

AGENDA
JAMES CITY COUNTY BOARD OF SUPERVISORS
REGULAR MEETING
County Government Center Board Room
101 Mounts Bay Road, Williamsburg, VA 23185
December 8, 2015
6:30 PM

A. CALL TO ORDER

B. ROLL CALL

C. MOMENT OF SILENCE

D. PLEDGE OF ALLEGIANCE

1. Pledge Leader - Isabella Kennedy, a 4th grade honor student at Walsingham Academy and resident of the Stonehouse District

E. PRESENTATIONS

1. Review of FY 2015 Financial Statements for James City County and James City Service Authority – Dixon Hughes Goodman, LLP
2. VDOT Quarterly Report
3. Presentation by Registrar
4. Presentation by Treasurer
5. Presentation by Communications
6. 2015 Chairman's Awards
7. Recognition of Service - Ms. Jones and Mr. Kennedy

F. PUBLIC COMMENT - Until 7 p.m.

G. CONSENT CALENDAR

1. Minutes Adoption - November 24, 2015 Regular Meeting
2. Contract Award - Recreation Center HVAC Replacement
3. Adoption of the James City County Emergency Operations Plan 2015

H. PUBLIC HEARING(S)

1. Adoption of the Mooretown Road Extended Corridor Study Report
2. LU-0002-2014 8491 Richmond Road (Taylor Farm) Land Use Designation Change

I. BOARD CONSIDERATION(S),

1. Adoption of 2016 Legislative Program

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 p.m. on January 4, 2016 for the Organizational Meeting

ITEM SUMMARY

DATE: 12/8/2015

TO: The Board of Supervisors

FROM: Teresa J. Fellows, Administrative Coordinator

SUBJECT: Pledge Leader - Isabella Kennedy, a 4th grade honor student at Walsingham Academy and resident of the Stonehouse District

REVIEWERS:

Department	Reviewer	Action	Date
Board Secretary	Fellows, Teresa	Approved	11/24/2015 - 9:06 AM

ITEM SUMMARY

DATE: 12/8/2015

TO: The Board of Supervisors

FROM: Tara Woodruff, Director of Budget and Accounting

SUBJECT: Review of FY 2015 Financial Statements for James City County and James City Service Authority – Dixon Hughes Goodman, LLP

ATTACHMENTS:

	Description	Type
▣	Annual Financial Report Memo	Cover Memo
▣	BOS CAFR	Exhibit
▣	BOS Report	Exhibit
▣	JCSA CAFR	Exhibit
▣	JCSA Report	Exhibit

REVIEWERS:

Department	Reviewer	Action	Date
Accounting	Mellen, Sue	Approved	11/17/2015 - 8:35 AM
Financial Management	Mellen, Sue	Approved	11/17/2015 - 8:36 AM
Publication Management	Burcham, Nan	Approved	11/17/2015 - 9:20 AM
Legal Review	Gowdy, Michelle	Approved	11/17/2015 - 10:29 AM
Board Secretary	Fellows, Teresa	Approved	11/17/2015 - 12:26 PM
Board Secretary	Kinsman, Adam	Approved	11/17/2015 - 2:33 PM
Board Secretary	Fellows, Teresa	Approved	11/17/2015 - 2:34 PM

MEMORANDUM

DATE: December 8, 2015
TO: The Board of Supervisors
FROM: Tara Woodruff, Director of Budget and Accounting
SUBJECT: Review of FY 2015 Financial Statements for James City County and James City Service Authority – Dixon Hughes Goodman, LLP

Included in the Reading File are the FY 2015 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.

TW/nb
AnnualFinReportFY15-mem

Attachment



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



**THE COMPREHENSIVE ANNUAL FINANCIAL REPORT
FOR THE FISCAL YEAR ENDED JUNE 30, 2015**

COUNTY OF JAMES CITY, VIRGINIA

Comprehensive Annual Financial Report

June 30, 2015

(With Independent Auditors' Report Thereon)

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

INTRODUCTORY SECTION

COUNTY OF JAMES CITY, VIRGINIA

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COUNTY OF JAMES CITY, VIRGINIA

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COUNTY OF JAMES CITY, VIRGINIA

Comprehensive Annual Financial Report

County Officials

Year ended June 30, 2015

Board of Supervisors

Michael J. Hipple, Sr., Powhatan District	Chair
Kevin D. Onizuk, Jamestown District	Vice Chair
James G. Kennedy, Stonehouse District	
John J. McGlennon, Roberts District	
Mary K. Jones, Berkeley District	
Bryan J. Hill	Clerk

Officials

Michael E. McGinty	Judge of the Circuit Court
B. Elliott Bondurant	Judge of the Circuit Court
Betsy B. Woolridge	Clerk of the Circuit Court
Nathan R. Green	Commonwealth's Attorney
Richard W. Bradshaw	Commissioner of the Revenue
Jennifer D. Tomes	Interim 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. Steven M. Constantino	Superintendent of Schools
Bryan J. Hill	County Administrator
Michelle M. Gowdy	County Attorney

COUNTY OF JAMES CITY, VIRGINIA

Comprehensive Annual Financial Report

County Officials

Year ended June 30, 2015

Board of Directors, James City Service Authority

James G. Kennedy	Chair
Kevin D. Onizuk	Vice Chair
Michael J. Hipple, Sr.	
Mary K. Jones	
John J. McGlennon	
M. Douglas Powell	General Manager
Stephanie A. Luton	Treasurer

School Board, Williamsburg-James City County Public Schools

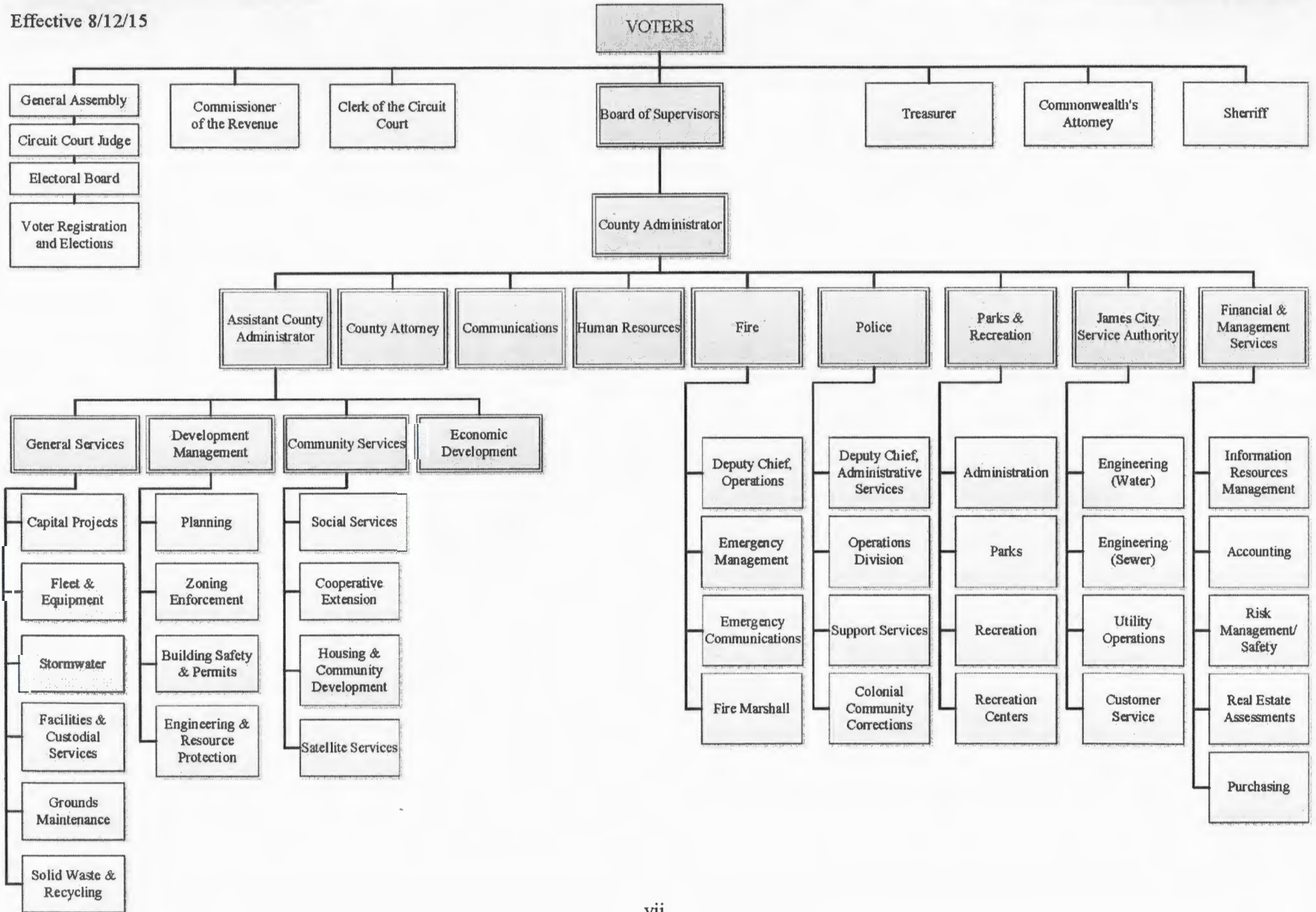
James Kelly	Chair
Heather Cordasco	Vice Chair
Ruth Larson	
Elise Emanuel	
Joe Fuentes	
James Nickols	
Kyra Cook	

Board Members, Economic Development Authority

Marshall Warner	Chair
Robin Carson	Vice Chair
Leanne Dubois	
Paul Gerhardt	
Tim Harris	
Stephen Montgomery	
Thomas Tingle	

James City County Organization Chart

Effective 8/12/15





Financial and Management Services

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

jamescitycountyva.gov

November 23, 2015

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, 2015, 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 in conformity with the provisions of the Single Audit Act of 1996, as amended, and U.S. Office of Management and Budget Circular A-133, *Audits of States, Local Governments and Non-Profit Organizations*. 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 4-14 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(a) in the notes 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 92-97 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 102.

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 1.1% from last year. Real estate revenue increased as a result of new development. Revenues are expected to increase 6.7% during fiscal year 2016. The real estate tax revenue is expected to increase next fiscal year, which is primarily related to a 7 cent real estate tax increase.

In May 2015, Standard & Poor's Rating 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

The County adopts a Comprehensive Plan, which is a document that guides infrastructure, development, policies and public services over the next ten to twenty years. In February 2014, the Board of Supervisors approved the methodology and timeline for the update of the Comprehensive Plan, "Toward 2035: Leading the Way". The focus of this update is to be limited in scope, with a focus on land use, transportation and economic development. As part of this process, a citizen phone survey was completed and organizations were invited to participate in a Community Participation Team (CPT) Forum. The 2035 Comprehensive Plan was adopted by the Board of Supervisors on June 23, 2015.

During fiscal year 2015, two park improvement projects were completed. First, renovations at Freedom Park were completed in February 2015, which added additional parking, sidewalks and lighting, picnic shelters, and a new playground. Second, Jamestown Beach Event Park had several important upgrades that were completed in May 2015, including a second entrance, observation pier, accessible walkway including a beach mat to make water access easier, designated fishing area, a building with restrooms and concessions, a launch area for paddle craft, outdoor rinse stations, and additional parking.

In September 2014, the County launched an enhanced County Alert system for citizens and local businesses. The enhanced system is part of the CodeRED network, which allows quick delivery of emergency alerts and notifications to citizens and businesses. In February 2015, the County launched NovusAGENDA, a new agenda process and meeting management system. This is a paperless system to allow for a more transparent and efficient process in the development of materials and documents for public meetings.

Economic Development

The Economic Development office partnered with the College of William & Mary Mason School of Business, Triangle Business & Innovation Center, and other localities and to develop START! Peninsula 3.0, which is a 54-hour-long "mosh pit of business," bringing together dozens of passionate entrepreneurs and business leaders under one roof with one purpose: to identify the best ideas and create new businesses within one weekend. Also, the Enterprise Zone was amended to add new commercial and industrial areas, including retail centers.

Capital Improvement Program

Capital expenditures totaled \$13,424,741 in fiscal year 2015. 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, such as fire pumpers. There were transfers to the schools for costs associated with renovations at Jamestown High School and the County's share of school facility improvements to address middle school classroom needs.

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 \$77,328,317 and focuses on a wide variety of needs. An indication of anticipated impacts can be seen in the adopted budget and capital improvements program for the fiscal year beginning July 1, 2015.

In fiscal year 2016, funding is included for the Human Services Building refurbishment, fire apparatus replacement, new middle school and stormwater projects focusing on the Federal and State mandates on improving water quality. Future planning includes school roof and refurbishments, fire pumper replacements, squad truck replacement, radio system upgrade, and drainage improvement 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 2015, 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, 2014. This was the thirtieth 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.

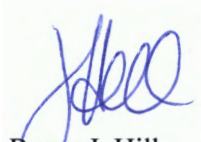
A Certificate of Achievement is valid for a period of one year only. We believe our current report continues to conform to Certificate of Achievement Program requirements, and we are submitting it to the GFOA to determine its eligibility for another certificate.

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, 2014

Executive Director/CEO

INDEPENDENT AUDITORS' REPORT



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, 2015, 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, 2015, 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.

Emphasis of Matter

Change in Accounting Principle

As discussed in Notes 1s and 18 to the financial statements, beginning net position was restated due to the implementation of GASB Statement 68, *Accounting and Financial Reporting for Pensions – an Amendment of GASB Statement No. 27* and GASB Statement 71, *Pension Transition for Contributions Made Subsequent to the Measurement Date – an Amendment of GASB 68*, in 2015. Our opinion is not modified with respect to these changes.

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 4 through 14; 92 through 101, 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 U.S. Office of Management and Budget Circular A-133, *Audits of State, Local Governments, and Non-Profit Organizations*, 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 23, 2015, 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 23, 2015**

**MANAGEMENT'S DISCUSSION AND
ANALYSIS (MD&A)**

COUNTY OF JAMES CITY, VIRGINIA

Management's Discussion and Analysis

June 30, 2015

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, 2015. We encourage readers to consider the information presented here in conjunction with additional information that we have furnished 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 \$14.1 million over the course of this year's operations, which represents a 3.8% increase from fiscal year 2014.
- The assets of the County exceeded its liabilities as of June 30, 2015 by approximately \$385.0 million. Of this amount, approximately \$296.6 million, or 77.0% is the net investment in capital assets.
- The County's total long-term liabilities for governmental activities at June 30, 2015 decreased by \$17,252,530 to \$176,738,321. The decrease was primarily principal payments on outstanding bonds.
- Actual General Fund revenues received were 0.2%, or \$416,874 more than what had been budgeted and increased 1.7% or \$2,885,410 from fiscal year 2014. There was an increase in real estate tax revenue due to new development. There was also an increase in the personal property tax revenue as a result of an increased collections, number, and the value of vehicles.
- The restatements of the County, the Authority, and Public Schools net position is due to the implementation of GASB Statement No. 68 and No. 71.

Overview of the Financial Statements

The County's 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 and liabilities. All of 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 they have changed. Net position - the difference between the County's assets and liabilities - 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.

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- *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. 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, we provide additional information 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. We exclude these activities 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 progress in funding its 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.

COUNTY OF JAMES CITY, VIRGINIA

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Financial Analysis

As noted earlier, net position may serve over time as a useful indicator of a government's financial position. The County's assets exceeded liabilities by \$385,036,058 at the close of the most recent fiscal year. This represents a 3.8% increase from last year.

Condensed Summary of Net Position

June 30, 2015

	<u>Governmental activities</u>	<u>Business-type activity</u>	<u>Total</u>	<u>Component unit – public schools</u>
Assets:				
Current and other assets	\$ 88,863,125	38,765,494	127,628,619	18,168,380
Capital assets	<u>329,390,782</u>	<u>161,288,064</u>	<u>490,678,846</u>	<u>53,549,272</u>
Total assets	<u>418,253,907</u>	<u>200,053,558</u>	<u>618,307,465</u>	<u>71,717,652</u>
Deferred outflow of resources:				
Deferred pension contributions	<u>4,091,153</u>	<u>330,920</u>	<u>4,422,073</u>	<u>9,802,152</u>
Total assets and deferred outflow of resources	<u>\$ 422,345,060</u>	<u>200,384,478</u>	<u>622,729,538</u>	<u>81,519,804</u>
Liabilities:				
Long-term liabilities	\$ 176,738,321	24,715,862	201,454,183	108,821,350
Other liabilities	<u>24,922,054</u>	<u>2,071,956</u>	<u>26,994,010</u>	<u>15,666,099</u>
Total liabilities	<u>201,660,375</u>	<u>26,787,818</u>	<u>228,448,193</u>	<u>124,487,449</u>
Deferred inflow of resources:				
Deferred pension investment experience	<u>8,441,486</u>	<u>803,802</u>	<u>9,245,288</u>	<u>17,052,806</u>
Net position:				
Net investment in capital assets	159,469,360	137,173,064	296,642,424	53,328,252
Restricted net position:				
Capital projects	1,551,387	2,716,277	4,267,664	—
Other	—	—	—	382,866
Unrestricted net position	<u>51,222,452</u>	<u>32,903,518</u>	<u>84,125,970</u>	<u>(113,731,569)</u>
Total net position	<u>212,243,199</u>	<u>172,792,859</u>	<u>385,036,058</u>	<u>(60,020,451)</u>
Total liabilities, deferred inflow of resources, and net position	<u>\$ 422,345,060</u>	<u>200,384,479</u>	<u>622,729,539</u>	<u>81,519,804</u>

COUNTY OF JAMES CITY, VIRGINIA

Management's Discussion and Analysis

June 30, 2015

Condensed Summary of Net Position

June 30, 2014 (as restated)

	<u>Governmental activities</u>	<u>Business-type activity</u>	<u>Total</u>	<u>Component unit – public schools</u>
Assets:				
Current and other assets	\$ 95,946,019	35,614,226	131,560,245	20,312,607
Capital assets	<u>330,432,497</u>	<u>162,582,955</u>	<u>493,015,452</u>	<u>52,447,242</u>
Total assets	\$ <u>426,378,516</u>	<u>198,197,181</u>	<u>624,575,697</u>	<u>72,759,849</u>
Deferred outflow of resources:				
Deferred pension contributions	<u>4,362,691</u>	<u>308,820</u>	<u>4,671,511</u>	<u>7,767,601</u>
Total assets and deferred outflow of resources	\$ <u>430,741,207</u>	<u>198,506,001</u>	<u>629,247,208</u>	<u>80,527,450</u>
Liabilities:				
Long-term liabilities	\$ 193,990,851	26,356,508	220,347,359	124,913,243
Other liabilities	<u>35,466,285</u>	<u>2,466,259</u>	<u>37,932,544</u>	<u>16,060,361</u>
Total liabilities	<u>229,457,136</u>	<u>28,822,767</u>	<u>258,279,903</u>	<u>140,973,604</u>
Net position:				
Net investment in capital assets	142,867,725	137,922,955	280,790,680	52,273,671
Restricted net position:				
Capital projects	8,320,449	2,601,160	10,921,609	—
Other	—	—	—	581,430
Unrestricted net position	<u>50,095,897</u>	<u>29,159,119</u>	<u>79,255,016</u>	<u>(113,301,255)</u>
Total net position	<u>201,284,071</u>	<u>169,683,234</u>	<u>370,967,305</u>	<u>(60,446,154)</u>
Total liabilities and net position	\$ <u>430,741,207</u>	<u>198,506,001</u>	<u>629,247,208</u>	<u>80,527,450</u>

The largest portion of the County's net position at June 30, 2015 (77.0%) reflects its investment in capital assets (e.g., land, buildings, machinery and equipment), 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 unrestricted portion of net position (21.8%) may be used to meet the County's ongoing obligations to citizens and creditors. The remaining portion of net position (1.1%) is restricted for specific purposes.

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.

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The Public Schools' net position increased 0.7% to approximately (\$60.0) million. Of the balance, a deficit of \$113,731,569 for unrestricted net position exists at June 30, 2015 from the adoption of GASB Statement No. 68 and \$53.3 million is invested in capital assets. The increase in net position is primarily attributable to the capitalization of ongoing and completed capital projects.

Summary of Changes in Net Position

Year ended June 30, 2015

	<u>Governmental activities</u>	<u>Business-type activity</u>	<u>Total</u>	<u>Component unit – public schools</u>
Revenues:				
Program revenues:				
Charges for services	\$ 16,715,136	16,452,120	33,167,256	2,314,333
Operating grants and contributions	31,767,861	—	31,767,861	16,483,871
Capital grants and contributions	346,627	5,284,379	5,631,006	—
General revenues:				
Property taxes	113,359,672	—	113,359,672	—
Other taxes	22,771,626	—	22,771,626	—
Grants and contributions not restricted to specific programs	—	—	—	113,568,153
Interest and investment earnings	232,388	248,207	480,595	4,174
Miscellaneous	4,217,842	1,013,854	5,231,696	240,785
Total revenues	<u>189,411,152</u>	<u>22,998,560</u>	<u>212,409,712</u>	<u>132,611,316</u>
Expenses:				
General government administration	19,278,147	—	19,278,147	—
Judicial administration	5,598,594	—	5,598,594	—
Public safety	23,996,973	—	23,996,973	—
Public works	6,985,073	—	6,985,073	—
Health and welfare	7,013,325	—	7,013,325	—
Education	87,713,464	—	87,713,464	132,185,613
Parks, recreation and cultural	9,386,351	—	9,386,351	—
Community development	10,692,736	—	10,692,736	—
Interest on long-term debt	7,787,361	—	7,787,361	—
Service Authority	—	19,888,935	19,888,935	—
Total expenses	<u>178,452,024</u>	<u>19,888,935</u>	<u>198,340,959</u>	<u>132,185,613</u>
Change in net position	10,959,128	3,109,625	14,068,753	425,703
Net position at beginning of year	<u>201,284,071</u>	<u>169,683,234</u>	<u>370,967,305</u>	<u>(60,446,154)</u>
Net position at end of year	<u>\$ 212,243,199</u>	<u>172,792,859</u>	<u>385,036,058</u>	<u>(60,020,451)</u>

COUNTY OF JAMES CITY, VIRGINIA

Management's Discussion and Analysis

June 30, 2015

Summary of Changes in Net Position

Year ended June 30, 2014 (as restated)

	<u>Governmental activities</u>	<u>Business-type activity</u>	<u>Total</u>	<u>Component unit – public schools</u>
Revenues:				
Program revenues:				
Charges for services	\$ 16,063,721	16,131,430	32,195,151	2,537,194
Operating grants and contributions	30,572,383	—	30,572,383	16,091,244
Capital grants and contributions	1,286,856	3,388,700	4,675,556	—
General revenues:				
Property taxes	111,899,484	—	111,899,484	—
Other taxes	21,435,046	—	21,435,046	—
Grants and contributions not restricted to specific programs	—	—	—	109,960,252
Interest and investment earnings	339,358	267,061	606,419	4,087
Miscellaneous	1,875,485	520,504	2,395,989	224,400
Total revenues	<u>183,472,333</u>	<u>20,307,695</u>	<u>203,780,028</u>	<u>128,817,177</u>
Expenses:				
General government administration	9,249,487	—	9,249,487	—
Judicial administration	5,216,769	—	5,216,769	—
Public safety	25,964,996	—	25,964,996	—
Public works	7,244,367	—	7,244,367	—
Health and welfare	6,671,151	—	6,671,151	—
Education	85,595,145	—	85,595,145	238,387,124
Parks, recreation and cultural	10,897,006	—	10,897,006	—
Community development	10,676,484	—	10,676,484	—
Interest on long-term debt	8,822,326	—	8,822,326	—
Service Authority	—	21,002,926	21,002,926	—
Total expenses	<u>170,337,731</u>	<u>21,002,926</u>	<u>191,340,657</u>	<u>238,387,124</u>
Change in net position	13,134,602	(695,231)	12,439,371	(109,569,947)
Net position at beginning of year	<u>188,149,469</u>	<u>170,378,465</u>	<u>358,527,934</u>	<u>49,123,793</u>
Net position at end of year	<u>\$ 201,284,071</u>	<u>169,683,234</u>	<u>370,967,305</u>	<u>(60,446,154)</u>

Governmental Activities

For the fiscal year ended June 30, 2015, revenues from governmental activities totaled \$189,411,152. Of this amount, \$53,279,854, or 28.0%, is received from sources other than local tax revenue. Real estate tax revenues, the County's largest single revenue source, totaled \$84,693,239. The County's assessed real property tax base for fiscal year 2015 was \$11,148,405,300, which was an increase of 0.7% from fiscal year 2014. Overall, the net position increased by \$10,959,128 from last year.

In fiscal year 2015, the County reported current year collections of \$19,184,266 in personal property taxes, and received reimbursement from the Commonwealth of Virginia of \$9,770,137. Under the provisions of the Personal

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Property Tax Relief Act (PPTRA), the state's share of local personal property tax was approximately 51% of most taxpayer's payments.

For the fiscal year ended June 30, 2015, expenses for governmental activities totaled \$178,452,024, including payments of \$87,713,464 to Public Schools. Total expenses increased by \$8,114,293 over fiscal year 2014. The increase to expenses was primarily due to an increase in the reduction of capital assets.

Business-Type Activity

The business-type activity had an increase in net position of \$3,109,625 during fiscal year 2015. 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. Overall, the expenses decreased from last year by 5.3%. The primary source of revenue consists of charges for water and sewer services, which totaled \$12,588,470 and increased by 6.5% from last year. This decrease was primarily due to a decline in water demands.

Component Unit – Public Schools

The Schools received \$84,348,424 from the County during fiscal year 2015. This money supported the operating and capital activities for the Schools. Expenses increased by 4.6% from fiscal year 2014, which is primarily a result of an increase in costs for retirement benefit and utilization of health insurance. Revenues increased by 2.9% from the previous fiscal year. This is primarily due to an increase in local funding for operating and capital.

Financial Analysis of the County's Funds

The County's General Fund experienced an overall decrease in fund balance of \$3,470,273. This was mostly due to one-time transfers to the Capital Projects Fund for capital expenditures and a planned draw on capital reserves for debt funding. The portion of the unassigned fund balance for fiscal liquidity totaled \$23,360,679, which was 10.7% of the total general governmental expenditures (from table 11A on page 135), including the County's share of the Public Schools' operating expenditures, and within the goal of 8% to 12%.

General Fund Budgetary Highlights

The overall difference between the original budget and the final amended budget for revenues increased by \$38,489. There were supplemental appropriations for insurance recovery funds for damaged equipment and vehicles. Actual General Fund revenues received were 0.2%, or \$416,874 more than what had been budgeted and increased 1.6% or \$2,885,410 from fiscal year 2014.

The largest increase in revenues from fiscal year 2014 to fiscal year 2015 occurred in the County's share of state sales tax for education revenues totaling \$667,098. Real estate tax revenues, both current and delinquent, are the County's largest revenue source and for fiscal year 2015 totaled \$84,693,239 and was \$106,761 less than the amended budget. Personal property taxes, another large source of local tax funding, had combined collections from the state and local taxpayers of \$28,954,403. State revenues, not including the personal property tax reimbursement, were \$292,138 less than budgeted. State revenues, not including the personal property tax reimbursement, increased \$430,322 in fiscal year 2015 from fiscal year 2014 levels. This increase is primarily due to receiving more in state sales tax for education, which increased \$667,098 from fiscal year 2014.

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General Fund budgeted expenditures were 2.9% below the final budget, or \$4,309,696, which was primarily due to reduced departmental spending. Of this amount, \$740,458 is for encumbrances and is assigned in the fund balance.

As a result of an increase in transfers to other funds, the fund balance decreased to \$34,663,432. This was a decrease of \$3,470,273 or 9.1% from 2014.

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 105-106. The other governmental funds had an increase in fund balance of \$210,861 in fiscal year 2015 from 2014.

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 \$3,109,625 in net position during the fiscal year primarily as a result of an increase in 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.

Capital Assets and Debt Administration

At the end of fiscal year 2015, the County's investment in capital assets for its governmental and business-type activities totaled \$490,678,846 (net of accumulated depreciation). This investment in capital assets includes land, construction in progress, land improvements, buildings and improvements, water and sewer systems, infrastructure, equipment, and vehicles. The County does not own its roads and they are therefore not included in the 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 2015, the net value of school buildings reflected in the governmental activities of the County equals \$195,526,837, and the associated current year's depreciation expense of \$5,008,700 is reflected in the educational expense line of the County's governmental activities in the statement of net position.

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Management's Discussion and Analysis

June 30, 2015

Capital Assets, Net of Depreciation and Amortization

June 30, 2015 and 2014

	2015			2014 Total
	Governmental activities	Business-type activity	Total	
Land	\$ —	1,739,491	1,739,491	1,750,391
Land and land rights – utility plant	—	962,995	962,995	962,995
Land and land improvements	28,132,818	13,183	28,146,001	28,100,002
Construction in progress	7,693,335	705,861	8,399,196	14,424,024
Water and sewer systems	—	132,011,921	132,011,921	131,631,413
Buildings and improvements	242,659,350	3,404,146	246,063,496	249,004,335
Improvements other than buildings	23,258,341	—	23,258,341	17,895,537
Equipment and vehicles	12,594,696	1,280,254	13,874,950	14,318,149
Infrastructure	6,983,063	—	6,983,063	5,075,718
Intangible assets – easements	8,069,177	4,570	8,073,747	8,073,747
Intangible assets – water rights	—	21,165,644	21,165,644	21,779,141
Total	\$ 329,390,780	161,288,065	490,678,845	493,015,452

Additional information about the County's capital assets can be found in note 7 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 2015, \$6,760,319 was transferred to the Capital Projects Fund from the General Fund. During the year, capital project expenditures of \$13,424,741 included the following:

- Transfers to schools for renovation of Lafayette High School
- Transfers to schools for renovation of Jamestown High School
- Transfers to schools for renovation of James River Elementary School
- Costs associated with renovation of a fire station
- Construction costs associated with replacement of a fire station
- Costs associated with purchase of new revenue billing software
- Costs associated with improvements at Jamestown Beach

COUNTY OF JAMES CITY, VIRGINIA

Management's Discussion and Analysis

June 30, 2015

Long-Term Debt

At June 30, 2015 and 2014, the County had total outstanding debt of \$194,036,422 and \$212,224,772, respectively. Compensated absences, OPEB obligation and landfill postclosure care costs of \$7,417,761 and \$7,007,501 at June 30, 2015 and 2014, respectively, are not included in these amounts.

