	176	768	34	682	335	36	284					
Volume Left	176	0	34	0	0	8	140					
Volume Right	0	19	0	0	335	28	142					
cSH	682	1700	846	1700	1700	95	74					
Volume to Capacity	0.26	0.45	0.04	0.40	0.20	0.38	3.86					
Queue Length 95th (ft)	26	0	3	0	0	38	Err					
Control Delay (s)	12.1	0.0	9.4	0.0	0.0	64.5	Err					
Lane LOS	B			A			F	F				
Approach Delay (s)	2.3			0.3			64.5	Err				
Approach LOS							F	F				
Intersection Summary												
Average Delay			1228.7									
Intersection Capacity Utilization			62.2%		ICU Level of Service				B			
Analysis Period (min)			15									

Intersection: 1: Centerville Road/Retail Entrance & US Route 60

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	T	R	L	LT	R
Maximum Queue (ft)	179	403	492	367	317	330	316	330	183	238	272	251
Average Queue (ft)	32	208	269	166	152	178	174	190	33	125	146	89
95th Queue (ft)	115	338	425	316	260	278	272	289	131	205	225	181
Link Distance (ft)		1396	1396				650	650			1225	1225
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	225			425	350	350			175	225		
Storage Blk Time (%)		5	0	0	0	0	0	10	0	0	1	
Queuing Penalty (veh)		2	3	0	0	2	0	4	0	0	2	

Intersection: 1: Centerville Road/Retail Entrance & US Route 60

Movement	SB	SB
Directions Served	LT	R
Maximum Queue (ft)	125	68
Average Queue (ft)	53	12
95th Queue (ft)	102	38
Link Distance (ft)	192	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		100
Storage Blk Time (%)	2	0
Queuing Penalty (veh)	1	0

Intersection: 2: Rt 199 SB Ramps & US Route 60

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	UT	T	R	L	T	T	L	R
Maximum Queue (ft)	287	285	142	126	305	258	174	408
Average Queue (ft)	101	122	48	36	130	100	147	156
95th Queue (ft)	248	265	103	91	249	209	202	346
Link Distance (ft)	650	650			701	701		625
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			450	175			150	
Storage Blk Time (%)					4		16	0
Queuing Penalty (veh)					1		43	1

Intersection: 3: Rt 199 NB Ramps & US Route 60

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	UT	T	R	L	T	T	L	R
Maximum Queue (ft)	364	377	150	246	249	214	472	92
Average Queue (ft)	210	227	60	133	135	83	276	31
95th Queue (ft)	345	352	119	214	226	175	414	66
Link Distance (ft)	701	701	701		860	860		495
Upstream Blk Time (%)							0	
Queuing Penalty (veh)							0	
Storage Bay Dist (ft)				350			525	
Storage Blk Time (%)							0	
Queuing Penalty (veh)							0	

Intersection: 4: Oppurtunity Way/Retail Entrance & Centerville Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	L	T	R	L	L	T	R	LT	R	L	LT
Maximum Queue (ft)	154	396	623	250	224	472	789	225	84	120	146	198
Average Queue (ft)	62	131	302	43	122	167	387	44	26	50	58	95
95th Queue (ft)	125	318	524	171	194	345	723	172	67	94	119	178
Link Distance (ft)			2587			1225	1225		2008			194
Upstream Blk Time (%)												1
Queuing Penalty (veh)												0
Storage Bay Dist (ft)	400	400		225	250			200		700	135	
Storage Blk Time (%)			16	0	0	0	23	0			1	3
Queuing Penalty (veh)			36	0	0	0	10	0			1	7

Intersection: 4: Oppurtunity Way/Retail Entrance & Centerville Road

Movement	SB
Directions Served	R
Maximum Queue (ft)	157
Average Queue (ft)	80
95th Queue (ft)	155
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	135
Storage Blk Time (%)	4
Queuing Penalty (veh)	8

Intersection: 5: Longhill Gate Road/Warhill Trail & Longhill Road

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	L	R	LTR	LT	R
Maximum Queue (ft)	115	2	39	49	56	962	240
Average Queue (ft)	50	0	10	8	19	482	147
95th Queue (ft)	97	2	30	31	46	1043	317
Link Distance (ft)	1287				644	1477	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	200		200	200			215
Storage Blk Time (%)						62	0
Queuing Penalty (veh)						75	0

Network Summary

Network wide Queuing Penalty: 198

## Queues

## Warhill Sports Complex

9/13/2016

## 1: Centerville Road/Retail Entrance &amp; US Route 60



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	19	946	409	295	834	44	262	267	521	87	21
v/c Ratio	0.22	0.84	0.26	0.90	0.54	0.05	0.60	0.60	0.95	0.78	0.08
Control Delay	56.6	43.3	0.4	83.8	18.8	0.1	41.6	41.7	54.4	92.9	0.6
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	56.6	43.3	0.4	83.8	18.8	0.1	41.6	41.7	54.4	92.9	0.6
Queue Length 50th (ft)	13	325	0	101	91	0	168	171	248	62	0
Queue Length 95th (ft)	38	408	0	#188	367	m1	258	264	#460	#160	0
Internal Link Dist (ft)		1392			654			1277		188	
Turn Bay Length (ft)	225		425	350		175	225				100
Base Capacity (vph)	86	1133	1583	329	1539	803	458	463	564	112	279
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.83	0.26	0.90	0.54	0.05	0.57	0.58	0.92	0.78	0.08

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.
























m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 1: Centerville Road/Retail Entrance & US Route 60

Warhill Sports Complex

9/13/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	918	397	286	809	43	462	51	505	49	35	20
Future Volume (vph)	18	918	397	286	809	43	462	51	505	49	35	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.5	6.0	4.0	8.0	6.0	6.0	8.0	8.0	8.0		7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.95	0.95	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	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.97	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	1681	1701	1583		1810	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.97	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	1681	1701	1583		1810	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)	19	946	409	295	834	44	476	53	521	51	36	21
RTOR Reduction (vph)	0	0	0	0	0	27	0	0	135	0	0	20
Lane Group Flow (vph)	19	946	409	295	834	17	262	267	386	0	87	1
Turn Type	Prot	NA	Free	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		4	4		3	3	
Permitted Phases			Free			6			4			3
Actuated Green, G (s)	2.2	35.0	110.0	10.5	42.8	42.8	28.7	28.7	28.7		6.8	6.8
Effective Green, g (s)	2.2	35.0	110.0	10.5	42.8	42.8	28.7	28.7	28.7		6.8	6.8
Actuated g/C Ratio	0.02	0.32	1.00	0.10	0.39	0.39	0.26	0.26	0.26		0.06	0.06
Clearance Time (s)	8.5	6.0		8.0	6.0	6.0	8.0	8.0	8.0		7.0	7.0
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)	35	1126	1583	327	1376	615	438	443	413		111	97
v/s Ratio Prot	0.01	c0.27		c0.09	c0.24		0.16	0.16			c0.05	
v/s Ratio Perm			0.26			0.01			c0.24			0.00
v/c Ratio	0.54	0.84	0.26	0.90	0.61	0.03	0.60	0.60	0.93		0.78	0.01
Uniform Delay, d1	53.4	34.9	0.0	49.2	26.9	20.8	35.6	35.7	39.7		50.9	48.5
Progression Factor	1.00	1.00	1.00	1.15	0.71	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	16.1	7.6	0.4	24.6	1.8	0.1	2.2	2.3	28.1		29.4	0.1
Delay (s)	69.5	42.5	0.4	81.1	20.9	20.8	37.8	38.0	67.9		80.3	48.5
Level of Service	E	D	A	F	C	C	D	D	E		F	D
Approach Delay (s)		30.3			36.0			52.8			74.1	
Approach LOS		C			D			D			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			39.8			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.90									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)			29.5			
Intersection Capacity Utilization			79.1%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

Queues  
2: Rt 199 SB Ramps & US Route 60

Warhill Sports Complex  
9/13/2016



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1191	412	69	995	247	491
v/c Ratio	0.72	0.42	0.64	0.47	0.52	0.93
Control Delay	18.1	1.9	64.8	17.0	37.9	52.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.1	1.9	64.8	17.0	37.9	52.5
Queue Length 50th (ft)	185	3	48	286	142	241
Queue Length 95th (ft)	m258	m9	m#91	m328	221	#432
Internal Link Dist (ft)	654			692	612	
Turn Bay Length (ft)		450	175		150	
Base Capacity (vph)	1662	990	107	2125	522	569
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.42	0.64	0.47	0.47	0.86

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 2: Rt 199 SB Ramps & US Route 60

Warhill Sports Complex

9/13/2016



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations		↔↗	↗	↗	↔↗	↗	↗
Traffic Volume (vph)	5	1115	387	65	935	232	462
Future Volume (vph)	5	1115	387	65	935	232	462
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	8.0	6.0	8.5	8.5
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00
Frt		1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)		3538	1583	1770	3539	1770	1583
Flt Permitted		0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)		3365	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	5	1186	412	69	995	247	491
RTOR Reduction (vph)	0	0	215	0	0	0	106
Lane Group Flow (vph)	0	1191	197	69	995	247	385
Turn Type	Perm	NA	Perm	Prot	NA	Prot	Perm
Protected Phases		2		1	6	4	
Permitted Phases	2		2				4
Actuated Green, G (s)		52.7	52.7	5.4	66.1	29.4	29.4
Effective Green, g (s)		52.7	52.7	5.4	66.1	29.4	29.4
Actuated g/C Ratio		0.48	0.48	0.05	0.60	0.27	0.27
Clearance Time (s)		6.0	6.0	8.0	6.0	8.5	8.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		1612	758	86	2126	473	423
v/s Ratio Prot				0.04	c0.28	0.14	
v/s Ratio Perm		c0.35	0.12				c0.24
v/c Ratio		0.74	0.26	0.80	0.47	0.52	0.91
Uniform Delay, d1		23.1	17.1	51.8	12.2	34.3	39.0
Progression Factor		0.69	0.61	0.78	1.26	1.00	1.00
Incremental Delay, d2		1.7	0.5	35.3	0.6	1.0	23.0
Delay (s)		17.7	10.8	75.8	16.0	35.4	62.0
Level of Service		B	B	E	B	D	E
Approach Delay (s)		15.9			19.9	53.1	
Approach LOS		B			B	D	
<b>Intersection Summary</b>							
HCM 2000 Control Delay		25.2		HCM 2000 Level of Service		C	
HCM 2000 Volume to Capacity ratio		0.81					
Actuated Cycle Length (s)		110.0		Sum of lost time (s)		22.5	
Intersection Capacity Utilization		79.0%		ICU Level of Service		D	
Analysis Period (min)		15					
c Critical Lane Group							



Queues  
3: Rt 199 NB Ramps & US Route 60

Warhill Sports Complex  
9/13/2016

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1342	358	281	694	370	117
v/c Ratio	0.93	0.41	1.03	0.30	0.98	0.27
Control Delay	39.1	7.9	108.7	8.3	85.3	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.1	7.9	108.7	8.3	85.3	8.4
Queue Length 50th (ft)	332	43	~212	97	263	0
Queue Length 95th (ft)	#594	m65	#380	126	#458	47
Internal Link Dist (ft)	692			817	473	
Turn Bay Length (ft)			350		525	
Base Capacity (vph)	1462	873	273	2348	378	430
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.41	1.03	0.30	0.98	0.27

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 3: Rt 199 NB Ramps & US Route 60

Warhill Sports Complex

9/13/2016



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations		↔↔	↔	↔	↔↔	↔	↔
Traffic Volume (vph)	10	1238	333	261	645	344	109
Future Volume (vph)	10	1238	333	261	645	344	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	8.0	6.0	8.0	8.0
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00
Frt		1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)		3538	1583	1770	3539	1770	1583
Flt Permitted		0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)		3353	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	11	1331	358	281	694	370	117
RTOR Reduction (vph)	0	0	184	0	0	0	92
Lane Group Flow (vph)	0	1342	174	281	694	370	25
Turn Type	Perm	NA	Perm	Prot	NA	Prot	Perm
Protected Phases		2		1	6	4	
Permitted Phases	2		2				4
Actuated Green, G (s)		47.5	47.5	17.0	72.5	23.5	23.5
Effective Green, g (s)		47.5	47.5	17.0	72.5	23.5	23.5
Actuated g/C Ratio		0.43	0.43	0.15	0.66	0.21	0.21
Clearance Time (s)		6.0	6.0	8.0	6.0	8.0	8.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		1447	683	273	2332	378	338
v/s Ratio Prot				c0.16	0.20	c0.21	
v/s Ratio Perm		c0.40	0.11				0.02
v/c Ratio		0.93	0.25	1.03	0.30	0.98	0.07
Uniform Delay, d1		29.6	19.9	46.5	8.0	43.0	34.6
Progression Factor		1.03	2.14	1.00	1.00	1.00	1.00
Incremental Delay, d2		8.2	0.6	62.2	0.3	40.2	0.1
Delay (s)		38.6	43.3	108.7	8.3	83.2	34.6
Level of Service		D	D	F	A	F	C
Approach Delay (s)		39.6			37.2	71.5	
Approach LOS		D			D	E	

### Intersection Summary

HCM 2000 Control Delay	43.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	88.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	160	708	38	272	543	41	65	387	92	95	102
v/c Ratio	0.63	1.00	0.05	0.84	0.72	0.06	0.23	0.88	0.50	0.51	0.59
Control Delay	62.2	69.0	0.1	72.8	35.6	0.2	41.2	38.8	56.1	56.3	60.9
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	62.2	69.0	0.1	72.8	35.6	0.2	41.2	38.8	56.1	56.3	60.9
Queue Length 50th (ft)	56	~498	0	97	314	0	39	109	64	66	68
Queue Length 95th (ft)	#110	#868	0	#195	#539	0	81	236	126	130	133
Internal Link Dist (ft)		2559			1277		1985			173	
Turn Bay Length (ft)	400		225	250		200		700	135		135
Base Capacity (vph)	258	709	704	322	754	739	437	560	252	256	238
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	1.00	0.05	0.84	0.72	0.06	0.15	0.69	0.37	0.37	0.43

## Intersection Summary













- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 4: Oppurtunity Way/Retail Entrance & Centerville Road

Warhill Sports Complex

9/13/2016





















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	152	673	36	258	516	39	49	12	368	157	21	97
Future Volume (vph)	152	673	36	258	516	39	49	12	368	157	21	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	6.0	6.0	7.5	6.0	6.0		7.5	7.5	6.5	6.5	6.5
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	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	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00	0.95	0.96	1.00
Satd. Flow (prot)	3433	1863	1583	3433	1863	1583		1791	1583	1681	1704	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00	0.95	0.96	1.00
Satd. Flow (perm)	3433	1863	1583	3433	1863	1583		1791	1583	1681	1704	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	160	708	38	272	543	41	52	13	387	165	22	102
RTOR Reduction (vph)	0	0	23	0	0	24	0	0	194	0	0	0
Lane Group Flow (vph)	160	708	15	272	543	17	0	65	193	92	95	102
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases			6			2			4			3
Actuated Green, G (s)	8.0	40.9	40.9	10.1	43.5	43.5		16.8	16.8	11.8	11.8	11.8
Effective Green, g (s)	8.0	40.9	40.9	10.1	43.5	43.5		16.8	16.8	11.8	11.8	11.8
Actuated g/C Ratio	0.07	0.38	0.38	0.09	0.41	0.41		0.16	0.16	0.11	0.11	0.11
Clearance Time (s)	7.0	6.0	6.0	7.5	6.0	6.0		7.5	7.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	256	711	604	323	756	642		280	248	185	187	174
v/s Ratio Prot	0.05	c0.38		c0.08	c0.29			0.04		0.05	0.06	
v/s Ratio Perm			0.01			0.01			c0.12			c0.06
v/c Ratio	0.62	1.00	0.02	0.84	0.72	0.03		0.23	0.78	0.50	0.51	0.59
Uniform Delay, d1	48.1	33.0	20.6	47.7	26.7	19.1		39.5	43.4	44.9	44.9	45.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.7	32.5	0.0	17.7	3.3	0.0		0.4	14.2	2.1	2.2	5.0
Delay (s)	52.8	65.5	20.7	65.4	29.9	19.1		39.9	57.6	47.0	47.1	50.3
Level of Service	D	E	C	E	C	B		D	E	D	D	D
Approach Delay (s)		61.4			40.7			55.1			48.2	
Approach LOS		E			D			E			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			51.6				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.87									
Actuated Cycle Length (s)			107.1				Sum of lost time (s)			27.5		
Intersection Capacity Utilization			79.8%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

# HCM Unsignalized Intersection Capacity Analysis

## 5: Longhill Gate Road/Warhill Trail & Longhill Road

Warhill Sports Complex

9/13/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	128	588	6	14	467	345	3	1	22	217	7	168
Future Volume (Veh/h)	128	588	6	14	467	345	3	1	22	217	7	168
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)	139	639	7	15	508	375	3	1	24	236	8	183
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)	9											
Median type	None			None								
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	883			646			1554	1834	642	1480	1462	508
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	883			646			1554	1834	642	1480	1462	508
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 %	82			98			94	98	95	0	92	68
cM capacity (veh/h)	766			939			50	61	474	83	104	565
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1					
Volume Total	139	646	15	508	375	28	427					
Volume Left	139	0	15	0	0	3	236					
Volume Right	0	7	0	0	375	24	183					
cSH	766	1700	939	1700	1700	220	133					
Volume to Capacity	0.18	0.38	0.02	0.30	0.22	0.13	3.20					
Queue Length 95th (ft)	16	0	1	0	0	11	Err					
Control Delay (s)	10.7	0.0	8.9	0.0	0.0	23.7	Err					
Lane LOS	B		A			C	F					
Approach Delay (s)	1.9		0.1			23.7	Err					
Approach LOS						C	F					
Intersection Summary												
Average Delay			1998.1									
Intersection Capacity Utilization			63.7%		ICU Level of Service				B			
Analysis Period (min)			15									

Intersection: 1: Centerville Road/Retail Entrance & US Route 60

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	T	R	L	LT	R
Maximum Queue (ft)	185	402	455	275	214	240	258	279	155	200	219	324
Average Queue (ft)	17	231	272	61	106	128	131	144	27	116	136	171
95th Queue (ft)	89	353	398	192	188	212	233	253	114	184	202	293
Link Distance (ft)		1396	1396				650	650			1225	1225
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	225			425	350	350			175	225		
Storage Blk Time (%)		9	1	0				4	0	0	0	
Queuing Penalty (veh)		2	2	0				2	0	0	1	

Intersection: 1: Centerville Road/Retail Entrance & US Route 60

Movement	SB	SB
Directions Served	LT	R
Maximum Queue (ft)	166	98
Average Queue (ft)	69	12
95th Queue (ft)	137	52
Link Distance (ft)	192	
Upstream Blk Time (%)	1	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		100
Storage Blk Time (%)	9	0
Queuing Penalty (veh)	2	0

Intersection: 2: Rt 199 SB Ramps & US Route 60

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	UT	T	R	L	T	T	L	R
Maximum Queue (ft)	431	453	302	182	258	255	174	475
Average Queue (ft)	249	268	91	65	124	122	134	204
95th Queue (ft)	384	401	192	132	222	223	203	387
Link Distance (ft)	650	650			701	701		625
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			450	175			150	
Storage Blk Time (%)		0	0	0	2		7	10
Queuing Penalty (veh)		2	0	1	1		34	23

Intersection: 3: Rt 199 NB Ramps & US Route 60

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	UT	T	R	L	T	T	L	R
Maximum Queue (ft)	552	564	247	348	293	242	465	234
Average Queue (ft)	264	279	71	221	119	78	271	52
95th Queue (ft)	468	478	162	348	333	280	445	145
Link Distance (ft)	701	701	701		860	860		495
Upstream Blk Time (%)	0	0			0	0	1	0
Queuing Penalty (veh)	0	0			0	0	0	0
Storage Bay Dist (ft)				350			525	
Storage Blk Time (%)				3	0		1	0
Queuing Penalty (veh)				11	0		1	0

Intersection: 4: Oppurtunity Way/Retail Entrance & Centerville Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	L	T	R	L	L	T	R	LT	R	L	LT
Maximum Queue (ft)	107	425	1387	250	156	173	431	205	95	225	138	180
Average Queue (ft)	43	250	847	69	81	110	232	32	34	110	47	75
95th Queue (ft)	90	543	1618	235	145	167	387	137	77	194	99	144
Link Distance (ft)			2587			1225	1225		2008			194
Upstream Blk Time (%)												0
Queuing Penalty (veh)												0
Storage Bay Dist (ft)	400	400		225	250			200		700	135	
Storage Blk Time (%)		0	51	0			14	0			0	1
Queuing Penalty (veh)		0	96	0			5	0			0	3

Intersection: 4: Oppurtunity Way/Retail Entrance & Centerville Road

Movement	SB
Directions Served	R
Maximum Queue (ft)	153
Average Queue (ft)	68
95th Queue (ft)	135
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	135
Storage Blk Time (%)	1
Queuing Penalty (veh)	2

Intersection: 5: Longhill Gate Road/Warhill Trail & Longhill Road

Movement	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	L	T	R	LTR	LT	R
Maximum Queue (ft)	118	28	2	54	50	1523	240
Average Queue (ft)	44	4	0	9	15	1236	208
95th Queue (ft)	88	19	2	34	40	1904	336
Link Distance (ft)			1476		644	1477	
Upstream Blk Time (%)						60	
Queuing Penalty (veh)						0	
Storage Bay Dist (ft)	200	200		200			215
Storage Blk Time (%)						94	0
Queuing Penalty (veh)						158	1

Network Summary

Network wide Queuing Penalty: 347



**Appendix H**  
**SYNCHRO Analysis of 2036**  
**Total Future Conditions**

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## Queues

## Warhill Sports Complex

## 1: Centerville Road/Retail Entrance &amp; US Route 60

9/13/2016



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	44	900	712	660	964	41	269	271	407	85	36
v/c Ratio	0.41	0.87	0.45	0.93	0.56	0.05	0.90	0.90	0.71	0.80	0.10
Control Delay	61.4	47.3	0.9	55.4	22.8	0.1	76.8	76.3	14.7	98.6	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.4	47.3	0.9	55.4	22.8	0.1	76.8	76.3	14.7	98.6	0.6
Queue Length 50th (ft)	30	317	0	201	311	0	196	197	31	61	0
Queue Length 95th (ft)	68	#425	0	#337	412	m0	#353	#354	137	#155	0
Internal Link Dist (ft)		1392			654			1277		188	
Turn Bay Length (ft)	225		425	350		175	225				100
Base Capacity (vph)	112	1036	1583	717	1727	876	305	308	579	106	349
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.87	0.45	0.92	0.56	0.05	0.88	0.88	0.70	0.80	0.10

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.
























m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 1: Centerville Road/Retail Entrance & US Route 60







Warhill Sports Complex

9/13/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	810	641	594	868	37	448	38	366	39	38	32
Future Volume (vph)	40	810	641	594	868	37	448	38	366	39	38	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.5	6.0	4.0	8.0	6.0	6.0	8.0	8.0	8.0		7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.95	0.95	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	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.98	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	1681	1698	1583		1817	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.98	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	1681	1698	1583		1817	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)	44	900	712	660	964	41	498	42	407	43	42	36
RTOR Reduction (vph)	0	0	0	0	0	22	0	0	293	0	0	34
Lane Group Flow (vph)	44	900	712	660	964	19	269	271	114	0	85	2
Turn Type	Prot	NA	Free	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		4	4		3	3	
Permitted Phases			Free			6			4			3
Actuated Green, G (s)	4.2	32.2	110.0	22.8	50.3	50.3	19.6	19.6	19.6		6.4	6.4
Effective Green, g (s)	4.2	32.2	110.0	22.8	50.3	50.3	19.6	19.6	19.6		6.4	6.4
Actuated g/C Ratio	0.04	0.29	1.00	0.21	0.46	0.46	0.18	0.18	0.18		0.06	0.06
Clearance Time (s)	8.5	6.0		8.0	6.0	6.0	8.0	8.0	8.0		7.0	7.0
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)	67	1035	1583	711	1618	723	299	302	282		105	92
v/s Ratio Prot	0.02	c0.25		c0.19	0.27		c0.16	0.16			0.05	
v/s Ratio Perm			c0.45			0.01			0.07			0.00
v/c Ratio	0.66	0.87	0.45	0.93	0.60	0.03	0.90	0.90	0.41		0.81	0.02
Uniform Delay, d1	52.2	36.9	0.0	42.8	22.3	16.4	44.2	44.2	40.0		51.2	48.9
Progression Factor	1.00	1.00	1.00	0.88	1.02	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	20.8	9.9	0.9	15.1	1.3	0.1	27.6	27.1	1.0		35.1	0.1
Delay (s)	73.0	46.8	0.9	52.7	24.0	16.4	71.8	71.3	41.0		86.3	49.0
Level of Service	E	D	A	D	C	B	E	E	D		F	D
Approach Delay (s)		27.8			35.2			58.4			75.2	
Approach LOS		C			D			E			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			38.5			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.90									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)			29.5			
Intersection Capacity Utilization			77.7%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

Queues  
2: Rt 199 SB Ramps & US Route 60

Warhill Sports Complex  
9/13/2016

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	932	445	43	1389	351	301
v/c Ratio	0.51	0.42	0.38	0.63	0.81	0.58
Control Delay	21.4	10.7	49.4	9.9	53.1	18.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.4	10.7	49.4	9.9	53.1	18.2
Queue Length 50th (ft)	331	180	28	163	233	73
Queue Length 95th (ft)	414	m214	m55	326	304	141
Internal Link Dist (ft)	654			692	612	
Turn Bay Length (ft)		450	175		150	
Base Capacity (vph)	1810	1055	116	2201	555	617
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.42	0.37	0.63	0.63	0.49

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 2: Rt 199 SB Ramps & US Route 60

Warhill Sports Complex

9/13/2016



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations		↔↔	↔	↔	↔↔	↔	↔
Traffic Volume (vph)	1	819	392	38	1222	309	265
Future Volume (vph)	1	819	392	38	1222	309	265
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	8.0	6.0	8.5	8.5
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00
Frt		1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)		3539	1583	1770	3539	1770	1583
Flt Permitted		0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)		3377	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	1	931	445	43	1389	351	301
RTOR Reduction (vph)	0	0	220	0	0	0	133
Lane Group Flow (vph)	0	932	225	43	1389	351	168
Turn Type	Perm	NA	Perm	Prot	NA	Prot	Perm
Protected Phases		2		1	6	4	
Permitted Phases	2		2				4
Actuated Green, G (s)		55.7	55.7	4.7	68.4	27.1	27.1
Effective Green, g (s)		55.7	55.7	4.7	68.4	27.1	27.1
Actuated g/C Ratio		0.51	0.51	0.04	0.62	0.25	0.25
Clearance Time (s)		6.0	6.0	8.0	6.0	8.5	8.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		1709	801	75	2200	436	389
v/s Ratio Prot				0.02	c0.39	c0.20	
v/s Ratio Perm		0.28	0.14				0.11
v/c Ratio		0.55	0.28	0.57	0.63	0.81	0.43
Uniform Delay, d1		18.5	15.6	51.7	13.0	39.0	35.0
Progression Factor		1.08	5.00	0.84	0.61	1.00	1.00
Incremental Delay, d2		0.7	0.5	8.6	1.2	10.4	0.8
Delay (s)		20.8	78.6	51.8	9.1	49.3	35.7
Level of Service		C	E	D	A	D	D
Approach Delay (s)		39.5			10.4	43.1	
Approach LOS		D			B	D	

### Intersection Summary

HCM 2000 Control Delay	28.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Queues  
3: Rt 199 NB Ramps & US Route 60

Warhill Sports Complex  
9/13/2016



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	906	252	202	810	523	99
v/c Ratio	0.78	0.35	0.85	0.41	0.93	0.17
Control Delay	44.1	12.5	76.5	15.4	60.1	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.1	12.5	76.5	15.4	60.1	5.9
Queue Length 50th (ft)	335	94	141	173	346	0
Queue Length 95th (ft)	427	142	#267	219	#540	37
Internal Link Dist (ft)	692			817	473	
Turn Bay Length (ft)			350		525	
Base Capacity (vph)	1162	712	246	1959	595	598
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.35	0.82	0.41	0.88	0.17

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 3: Rt 199 NB Ramps & US Route 60

Warhill Sports Complex

9/13/2016



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations		↕↕	↗	↖	↕↕	↗	↖
Traffic Volume (vph)	5	838	234	188	753	486	92
Future Volume (vph)	5	838	234	188	753	486	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	8.0	6.0	8.0	8.0
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00
Frt		1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)		3538	1583	1770	3539	1770	1583
Flt Permitted		0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)		3363	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	5	901	252	202	810	523	99
RTOR Reduction (vph)	0	0	165	0	0	0	67
Lane Group Flow (vph)	0	906	87	202	810	523	32
Turn Type	Perm	NA	Perm	Prot	NA	Prot	Perm
Protected Phases		2		1	6	4	
Permitted Phases	2		2				4
Actuated Green, G (s)		38.0	38.0	14.9	60.9	35.1	35.1
Effective Green, g (s)		38.0	38.0	14.9	60.9	35.1	35.1
Actuated g/C Ratio		0.35	0.35	0.14	0.55	0.32	0.32
Clearance Time (s)		6.0	6.0	8.0	6.0	8.0	8.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		1161	546	239	1959	564	505
v/s Ratio Prot				c0.11	0.23	c0.30	
v/s Ratio Perm		c0.27	0.05				0.02
v/c Ratio		0.78	0.16	0.85	0.41	0.93	0.06
Uniform Delay, d1		32.3	24.9	46.4	14.2	36.2	26.0
Progression Factor		1.19	3.23	1.00	1.00	1.00	1.00
Incremental Delay, d2		4.6	0.5	23.0	0.6	21.4	0.1
Delay (s)		42.9	81.1	69.4	14.9	57.7	26.1
Level of Service		D	F	E	B	E	C
Approach Delay (s)		51.2			25.7	52.6	
Approach LOS		D			C	D	

### Intersection Summary

HCM 2000 Control Delay	42.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	87.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	199	741	79	606	973	51	50	319	113	115	124
v/c Ratio	0.97	0.96	0.10	0.95	0.96	0.06	0.32	0.81	0.63	0.64	0.74
Control Delay	118.7	62.2	0.3	80.2	50.1	0.1	62.7	27.3	74.8	74.8	84.0
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	118.7	62.2	0.3	80.2	50.1	0.1	62.7	27.3	74.8	74.8	84.0
Queue Length 50th (ft)	90	613	0	270	770	0	42	33	98	100	104
Queue Length 95th (ft)	#178	#932	0	#409	#1165	0	80	116	173	176	#194
Internal Link Dist (ft)		2559			1277		1985			173	
Turn Bay Length (ft)	400		225	250		200		700	135		135
Base Capacity (vph)	205	775	766	636	1016	923	349	532	200	203	189
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.96	0.10	0.95	0.96	0.06	0.14	0.60	0.56	0.57	0.66

#### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.


