Summary of Long-Term Debt

June 30, 2015 and 2014

	2015			2014 Total
	Governmental activities	Business-type activity	Total	
General obligation bonds	\$ 65,458,589	—	65,458,589	72,164,244
Revenue bonds	103,604,000	24,115,000	127,719,000	139,076,000
Other capital leases	858,833	—	858,833	984,528
Total	\$ <u>169,921,422</u>	<u>24,115,000</u>	<u>194,036,422</u>	<u>212,224,772</u>

Additional information about the County's long-term debt can be found in note 10 to the financial statements.

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Management's Discussion and Analysis

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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 2015 is the first year of the next two-year cycle. The fiscal year 2015 approved budget for the General Fund is \$175,250,000. Fiscal year 2016 is the second year of the current two-year cycle. The fiscal year 2016 approved budget for the General Fund is \$186,964,000.

This budget was adopted on April 28, 2015, and reflects an \$11,430,511, or a 6.1%, increase over the amended fiscal year 2015 budget. This increase is primarily due to increases in real estate, personal property and local sales, meals and lodging tax revenues.

During fiscal year 2016, real estate revenues, the largest source of general fund revenue, are projected to increase 9.4% over last year in association with a 7 cent real estate tax rate increase. Personal property tax revenue is expected to increase by 7.0% over last year. This increase is primarily due to an increase in valuations and an increase in the number of vehicles. State revenues increase by 2.9%, primarily from an increase in sales tax for education. This increase is mostly due to increased estimates of statewide sales tax.

Expenditures include increased costs for a salary increase and health insurance and funding to begin the five-year update to the Comprehensive Planning process. The County's general fund contribution to the Williamsburg-James City County School Board will be \$82,917,697, which is a 2.6% or \$2,116,033 increase from fiscal year 2015.

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.

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BASIC FINANCIAL STATEMENTS

COUNTY OF JAMES CITY, VIRGINIA

Statement of Net Position

June 30, 2015

Assets	Primary government			Discretely presented component units	
	Governmental activities	Business-type activity	Total	Public schools	Economic Development Authority
Cash and cash equivalents (note 2)	\$ 25,463,403	837,750	26,301,153	17,120,502	1,238,005
Investments (note 2)	7,782,994	33,007,483	40,790,477	—	—
Cash and cash equivalents and investments - restricted (notes 2 and 3)	3,606,789	2,716,277	6,323,066	—	—
Receivables, net of allowance for uncollectibles:					
Taxes, including penalties	30,673,904	—	30,673,904	—	—
Accounts	—	2,574,394	2,574,394	83,239	—
Interest	22,377	88,112	110,489	—	640
Loans	3,272,914	—	3,272,914	—	—
Notes	—	31,531	31,531	—	15,239
Miscellaneous	5,727,243	38,520	5,765,763	—	4,807
Internal balances (note 5)	1,346,004	(1,346,004)	—	—	—
Due from component unit	325,283	—	325,283	—	—
Due from primary government (note 8)	—	—	—	—	81,591
Due from other governments, net (note 6)	9,112,556	—	9,112,556	928,964	—
Inventory	340,709	817,432	1,158,141	35,675	—
Prepaid	2,111	—	2,111	—	—
Other assets	1,186,838	—	1,186,838	—	—
Capital assets (note 7):					
Land and land improvements	28,132,818	2,715,669	30,848,487	8,435,126	233,106
Construction in progress (note 17)	7,693,336	705,860	8,399,196	1,944,242	166,510
Buildings, improvements and equipment	415,792,673	253,204,553	668,997,226	74,439,518	12,719
Intangible assets	8,069,178	25,004,570	33,073,748	—	—
Less accumulated depreciation and amortization	(130,297,223)	(120,342,588)	(250,639,811)	(31,269,614)	(6,565)
Net capital assets	329,390,782	161,288,064	490,678,846	53,549,272	405,770
Total assets	418,253,907	200,053,559	618,307,466	71,717,652	1,746,052
Deferred Outflow of Resources					
Deferred pension contributions (note 12)	4,091,153	330,920	4,422,073	9,802,152	—
Total assets and deferred outflow of resources	\$ 422,345,060	200,384,479	622,729,539	81,519,804	1,746,052
Liabilities					
Liabilities:					
Accounts payable (note 4)	\$ 3,588,744	385,052	3,973,796	2,212,368	100,190
Accrued liabilities (note 4)	1,171,311	517,705	1,689,016	12,459,195	—
Liabilities payable from restricted assets	939,352	—	939,352	—	—
Due to component units (note 8)	81,591	—	81,591	—	—
Due to primary government (note 8)	—	—	—	325,283	—
Advances for construction (note 17)	—	32,902	32,902	—	—
Amounts held for others	—	196,804	196,804	—	—
Unearned revenue (note 9)	3,682,264	—	3,682,264	160,436	—
Net pension liability (note 12)	15,458,792	939,493	16,398,285	—	—
Long-term liabilities (notes 10, 11 and 13):					
Due within one year	19,468,513	833,010	20,301,523	508,817	—
Due in more than one year	157,269,808	23,882,852	181,152,660	108,821,350	—
Total liabilities	201,660,375	26,787,818	228,448,193	124,487,449	100,190
Deferred Inflow of Resources					
Deferred pension investment experience (note 12)	8,441,486	803,802	9,245,288	17,052,806	—
Net Position					
Net position:					
Net investment in capital assets	159,469,360	137,173,064	296,642,424	53,328,252	405,770
Restricted net position:					
Capital projects	1,551,387	2,716,277	4,267,664	—	—
Other	—	—	—	382,866	—
Unrestricted net position	51,222,452	32,903,518	84,125,970	(113,731,569)	1,240,092
Total net position	212,243,199	172,792,859	385,036,058	(60,020,451)	1,645,862
Total liabilities and net position	\$ 422,345,060	200,384,479	622,729,539	81,519,804	1,746,052

See accompanying notes to basic financial statements.

COUNTY OF JAMES CITY, VIRGINIA

Statement of Activities

Year ended June 30, 2015

Functions/programs	Expenses	Program revenues		
		Charges for services	Operating grants and contributions	Capital grants and contributions
Primary government:				
Governmental activities:				
General government administration	\$ 19,278,147	8,047,642	23,394,952	—
Judicial administration	5,598,594	1,832,471	1,213,771	15,200
Public safety	23,996,973	3,455,177	1,665,855	157,133
Public works	6,985,073	270,799	13,010	—
Health and welfare	7,013,325	—	3,668,230	—
Education (including payments to school system)	87,713,464	—	—	—
Parks, recreation and cultural	9,386,351	3,109,047	9,390	174,294
Community development	10,692,736	—	1,802,653	—
Interest on long-term debt	7,787,361	—	—	—
Total governmental activities	178,452,024	16,715,136	31,767,861	346,627
Business-type activity - Service Authority	19,888,935	16,452,120	—	5,284,379
Total primary government	\$ 198,340,959	33,167,256	31,767,861	5,631,006
Component units:				
Economic Development Authority	\$ 347,695	20,575	162,946	—
Public Schools	132,185,613	2,314,333	16,483,871	—
Total component units	\$ 132,533,308	2,334,908	16,646,817	—
General revenues:				
Taxes:				
Property taxes, levied for general purposes				
Local sales and use taxes				
Franchise license tax				
Taxes on recordation and wills				
Hotel and motel room taxes				
Restaurant food taxes				
Deeds of conveyance				
Penalties and interest				
Grants and contributions not restricted to specific programs				
Interest and investment earnings				
Miscellaneous				
Total general revenues				
Change in net position				
Net position – beginning, restated				
Net position – ending				

See accompanying notes to basic financial statements.

Exhibit 2

Net (expenses) revenues and changes in net assets

Primary government			Discretely presented component units	
Governmental activities	Business-type activity	Total	Public schools	Economic Development Authority
12,164,447	—	12,164,447	—	—
(2,537,152)	—	(2,537,152)	—	—
(18,718,808)	—	(18,718,808)	—	—
(6,701,264)	—	(6,701,264)	—	—
(3,345,095)	—	(3,345,095)	—	—
(87,713,464)	—	(87,713,464)	—	—
(6,093,620)	—	(6,093,620)	—	—
(8,890,083)	—	(8,890,083)	—	—
(7,787,361)	—	(7,787,361)	—	—
(129,622,400)	—	(129,622,400)	—	—
—	1,847,564	1,847,564	—	—
(129,622,400)	1,847,564	(127,774,836)	—	—
—	—	—	—	(164,174)
—	—	—	(113,387,409)	—
—	—	—	(113,387,409)	(164,174)
\$ 113,359,672	—	113,359,672	—	—
10,533,390	—	10,533,390	—	—
468,497	—	468,497	—	—
1,372,519	—	1,372,519	—	—
3,353,337	—	3,353,337	—	—
6,600,364	—	6,600,364	—	—
420,145	—	420,145	—	—
23,374	—	23,374	—	—
—	—	—	113,568,153	—
232,388	248,207	480,595	4,174	13,759
4,217,842	1,013,854	5,231,696	240,785	33,824
140,581,528	1,262,061	141,843,589	113,813,112	47,583
10,959,128	3,109,625	14,068,753	425,703	(116,591)
201,284,071	169,683,234	370,967,305	(60,446,154)	1,762,453
\$ 212,243,199	172,792,859	385,036,058	(60,020,451)	1,645,862

COUNTY OF JAMES CITY, VIRGINIA

Balance Sheet

Governmental Funds

June 30, 2015

Assets	Major Funds			Nonmajor governmental funds	Total governmental funds
	General	Capital projects	Debt service		
Cash and cash equivalents and investments	\$ 7,689,056	15,069,695	—	2,704,652	25,463,403
Investments	6,363,552	1,419,442	—	—	7,782,994
Cash and cash equivalents and investments – restricted (note 3)	865,424	1,387,116	—	1,354,249	3,606,789
Receivables, net of allowance for uncollectibles:					
Taxes	30,563,715	760	—	109,429	30,673,904
Interest	—	22,377	—	—	22,377
Loans	—	—	—	3,272,914	3,272,914
Miscellaneous (note 4)	5,455,108	10,122	—	262,013	5,727,243
Due from other funds (note 5)	414,339	1,412,880	—	—	1,827,219
Due from blended component unit (note 8)	1,346,004	—	—	—	1,346,004
Due from component unit (note 8)	1,340,460	—	—	—	1,340,460
Due from other governments, net (note 6)	7,600,487	—	—	1,512,069	9,112,556
Inventory	340,709	—	—	—	340,709
Prepaid item	2,111	—	—	—	2,111
Total assets	\$ 61,980,965	19,322,392	—	9,215,326	90,518,683
Liabilities and Fund Balances					
Liabilities:					
Accounts payable (note 4)	\$ 2,719,666	629,817	—	239,261	3,588,744
Accrued liabilities (note 4)	305,996	—	—	16,704	322,700
Liabilities payable from restricted assets	866,177	—	—	73,175	939,352
Due to other funds (note 5)	1,221,607	—	—	605,612	1,827,219
Due to component units (note 8)	94,996	961,680	—	40,092	1,096,768
Unearned revenue (note 9)	22,109,091	760	—	3,283,004	25,392,855
Total liabilities	27,317,533	1,592,257	—	4,257,848	33,167,638
Fund balances:					
Nonspendable:					
Loans	—	—	—	540,850	540,850
Inventory	340,709	—	—	—	340,709
Prepaid item	2,111	—	—	—	2,111
Committed	—	1,551,387	—	69	1,551,456
Assigned:					
General	5,991,822	16,178,748	—	—	22,170,570
Capital reserve	4,968,111	—	—	—	4,968,111
Other governmental funds	—	—	—	4,416,559	4,416,559
Unassigned:					
General	23,360,679	—	—	—	23,360,679
Total fund balances	34,663,432	17,730,135	—	4,957,478	57,351,045
Total liabilities and fund balances	\$ 61,980,965	19,322,392	—	9,215,326	90,518,683

COUNTY OF JAMES CITY, VIRGINIA

Balance Sheet

Governmental Funds

June 30, 2015

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

Ending fund balance – governmental funds	\$ 57,351,045
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.	329,390,782
Land held for resale and future development used in governmental activities are not financial resources and therefore are not reported in the funds.	1,186,838
Other long-term assets are not available to pay for current-period expenditures and therefore are deferred in the funds.	21,710,591
Deferred pension contributions do not provide current financial resources and therefore are not deferred in the governmental funds.	4,091,153
Net pension liability and deferred pension investment experience do not require the use of current financial resources and therefore are not accrued as liabilities or deferred in the governmental funds.	(23,900,278)
Obligation for OPEB is not due and payable in the current period and is not recorded as a liability in the governmental funds.	(2,193,962)
Unmatured interest payable reported in governmental activities will not be paid with current financial resources and therefore is not reported in the funds.	(848,611)
Long-term liabilities, including notes and bonds payable, are not due and payable in the current period and therefore are not reported in the funds.	
General obligation bonds, net	\$ (65,458,589)
Capital leases	(858,833)
Lease revenue bonds	(103,604,000)
Compensated absences	(3,454,777)
Landfill postclosure care cost	(1,168,160)
	<u>(174,544,359)</u>
Net assets of governmental activities	<u>\$ 212,243,199</u>

See accompanying notes to basic financial statements.

COUNTY OF JAMES CITY, VIRGINIA

Statement of Revenues, Expenditures and Changes in Fund Balances

Governmental Funds

Year ended June 30, 2015

	Major Funds			Nonmajor governmental funds	Total governmental funds
	General	Capital projects	Debt service		
Revenues:					
General property taxes	\$ 112,542,078	—	—	—	112,542,078
Other local taxes	21,986,110	—	—	785,516	22,771,626
Permits, privilege fees and regulatory licenses	8,443,821	—	—	—	8,443,821
Fines and forfeitures	271,615	—	—	—	271,615
Revenue from use of money and property	142,230	87,051	3,092	15	232,388
Charges for services	5,944,750	—	—	—	5,944,750
Miscellaneous	320,563	2,105,824	212,492	463,426	3,102,305
Intergovernmental:					
Local	—	—	—	348,910	348,910
Commonwealth	26,292,362	—	—	3,433,410	29,725,772
Federal	6,834	—	—	4,087,922	4,094,756
Total revenues	175,950,363	2,192,875	215,584	9,119,199	187,478,021
Expenditures:					
Current:					
General government administration	9,432,889	—	—	—	9,432,889
Judicial administration	4,171,806	—	—	1,427,922	5,599,728
Public safety	26,531,621	—	—	943,686	27,475,307
Public works	6,962,923	—	—	13,610	6,976,533
Health and welfare	1,785,160	—	—	5,408,681	7,193,841
Education	79,610,865	—	—	—	79,610,865
Parks, recreation and cultural	9,673,422	—	—	185,465	9,858,887
Community development	5,454,857	—	319,767	4,994,440	10,769,064
Nondepartmental	525,433	—	—	—	525,433
Debt service:					
Principal retirement	—	—	16,862,695	—	16,862,695
Interest, other fiscal charges and early retirement	—	—	7,787,361	—	7,787,361
Capital outlay – governmental activities	—	8,656,374	—	—	8,656,374
Capital outlay – school activities	—	4,768,367	—	—	4,768,367
Total expenditures	144,148,976	13,424,741	24,969,823	12,973,804	195,517,344
Excess (deficiency) of revenues over (under) expenditures	31,801,387	(11,231,866)	(24,754,239)	(3,854,605)	(8,039,323)
Other financing sources (uses):					
Sale of land	—	1,115,537	—	—	1,115,537
Issuance of debt	—	—	34,185,000	—	34,185,000
Payment to escrow agent	—	(1,700,906)	(37,671,046)	—	(39,371,952)
Premium on bond issuance	—	—	3,907,273	—	3,907,273
Transfers in (note 5)	—	6,760,319	24,445,875	4,065,466	35,271,660
Transfers out (note 5)	(35,271,660)	—	—	—	(35,271,660)
Underwriters discount	—	—	(112,863)	—	(112,863)
Total other financing sources (uses)	(35,271,660)	6,174,950	24,754,239	4,065,466	(277,005)
Net change in fund balances	(3,470,273)	(5,056,916)	—	210,861	(8,316,328)
Fund balances at beginning of year	38,133,705	22,787,051	—	4,746,617	65,667,373
Fund balances at end of year	\$ 34,663,432	17,730,135	—	4,957,478	57,351,045

COUNTY OF JAMES CITY, VIRGINIA
 Statement of Revenues, Expenditures and Changes in Fund Balances
 Governmental Funds
 Year ended June 30, 2015

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 – total governmental funds \$ (8,316,328)

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	\$ (12,115,327)	
Capital outlay expenditures	10,962,816	
Cost of assets sold	<u>(186,076)</u>	
		(1,338,587)

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 decreased by this amount this year. 817,594

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 assets. Also, governmental funds report the effect of issuance costs, premiums, refunding costs, 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:

Principal payments	16,862,695	
Payment to escrow agent	2,533,773	
Premium on debt issuance	(3,907,273)	
Underwriters discount	112,863	
Cost of issuance	308,364	
Deferred costs	1,732,928	
OPEB obligation	<u>(383,000)</u>	
		17,260,350

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. This difference includes the increase in vested compensated absences of \$5,335, increase in landfill postclosure care cost of \$2,485, decrease in accrued interest of \$525,510, and decrease in pension and pension-related deferred amounts of \$2,018,409.

		<u>2,536,099</u>
Change in net assets of governmental activities	\$	<u><u>10,959,128</u></u>

See accompanying notes to basic financial statements.

COUNTY OF JAMES CITY, VIRGINIA

Balance Sheet

Proprietary Fund

June 30, 2015

Assets	James City Service Authority
Current assets:	
Cash and cash equivalents	\$ 837,750
Investments	33,007,483
Receivables, net of allowance for uncollectibles:	
Accounts	2,574,394
Interest	88,112
Notes	31,531
Miscellaneous	38,520
Inventory	817,432
Total current assets	<u>37,395,222</u>
Noncurrent assets:	
Capital assets (notes 7, 10 and 17):	
Land	1,739,491
Land – utility plant	962,995
Land improvements	13,183
Construction in progress	705,860
Water and sewer systems – utility plant	244,019,716
Buildings and improvements	4,892,209
Office fixtures and equipment	1,809,839
Automotive equipment	2,482,789
Intangible assets	25,004,570
Less accumulated depreciation and amortization	<u>(120,342,588)</u>
Net capital assets	<u>161,288,064</u>
Investments restricted for future use (note 2)	<u>2,716,277</u>
Total noncurrent assets	<u>164,004,341</u>
Total assets	<u>201,399,563</u>
Deferred Outflow of Resources	
Deferred pension contributions	<u>330,920</u>
Total assets and deferred outflow of resources	<u>\$ 201,730,483</u>
Liabilities	
Liabilities:	
Current liabilities:	
Accounts payable	\$ 385,052
Accrued salaries	21,605
Compensated absences, current portion	268,010
Due to other funds (note 5)	1,346,004
Deposits	196,804
Interest payable	496,100
Current portion of bonds payable (note 10)	565,000
Total current liabilities	<u>3,278,575</u>
Noncurrent liabilities:	
Advances for construction (note 17)	32,902
OPEB liability	243,509
Bonds payable, net of current portion (note 10)	23,550,000
Compensated absences, net of current portion	89,343
Net pension liability	939,493
Total noncurrent liabilities	<u>24,855,247</u>
Total liabilities	<u>28,133,822</u>
Deferred Inflow of Resources	
Deferred pension investment experience	<u>803,802</u>
Net Position	
Net position:	
Net investment in capital assets	137,173,064
Restricted for capital projects	2,716,277
Unrestricted net position	<u>32,903,518</u>
Total net position	<u>172,792,859</u>
Total liabilities, deferred inflow of resources and net position	<u>\$ 201,730,483</u>

See accompanying notes to basic financial statements.

COUNTY OF JAMES CITY, VIRGINIA

Statement of Revenues, Expenses and Changes in Fund Net Position

Proprietary Fund

Year ended June 30, 2015

	James City Service Authority
Operating revenues:	
Water and sewer services	\$ 12,588,470
Water supply proffers	450,262
Rental income	325,991
Miscellaneous	214,104
Total operating revenues	<u>13,578,827</u>
Operating expenses:	
Salaries	4,257,924
Fringe benefits	1,546,525
Operating supplies	836,288
Maintenance of buildings and equipment	2,067,464
Utilities	861,074
Contractual fees	915,365
Depreciation and amortization	7,810,808
Other	497,803
Total operating expenses	<u>18,793,251</u>
Operating loss	<u>(5,214,424)</u>
Nonoperating revenues (expenses):	
Facility charges	3,863,650
Investment income	248,207
Gain on disposal of capital assets	23,497
Interest expense, net	(1,095,684)
Total nonoperating revenues, net	<u>3,039,670</u>
Loss before contributions	<u>(2,174,754)</u>
Capital contributions	<u>5,284,379</u>
Increase in net position	3,109,625
Net position at beginning of year, restated	<u>169,683,234</u>
Net position at end of year	<u>\$ 172,792,859</u>

See accompanying notes to basic financial statements.

COUNTY OF JAMES CITY, VIRGINIA

Statement of Cash Flows

Proprietary Fund

Year ended June 30, 2015

	James City Service Authority
Cash flows from operating activities:	
Cash receipts from customers	\$ 12,447,781
Other operating cash receipts	1,067,923
Cash payments to suppliers of goods and services	(4,368,094)
Cash payments to employees for services	(5,977,476)
Facility charges	3,863,650
Net cash provided by operating activities	<u>7,033,784</u>
Cash flows from capital and related financing activities:	
Payment of debt	(545,000)
Interest paid	(1,104,431)
Acquisition and construction of capital assets	(1,241,159)
Proceeds from sale of capital assets	33,118
Net cash used in capital and related financing activities	<u>(2,857,472)</u>
Cash flows from investing activities:	
Purchases of investments	(28,269,994)
Sales of investments	24,103,069
Interest received	241,393
Net cash used by investing activities	<u>(3,925,532)</u>
Net decrease in cash and cash equivalents	250,780
Cash and cash equivalents at beginning of year	<u>586,970</u>
Cash and cash equivalents at end of year	<u>\$ 837,750</u>
Reconciliation of operating loss to net cash provided by operating activities:	
Operating loss	\$ (5,214,424)
Adjustments to reconcile operating loss to net cash provided by operating activities:	
Depreciation and amortization	7,810,808
Facility charges	3,863,650
Changes in assets and liabilities:	
Accounts receivable	(153,087)
Accounts receivable, miscellaneous	48,103
Notes receivable	29,463
Inventory	2,768
Accounts payable	(83,377)
Accrued salaries	21,605
Change in compensated absences	(44,208)
Due to other funds	890,509
Deposits	12,398
OPEB liability	36,000
Decrease in net pension liability and related deferred inflows/outflows of resources	<u>(186,424)</u>
Net cash provided by operating activities	<u>\$ 7,033,784</u>
Supplemental schedule – noncash capital and investing activities:	
Capital asset contributions	<u>\$ 5,284,379</u>
Unrealized loss from change in fair value of investments	<u>\$ (166,009)</u>

See accompanying notes to basic financial statements.

COUNTY OF JAMES CITY, VIRGINIA

Statement of Fiduciary Net Position

Fiduciary Funds

June 30, 2015

Assets	<u>Pension trust fund</u>	<u>Agency funds</u>
Cash and cash equivalents (note 2)	\$ —	2,104,591
Restricted cash and cash equivalents and investments with fiscal agent/trustee (notes 2 and 12):		
Money market funds	7,194,799	7,575,422
Bond mutual funds	750,981	—
Debt and equities	9,682,472	—
U.S. stock funds	10,486,867	—
International stock funds	650,182	—
Accounts receivable	—	2,487,716
Total assets	<u>\$ 28,765,301</u>	<u>12,167,729</u>
Liabilities and Net Position		
Liabilities:		
Accounts payable and accrued liabilities	\$ —	632,552
Amounts held for others	—	11,535,177
Total liabilities	—	12,167,729
Net position:		
Held in trust for employees' retirement	<u>28,765,301</u>	—
Total liabilities and net position	<u>\$ 28,765,301</u>	<u>12,167,729</u>

See accompanying notes to basic financial statements.

COUNTY OF JAMES CITY, VIRGINIA
 Statement of Changes in Fiduciary Net Assets
 Fiduciary Funds
 Year ended June 30, 2015

	<u>Pension trust fund</u>
Additions:	
Revenue from use of money and property	\$ 962,117
Contributions	<u>2,400,440</u>
Total additions	3,362,557
Deductions:	
Distributions to employees	<u>2,101,990</u>
Change in net position held in trust for employees' retirement	1,260,567
Net position at beginning of year	<u>27,504,735</u>
Net position at end of year	<u><u>\$ 28,765,302</u></u>

See accompanying notes to basic financial statements.

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

(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 following is a summary of the County's more significant accounting policies:

(a) *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

1. James City Service Authority

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 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, 2015 may be obtained from 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

Notes to Basic Financial Statements

June 30, 2015

Discretely Presented Component Units

1. Williamsburg-James City County Public Schools

The Williamsburg-James City County 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.

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, 2015, the apportionment of the Public Schools' operating costs to the City and County was \$8,528,952 and 9.68% and \$79,580,057 and 90.32%, respectively. For the fiscal year ended June 30, 2015, the contributions for the Public Schools' capital project costs from the City and County were \$576,704 and 10.79% and \$4,768,367 and 89.21%, respectively.

The Public Schools' financial statements for the fiscal year ended June 30, 2015 may be obtained from the Finance Department, 117 Ironbound Road, Williamsburg, Virginia 23185.

2. James City County Economic Development Authority

The James City County Economic 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, 2015, there were 13 series of Industrial Revenue Bonds outstanding, with an aggregate principal amount payable of approximately \$186 million.

The Development Authority's financial statements for the fiscal year ended June 30, 2015 may be obtained from the Director of Economic Development, 101-D Mounts Bay Road, Williamsburg, Virginia 23185.

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

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Other Related Organizations and Joint Ventures

Separate financial statements for the fiscal year ended June 30, 2015, 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 Director of Budget and Accounting of James City County, 101-F Mounts Bay Road, P.O. Box 8784, Williamsburg, Virginia 23187-8784.

1. Williamsburg Area Medical Assistance Corporation

The Williamsburg Area Medical Assistance 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.

2. Colonial Community Corrections Program

The Colonial Community Corrections 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.

3. Virginia Peninsulas Public Service Authority

The Virginia Peninsulas 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. The Public Service Authority's financial statements for the fiscal year ended June 30, 2015 may be obtained from the Public Service Authority, 475 McLaws Circle, Suite 3B, Williamsburg, Virginia 23185-5676.

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.

4. Williamsburg Regional Library

Pursuant to an agreement dated May 26, 1977, as amended, the Williamsburg Regional Library (the Library) 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

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

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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, 2015 may be obtained from the Library, 7770 Croaker Road, Williamsburg, Virginia 23188.

5. Virginia Peninsula Regional Jail Authority

The Virginia Peninsula Regional 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.

6. Middle Peninsula Juvenile Detention Commission

The Middle Peninsula Juvenile Detention 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.

7. Williamsburg Area Transit Authority

The Williamsburg Area 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

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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.

(b) *The Financial Reporting Model*

In June 1999, GASB issued Statement No. 34, *Basic Financial Statements – and Management's Discussion and Analysis – for State and Local Governments*. This statement, known as the "Reporting Model" statement, affects the way the County prepares and presents financial information. State and local governments, including other governmental entities such as the County, traditionally have used a financial reporting model substantially different from the one used to prepare private-sector financial reports.

GASB Statement No. 34 establishes requirements and a new reporting model for the annual financial reports of state and local governments, including other governmental entities. The statement was developed to make annual reports easier to understand and more useful to the people who use governmental financial information to make decisions and includes:

Management's Discussion and Analysis – GASB Statement No. 34 requires that financial statements be accompanied by a narrative introduction and analytical overview of the government's financial activities in the form of "management's discussion and analysis" (MD&A). This analysis is similar to analysis the private sector provides in their annual reports.

Government-Wide Financial Statements – The reporting model includes financial statements prepared using full accrual accounting for all of the government's activities. This approach includes not just current assets and liabilities (such as cash and accounts payable) but also capital assets and long-term liabilities (such as buildings and debt). Accrual accounting also reports all of the revenues and cost of providing services each year, not just those received or paid in the current year or soon thereafter.

Statement of Net Position – The government-wide statement of net position is designed to display the financial position of the County. Governments report all capital assets, including infrastructure, in the government-wide statement of net position and report depreciation expense - the cost of "using up" capital assets - in the statement of activities. The net position of a government are broken down into three categories - 1) net investment in capital assets; 2) restricted; and 3) unrestricted.

Statement of Activities – The government-wide statement of activities reports expenses and revenues in a format that focuses on the cost of each of the government's functions. The expense of individual functions is compared to the revenues generated directly by the function (for instance, through user charges or intergovernmental grants).

Fund Financial Statements – These statements are, in substance, very similar to the financial statements presented in the previous financial reporting model. Emphasis here is on major funds.

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

(c) ***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. While the previous reporting model emphasized fund types (the total of all funds of a particular type), in the new reporting model, the focus is on either the County as a whole or major individual funds (within the 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

COUNTY OF JAMES CITY, VIRGINIA

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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.

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.

(d) *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

COUNTY OF JAMES CITY, VIRGINIA

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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 assets.

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.

(e) *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.

COUNTY OF JAMES CITY, VIRGINIA

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(f) 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 \$65,160 in the General Fund at June 30, 2015. Additionally, the County recorded an allowance for uncollectible accounts of \$39,214 related to business, professional and occupational license taxes and \$1,703,194 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.

(g) Investments

All investments of the County are stated at fair value as of June 30, 2015, in accordance with the provisions of GASB Statement No. 31, *Accounting and Financial Reporting for Certain Investments and for External Investment Pools*.

(h) 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.

(i) 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 estimated fair market 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.

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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

(j) *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.

(k) *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 \$1,196,000 at June 30, 2015.

(l) *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 on December 6 and June 6 on taxes outstanding as of those dates and interest at 10% per annum is added.

(m) *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, 2015 are on the following page:

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Notes to Basic Financial Statements

June 30, 2015

	<u>Deductibles</u>
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

	<u>Coverage limits</u>
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 2015, the County made a payment of \$137,452 for these premiums.

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

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(n) 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.

(o) 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.

(p) 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.

(q) 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.