# HCM Signalized Intersection Capacity Analysis

## 4: Oppurtunity Way/Retail Entrance & Centerville Road

Warhill Sports Complex

9/13/2016





















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	637	68	521	837	44	30	13	274	173	23	107
Future Volume (vph)	171	637	68	521	837	44	30	13	274	173	23	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	6.0	6.0	7.5	6.0	6.0		7.5	7.5	6.5	6.5	6.5
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	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	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00	0.95	0.96	1.00
Satd. Flow (prot)	3433	1863	1583	3433	1863	1583		1800	1583	1681	1704	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00	0.95	0.96	1.00
Satd. Flow (perm)	3433	1863	1583	3433	1863	1583		1800	1583	1681	1704	1583
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	199	741	79	606	973	51	35	15	319	201	27	124
RTOR Reduction (vph)	0	0	46	0	0	23	0	0	256	0	0	0
Lane Group Flow (vph)	199	741	33	606	973	28	0	50	63	113	115	124
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases			6			2			4			3
Actuated Green, G (s)	8.0	55.9	55.9	24.9	73.3	73.3		11.6	11.6	14.3	14.3	14.3
Effective Green, g (s)	8.0	55.9	55.9	24.9	73.3	73.3		11.6	11.6	14.3	14.3	14.3
Actuated g/C Ratio	0.06	0.42	0.42	0.19	0.55	0.55		0.09	0.09	0.11	0.11	0.11
Clearance Time (s)	7.0	6.0	6.0	7.5	6.0	6.0		7.5	7.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	204	776	659	636	1017	864		155	136	179	181	168
v/s Ratio Prot	0.06	0.40		c0.18	c0.52			0.03		0.07	0.07	
v/s Ratio Perm			0.02			0.02			c0.04			c0.08
v/c Ratio	0.98	0.95	0.05	0.95	0.96	0.03		0.32	0.46	0.63	0.64	0.74
Uniform Delay, d1	63.0	37.9	23.3	54.1	28.9	14.1		57.6	58.3	57.4	57.5	58.1
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	55.5	21.8	0.0	24.4	18.5	0.0		1.2	2.5	7.1	7.1	15.5
Delay (s)	118.5	59.7	23.4	78.5	47.4	14.1		58.8	60.8	64.5	64.6	73.7
Level of Service	F	E	C	E	D	B		E	E	E	E	E
Approach Delay (s)		68.4			57.9			60.6			67.7	
Approach LOS		E			E			E			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			62.4				HCM 2000 Level of Service			E		
HCM 2000 Volume to Capacity ratio			0.92									
Actuated Cycle Length (s)			134.2				Sum of lost time (s)			27.5		
Intersection Capacity Utilization			77.2%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

# HCM Unsignalized Intersection Capacity Analysis

## 5: Longhill Gate Road/Warhill Trail & Longhill Road

Warhill Sports Complex

9/13/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	188	637	16	29	580	324	7	0	24	138	2	140
Future Volume (Veh/h)	188	637	16	29	580	324	7	0	24	138	2	140
Sign Control	Free				Free				Stop		Stop	
Grade	0%				0%				0%		0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	221	749	19	34	682	381	8	0	28	162	2	165
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)	9											
Median type	None			None								
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1063			768			2034	2332	758	1969	1960	682
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1063			768			2034	2332	758	1969	1960	682
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 %	66			96			57	100	93	0	95	63
cM capacity (veh/h)	655			846			18	23	407	31	40	450
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1					
Volume Total	221	768	34	682	381	36	329					
Volume Left	221	0	34	0	0	8	162					
Volume Right	0	19	0	0	381	28	165					
cSH	655	1700	846	1700	1700	72	59					
Volume to Capacity	0.34	0.45	0.04	0.40	0.22	0.50	5.55					
Queue Length 95th (ft)	37	0	3	0	0	52	Err					
Control Delay (s)	13.3	0.0	9.4	0.0	0.0	97.6	Err					
Lane LOS	B			A			F	F				
Approach Delay (s)	3.0			0.3			97.6	Err				
Approach LOS							F	F				
Intersection Summary												
Average Delay			1344.9									
Intersection Capacity Utilization			65.4%		ICU Level of Service				C			
Analysis Period (min)			15									

Intersection: 1: Centerville Road/Retail Entrance & US Route 60

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	T	R	L	LT	R
Maximum Queue (ft)	198	365	440	401	326	331	369	343	185	242	395	240
Average Queue (ft)	35	208	264	201	191	202	179	186	34	138	163	111
95th Queue (ft)	123	327	391	354	305	322	314	302	130	218	306	208
Link Distance (ft)		1396	1396				650	650			1225	1225
Upstream Blk Time (%)							0				0	
Queuing Penalty (veh)							0				0	
Storage Bay Dist (ft)	225			425	350	350			175	225		
Storage Blk Time (%)		5	0	0	0	1	0	8	0	0	1	
Queuing Penalty (veh)		2	2	0	1	3	0	3	0	1	3	

Intersection: 1: Centerville Road/Retail Entrance & US Route 60

Movement	SB	SB
Directions Served	LT	R
Maximum Queue (ft)	145	79
Average Queue (ft)	60	16
95th Queue (ft)	118	50
Link Distance (ft)	192	
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		100
Storage Blk Time (%)	4	0
Queuing Penalty (veh)	1	0

Intersection: 2: Rt 199 SB Ramps & US Route 60

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	UT	T	R	L	T	T	L	R
Maximum Queue (ft)	297	334	169	164	376	306	174	499
Average Queue (ft)	128	154	59	40	153	115	153	184
95th Queue (ft)	273	300	124	106	282	230	199	407
Link Distance (ft)	650	650			701	701		625
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			450	175			150	
Storage Blk Time (%)				0	5		18	0
Queuing Penalty (veh)				0	2		49	1

Intersection: 3: Rt 199 NB Ramps & US Route 60

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	UT	T	R	L	T	T	L	R
Maximum Queue (ft)	364	368	176	271	272	208	509	280
Average Queue (ft)	214	229	70	143	151	90	294	40
95th Queue (ft)	349	353	141	239	245	186	464	150
Link Distance (ft)	701	701	701		860	860		495
Upstream Blk Time (%)							2	0
Queuing Penalty (veh)							0	0
Storage Bay Dist (ft)				350			525	
Storage Blk Time (%)							2	0
Queuing Penalty (veh)							2	1

Intersection: 4: Oppurtunity Way/Retail Entrance & Centerville Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	L	T	R	L	L	T	R	LT	R	L	LT
Maximum Queue (ft)	163	425	954	250	274	632	890	225	99	168	146	207
Average Queue (ft)	72	177	449	87	185	238	425	41	32	74	62	102
95th Queue (ft)	137	413	895	260	286	447	768	164	74	132	125	181
Link Distance (ft)			2587			1225	1225		2008			194
Upstream Blk Time (%)							0					2
Queuing Penalty (veh)							0					0
Storage Bay Dist (ft)	400	400		225	250			200		700	135	
Storage Blk Time (%)		0	29	0	1	6	26	0			0	4
Queuing Penalty (veh)		0	70	0	4	17	11	0			1	9

Intersection: 4: Oppurtunity Way/Retail Entrance & Centerville Road

Movement	SB
Directions Served	R
Maximum Queue (ft)	159
Average Queue (ft)	88
95th Queue (ft)	163
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	135
Storage Blk Time (%)	4
Queuing Penalty (veh)	9

Intersection: 5: Longhill Gate Road/Warhill Trail & Longhill Road

Movement	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	TR	L	T	R	LTR	LT	R
Maximum Queue (ft)	175	87	44	3	61	66	1497	240
Average Queue (ft)	63	5	10	0	12	19	1081	169
95th Queue (ft)	126	78	32	2	41	48	1901	340
Link Distance (ft)		1287		1476		644	1477	
Upstream Blk Time (%)							43	
Queuing Penalty (veh)							0	
Storage Bay Dist (ft)	200		200		200			215
Storage Blk Time (%)	0	0					86	0
Queuing Penalty (veh)	3	0					121	1

Network Summary

Network wide Queuing Penalty: 319

## Queues

## Warhill Sports Complex

9/13/2016

## 1: Centerville Road/Retail Entrance &amp; US Route 60



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	19	946	444	505	834	44	279	282	714	87	21
v/c Ratio	0.22	1.01	0.28	1.08	0.56	0.06	0.59	0.59	1.12	0.89	0.06
Control Delay	56.6	73.7	0.4	112.6	16.9	0.1	40.1	39.9	99.6	117.0	0.3
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	56.6	73.7	0.4	112.6	16.9	0.1	40.1	39.9	99.6	117.0	0.3
Queue Length 50th (ft)	13	~361	0	~196	121	0	178	180	~442	62	0
Queue Length 95th (ft)	38	#500	0	#305	274	m0	272	275	#674	#160	0
Internal Link Dist (ft)		1392			654			1277		188	
Turn Bay Length (ft)	225		425	350		175	225				100
Base Capacity (vph)	86	933	1583	468	1493	785	473	479	635	98	344
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	1.01	0.28	1.08	0.56	0.06	0.59	0.59	1.12	0.89	0.06

## Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.
























m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 1: Centerville Road/Retail Entrance & US Route 60

Warhill Sports Complex

9/13/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	918	431	490	809	43	493	51	693	49	35	20
Future Volume (vph)	18	918	431	490	809	43	493	51	693	49	35	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.5	6.0	4.0	8.0	6.0	6.0	8.0	8.0	8.0		7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.95	0.95	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	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.97	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	1681	1701	1583		1810	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.97	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	1681	1701	1583		1810	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)	19	946	444	505	834	44	508	53	714	51	36	21
RTOR Reduction (vph)	0	0	0	0	0	27	0	0	189	0	0	20
Lane Group Flow (vph)	19	946	444	505	834	17	279	282	525	0	87	1
Turn Type	Prot	NA	Free	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		4	4		3	3	
Permitted Phases			Free			6			4			3
Actuated Green, G (s)	2.2	29.0	110.0	15.0	41.3	41.3	31.0	31.0	31.0		6.0	6.0
Effective Green, g (s)	2.2	29.0	110.0	15.0	41.3	41.3	31.0	31.0	31.0		6.0	6.0
Actuated g/C Ratio	0.02	0.26	1.00	0.14	0.38	0.38	0.28	0.28	0.28		0.05	0.05
Clearance Time (s)	8.5	6.0		8.0	6.0	6.0	8.0	8.0	8.0		7.0	7.0
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)	35	933	1583	468	1328	594	473	479	446		98	86
v/s Ratio Prot	0.01	c0.27		c0.15	0.24		0.17	0.17			c0.05	
v/s Ratio Perm			0.28			0.01			c0.33			0.00
v/c Ratio	0.54	1.01	0.28	1.08	0.63	0.03	0.59	0.59	1.18		0.89	0.01
Uniform Delay, d1	53.4	40.5	0.0	47.5	28.1	21.7	34.0	34.0	39.5		51.7	49.2
Progression Factor	1.00	1.00	1.00	1.17	0.61	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	16.1	33.0	0.4	60.9	1.9	0.1	1.9	1.9	101.0		55.8	0.1
Delay (s)	69.5	73.5	0.4	116.5	19.0	21.8	35.9	35.9	140.5		107.4	49.3
Level of Service	E	E	A	F	B	C	D	D	F		F	D
Approach Delay (s)		50.4			54.7			94.5			96.1	
Approach LOS		D			D			F			F	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			66.5			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			1.09									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)			29.5			
Intersection Capacity Utilization			90.8%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

Queues  
2: Rt 199 SB Ramps & US Route 60

Warhill Sports Complex  
9/13/2016



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1374	429	69	1085	373	491
v/c Ratio	0.86	0.44	0.78	0.51	0.78	0.96
Control Delay	15.6	0.9	86.5	18.9	49.8	62.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.6	0.9	86.5	18.9	49.8	62.3
Queue Length 50th (ft)	218	3	47	316	241	272
Queue Length 95th (ft)	m209	m1	m#100	m353	#365	#483
Internal Link Dist (ft)	654			692	612	
Turn Bay Length (ft)		450	175		150	
Base Capacity (vph)	1601	978	88	2119	491	522
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.44	0.78	0.51	0.76	0.94

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



# HCM Signalized Intersection Capacity Analysis

## 2: Rt 199 SB Ramps & US Route 60

Warhill Sports Complex

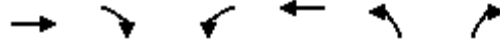
9/13/2016



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations		↔↗	↗	↗	↔↗	↗	↗
Traffic Volume (vph)	5	1287	403	65	1020	351	462
Future Volume (vph)	5	1287	403	65	1020	351	462
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	8.0	6.0	8.5	8.5
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00
Frt		1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)		3539	1583	1770	3539	1770	1583
Flt Permitted		0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)		3366	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	5	1369	429	69	1085	373	491
RTOR Reduction (vph)	0	0	225	0	0	0	84
Lane Group Flow (vph)	0	1374	204	69	1085	373	407
Turn Type	Perm	NA	Perm	Prot	NA	Prot	Perm
Protected Phases		2		1	6	4	
Permitted Phases	2		2				4
Actuated Green, G (s)		52.3	52.3	5.5	65.8	29.7	29.7
Effective Green, g (s)		52.3	52.3	5.5	65.8	29.7	29.7
Actuated g/C Ratio		0.48	0.48	0.05	0.60	0.27	0.27
Clearance Time (s)		6.0	6.0	8.0	6.0	8.5	8.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		1600	752	88	2116	477	427
v/s Ratio Prot				0.04	c0.31	0.21	
v/s Ratio Perm		c0.41	0.13				c0.26
v/c Ratio		0.86	0.27	0.78	0.51	0.78	0.95
Uniform Delay, d1		25.6	17.4	51.7	12.8	37.2	39.5
Progression Factor		0.56	0.45	0.78	1.39	1.00	1.00
Incremental Delay, d2		0.6	0.1	30.7	0.7	8.1	31.6
Delay (s)		15.0	8.0	71.0	18.5	45.3	71.1
Level of Service		B	A	E	B	D	E
Approach Delay (s)		13.3			21.6	59.9	
Approach LOS		B			C	E	
<b>Intersection Summary</b>							
HCM 2000 Control Delay			26.4		HCM 2000 Level of Service		C
HCM 2000 Volume to Capacity ratio			0.90				
Actuated Cycle Length (s)			110.0		Sum of lost time (s)		22.5
Intersection Capacity Utilization			85.5%		ICU Level of Service		E
Analysis Period (min)			15				
c Critical Lane Group							

Queues  
3: Rt 199 NB Ramps & US Route 60

Warhill Sports Complex  
9/13/2016



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1410	475	281	767	388	117
v/c Ratio	0.95	0.51	1.09	0.33	1.05	0.28
Control Delay	38.4	8.0	128.0	8.4	102.5	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.4	8.0	128.0	8.4	102.5	8.4
Queue Length 50th (ft)	334	59	~224	111	~299	0
Queue Length 95th (ft)	m#621	m78	#392	142	#488	47
Internal Link Dist (ft)	692			817	473	
Turn Bay Length (ft)			350		525	
Base Capacity (vph)	1493	935	257	2348	371	424
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.51	1.09	0.33	1.05	0.28

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 3: Rt 199 NB Ramps & US Route 60