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Management's Discussion and Analysis

June 30, 2015

- *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, 2015, the General Fund has the following amounts assigned or unassigned:

	<u>Assigned</u>	<u>Unassigned</u>
Capital projects	\$ 1,878,000	—
Health insurance	3,073,364	—
Potential insurance loss	300,000	—
Capital reserve fund	4,968,111	—
Encumbrances	740,458	—
Fiscal liquidity	—	23,360,679
	<u>\$ 10,959,933</u>	<u>23,360,679</u>

The committed fund balance for the Capital Projects Fund was \$1,551,387 at June 30, 2015 and was primarily for amounts approved related to bond proceeds received for improvements at three schools and a replacement of a fire station. The assigned fund balance in the capital projects fund was \$16,178,748 at June 30, 2015 and was for ongoing capital projects. The assigned fund balance in the other governmental funds was \$4,416,559 at June 30, 2015 and was primarily for ongoing expenditures.

(r) Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at

COUNTY OF JAMES CITY, VIRGINIA

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June 30, 2015

the date of the financial statements. Such estimates also affect the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates and assumptions.

(s) *New Accounting Principles*

The County has adopted GASB Statement 68, *Accounting and Financial Reporting for Pensions – An Amendment of GASB Statement 27* (“GASB 68”) and GASB Statement 71, *Pension Transition for Contributions Made Subsequent to the Measurement Date – an Amendment to GASB Statement 68* (“GASB 71”). GASB 68 replaces the requirements of Statement 27, *Accounting for Pensions by State and Local Governmental Employers*, as well as the requirements of Statement 50, *Pension Disclosures*, as they relate to pensions that are provided through pension plans administered as trusts or equivalent arrangements that meet certain criteria. GASB 68 establishes standards for measuring and recognizing liabilities, deferred outflows of resources, and deferred inflows of resources, and expense/expenditures. Note disclosure and required supplementary information requirements about pensions are also addressed. This statement details the recognition and disclosure requirements for employers with liabilities to a defined benefit pension plan and for employers whose employees are provided with defined contribution pensions. GASB 71 provides accounting and financial reporting guidance for contributions, if any, made by an employer to a defined benefit plan after the measurement date of the government's beginning net pension. The accounting changes required by GASB 68 and 71 are applied retroactively by reclassifying the statement of net position, balance sheet information, and results of operations.

(t) *Subsequent Events*

In preparing these financial statements, the County has evaluated events and transactions for potential recognition or disclosure through November 23, 2015 the date the financial statements were available to be issued.

(2) *Cash and Cash Equivalents and Investments*

Primary Government

(a) *Deposits*

At year end, the carrying value of the deposits with banks and savings and loans was \$29,907,947 and the bank balance was \$31,797,120. The difference between the carrying value of bank deposits and the bank balance is primarily due to outstanding checks and deposits in transit. The entire bank balance was covered by federal depository insurance or collateralized in accordance with the Virginia Security for Public Deposits Act (the Act).

Under the Act, banks holding public deposits in excess of the amounts insured by the Federal Deposit Insurance Corporation (FDIC) must pledge collateral in the amount of 50% of excess deposits to a collateral pool in the name of the State Treasury Board. Savings and loan institutions are required to collateralize 100% of deposits in excess of FDIC limits. If any member financial institution fails, the entire collateral becomes available to satisfy the claims of the County. If the value of the pool's collateral is inadequate to cover a loss, additional amounts would be assessed on a pro rata basis to the members (banks and savings and loans) of the pool; therefore, these deposits are considered collateralized and as a result are considered insured. The State Treasury Board is responsible for

COUNTY OF JAMES CITY, VIRGINIA

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monitoring compliance with the collateralization and reporting requirements of the Act and for notifying local governments of compliance by banks and savings and loans.

(b) Investments

As of June 30, 2015, the primary government had the following investments and maturities:

	Fair value	Original investment maturity (in years)		
		Less than 1	1-2	2-7
Commonwealth of Virginia				
LGIP	\$ 32,322	32,322	—	—
Money market funds	4,528,267	4,528,267	—	—
Certificates of deposit	3,473,079	500,000	—	2,973,079
Federal agency bonds/notes	6,921,684	249,953	1,517,282	5,154,449
Corporate notes	6,658,965	—	50,014	6,608,951
Municipal bonds	906,301	—	—	906,301
U.S. Treasury notes	20,986,131	—	1,554,086	19,432,045
	<u>\$ 43,506,749</u>	<u>5,310,542</u>	<u>3,121,382</u>	<u>35,074,825</u>

(c) Summary of Deposits

A reconciliation of the carrying value of deposits and investments reported above to amounts reported in the statement of net position is as follows:

Deposits	\$ 29,907,947
Investments	<u>43,506,749</u>
	<u>\$ 73,414,696</u>
Cash and cash equivalents	\$ 26,301,153
Investments	40,790,477
Cash and cash equivalents and investments - restricted	<u>6,323,066</u>
	<u>\$ 73,414,696</u>

(d) 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.

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

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

(e) 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, 2015 were rated by Standard & Poor's, Moody's and Fitch and/or an equivalent national rating organization and the ratings are as follows:

		Investment ratings				
		AAA/AA+	AA	AA-	A-1+	A-1
Money market funds	\$	—	—	—	—	249,818
Certificate of deposit		—	—	1,900,074	950,579	—
Corporate notes		2,511,671	1,939,321	2,207,972	—	—
Federal agency						
bonds/notes		6,921,684	—	—	—	—
Municipal bonds		906,302	—	—	—	—
US Treasury notes/bonds		20,986,129				
Total	\$	31,325,786	1,939,321	4,108,046	950,579	249,818

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

Commonwealth of Virginia LGIP, U.S. Treasury Notes, a portion of money market funds and a portion of certificate of deposit, totaling \$4,933,199 at June 30, 2015, are unrated; therefore, they are not included in the information presented on the previous page.

(f) 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, 2015, 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:

Federal Home Loan Mortgage Corporation	19.6%
Federal National Mortgage Association	10.7
PFM Funds - Prime, Institutional Class	5.1

(g) 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.

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.

(h) 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, 2015, all of the County's investments are held in a bank's trust department in the name of James City County.

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

(i) Component Unit – Public Schools

Cash and cash equivalents:

Bank deposits (including school agency funds)	\$ 17,954,344
Certificates of deposit	29,245
Investment in LGIP	<u>207,309</u>
	<u>\$ 18,190,898</u>

At year end, the carrying value of the Public Schools' deposits with banks and savings institutions in the General Fund and the Agency Fund was \$17,120,502 (excluding \$1,070,396 of the School Activity Funds) and the bank balance was \$20,734,808. The difference between the carrying value of bank deposits and the bank balance is primarily due to outstanding checks and deposits in transit. The bank balance is fully covered by federal depository insurance or collateralized in accordance with the Act.

(j) Component Unit – Economic Development Authority – Deposits

Cash and cash equivalents:

Bank deposits	\$ 197,443
Investment in LGIP	242
Certificates of deposit	<u>1,040,320</u>
	<u>\$ 1,238,005</u>

At year end, the carrying value of the Development Authority's deposits with banks and savings institutions was \$197,443 and the bank balance was \$197,461. The bank balance, which may differ from the carrying value of deposits primarily due to outstanding checks and deposits in transit, is fully covered by federal depository insurance (FDIC) or collateralized in accordance with the Act.

(3) Restricted Cash and Cash Equivalents and Investments

Restricted cash and cash equivalents and investments of the County's governmental activities at June 30, 2015, are detailed as follows:

<u>Fund</u>	<u>Purpose</u>	<u>Amount</u>
Capital projects	Lease bonds	\$ 1,387,116
General	Subdivision escrow	865,424
Grants and special projects	Grants and special projects	110,953
Community development	Community rehabilitation	<u>1,243,296</u>
		<u>\$ 3,606,789</u>

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

(4) Receivables and Payables

Amounts due from miscellaneous sources in the General Fund at June 30, 2015, are detailed as follows:

Sales tax	\$ 1,927,294
Emergency medical services	1,190,017
Meals tax	889,369
Other	550,731
Business license	268,427
Charges for services	235,175
Recordation tax	178,275
Deeds of conveyance	103,352
Williamsburg Regional Library	65,325
Utility consumption fee	28,813
Fines and forfeitures	18,330
	<u>5,455,108</u>
	<u>\$ 5,455,108</u>

Accounts payable and accrued liabilities at June 30, 2015, are comprised of the following:

	<u>Accounts payable</u>	<u>Accrued liabilities</u>	<u>Total</u>
General	\$ 2,719,666	305,996	3,025,662
Capital projects	629,817	—	629,817
Other governmental funds	239,261	16,704	255,965
Governmental funds	3,588,744	322,700	3,911,444
Accrued interest	—	848,611	848,611
Governmental activities	\$ 3,588,744	1,171,311	4,760,055

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

(5) 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. At June 30, 2015, the balances are as follows:

Due from other funds			
	<u>General</u>	<u>Capital Projects</u>	<u>Total</u>
Due to other funds:			
General	\$ —	1,221,607	1,221,607
Nonmajor			
governmental funds	414,339	191,273	605,612
Service Authority	<u>1,346,004</u>	<u>—</u>	<u>1,346,004</u>
Total	<u>\$ 1,760,343</u>	<u>1,412,880</u>	<u>3,173,223</u>

	<u>Interfund Receivable</u>	<u>Interfund Payable</u>
General fund	\$ 414,339	1,221,607
Capital Projects	1,412,880	—
Nonmajor		
governmental funds:		
Virginia public assistance	—	292,977
Colonial community corrections	—	9,252
Community development	—	290,537
Trust fund	—	1,030
Tourism investment	—	1,572
Grants/special projects	<u>—</u>	<u>10,244</u>
Total	<u>\$ 1,827,219</u>	<u>1,827,219</u>

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

Interfund transfers for the year ended June 30, 2015, consisted of the following:

	<u>Transfers to other Funds</u>	<u>Transfers from other Funds</u>
General fund	\$ 35,271,660	—
Capital projects	—	6,760,319
Debt service	—	24,445,875
Nonmajor governmental funds	—	4,065,466
	<u>35,271,660</u>	<u>35,271,660</u>
Total	\$ <u>35,271,660</u>	<u>35,271,660</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.

	<u>Transfers in</u>	<u>Transfers out</u>	<u>Net transfers</u>
Governmental funds:			
General fund	\$ —	(35,271,660)	(35,271,660)
Capital projects	6,760,319	—	6,760,319
Debt service	24,445,875	—	24,445,875
Nonmajor governmental funds	4,065,466	—	4,065,466
Total	\$ <u>35,271,660</u>	<u>(35,271,660)</u>	<u>—</u>

Transfers from the General Fund to Capital Projects Fund represent the County's budgeted pay-as-you-go funding.

Transfers from the General Fund to Debt Service Fund represent the movement of restricted receipts from the funds collecting the receipts as debt service payments become due.

Transfers from the General Fund 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.

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

(6) Due from Other Governments

Details of amounts due from other governments as of June 30, 2015 are as follows:

Governmental activities:

General Fund:

Local Governments:	
City of Williamsburg	\$ 102,523
Other	15,890
Commonwealth of Virginia:	
Recordation tax	134,040
Rolling stock tax	59,386
Communications sales and use tax	279,019
State sales tax	1,960,844
Personal property tax relief	4,836,856
Compensation Board	171,980
Other	39,949
	<hr/>
Total General Fund	7,600,487

Nonmajor Governmental Funds:

Local Governments:	
City of Williamsburg	15,116
Other	128,440
Commonwealth of Virginia:	
Virginia Department of Social Services	145,883
Virginia Department of Housing and Community Development	160
Other	618,042
Federal Government:	
Department of Homeland Security	66,631
Department of Social Services	188,379
Department of Transportation	162,854
Other	186,564
	<hr/>
Total Nonmajor Governmental Funds	1,512,069
	<hr/>
Total Governmental Activities	\$ 9,112,556

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

Component Unit – Public Schools:

Federal government	\$ 750,571
Commonwealth of Virginia	<u>178,393</u>
Total	<u><u>\$ 928,964</u></u>

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

(7) Capital Assets

The following is a summary of changes in capital assets for the fiscal year ended June 30, 2015:

Governmental Activities

	<u>Balances</u> <u>July 1, 2014</u>	<u>Increases</u>	<u>Decreases</u>	<u>Balances</u> <u>June 30, 2015</u>
Capital assets not being depreciated:				
Land and land improvements	\$ 28,086,819	225,999	180,000	28,132,818
Construction in progress	12,675,404	9,920,162	14,902,230	7,693,336
Intangible assets - easements	<u>8,069,178</u>	—	—	<u>8,069,178</u>
Total capital assets not being depreciated	<u>48,831,401</u>	<u>10,146,161</u>	<u>15,082,230</u>	<u>43,895,332</u>
Other capital assets:				
Buildings and improvements	324,196,109	4,332,125	392,331	328,135,903
Improvements other than buildings	25,982,862	6,507,417	—	32,490,279
Equipment and vehicles	43,369,641	3,097,759	1,801,763	44,665,637
Infrastructure	<u>8,242,402</u>	<u>2,258,452</u>	—	<u>10,500,854</u>
Total other capital assets	<u>401,791,014</u>	<u>16,195,753</u>	<u>2,194,094</u>	<u>415,792,673</u>
Less accumulated depreciation for:				
Buildings and improvements	78,698,283	7,021,719	243,449	85,476,553
Improvements other than buildings	8,087,325	1,144,612	—	9,231,937
Equipment and vehicles	30,237,626	3,597,884	1,764,569	32,070,941
Infrastructure	<u>3,166,684</u>	<u>351,108</u>	—	<u>3,517,792</u>
Total accumulated depreciation	<u>120,189,918</u>	<u>12,115,323</u>	<u>2,008,018</u>	<u>130,297,223</u>
Other capital assets, net	<u>281,601,096</u>	<u>4,080,430</u>	<u>186,076</u>	<u>285,495,450</u>
	<u><u>\$ 330,432,497</u></u>	<u><u>14,226,591</u></u>	<u><u>15,268,306</u></u>	<u><u>329,390,782</u></u>

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

Depreciation was charged to governmental functions as follows:

General government administration	\$	860,953
Judicial administration		253,965
Public safety		2,357,092
Public works		235,661
Parks, recreation and cultural		1,770,619
Community development		365,139
Education		5,008,700
Nondepartmental		<u>1,263,198</u>
Total depreciation expense – governmental activities	\$	<u><u>12,115,327</u></u>

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

Business-Type Activity

	<u>Balances</u> <u>July 1, 2014</u>	<u>Increases</u>	<u>Decreases</u>	<u>Balances</u> <u>June 30, 2015</u>
Capital assets not being depreciated:				
Land	\$ 1,750,391	1,600	12,500	1,739,491
Land – utility plant	962,995	—	—	962,995
Land improvements	13,183	—	—	13,183
Construction in progress	1,748,620	1,773,110	2,815,870	705,860
Intangible assets - 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>
Other capital assets:				
Water and sewer systems – utility plant	237,026,604	7,070,270	77,158	244,019,716
Buildings and improvements	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 assets – water rights	25,000,000	—	—	25,000,000
Total other capital assets	<u>270,957,582</u>	<u>7,579,198</u>	<u>332,227</u>	<u>278,204,553</u>
Less accumulated depreciation and amortization for:				
Water and sewer systems – utility plant	105,395,191	6,680,140	67,537	112,007,794
Buildings and improvements	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
Intangible assets – water rights	3,220,859	613,497	—	3,834,356
Total accumulated depreciation and amortization	<u>112,854,386</u>	<u>7,810,808</u>	<u>322,606</u>	<u>120,342,588</u>
Other capital assets, net	<u>158,103,196</u>	<u>(231,609)</u>	<u>9,621</u>	<u>157,861,966</u>
	<u>\$ 162,582,955</u>	<u>1,543,102</u>	<u>2,837,992</u>	<u>161,288,064</u>

Depreciation and amortization of \$7,810,808 was charged to water and sewer operations as follows:

Water	\$ 4,899,603
Sewer	<u>2,911,205</u>
	<u>\$ 7,810,808</u>

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

Component Unit – Public Schools

	<u>Balances</u> <u>July 1, 2014</u>	<u>Increases</u>	<u>Decreases</u>	<u>Balances</u> <u>June 30, 2015</u>
Capital assets not being depreciated:				
Land improvements	\$ 8,435,126	—	—	8,435,126
Construction in progress	6,054,125	3,527,417	7,637,300	1,944,242
Total capital assets not being depreciated	<u>14,489,251</u>	<u>3,527,417</u>	<u>7,637,300</u>	<u>10,379,368</u>
Other capital assets:				
Buildings and improvements	44,096,015	7,711,216	—	51,807,231
Furniture and equipment	21,164,528	1,612,248	144,489	22,632,287
Total other capital assets	<u>65,260,543</u>	<u>9,323,464</u>	<u>144,489</u>	<u>74,439,518</u>
Less accumulated depreciation for:				
Buildings and improvements	14,135,027	2,454,823	—	16,589,850
Furniture and equipment	13,167,525	1,550,328	38,089	14,679,764
Total accumulated depreciation	<u>27,302,552</u>	<u>4,005,151</u>	<u>38,089</u>	<u>31,269,614</u>
Other capital assets, net	<u>37,957,991</u>	<u>5,318,313</u>	<u>106,400</u>	<u>43,169,904</u>
	<u>\$ 52,447,242</u>	<u>8,845,730</u>	<u>7,743,700</u>	<u>53,549,272</u>

Depreciation of \$4,005,151 was charged to the Public Schools' governmental functions.

The total construction in progress for the Public Schools is \$6,535,798. Capital outlay expenditures totaling \$4,591,556 are presented in the County's construction in progress balance in order to match the corresponding debt.

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

Component Unit – Economic Development Authority

	Balances			Balances
	July 1, 2014	Increases	Decreases	June 30, 2015
Capital assets not being depreciated:				
Land	\$ 233,106	—	—	233,106
Construction in progress	166,510	—	—	166,510
Total capital assets not being depreciated	<u>399,616</u>	<u>—</u>	<u>—</u>	<u>399,616</u>
Other capital assets:				
Furniture and equipment	5,119	—	—	5,119
Intangible assets	7,600	—	—	7,600
Total other capital assets	<u>12,719</u>	<u>—</u>	<u>—</u>	<u>12,719</u>
Less accumulated depreciation for:				
Furniture and equipment	1,493	512	—	2,005
Intangible assets	3,040	1,520	—	4,560
Total accumulated depreciation	<u>4,533</u>	<u>2,032</u>	<u>—</u>	<u>6,565</u>
Other capital assets, net	<u>8,186</u>	<u>(2,032)</u>	<u>—</u>	<u>6,154</u>
	<u>\$ 407,802</u>	<u>(2,032)</u>	<u>—</u>	<u>405,770</u>

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

(8) Amounts Due From and To Component Units

The Service Authority owes the County \$1,346,004 at June 30, 2015, 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, 2015, the County owed the Public Schools \$1,014,769, which primarily represents construction incurred by the Public Schools. The Public Schools owed the County \$1,340,052, which represents local schools funds unexpended at year end that are contractually required to be returned to the County. Additionally, the County owed the Development Authority \$82,000, which primarily represents payments for Development Authority grants. The Development Authority owed the County \$409, which is a reimbursement for a telecommunications expense.

(9) 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, 2015 follow:

	<u>General fund</u>	<u>Capital projects</u>	<u>Other governmental funds</u>	<u>Total</u>
Prepaid property taxes	\$ 399,260	—	—	399,260
Unexpended grants	—	—	3,283,004	3,283,004
Governmental activities	399,260	—	3,283,004	3,682,264
Property taxes not collected within 45 days	<u>21,709,831</u>	<u>760</u>	—	<u>21,710,591</u>
Governmental funds	<u>\$ 22,109,091</u>	<u>760</u>	<u>3,283,004</u>	<u>25,392,855</u>

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

(10) 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, 2015, is presented below:

	<u>Amounts payable at July 1, 2014</u>	<u>Additions</u>	<u>Retirements and reductions</u>	<u>Amounts payable at June 30, 2015</u>	<u>Amounts due within one year</u>
Governmental activities:					
General obligation bonds	\$ 63,510,000	21,610,000	30,490,000	54,630,000	7,940,000
Deferred amounts:					
Add bond premium	<u>8,654,244</u>	<u>3,907,273</u>	<u>1,732,928</u>	<u>10,828,589</u>	<u>—</u>
Total general obligation bonds	<u>72,164,244</u>	<u>25,517,273</u>	<u>32,222,928</u>	<u>65,458,589</u>	<u>7,940,000</u>
Other capital lease	984,528	—	125,695	858,833	130,377
Lease revenue bonds	114,416,000	12,575,000	23,387,000	103,604,000	8,747,000
OPEB obligation	1,810,962	383,000	—	2,193,962	—
Compensated absences	3,449,442	3,745,245	3,739,910	3,454,777	2,591,083
Landfill postclosure care cost	<u>1,165,675</u>	<u>2,485</u>	<u>—</u>	<u>1,168,160</u>	<u>60,053</u>
Total other long-term liabilities	<u>121,826,607</u>	<u>16,705,730</u>	<u>27,252,605</u>	<u>111,279,732</u>	<u>11,528,513</u>
Governmental activities long- term liabilities	<u>\$ 193,990,851</u>	<u>42,223,003</u>	<u>59,475,533</u>	<u>176,738,321</u>	<u>19,468,513</u>

The General Fund or the Special Revenue Fund where the employees' salaries are charged generally liquidates compensated absences and other postemployment benefit 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, 2015, \$1,008,200 was included in capital assets, and \$100,820 depreciation expense was incurred during fiscal year 2015.

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

The present value of future minimum capital lease payments of the County as of June 30, 2015, is as follows:

Fiscal year ending June 30:	
2016	162,369
2017	162,369
2018	162,369
2019	162,369
2020	162,369
2021	<u>162,369</u>
Total minimum lease payments	974,214
Less amount representing interest	<u>(115,381)</u>
Present value of minimum capital lease payments	<u>\$ 858,833</u>

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

(a) Governmental Activities

Details of long-term bonded indebtedness:

\$18,800,000 School Bonds, issued May 1, 1997, maturing in various annual installments through January 15, 2018, with interest payable semiannually at 5.60%	\$ 4,320,000
\$19,220,000 School Bonds, Series 1999A, issued May 13, 1999, maturing in various annual installments through July 15, 2019, with interest payable semiannually at 4.725%	6,620,000
\$1,250,000 School Bonds, Series 1999B, issued August 17, 1999, maturing in various annual installments through July 15, 2019, with interest payable semiannually at 5.975%	300,000
\$39,820,000 General Obligation School Bonds, Series 2005, issued June 8, 2005, maturing in various installments through December 15, 2029, with interest payable semiannually at 3.60%	6,540,000
\$21,000,000 General Obligation Bonds, Series 2006, issued December 28, 2006, maturing in annual installments of \$1,050,000 through June 15, 2026, with interest payable semiannually at 4.00%	11,550,000
\$4,820,000 General Obligation Public Improvement Refunding Bonds, Series, 2010, issued on October 20, 2010, maturing in various annual installments through December 15, 2015, with interest payable semiannually at 3.00%	2,865,000
\$1,000,000 General Obligation School Bond, Series 2011A, issued December 15, 2011, maturing in various installments through December 1, 2030, with interest payable semiannually at 4.25%	850,000
\$21,610,000 General Obligation Bond, Series 2014, issued August 5, 2014, maturing in various installments through December 15, 2027, with interest payable semiannually at 2.00%	<u>21,585,000</u>
Total long-term bonded indebtedness	54,630,000
Add premiums	<u>10,828,589</u>
Total general obligation bonds	<u>65,458,589</u>

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

Capital lease obligation:

\$1,312,522 entered into on November 10, 2010, due in various annual installments through December 1, 2020, with interest paid semiannually at 3.725%	858,833
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Lease revenue bonds:

\$95,775,000 issued December 28, 2006, due in various installments through June 15, 2026, with interest paid semiannually at 5.00%	52,665,000
\$14,935,000 issued September 23, 2009, due in various installments through January 15, 2030, with interest paid semiannually at 3.50%	11,430,000
\$6,672,000 issued September 30, 2011, due in various installments through July 15, 2021, with interest paid semiannually at 2.18%	4,669,000
\$26,380,000 issued September 11, 2012, due in various installments through June 30, 2033, with interest paid semiannually at 4.00%	22,265,000
\$12,575,000 issued August 7, 2014, due in various annual installments through June 15, 2026, with interest paid semiannually at 3.00%	12,575,000

OPEB obligation	2,193,962
Compensated absences	3,454,777
Landfill postclosure care costs	1,168,160
	<hr/>
Total other long-term liabilities	1,112,797,732
	<hr/>
Total governmental activities	\$ 176,738,321
	<hr/> <hr/>

(b) Business-Type Activity

A summary of the County's long-term liability activity for the business-type activity for the fiscal year ended June 30, 2015, is presented below:

	<u>Amounts payable at July 1, 2014</u>	<u>Additions</u>	<u>Retirements and reductions</u>	<u>Amounts payable at June 30, 2015</u>	<u>Amounts due within one year</u>
Business-type activity:					
Revenue bonds	\$ 24,660,000	—	545,000	24,115,000	565,000
OPEB obligation	207,508	36,000	—	243,509	—
Compensated absences	373,913	445,120	461,680	357,353	268,010
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Total	\$ 25,241,421	481,120	1,006,680	24,715,862	833,010
	<hr/> <hr/>	<hr/> <hr/>	<hr/> <hr/>	<hr/> <hr/>	<hr/> <hr/>

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

Details of long-term bonded indebtedness:

\$27,120,000 Revenue Bonds, Series 2008 issued August, 2008,
maturing in various annual installments through 2040
with interest payable semiannually at 3.50%

\$ 24,115,000

Future maturities of the County's various debt obligations together with scheduled interest payments are as follows:

Governmental activities:

	General obligation bonds		Lease revenue bonds	
	Principal	Interest	Principal	Interest
Fiscal year ending				
June 30:				
2016	7,940,000	2,291,726	8,747,000	4,666,779
2017	5,345,000	1,974,336	8,857,000	4,290,638
2018	5,495,000	1,677,784	8,997,000	3,882,598
2019	4,095,000	1,443,575	9,147,000	3,465,497
2020	4,225,000	1,268,703	8,032,000	3,040,047
2021-2025	14,650,000	4,303,275	39,844,000	9,575,763
2026-2030	12,880,000	1,481,856	16,195,000	2,140,025
2031-2033	—	—	3,785,000	248,787
	<u>\$ 54,630,000</u>	<u>14,441,255</u>	<u>103,604,000</u>	<u>31,310,134</u>

Future maturities of compensated absences and landfill postclosure care costs are not determinable (see note 11).

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

Business-type activity:

Fiscal year ending	Revenue bonds	
	Principal	Interest
June 30:		
2016	565,000	1,081,856
2017	585,000	1,062,081
2018	605,000	1,041,606
2019	630,000	1,017,406
2020	655,000	992,206
2021-2025	3,690,000	4,536,144
2026-2030	3,565,000	3,669,444
2031-2035	3,110,000	2,843,088
2036-2040	10,710,000	2,128,800
	<u>\$ 24,115,000</u>	<u>18,372,631</u>

Future maturities of compensated absences and landfill postclosure care costs are not determinable (see note 11).

(c) Component Unit – Public Schools

	Amounts payable at July 1, 2014	Additions	Retirements and reductions	Amounts payable at June 30, 2015	Amounts due within one year
OPEB obligation	\$ 4,440,300	859,000	303,000	4,996,300	—
Equipment capital leases	173,571	98,861	51,412	221,020	56,777
Compensated absences	962,025	975,192	932,684	1,004,533	452,040
Net pension liability	<u>119,805,628</u>	<u>—</u>	<u>16,697,314</u>	<u>103,108,314</u>	<u>—</u>
Component Unit – Public Schools long-term liabilities	<u>\$ 125,381,524</u>	<u>1,933,053</u>	<u>17,984,410</u>	<u>109,330,167</u>	<u>508,817</u>

(11) 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 \$1,168,160 reported as landfill postclosure liability at June 30, 2015, 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

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

on what it would cost to perform all closure and postclosure care in 2015. 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 General Fund.

(12) Pension Plan

(a) Pensions

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 Virginia Retirement System (VRS). For this purpose, benefit payments (including refunds or employee contributions) are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

(b) Plan Description

All full-time, salaried regular employees of participating employers are automatically covered by Virginia Retirement System (VRS) upon employment. This plan is administered by the Virginia Retirement System (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 they and their employer are paying contributions to VRS. Members are eligible to purchase prior public service, active duty military service, certain periods of leave and previously refunded VRS service as service credit in their plan.

VRS administers three different benefit plans for local government employees – Plan 1, Plan 2 and Hybrid. Each plan has different eligibility and benefit structures as set out below.

VRS PLAN 1:

About VRS Plan 1

VRS 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 VRS 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 VRS 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

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

also eligible to opt into the Hybrid Retirement Plan. Members who were eligible for an optional retirement plan (ORP) and had prior service under VRS Plan 1 were not eligible to elect the Hybrid Retirement Plan and remain as VRS Plan 1 or ORP.

Retirement Contributions

Members contribute up to 5% of their compensation each month to their member contribution account through a pre-tax salary reduction. Some school divisions and political subdivisions elected to phase in the required 5% member contribution; 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. Beginning July 1, 2012, the County opted for employees to pay the entire 5% member contribution.

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 1.7%. The retirement multiplier for sheriffs and regional jail superintendents is 1.85%. The retirement multiplier of eligible political subdivision

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

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hazardous duty employees other than sheriffs and regional jail superintendents is 1.7% as elected by the employer.

Normal Retirement Age

Age 65.

Earliest Unreduced Retirement Eligibility

Members who are not in hazardous duty positions are eligible for an unreduced retirement benefit at age 65 with at least five years (60 months) of creditable service or at age 55 with at least 30 years of creditable service. Hazardous duty members are eligible for an unreduced retirement benefit at 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

Members may retire with a reduced benefit as early as age 55 with at least five years (60 months) of creditable service or age 50 with at least 10 years of creditable service. Hazardous duty members are eligible for a reduced benefit as early as age 50 with at least five years of creditable service.

Cost-of-Living Adjustment (COLA) in Retirement

The Cost-of-Living Adjustment (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.

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

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.

VRS PLAN 2:

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 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 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.