Warhill Sports Complex

9/13/2016



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations		↔↔	↔	↔	↔↔	↔	↔
Traffic Volume (vph)	10	1301	442	261	713	361	109
Future Volume (vph)	10	1301	442	261	713	361	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	8.0	6.0	8.0	8.0
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00
Frt		1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)		3538	1583	1770	3539	1770	1583
Flt Permitted		0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)		3351	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	11	1399	475	281	767	388	117
RTOR Reduction (vph)	0	0	231	0	0	0	93
Lane Group Flow (vph)	0	1410	244	281	767	388	24
Turn Type	Perm	NA	Perm	Prot	NA	Prot	Perm
Protected Phases		2		1	6	4	
Permitted Phases	2		2				4
Actuated Green, G (s)		49.0	49.0	16.0	73.0	23.0	23.0
Effective Green, g (s)		49.0	49.0	16.0	73.0	23.0	23.0
Actuated g/C Ratio		0.45	0.45	0.15	0.66	0.21	0.21
Clearance Time (s)		6.0	6.0	8.0	6.0	8.0	8.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		1492	705	257	2348	370	330
v/s Ratio Prot				c0.16	0.22	c0.22	
v/s Ratio Perm		c0.42	0.15				0.02
v/c Ratio		0.95	0.35	1.09	0.33	1.05	0.07
Uniform Delay, d1		29.2	20.0	47.0	7.9	43.5	34.9
Progression Factor		1.04	2.12	1.00	1.00	1.00	1.00
Incremental Delay, d2		7.5	0.6	83.4	0.4	60.1	0.1
Delay (s)		37.8	43.0	130.4	8.3	103.6	35.0
Level of Service		D	D	F	A	F	D
Approach Delay (s)		39.1			41.0	87.7	
Approach LOS		D			D	F	

### Intersection Summary

HCM 2000 Control Delay	46.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	92.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	160	708	38	522	543	41	65	618	92	95	102
v/c Ratio	0.62	1.03	0.05	1.09	0.67	0.05	0.17	1.15	0.60	0.61	0.70
Control Delay	77.4	87.5	0.1	126.9	38.7	0.1	49.6	116.8	80.5	81.0	90.2
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	77.4	87.5	0.1	126.9	38.7	0.1	49.6	116.8	80.5	81.0	90.2
Queue Length 50th (ft)	78	~739	0	~296	423	0	52	~499	91	93	97
Queue Length 95th (ft)	119	#997	0	#418	569	0	98	#747	156	162	164
Internal Link Dist (ft)		2559			1277		1985			173	
Turn Bay Length (ft)	400		225	250		200		700	135		135
Base Capacity (vph)	279	687	701	477	812	764	382	538	182	184	171
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	1.03	0.05	1.09	0.67	0.05	0.17	1.15	0.51	0.52	0.60

## Intersection Summary
























- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 4: Oppurtunity Way/Retail Entrance & Centerville Road

Warhill Sports Complex

9/13/2016





















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	152	673	36	496	516	39	49	12	587	157	21	97
Future Volume (vph)	152	673	36	496	516	39	49	12	587	157	21	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	6.0	6.0	7.5	6.0	6.0		7.5	7.5	6.5	6.5	6.5
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	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	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00	0.95	0.96	1.00
Satd. Flow (prot)	3433	1863	1583	3433	1863	1583		1791	1583	1681	1704	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00	0.95	0.96	1.00
Satd. Flow (perm)	3433	1863	1583	3433	1863	1583		1791	1583	1681	1704	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	160	708	38	522	543	41	52	13	618	165	22	102
RTOR Reduction (vph)	0	0	24	0	0	23	0	0	201	0	0	0
Lane Group Flow (vph)	160	708	14	522	543	18	0	65	417	92	95	102
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases			6			2			4			3
Actuated Green, G (s)	11.1	54.5	54.5	20.5	64.4	64.4		31.5	31.5	13.6	13.6	13.6
Effective Green, g (s)	11.1	54.5	54.5	20.5	64.4	64.4		31.5	31.5	13.6	13.6	13.6
Actuated g/C Ratio	0.08	0.37	0.37	0.14	0.44	0.44		0.21	0.21	0.09	0.09	0.09
Clearance Time (s)	7.0	6.0	6.0	7.5	6.0	6.0		7.5	7.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	258	687	584	476	812	690		382	337	154	157	145
v/s Ratio Prot	0.05	c0.38		c0.15	0.29			0.04		0.05	0.06	
v/s Ratio Perm			0.01			0.01			c0.26			c0.06
v/c Ratio	0.62	1.03	0.02	1.10	0.67	0.03		0.17	1.24	0.60	0.61	0.70
Uniform Delay, d1	66.2	46.5	29.6	63.5	33.1	23.7		47.4	58.0	64.4	64.4	65.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.6	42.4	0.0	70.1	2.1	0.0		0.2	130.2	6.1	6.4	14.4
Delay (s)	70.8	89.0	29.6	133.7	35.2	23.7		47.6	188.3	70.5	70.9	79.4
Level of Service	E	F	C	F	D	C		D	F	E	E	E
Approach Delay (s)		83.3			81.2			174.9			73.8	
Approach LOS		F			F			F			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			102.6				HCM 2000 Level of Service			F		
HCM 2000 Volume to Capacity ratio			1.06									
Actuated Cycle Length (s)			147.6				Sum of lost time (s)			27.5		
Intersection Capacity Utilization			93.3%				ICU Level of Service			F		
Analysis Period (min)			15									
c Critical Lane Group												

# HCM Unsignalized Intersection Capacity Analysis

## 5: Longhill Gate Road/Warhill Trail & Longhill Road

Warhill Sports Complex

9/13/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	588	6	14	467	430	3	1	22	295	7	184
Future Volume (Veh/h)	145	588	6	14	467	430	3	1	22	295	7	184
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)	158	639	7	15	508	467	3	1	24	321	8	200
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)	9											
Median type	None			None								
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	975			646			1600	1964	642	1518	1500	508
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	975			646			1600	1964	642	1518	1500	508
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 %	78			98			93	98	95	0	91	65
cM capacity (veh/h)	707			939			42	48	474	75	93	565
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1					
Volume Total	158	646	15	508	467	28	529					
Volume Left	158	0	15	0	0	3	321					
Volume Right	0	7	0	0	467	24	200					
cSH	707	1700	939	1700	1700	197	112					
Volume to Capacity	0.22	0.38	0.02	0.30	0.27	0.14	4.72					
Queue Length 95th (ft)	21	0	1	0	0	12	Err					
Control Delay (s)	11.5	0.0	8.9	0.0	0.0	26.3	Err					
Lane LOS	B		A			D	F					
Approach Delay (s)	2.3		0.1			26.3	Err					
Approach LOS						D	F					
Intersection Summary												
Average Delay				2251.0								
Intersection Capacity Utilization				68.0%	ICU Level of Service				C			
Analysis Period (min)				15								

Intersection: 1: Centerville Road/Retail Entrance & US Route 60

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	T	R	L	LT	R
Maximum Queue (ft)	226	1097	1166	450	362	375	662	664	107	231	376	893
Average Queue (ft)	37	535	623	291	309	320	349	249	15	123	151	523
95th Queue (ft)	164	1104	1218	597	429	444	766	606	62	195	288	907
Link Distance (ft)		1396	1396				650	650			1225	1225
Upstream Blk Time (%)		1	4				8	0				0
Queuing Penalty (veh)		0	0				56	1				1
Storage Bay Dist (ft)	225			425	350	350			175	225		
Storage Blk Time (%)		46	26	0	14	33	1	2	0	0	0	
Queuing Penalty (veh)		8	111	1	55	134	4	1	0	0	1	

Intersection: 1: Centerville Road/Retail Entrance & US Route 60

Movement	SB	SB
Directions Served	LT	R
Maximum Queue (ft)	180	79
Average Queue (ft)	80	15
95th Queue (ft)	168	65
Link Distance (ft)	192	
Upstream Blk Time (%)	4	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		100
Storage Blk Time (%)	15	0
Queuing Penalty (veh)	3	0

Intersection: 2: Rt 199 SB Ramps & US Route 60

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	UT	T	R	L	T	T	L	R
Maximum Queue (ft)	407	444	226	189	320	284	175	653
Average Queue (ft)	221	247	73	74	185	171	167	435
95th Queue (ft)	348	378	152	157	296	266	198	754
Link Distance (ft)	650	650			701	701		625
Upstream Blk Time (%)								23
Queuing Penalty (veh)								0
Storage Bay Dist (ft)			450	175			150	
Storage Blk Time (%)		0	0	0	8		38	15
Queuing Penalty (veh)		1	0	0	5		176	53

Intersection: 3: Rt 199 NB Ramps & US Route 60

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	UT	T	R	L	T	T	L	R
Maximum Queue (ft)	521	528	293	368	579	454	496	280
Average Queue (ft)	286	301	106	262	223	150	299	81
95th Queue (ft)	456	469	209	409	611	514	486	287
Link Distance (ft)	701	701	701		860	860		495
Upstream Blk Time (%)					2	0	6	2
Queuing Penalty (veh)					0	0	0	0
Storage Bay Dist (ft)				350			525	
Storage Blk Time (%)				14	0		6	2
Queuing Penalty (veh)				50	0		7	6

Intersection: 4: Oppurtunity Way/Retail Entrance & Centerville Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	L	T	R	L	L	T	R	LT	R	L	LT
Maximum Queue (ft)	125	425	1937	250	275	793	640	225	1234	724	155	211
Average Queue (ft)	53	261	1189	56	251	473	298	41	490	550	64	109
95th Queue (ft)	106	547	2244	213	319	867	577	163	1482	861	131	189
Link Distance (ft)			2587			1225	1225		2008			194
Upstream Blk Time (%)			3				0		0			2
Queuing Penalty (veh)			0				0		0			0
Storage Bay Dist (ft)	400	400		225	250			200		700	135	
Storage Blk Time (%)		0	56	0	13	43	18	0	1	30	1	7
Queuing Penalty (veh)		0	104	0	32	106	7	0	4	18	1	12

Intersection: 4: Oppurtunity Way/Retail Entrance & Centerville Road

Movement	SB
Directions Served	R
Maximum Queue (ft)	159
Average Queue (ft)	89
95th Queue (ft)	163
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	135
Storage Blk Time (%)	3
Queuing Penalty (veh)	6



Intersection: 5: Longhill Gate Road/Warhill Trail & Longhill Road

Movement	EB	WB	WB	NB	SB	SB
Directions Served	L	L	R	LTR	LT	R
Maximum Queue (ft)	132	24	54	47	1523	240
Average Queue (ft)	52	5	12	16	1469	199
95th Queue (ft)	99	21	39	39	1652	345
Link Distance (ft)				644	1477	
Upstream Blk Time (%)					92	
Queuing Penalty (veh)					0	
Storage Bay Dist (ft)	200	200	200			215
Storage Blk Time (%)	0				98	0
Queuing Penalty (veh)	0				181	1

Network Summary

Network wide Queuing Penalty: 1149





# JCC-SUP-0014-2016/MP-0002-2016

## Warhill Sports Complex (service road)



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Planning Commission  
James City County, Virginia

Commission Members:

I am herewith submitting my comments relative to the JCC case no. SUP-0014-2016/MP-0002-2016 Warhill Sports Complex Master Plan amendment.

I am a resident of the adjacent subdivision, Mallard Hill, which branches off of Warhill Trail on the easterly side. As you may imagine, I am very interested in the developments planned in this amendment proposal. There seem to be quite a number of unanswered questions that bother me.

Using two of the documents available:

- I. Feb 24, 2016 JCC Development Review Cmtt Regular Mtg
  - A. Planned usage
    - 1. 2 indoor pools + associated ofc/locker rooms
    - 2. practices and meets
      - a. for three HS in immediate area
      - b. "open for competitive swim teams"

There have been non-local organizations use other facilities at WISC for tournaments, causing the resultant increase in traffic congestion. What provisions are there to limit usage to local groups?

- 3. ... *IF* schools continue early practice, no effect on peak traffic [Holt]

What assurances are there that practice times won't be expanded to accommodate all three schools attempting to use the same pool facilities?

- 4. "It falls upon the operational aspects to provide solutions such as a police officer to control traffic at certain times." [Carnifax]

What requirements will there be to ensure proper traffic control?

- B. Traffic numbers ... there are existing traffic problems at the Warhill site outside of the peak hours. [Sr. Planner II Basic]

C. M. Flory Comments RE SUP-0014-2016/MP-0002-2016 WISC Master Plan amendment

C. Speed ...concern less about traffic and more about speed limit. The speed limit on Longhill Rd is 45 mph, but many vehicles are driving at a faster pace." [O'Connor, Planning Dir]

This is not to mention the speeding along Warhill Trail itself — private vehicles, commercial trucks and busses, etc. We need two speed bumps placed equidistant between the northern tip of the medians near Longhill and the gate near Beaver Run E, spanning the entire width of Warhill Trail and sufficiently tall enough to slow traffic (not just "rumble ridges").

D. Improvements

1. not expected to generate a need for improvements either on Longhill or Opportunity 3 Way Rds. [Holt]

2. ...the only improvements to be made are on Longhill Rd. [Dir. Parks & Recreation Carnifax]

This is confusing and unclear.

II. Warhill Sports Complex Expansion Traffic Impact Analysis — 09/19/16

A. Section 1. Executive Summary

1. Estimated to add 382 weekday PM peak hour trips — 1,594 total

2. Estimated to add 653 Saturday peak hour trips — 2,629 total

Where are the statistics pertaining to the WATA trips?

3. Under existing conditions, the intersection fails during both the PM and the Saturday peak hours and a traffic signal is needed for the intersection to operate at acceptable levels of service. (p1-3 and Section 3.3 Existing Conditions Analysis)

4. Traffic entering the park is split equally between the two entrances, while exiting traffic is skewed toward the Opportunity Way entrance (and traffic signal) due to the delays encountered at Longhill Rd. (p 1-4)

When there's a light at Longhill, this will change and the volume will increase as drivers take advantage of the greater convenience, compounding the blockage of traffic exiting MH subdivision.

B. Section 9. MUTCD Traffic Signal Warrant Analysis: Warrant 3, Peak Hour: "The 2016 existing volumes ... meet this warrant."

Why is there no provision for addressing — at the very least — access to Mallard Hill subdivision at its southern entrance where exiting WISC traffic blocks movement out of that residential neighborhood?

C. Section 10. Conclusions and Recommendations

1. "Under existing conditions, the intersection [Longhill Road/Warhill Trail] fails during both the PM and Saturday peak hours and a traffic signal is needed for the intersection to operate at acceptable levels of service."

2. Signalization of the intersection, since the issue is limited to peak hours, manual traffic control... during those hours should be considered. ...VDOT typically does not allow signalization based on the peak hour warrant only.

3. ...lengthening the SOUTHBOUND RIGHT TURN LANE to accommodate queues.

Which road is this? Warhill Trail is the only road running N-S.

4. Potential realignment of the residential driveway just west of the intersection to align with Blue Bill Run.

How "realign"? How will this address the blockage onto the exit road of Warhill Trail? Blue Bill already feeds directly to Warhill Trail with an extension between two median islands, allowing access to both north and south lanes of Warhill Trail.

And there are *other* questions beyond the considerations of your documents:

1. Is Warhill Trail structurally able to stand up to the added volume and weight of vehicles — those supporting activities and transporting users of the facilities at WISC? We already lost the pond west of the drainage pipes leading to WISC because the roadway was insufficient to support the traffic at *that* time.