Hybrid Opt-In Election

VRS 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 VRS 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 VRS Plan 2 were not eligible to elect the Hybrid Retirement Plan and remain as VRS Plan 2 or ORP.

Retirement Contributions

Same as VRS Plan 1.

Creditable Service

Same as VRS Plan 1.

Vesting

Same as VRS Plan 1.

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

Calculating the Benefit

See definition under VRS 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 Plan1 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.

Earliest Unreduced Retirement Eligibility

Members who are not in hazardous duty positions are eligible for an unreduced retirement benefit when they reach normal Social Security retirement age and have at least five years (60 months) of creditable service or when their age and service equal 90. Hazardous duty members are eligible for an unreduced retirement benefit at 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

Members may retire with a reduced benefit as early as age 60 with at least five years (60 months) of creditable service. Hazardous duty employees are the same as VRS Plan 1.

Cost-of-Living Adjustment (COLA) in Retirement

The Cost-of-Living Adjustment (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 VRS Plan 1.

Exceptions to COLA Effective Dates:

Same as VRS 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 VRS Plan 1.

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

HYBRID RETIREMENT PLAN

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.

Eligible Members

Employees are in the Hybrid Retirement Plan if their membership date is on or after January 1, 2014. This includes members in VRS Plan 1 or VRS 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 members of the State Police Officers’ Retirement System (SPORS), the Virginia Law Officers’ Retirement System (VaLORS), or political subdivision employees who are covered by enhanced benefits for hazardous duty employees.

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.

COUNTY OF JAMES CITY, VIRGINIA

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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. VRS Plan 1 or VRS 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 VRS 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.

Average Final Compensation

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

Service Retirement Multiplier

The retirement multiplier is 1.0%. For members that opted into the Hybrid Retirement Plan from VRS Plan 1 or VRS 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 VRS Plan 2.

Defined Contribution Component:

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

COUNTY OF JAMES CITY, VIRGINIA

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Earliest Unreduced Retirement Eligibility

Defined Benefit Component:

Members are eligible for an unreduced retirement benefit when they reach 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 VRS Plan 2.

Defined Contribution Component:

Not applicable.

Eligibility:

Same as VRS Plan 1 and VRS Plan 2.

Exceptions to COLA Effective Dates:

Same as VRS Plan 1 and VRS Plan 2.

Disability Coverage

Eligible political subdivision and school division (including VRS Plan 1 and VRS 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 VRS Plan 1 and VRS 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 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

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

service will change to actuarial cost.

Defined Contribution Component:

Not applicable.

(c) Employees Covered by Benefit Terms

As of the June 30, 2013 actuarial valuation, the following employees were covered by the benefit terms of the pension plan:

Governmental activities:

	<u>Number</u>
Inactive members or their beneficiaries currently receiving benefits	296
Inactive members:	
Vested inactive members	135
Non-vested inactive members	159
Inactive members active elsewhere in VRS	<u>239</u>
Total inactive members	533
Active members	<u>770</u>
Total covered employees	<u><u>1,599</u></u>

Business-type activities:

	<u>Number</u>
Inactive members or their beneficiaries currently receiving	34
Inactive members:	
Vested inactive members	11
Non-vested inactive members	15
Inactive members active elsewhere in VRS	<u>31</u>
Total inactive members	57
Active members	<u>83</u>
Total covered employees	<u><u>174</u></u>

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

Component Unit – Public Schools (non-professional):

	Number
Inactive members or their beneficiaries currently receiving benefits	82
Inactive members:	
Vested inactive members	19
Non-vested inactive members	70
Inactive members active elsewhere in VRS	44
Total inactive members	133
Active members	185
Total covered employees	400

(d) 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, 2015 were 11.12%, 8.49%, and 7.22% of covered employee compensation, respectively. 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 employees during the year, with an additional amount to finance any unfunded accrued liability. Total contributions to the pension plan from the County were \$4,091,153 and \$4,362,691, the Authority were \$330,920 and \$308,820, and the Public Schools were \$372,141 and \$435,519 for years ended June 30, 2015 and June 30, 2014, respectively.

(e) Net Pension Liability

The net pension liability was measured as of June 30, 2014. The total pension liability used to calculate the net pension liability was determined by an actuarial valuation performed as of June 30, 2013, using updated actuarial assumptions, applied to all periods included in the measurement and rolled forward to the measurement date of June 30, 2014.

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

(f) 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, 2013, 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, 2014.

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%. However, since the difference was minimal, and a more conservative 7% 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% 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.

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

The actuarial assumptions used in the June 30, 2013 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

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

(g) 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, 2013, 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, 2014.

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 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.

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

The actuarial assumptions used in the June 30, 2013 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 on the following page:

Largest 10 – LEOS:

- Update mortality table
- Decrease in male rates of disability

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

(h) 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 table on the following page:

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

<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%.

(i) Discount Rate

The discount rate used to measure the total pension liability was 7%. The discount rate determination does not use a municipal bond rate. The projection of cash flows used to determine the discount rate assumed that VRS 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. Projected future benefit payments for all current

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

VRS members were projected through 2121. Therefore, the long-term expected rate of return was applied to all periods of projected benefit payments to determine the total pension liability.

(j) 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%, 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%) or one percentage point higher (8%) than the current rate:

Governmental activities:

	1% Decrease (6%)		Current Discount Rate (7%)		1% Increase (8%)
Net pension liability	\$ 37,443,554	\$	15,458,792	\$	(2,696,680)

Business-type activity:

	1% Decrease (6%)		Current Discount Rate (7%)		1% Increase (8%)
Net pension liability	\$ 2,967,853	\$	939,493	\$	(740,025)

Component Unit – Public Schools (non-professional):

	1% Decrease (6%)		Current Discount Rate (7%)		1% Increase (8%)
Net pension liability	\$ 1,175,394	\$	(804,686)	\$	(2,467,016)

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

(k) Changes in Net Pension Liability

Governmental activities:

	<u>Total pension liability (a)</u>	<u>Plan fiduciary net pension (b)</u>	<u>Net pension liability (a) - (b)</u>
Balances at June 30, 2013	\$ 145,419,002	\$ 119,228,777	\$ 26,190,225
Changes for the year:			
Service cost	4,376,092	-	4,376,092
Interest	9,996,496	-	9,996,496
Contributions - employer	-	4,362,691	(4,362,691)
Contributions - employee	-	1,909,429	(1,909,429)
Net investment income	-	18,931,089	(18,931,089)
Benefit payments, including refunds of employee contributions	(5,223,843)	(5,223,843)	-
Administrative expenses	-	(100,186)	100,186
Other changes	-	998	(998)
Net changes	<u>9,148,745</u>	<u>19,880,178</u>	<u>(10,731,433)</u>
Balances at June 30, 2014	\$ <u>154,567,747</u>	\$ <u>139,108,955</u>	\$ <u>15,458,792</u>

Business-type activity:

	<u>Total pension liability (a)</u>	<u>Plan fiduciary net pension (b)</u>	<u>Net pension liability (a) - (b)</u>
Balances at June 30, 2013	\$ 13,242,723	\$ 11,335,104	\$ 1,907,619
Changes for the year:			
Service cost	417,066	-	417,066
Interest	913,818	-	913,818
Contributions - employer	-	308,820	(308,820)
Contributions - employee	-	197,188	(197,188)
Net investment income	-	1,802,418	(1,802,418)
Benefit payments, including refunds of employee contributions	(376,365)	(376,365)	-
Administrative expenses	-	(9,511)	9,511
Other changes	-	95	(95)
Net changes	<u>954,519</u>	<u>1,922,645</u>	<u>(968,126)</u>
Balances at June 30, 2014	\$ <u>14,197,242</u>	\$ <u>13,257,749</u>	\$ <u>939,493</u>

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

Component Unit – Public Schools (non-professional):

	Total pension liability (a)	Plan fiduciary net pension (b)	Net pension liability (a) - (b)
Balances at June 30, 2013	\$ 14,876,279	\$ 14,283,651	\$ 592,628
Changes for the year:			
Service cost	507,972	-	507,972
Interest	1,021,383	-	1,021,383
Contributions - employer	-	435,519	(435,519)
Contributions - employee	-	237,728	(237,728)
Net investment income	-	2,265,304	(2,265,304)
Benefit payments, including refunds of employee contributions	(570,189)	(570,189)	-
Administrative expenses	-	(12,002)	12,002
Other changes	-	120	(120)
Net changes	959,166	2,356,480	(1,397,314)
Balances at June 30, 2014	\$ 15,835,445	\$ 16,640,131	\$ (804,686)

(l) Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

For the year ended June 30, 2015, the County, Authority, and Schools recognized pension expense of \$2,072,744, \$144,496, \$8,075,082, respectively. At June 30, 2015, deferred outflows of resources and deferred inflows of resources to pensions from the following sources were reported:

Governmental activities:

	Deferred outflows of resources	Deferred inflows of resources
Net difference between projected and actual earnings on pension plan investments	\$ -	\$ 8,441,486
Employer contributions subsequent to the measurement date	4,091,153	-
Total	\$ 4,091,153	\$ 8,441,486

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

Business-type activity:

	<u>Deferred outflows of resources</u>	<u>Deferred inflows of resources</u>
Net difference between projected and actual earnings on pension plan investments	\$ -	\$ 803,802
Employer contributions subsequent to the measurement date	330,920	-
Total	\$ <u>330,920</u>	\$ <u>803,802</u>

Component Unit – Public Schools (non-professional):

	<u>Deferred outflows of resources</u>	<u>Deferred inflows of resources</u>
Net difference between projected and actual earnings on pension plan investments	\$ -	\$ 1,009,806
Employer contributions subsequent to the measurement date	372,141	-
Total	\$ <u>372,141</u>	\$ <u>1,009,806</u>

The County, Authority, and Schools had \$4,091,153, \$330,920, \$372,141, respectively reported as deferred outflows of resources 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, 2016. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Governmental activities:

Year ended June 30

2016	\$ (2,110,371)
2017	(2,110,371)
2018	(2,110,371)
2019	<u>(2,110,373)</u>
	\$ <u>(8,441,486)</u>

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Notes to Basic Financial Statements

June 30, 2015

Business-type activity:

Year ended June 30

2016	\$	(200,951)
2017		(200,951)
2018		(200,951)
2019		<u>(200,949)</u>
	\$	<u><u>(803,802)</u></u>

Component Unit – Public Schools (non-professional):

Year ended June 30

2016	\$	(252,451)
2017		(252,451)
2018		(252,451)
2019		<u>(252,451)</u>
	\$	<u><u>(1,009,804)</u></u>

(13) Post-Employment Benefits Other Than Pensions (OPEB)

For the fiscal year ended June 30, 2009, the County, Authority and Public Schools adopted GASB Statement No. 45, *Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions*. The Statement establishes standards for reporting the liability for the County's nonpension postemployment benefit, the health care plan for retirees.

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.

(a) Plan Provisions

In addition to providing the pension benefits described in footnote 12, the County, Authority and Public Schools provide postemployment health care (OPEB) 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.

(b) Funding Policy

The County, Authority and Public Schools do not intend to establish a trust to prefund this liability. 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 pay the full rate of coverage under the medical plan.

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

(c) Plan Description

Currently, 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 postretirement 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 GASB 45 liability. There is no coverage for post-Medicare retirees. There were 556 County and 76 Authority participants at the time of the actuarial study. The County and Authority do not contribute towards the retiree's health insurance premiums. Therefore, since the retirees pay their health insurance premiums based on a blended rate, the County and Authority has an implicit liability.

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 49.

(d) Annual OPEB Costs and Net OPEB Obligation

The net OPEB obligation as of June 30, 2015 was calculated as follows:

Governmental activities:

Annual required contribution	\$ 505,000
Interest on net OPEB obligation	73,000
Actuarial adjustments	<u>(88,000)</u>
Annual OPEB cost	490,000
Contributions made	<u>(107,000)</u>
Increase in net OPEB obligation	383,000
Net OPEB obligation, beginning of year	<u>1,810,962</u>
Net OPEB obligation, end of year	<u><u>\$ 2,193,962</u></u>

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

Business-type activity:

Annual required contribution	\$ 47,000
Interest on net OPEB obligation	8,000
Actuarial adjustments	<u>(10,000)</u>
Annual OPEB cost	45,000
Contributions made	<u>(9,000)</u>
Increase in net OPEB obligation	36,000
Net OPEB obligation, beginning of year	<u>207,509</u>
Net OPEB obligation, end of year	<u><u>\$ 243,509</u></u>

Component Unit – Public Schools:

Annual required contribution	\$ 873,000
Interest on net OPEB obligation	178,000
Actuarial adjustments	<u>(192,000)</u>
Annual OPEB cost	859,000
Contributions made	<u>(303,000)</u>
Increase in net OPEB obligation	556,000
Net OPEB obligation, beginning of year	<u>4,440,300</u>
Net OPEB obligation, end of year	<u><u>\$ 4,996,300</u></u>

The trend information for the OPEB plans is as follows:

Governmental activities:

Three-year trend information

Fiscal year ended June 30,	Annual OPEB cost	Actual contribution	Percentage of annual OPEB cost contributed	Net OPEB obligation
2015	\$ 490,000	107,000	21.8%	\$ 2,193,962
2014	457,000	93,000	20.4	1,810,962
2013	322,000	73,000	22.7	1,446,962

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

Business-type activity:

Three-year trend information					
Fiscal year ended June 30,		Annual OPEB cost	Actual contribution	Percentage of annual OPEB cost contributed	Net OPEB obligation
2015	\$	45,000	9,000	20.0%	\$ 243,509
2014		43,000	7,000	16.3	207,509
2013		34,000	13,000	38.2	171,509

Component Unit – Public Schools:

Three-year trend information					
Fiscal year ended June 30,		Annual OPEB cost	Actual contribution	Percentage of annual OPEB cost contributed	Net OPEB obligation
2015	\$	859,000	303,000	35.3%	\$ 4,996,300
2014		804,000	242,000	30.1	4,440,300
2013		815,000	239,000	29.3	3,878,300

(e) Actuarial Methods and Assumptions

Valuation Methods

The projected unit credit actuarial cost method was used to calculate all of the expense amounts and the funded status of the plan. The calculations were performed in accordance with the methodologies set forth in GASB Statement No. 45. Under the methods, benefits provided by the substantive plans (the plans as understood by the employers and the members of the plans) 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.

Employees Included in the Calculations

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.

Actuarial Assumptions

In the July 1, 2014 actuarial valuation, the projected unit credit actuarial cost method was used. The actuarial assumptions included calculations based on a discount rate of 4% for the unfunded liability, rate of inflation of 2.5%, payroll growth of 3%, healthcare cost trend rate of 9% and amortization of the initial unfunded actuarial liability over a closed 25 year period based on a level percent of payroll method. Projections of benefits for financial reporting purposes are based on the substantive plan (the plan as understood by the employer and the plan members) and include the types of benefits provided

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

at the time of each valuation and the historical pattern of sharing of benefit costs between the employer and plan members to that point.

The actuarial accrued liability was \$4,396,000, \$423,000 and \$7,335,000 for the County, Authority and Public Schools, respectively. Future increases for medical benefits are assumed to range from an initial rate of 7.50% and gradually decrease to 5.04% thereafter. It should be noted that actuarial valuations for the OPEB plan involve estimates of the value of reported amounts and assumptions about the probability of events far into the future. As such, 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.

(f) Schedule of Funding Progress

Governmental activities:

Actuarial valuation date	Actuarial value of assets	Actuarial liability (AAL) project unit credit	Unfunded actuarial liability (UAAL)	Funding ratio	Covered payroll	UAAL as a percentage of covered payroll
July 1, 2012	\$ —	2,997,000	2,997,000	—	\$ 33,716,939	8.9%
2013	—	4,050,000	4,050,000	—	34,545,065	11.7
2014	—	4,396,000	4,396,000	—	34,159,831	12.9

Business-type activity:

Actuarial valuation date	Actuarial value of assets	Actuarial liability (AAL) project unit credit	Unfunded actuarial liability (UAAL)	Funding ratio	Covered payroll	UAAL as a percentage of covered payroll
July 1, 2012	\$ —	343,000	343,000	—	\$ 4,306,155	8.0%
2013	—	389,000	389,000	—	4,288,721	9.1
2014	—	423,000	423,000	—	4,257,924	9.9

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

Component Unit – Public Schools:

Actuarial valuation date	Actuarial value of assets	Actuarial accrued liability (AAL) project unit credit	Unfunded actuarial accrued liability (UAAL)	Funding ratio	Covered payroll	UAAL as a percentage of covered payroll
2012	\$ —	6,349,000	6,349,000	—	\$ 70,133,265	9.1%
2013	—	6,782,000	6,782,000	—	71,291,388	9.5
2014	—	7,335,000	7,335,000	—	7,400,962	9.9

(14) 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 2015). 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 Plan trust fund in the accompanying basic financial statements in accordance with the provisions of GASB Statement No. 32, *Accounting and Financial Reporting for Internal Revenue Code Section 457 Deferred Compensation Plans*.

(15) 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 \$807,844 and \$857,564 for the years ended June 30, 2015.

The County rents space in the Authority’s administration building under a 10 year operating lease agreement, effective July 1, 2014. The County paid the Authority \$176,928 for the year ended June 30, 2015. The rental charge includes the following: utilities, insurance, maintenance, housekeeping, supplies and custodial services.

In addition, the County leases space in the Authority’s building at Tewning Road. The lease agreement began July, 2014 for a ten year term, and can be adjusted every five years. For the year ended June 30, 2015, the County paid the Authority \$84,000. The rent includes utilities, maintenance, housekeeping, and custodial services. The County will also pay for tenant improvements up to \$150,000. During the first twelve months, the County must pay two percent (2%) interest payments on any renovation expenses incurred. For the year ended June 30, 2015, interest payments paid by the County were

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

\$1,096. After the first twelve months, the County will pay the Authority the principal cost of the renovations plus two percent (2%) interest.

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 \$123,436 for the year ended June 30, 2015 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.

(16) 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.

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.

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

(17) Commitments and Contingencies

Primary Government

Construction in Progress – Governmental Activities

At June 30, 2015, the County had several major projects under construction which are presented in the accompanying financial statements as construction in progress. Presented below is a list of major projects, by budget, expenditures to date, balance of contract and budget balance.

Project	Budget	Expenditures to date	Balance of contract	Budget balance
Public safety	\$ 6,726,557	2,857,886	3,713,860	154,811
General governmental	3,387,918	84,506	518,586	2,784,826
Education	9,637,238	4,591,556	3,270,819	1,774,863
Parks and recreation	1,490,468	159,388	48,693	1,282,387
	<u>\$ 21,242,181</u>	<u>7,693,336</u>	<u>7,551,958</u>	<u>5,996,887</u>

Construction in Progress – Business-Type Activity

At June 30, 2015, the Authority had several major projects under construction which are presented in the accompanying financial statements as construction in progress. Presented on the following page is a list of major projects, by budget, expenditures to date, balance of contract and budget balance.

Project	Budget	Expenditures to date	Balance of contract	Budget balance
Sewer improvements	\$ 4,038,585	45,100	267,488	3,725,997
Water supply	12,875,778	609,032	140,096	12,126,650
Water distribution	333,090	—	—	333,090
Water transmission	500,000	—	45,075	454,925
Water storage	185,620	—	—	185,620
Other	995,580	51,728	62,887	880,965
	<u>\$ 18,928,653</u>	<u>705,860</u>	<u>515,546</u>	<u>17,707,247</u>

Advances for Construction

The Authority records advances for construction representing two separate agreement types. The first one represents funds advanced by developers for the construction of specific facilities. These agreements call for rebates, up to the amount advanced, and have no expiration date. Secondly, 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, 2015, the Authority had \$32,902 outstanding in advances for construction.

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Notes to Basic Financial Statements

June 30, 2015

Operating Leases

Primary Government

The County leases certain land and office space under noncancelable operating lease agreements. A summary of future minimum lease payments as of June 30, 2015 are as follows:

	<u>Lease payments due</u>
Year ending June 30:	
2016	\$ 235,312
2017	239,152
2018	245,577
2019	251,810
2020	258,607
2021-2025	1,395,927
2026-2029	526,695
	<u>\$ 3,153,080</u>

Rental expenditures related to these lease agreements were \$392,833 for the year ended June 30, 2015.

Component Unit – Public Schools

The Public Schools lease equipment and buildings under noncancelable operating leases. Total costs for such leases were approximately \$259,408 for the year ended June 30, 2015. The future minimum lease payments for these leases are as follows:

	<u>Lease payments due</u>
Year ending June 30:	
2016	\$ 240,714
2017	134,496
2018	75,579
2019	68,135
2020	23,837
	<u>\$ 542,761</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

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

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in any litigation which management feels could have a significant impact on the County's, the Public Schools', or the Development Authority's financial condition.

(18) Restatement

The County adopted GASB Statement 68, *Accounting and Financial Reporting for Pensions – an Amendment of GASB Statement 27* and GASB Statement 71, *Pension Transition for Contributions Made Subsequent to the Measurement Date – an Amendment of GASB Statement 68*, in the current year. As a result, the effect on fiscal year 2014 is:

Governmental activities:

	2014		2014
	Previously		2014
	Reported	Restatement	Restatement
Deferred pension contribution	\$ -	4,362,691	4,362,691
Net pension liability	-	26,190,225	26,190,225
Unrestricted net position	71,923,431	(21,827,534)	50,095,897
Net position	223,111,605	(21,827,534)	201,284,071

Business-type activity:

	2014		2014
	Previously		2014
	Reported	Restatement	Restatement
Deferred pension contribution	\$ -	308,820	308,820
Net pension liability	-	1,907,619	1,907,619
Unrestricted net position	30,757,918	(1,598,799)	29,159,119
Net position	171,282,033	(1,598,799)	169,683,234

Component Unit – Public Schools (non-professional):

	2014		2014
	Previously		2014
	Reported	Restatement	Restatement
Deferred pension contribution	\$ -	7,767,601	7,767,601
Net pension liability	21,167,976	119,805,628	140,973,604
Unrestricted net position	(1,263,228)	(112,038,027)	(113,301,255)
Net position	51,591,873	(112,038,027)	(60,446,154)

COUNTY OF JAMES CITY, VIRGINIA

Notes to Basic Financial Statements

June 30, 2015

(19) Subsequent Event

On August 4, 2015, the County issued general obligation refunding bonds, series 2015A, in the amount of \$11,280,000 at an interest rate of 3%. This refunded the 2005 general obligation bonds and a portion of the 2006 general obligation bonds outstanding. On August 4, 2015, the County issued taxable general obligation refunding bonds, series 2015B, in the amount of \$3,820,000 at an interest rate of 1%. This refunded a portion of the 2006 general obligation bonds outstanding.

On August 5, 2015, the County issued lease revenue refunding bonds, series 2015, in the amount of \$49,815,000 at an interest rate of 5%. This refunded the 2006 lease revenue bonds outstanding.

In addition, at the time of these bond refundings, Moody's upgraded the County's bond rating to AAA.

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**REQUIRED SUPPLEMENTARY INFORMATION
OTHER THAN MD&A**

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, 2015

Fund, major and minor revenue source	Original budget	Final budget	Actual	Variance positive (negative)
Revenue from local sources:				
General property taxes:				
Real property taxes	\$ 84,800,000	84,800,000	84,693,239	(106,761)
Real and personal public service corporation property taxes	1,800,000	1,800,000	2,632,859	832,859
Personal property taxes	19,197,500	19,197,500	19,184,266	(13,234)
Machinery and tools taxes	5,650,000	5,650,000	5,187,583	(462,417)
Penalties	600,000	600,000	573,210	(26,790)
Interest	350,000	350,000	270,921	(79,079)
Total general property taxes	<u>112,397,500</u>	<u>112,397,500</u>	<u>112,542,078</u>	<u>144,578</u>
Other local taxes:				
Local sales and use taxes	10,600,000	10,600,000	10,533,390	(66,610)
Franchise license taxes	500,000	500,000	468,497	(31,503)
Taxes on recordation and wills	1,350,000	1,350,000	1,372,519	22,519
Hotel and motel room taxes	2,600,000	2,600,000	2,567,821	(32,179)
Restaurant food taxes	6,340,000	6,340,000	6,600,364	260,364
Deeds of conveyance	375,000	375,000	420,145	45,145
Penalties	—	—	14,454	14,454
Interest	—	—	8,920	8,920
Total other local taxes	<u>21,765,000</u>	<u>21,765,000</u>	<u>21,986,110</u>	<u>221,110</u>
Permits, privilege fees and regulatory licenses:				
Animal licenses	20,000	20,000	13,712	(6,288)
Business licenses	6,355,000	6,355,000	6,514,163	159,163
Motor vehicle licenses	150,000	150,000	145,692	(4,308)
Building permits	1,000,000	1,000,000	941,095	(58,905)
Permits and other licenses	705,000	705,000	829,159	124,159
Total permits, privilege fees and regulatory licenses	<u>8,230,000</u>	<u>8,230,000</u>	<u>8,443,821</u>	<u>213,821</u>
Fines and forfeitures	315,000	315,000	271,615	(43,385)
Revenue from use of property	125,000	125,000	142,230	17,230
Charges for services:				
Excess fees of the clerk	175,000	175,000	143,607	(31,393)
Charges for Commonwealth's attorney	6,000	6,000	5,676	(324)
Charges for law enforcement and traffic control	140,000	140,000	128,492	(11,508)
Charges for emergency medical services	2,425,000	2,425,000	2,226,186	(198,814)
Charges for parks and recreation	2,838,200	2,855,250	3,109,047	253,797
Landfill user fees	245,000	245,000	270,799	25,799
Other fees	83,500	83,500	60,943	(22,557)
Total charges for services	<u>5,912,700</u>	<u>5,929,750</u>	<u>5,944,750</u>	<u>15,000</u>
Miscellaneous revenue:				
Sale of property	75,000	75,000	171,769	96,769
Miscellaneous	83,300	104,739	148,794	44,055
Total miscellaneous revenue	<u>158,300</u>	<u>179,739</u>	<u>320,563</u>	<u>140,824</u>
Total revenue from local sources	<u>148,903,500</u>	<u>148,941,989</u>	<u>149,651,167</u>	<u>709,178</u>

COUNTY OF JAMES CITY, VIRGINIA

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

General Fund

Year ended June 30, 2015

Fund, major and minor revenue source	Original budget	Final budget	Actual	Variance positive (negative)
Revenue from the Commonwealth:				
Noncategorical aid:				
Mobile home titling taxes	\$ 30,000	30,000	30,464	464
Tax on deeds	500,000	500,000	328,821	(171,179)
Railroad rolling stock taxes	60,000	60,000	59,386	(614)
Personal property tax relief	9,770,137	9,770,137	9,770,137	—
Communications sales and use tax	1,850,000	1,850,000	1,699,802	(150,198)
Car rental tax	125,000	125,000	103,429	(21,571)
Total noncategorical aid	<u>12,335,137</u>	<u>12,335,137</u>	<u>11,992,039</u>	<u>(343,098)</u>
Categorical aid:				
Shared expenses:				
Commonwealth's attorney	541,014	541,014	538,359	(2,655)
Sheriff	696,403	696,403	684,972	(11,431)
Commissioner of the revenue	165,869	165,869	169,249	3,380
Treasurer	168,925	168,925	157,516	(11,409)
Registrar/electoral board	47,000	47,000	44,997	(2,003)
Clerk of the circuit court	482,018	482,018	459,857	(22,161)
Total shared expenses	<u>2,101,229</u>	<u>2,101,229</u>	<u>2,054,950</u>	<u>(46,279)</u>
Other categorical aid:				
Wireless Board	185,000	185,000	201,841	16,841
Commission of the arts	5,000	5,000	5,000	—
HB 599 payments	1,387,341	1,387,341	1,280,307	(107,034)
Share of state sales tax	10,515,793	10,515,793	10,696,929	181,136
Other	55,000	55,000	61,296	6,296
Total other categorical aid	<u>12,148,134</u>	<u>12,148,134</u>	<u>12,245,373</u>	<u>97,239</u>
Total categorical aid	<u>14,249,363</u>	<u>14,249,363</u>	<u>14,300,323</u>	<u>50,960</u>
Total revenue from the Commonwealth	<u>26,584,500</u>	<u>26,584,500</u>	<u>26,292,362</u>	<u>(292,138)</u>
Revenue from the federal government:				
Payments in lieu of taxes	7,000	7,000	6,834	(166)
Total revenue from the federal government	<u>7,000</u>	<u>7,000</u>	<u>6,834</u>	<u>(166)</u>
Total revenues	<u>175,495,000</u>	<u>175,533,489</u>	<u>175,950,363</u>	<u>416,874</u>

COUNTY OF JAMES CITY, VIRGINIA

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

General Fund

Year ended June 30, 2015

Fund, major and minor expenditure source	Original budget	Final budget	Actual	Variance positive (negative)
General government administration:				
Legislative:				
Board of supervisors	\$ 220,287	234,087	234,080	7
General and financial administration:				
County administrator	482,163	481,163	448,071	33,092
County attorney	501,432	501,432	362,677	138,755
Human resources	672,466	691,917	525,382	166,535
Legal services	13,500	23,500	20,202	3,298
Commissioner of the revenue	772,250	772,250	777,814	(5,564)
Real estate assessments	821,877	825,377	804,597	20,780
Treasurer	1,402,168	1,402,168	1,350,228	51,940
Financial management	960,696	950,696	847,694	103,002
Accounting	182,170	182,879	112,038	70,841
Publications management	210,260	210,260	205,248	5,012
Purchasing	295,286	295,286	262,775	32,511
Records management	263,301	273,453	242,430	31,023
Information technology	1,967,527	2,019,104	1,899,277	119,827
Fleet maintenance	1,003,037	1,037,537	1,034,897	2,640
Total general and financial administration	9,548,133	9,667,022	8,893,330	773,692
Board of elections:				
Voter registration and elections	358,705	358,887	305,479	53,408
Total general government administration	10,127,125	10,259,996	9,432,889	827,107
Judicial administration:				
Courts:				
Circuit court and judicial services	516,509	516,509	510,601	5,908
General district court	37,240	37,240	30,112	7,128
Juvenile and domestic relations district court	23,760	23,760	18,696	5,064
Clerk of the circuit court	698,756	698,862	685,911	12,951
Sheriff	1,296,617	1,296,617	1,264,069	32,548
9th judicial district	9,945	9,945	9,127	818
Court services and juvenile detention	446,262	470,762	470,729	33
Courthouse	482,665	500,933	403,375	97,558
Total courts	3,511,754	3,554,628	3,392,620	162,008
Commonwealth's attorney	784,080	784,080	779,186	4,894
Total judicial administration	4,295,834	4,338,708	4,171,806	166,902
Public safety:				
Law enforcement and traffic control:				
Police department	9,438,046	9,504,875	9,117,294	387,581
Emergency communications	2,926,704	2,960,182	2,682,616	277,566
Total law enforcement and traffic control	12,364,750	12,465,057	11,799,910	665,147
Fire and rescue services:				
Fire department and emergency medical services	10,993,792	11,060,792	10,724,352	336,440
Correction and detention:				
Regional jail	2,500,000	2,494,300	2,486,189	8,111