2. Who will direct traffic at the exit of Mallard Hill subdivision during those hours when the road is obstructed by people leaving WISC? A patrolman on Longhill will be no use to the subdivision at all. The stats from Table 3-3 indicate current delays on SB Warhill Trail approach are *already* 544.3 sec/veh delay at PM peak hours and 481.7 sec/veh at Saturday peak hours. These wait times are often even longer for residents waiting to get out of our subdivision.

3. How will these amendments address the *speed* issues on Warhill Trail? Increasing the speed limit to 35 has only encouraged drivers of every kind of vehicle to go even faster. Not only is it illegal and dangerous, but it is unnecessarily noisy. A few residents have suggested sound barrier walls. Warhill Trail does not warrant that kind of obstructive structure which would detract from the extended view into the trees, impede the movement of local wildlife that moves throughout the extended neighborhood and could even lower property values.

4. Mallard Hill subdivision is already subject to traffic attempting to avoid the long lines from WISC and speeding down Swan Road to rejoin the line closer to Longhill. With longer lines and more delays, this would only get worse and increase the wait times for the residents attempting to exit the subdivision.

In closing, I'm happy that more residents of JCC can and will enjoy the facilities at WISC. I feel it is vital, however, to ensure there is no deterioration in the wellbeing and functioning of WISC's

neighbors. I believe there are outstanding and very important questions still to be answered before these amendments are finalized and approved.

I look forward to some additional developments in these plans from the Commission and would be happy to participate in some way if it would be of any assistance.

Most sincerely,

Cheryl M. Flory

5529 Swan Rd. WBVA 23188

757.707.3662

## Jose Ribeiro

---

**From:** Paul Holt  
**Sent:** Wednesday, November 02, 2016 8:06 AM  
**To:** John Carnifax; Jose Ribeiro  
**Subject:** FW: Warhill Sports Complex Master Plan amendment: PUBLIC COMMENT/CONCERN (from homeowner 5529 Swan Road, Williamsburg)

**From:** Cheryl Flory [mailto:cherylflory@cox.net]  
**Sent:** Tuesday, November 01, 2016 9:32 PM  
**To:** jeffrey.bigelow@cox.net; paul.heilman@yahoo.com; Michael Hipple <michael.hipple@jamescitycountyva.gov>; PlanComm <PlanComm@jamescitycountyva.gov>; Paul Holt <Paul.Holt@jamescitycountyva.gov>; Richard Krapf <Richard.Krapf@jamescitycountyva.gov>; abigailmknox@gmail.com; alphonso.matthewson@yahoo.com; s1shum@aol.com; kristen.fair@yahoo.com; clarence.jenkins@westrock.com; v8s102@cox.net; d.pogue@hotmail.com; dean10@cox.net; mngadam@cox.net; higs70@yahoo.com; dta87@msn.com; gtsinger@cox.net; txaggie64@gmail.com; jbmarsall00@hotmail.com; rwoark@aol.com; roberts\_curt@hotmail.com; jyelich@wesco.com; divamrgn17@aol.com; playsing55@gmail.com; mildress@aol.com; carpenjoyce@hotmail.com; david.bell@snapon.com; osmcian@me.com; annieann1@verizon.net; sslyfieldl@icloud.com; jubilee991@verizon.net; michaelproselli@msn.com; lgleaves@cox.net; lbeuschel@icloud.com; j2a3gonz@gmail.com; sezsusie@hotmail.com; micheleflautt@yahoo.com; jaeprice@cox.net; wmbgtrotts@verizon.net; winfield1@cox.net; o2swimn@gmail.com; RKnox1@cox.net  
**Subject:** Warhill Sports Complex Master Plan amendment: PUBLIC COMMENT/CONCERN (from homeowner 5529 Swan Road, Williamsburg)

Jeff et al

This is what I sent earlier to the board.

Please add us to your email threads

[christinaflory@cox.net](mailto:christinaflory@cox.net)

[cherylflory@cox.net](mailto:cherylflory@cox.net)

thanks

Tina

TO: Development Management Board  
Beth Klapper  
Board of Supervisors  
Teresa Fellowes

FROM: Christina Flory, PA-c Health Promotion Disease Prevention Program Manager VHA Richmond  
RE: Warhill Sports Complex Master Plan amendment  
DATE: 1 November, 2016

Dear Gentlemen,

After the death of my parents who purchased 5529 Swan Road in 1997, my sister and I inherited the Swan Road property in 2011. I have lived in Williamsburg since 2000, owning a townhouse prior to my move to 5529 Swan Road. There were a number of reasons the property was purchased & maintained including a location near wooded, natural areas; wildlife preserve, quiet surrounding neighborhoods, hospital & emergency care. The Warhill Sports Complex has been a considered a social benefit up until this point but with detrimental environmental impact.



With development of Warhill to include a second underground pool, a large arena, etc. additional limited resources and services will be stretched with a **very small cohort** of the population benefiting from the addition.

1. Our Mallard Hill community will realize significant increase in traffic, noise and crime risk.
2. Improved access will be needed.  
*I refuse to sell any land to JCC to enlarge a road to improve access to a swimming pool.*
3. The use of water and sewer resources will be stressed further placing our private land as well as the contiguous natural woodland and preserve at risk for further air pollution, greenhouse gas emissions and waste generation, ozone layer depletion, habitat and biodiversity loss, soil erosion & water pollution.

I suggest your office look to the future of our species, habitat and biodiversity by developing plans to improve and heal our township & environment rather than exploit them. Without this effort, the children using Warhill Sports Center may have a very bleak fate.

Respectfully,  
Christina Flory, PA-c

**From:** Beth Klapper [mailto:[Beth.Klapper@jamescitycountyva.gov](mailto:Beth.Klapper@jamescitycountyva.gov)]

**Sent:** Tuesday, November 01, 2016 8:20 AM

**To:** 'Cheryl Flory'

**Subject:** RE: JCC case no. SUP-0014-2016/MP-0002-2016 Warhill Sports Complex Master Plan amendment

Ms. Flory,

Our public comment is a little different. Technically the public comment period is opened and closed during the Planning Commission meeting; however, to accommodate individuals who wish to comment but who cannot be present at the meeting, we do accept written comment prior to the meeting. Another public comment period will be opened and closed during the Board of Supervisors meeting when the case is heard by the Board. I believe the Board accepts written comment also; however, you should confirm that with the Board Secretary, Teresa Fellowes – [teresa.fellowes@jamescitycountyva.gov](mailto:teresa.fellowes@jamescitycountyva.gov).

Best regards,

Beth Klapper  
Development Management Assistant

<image001.jpg>

101-A Mounts Bay Road  
Williamsburg, VA 23185

P: 757-253-6671

[jamescitycountyva.gov](http://jamescitycountyva.gov)

Please note that County e-mail addresses have changed.

Please use: [Beth.Klapper@jamescitycountyva.gov](mailto:Beth.Klapper@jamescitycountyva.gov) for all future correspondence.

-----Original Message-----

From: Cheryl Flory [mailto:[cherylflory@cox.net](mailto:cherylflory@cox.net)]

Sent: Monday, October 31, 2016 9:56 PM

To: Beth Klapper <[Beth.Klapper@jamescitycountyva.gov](mailto:Beth.Klapper@jamescitycountyva.gov)>

Subject: E: JCC case no. SUP-0014-2016/MP-0002-2016 Warhill Sports Complex Master Plan amendment

Hello, again, Ms. Klapper

I have a question about the comment period: When does it end?

I used to do comment summaries for the rulemaking office of the LA Dept of Environmental Quality. We would list the beginning and ending comment dates when we announced the hearing date. I don't remember seeing your dates. I might have missed them somewhere.

I look forward to hearing from you. Thanks so much!

Regards,  
Cheryl Flory

## Jose Ribeiro

---

**From:** Paul Holt  
**Sent:** Wednesday, November 02, 2016 8:04 AM  
**To:** Jose Ribeiro; John Carnifax  
**Subject:** FW: James City County Planning Commission - Warhill Sport Complex

**From:** Tamara Johnson [mailto:tmara2000@yahoo.com]  
**Sent:** Wednesday, November 02, 2016 12:33 AM  
**To:** Jim and Teresa Gabel <v8s102@cox.net>; 'Paul Heilman' <paul.heilman@yahoo.com>; 'Stephen Slyfield' <sslyfield@me.com>; 'Saul Gleiser' <gleiser@cox.net>  
**Cc:** 'Jeff Bigelow' <jeffrey.bigelow@cox.net>; Michael Hipple <michael.hipple@jamescitycountyva.gov>; PlanComm <PlanComm@jamescitycountyva.gov>; Paul Holt <Paul.Holt@jamescitycountyva.gov>; Richard Krapf <Richard.Krapf@jamescitycountyva.gov>; 'Abigail Knox' <abigailmknox@gmail.com>; alphonso.matthewson@yahoo.com; s1shum@aol.com; 'Kristen Fair' <kristen.fair@yahoo.com>; clarence.jenkins@westrock.com; d.pogue@hotmail.com; dean10@cox.net; mngadam@cox.net; higs70@yahoo.com; dta87@msn.com; 'Singer' <gtsinger@cox.net>; 'Jim Davenport' <txaggie64@gmail.com>; jbmarsall00@hotmail.com; rworoark@aol.com; 'Curt Roberts' <roberts\_curt@hotmail.com>; jylich@wesco.com; divamrgn17@aol.com; playsing55@gmail.com; mildress@aol.com; carpenjoyce@hotmail.com; david.bell@snapon.com; osmclan@me.com; annieann1@verizon.net; 'Linda Slyfield' <sslyfieldl@icloud.com>; 'Jessee and Glenda Glenda' <jubilee991@verizon.net>; 'Michael Roselli' <michaelproseli@msn.com>; lgleaves@cox.net; 'beuschel Lance' <lbeuschel@icloud.com>; j2a3gonz@gmail.com; sezsusie@hotmail.com; micheleflautt@yahoo.com; jaeprice@cox.net; 'Trots' <wmbgtrots@verizon.net>; 'Winfield' <winfield1@cox.net>; o2swimn@gmail.com; 'Roy Knox' <RKnox1@cox.net>  
**Subject:** Re: James City County Planning Commission - Warhill Sport Complex

Christopher and I will be there, though I'm not allowed to speak a second time, again a reminder to arrive early to fill out the speaker cards, we need a great showing from our development if you care about the resale value of your home.

Thank you,

Tamara Johnson  
AEA, SAG-AFTRA  
Associate Producer, Virginia Shakespeare Festival  
Instructor of Acting, College of William & Mary  
Cell: 410-608-0191  
<http://www.imdb.me/tamarajohnson>

**From:** Jim and Teresa Gabel <v8s102@cox.net>  
**To:** 'Paul Heilman' <paul.heilman@yahoo.com>; 'Stephen Slyfield' <sslyfield@me.com>; 'Saul Gleiser' <gleiser@cox.net>  
**Cc:** 'Jeff Bigelow' <jeffrey.bigelow@cox.net>; tmara2000@yahoo.com; 'Michael Hipple' <michael.hipple@jamescitycountyva.gov>; 'PlanComm' <PlanComm@jamescitycountyva.gov>; 'Paul Holt' <Paul.Holt@jamescitycountyva.gov>; 'Richard Krapf' <Richard.Krapf@jamescitycountyva.gov>; 'Abigail Knox' <abigailmknox@gmail.com>; alphonso.matthewson@yahoo.com; s1shum@aol.com; 'Kristen Fair' <kristen.fair@yahoo.com>; clarence.jenkins@westrock.com; d.pogue@hotmail.com; dean10@cox.net; mngadam@cox.net; higs70@yahoo.com; dta87@msn.com; 'Singer' <gtsinger@cox.net>; 'Jim Davenport' <txaggie64@gmail.com>; jbmarsall00@hotmail.com; rworoark@aol.com; 'Curt Roberts' <roberts\_curt@hotmail.com>; jylich@wesco.com; divamrgn17@aol.com; playsing55@gmail.com; mildress@aol.com; carpenjoyce@hotmail.com; david.bell@snapon.com; osmclan@me.com; annieann1@verizon.net; 'Linda Slyfield' <sslyfieldl@icloud.com>; 'Jessee

and Glenda Glenda' <jubilee991@verizon.net>; 'Michael Roselli' <michaelproselli@msn.com>; lgleaves@cox.net; 'beuschel Lance' <lbeuschel@icloud.com>; j2a3gonz@gmail.com; sezsusie@hotmail.com; michelefiautt@yahoo.com; jaeprice@cox.net; 'Trots' <wmbgtrots@verizon.net>; 'Winfield' <winfield1@cox.net>; o2swimn@gmail.com; 'Roy Knox' <RKnox1@cox.net>

**Sent:** Tuesday, November 1, 2016 7:41 PM

**Subject:** RE: James City County Planning Commission - Warhill Sport Complex

I plan on attending. Hopefully my Indians will win the WS tonight and I won't have to worry about a game 7 tomorrow. What has been the commissioners reply when asked about speed bumps on Warhill?

Jim Gabel

---

**From:** Paul Heilman [mailto:paul.heilman@yahoo.com]

**Sent:** Tuesday, November 01, 2016 6:08 PM

**To:** Stephen Slyfield; Saul Gleiser

**Cc:** Jeff Bigelow; tmara2000@yahoo.com; Michael Hipple; PlanComm; Paul Holt; Richard Krapf; Abigail Knox; alphonso.matthewson@yahoo.com; s1shum@aol.com; Kristen Fair; clarence.jenkins@westrock.com; v8s102@cox.net; d.poque@hotmail.com; dean10@cox.net; mngadam@cox.net; higs70@yahoo.com; dta87@msn.com; Singer; Jim Davenport; jbmarsall00@hotmail.com; rwoark@aol.com; Curt Roberts; jyellch@wesco.com; divamrgn17@aol.com; playsing55@gmail.com; mildress@aol.com; carpenjoyce@hotmail.com; david.bell@snapon.com; osmclan@me.com; annleann1@verizon.net; Linda Slyfield; Jesse and Glenda Glenda; Michael Roselli; lgleaves@cox.net; beuschel Lance; j2a3gonz@gmail.com; sezsusie@hotmail.com; michelefiautt@yahoo.com; jaeprice@cox.net; Trots; Winfield; o2swimn@gmail.com; Roy Knox

**Subject:** Re: James City County Planning Commission - Warhill Sport Complex

I will not be able to attend this meeting. I have a class scheduled that night.

Paul

On Tuesday, November 1, 2016 5:32 PM, Stephen Slyfield <sslyfield@me.com> wrote:

Here is the JCC 2014 Longhill Corridor Executive Summary

The WarHill Study is not yet on JCC Web Site.

That study has 2 pages of recommendations.

I may get a copy of the Warhill Recommendations tomorrow. tomorrow mid morning.



## 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 I 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 I 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.

5  
Kimley-Horn



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

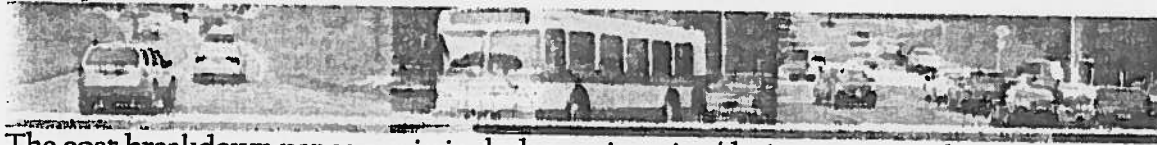
Project specific recommendations focus on operational, capacity, and safety improvements within the study area. Planning-level cost estimates, expressed in year 2014 dollars, have been included for all recommendations. These planning-level cost estimates have been based on VDOT's statewide four-year 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.