COUNTY OF JAMES CITY, VIRGINIA

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

General Fund

Year ended June 30, 2015

Fund, major and minor expenditure source	Original budget	Final budget	Actual	Variance positive (negative)
Inspections:				
Building and safety permits	\$ 1,111,716	1,113,376	1,047,214	66,162
Other protection:				
Animal control	207,298	207,298	174,227	33,071
Emergency management	342,307	342,401	299,729	42,672
Total other protection	549,605	549,699	473,956	75,743
Total public safety	27,519,863	27,683,224	26,531,621	1,151,603
Public works:				
Sanitation and waste removal:				
Grounds maintenance	1,635,457	1,649,612	1,495,865	153,747
Solid waste and recycling	1,327,653	1,330,653	1,330,156	497
Total sanitation and waste removal	2,963,110	2,980,265	2,826,021	154,244
Maintenance of general buildings and grounds:				
Facilities management	4,324,753	4,410,853	4,136,902	273,951
Total public works	7,287,863	7,391,118	6,962,923	428,195
Health and welfare:				
Local health department	725,160	725,160	725,160	—
Mental health and mental retardation	1,060,000	1,060,000	1,060,000	—
Total health and welfare	1,785,160	1,785,160	1,785,160	—
Education:				
School board administration	80,832,474	80,832,474	79,610,865	1,221,609
Parks, recreation and cultural:				
Parks and recreation:				
Administration	4,534,815	4,508,632	4,393,038	115,594
Community centers	208,145	283,159	255,116	28,043
Park operations	256,023	270,523	246,656	23,867
Recreation services	478,412	464,640	411,501	53,139
Total parks and recreation	5,477,395	5,526,954	5,306,311	220,643
Library:				
Regional library	4,367,111	4,367,111	4,367,111	—
Total parks, recreation and cultural	9,844,506	9,894,065	9,673,422	220,643
Community development:				
Planning and community development:				
Planning	924,661	995,076	875,001	120,075
Development management	213,179	218,879	212,568	6,311
Communications	589,508	592,303	523,780	68,523
Zoning enforcement	364,587	364,587	355,194	9,393
Economic development	416,318	421,620	319,758	101,862
Satellite office	214,045	214,045	199,145	14,900
Contributions – other	749,161	754,677	738,982	15,695
Regional transportation	573,420	573,420	573,420	—
Total planning and community development	4,044,879	4,134,607	3,797,848	336,759

COUNTY OF JAMES CITY, VIRGINIA

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

General Fund

Year ended June 30, 2015

Fund, major and minor expenditure source	Original budget	Final budget	Actual	Variance positive (negative)
Environmental management:				
Engineering and resource protection	\$ 954,233	977,963	889,263	88,700
Stormwater management	797,759	949,255	767,746	181,509
Total environmental management	1,751,992	1,927,218	1,657,009	270,209
Total community development	5,796,871	6,061,825	5,454,857	606,968
Nondepartmental:				
Miscellaneous	240,522	212,102	525,433	(313,331)
Total expenditures	147,730,218	148,458,672	144,148,976	4,309,696
Excess of revenues over expenditures	27,764,782	27,074,817	31,801,387	4,726,570
Other financing uses:				
Operating transfers out	(30,121,057)	(30,121,057)	(35,271,660)	(5,150,603)
Deficiency of revenues over expenditures and other uses	(2,356,275)	(3,046,240)	(3,470,273)	(424,033)
Fund balance at beginning of year	2,356,275	3,046,240	38,133,705	35,087,465
Fund balance at end of year	\$ —	—	34,663,432	34,663,432

Unaudited - see accompanying 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)

Year ended June 30, 2015

	2014		
	County Employees	JCSA Employees	Public Schools' Non-Professional
Total pension liability			
Service cost	\$ 4,376,092	417,066	\$ 507,972
Interest	9,996,496	913,818	1,021,383
Changes of benefit terms	-	-	-
Differences between expected and actual experience	-	-	-
Changes in assumptions	-	-	-
Benefit payments, including refunds of employee contributions	(5,223,843)	(376,365)	(570,189)
Net change in total pension liability	<u>9,148,745</u>	<u>954,519</u>	<u>959,166</u>
Total pension liability - beginning	<u>145,419,002</u>	<u>13,242,723</u>	<u>14,876,279</u>
Total pension liability - ending (a)	<u>154,567,747</u>	<u>14,197,242</u>	<u>15,835,445</u>
Plan fiduciary net position			
Contributions - employer	4,362,691	308,820	435,519
Contributions - employee	1,909,429	197,188	237,728
Net investment income	18,931,089	1,802,418	2,265,304
Benefit payments, including refunds of employee contributions	(5,223,843)	(376,365)	(570,189)
Administrative expense	(100,186)	(9,511)	(12,002)
Other	998	95	120
Net change in plan fiduciary net position	<u>19,880,178</u>	<u>1,922,645</u>	<u>2,356,480</u>
Plan fiduciary net position - beginning	<u>119,228,777</u>	<u>11,335,104</u>	<u>14,283,651</u>
Plan fiduciary net position - ending (b)	<u>139,108,955</u>	<u>13,257,749</u>	<u>16,640,131</u>
Net pension liability (a) - (b)	<u>\$ 15,458,792</u>	<u>939,493</u>	<u>(804,686)</u>
Plan fiduciary net position as a percentage of the total pension liability	90.00%	93.38%	105.08%
Covered-employee payroll	\$ 36,725,410	3,943,666	4,812,365
Net pension liability as a percentage of the total covered-employee payroll	42.09%	23.82%	-16.72%

Note: Information in this schedule is presented for the year in which information is available.

Information will be added each year until a full 10-year trend is presented.

Unaudited - see accompanying notes and independent auditors' report.

See accompanying notes to required supplementary information.

COUNTY OF JAMES CITY, VIRGINIA
 Schedule of Employer Contributions
 Required Supplementary Information (Unaudited)
 Year ended June 30, 2015

County employees:

Fiscal Year	Contractually Required Contribution	Contributions in relation to contractually required contribution	Contribution deficiency (Excess)	Employer's covered employee payroll	Contributions as a % of covered employee payroll
2015	\$ 4,090,933	4,091,153	(220)*	36,788,968	11.12%

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

James City Service Authority employees:

Fiscal Year	Contractually Required Contribution	Contributions in relation to contractually required contribution	Contribution deficiency (Excess)	Employer's covered employee payroll	Contributions as a % of covered employee payroll
2015	\$ 330,920	330,920	-	3,897,762	8.49%

Public Schools' – non-professional:

Fiscal Year	Contractually Required Contribution	Contributions in relation to contractually required contribution	Contribution deficiency (Excess)	Employer's covered employee payroll	Contributions as a % of covered employee payroll
2015	\$ 372,141	372,141	-	5,154,307	7.22%

Note: Information in this schedule is presented for the year in which information is available.
 Information will be added each year until a full 10-year trend is presented.

Unaudited - see accompanying notes and independent auditors' report.
 See accompanying notes to required supplementary information.

COUNTY OF JAMES CITY, VIRGINIA

Notes to Required Supplementary Information (Unaudited)

June 30, 2015

(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 \$38,489, excluding encumbrances carried forward of \$690,251, in supplemental appropriations during the fiscal year ended June 30, 2015. This increase was primarily to appropriate insurance recovery funds 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, 2015, as adopted and amended by supplemental appropriations.

(2) Changes of Benefit Terms

There have been no significant changes to the system benefit provisions since the prior actuarial valuation. A hybrid plan with changes to the defined benefit plan structure and a new defined contribution component were adopted in 2012. The hybrid plan applies to most new employees hired on or after January 1, 2014 and not covered by enhanced hazardous duty benefits. The liabilities presented do not reflect the hybrid plan since it covers new members joining the System after the valuation date of June 30, 2013 and the impact on the liabilities as of the measurement date of June 30, 2014 are minimal.

(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

COUNTY OF JAMES CITY, VIRGINIA

Notes to Required Supplementary Information (Unaudited)

June 30, 2015

- 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

Unaudited – see accompanying independent auditors' report.

OTHER SUPPLEMENTARY INFORMATION

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, 2015

	Original Budget	Final Budget	Actual	Variance positive (negative)
Revenues:				
Revenue from use of money and property	\$ 20,000	20,000	3,092	(16,908)
Miscellaneous	211,620	211,620	212,492	872
Total revenues	<u>231,620</u>	<u>231,620</u>	<u>215,584</u>	<u>(16,036)</u>
Expenditures:				
Community development	75,000	75,000	319,767	(244,767)
Principal retirement	16,830,000	16,830,000	16,862,695	(32,695)
Interest, other fiscal charges and early retirement	8,186,660	8,186,660	7,787,361	399,299
Total expenditures	<u>25,091,660</u>	<u>25,091,660</u>	<u>24,969,823</u>	<u>121,837</u>
Deficiency of revenues under expenditures	(24,860,040)	(24,860,040)	(24,754,239)	105,801
Other financing sources (uses):				
Proceeds from issuance of debt	—	—	34,185,000	(34,185,000)
Payment to escrow agent	—	—	(37,671,046)	37,671,046
Premium on bond issuance	—	—	3,907,273	(3,907,273)
Operating transfers in	21,300,000	21,300,000	24,445,875	(3,145,875)
Underwriters discount	—	—	(112,863)	112,863
Total other financing sources (uses)	<u>21,300,000</u>	<u>21,300,000</u>	<u>24,754,239</u>	<u>(3,454,239)</u>
Deficiency of revenues and other sources under expenditures	(3,560,040)	(3,560,040)	—	3,560,040
Fund balance at beginning of year	3,560,040	3,560,040	—	(3,560,040)
Fund balance at end of year	<u>\$ —</u>	<u>—</u>	<u>—</u>	<u>—</u>

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, 2015

Assets	Virginia Public Assistance Fund	Colonial Community Corrections Fund	Community Development Fund	Trust Fund	Tourism Investment Fund	Grants and Special Projects Fund	Total
Cash and cash equivalents and investments	\$ 1,256,008	107,156	194,345	324,022	823,121	—	2,704,652
Cash and cash equivalents, restricted	—	—	1,243,296	—	—	110,953	1,354,249
Taxes receivable	—	—	—	—	109,429	—	109,429
Accounts receivable	—	12,702	138,464	3	—	110,844	262,013
Loans receivable	—	—	3,272,914	—	—	—	3,272,914
Due from other governments	334,262	16,784	128,600	—	—	1,032,423	1,512,069
Paid Total assets	<u>\$ 1,590,270</u>	<u>136,642</u>	<u>4,977,619</u>	<u>324,025</u>	<u>932,550</u>	<u>1,254,220</u>	<u>9,215,326</u>
Liabilities and Fund Balances							
Liabilities:							
Accounts payable	\$ 26,187	6,629	14,421	1,032	98,906	92,086	239,261
Accrued liabilities	6,040	6,598	—	—	—	4,066	16,704
Liabilities payable from restricted assets	—	—	73,175	—	—	—	73,175
Due to other funds	292,977	9,252	290,537	1,030	1,572	10,244	605,612
Due to component unit	—	—	—	—	—	40,092	40,092
Unearned revenue	—	11,000	2,732,064	—	—	539,940	3,283,004
Total liabilities	<u>325,204</u>	<u>33,479</u>	<u>3,110,197</u>	<u>2,062</u>	<u>100,478</u>	<u>686,428</u>	<u>4,257,848</u>
Fund balances:							
Nonspendable -							
Loans	—	—	540,850	—	—	—	540,850
Committed -							
Grants	—	—	—	—	—	69	69
Assigned -							
Special revenue	1,265,066	103,163	1,326,572	321,963	832,072	567,723	4,416,559
Total fund balances	<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>
Total liabilities and fund balances	<u>\$ 1,590,270</u>	<u>136,642</u>	<u>4,977,619</u>	<u>324,025</u>	<u>932,550</u>	<u>1,254,220</u>	<u>9,215,326</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, 2015

	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	\$ —	—	—	—	785,516	—	785,516
Revenue from use of money and property	—	—	—	15	—	—	15
Miscellaneous	—	91,925	162,084	36,573	8,000	164,844	463,426
Intergovernmental:							
Local	—	77,134	—	—	—	271,776	348,910
Commonwealth	1,110,525	802,346	436,013	14,919	—	1,069,607	3,433,410
Federal	2,231,479	100,707	967,154	49,436	—	739,146	4,087,922
Total revenues	<u>3,342,004</u>	<u>1,072,112</u>	<u>1,565,251</u>	<u>100,943</u>	<u>793,516</u>	<u>2,245,373</u>	<u>9,119,199</u>
Expenditures:							
Current:							
General government administration	—	—	—	—	—	—	—
Judicial administration	—	1,112,369	—	17,763	—	297,790	1,427,922
Public safety	—	—	—	208,995	—	734,691	943,686
Public works	—	—	—	600	—	13,010	13,610
Health and welfare	4,851,849	—	—	2,150	—	554,682	5,408,681
Parks, recreation and cultural	—	—	—	6,781	—	178,684	185,465
Community development	—	—	2,139,891	—	1,907,188	947,361	4,994,440
Total expenditures	<u>4,851,849</u>	<u>1,112,369</u>	<u>2,139,891</u>	<u>236,289</u>	<u>1,907,188</u>	<u>2,726,218</u>	<u>12,973,804</u>
Deficiency of revenues under expenditures	(1,509,845)	(40,257)	(574,640)	(135,346)	(1,113,672)	(480,845)	(3,854,605)
Other financing sources:							
Transfers in	<u>1,370,934</u>	<u>49,192</u>	<u>596,865</u>	<u>—</u>	<u>1,560,000</u>	<u>488,475</u>	<u>4,065,466</u>
Net change in fund balances	(138,911)	8,935	22,225	(135,346)	446,328	7,630	210,861
Fund balances at beginning of year	<u>1,403,977</u>	<u>94,228</u>	<u>1,845,197</u>	<u>457,309</u>	<u>385,744</u>	<u>560,162</u>	<u>4,746,617</u>
Fund balances at end 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>

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, 2015

	Budget	Actual	Variance positive (negative)
Revenues:			
Intergovernmental:			
Commonwealth	\$ 2,935	1,110,525	1,107,590
Federal	3,779,768	2,231,479	(1,548,289)
Total intergovernmental revenues	3,782,703	3,342,004	(440,699)
Expenditures:			
Current:			
Health and welfare	5,688,865	4,851,849	837,016
Deficiency of revenues under expenditures	(1,906,162)	(1,509,845)	396,317
Other financing sources:			
Operating transfers in	1,400,000	1,370,934	(29,066)
Deficiency of revenues and other sources under expenditures	(506,162)	(138,911)	(367,251)
Fund balance at beginning of year	506,162	1,403,977	(897,815)
Fund balance at end of year	\$ —	1,265,066	(1,265,066)

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 Assets
 Agency Funds
 June 30, 2015

Assets	<u>Special Welfare</u>	<u>WAMAC</u>	<u>Regional Jail</u>	<u>Juvenile Detention</u>	<u>Williamsburg Area Transit Authority</u>	<u>Total</u>
Cash and cash equivalents	\$ 10	89,092	604,476	940,631	470,382	2,104,591
Restricted cash and cash equivalents and investments with fiscal agent/trustee	—	4,207,422	3,368,000	—	—	7,575,422
Accounts receivable	—	152,280	308,042	127,144	1,675	589,141
Due from other government	—	—	1,155,407	—	743,168	1,898,575
Total assets	<u>\$ 10</u>	<u>4,448,794</u>	<u>5,435,925</u>	<u>1,067,775</u>	<u>1,215,225</u>	<u>12,167,729</u>
Liabilities						
Accounts payable and accrued liabilities	\$ —	29,333	238,009	151,041	214,169	632,552
Amounts held for others	10	4,419,461	5,197,916	916,734	1,001,056	11,535,177
Total liabilities	<u>\$ 10</u>	<u>4,448,794</u>	<u>5,435,925</u>	<u>1,067,775</u>	<u>1,215,225</u>	<u>12,167,729</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, 2015

	<u>Balances beginning of year</u>	<u>Additions</u>	<u>Reductions</u>	<u>Balances end of year</u>
Special Welfare Fund:				
Assets:				
Cash	\$ 206	4,909	5,105	10
Liabilities:				
Amounts held for others	206	4,909	5,105	10
WAMAC Fund:				
Assets:				
Cash	\$ 117,692	2,301,577	2,330,177	89,092
Restricted cash	4,106,651	176,221	75,450	4,207,422
Accounts receivable	97,822	194,274	139,816	152,280
Total assets	\$ 4,322,165	2,672,072	2,545,443	4,448,794
Liabilities:				
Accounts payable and accrued liabilities	\$ 28,853	2,000,089	1,999,609	29,333
Amounts held for others	4,293,311	2,669,887	2,543,737	4,419,461
Total liabilities	\$ 4,322,164	4,669,976	4,543,346	4,448,794
Regional Jail Fund:				
Assets:				
Cash and cash equivalents	\$ 851,664	13,031,639	13,278,827	604,476
Restricted cash and cash equivalents and investments with fiscal agent/trustee	3,453,235	2,531,865	2,617,100	3,368,000
Accounts receivable	149,438	338,861	180,257	308,042
Due from other governmental units	1,134,515	1,155,732	1,134,840	1,155,407
Total assets	\$ 5,588,852	17,058,097	17,211,024	5,435,925
Liabilities:				
Accounts payable and accrued liabilities	\$ 304,601	8,243,034	8,309,626	238,009
Amounts held for others	5,284,250	16,216,073	16,302,407	5,197,916
Total liabilities	\$ 5,588,851	24,459,107	24,612,033	5,435,925
Juvenile Detention Fund:				
Assets:				
Cash and cash equivalents and investments	\$ 327,972	4,091,039	3,478,380	940,631
Accounts receivable	389,418	130,361	392,635	127,144
Total assets	\$ 717,390	4,221,400	3,871,015	1,067,775
Liabilities:				
Accounts payable and accrued liabilities	\$ 154,007	3,327,649	3,330,615	151,041
Amounts held for others	563,382	5,532,910	5,179,558	916,734
Total liabilities	\$ 717,389	8,860,559	8,510,173	1,067,775

COUNTY OF JAMES CITY, VIRGINIA
Combining Statement of Changes in Assets and Liabilities
Agency Funds
Year ended June 30, 2015

	Balances beginning of year	Additions	Reductions	Balances end of year
Williamsburg Area Transit Authority Fund:				
Assets:				
Cash and cash equivalents	\$ 769,281	8,353,443	8,652,342	470,382
Accounts receivable	7,978	9,326	15,629	1,675
Due from other governmental units	935,192	1,678,361	1,870,385	743,168
Total assets	<u>\$ 1,712,451</u>	<u>10,041,130</u>	<u>10,538,356</u>	<u>1,215,225</u>
Liabilities:				
Accounts payable and accrued liabilities	\$ 732,395	3,446,978	3,965,204	214,169
Amounts held for others	980,057	18,555,294	18,534,295	1,001,056
Total liabilities	<u>\$ 1,712,452</u>	<u>22,002,272</u>	<u>22,499,499</u>	<u>1,215,225</u>
Total:				
Assets:				
Cash and cash equivalents and investments	\$ 2,066,815	27,782,607	27,744,831	2,104,591
Restricted cash and cash equivalents and investments with fiscal agent/trustee	7,559,886	2,708,086	2,692,550	7,575,422
Accounts receivable	644,656	672,822	728,337	589,141
Due from other governmental units	2,069,707	2,834,093	3,005,225	1,898,575
Total assets	<u>\$ 12,341,064</u>	<u>33,997,608</u>	<u>34,170,943</u>	<u>12,167,729</u>
Liabilities:				
Accounts payable and accrued liabilities	\$ 1,219,856	17,017,750	17,605,054	632,552
Amounts held for others	11,121,206	42,979,073	42,565,102	11,535,177
Total liabilities	<u>\$ 12,341,062</u>	<u>59,996,823</u>	<u>60,170,156</u>	<u>12,167,729</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, 2015

Assets	General	Grants	Schools' food services	Capital projects	Total governmental funds
Cash and temporary investments	\$ 15,570,164	24,840	517,345	1,008,153	17,120,502
Receivables	55,167	18,290	9,782	—	83,239
Due from federal government	—	633,326	117,244	—	750,570
Due from Commonwealth of Virginia	151,314	27,079	—	—	178,393
Due from the City of Williamsburg and James City County	78,775	—	—	1,062,261	1,141,036
Inventory	—	—	35,675	—	35,675
Total assets	<u>\$ 15,855,421</u>	<u>703,534</u>	<u>680,046</u>	<u>2,070,414</u>	<u>19,309,415</u>
Liabilities and Fund Balances					
Liabilities:					
Accounts payable	\$ 1,115,184	67,021	4,775	1,020,730	2,207,710
Accrued payroll	6,614,804	294,235	134,645	—	7,043,684
Accrued benefits	5,111,584	181,842	122,085	—	5,415,511
Due to the City of Williamsburg and James City County	1,470,977	—	—	—	1,470,977
Total liabilities	<u>14,312,549</u>	<u>543,098</u>	<u>261,505</u>	<u>1,020,730</u>	<u>16,137,882</u>
Fund balances:					
Nonspendable -					
Inventory	—	—	35,675	—	35,675
Restricted	—	160,436	382,866	—	543,302
Committed	—	—	—	1,049,684	1,049,684
Assigned	1,042,872	—	—	—	1,042,872
Unassigned	500,000	—	—	—	500,000
Total fund balances	<u>1,542,872</u>	<u>160,436</u>	<u>418,541</u>	<u>1,049,684</u>	<u>3,171,533</u>
Total liabilities and fund balances	<u>\$ 15,855,421</u>	<u>703,534</u>	<u>680,046</u>	<u>2,070,414</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.					53,549,272
Long-term liabilities are not reported as liabilities in the governmental funds.					
Compensated absences		(1,004,533)			
Equipment capital leases		(221,020)			
Other post employment benefits		(4,996,300)			
Net pension liability		<u>(103,108,314)</u>			(109,330,167)
Advance receipt of grant funding is not reported as a liability in the governmental funds.					(160,436)
Deferred outflows and inflows of resources are not current financial resources and therefore are not reported in the governmental funds.					(7,250,653)
Net position of governmental activities					<u>\$ (60,020,451)</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, 2015

	<u>General</u>	<u>Grants</u>	<u>Schools' food services</u>	<u>Capital projects</u>	<u>Total governmental funds</u>
Revenues:					
Intergovernmental:					
From City of Williamsburg and James City County	\$ 88,109,009	—	—	3,520,875	91,629,884
From Commonwealth of Virginia	30,853,685	982,300	53,253	6,542	31,895,780
From federal government	87,634	3,558,790	2,154,512	—	5,800,936
Total intergovernmental	119,050,328	4,541,090	2,207,765	3,527,417	129,326,600
Charges for services	581,991	4,597	1,732,342	—	2,318,930
Interest	3,827	—	347	—	4,174
Miscellaneous	240,786	694,043	—	—	934,829
Total revenues	119,876,932	5,239,730	3,940,454	3,527,417	132,584,533
Expenditures:					
General and administrative	2,847,306	—	—	—	2,847,306
Instruction	87,276,924	4,098,991	—	—	91,375,915
Attendance and health services	4,155,979	562,036	—	—	4,718,015
Pupil transportation	7,542,084	—	—	—	7,542,084
Operations and maintenance	10,950,273	26,178	—	—	10,976,451
Technology	7,125,095	303,538	—	—	7,428,633
Food services	—	85,921	4,155,437	—	4,241,358
Debt service:					
Principal	51,412	—	—	—	51,412
Interest	24,851	—	—	—	24,851
Capital outlay	1,496,316	189,849	—	3,527,417	5,213,582
Total expenditures	121,470,240	5,266,513	4,155,437	3,527,417	134,419,607
Deficiency of revenues under expenditures	(1,593,308)	(26,783)	(214,983)	—	(1,835,074)
Other financing sources:					
Proceeds from capital lease obligations	98,861	—	—	—	98,861
Total other financing sources	98,861	—	—	—	98,861
Net change in fund balances	(1,494,447)	(26,783)	(214,983)	—	(1,736,213)
Fund balances at beginning of year	3,037,319	187,219	633,524	1,049,684	4,907,746
Fund balances at end of year	\$ 1,542,872	160,436	418,541	1,049,684	3,171,533

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, 2015

Net change in fund balances \$ (1,736,213)

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	5,213,582
Depreciation expense	(4,005,151)
	<u>1,208,431</u>

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. (106,400)

Repayment of debt principal is an expenditure in the governmental funds, but does not affect the statement of activities. 51,412

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	(42,508)
Change in net OPEB obligation	(556,000)
Change in net pension liability	1,679,059
	<u>1,080,551</u>

Proceeds from the issuance of long-term debt are reported as other financing sources in the governmental funds, increasing fund balance. In the government-wide statements, new debt increases long-term liabilities in the statement of net position and does not affect the statement of activities. This represents principal amounts of new capital leases. (98,861)

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.

	<u>26,783</u>
Change in net position	<u>\$ 425,703</u>

See accompanying independent auditors' report.

COUNTY OF JAMES CITY, VIRGINIA
 Schedule of Changes in Assets and Liabilities
 Discretely Presented Component Unit – Public Schools – Agency Funds
 Year ended June 30, 2015

	Balances beginning of year	Additions	Reductions	Balances end of year
State Operated Educational Program:				
Assets:				
Cash and temporary investments	\$ (177,953)	1,017,408	1,040,676	(201,221)
Due from other governmental units	261,755	267,116	261,984	266,887
Total assets	\$ 83,802	1,284,524	1,302,660	65,666
Liabilities:				
Accounts payable and accrued liabilities	\$ 83,802	1,755,296	1,773,432	65,666
School Activity Fund:				
Assets:				
Cash and temporary investments	\$ 1,237,848	2,039,296	2,005,527	1,271,617
Total assets	\$ 1,237,848	2,039,296	2,005,527	1,271,617
Liabilities:				
Amounts held for others	\$ 1,237,848	2,039,296	2,005,527	1,271,617
Totals – primary government:				
Assets:				
Cash and temporary investments	\$ 1,059,895	3,056,704	3,046,203	1,070,396
Due from other governmental units	261,755	267,116	261,984	266,887
Total assets	\$ 1,321,650	3,323,820	3,308,187	1,337,283
Liabilities:				
Accounts payable and accrued liabilities	\$ 83,802	1,755,296	1,773,432	65,666
Amounts held for others	1,237,848	2,039,296	2,005,527	1,271,617
Total liabilities	\$ 1,321,650	3,794,592	3,778,959	1,337,283

See accompanying independent auditors' report.

COUNTY OF JAMES CITY, VIRGINIA

Balance Sheet

Discretely Presented Component Unit – Economic Development Authority

June 30, 2015

Assets

Assets:

Cash and short-term investments (note 2)	\$	1,238,005
Due from James City County		82,000
Interest receivable		640
Bond fee receivable		4,807
Current portion of notes receivable		3,220
Notes receivable		12,019
Capital assets (note 7 and 18):		
Land		233,106
Furniture and equipment		5,119
Intangible assets		7,600
Construction in progress		166,510
Accumulated depreciation		<u>(6,565)</u>
Total capital assets		<u>405,770</u>
Total assets	\$	<u><u>1,746,461</u></u>

Liabilities and Net Position

Liabilities:

Current liabilities:

Accounts payable	\$	100,190
Due to James City County		<u>409</u>
Total current liabilities		<u>100,599</u>

Net position:

Net investment in capital assets		405,770
Unrestricted		<u>1,240,092</u>
Total net position		<u>1,645,862</u>
Total liabilities and net position	\$	<u><u>1,746,461</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, 2015

Operating revenues:	
County contribution	\$ 93,946
Bond fees	22,860
Lease income	20,575
Incubator revenue	5,650
Incubator member contributions	69,000
Miscellaneous revenue	5,314
	217,345
Total operating revenues	217,345
Operating expenses:	
Community development	165,093
Promotion	62,648
Professional fees	20,352
Note forgiveness	1,742
Performance based agreements	82,000
Other	13,828
	345,663
Total operating expenses	345,663
Operating loss before depreciation	(128,318)
Depreciation	2,032
Operating loss	(130,350)
Nonoperating revenue:	
Interest income	13,759
Change in net position	(116,591)
Net position at beginning of year	1,762,453
Net position at end of year	\$ 1,645,862

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, 2015

Cash flows from operating activities:	
Receipts from customers	\$ 350,593
Payments to suppliers	<u>(485,248)</u>
Net cash used by operating activities	<u>(134,655)</u>
Cash flows from investing activities -	
Interest received	<u>13,759</u>
Net decrease in cash and short-term investments	(120,896)
Cash and short-term investments at beginning of year	<u>1,358,901</u>
Cash and short-term investments at end of year	<u>\$ 1,238,005</u>
Reconciliation of operating loss to net cash used by operating activities:	
Operating loss	\$ (130,350)
Adjustments to reconcile operating loss to cash used by operating activities:	
Depreciation	2,032
Note forgiveness	1,742
Changes in assets and liabilities:	
Due from James City County	136,108
Interest receivable	205
Bond fee receivable	(4,807)
Accounts payable	(139,823)
Due to James City County	<u>238</u>
Net cash used by operating activities	<u>\$ (134,655)</u>

See accompanying independent auditors' report.

STATISTICAL SECTION

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.

CONTENTS

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

	2006	2007	2008	2009	2010	2011	2012	2013	2014, as restated	2015
Governmental activities:										
Net investment in capital assets	\$ 57,943,767	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
Reserved:										
Capital projects	41,541,322	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
Other purposes	14,148,422	6,214,172	433,272	394,831	813,685	—	—	—	—	—
Unrestricted	47,114,240	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
Total governmental activities net position	\$ 160,747,751	193,038,489	211,410,214	214,571,718	195,156,186	201,797,564	210,382,697	216,258,221	201,284,071	212,243,199
Business-type activity:										
Net investment in capital assets	\$ 123,710,597	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
Reserved:										
Capital projects	703,494	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
Unrestricted	29,627,748	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
Total business-type activity net position	\$ 154,041,839	166,006,288	172,150,930	175,580,255	176,112,274	174,440,266	174,449,702	172,775,615	169,683,234	172,792,859
Primary government:										
Net investment in capital assets	\$ 181,654,364	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
Reserved:										
Capital projects	42,244,816	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
Other purposes	14,148,422	6,214,172	433,272	394,831	813,685	—	—	—	—	—
Unrestricted	76,741,988	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
Total primary government net position	\$ 314,789,590	359,044,777	383,561,144	390,151,973	371,268,460	376,237,830	384,832,399	389,033,836	370,967,305	385,036,058

Table 2

COUNTY OF JAMES CITY, VIRGINIA
Government-Wide Expenses and Program Revenues by Function
Last Ten Fiscal Years

	2006	2007	2008	2009	2010	2011	2012	2013	2014, as restated	2015
Expenses:										
Governmental activities:										
General government administration	\$ 5,790,007	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
Judicial administration	4,374,852	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
Public safety	13,599,920	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
Public works	2,674,311	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
Health and welfare	7,043,503	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
Education	77,265,247	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
Parks, recreation, and cultural	8,720,218	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
Community development	12,662,469	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
Storm costs	—	166,546	—	—	—	—	—	—	—	—
Interest on long-term debt	5,962,561	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
Non-departmental	5,161,844	—	—	—	—	—	—	—	—	—
Total governmental activities expenses	143,254,932	148,757,573	172,082,789	180,710,064	190,856,672	170,415,061	174,592,125	175,817,038	170,337,731	178,452,024
Business-type activities:										
Service Authority	14,149,218	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
Stormwater Utility	—	—	882,254	1,466,080	—	—	—	—	—	—
Total business-type expenses	14,149,218	17,688,528	17,433,357	20,208,779	20,074,066	20,896,660	21,361,681	21,272,566	21,002,926	19,888,935
Total primary government expenses	\$ 157,404,150	166,446,101	189,516,146	200,918,843	210,930,738	191,311,721	195,953,806	197,089,604	191,340,657	198,340,959
Program revenues:										
Governmental activities:										
Charges for services:										
General government administration	\$ 6,569,599	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
Judicial administration	2,098,886	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
Public safety	1,555,099	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
Parks, recreation and cultural	2,638,777	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
Other	2,473,163	691,062	684,719	736,926	213,976	203,302	216,443	225,520	281,256	270,799
Total charges for services	15,335,524	15,768,525	16,371,794	15,302,252	13,814,706	14,282,467	14,980,225	15,661,265	16,063,721	16,715,136
Operating grants and contributions	18,790,084	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
Capital grants and contributions	785,786	5,039,467	3,087,066	804,605	423,581	434,823	2,035,365	1,312,352	1,286,856	346,627
Total governmental activities program revenues	34,911,394	43,256,096	44,052,701	41,278,719	37,399,956	46,767,283	50,034,832	48,328,032	47,922,960	48,829,624
Business-type activities:										
Charges for services	16,805,640	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
Operating grants and contributions	—	—	—	21,978	2,756	—	—	—	—	—
Capital grants and contributions	10,077,376	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
Total business-type activities program revenues	26,883,016	25,826,309	20,082,275	19,372,099	19,005,409	18,193,593	20,278,989	20,471,832	19,520,130	21,736,499
Total primary government program revenues	\$ 61,794,410	69,082,405	64,134,976	60,650,818	56,405,365	64,960,876	70,313,821	68,799,864	67,443,090	70,566,123
Net (expense)/revenue:										
Governmental activities	\$ (108,343,538)	(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)
Business-type activities	12,733,798	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
Total primary government net expense	\$ (95,609,740)	(97,363,696)	(125,381,170)	(140,268,025)	(154,525,373)	(126,350,845)	(125,639,985)	(128,289,740)	(123,897,567)	(127,774,836)

Table 2

COUNTY OF JAMES CITY, VIRGINIA
 Government-Wide Expenses and Program Revenues by Function
 Last Ten Fiscal Years

	2006	2007	2008	2009	2010	2011	2012	2013	2014, as restated	2015
General revenues and other changes in net position:										
Governmental activities:										
Taxes:										
Property taxes, levied for general purposes	\$ 86,204,347	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
Other local taxes	20,366,681	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
Permits, fees and licenses	8,877,130	9,255,185	8,288,580	7,420,591	6,672,136	—	—	—	—	—
Interest on investment earnings	3,407,722	7,306,357	5,105,721	2,351,497	673,668	442,698	395,001	330,514	339,358	232,388
Gain on sale of capital assets	—	—	—	223,203	—	—	—	—	—	—
Sale of land	—	—	—	4,936,444	—	—	—	—	—	—
Miscellaneous	2,053,405	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
Total governmental activities	<u>120,909,285</u>	<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>
Business-type activities:										
Interest on investment earnings	935,971	1,503,939	2,004,957	3,669,266	956,056	509,675	351,929	(1,249,111)	267,061	248,207
Gain (loss) on sale of capital assets	—	—	181,615	74,226	—	—	—	—	—	—
Miscellaneous	526,601	1,378,725	1,309,152	522,513	644,620	521,384	740,199	375,758	520,504	1,013,854
Total business-type activities	<u>1,462,572</u>	<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>
Total primary government	<u>\$ 122,371,857</u>	<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>
Change in net position:										
Governmental activities	\$ 12,565,747	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
Business-type activities	14,196,370	11,020,445	6,144,642	3,429,325	532,019	(1,672,008)	9,436	(1,674,087)	(695,231)	3,109,625
Total primary government	<u>\$ 26,762,117</u>	<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>

(1) Reflects expenses from Exhibit 2.

Table 3

COUNTY OF JAMES CITY, VIRGINIA
Fund Balances, Governmental Funds
Last Ten Fiscal Years (1)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
General fund:										
Nonspendable:										
Inventory	\$ 245,959	291,364	288,734	264,969	276,083	298,757	346,545	361,682	370,536	340,709
Prepaid items	—	—	—	—	400,301	—	—	—	—	2,111
Assigned:										
General	457,287	452,420	407,496	437,744	1,161,093	2,678,655	6,089,236	6,595,137	6,544,809	5,991,822
Capital projects	14,056,476	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
Unassigned:										
General	21,406,435	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
Total general fund	\$ 36,166,157	39,316,687	36,525,439	33,132,714	35,433,711	39,471,901	43,876,490	40,886,094	38,133,705	34,663,432
All other government funds:										
Nonspendable -										
Loans	\$ 147,168	170,886	144,538	129,862	137,301	155,940	167,249	173,501	601,707	540,850
Committed:										
Grants	—	—	—	—	—	741,113	962,702	128,700	240,900	69
Capital projects	51,808,002	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
Assigned:										
Capital projects	—	—	—	—	—	—	—	—	14,466,602	16,178,748
Special revenue	3,662,370	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
Total all other governmental funds	\$ 55,617,540	116,464,699	99,479,142	85,681,023	57,081,138	29,264,494	26,321,177	40,132,199	27,533,668	22,687,613

- (1) Governmental Accounting Standards Board (GASB) Statement No. 54, Fund Balance Reporting and Governmental Fund Type Definitions, which provides clearer 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 2006 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

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Revenues:										
General property taxes	\$ 85,280,660	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
Other local taxes	20,366,681	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
Licenses, permits, and fees	8,877,130	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
Fines and forfeitures	290,714	321,443	366,606	348,846	296,866	334,633	274,198	295,355	293,625	271,615
Use of money and property	3,407,723	7,306,357	5,105,721	2,351,497	673,668	442,698	395,001	330,514	339,358	232,388
Charges for services	4,335,505	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
Intergovernmental	30,285,175	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
Miscellaneous	2,053,402	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
Total revenues	154,896,990	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
Expenditures:										
Storm costs	—	166,546	—	—	—	—	2,454,661	—	—	—
General government	7,681,371	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
Judicial administration	4,188,180	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
Public works	4,494,973	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
Health and welfare	6,840,336	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
Education	60,797,314	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
Parks, recreation, and cultural	9,010,847	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
Public safety	18,791,965	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
Community development	13,048,650	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
Nondepartmental	1,267,388	1,473,817	2,492,546	1,502,034	556,381	(266,150)	1,265,803	966,806	721,744	525,433
Debt service (2):										
Principal	7,215,460	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
Interest	5,962,561	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
Underwriters discount	125,640	192,900	—	—	101,667	—	—	—	—	—
Capital outlay (1)	37,898,518	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
Total expenditures	177,323,203	243,849,861	206,340,851	201,583,683	213,056,971	199,956,285	188,611,083	198,068,432	199,075,112	195,517,344
Deficiency of revenues under expenditures	(22,426,213)	(60,607,452)	(19,776,805)	(17,190,844)	(40,869,365)	(23,880,542)	(6,210,728)	(17,615,665)	(15,350,920)	(6,923,786)
Other financing sources:										
Transfers in	23,559,107	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
Issuance of debt	23,492,454	116,775,000	—	—	14,935,000	4,820,000	7,672,000	26,380,000	—	34,185,000
Underwriter's discount	—	—	—	—	—	(20,003)	—	(253,624)	—	(112,863)
Payment to refunded bond escrow agent	—	—	—	—	—	(5,019,743)	—	—	—	(39,371,952)
Premiums on bonds issued	291,672	7,830,141	—	—	12,809	321,834	—	2,309,915	—	3,907,273
Transfers out	(23,559,107)	(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)
Total other financing sources	23,784,126	124,605,141	—	—	14,947,809	102,088	7,672,000	28,436,291	—	(1,392,542)
Net change in fund balances	\$ 1,357,913	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)
Debt service as a percentage of noncapital expenditures	9.33%	15.62%	14.48%	13.92%	13.58%	14.27%	13.65%	17.57%	13.97%	13.36%

(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 assets.

Table 5

COUNTY OF JAMES CITY, VIRGINIA
 Assessed Value and Actual Value of Taxable Property
 Last Ten Fiscal Years

Fiscal year	Total real property	General personal property	Machinery and tools	Mobile homes	Total Personal property	Public service	Total assessed value	Total direct tax rate
2006	\$ 8,189,928,900	558,027,641	123,471,704	12,350,825	693,850,170	165,476,326	9,049,255,396	4.785
2007	9,821,638,100	595,277,728	122,197,566	12,675,461	730,150,755	152,475,702	10,704,264,557	4.770
2008	10,672,714,225	623,336,868	125,136,293	12,537,160	761,010,321	176,428,097	11,610,152,643	4.770
2009	11,005,655,000	610,316,169	128,696,107	11,641,959	750,654,235	184,750,991	11,941,060,226	4.770
2010	11,155,493,300	598,149,387	132,052,632	10,994,266	741,196,285	196,289,584	12,092,979,169	4.770
2011	11,172,929,700	621,471,862	137,178,668	10,101,067	768,751,597	210,802,200	12,152,483,497	4.770
2012	11,316,807,900	652,561,625	139,945,157	9,719,184	802,225,966	222,670,868	12,341,704,734	4.770
2013	10,921,180,200	687,058,440	141,877,157	9,209,475	838,145,072	232,588,225	11,991,913,497	4.770
2014	11,067,756,400	710,720,870	144,950,305	8,346,659	864,017,834	233,973,337	12,165,747,571	4.770
2015	11,148,405,300	783,249,672	144,694,099	7,901,856	935,845,627	336,370,602	12,420,621,529	4.770

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

Fiscal year		Real estate tax (1)	Personal property tax (1)	Room tax	Meal tax	Retail sales tax (2)	Total direct tax rate
2006	\$	0.785	4.00	5.00	4.00	1.00	4.785
2007		0.770	4.00	5.00	4.00	1.00	4.770
2008		0.770	4.00	5.00	4.00	1.00	4.770
2009		0.770	4.00	5.00	4.00	1.00	4.770
2010		0.770	4.00	5.00	4.00	1.00	4.770
2011		0.770	4.00	5.00	4.00	1.00	4.770
2012		0.770	4.00	5.00	4.00	1.00	4.770
2013		0.770	4.00	5.00	4.00	1.00	4.770
2014		0.770	4.00	5.00	4.00	1.00	4.770
2015		0.770	4.00	5.00	4.00	1.00	4.770

(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 Property Tax Payers

Current Year and Nine Years Ago

	2015			2006		
	Property taxes assessed	Rank	Percentage of County total	Property taxes assessed	Rank	Percentage of County total
Anheuser-Busch, Inc.	\$ 5,007,638	1	4.04%	\$ 4,632,950	1	4.98%
Seaworld Parks, LLC	1,980,424	2	1.60	1,370,299	2	1.47
Virginia Electric & Power Company	1,396,208	3	1.13	611,378	7	0.66
Wal-Mart, Inc.	1,087,484	4	0.88	980,477	3	1.05
Premium Outlets of Williamsburg (1)	1,045,175	5	0.84	546,993	9	0.59
Powhatan Plantation Owners Association	980,222	6	0.79	798,915	4	0.86
Williamsburg Landing, Inc.	769,057	7	0.62	555,316	8	0.60
Ball Metal Container	688,884	8	0.56	613,747	6	0.66
Williamsburg Plantation Owners Association	657,613	9	0.53	—		—
Owens-Brockway	532,259	10	0.43	—		—
Busch Properties	—		—	723,669	5	0.78
Manor Houses Association	—		—	486,331	10	0.52
Total	\$ 14,144,964		11.42%	\$ 11,320,075		12.17%

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.

Table 7A

COUNTY OF JAMES CITY, VIRGINIA

Principal Personal Property Tax Payers

Current Year and Nine Years Ago

	2015			2006 (1)		
	Property taxes assessed	Rank	Percentage of County total	Property taxes assessed	Rank	Percentage of County total
Anheuser-Busch, Inc.	\$ 3,924,079	1	11.02%	\$ **		**
Seaworld Parks, LLC	1,458,740	2	4.10	**		**
Ball Metal Container	559,424	3	1.57	**		**
Printpack, Inc.	466,985	4	1.31	**		**
Owens-Brockway Glass Container	448,168	5	1.26	**		**
Wal-Mart, Inc.	317,484	6	0.89	**		**
Cox Communications of Hampton Roads	242,898	7	0.68	**		**
Toyota Lease Trust	226,624	8	0.64	**		**
HVT, Inc.	110,893	9	0.31	**		**
Branscome, Inc.	106,533	10	0.30	**		**
Total	\$ 7,861,828		22.08%	\$ —		—%

Source: Commissioner of the Revenue

(1) The first year this was reported was fiscal year 2010. Therefore, information for fiscal year 2006 is not available.

Table 7B

COUNTY OF JAMES CITY, VIRGINIA

Principal Real Estate Tax Payers

Current Year and Nine Years Ago

	2015			2006 (1)		
	Property taxes assessed	Rank	Percentage of County total	Property taxes assessed	Rank	Percentage of County total
Virginia Electric & Power Company	\$ 1,392,726	1	1.57%	\$ **		**
Anheuser-Busch, Inc.	1,083,559	2	1.23%	**		**
Premium Outlets of Williamsburg (2)	1,038,962	3	1.17	**		**
Powhatan Plantation Owners Association	966,499	4	1.09	**		**
Wal-Mart, Inc.	770,000	5	0.87	**		**
Williamsburg Landing, Inc.	675,738	6	0.76	**		**
Williamsburg Plantation Owners Association	650,029	7	0.74	**		**
Manor Houses Associates	580,068	8	0.66	**		**
Virginia United Methodist Homes, Inc.	577,698	9	0.65	**		**
Seaworld Parks, LLC	521,684	10	0.59	**		**
Total	\$ 8,256,963		9.33%	\$ —		—%

Source: Commissioner of the Revenue

(1) The first year this was reported was fiscal year 2010. Therefore, information for fiscal year 2006 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

Fiscal year	Taxes levied for the fiscal year	Collected within the fiscal year of the levy		Collections in subsequent years	Total collections to date	
		Amount (1)	Percentage of levy (%)		Amount	Percentage of levy (%)
2006	\$ 95,574,858	78,647,494	82.29%	\$ 16,850,677	95,498,171	99.92%
2007	105,811,945	88,752,007	83.88	16,977,379	105,729,386	99.92
2008	114,071,066	96,586,301	84.67	17,364,741	113,951,042	99.89
2009	114,860,437	97,895,837	85.23	16,806,828	114,702,665	99.86
2010	116,355,119	99,101,581	85.17	16,888,741	115,990,322	99.69
2011	117,175,876	100,889,563	86.10	15,840,347	116,729,910	99.62
2012	121,294,208	101,482,234	83.67	19,297,459	120,779,693	99.58
2013	117,394,409	98,431,581	83.85	18,076,974	116,508,555	99.25
2014	118,756,973	100,523,591	84.65	17,285,081	117,808,672	99.20
2015	120,406,640	101,071,578	83.94	—	101,071,578	83.94

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

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Apparel stores	\$ 106,280,148	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
Automotive dealers, supplies and repair	9,532,774	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
Building materials, machinery and equipment	80,881,233	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
Eating and drinking establishments	50,262,980	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
Food stores	93,670,198	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
Furniture, home furnishings and household equipment	38,502,745	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
General merchandise	55,149,333	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
Lodging	51,474,891	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
Other outlets	42,378,637	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
Other retail stores, dealers, trades and services	175,126,243	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
Total	\$ <u>703,259,182</u>	<u>812,114,895</u>	<u>828,946,907</u>	<u>800,140,357</u>	<u>777,319,142</u>	<u>802,513,095</u>	<u>869,588,361</u>	<u>905,053,403</u>	<u>944,879,271</u>	<u>968,745,918</u>

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

Governmental activities							
Fiscal year	General obligation bonds	Virginia literary fund loan	Capital lease – radio system	Other capital lease	Loan payable Virginia Department of Transportation	Lease revenue bonds	Total
2006	\$ 106,062,319	28,950	13,100,000	808,307	250,000	22,570,000	142,819,576
2007	126,590,560	—	12,350,000	688,190	125,000	112,780,000	252,533,750
2008	118,369,735	—	11,564,000	562,298	—	107,200,000	237,696,033
2009	109,974,105	—	10,740,000	430,533	—	101,595,000	222,739,638
2010	101,414,765	—	9,877,000	292,895	—	110,275,000	221,859,660
2011	93,283,624	—	8,973,000	1,312,522	—	104,055,000	207,624,146
2012	86,134,103	—	8,026,000	1,209,074	—	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

Fiscal year	Business-type activity Revenue bonds	Total primary government	Percentage of personal income (1)	Per capita personal income (2)
2006	\$ 13,034,918	\$ 155,854,494	21.10%	\$ 44,480
2007	12,133,794	264,667,544	13.76	47,825
2008	11,212,670	248,908,703	16.01	51,274
2009	37,386,546	260,126,184	14.77	48,129
2010	35,950,423	257,810,083	15.16	47,983
2011	34,469,298	242,093,444	17.63	51,652
2012	32,938,174	232,779,351	19.34	53,495
2013	25,185,000	229,322,148	**	53,571
2014	24,660,000	212,224,772	**	**
2015	24,115,000	194,036,422	**	**

Notes:

(1) Based on personal income from Table 13

(2) From Table 13, calendar year basis

** Population and income statistics not yet available

Table 11

COUNTY OF JAMES CITY, VIRGINIA

Ratio of Net General Bonded Debt to Assessed Value and Net Bonded Debt Per Capita
Last Ten Fiscal Years

Fiscal year	(1) Population	(2) Assessed value	(3) (4) Gross bonded debt	(5) Less debt service monies available	Net bonded debt	Ratio of net general obligation debt to assessed value	Net bonded debt per capita
2006	58,893	\$ 9,049,255,396	106,091,269	1,749,709	104,341,560	1.15	\$ 1,772
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

- (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

Table 11A

COUNTY OF JAMES CITY, VIRGINIA

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

Last Ten Fiscal Years

<u>Fiscal year</u>	<u>(1) Principal</u>	<u>(2) Interest</u>	<u>(4) Total debt service</u>	<u>(3) Total general governmental expenditures</u>	<u>Ratio of debt service to general total governmental expenditures</u>
2006	\$ 7,215,460	5,962,561	13,178,021	171,917,860	7.67
2007	14,488,702	9,857,524	24,346,226	199,622,475	12.20
2008	14,245,257	11,253,935	25,499,192	212,383,260	12.01
2009	14,363,935	10,625,010	24,988,945	208,510,363	11.98
2010	15,077,900	10,147,353	25,225,253	198,552,653	12.70
2011	14,830,524	9,853,465	24,683,989	198,893,176	12.41
2012	14,787,955	9,384,810	24,172,765	201,078,316	12.02
2013 (5)	23,473,305	9,522,081	32,995,386	215,304,486	15.32
2014	16,417,326	8,822,326	25,239,652	211,866,777	11.91
2015	16,862,695	8,781,971	25,644,666	218,984,810	11.71

- (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 included in the General Fund, Debt Service Fund, all 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 11B

COUNTY OF JAMES CITY, VIRGINIA

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

Last Ten Fiscal Years

Fiscal year	(1) Principal	(2) Interest	(4) Total debt service	(3) Total general governmental revenues	Ratio of debt service to general total governmental revenues
2006	\$ 7,215,460	5,962,561	13,178,021	177,521,975	7.42
2007	14,488,702	9,857,524	24,346,226	204,284,050	11.92
2008	14,245,257	11,253,935	25,499,192	219,920,086	11.59
2009	14,363,935	10,625,010	24,988,945	216,835,334	11.52
2010	15,077,900	10,147,353	25,225,253	200,014,429	12.61
2011	14,830,524	9,853,465	24,683,989	201,684,905	12.24
2012	14,787,955	9,384,810	24,172,765	206,996,888	11.68
2013 (5)	23,473,305	9,522,081	32,995,386	205,082,111	16.09
2014	16,417,326	8,822,326	25,239,652	209,633,075	12.04
2015	16,862,695	8,781,971	25,644,666	213,074,589	12.04

- (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 revenues included in the General Fund, Debt Service Fund, all Special Revenue funds, 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	
2006	\$ 18,268,212	8,283,711	9,984,501	860,000	522,981	1,382,981	7.22
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	12,424,220	2,573,614	525,000	1,119,306	1,644,306	1.57
2014	16,918,995	12,527,225	4,391,770	545,000	1,100,931	1,645,931	2.67
2015	17,714,181	10,813,844	6,900,337	565,000	1,081,856	1,646,856	4.19

(1) Total operating expenses exclusive of depreciation.

(2) The Authority has no debt margin nor overlapping debt.

Table 13

COUNTY OF JAMES CITY, VIRGINIA

Demographic and Economic Statistics

Last Ten Calendar Years

<u>Calendar year</u>	<u>Population (1)</u>	<u>Personal income (2)</u>	<u>Per capita personal income (2)</u>	<u>Unemployment percentage (1)</u>
2006	58,893	\$ 3,289,020,000	44,480	2.6%
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	4,592,180,000	53,571	5.3
2014	71,254	**	**	5.0
2015	72,187	**	**	4.8*

(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 as of May 2015

** Statistics not yet available

Table 13

COUNTY OF JAMES CITY, VIRGINIA
Demographic and Economic Statistics

Households and Population

(Sources: Social Services Department and Planning Division)

Year:	<u>Food stamp households</u>	<u>Total households *</u>	<u>Percentage of food stamp households</u>
2006	974	25,659	3.8
2007	927	26,507	3.5
2008	965	27,217	3.5
2009	1,224	27,567	4.4
2010	1,638	27,196	6.0
2011	1,840	27,551	6.7
2012	2,015	27,893	7.2
2013	2,236	28,090	8.0
2014	2,211	28,615	7.7
2015	2,006	28,986	6.9

* The number of households is the number of occupied housing.

Population

(Source: U.S. Census)

Year:	<u>Population number</u>	<u>Percentage increase</u>
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

Age Distribution

(Source: U.S. Census)

Age:	<u>1970</u>	<u>%</u>	<u>1980</u>	<u>%</u>	<u>1990</u>	<u>%</u>	<u>2000</u>	<u>%</u>	<u>2010</u>	<u>%</u>
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	6.2
20-29	2,915	16.3	3,870	17.0	5,330	15.3	—	—	—	—
20-34 **	—	—	—	—	—	—	7,484	15.6	9,741	14.5
30-44	3,172	17.8	4,780	21.0	8,901	25.5	—	—	—	—
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
	<u>17,853</u>	<u>100.0</u>	<u>22,763</u>	<u>100.0</u>	<u>34,859</u>	<u>100.0</u>	<u>48,102</u>	<u>100.0</u>	<u>67,009</u>	<u>100.0</u>

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

Table 13

COUNTY OF JAMES CITY, VIRGINIA
Demographic and Economic Statistics

Households and Population

(Source: Planning Division)

Year:	<u>Number of households *</u>	<u>Total households population **</u>	<u>Persons per household</u>
2006	25,659	57,991	2.26
2007	26,507	59,905	2.26
2008	27,217	61,511	2.26
2009	27,567	62,301	2.47
2010	27,196	66,631	2.45
2011	27,551	67,499	2.45
2012	27,893	68,337	2.45
2013	28,271	69,265	2.45
2014	28,615	70,107	2.45
2015	28,986	71,015	2.45

* The number of households is the number of occupied housing.

** Household population is 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.

Unemployment Rate and Labor Force

Last 10 Calendar Years

(Source: Planning Division supplemented by data from Virginia Workforce Connection)

Year:	<u>Civilian labor force</u>	<u>Number Employed</u>	<u>Number Unemployed</u>	<u>Unemployment rate (%)</u>
2006	30,368	29,568	800	2.6
2007	31,437	30,664	773	2.5
2008	32,294	31,262	1,032	3.2
2009	32,648	30,867	1,781	5.5
2010	32,243	30,205	2,038	6.3
2011	32,627	30,638	1,989	6.1
2012	33,041	31,152	1,889	5.7
2013	33,771	31,970	1,801	5.3
2014	33,836	32,157	1,679	5.0
2015	33,951	32,310	1,641	4.8

Table 13

COUNTY OF JAMES CITY, VIRGINIA
 Demographic and Economic Statistics
 Last Ten Calendar Years

Median Household Income

Calendar year	James City County	Commonwealth of Virginia	United States
2006	67,054	56,297	48,451
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	**	**	**
2015	**	**	**

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

** Statistics not yet available

Table 14

COUNTY OF JAMES CITY, VIRGINIA

Principal Employers in James City County

Current Year and Nine Years Ago

	2015			2006		
	<u>Employees</u>	<u>Rank</u>	<u>Percentage of total County employment</u>	<u>Employees</u>	<u>Rank</u>	<u>Percentage of total County employment</u>
Employment:						
Principal Public/Private Employers:						
Busch Gardens (1)	1000+	1	**	1000+	1	25.64%
Williamsburg-James City County						
Public Schools	1000+	2	4.95%	1000+	2	6.23%
Eastern State Hospital	500-999	3	2.79	1000+	3	4.46%
James City County	500-999	4	2.32	500-999	5	3.71%
Wal-Mart Distribution Center	500-999	5	0.19	500-999	6	3.39%
Kingsmill Resort	500-999	6	1.55	—		—
Anheuser-Busch, Inc.	500-999	7	1.55	500-999	4	3.75%
Owens & Minor	500-999	8	1.55	250-499	9	1.60%
Busch Properties, Inc.	—		—	500-999	7	3.25%
Jamestown-Yorktown Foundation	250-499	9	0.93	250-499	8	2.14%
Williamsburg Landing	250-499	10	0.93	250-499	10	1.19%
Total	—		16.76%	—		55.36%

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

(1) 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	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Administrative:										
Board of supervisors	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
County administration	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3.0	3.0	3.0
Satellite services	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
County attorney	4.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Communications	6.0	7.5	7.5	6.5	6.5	7.5	7.5	7.0	7.0	7.0
Economic development	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
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	5.0	4.0	4.0	7.0	7.0	7.0	7.0
Training and Quality Performance	3.0	3.0	3.0	3.0	3.0	3.0	—	—	—	—
Financial administration:										
Accounting	8.0	9.0	9.0	9.0	8.0	8.0	8.0	8.0	8.0	8.0
Commissioner of the revenue	11.0	13.0	13.0	13.0	12.0	11.0	11.0	11.0	11.0	11.0
Financial and management services	7.0	7.0	7.0	7.0	7.0	7.0	6.0	7.0	7.0	7.0
Purchasing	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
Real estate assessments	11.0	12.0	13.0	13.0	11.0	10.0	9.0	10.0	10.0	10.0
Treasurer	13.0	13.0	13.0	13.0	13.0	12.0	11.0	12.0	12.0	13.0
Information resources management	20.0	20.0	21.0	21.0	21.0	20.0	21.0	21.0	21.0	21.0
General services:										
Facilities maintenance	19.0	18.0	19.0	19.0	18.0	17.0	17.0	18.0	18.0	18.0
Fleet and equipment	8.0	8.0	8.0	8.0	7.0	8.0	8.0	8.0	8.0	8.0
General and capital services	3.5	6.5	6.5	6.5	6.5	5.5	7.0	8.0	8.0	7.0
Grounds maintenance	13.0	16.0	21.0	21.0	20.0	22.0	22.0	24.0	25.0	25.0
Solid waste management	6.0	7.0	7.0	7.0	7.0	6.0	6.0	5.0	5.0	5.0
Stormwater	—	—	9.0	8.5	6.5	6.5	4.0	4.0	4.0	6.0
Development management:										
Building safety and permits	18.0	20.0	21.0	19.0	15.0	13.0	13.0	13.0	13.0	14.0
Development management	4.5	3.5	4.5	2.5	2.5	2.5	2.5	2.0	2.0	2.0
Engineering and resource protection	12.0	15.0	15.0	15.0	14.0	12.0	13.0	12.0	12.0	11.0
Mosquito control	1.0	1.0	1.0	1.0	—	—	—	—	—	—
Planning	18.5	17.5	19.5	19.5	17.5	12.5	10.5	10.0	10.0	10.0
Zoning enforcement	—	—	—	—	—	3.0	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	12.0	11.0
Commonwealth's attorney	8.0	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	18.0	16.0	16.0	16.0	16.0	16.0
Public safety:										
Animal control	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0
Emergency communications	26.0	27.0	27.0	27.0	27.0	26.0	26.0	26.0	26.0	29.0
Emergency management	1.0	1.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0
Emergency medical services	24.0	24.0	25.0	25.0	25.0	25.0	—	—	—	—
Fire	77.0	80.0	83.0	86.0	86.0	86.0	110.0	110.0	110.0	114.0
Police	78.0	87.0	94.0	97.0	98.0	98.0	98.0	98.0	99.0	103.0

Table 15

COUNTY OF JAMES CITY, VIRGINIA
 Full-time County Government Employees by Function/Program
 Last Ten Fiscal Years

Function/program	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Parks and recreation	45.0	52.0	56.0	54.0	53.0	48.0	49.0	48.0	48.0	47.0
Community services:										
Community services	5.0	4.0	4.0	3.0	3.0	—	—	—	—	—
Cooperative extension service	2.0	2.0	2.0	2.0	2.0	2.0	2.0	—	—	—
Neighborhood connections	3.0	4.0	4.0	4.0	2.0	—	—	—	—	—
Total general fund	512.5	548.5	586.5	584.0	563.0	541.0	541.0	542.0	544.0	555.0
Other services:										
Community development	8.5	9.5	9.5	9.5	8.5	9.5	9.5	9.0	9.0	8.0
JCSA	85.0	87.0	88.0	91.0	90.0	86.0	89.0	89.0	89.0	89.0
Social services	53.5	53.5	57.5	57.5	52.5	52.5	52.5	52.0	51.0	51.0
Colonial community corrections	13.0	13.0	13.0	11.0	11.0	12.0	12.0	12.0	13.0	13.0
Special projects/grants	3.0	4.0	5.0	6.0	5.0	3.0	3.0	3.0	3.0	3.0
Grand total all funds	675.5	715.5	759.5	759.0	730.0	704.0	707.0	707.0	709.0	719.0

Source: Financial and Management Services

Table 16

COUNTY OF JAMES CITY, VIRGINIA
 Operating Indicators by Function/Program
 Last Ten Fiscal Years

Function/program	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Police:										
Calls for service	20,641	21,897	21,320	21,694	21,762	21,129	20,879	19,539	20,175	20,875
Major crimes reported	1,049	971	1,007	1,060	1,080	1,071	1,092	999	999	1,182
Major crimes cleared	301	351	343	363	396	325	324	317	247	335
Fire:										
Fire/other responses	2,822	3,064	3,575	2,969	2,922	2,786	3,178	2,822	3,065	3,153
Inspections	1,798	1,486	2,334	1,156	2,037	1,735	1,804	1,910	1,829	1,320
EMS responses	4,869	5,219	4,851	5,276	5,573	5,956	6,147	6,446	6,450	6,666
Refuse collection:										
Refuse collected (tons per day)	10.76	11.83	9.25	7.68	8.06	8.51	10.39	11.85	10.59	9.72
Recyclables collected (tons per day)	1.08	1.43	1.25	1.12	1.08	1.10	1.01	1.04	0.97	0.91
Recyclables collected curbside (tons per day)	N/A	N/A	N/A	N/A	N/A	22.51	22.25	22.37	22.21	23.21
Parks and recreation:										
Community center admissions	333,299	315,480	409,706	353,862	394,757	463,491	464,358	511,976	444,755	400,367
Park attendance	1,100,051	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
Participants in programs offered	228,504	250,042	408,905	422,009	384,650	395,789	378,733	371,959	402,634	441,969
Water:										
New connections	880	694	351	263	385	388	351	448	359	388
Water mains breaks	51	42	57	37	40	44	31	25	21	26
Wastewater:										
New connections	884	693	389	269	380	375	296	347	261	380

Source: County operating departments

N/A : This information is not available.