#### Kimley-Horn



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.

On Nov 1, 2016, at 16:32, Saul Gleiser <[gleiser@cox.net](mailto:gleiser@cox.net)> wrote:



If we can get a copy of the executive summary of the TIA we will know what the recommendations are.

On Tue, Nov 1, 2016 at 4:07 PM, Stephen Slyfield <[sslyfield@me.com](mailto:sslyfield@me.com)> wrote:  
Jeff and Paul, are you attending the meeting?

With little time between now and the meeting.

Here are the recommendations I have made in the past

1. Traffic Light at Warhill and LongHill
2. Police or JCC traffic director at Longhill and Warhill during peak traffic events ,  
Like the high school does.
3. 2 way stop sight on Warhill at the green gate and a yield sign for MH.
4. Speed Bumps
5. Keeping the park open to thru traffic entering and exiting the Park via Opportunity  
Way .
6. I believe that the neighbors that back up to Warhill should have a say in what kind of  
a sound barrier, fence or wall.  
Either can be a deterrent to thieves, (as has happened in the past). Can be a wind  
blocker etc

Since the no outlet signs, we rarely have folks trying to get out via N and S Mallard Run.

This from Rossie Carroll, VDOT Engineer.

II

Mr. Slyfield,

The Warhill Sports Complex Expansion Traffic Impact Analysis was performed by the Timmons Group for James City County. I have a copy of the document however the county would be in a better position to answer any questions you may have concerning the document and its findings in relation to impacts. You are more than welcome to view the copy of the study here at our office or contact JCC planning to set up a meeting to review and discuss. Just let me know if you want to schedule a meeting to come by and view the document here. Thanks.

***Rossie Carroll***

Williamsburg Residency Administrator  
Virginia Department of Transportation  
Hampton Roads District  
4451 Ironbound Road  
Williamsburg, VA 23188  
Office (757) 253-5140  
Fax (757) 253-5148

On Nov 1, 2016, at 12:41, Saul Gleiser <[gleiser@cox.net](mailto:gleiser@cox.net)> wrote:

It would be important to read the Traffic Impact Analysis (TIA), that I hope was conducted and see what the recommendations in that document are. I suspect that the existing road is not capable of sustaining the traffic increase, so are they planning broadening up the road and adding a new lane on each side? I won't be able to make the meeting tomorrow, but please make sure to ask about the TIA.

The document has to not only address road level of service (LOS) which should clearly be diminished once you place that type of stress on a neighborhood road, and how are they planning to mitigate it.

Also traffic calming devices should be contemplated, I prefer rough pavement or a change of pavement to the speed bumps, specially since lighting is not the best on the road. I don't think that a noise wall will be warranted but a tall fence and increase vegetative buffer might solve the noise problem.

they could also direct the traffic towards Centerville since Opportunity Way is designed for higher traffic volumes and is better equipped to handle that traffic than a two lane neighborhood road.

My two cents,

Saul

On Tue, Nov 1, 2016 at 12:03 PM, Stephen Slyfield <[sslyfield@me.com](mailto:sslyfield@me.com)> wrote:

Good points. I've tried multiple times for speed bumps over 18 years. I was able to get VDOT to get the crossing and no outlet signs.

I don't think anyone out of the neighborhood cares.

The wall sounds like the presidential election lol

On Nov 1, 2016, at 12:01, Tamara Johnson  
<[tmara2000@yahoo.com](mailto:tmara2000@yahoo.com)> wrote:

Hello,

With all due respect, Not all of us in the neighborhood are in favor of a huge concrete wall in our backyards. We need speed bumps on Warhill, to slow the speed of the drivers. I think the main issue is trying to get out of our neighborhood when an additional 200 more cars are added to getting in and out of our development once the pools are used for competition swim meets. They performed a traffic count this past month, but this time of year is not the highest amount of traffic, lucky for WISC and the Planning Commission. The city wants this pool built so they don't have to build another for the city elsewhere. There's no telling how much more traffic may be added if this becomes the new city pool.

Thank you,

Tamara Johnson

Sent from Yahoo Mail on Android

On Tue, Nov 1, 2016 at 8:44 AM, Stephen Slyfield  
<[sslyfield@me.com](mailto:sslyfield@me.com)> wrote:

I brought up the noise wall to the VDOT engineer a month ago via email.

No reply, but it should be raised at the meeting.

On Nov 1, 2016, at 08:21, Jeff Bigelow  
<[jeffrey.bigelow@cox.net](mailto:jeffrey.bigelow@cox.net)> wrote:

Yes, a noise eliminating fence would be ideal,

Jeff

From: Stephen Slyfield [<mailto:sslyfield@me.com>]  
Sent: Tuesday, November 1, 2016 7:57 AM  
To: Jeff Bigelow <[jeffrey.bigelow@cox.net](mailto:jeffrey.bigelow@cox.net)>  
Cc: Michael Hipple <[michael.hipple@jamescitycountyyva.gov](mailto:michael.hipple@jamescitycountyyva.gov)>; PlanComm  
<[PlanComm@jamescitycountyyva.gov](mailto:PlanComm@jamescitycountyyva.gov)>; Paul Holt  
<[Paul.Holt@jamescitycountyyva.gov](mailto:Paul.Holt@jamescitycountyyva.gov)>; Richard Krapf  
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1@verizon.net; gleiser@cox.net; Linda Slyfield  
<[sslyfield1@icloud.com](mailto:sslyfield1@icloud.com)>; Jessee and Glenda Glenda  
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<[winfield1@cox.net](mailto:winfield1@cox.net)>; o2swimn@gmail.com; Roy Knox  
<[RKnox1@cox.net](mailto:RKnox1@cox.net)>; tmara2000@yahoo.com

**Subject:** Re: James City County Planning Commission -  
Warhill Sport Complex

We need a sound wall along that road.

On Oct 31, 2016, at 22:58, Jeff  
Bigelow <[jeffrey.bigelow@cox.net](mailto:jeffrey.bigelow@cox.net)>  
wrote:

James City County  
Planning  
Commissioners,

I've been the President  
of the Mallard Hill Home  
Owners Association for  
about 10 years and this  
is the most outspoken  
our neighbors have been  
on any subject affecting  
the neighborhood. I,  
myself live on Swan  
Road which backs up to  
Warhill Trail and I can  
attest to the fact that the  
traffic has gotten out of  
control. Every day there  
are numerous vehicles  
speeding up and down  
Warhill Trail; not to  
mention the problem with  
traffic backing up. This  
definitely makes it very  
difficult and frustrating for  
everyone in the  
neighborhood to leave  
their homes. And when  
that happens we get  
traffic coming through  
our neighborhood to try  
and circumvent the

problem! A day doesn't go by that I don't hear "I hate all those loud speeding trucks, buses, and cars going back and forth all the time; I can't even sit in our own back yards and enjoy the beautiful day or relax outside".

I don't know the best solution to this problem, but I do know that something needs to be done because the more activities that take place at WISC, the worse this situation will become. I know we're not a large neighborhood, but this effects each and every one of us on a daily basis.

Thank you for your time.

Sincerely,

Jeff Bigelow  
President, Mallard Hill  
Home Owners  
Association

## Jose Ribeiro

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**From:** Paul Holt  
**Sent:** Tuesday, November 01, 2016 6:10 PM  
**To:** John Carnifax; Jose Ribeiro  
**Subject:** FW: James City County Planning Commission - Warhill Sport Complex

**From:** Tamara Johnson [mailto:tmara2000@yahoo.com]  
**Sent:** Tuesday, November 01, 2016 6:08 PM  
**To:** Saul Gleiser <gleiser@cox.net>; Stephen Slyfield <sslyfield@me.com>  
**Cc:** Jeff Bigelow <jeffrey.bigelow@cox.net>; Paul Heilman <paul.heilman@yahoo.com>; Michael Hipple <michael.hipple@jamescitycountyva.gov>; PlanComm <PlanComm@jamescitycountyva.gov>; Paul Holt <Paul.Holt@jamescitycountyva.gov>; Richard Krapf <Richard.Krapf@jamescitycountyva.gov>; Abigail Knox <abigailmknnox@gmail.com>; alphonso.matthewson@yahoo.com; s1shum@aol.com; Kristen Fair <kristen.fair@yahoo.com>; clarence.jenkins@westrock.com; v8s102@cox.net; d.pogue@hotmail.com; dean10@cox.net; mngadam@cox.net; higs70@yahoo.com; dta87@msn.com; Singer <gtsinger@cox.net>; Jim Davenport <txaggie64@gmail.com>; jbmarsshall00@hotmail.com; rworoark@aol.com; Curt Roberts <roberts\_curt@hotmail.com>; jyelich@wesco.com; divamrgn17@aol.com; playing55@gmail.com; mildress@aol.com; carpenjoyce@hotmail.com; david.bell@snapon.com; osmclan@me.com; annieann1@verizon.net; Linda Slyfield <sslyfieldl@icloud.com>; Jessee and Glenda Glenda <jubilee991@verizon.net>; Michael Roselli <michaelproseli@msn.com>; lgleaves@cox.net; beuschel Lance <lbeuschel@icloud.com>; j2a3gonz@gmail.com; sezsusie@hotmail.com; micheleflautt@yahoo.com; jaeprice@cox.net; Trots <wmbgtrots@verizon.net>; Winfield <winfield1@cox.net>; o2swimn@gmail.com; Roy Knox <RKnox1@cox.net>  
**Subject:** Re: James City County Planning Commission - Warhill Sport Complex

Hi Neighbors,

This meeting is supposed to ask for "special permission" to use the Warhill Road for an additional Bus Stop to be built in the near future (even bigger traffic vehicles). Those buses should be entering via Opportunity Way instead, but that road is partially a service road.

The Commission is well aware of traffic issues in our area which is why we need to make a grand showing of neighbors concerned about the increase in traffic. Currently the road to WISC via Opportunity Way is partially a service road where cars can only drive 15 mph and in a 3/10th's of a mile stretch has 3 major raised speed bumps. These are the types of speed bumps we want on Warhill. It's the exact same distance from Opportunity Way to WISC as Longhill to WISC, 1 mile either way. One problem is the service road via Opportunity Way is not marked as an exit, and it is only open during certain hours which you can't read until you travel down that road.

I drove up to WISC today and saw parents dropping their children off and leaving via Longhill, which means that for every child dropped off, parents are driving on Warhill Road, 4 times in an hour to deliver & pick up their child. I'd prefer WISC patrons use the Opportunity Way entrance via Warhill High School and let drivers speed past the Law Enforcement Building instead of our neighborhood. AND a reminder to all of us that we also get all the ambulances that are called to the WISC fields for injuries.

Why can't drivers and ambulances be redirected to use the Opportunity Way **ENTRANCE and close our park access gates** located on Warhill Road. Please note we do not want to be build a road connecting Opportunity Way and Warhill. Patrons will use that to cut through instead of using Centerville.

As for the noise factor and suggestion of vegetation to eliminate the noise... all these homes backed up to Warhill have vegetation, our's is probably the least and I've been trying to grow my trees back there for 6 years.

I'm concerned ultimately about the re-sale of our house from this development. When a prospective buyer arrives on Saturday morning and sees all that traffic, it will be a real turn-off. So I'd like to make a proposal, if we are going to be incarcerated in our development every weekend and now Friday nights, (Parents Night out). That WISC offer a lifetime Full Family membership to each and every household and future buyer in Mallard Hill for perpetuity.

I welcome your comments. Just so you know, I spoke at the last Planing Commission meeting in October. I will not allowed to speak at this November meeting. Please, please put our DVR on record and arrive at this meeting tomorrow night.

Thank you,

Tamara Johnson  
AEA, SAG-AFTRA  
Associate Producer, Virginia Shakespeare Festival  
Instructor of Acting, College of William & Mary  
Cell: 410-608-0191  
<http://www.imdb.me/tamarajohnson>

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**From:** Saul Gleiser <gleiser@cox.net>  
**To:** Stephen Slyfield <sslyfield@me.com>  
**Cc:** Jeff Bigelow <jeffrey.bigelow@cox.net>; Paul Heilman <paul.heilman@yahoo.com>; "tmara2000@yahoo.com" <tmara2000@yahoo.com>; Michael Hipple <michael.hipple@jamescitycountyva.gov>; PlanComm <PlanComm@jamescitycountyva.gov>; Paul Holt <Paul.Holt@jamescitycountyva.gov>; Richard Krapf <Richard.Krapf@jamescitycountyva.gov>; Abigail Knox <abigailmknox@gmail.com>; "alphonso.matthewson@yahoo.com" <alphonso.matthewson@yahoo.com>; "s1shum@aol.com" <s1shum@aol.com>; Kristen Fair <kristen.fair@yahoo.com>; "clarence.jenkins@westrock.com" <clarence.jenkins@westrock.com>; "v8s102@cox.net" <v8s102@cox.net>; "d.pogue@hotmail.com" <d.pogue@hotmail.com>; "dean10@cox.net" <dean10@cox.net>; "mngadam@cox.net" <mngadam@cox.net>; "higs70@yahoo.com" <higs70@yahoo.com>; "dta87@msn.com" <dta87@msn.com>; Singer <gtsinger@cox.net>; Jim Davenport <txaggie64@gmail.com>; "jbmarshall00@hotmail.com" <jbmarshall00@hotmail.com>; "rwoark@aol.com" <rwoark@aol.com>; Curt Roberts <roberts\_curt@hotmail.com>; "jyelich@wesco.com" <jyelich@wesco.com>; "divamrgn17@aol.com" <divamrgn17@aol.com>; "playsing55@gmail.com" <playsing55@gmail.com>; "mildress@aol.com" <mildress@aol.com>; "carpenjoyce@hotmail.com" <carpenjoyce@hotmail.com>; "david.bell@snapon.com" <david.bell@snapon.com>; "osmclan@me.com" <osmclan@me.com>; "annieann1@verizon.net" <annieann1@verizon.net>; Linda Slyfield <sslyfield@icloud.com>; Jesse and Glenda Glenda <jubilee991@verizon.net>; Michael Roselli <michaelproseli@msn.com>; "lgleaves@cox.net" <lgleaves@cox.net>; beuschel Lance <lbeuschel@icloud.com>; "i2a3gonz@gmail.com" <i2a3gonz@gmail.com>; "sezsusie@hotmail.com" <sezsusie@hotmail.com>; "micheleflautt@yahoo.com" <micheleflautt@yahoo.com>; "jaeprice@cox.net" <jaeprice@cox.net>; Trots <wmbgtrots@verizon.net>; Winfield <winfield1@cox.net>; "o2swimn@gmail.com" <o2swimn@gmail.com>; Roy Knox <RKnox1@cox.net>

**Sent:** Tuesday, November 1, 2016 4:32 PM

**Subject:** Re: James City County Planning Commission - Warhill Sport Complex

If we can get a copy of the executive summary of the TIA we will know what the recommendations are.

On Tue, Nov 1, 2016 at 4:07 PM, Stephen Slyfield <[sslyfield@me.com](mailto:sslyfield@me.com)> wrote:

Jeff and Paul, are you attending the meeting?

With little time between not and the meeting.

Here are the recommendations I have made in the past

1. Traffic Light at Warhill and LongHill
2. Police or JCC traffic director at Longhill and Warhill during peak traffic events ,  
Like the high school does.
3. 2 way stop sight on Warhill at the green gate and a yield sign for MH.
4. Speed Bumps
5. Keeping the park open to thru traffic entering and exiting the Park via Opportunity Way .
6. I believe that the neighbors that back up to Warhill should have a say in what kind of a sound barrier, fence or wall.