Table 17

COUNTY OF JAMES CITY, VIRGINIA
 Capital Asset Statistics by Function/Program
 Last Ten Fiscal Years

Function/program	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
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	1,547	1,749	1,622	1,622	1,622	1,622	1,622	1,622	1,622	1,622
Playgrounds	7	8	10	10	11	11	11	11	11	12
Ball fields maintained	17	23	30	30	58	65	65	65	65	65
Tennis courts maintained	3	6	6	6	5	5	5	5	5	4
Community centers	2	2	2	2	2	2	2	2	2	2
Water:										
Water lines (miles)	319	329	332	339	344	393	390	393	400	402
Water customers	17,552	18,283	18,770	19,085	19,368	19,719	20,070	20,549	20,858	21,246
Storage tanks (greater than 250,000 gallons)	6	6	7	7	7	7	7	7	7	7
Average ERCs (1)	19,200	19,600	20,400	25,753	20,200	20,866	19,200	18,597	18,937	19,415
Wastewater:										
Sewer lines (miles)	360	370	375	379	382	419	423	425	430	435
Gallons collected (millions)	1,606	1,680	1,727	1,765	1,833	1,598	1,771	1,739	1,862	1,922
Sewer customers	17,982	18,426	18,590	18,702	18,860	21,127	21,488	21,962	22,575	22,955

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

Retail Sales

Last 10 Years

(Source: Treasurer, James City County)

Year:	<u>Taxable retail sales</u>	<u>Percentage change (%)</u>
2006	832,202,000	9.0
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	5.1

Business Licenses Issued

Last 10 Years

(Source: Commissioner of the Revenue, James City County)

Year:	<u>Business licenses issued</u>	<u>Percentage change (%)</u>
2006	5,088	2.4
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

Table 18

COUNTY OF JAMES CITY, VIRGINIA

Miscellaneous Statistics

Construction Information

Last Ten Fiscal Years

(Source: Building and Safety Permits Division)

Fiscal year	Construction					
	Commercial/Industrial		Residential		Total	
	Number of permits	Value	Number of permits	Value	Number of permits	Value
2006	197	\$ 70,501,744	1,645	\$ 264,701,674	1,842	\$ 335,203,418
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	129,526,342	969	145,976,118

Table 18

COUNTY OF JAMES CITY, VIRGINIA
Miscellaneous Statistics

Williamsburg-James City County Public Schools**Staffing Analysis**

	<u>Classroom teachers</u>	<u>Pupils</u>	<u>Pupil-teacher ratio</u>
School year:			
2014-15	662.84	11,116	16.8
2013-14	648.67	10,998	17.0
2012-13	648.10	10,795	16.7
2011-12	658.59	10,671	16.2
2010-11	673.91	10,549	15.7
2009-10	668.98	10,503	15.7
2008-09	643.00	10,249	15.9
2007-08	625.00	10,137	16.2
2006-07	612.00	10,107	16.5
2005-06	596.68	9,820	16.5

Source: Williamsburg-James City County Public Schools

Projected Enrollment (1)

2015-16	11,316
2016-17	11,439
2017-18	11,461
2018-19	11,580

(1) Based on low enrollment projections provided by Future Think, November 2014.

COMPLIANCE SECTION

COUNTY OF JAMES CITY, VIRGINIA
 Schedule of Expenditures of Federal Awards – Primary Government and
 Discretely Presented Component Unit – Public Schools
 Year ended June 30, 2015

<u>Federal Grantor/State Pass-Through Grantor/Program Title</u>	<u>Federal catalog number</u>	<u>Expenditures</u>
Primary Government:		
Governmental Activities:		
Department of Agriculture:		
Virginia Department of Social Services:		
State Administrative Matching Grants - Supplemental Nutrition Assistance Program	10.561	\$ <u>472,463</u>
Total Department of Agriculture		<u>472,463</u>
Department of Health and Human Services:		
Virginia Department of Social Services:		
Promoting Safe and Stable Families	93.556	987
Temporary Assistance for Needy Families	93.558	341,335
Refugee and Entrant Assistance – State Administered Programs	93.566	495
Low-Income Home Energy Assistance	93.568	35,827
Chafee Education and Training Vouchers Program	93.599	1,772
Child Welfare Services	93.645	2,030
Foster Care – Title IV-E	93.658	197,355
Adoption Assistance	93.659	330,196
Social Services Block Grant	93.667	243,303
Chafee Foster Care Independent Living	93.674	2,028
State Children’s Insurance Program	93.767	14,932
Medical Assistance Program	93.778	528,339
Child Care Mandatory and Matching Funds of the Child Care and Development Fund	93.596	<u>49,030</u>
Total Department of Health and Human Services		<u>1,747,629</u>
Department of Interior:		
Direct Payment -		
Bureau of Cash Management Payment in lieu of taxes	15.000	6,834
Land and Water Conservation	15.916	<u>155,684</u>
Total Department of Interior		<u>162,518</u>

COUNTY OF JAMES CITY, VIRGINIA
 Schedule of Expenditures of Federal Awards – Primary Government and
 Discretely Presented Component Unit – Public Schools
 Year ended June 30, 2015

<u>Federal Grantor/State Pass-Through Grantor/Program Title</u>	<u>Federal catalog number</u>	<u>Expenditures</u>
Primary Government, continued:		
Department of Homeland Security:		
Virginia Department of Emergency Management:		
Hazard Mitigation Grant Program	97.039	63,275
Homeland Security Grant Program	97.067	36,757
Emergency Management Performance Grants	97.042	39,510
Port Security Grant Program	97.056	41,543
Total Department of Homeland Security		<u>181,085</u>
Department of Housing and Community Development:		
Virginia Department of Housing and Community Development:		
Section 8 Housing Choice Vouchers	14.871	1,087,249
Home Investment Partnership Program	14.239	47,749
Housing Counselor Grant	14.169	25,000
Total Department of Housing and Community Development		<u>1,159,998</u>
Department of Transportation:		
National Highway Traffic Safety Administration -		
Highway Safety Grant	20.600	44,815
Highway Planning and Construction Cluster:		
Virginia Department of Conservation and Recreation:		
Recreation Trails Program	20.219	18,610
Virginia Department of Transportation:		
Transportation Enhancement Programs Funds	20.205	256,961
Total Highway Planning and Construction Center Cluster		<u>275,571</u>
Total Department of Transportation		<u>320,386</u>
Department of Justice:		
Bureau of Justice Administration -		
BJA - Bulletproof Vests Partnership	16.607	5,700
Total Department of Justice		<u>5,700</u>
Department of Criminal Justice Services:		
Virginia Department of Criminal Justice Services:		
Violence Against Women Formula Grants	16.588	28,632
Crime Victim Assistance	16.575	79,565
Total Department of Criminal Justice Services		<u>108,197</u>
Total federal awards, primary government-governmental activities		<u>4,157,976</u>
Business-type activity - James City Service Authority:		
Environmental Protection Agency -		
Virginia Department of Environmental Quality		
Wellhead Protection Grant	66.468	1,800
Total federal awards, primary government		<u>4,159,776</u>

COUNTY OF JAMES CITY, VIRGINIA

Schedule of Expenditures of Federal Awards – Primary Government and
Discretely Presented Component Unit – Public Schools
Year ended June 30, 2015

<u>Federal Grantor/State Pass-Through Grantor/Program Title</u>	<u>Federal catalog number</u>	<u>Expenditures</u>
Component Unit – Public Schools:		
Department of Agriculture:		
Child Nutrition Cluster:		
Virginia Department of Agriculture and Consumer Services - Food Commodities	10.555	\$ 218,860
Virginia Department of Education:		
School Breakfast Program	10.553	407,904
National School Lunch Program	10.555	1,420,030
Total Child Nutrition Cluster		<u>2,046,794</u>
Total Department of Agriculture		<u>2,046,794</u>
Department of Education:		
Virginia Department of Education:		
Title I Grants to Local Educational Agencies	84.010	1,175,514
Title I, Part D, Neglected and Delinquent Children	84.013	15,291
Vocational Education – Basic Grants to States	84.048	130,349
Title II, Part A, Improving Teacher Quality State Grants	84.367	262,702
Impact Aid	84.041	176,917
Title III, Part A, English Language Acquisition Grants	84.365	19,610
Special Education Cluster:		
Virginia Department of Education:		
Special Education – Grants to States	84.027	1,849,470
Special Education – Preschool Grants	84.173	21,852
Total Special Education Cluster		<u>1,871,322</u>
College of William and Mary - Project HOPE	84.387	12,813
Total Department of Education		<u>3,664,518</u>
Department of Health and Human Services -		
Head Start Program Cluster:		
Williamsburg-James City County Community Action Agency - Head Start	93.600	107,719
Total Department of Health and Human Services		<u>107,719</u>
Department of Transportation -		
Safe Routes to Schools	20.205	30,911
Total federal awards, Component Unit – Public Schools		<u>5,849,942</u>
Total federal awards, reporting entity		<u>\$ 10,909,718</u>

See accompanying notes to schedule of expenditures of federal awards.

COUNTY OF JAMES CITY, VIRGINIA

Notes to Schedule of Expenditures of Federal Awards

Year ended June 30, 2015

(1) General

The accompanying schedule of expenditures of federal awards includes the federal grant activity of the County of James City, Virginia (the County) and its component unit, Williamsburg-James City County Public Schools, and is presented on the modified accrual basis of accounting, which is described in note 1 to the County's basic financial statements. The information in this schedule is presented in accordance with the requirements of OMB Circular A-133, *Audits of States, Local Governments, and Non-Profit Organizations*. Therefore, some amounts presented in this schedule may differ from amounts presented in, or used in the preparation of, the basic financial statements.

(2) Relationship to Basic Financial Statements

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

General Fund	\$	6,833
Special Revenue Funds		4,151,143
Component Unit - JCSA		1,800
Component Unit - Public Schools		<u>5,849,942</u>
	\$	<u><u>10,009,718</u></u>

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

To The Honorable Members of 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, 2015, 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 23, 2015.

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 23, 2015**

Independent Auditors' Report on Compliance for Each Major Program and on Internal Control over Compliance Required by OMB Circular A-133

To The Honorable Members of Board of Supervisors
County of James City, Virginia

Compliance

We have audited **County of James City, Virginia's** compliance with the types of compliance requirements described in the *U.S. Office of Management and Budget (OMB) Circular A-133 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, 2015. 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; and OMB Circular A-133, *Audits of States, Local Governments, and Non-Profit Organizations*. Those standards and OMB Circular A-133 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 the **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 on the **County of James City, Virginia's** compliance.

Opinion on Each Major Federal Program

In our opinion, the **County of James City, Virginia** complied, in all material respects, with the requirements referred to above that referred to above that could have a direct and material effect on each of its major federal programs for the year ended June 30, 2015.

Report on Internal Control over Compliance

Management of the ***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 the ***County of James City, Virginia's*** internal control over compliance with the types of requirements that could have a direct and material effect on a 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 OMB Circular A-133, 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 the ***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 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 OMB Circular A-133. Accordingly, this report is not suitable for any other purpose.

Dixon Hughes Goodman LLP

**Newport News, Virginia
November 23, 2015**

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

To The Honorable Members of 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, 2015, and have issued our report thereon November 23, 2015.

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 two instances of noncompliance with the provisions referred to in the preceding paragraph. These instances are discussed in the Schedule of Findings and Questioned Costs as Findings 15-1 and 15-2. 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 23, 2015

COUNTY OF JAMES CITY, VIRGINIA

Schedule of Findings and Questioned Costs

Year ended June 30, 2015

(1) Summary of Auditors' Results

- (a) The type of report issued on the financial statements: **unmodified opinion**
- (b) Significant deficiencies in internal control disclosed by the audit of the financial statements: **none noted**
Material weaknesses: **none noted**
- (c) Noncompliance which is material to the financial statements: **no**
- (d) Significant deficiencies in internal control over major programs: **no**
- (e) The type of report issued on compliance for major programs: **unmodified opinion**
- (f) Any audit findings which are required to be reported under Section 510(a) of OMB Circular A-133: **no**
- (g) Major programs:
Title I Grants to Local Educational Agencies (CFDA Number 84.010), Special Education Cluster (CFDA Numbers 84.027 and 84.173)
- (h) Dollar threshold used to determine Type A programs: **\$300,292**
- (i) Auditee qualified as low-risk auditee under Section 530 of OMB Circular A-133: **yes**

(2) Findings Relating to the Financial Statements Reported in Accordance with *Government Auditing Standards*: none noted

(3) Findings and Questioned Costs Relating to Federal Awards: none noted

(4) State Compliance Findings:

Finding 15-1

Condition: 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 a statement of economic interests and/or real estate holdings disclosure with the clerk of the governing body by January 15 of each year.

Criteria: One real estate holdings disclosure statement (from a member of the Planning Commission) was 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: The County agrees with the finding and new controls are in place.

COUNTY OF JAMES CITY, VIRGINIA

Schedule of Findings and Questioned Costs

Year ended June 30, 2015

Finding 15-2

Condition: In Section 15.2-1615 of the Code of Virginia requires the daily deposit of all collections into the sheriff's official bank account intact, if receipts total \$200 or more. If receipts total less than \$200 in a day, accumulate daily receipts until they total \$200 but always deposit no less frequently than weekly. Someone other than the employee preparing the receipts should make the deposit for the sheriff's offices with one employee other than the sheriff, that employee may perform these functions; however, it is imperative that the sheriff reviews their work.

Criteria: One receipt of cash not in excess of \$200 was not deposited weekly.

Effect: The County was not in compliance with the Code of Virginia.

Recommendation: The sheriff's office should take steps to ensure that receipts are deposited in the bank timely.

Management's response: The County agrees with the finding and new controls are in place.

(5) Summary Schedule of Prior Federal Audit Findings:

Federal: There were no prior year federal findings.

State: There were two findings in the prior year related to one financial disclosure statement not filed timely and the sheriff's office did not deposit a cash receipt in excess of \$200 timely.

**Report to the
Board of
Supervisors**

County of James City, Virginia

June 30, 2015

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Contacts

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Communications with Those Charged with Governance

November 23, 2015

To the Board of Supervisors
County of James City, Virginia

We have audited the financial statements of Board of Supervisors (the “County”) for the year ended June 30, 2015, and have issued our report thereon dated November 23, 2015. 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 19, 2015. 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 Notes 1s and 18 to the financial statements. As described in Notes 1s and 18 to the financial statements, the County adopted GASB Statement No. 68, *Accounting and Financial Reporting for Pensions (GASB 68)* and GASB Statement No. 71, *Pension Transition for Contributions Made Subsequent to the Measurement Date (GASB 71)*, in 2015. 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 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 liability 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 financial statement disclosures are neutral, consistent, and clear.

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. The schedule in Appendix B summarizes uncorrected misstatements of the financial statements. Management has determined that their effects are immaterial, both individually and in the aggregate, to the financial statements taken as a whole. In addition, none of the misstatements detected as a result of audit procedures and corrected by management were material, either individually or in the aggregate, to the financial statements taken as a whole. Also, the audit adjustment posted is included at Appendix C. It should be noted that this adjustment was brought to our attention by management and proposed by management as it was discovered subsequent to them providing us with the trial balance, not the result of an error uncovered by audit procedures.

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. The following other matters were noted during our audit work. While these matters had no impact on our audit opinions, nor do we consider them to be significant deficiencies or material weaknesses over financial reporting, we do feel that it's prudent to bring them to the attention of those charged with governance.



During our audit procedures, we noted that the County's General Fund bank reconciliation for June, 2015 was not completed timely by the Treasurer's Office. The reconciliation was completed around August 31, 2015. We recommend that bank reconciliations be completed within the month after they are received so that any issues or discrepancies can be identified and resolved timely.

During our audit procedures, we noted that delinquent tax notices were not sent timely by the Treasurer's Office. Although the Treasurer's Office is not required to send delinquent notices, and the second half billing may serve as the delinquency notice, this is not customary for the County. In the future, we recommend that the County resume sending delinquent tax notices as soon as possible to maximize collections.

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



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

November 23, 2015

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, 2015 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 19, 2015 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 are reasonable.
8. 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.
9. We believe that the effects of the uncorrected misstatements in the financial statements summarized in the attached schedule and aggregated by you during the current engagement are immaterial, both individually and in the aggregate, to the financial statements taken as a whole. We are in agreement with the adjusting journal entry you have proposed and it has been posted to the County's accounts. Further, there were no omitted disclosures noted by you during your audit.
10. Guarantees, whether written or oral, under which the County is contingently liable, if any, have been properly recorded or disclosed.
11. 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.

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 no knowledge of any fraud or suspected fraud affecting the County involving:
 - a. Management;
 - b. Employees who have significant roles in internal control; or
 - c. Others where the fraud could have a material effect on the financial statements.
15. 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.
16. There have been no communications from regulatory agencies concerning noncompliance with, or deficiencies in, financial reporting practices.
17. 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.

18. 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.
19. We have made available to you all financial records and related data.
20. 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.
21. The County has no plans or intentions that may materially affect the carrying value or classification of assets, liabilities, or equity.
22. 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.
23. 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.
24. The County complied with all aspects of contractual agreements that would have a material effect on the financial statements in the event of noncompliance.
25. 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.
26. We have followed all applicable laws and regulations in adopting, approving, and amending budgets.
27. Components of net position (net investment in capital assets; restricted; and unrestricted) and fund balance amounts are properly classified and, if applicable, approved.
28. Provision for uncollectible receivables have been properly identified and recorded.
29. 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.
30. Revenues are appropriately classified in the statement of activities with program revenues or general revenues.
31. Deposits and investment securities and derivative instruments are properly classified as to risk and are properly disclosed.
32. Capital assets, including infrastructure and intangible assets, are properly capitalized, reported, and, if applicable, depreciated.
33. The government meets the GASB-established requirements for accounting for eligible infrastructure assets using the modified approach.

34. 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.
35. We acknowledge our responsibility for 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.
36. 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.
37. With respect to federal award programs:
 - a. We are responsible for understanding and complying with and have complied with the requirements of OMB Circular A-133, (*Audits of States, Local Governments, and Non-Profit Organizations*), 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) in accordance with the requirements of OMB Circular A-133 §310.b, and we believe the SEFA, including its form and content, is fairly presented in accordance with OMB Circular A-133 §310.b. 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 prepared the schedule of expenditures of federal awards in accordance with OMB Circular A-133, and have identified and disclosed in the schedule expenditures made during the audit period for all awards provided by federal agencies in the form of grants, federal cost-reimbursement contracts, loans, loan guarantees, property (including donated surplus property), cooperative agreements, interest subsidies, insurance, food commodities, direct appropriations, and other assistance.
 - d. We are responsible for understanding and complying with, and have complied with, the requirements of laws, regulations, and the provisions of contracts and grant agreements related to each of our federal programs and have identified and disclosed to you the requirements of laws, regulations, and the provisions of contracts and grant agreements 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 requirements applicable to federal programs that provides reasonable assurance that we are managing our federal awards in compliance with laws, regulations, and the provisions of contracts and grant agreements 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 contracts and grant agreements (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 Circular A-133 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 grantors 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 Circular A-87, *Cost Principles for State, Local, and Tribal Governments*, and OMB's *Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments*.
- 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 auditor's 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 in internal control over compliance (including material weaknesses in internal control over compliance) have occurred subsequent to the date as of which compliance was audited.
- 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 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 OMB Circular A-133 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 accurately prepared the auditee section of the Data Collection Form as required by OMB Circular A-133.


38. We take responsibility for the current year implementation of Governmental Accounting Standards Board (GASB) Statement No. 68, Accounting and Financial Reporting for Pensions, and GASB Statement No. 71, Pension Transition for Contributions Made Subsequent to the Measurement Date, and we have reviewed and approved the adjustments to the financial statements that you have proposed.



Bryan Hill
County Administrator



Suzanne R. Mellen
Director of Financial and Management Services



Tara E. Woodruff
Director of Budget and Accounting

Appendix B

Schedule of Uncorrected Misstatements

SUMMARY OF UNCORRECTED MISSTATEMENTS

DHG version 09.12

Instructions: This form should be used to accumulate uncorrected misstatements (including those communicated by component auditors, if applicable). The auditor should review the guidance beginning at paragraph 1812.32 (RIA Checkpoint's Audits of Nonpublic Companies Editorial Materials) before concluding whether to reflect the effect of prior-year uncorrected misstatements in evaluating audit differences in the current period. At the end of the audit, the auditor should evaluate all uncorrected misstatements, individually and in the aggregate, in relation to individual amounts, subtotals, or totals in the financial statements and conclude on whether they materially misstate the financial statements taken as a whole. See Section 1812. The notes following the table provide a listing of qualitative considerations in evaluating materiality. Omitted disclosures, other than those that are clearly trivial, should also be accumulated and evaluated individually and in the aggregate to determine if they materially misstate the financial statements taken as a whole. Use tab 'Omitted Disclosures' to accumulate and evaluate those disclosures.

Effective Tax Rate N/A

Materiality 1,900,000

Enter as Debit (Credit) necessary to correct the financial statements.

DESCRIPTION	Cause	REF	TAXABLE Y/N	ASSETS	LIABILITIES	BEGINNING EQUITY	P&L	ENDING EQUITY	TAX EFFECT	
									B/S	P&L
Factual									-	-
AHIP Forgivable Loans	Discrepancies in forgivable loans.	5374	N	148,840	-		(148,840)	(148,840)	-	-
Deferred Revenue Overstated	Improper recordation of tax bill payments	6140a	N	(128,840)	128,840				-	-
									-	-
									-	-
									-	-
Judgmental									-	-
None noted									-	-
									-	-
									-	-
									-	-
Projected									-	-
None noted									-	-
									-	-
									-	-
									-	-
									-	-
									-	-
									-	-
									-	-
C/Y PRETAX UNCORRECTED MISSTATEMENTS				20,000	128,840	-	(148,840)	(148,840)	-	-
TAX EFFECT OF UNCORRECTED MISSTATEMENTS									-	-
C/Y NET EFFECT OF UNCORRECTED MISSTATEMENTS				20,000	128,840	-	(148,840)	(148,840)	-	-
EFFECT OF P/Y UNCORRECTED MISSTATEMENTS									-	-
TOTAL UNCORRECTED MISSTATEMENTS				20,000	128,840	-	(148,840)	(148,840)	-	-
FINANCIAL STATEMENT CAPTION TOTALS				622,728,539	(237,693,481)		(14,068,753)	(385,036,058)		
NET UNCORRECTED MISSTATEMENTS AS % OF F/S CAPTIONS				0%	0%		1%	0%		

Appendix C

Adjusting Journal Entries



11/25/2015
4:43 PM

Client: 2046939000 - County of James City, Virginia
 Engagement: 2015 Audit - James City County
 Period Ending: 6/30/2015
 Trial Balance: 1480 - Governmental Activities TBD
 Workpaper: 1450 - Adjusting Journal Entries Report

Account	Description	W/P Ref	Debit	Credit
Adjusting Journal Entries JE # 8		PBC		
To adjust FY15 general fund revenue from public service corporations due to a one time accrual.				
001-549-6099	UNEARNED REVENUE		903,345.00	
001-301-3130	PUBLIC SERVICE			903,345.00
Total			<u>903,345.00</u>	<u>903,345.00</u>



PREPARED BY THE DEPARTMENT OF FINANCIAL AND MANAGEMENT SERVICES
JAMES CITY COUNTY, VIRGINIA
jamescitycountyva.gov/jcsa



THE COMPREHENSIVE ANNUAL FINANCIAL REPORT
FOR THE FISCAL YEARS ENDED JUNE 30, 2015 AND 2014

JAMES CITY SERVICE AUTHORITY
(A Component Unit of the County of James City, Virginia)

Comprehensive Annual Financial Report

June 30, 2015 and 2014

(With Independent Auditors' Report Thereon)

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

INTRODUCTORY SECTION

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

Board of Directors

James G. Kennedy
Kevin D. Onizuk
Michael J. Hipple, Sr
Mary K. Jones
John J. McGlennon

Chair
Vice-Chair

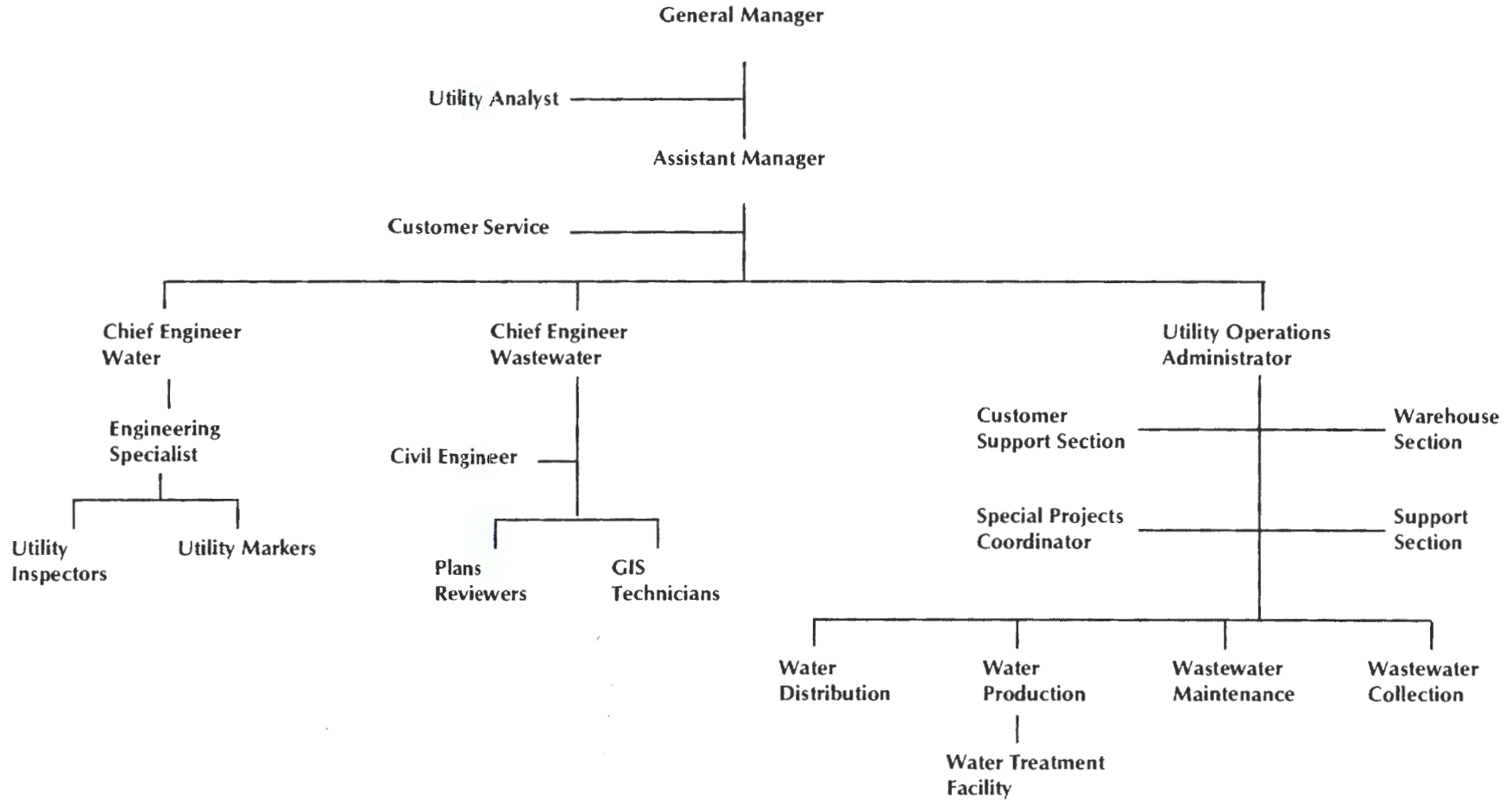
Officials

M. Douglas Powell
Stephanie A. Luton

General Manager
Assistant Manager/Treasurer

James City Service Authority Organization Chart

Effective 1/9/13





Operations Center
119 Tewning Road
Williamsburg, VA 23188-2639
P: 757-229-7421
F: 757-229-2463
jcsa@jamescitycountyva.gov

November 23, 2015

To 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, 2015 and 2014, 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 7 independent water production facilities that are located outside the PSA. There are approximately 402 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 21,246 water customers.