Either can be a deterrent to thieves, (as has happened in the past). Can be a wind blocker etc

Since the no outlet signs, we rarely have folks trying to get out via N and S Mallard Run.

This from Rossie Carroll, VDOT Engineer.

||

Mr. Slyfield,

The Warhill Sports Complex Expansion Traffic Impact Analysis was performed by the Timmons Group for James City County. I have a copy of the document however the county would be in a better position to answer any questions you may have concerning the document and its findings in relation to impacts. You are more than welcome to view the copy of the study here at our office or contact JCC planning to set up a meeting to review and discuss. Just let me know if you want to schedule a meeting to come by and view the document here. Thanks.

***Rossie Carroll***

Williamsburg Residency Administrator  
Virginia Department of Transportation  
Hampton Roads District  
4451 Ironbound Road  
Williamsburg, VA 23188  
Office (757) 253-5140  
Fax (757) 253-5148



On Nov 1, 2016, at 12:41, Saul Gleiser <[gleiser@cox.net](mailto:gleiser@cox.net)> wrote:

It would be important to read the Traffic Impact Analysis (TIA), that I hope was conducted and see what the recommendations in that document are. I suspect that the existing road is not capable of sustaining the traffic increase, so are they planning broadening up the road and adding a new lane on each side? I won't be able to make the meeting tomorrow, but please make sure to ask about the TIA.

The document has to not only address road level of service (LOS) which should clearly be diminished once you place that type of stress on a neighborhood road, and how are they planning to mitigate it.

Also traffic calming devices should be contemplated, I prefer rough payment or a change of payment to the speed bumps, specially since lighting is not the best on the road. I don't think that a noise wall will be warranted but a tall fence and increase vegetative buffer might solve the noise problem.

they could also direct the traffic towards Centerville since Opportunity Way is designed for higher traffic volumes and is better equipped to handle that traffic than a two lane neighborhood road.

My two cents,

Saul

On Tue, Nov 1, 2016 at 12:03 PM, Stephen Slyfield <[sslyfield@me.com](mailto:sslyfield@me.com)> wrote:

Good points. I've tried multiple times for speed bumps over 18 years. I was able to get VDOT to get the crossing and no outlet signs.

I don't think anyone out of the neighborhood cares.

The wall sounds like the presidential election lol

On Nov 1, 2016, at 12:01, Tamara Johnson <[tmara2000@yahoo.com](mailto:tmara2000@yahoo.com)> wrote:

Hello,

With all due respect, Not all of us in the neighborhood are in favor of a huge concrete wall in our backyards. We need speed bumps on Warhill, to slow the speed of the drivers. I think the main issue is trying to get out of our neighborhood when an additional 200 more cars are added to getting in and out of our development once the pools are used for competition swim meets. They performed a traffic count this past month, but this time of year is not the highest amount of traffic, lucky for WISC and the Planning Commission. The city wants this pool built so they don't have to build another for the city elsewhere. There's no telling how much more traffic may be added if this becomes the new city pool.

Thank you,

Tamara Johnson

Sent from Yahoo Mail on Android

On Tue, Nov 1, 2016 at 8:44 AM, Stephen Slyfield

<sslyfield@me.com> wrote:

I brought up the noise wall to the VDOT engineer a month ago via email.  
No reply, but it should be raised at the meeting.

On Nov 1, 2016, at 08:21, Jeff Bigelow  
<jeffrey.bigelow@cox.net> wrote:

Yes, a noise eliminating fence would be ideal,

Jeff

**From:** Stephen Slyfield [mailto:sslyfield@me.com]  
**Sent:** Tuesday, November 1, 2016 7:57 AM  
**To:** Jeff Bigelow <jeffrey.bigelow@cox.net>  
**Cc:** Michael Hipple <michael.hipple@jamescitycount yva.gov>;  
PlanComm <PlanComm@jamescitycountyva.go v>; Paul Holt  
<Paul.Holt@jamescitycountyva.g ov>; Richard Krapf  
<Richard.Krapf@jamescitycounty va.gov>; Abigail Knox  
<abigailmknox@gmail.com>; paul .heilman@yahoo.com; alphonso.m  
atthewson@yahoo.com; s1shum@aol.com; Kristen Fair  
<kristen.fair@yahoo.com>; clar ence.jenkins@westrock.com; v8s  
102@cox.net; d.pogue@hotmail.c  
om; dean10@cox.net; mngadam@co  
x.net; higs70@yahoo.com; dta87 @msn.com; Singer  
<gtsinger@cox.net>; Jim Davenport <txaggie64@gmail.com>; jbmars  
all00@hotmail.com; rwoorark@aol.com; Curt Roberts  
<roberts\_curt@hotmail.com>; jy elich@wesco.com; divamrgn17@aol  
.com; playsing55@gmail.com; m ildress@aol.com; carpenjoyce@  
hotmail.com; david.bell@snapon .com; osmcian@me.com; annieann  
1@verizon.net; gleiser@cox.net ; Linda Slyfield  
<sslyfieldl@icloud.com>; Jessee and Glenda Glenda  
<jubilee991@verizon.net>; Michael Roselli  
<michaelproseli@msn.com>; lgl eaves@cox.net; beuschel Lance  
<lbeuschel@icloud.com>; j2a3go nz@gmail.com; sezsusie@hotmail  
.com; micheleflautt@yahoo.com; jaeprice@cox.net; Trots  
<wmbgtrotts@verizon.net>; Winfield  
<winfield1@cox.net>; o2swimn@g mail.com; Roy Knox  
<RKnox1@cox.net>; tmara2000@ya hoo.com  
**Subject:** Re: James City County Planning Commission - Warhill Sport  
Complex

We need a sound wall along that road.

On Oct 31, 2016, at 22:58, Jeff Bigelow  
<jeffrey.bigelow@cox.net> wrote:

James City County Planning  
Commissioners,

I've been the President of the  
Mallard Hill Home Owners

Association for about 10 years and this is the most outspoken our neighbors have been on any subject affecting the neighborhood. I, myself live on Swan Road which backs up to Warhill Trail and I can attest to the fact that the traffic has gotten out of control. Every day there are numerous vehicles speeding up and down Warhill Trail; not to mention the problem with traffic backing up. This definitely makes it very difficult and frustrating for everyone in the neighborhood to leave their homes. And when that happens we get traffic coming through our neighborhood to try and circumvent the problem! A day doesn't go by that I don't hear "I hate all those loud speeding trucks, buses, and cars going back and forth all the time; I can't even sit in our own back yards and enjoy the beautiful day or relax outside".

I don't know the best solution to this problem, but I do know that something needs to be done because the more activities that take place at WISC, the worse this situation will become. I know we're not a large neighborhood, but this effects each and every one of us on a daily basis.

Thank you for your time.

Sincerely,

Jeff Bigelow  
President, Mallard Hill Home  
Owners Association

## Jose Ribeiro

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**From:** John Carnifax  
**Sent:** Monday, October 10, 2016 8:07 AM  
**To:** Paul Holt; Jose Ribeiro; Bradley Rinehimer  
**Cc:** Bryan Hill; Jason Purse  
**Subject:** FW: The upcoming Oct 5 meeting

FYI

---

**From:** Stephen Slyfield [mailto:sslyfield@me.com]  
**Sent:** Saturday, October 08, 2016 10:10 AM  
**To:** Jim and Teresa Gabel <v8s102@cox.net>  
**Cc:** Jeff Bigelow <jeffrey.bigelow@cox.net>; paul.heilman@yahoo.com; alphonso.matthewson@yahoo.com; s1shum@aol.com; Kristen Fair <kristen.fair@yahoo.com>; clarence.jenkins@westrock.com; d.pogue@hotmail.com; dean10@cox.net; mngadam@cox.net; higs70@yahoo.com; dta87@msn.com; Singer <gtsinger@cox.net>; Jim Davenport <txaggie64@gmail.com>; jbmarsall00@hotmail.com; rworoark@aol.com; Curt Roberts <roberts\_curt@hotmail.com>; jyelich@wesco.com; David Sutton <dosutton1966@gmail.com>; divamrgn17@aol.com; playsing55@gmail.com; mildress@aol.com; carpenjoyce@hotmail.com; david.bell@snapon.com; osmcian@me.com; gleiser@cox.net; Linda Slyfield <sslyfieldl@icloud.com>; Jessee and Glenda Glenda <jubilee991@verizon.net>; Michael Roselli <michaelproselli@msn.com>; lgleaves@cox.net; beuschel Lance <lbeuschel@icloud.com>; j2a3gonz@gmail.com; sezsusie@hotmail.com; micheleflautt@yahoo.com; jaeprice@cox.net; Trots <wmbgtrots@verizon.net>; Winfield <winfield1@cox.net>; o2swimn@gmail.com; Roy Knox <RKnox1@cox.net>; tmara2000@yahoo.com  
**Subject:** Re: The upcoming Oct 5 meeting

**Jim**, I've been here since the start of Mallard Hill in about 2001.

The back road should be open all the time and from an hour before Sunrise tis 2000 or after event traffic is gone.

I took a picture of the sign 11 March 2015, so i can know when its usable.



# Warhill Sports Complex Service Road Open

March 1-June 30

September 1-November 30

Monday-Friday, 4-9 p.m.

Saturday & Sunday, 8 a.m. - 5 p.m.

Closed all other times, except  
during special events. 757-259-5360

Big events should be funneled out that back gate all the time.

**Carrol Rossie is our area Engineer.**

**Note he is cc'd below.**

I've worked with him over the years.

**Rossie has:**

- given us No outlet signs
- fixed drainage on North Mallard Run
- cleared the fields of vision accessing Warhill trail (maybe Park Cit this.)
- had park bushes behind the gate trimmed to increase visibility
- put a Hash mark and white line and stop mark at the stop sign
- put a cross walk warning in at the gate
- answered questions for us etc.
- referred us to a JCC program on repairing culverts clear

There is a Longhill Road study ongoing now. Not sure what is in it.

**To no avail I have asked for:**

- speed bumps
- traffic light at Longhill
- traffic Police during mass events in the park
- 3 way stop at the park gate, to slow people down
- I've asked the JCC County folks (John Carnifax) to have a traffic director at Longhill and Warhill

Trail just like the high school has during the peak events.

JCC Chief of Police, Brad Rinehimer, has set up speed traps from time to time at my request. Speeders are still flying when they pass the green gate. JCC could make a bunch of money there with tickets, and make exiting Mallard hill from there safer.

Speed bumps would just teach the park traffic to go through our neighborhood.

A 3 way stop would solve that the problem or at least slow track to a rolling slow stop.

So my thanks to Rossie, John and Chief Rinehimer for what you have done for us in Mallard Hill.

**Rossie, John, Chief .... is there any chance of:**

1. traffic light at Longhill (The new Pool may generate generate enough traffic count to justify a traffic light. It will clearly impose further traffic jams on Warhill Road, sound problems for residents backing up to that road. I believe a traffic count during peak use hours is in order, pls.
  2. a sound wall to shield Mallard Hill from the traffic noise.
  3. traffic Police during mass events in the park
  4. 3 way stop at the park gate, to slow people down
  5. John Carnifax or the Police to have a traffic director at Longhill and Warhill Trail during the peak events.
    - the high school has a civilian traffic director when school lets out
  6. the speed trap and slow down sign again
  7. move the Opportunity way sign closer to Centerville Road
  8. keep the Opportunity way road and the Warhill gate open year round from an hour before Sunset until 2000 (8PM)
    - This would allow reasonable use to all, and allow the parents picking up kids to speed out to Centerville Road past the Police Station.
  9. Keep The opportunity way road open until all Park events are over and traffic is gone.
  10. A demographic study of where local park users residents will dictate whether folks will use the back entrance. But leaving it open as i recommend above would eliminate the need for a costly study
- Regards

On Oct 8, 2016, at 08:24, Jim and Teresa Gabel <[v8s102@cox.net](mailto:v8s102@cox.net)> wrote:

When did that sign go up and who selected date range? Why wasn't it 1 March to 30 November? I've seen traffic backed up to almost the second Mallard Hill entrance this spring. I've walked there in the middle of the week before 9:00 PM and the gate has been closed. It could have been after 30 June.

It's time to widen the service road and make it a thoroughfare. I live at the main entrance to Mallard Hill. At times the traffic coming and going is ridiculous and dangerous when turning left on Longhill. What's the position of Mallard Hill residents? Widen service road? Install a light on Longhill? While I

was in Germany my wife told me there was talk about widening Longhill. I Haven't heard anything about this since I've been back. Is that going to happen?

v/r  
Jim Gabel

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**From:** Jeff Bigelow [mailto:jeffrey.bigelow@cox.net]  
**Sent:** Monday, October 03, 2016 7:53 PM  
**To:** paul.heilman@yahoo.com; alphonso.matthewson@yahoo.com; s1shum@aol.com; 'Kristen Fair'; clarence.jenkins@westrock.com; v8s102@cox.net; d.pogue@hotmail.com; dean10@cox.net; mngadam@cox.net; higs70@yahoo.com; dta87@msn.com; 'Singer'; 'Jim Davenport'; jbmarsall00@hotmail.com; rwoark@aol.com; 'Curt Roberts'; jyelich@wesco.com; dosutton1966@gmail.com; divamrgn17@aol.com; playsing55@gmail.com; mildress@aol.com; carpenjoyce@hotmail.com; david.bell@snapon.com; osmclan@me.com; annieann1@verizon.net; gleiser@cox.net; 'Linda'; 'Jessee and Glenda Glenda'; 'Stephen Slyfield'; 'Michael Roselli'; lgleaves@cox.net; 'beuschel Lance'; j2a3gonz@gmail.com; sezsusie@hotmail.com; micheleflautt@yahoo.com; jaeprice@cox.net; 'Trots'; 'Winfield'; o2swimn@gmail.com; 'Roy Knox'; tmara2000@yahoo.com; winfield1@cox.net  
**Subject:** RE: The upcoming Oct 5 meeting

All,

Received the following from Cheryl Flory. Sounds like we need to wait until 2 Nov to attend the Planning Commission Meeting. Thank you for sharing!!!

Also some more info from Tamara Johnson concerning the two entrances to WISC. The 2<sup>nd</sup> road is via Opportunity Way is a service road located near the basketball courts and not designed for a lot of traffic. It has speed limit of 15 mph with 4-5 speed bumps which you can go over at 5 mph **when the access road is open which you can't tell until traveling down the road a bit.** Most of the travelers will likely take the Warhill trail exit which you can travel at a much higher speed and no speed bumps to exit the park. For those of you that don't know the times the access road (via Opportunity Way) see the attached sign for hours that it's open.

Again, thank you both for sharing this information.

Jeff

**From:** Beth Klapper [mailto:Beth.Klapper@jamescitycountyva.gov]  
**Sent:** Monday, October 03, 2016 9:22 AM  
**To:** 'Cheryl Flory'  
**Subject:** RE: JCC case no. SUP-0014-2016/MP-0002-2016 Warhill Sports Complex Master Plan amendment

Ms. Flory,

Below is a direct link to the materials for the Warhill Sports Complex Master Plan amendment:  
<http://jamescity.novusagenda.com/AgendaPublic/CoverSheet.aspx?ItemID=1939&MeetingID=307>



**Staff has requested that this case be deferred to the November 2, 2016 Planning Commission meeting.** As it has been advertised, the public hearing will be opened at the October 5 meeting and you would be welcome to speak; however, **if you choose to provide your comments then, you would not be able speak again at the November meeting when the case is discussed.** Alternately, should you not be able to attend either meeting, you may provide written comment by letter or email which will be provided to the Commission for consideration. If you have questions in the interim, please let me know and I will forward them to the planner handling the case.

For reference, agenda materials for all public meetings can be found (generally a week before the meeting) at:

<http://www.jamescitycountyva.gov/129/Agendas-Minutes>

You may find the link for the Online Agenda less cumbersome than downloading the entire PDF file as you can select just those items which interest you.

Thank you for the note regarding the calendar. I will follow up on it.

Best regards,

**Beth Klapper**  
Development Management Assistant

<image002.jpg>  
101-A Mounts Bay Road  
Williamsburg, VA 23185  
P: 757-253-6671  
[jamescitycountyva.gov](http://jamescitycountyva.gov)

*Please note that County e-mail addresses have changed.  
Please use: [Beth.Klapper@jamescitycountyva.gov](mailto:Beth.Klapper@jamescitycountyva.gov) for all future correspondence.*

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**From:** Jeff Bigelow [<mailto:jeffrey.bigelow@cox.net>]  
**Sent:** Sunday, October 2, 2016 8:44 PM  
**To:**  
**Cc:** 'Jeff Bigelow' <[jeffrey.bigelow@cox.net](mailto:jeffrey.bigelow@cox.net)>  
**Subject:** FW: The upcoming Oct 5 meeting  
**Importance:** High

Mallard Hill Neighbors,

I can't make this meeting but I encourage everyone who can to attend. I've also attached a letter concerning a bus stop at WISC too! If we have to live with this maybe it would be nice to get a sounds suppressing fence on our side of the road, just a thought. Please forward to anyone else you may know would be interested.

Jeff

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**From:** Tamara Johnson [<mailto:tmara2000@yahoo.com>]  
**Sent:** Saturday, October 1, 2016 12:20 PM  
**To:** Mark Winfield <[winfield1@cox.net](mailto:winfield1@cox.net)>; [jeffrey.bigelow@cox.net](mailto:jeffrey.bigelow@cox.net)  
**Subject:** The upcoming Oct 5 meeting

Hello Gentlemen,

It took me some time to dig this up online and perhaps you already have it, but in a nutshell I think we need some representation from the neighborhood to protest the additional traffic that will halt our ability to exit our development even more than as it currently stands. We are talking an additional 200 cars coming to and from the WISC Rec Center for its new swimming pool competitions. Chris and I are planning to be at the Oct 5th meeting. I hope to see you and others there. Feel free to send this out to our neighbors, Chris keeps the developments email list at this work. I don't have everyone's emails, so if you could forward this it would be appreciated.

Tamara Johnson  
AEA, SAG-AFTRA  
Associate Producer, Virginia Shakespeare Festival  
Instructor of Acting, College of William & Mary  
Cell: 410-608-0191  
<http://www.imdb.me/tamarajohnson>

**Jose Ribeiro**

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**Subject:** FW: WISC/Warhill Trail

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**From:** Abigail Knox [abigailmknox@gmail.com]  
**Sent:** Monday, October 24, 2016 4:19 PM  
**To:** Richard Krapf  
**Cc:** Michael Hipple; [jeffrey.bigelow@cox.net](mailto:jeffrey.bigelow@cox.net)  
**Subject:** WISC/Warhill Trail

Gentlemen,

As 19 year residents of Mallard Hill we have witnessed the many changes to Warhill Park and WISC. We are not in anyway opposed to the improvements to the park and the benefits provided to the residents of James City County. We are, however, losing patience with the lack of traffic control on Warhill Trail and the additional noise and access issues it has created for our neighborhood. We often see traffic backups to the entrance to the park, making it difficult for us to leave our home. We can no longer enjoy a quiet dinner on our porch without excessive noise from buses, speeding vehicles and commercial traffic caused by the childcare and sports activities.

As residents who witness these issues daily we would like to propose that a solution to the traffic issues be addressed before the changes are approved. Opening of the road through to Opportunity Way would seem the most obvious solution, since a light exists at Centerville Road and traffic would have a safer and speedier exit from the park. During morning and evening rush hours exiting to Longhill Road is very dangerous and a number of accidents have occurred. Regular speed enforcement is also necessary. The majority of the traffic on Warhill Trail exceeds the 30 mph speed limit and rarely stops for pedestrians to access the bicycle and walking trails.

We appreciate your consideration of the quality of life and property values in the Mallard Hill neighborhood.

Roy A. and Abigail Knox  
[abigailmknox@gmail.com](mailto:abigailmknox@gmail.com)

5521 Swan Road  
Williamsburg, VA 23188  
757-258-0887

**Jose Ribeiro**

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**Subject:**

**FW: Lawn bowling**

**-----Original Message-----**

**From:** CHRISTINE BORN [mailto:christinepaque@icloud.com]

**Sent:** Monday, October 24, 2016 4:33 PM

**To:** Paul Holt <Paul.Holt@jamescitycountyva.gov>

**Subject:** Lawn bowling

Since the closure of the bowling green in Williamsburg we are searching for a new venue. I have played at your indoor sports complex. I understand there is a proposal for a specific outdoor green and would like to add my support for it. It is a great sport for everyone. There is a member who is unable to bend down to deliver a bowl who uses a special gadget with which the bowl can be released while standing. This is one example of how seniors with reduced mobility can benefit from the sport. It is an excellent sport for seniors and of course any adult (. In the U K young people can play as well. ) Many members of our bowling club; some of whom have been playing for years would be able to assist in teaching the sport. It is also a sport for men and women as strength is not necessary as it is a question of applying certain skills.

Thal you for considering our proposal . Christine Born

Sent from my iPad

**From:** Kenneth Selby [mailto:kbselby@aol.com]  
**Sent:** Monday, September 26, 2016 11:14 AM  
**To:** Planning <planning@jamescitycountvwa.gov>  
**Subject:** Warhill Sports Complex Master Plan Amendment letter dtd 9/20/16

**Mr Holt,**

After reading your proposal letter I have one question that concerns not only the Mallard Hill neighborhood but ALL users of complex using the Warhill Road entrance. What planning and coordination has been conducted with VDOT and the county's roads department as to the impact of putting the WATA transfer station on the Warhill Road side of the complex?

My concern is egress from Warhill to Longhill Road. First and foremost this is and has been a safety concern since we moved here almost six years ago. By adding the transfer station now we will have to add buses to the extremely long lines of traffic trying to exit Warhill. If you've never tried this exit I'd suggest you do so prior to, between or after sporting events. Lines can develop from Longhill to past the Warhill entrance gate.

There are a couple of solutions that would remedy this safety issue. The first is to install a traffic signal at the Warhill/Longhill intersection. While I understand this may be in the long range plan of VDOT it must surely be addressed if the Master Plan Amendment is approved. The other solution would be to establish the transfer point off of Opportunity Way or possibly at the stadium on the north end?

I appreciate your consideration in this matter.

V/r,

Ken Selby  
5513 N Mallard Run  
Williamsburg VA 23188  
Cell (612) 227-8990

**ITEM SUMMARY**

DATE: 12/13/2016

TO: The Board of Supervisors

FROM: Richard Bradshaw, Commissioner of the Revenue

SUBJECT: Ordinance to Amend Chapter 20, Taxation

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**ATTACHMENTS:**

	Description	Type
▣	memo	Cover Memo
▣	Ordinance	Ordinance
▣	ord - clean	Ordinance

**REVIEWERS:**

Department	Reviewer	Action	Date
Attorney	Kinsman, Adam	Approved	11/18/2016 - 3:46 PM
Publication Management	Burcham, Nan	Approved	11/18/2016 - 3:51 PM
Legal Review	Kinsman, Adam	Approved	11/18/2016 - 4:00 PM
Board Secretary	Fellows, Teresa	Approved	11/23/2016 - 7:57 AM
Board Secretary	Purse, Jason	Approved	12/6/2016 - 9:27 AM
Board Secretary	Fellows, Teresa	Approved	12/6/2016 - 9:37 AM

## MEMORANDUM

DATE: November 16, 2016  
TO: The Board of Supervisors  
FROM: Richard W. Bradshaw, Commissioner of the Revenue  
SUBJECT: Proposed Revision of the Code of James City County, Section 20-13.8

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The Commissioner of the Revenue's office requests the attached changes to the Code of James City County, Section 20-13.8.

These changes will clarify calculation of late filing penalty for business personal property and machinery and tools, and remove references to late payment penalties and interest.

RWB/kb  
PropRevision-mem

Attachment

ORDINANCE NO. \_\_\_\_\_

AN ORDINANCE TO AMEND AND REORDAIN CHAPTER 20, TAXATION OF THE CODE OF THE COUNTY OF JAMES CITY, VIRGINIA, BY AMENDING ARTICLE III, PERSONAL PROPERTY TAX, SECTION 20-13.8, FILING ANNUAL RETURNS OF BUSINESS PERSONAL PROPERTY AND MACHINERY AND TOOLS.

BE IT ORDAINED by the Board of Supervisors of the County of James City, Virginia, that Chapter 20, Taxation, is hereby amended and reordained by amending Article III, Personal Property Tax, Section 20-13.8, Filing annual returns of business personal property and machinery and tools.

**Chapter 20. Taxation**

**Article III. Personal Property Tax**

**Section 20-13.8. Filing annual returns of business personal property and machinery and tools.**

Every taxpayer owning business personal property or machinery and tools shall file a tax return on or before May 1 of each year that includes information required by the commissioner of the revenue. If any taxpayer owning business personal property or machinery and tools neglects or refuses to file such return for any year within the time prescribed, the commissioner of the revenue shall, from the best information he can obtain, enter the fair market value of such property and assess the same as if it had been reported to him. Any person failing to file a return by May 1 of each year, or the first day thereafter which is not a Saturday, Sunday, or a legal holiday shall incur a penalty of ten percent of the assessed tax ~~past due, or \$10.00, whichever is greater; provided, however, that the penalty shall in no case exceed the amount of the tax assessable. In addition thereto, interest at the rate prescribed in section 20-7.4, shall commence the first day of the month following the month in which the return was required to be filed.~~

	Michael J. Hipple			
	Chairman, Board of Supervisors			
	VOTES			
ATTEST:		<u>AYE</u>	<u>NAY</u>	<u>ABSTAIN</u>
	MCLENNON	_____	_____	_____
	LARSON	_____	_____	_____
	ONIZUK	_____	_____	_____
	SADLER	_____	_____	_____
	HIPPLE	_____	_____	_____

\_\_\_\_\_  
Bryan J. Hill  
Clerk to the Board

Adopted by the Board of Supervisors of James City County, Virginia, this 13th day of December, 2016.

Ch20-ArtIII-Tax-ord



ORDINANCE NO. \_\_\_\_\_

AN ORDINANCE TO AMEND AND REORDAIN CHAPTER 20, TAXATION OF THE CODE OF THE COUNTY OF JAMES CITY, VIRGINIA, BY AMENDING ARTICLE III, PERSONAL PROPERTY TAX, SECTION 20-13.8, FILING ANNUAL RETURNS OF BUSINESS PERSONAL PROPERTY AND MACHINERY AND TOOLS.

BE IT ORDAINED by the Board of Supervisors of the County of James City, Virginia, that Chapter 20, Taxation, is hereby amended and reordained by amending Article III, Personal Property Tax, Section 20-13.8, Filing annual returns of business personal property and machinery and tools.

## **Chapter 20. Taxation**

### **Article III. Personal Property Tax**

#### **Section 20-13.8. Filing annual returns of business personal property and machinery and tools.**

Every taxpayer owning business personal property or machinery and tools shall file a tax return on or before May 1 of each year that includes information required by the commissioner of the revenue. If any taxpayer owning business personal property or machinery and tools neglects or refuses to file such return for any year within the time prescribed, the commissioner of the revenue shall, from the best information he can obtain, enter the fair market value of such property and assess the same as if it had been reported to him. Any person failing to file a return by May 1 of each year, or the first day thereafter which is not a Saturday, Sunday, or a legal holiday shall incur a penalty of ten percent of the assessed tax.

**ITEM SUMMARY**

DATE: 12/13/2016

TO: The Board of Supervisors

FROM: Bryan J. Hill, County Administrator

SUBJECT: County Administrator's Report

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**ATTACHMENTS:**

	Description	Type
▣	CA Report	Cover Memo

**REVIEWERS:**

Department	Reviewer	Action	Date
Board Secretary	Fellows, Teresa	Approved	12/6/2016 - 3:55 PM

## **M E M O R A N D U M**

DATE: December 13, 2016

TO: The Board of Supervisors

FROM: Bryan J. Hill, County Administrator

SUBJECT: County Administrator's Report

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The following is a summary of activities that took place November 16, 2016 through December 6, 2016:

### November 16, 2016 (Wednesday)

- Attended New Employee Orientation
- Met with John Horne, General Services Director
- Attended unveiling Presidents Pavilion at Patriot's Colony
- Attended VDOT public hearing: News Road/Centerville

### November 17, 2016 (Thursday)

- Attended Hampton Roads Planning District Commission and Hampton Roads Transportation Planning Organization meetings

### November 18, 2016 (Friday)

- Met with Patrick Teague, interim HR Director, Jody Puckett, Communications Director and Jason Purse, Assistant County Administrator; Strategic Plan
- Met with Rebecca Vinroot, Social Services Director
- Met with Nzinga Teule-Hekima, Peninsula Health Center Director
- Met with Sue Mellen, FMS Director and Sharon Day, FMS Assistant Director

### November 22, 2016 (Tuesday)

- Attended VPRJ Budget Committee meeting
- Met with Peggy Bellows, Virginia Gazette Editor
- Attended agenda meeting
- Attended Board of Supervisors work session
- Attended Board of Supervisors meeting

### November 23, 2016 (Wednesday)

- Met with Doug Powell, JCSA Manager and Mike Vergakis, JCSA Chief Civil Engineer
- Met with Tim Trant

### November 24, 2016 (Thursday)

- County Closed in observance of Thanksgiving Holiday

November 25, 2016 (Friday)

- County closed in observance of Thanksgiving Holiday

November 28, 2016 (Monday)

- Met with Sue Mellen, FMS Director
- Met with Patrick Teague, interim HR Director

November 29, 2016 (Tuesday)

- Met with Department of Environmental Quality and Doug Powell, JCSA Manager
- Attended meeting with consultant; superintendent search

November 30, 2016 (Wednesday)

- Met with Sue Mellen, FMS Director
- Speaking engagement: Hampton Roads Criminal Justice Academy

December 1, 2016 (Thursday)

- Attended New Employee Orientation
- Met with Paul Holt, Community Development Director
- Attended pre-agenda meeting
- Met with Ryan Ashe, Fire Chief and Brad Rinehimer, Police Chief
- Met with Supervisor John McGlennon
- Met with Russ Seymour, Economic Development Director

December 2, 2016 (Friday)

- Attended 7th Annual Economic Summit

December 5, 2016 (Monday)

- Met with Russ Seymour, Economic Development Director
- Met with Sue Mellen, FMS Director
- Met with Patrick Teague, interim HR Director

December 6, 2016 (Tuesday)

- Attended Social Services Holiday Party
- Attended VDOT public hearing: Route 612 Longhill Road widening project
- Attended Abram Frink Santa Helper Event

**ITEM SUMMARY**

DATE: 12/13/2016

TO: The Board of Supervisors

FROM: Teresa J. Fellows, Administrative Coordinator

SUBJECT: Adjourn until 4 pm on January 3, 2017 for the Organizational Meeting

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**REVIEWERS:**

Department	Reviewer	Action	Date
Board Secretary	Fellows, Teresa	Approved	12/6/2016 - 4:12 PM