The JCSA's sewer system includes 76 pump stations with approximately 435 miles of sewer collection lines. The sewer system facilities collect and move approximately 5.1 million gallons of sewage per day for 22,955 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 (HRSD).

As of June 30, 2015, 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 fiords 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 to be effective for fiscal year 1997 for residential customers which incorporates a unit charge that increases with increasing consumption. The primary objective of establishing the inverted-block rate structure was to promote water conservation, particularly from large-volume residential customers. On July 1, 2008, the residential water consumption service charge was set at the first block of \$2.80 per 1,000 gallons for less than 15,000 gallons consumed per quarter, the second block was set at \$3.45 per 1,000 gallons for more than 15,000 gallons but less than 30,000 gallons consumed per quarter, and a third block was set at \$9.80 per 1,000 gallons for more than 30,000 gallons consumed per quarter. Commercial and industrial customers were set at a flat or uniform rate structure of \$3.45 per 1,000 gallons. On July 1, 2012, the sewer service charge for all categories of customers was set to \$3.22 per 1,000 gallons.

Economic Condition and Outlook

James City County is located near the cities of Hampton, Newport News and Williamsburg and the County of York. Major employers within commuting distance include Busch Gardens, Anheuser-Busch, Newport News Shipbuilding, Langley Air Force Base, Fort Eustis, Fort Monroe, Colonial Williamsburg Foundation, and the National Aeronautics and Space Administration. The County's population grew 39 percent from 2000 to 2010, while the state population increased only 13 percent during the past decade. James City County had modest growth over the past several years as the economic climate gradually improved. A historically fast-growing population and expanding commercial base enhances the long term economic outlook for the JCSA.

Major Initiatives

JCSA conducted a comprehensive water and sewer rate study in fiscal year 2015 and the Board of Directors adopted a new rate structure in April, 2015 to be effective July 1, 2015. The new rate structure includes 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 new rate structure also includes 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.

During fiscal year 2015, a major waterline replacement was completed in Williamsburg Landing, rehabilitation work was completed on the sewer interceptor improvement project in the Lift Station 1-5 basin (upper reaches of Powhatan Creek) along Chisel Run to Olde Towne Road near Route 60 and a sewer line reconstruction project was completed in a portion of the Tarleton Bivouac neighborhood. 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.

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, 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.

Under this Plan, scheduled for completion in the fall of 2016, 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, 2014. This was the thirtieth year that the JCSA has received this prestigious award.

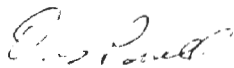
In order to be awarded a Certificate of Achievement, the JCSA must publish an easily readable and efficiently organized comprehensive annual financial report, whose contents conform to program standards. Such reports must satisfy both accounting principles generally accepted in the United States of America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

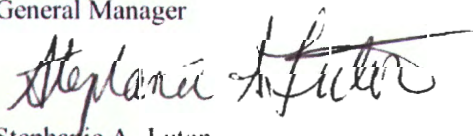
Acknowledgments

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, 2014

Executive Director/CEO

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FINANCIAL SECTION

Independent Auditors' Report

Board of Directors
James City Service Authority

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, 2015 and 2014, and the related notes to the financial statements, which collectively comprise the Authority's basic financial statements, as listed in the table of contents. These financial statements are the responsibility of **James City Service Authority's** management.

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, 2015 and 2014, 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.

Emphasis of Matter

Change in Accounting Principle

As discussed in Notes 1(m) and 13 to the financial statements, the financial statements as of the year ended June 30, 2014 were *restated* due to the implementation of GASB Statement No. 68, Accounting and Financial Reporting for Pensions - an Amendment of GASB Statement No. 27 and GASB Statement No. 71, Pension Transition for Contributions Made Subsequent to the Measurement Date-an Amendment of GASB 68, in 2015. Our opinion is not modified with respect to these changes.

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 45-47 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 statements 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.

The statements 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 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 statements 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 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 23, 2015, 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 23, 2015

JAMES CITY SERVICE AUTHORITY
(A Component Unit of the County of James City, Virginia)

Management's Discussion and Analysis

June 30, 2015 and 2014

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, 2015 and 2014. The information presented in this section should be read in conjunction with the letter of transmittal on pages v-viii at the front of this report and the Authority's basic financial statements, which begin on page 10.

Financial Highlights for Fiscal Years 2015 and 2014

- The Authority's total net position was \$172,792,859 and \$169,683,234 at June 30, 2015 and 2014, respectively.
- The Authority's total operating expenses before depreciation and amortization decreased by 10.1% in 2015 from 2014. This was primarily due to the absence of 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. Total operating expenses before depreciation and amortization increased by 1% in 2014 from 2013.
- The Authority's total operating revenues increased by 10.1% in 2015 from 2014. This was primarily due to increased water demand due to irrigation, an increase in proffer collections, and new office lease rental income. Total operating revenues in 2014 remained relatively flat and decreased by 0.7% from 2013.
- Capital assets decreased by 0.8% in 2015 from 2014. This was primarily due to depreciation expense during the current year. For fiscal year 2015, there was formal acceptance of 8 new water system dedications and 10 new sewer system dedications. Capital assets decreased by 1.6% in 2014 from 2013. For fiscal year 2014, there was formal acceptance of 8 new water system dedications and 8 new sewer system dedications.

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 similar to 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 assets and liabilities as of June 30, 2015 and 2014, 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 in fiscal year 2015 and 2014. 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.

JAMES CITY SERVICE AUTHORITY
(A Component Unit of the County of James City, Virginia)

Management's Discussion and Analysis

June 30, 2015 and 2014

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 can be found on pages 13 through 43.

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 can be found on pages 45-47.

Financial Analysis

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. 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 net position decreased by \$2,602,850 in 2014 from 2013, which was primarily due to the restatement of the Authority's beginning net position in 2014, as a result of the implementation of GASB 68 and 71. This was a result of a decline in water demand, a major waterline repair funded from reserves as authorized by the Board of Directors, and a decrease in the number and value of water and sewer system dedications.

Condensed Statements of Net Position Information at June 30

	2015	2014 (as restated)	2013
Current and other assets	\$ 40,111,499	35,614,226	35,484,446
Capital assets	161,288,064	162,582,955	165,151,206
Total assets	<u>201,399,563</u>	<u>198,197,181</u>	<u>200,635,652</u>
Deferred pension contributions	330,920	308,820	-
Total assets and deferred outflow of resources	<u>\$ 201,730,483</u>	<u>198,506,001</u>	<u>200,635,652</u>
Current liabilities	\$ 3,278,575	2,466,259	3,383,213
Noncurrent liabilities	24,855,247	26,356,508	24,966,355
Total liabilities	<u>28,133,822</u>	<u>28,822,767</u>	<u>28,349,568</u>
Deferred pension investment experience	<u>803,802</u>	-	-
Net position:			
Net investment in capital assets	137,173,064	137,922,955	139,966,206
Restricted for capital projects	2,716,277	2,601,160	2,620,384
Unrestricted	<u>32,903,518</u>	<u>29,159,119</u>	<u>29,699,494</u>
Total net position	<u>172,792,859</u>	<u>169,683,234</u>	<u>172,286,084</u>
Total liabilities, deferred inflow of resources, and net position	<u>\$ 201,730,483</u>	<u>198,506,001</u>	<u>200,635,652</u>

JAMES CITY SERVICE AUTHORITY
(A Component Unit of the County of James City, Virginia)

Management's Discussion and Analysis

June 30, 2015 and 2014

The largest portion of the Authority's net position at June 30, 2015 (79.4%), 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, 2015 (19.0%) 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.

Condensed Statements of Revenues, Expenses, and Changes in Net Position Information
Years ended June 30

	2015	2014	2013
	2015	(as restated)	2013
Water and sewer services	\$ 12,588,470	11,825,702	12,002,533
Reimbursement for storm costs	-	900	-
Other	990,357	504,252	420,265
Total operating revenues	<u>13,578,827</u>	<u>12,330,854</u>	<u>12,422,798</u>
Salaries	4,257,924	4,288,721	4,306,155
Fringe benefits	1,546,525	1,337,328	1,636,038
Operating supplies	836,288	882,253	822,882
Maintenance of buildings and equipment	2,067,464	3,501,598	3,364,910
Utilities	861,074	875,020	862,665
Contractual fees	915,365	836,634	910,491
Other	497,803	496,851	504,573
Depreciation and amortization	7,810,808	7,670,391	7,619,431
Total expenses	<u>18,793,521</u>	<u>19,888,796</u>	<u>20,027,145</u>
Facility charges	3,863,650	4,305,728	3,868,654
Investment income (loss)	248,207	267,061	(1,249,111)
Gain (loss) on disposal of capital assets	23,497	15,352	(44,507)
Interest, net	(1,095,684)	(1,114,130)	(1,141,052)
Total nonoperating revenues	<u>3,039,670</u>	<u>3,474,011</u>	<u>1,433,984</u>
Loss before capital contributions	(2,174,754)	(4,083,931)	(6,170,363)
Capital contributions	5,284,379	3,388,700	4,600,645
Change in net position	<u>3,109,625</u>	<u>(695,231)</u>	<u>(1,569,718)</u>
Net position, beginning of year	169,683,234	170,378,465	173,855,802
Net position, end of year	<u>\$ 172,792,859</u>	<u>169,683,234</u>	<u>172,286,084</u>

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Management's Discussion and Analysis

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The Authority's beginning net position for 2014 was restated due to the implementation of GASB 68 and 71. There was not enough information available to restate 2013; therefore, there is a difference from the 2013 ending net position and 2014 beginning net position.

In fiscal year 2015, water and sewer service revenue increased by 6.5% over 2014. This was primarily 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.

In fiscal year 2014, water and sewer service revenue decreased by 1.5% over 2013. This was primarily a result of a decline in water demand. The Authority received \$57,446 in proffers from developers to fund capital improvements, which was \$44,084 more than what was received during 2013. There was an increase in the facility charges collected during 2014. New water connections decreased to 359 in 2014 from 448 in 2013 and new sewer connections decreased to 261 in 2014 from 347 in 2013.

Capital Assets

At the end of fiscal year 2015, the Authority had invested \$161,288,064 (net of accumulated depreciation) in a broad range of capital assets, including land and land improvements, water and sewer systems, office fixtures and equipment, and automotive equipment. This amount represents a 0.8% net decrease from last year, which was primarily the result of depreciation expense during fiscal year 2015. During the current fiscal year, construction in progress decreased by 59.6%. This was primarily due to the capitalization of a substantial rehab project at Lift Station 1-5.

At the end of fiscal year 2014, the Authority had invested \$162,582,955 (net of accumulated depreciation) in a broad range of capital assets, including land and land improvements, water and sewer systems, office fixtures and equipment, and automotive equipment. This was a 1.6% decrease from 2013, which was primarily the result of depreciation expense during fiscal year 2014. Construction in progress increased by 242% in 2014 from 2013. This increase was primarily a result of a substantial rehab project at Lift Station 1-5, which was expected to be completed in August 2014.

Further information related to the Authority's capital assets can be found in Note 3 on pages 22-23. The table on the following page summarizes the Authority's assets at June 30, 2015, 2014, and 2013:

JAMES CITY SERVICE AUTHORITY
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Management's Discussion and Analysis

June 30, 2015 and 2014

	<u>2015</u>	<u>2014</u>	<u>2013</u>
Utility plant:			
Land	\$ 962,995	962,995	962,695
Water and sewer systems	244,019,716	237,026,604	233,407,744
Total utility plant	<u>244,982,711</u>	<u>237,989,599</u>	<u>234,370,439</u>
Nonutility plant:			
Land	1,739,491	1,750,391	1,750,391
Central shop	4,892,209	4,884,119	4,860,309
Office fixtures and equipment	1,809,839	1,696,932	1,669,073
Land improvements	13,183	13,183	13,183
Automotive equipment	2,482,789	2,349,927	2,411,512
Total nonutility plant	<u>10,937,511</u>	<u>10,694,552</u>	<u>10,704,468</u>
Intangible assets:			
Easements	4,570	4,570	4,570
Water rights	25,000,000	25,000,000	25,000,000
Total intangible assets	<u>25,004,570</u>	<u>25,004,570</u>	<u>25,004,570</u>
Construction in progress	705,860	1,748,620	510,598
Less accumulated depreciation and amortization	120,342,588	112,854,386	105,438,869
Net capital assets	<u>\$ 161,288,064</u>	<u>162,582,955</u>	<u>165,151,206</u>

Debt Administration

At the close of the current fiscal year, the Authority's total outstanding bonded debt was \$24,115,000 (before premiums). At the close of the fiscal year 2014, the Authority's total outstanding debt was \$24,660,000 (before premiums). In 2015 Standard & Poor's affirmed its rating of AA+ for the Authority's outstanding bonded debt. Moody's Investors Service affirmed its rating of Aa2 for the Authority's outstanding bonded debt in fiscal year 2012.

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. The Authority also experienced an upgrade to their bond rating to AA+ by Standard & Poor's and Aa3 by Moody's Investors Service. Standard & Poor's issues ratings ranging from AAA to D to designate the relative investment qualities of bonds. Moody's issues ratings ranging from Aaa to C to designate the relative investment qualities of bonds.

In January 2013, the Authority paid off revenue bonds that were issued in 2003 in the amount of \$14,650,000 and had an outstanding balance of \$7,005,000. The bonds were issued to finance a groundwater treatment facility, wells, and water transmission lines and to provide for the costs of issuing the bonds and funding any necessary reserves. The revenue bonds had been rated Aaa from Moody's and AAA from Standard & Poor's rating services, based on the municipal bond insurance policy by the Insurer. For further information on the Authority's outstanding debt, see Note 5 on pages 24-25.

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Economic Factors and Next Year Budgets and Rates

During the current fiscal year, the unrestricted net position increased by \$3,744,399 to approximately \$32.9 million from 2014. The Authority did not appropriate any of this for spending as part of the fiscal year 2016 budget.

The JCSA's budget consists of five separate funds: Administration, Water, Sewer, Capital Improvements Program and Debt Service. The fiscal year 2016 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 2016 budget contains the initiation of a fixed charge for both water and sewer service and a water rate increase for fiscal year 2016 as part of a multi-year plan to ensure the long term financial stability of the Authority.

The philosophy of the fixed charge is 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 water fixed charge is \$7.22 and the quarterly sewer fixed charge is \$5.66.

The fiscal year 2016 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 decreases from \$2.85 per 1,000 gallons to \$2.47 to offset some of the additional customer cost from the fixed charge. The second tier (15,001-30,000 gallons per quarter) rate increases from \$3.45 per 1,000 gallons to \$4.93, and the third tier rate (30,000+ gallons per quarter) increases from \$9.80 to \$11.59. The water service rate for non-residential and multi-family residential customers increases from \$3.45 per 1,000 gallons to \$3.65. The decrease in the sewer service rate from \$3.22 to \$2.93 offsets some of the additional customer cost from the fixed charge.

The rate changes will increase a typical 5,000 gallons per month residential customer's bill by \$0.95 per month from \$30.35 to \$31.30.

The Administration Fund budget decreases by 0.5% in fiscal year 2016 from the 2015 budget. In the Water Fund, service revenue is projected to increase by 2.8% in fiscal year 2016 from the 2015 budget as a result of the rate changes. Direct expenses are budgeted to increase by 4.4%, primarily due to meter replacement. In the Sewer Fund, service revenue is projected to decrease by 5.6% in fiscal year 2016 from the 2015 budget due to updated customer demand and growth forecasts from the rate study analysis. Direct expenses are budgeted to increase by 9.6%, primarily due to sewer Consent Order maintenance activities. The Capital Improvements Program budget decreases by 11.1% in fiscal year 2016 from the 2015 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

JAMES CITY SERVICE AUTHORITY
(A Component Unit of the County of James City, Virginia)
Statements of Net Position
June 30, 2015 and 2014

Assets	2015	2014 (as restated)
Current assets:		
Cash and cash equivalents (note 2)	\$ 837,750	586,970
Investments (note 2)	33,007,483	28,955,675
Accounts receivable, customers	2,574,394	2,421,307
Accounts receivable, other	38,520	86,623
Note receivable (note 12)	31,531	60,994
Interest receivable	88,112	81,297
Inventories	817,432	820,200
Total current assets	<u>37,395,222</u>	<u>33,013,066</u>
Noncurrent assets:		
Capital assets (note 3):		
Utility plant:		
Land	962,995	962,995
Water and sewer systems	244,019,716	237,026,604
Total utility plant	<u>244,982,711</u>	<u>237,989,599</u>
Nonutility property:		
Land	1,739,491	1,750,391
Central shop	4,892,209	4,884,119
Office fixtures and equipment	1,809,839	1,696,932
Land improvements	13,183	13,183
Automotive equipment	2,482,789	2,349,927
Total nonutility property	<u>10,937,511</u>	<u>10,694,552</u>
Intangible assets:		
Easements	4,570	4,570
Water rights	25,000,000	25,000,000
Total intangible assets	<u>25,004,570</u>	<u>25,004,570</u>
Construction in progress (note 11)	705,860	1,748,620
Less accumulated depreciation and amortization	<u>120,342,588</u>	<u>112,854,386</u>
Net capital assets	<u>161,288,064</u>	<u>162,582,955</u>
Investments restricted for future use (note 2)	2,716,277	2,601,160
Total noncurrent assets	<u>164,004,341</u>	<u>165,184,115</u>
Total assets	<u>201,399,563</u>	<u>198,197,181</u>
Deferred Outflow of Resources		
Deferred pension contributions	330,920	308,820
Total assets and deferred outflow of resources	<u>\$ 201,730,483</u>	<u>198,506,001</u>
Liabilities		
Current liabilities:		
Accounts payable, trade	\$ 385,052	468,429
Accrued salaries	21,605	27,647
Compensated absences, current portion (notes 5 and 6)	268,010	280,435
Due to James City County (note 10)	1,346,004	455,495
Deposits	196,804	184,406
Interest payable	496,100	504,847
Current portion of bonds payable, including unamortized premium (note 5)	565,000	545,000
Total current liabilities	<u>3,278,375</u>	<u>2,466,259</u>
Noncurrent liabilities:		
Advances for construction (note 4)	32,902	32,902
OPEB liability (note 8)	243,509	207,509
Compensated absences, net of current portion (notes 5 and 6)	89,343	93,478
Bonds payable, including unamortized premium, net of current portion (note 5)	23,550,000	24,115,000
Net pension liability	939,493	1,907,619
Total noncurrent liabilities	<u>24,855,247</u>	<u>26,356,508</u>
Total liabilities	<u>28,133,622</u>	<u>28,822,767</u>
Deferred Inflow of Resources		
Deferred pension investment experience	803,802	—
Net position		
Net position:		
Net investment in capital assets	137,173,064	137,922,955
Restricted for capital projects	2,716,277	2,601,160
Unrestricted	32,903,518	29,159,119
Total net position	<u>172,792,859</u>	<u>169,683,234</u>
Total liabilities, deferred inflow of resources, and net position	<u>\$ 201,730,483</u>	<u>198,506,001</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, 2015 and 2014

	2015	2014 (as restated)
Operating revenues:		
Water and sewer services	\$ 12,588,470	11,825,702
Water supply proffers	450,262	57,446
Rental income (note 10)	325,991	160,914
Reimbursement for storm costs	—	900
Other	214,104	285,892
Total operating revenues	13,578,827	12,330,854
Operating expenses:		
Salaries (note 6)	4,257,924	4,288,721
Fringe benefits (note 6)	1,546,525	1,337,328
Operating supplies	836,288	882,253
Maintenance of buildings and equipment	2,067,464	3,501,598
Utilities	861,074	875,020
Contractual fees (note 10)	915,365	836,634
Other	497,803	496,851
Total operating expenses	10,982,443	12,218,405
Operating income before depreciation and amortization	2,596,384	112,449
Depreciation and amortization	7,810,808	7,670,391
Operating loss	(5,214,424)	(7,557,942)
Nonoperating revenues (expenses):		
Facility charges	3,863,650	4,305,728
Investment income	248,207	267,061
Gain on disposal of capital assets	23,497	15,352
Interest, net	(1,095,684)	(1,114,130)
Net nonoperating revenues	3,039,670	3,474,011
Loss before capital contributions	(2,174,754)	(4,083,931)
Capital asset contributions	5,284,379	3,388,700
Changes in net position	3,109,625	(695,231)
Net position at beginning of year	169,683,234	170,378,465
Net position at end of year	\$ 172,792,859	169,683,234

See accompanying notes to basic financial statements.

JAMES CITY SERVICE AUTHORITY
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Statements of Cash Flows
Years ended June 30, 2015 and 2014

	<u>2015</u>	<u>2014</u> (as restated)
Cash flows from operating activities:		
Cash received from customers	\$ 12,447,781	11,958,854
Other cash receipts	1,067,923	533,060
Cash payments to suppliers for goods and services	(4,368,094)	(7,549,761)
Cash payments for personnel services	(5,977,476)	(5,918,344)
Facility charges	3,863,650	4,305,728
Net cash provided by operating activities	<u>7,033,784</u>	<u>3,329,537</u>
Cash flows from capital and related financing activities:		
Payments of debt	(545,000)	(525,000)
Interest paid	(1,104,431)	(1,122,556)
Acquisition and construction of capital assets	(1,241,159)	(1,724,640)
Proceeds from sale of capital assets	33,118	26,552
Net cash used in capital and related financing activities	<u>(2,857,472)</u>	<u>(3,345,644)</u>
Cash flows from investing activities:		
Purchases of investments	(28,269,994)	(28,479,458)
Proceeds from sale of investments	24,103,069	28,139,431
Interest received	241,393	276,981
Net cash used by investing activities	<u>(3,925,532)</u>	<u>(63,046)</u>
Increase (decrease) in cash and cash equivalents	250,780	(79,153)
Cash and cash equivalents at beginning of year	586,970	666,123
Cash and cash equivalents at end of year	<u>\$ 837,750</u>	<u>586,970</u>
Reconciliation of operating loss to net cash provided by operating activities:		
Operating loss	\$ (5,214,424)	(7,557,942)
Adjustments to reconcile operating loss to cash provided by operating activities:		
Depreciation and amortization	7,810,808	7,670,391
Facility charges	3,863,650	4,305,728
Change in operating assets and liabilities:		
Accounts receivable, customers	(153,087)	109,510
Accounts receivable, other	48,103	2,317
Notes receivable	29,463	25,591
Inventories	2,768	(16,244)
Accounts payable, trade	(83,377)	(318,048)
Accrued salaries	21,605	27,647
Change in compensated absences	(44,208)	(47,122)
Due to James City County	890,509	(623,113)
Deposits	12,398	23,642
OPEB liability	36,000	36,000
Decrease in net pension liability and related deferred inflow/outflow of resources	(186,424)	(308,820)
Total adjustments	<u>12,248,208</u>	<u>10,887,479</u>
Net cash provided by operating activities	<u>\$ 7,033,784</u>	<u>3,329,537</u>
Supplemental schedules:		
Noncash capital activities:		
Capital asset contributions	\$ 5,284,379	3,388,700
Noncash investing activity:		
Unrealized loss from change in fair value of investments	\$ (166,009)	(169,609)

See accompanying notes to basic financial statements.

JAMES CITY SERVICE AUTHORITY
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Notes to Financial Statements

June 30, 2015 and 2014

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.

(a) 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, which reports its financial statements similar to an enterprise fund, has elected to apply all applicable GASB pronouncements, as well as Financial Accounting Standards Board (FASB) pronouncements and Accounting Principles Board (APB) opinions, issued on or before November 30, 1989, unless those pronouncements conflict with or contradict GASB pronouncements. 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.

The Authority's financial statements are presented in accordance with Governmental Accounting Standards Board (GASB) Statement No. 34, *Basic Financial Statements – and Management's Discussion and Analysis – For State and Local Governments*. Since the Authority is only engaged in business-type

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Notes to Financial Statements

June 30, 2015 and 2014

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.

(b) 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.

(c) Investments

All investments of the Authority are stated at fair value as of June 30, 2015 and 2014, in accordance with the provisions of GASB Statement No. 31, *Accounting and Financial Reporting for Certain Investments and for External Investment Pools*.

(d) 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.

(e) 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 fair value at the date of donation of five thousand dollars (\$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. More information on this agreement can be found in note 11.

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.

JAMES CITY SERVICE AUTHORITY
(A Component Unit of the County of James City, Virginia)

Notes to Financial Statements

June 30, 2015 and 2014

(f) *Unbilled Revenue*

The Authority records the amount of accrued but unbilled revenue by prorating actual subsequent billings. Amounts accrued but unbilled were approximately \$1,196,000 and \$1,072,000 at June 30, 2015 and 2014, respectively.

(g) *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.

(h) *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 year ended June 30, 2015, there were \$26,200 in supplemental appropriations for various grants. At June 30, 2014, there were \$534,033 in supplemental appropriations for and capital projects, including an emergent waterline replacement, and various grants.

(i) *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, 2015 are on the following page:

JAMES CITY SERVICE AUTHORITY
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Notes to Financial Statements

June 30, 2015 and 2014

		<u>Deductibles</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

		<u>Liability coverage limits</u>
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.

(j) 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.

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(k) *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.

(l) *Estimates*

The preparation of financial statements requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses, and disclosure of contingent assets and liabilities for the reported periods. Actual results could differ from those estimates and assumptions.

(m) *New Accounting Principles*

The Authority has adopted GASB Statement 68, *Accounting and Financial Reporting for Pensions – an Amendment of GASB Statement 27 (GASB 68)* and GASB Statement 71, *Pension Transition for Contributions Made Subsequent to the Measurement Date—an Amendment to GASB 68 (GASB 71)*. GASB 68 replaces the requirements of Statement 27, *Accounting for Pensions by State and Local Governmental Employers*, as well as the requirements of Statement 50, *Pension Disclosures*, as they relate to pensions that are provided through pension plans administered as trusts or equivalent arrangements that meet certain criteria. GASB 68 provides accounting and financial reporting guidance for measuring and recognizing liabilities, deferred outflows of resources, and deferred inflows of resources, and expense/expenditures related to pensions and related disclosures. GASB 71 provides accounting and financial reporting guidance for contributions, if any, made by the employer to a defined benefit pension plan after the measurement date of the government's beginning net position. The accounting changes required by GASB 68 and 71 are applied retroactively by reclassifying the statement of net position, and results of operations.

(n) *Subsequent Events*

In preparing these financial statements, the Authority has evaluated events and transactions for potential recognition or disclosure through November 23, 2015, the date the financial statements were available to be issued.

2) Cash and Cash Equivalents and Investments

(a) *Deposits*

At June 30, 2015 and 2014, the carrying values of the Authority's deposits with banks and savings institutions were \$837,750 and \$586,970, respectively, and the bank balances were \$887,204 and \$1,027,721, respectively. The differences between the carrying values of bank deposits and the bank balances are primarily due to outstanding checks and deposits in transit. The bank balances are fully covered by the Federal Depository Insurance Corporation (FDIC) or collateralized in accordance with the Virginia Security for Public Deposits Act (the Act), which is considered to be insured. Under the Act,

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banks holding public deposits in excess of the amounts insured by FDIC must pledge collateral in the amount of 50% of the excess deposits to a collateral pool in the name of the State Treasury Board. Savings and loan institutions are required to collateralize 100% of deposits in excess of FDIC limits.

If any member financial institution fails, the entire collateral pool becomes available to satisfy claims of the Authority. If the value of the pool's collateral is inadequate to cover a loss, additional amounts would be assessed on a pro rata basis to the members (banks) of the pool. Therefore, these deposits are considered collateralized and as a result, are considered insured.

The State Treasury Board is responsible for monitoring compliance with the collateralization and reporting requirements of the Act and for notifying local governments of compliance by banks and savings and loans.

(b) Investments

	Fair value	Investment maturity (in years)		
		Less than 1	1-2	2-7
2015:				
Money market funds	\$ 2,593,852	2,593,852	-	-
Certificate of deposit	2,572,914	-	-	2,572,914
Corporate notes	5,965,056	-	-	5,965,056
Federal agency bonds/notes	5,149,629	-	684,789	4,464,840
Municipal bonds	906,302	-	-	906,302
U.S. Treasury notes	18,536,007	-	1,050,737	17,485,270
Total	\$ 35,723,760	2,593,852	1,735,526	31,394,382

	Fair value	Investment maturity (in years)		
		Less than 1	1-2	2-7
2014:				
Money market funds	\$ 2,481,272	2,481,272	-	-
Certificate of deposit	3,944,641	1,276,657	1,973,323	694,661
Corporate notes	4,292,472	-	-	4,292,472
Federal agency bonds/notes	2,901,557	-	-	2,901,557
Municipal bonds	300,048	-	-	300,048
U.S. Treasury notes	17,636,845	-	4,547,150	13,089,695
Total	\$ 31,556,835	3,757,929	6,520,473	21,278,433

(c) Investment Policy

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

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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 JCSA Board of Directors adopted an updated Investment Policy on March 26, 2013.

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 presented on the following page.

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 notes	20% maximum
Municipal obligations	20% maximum
Corporate notes	20% maximum
Bank deposits	35% maximum

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.

(d) 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, 2015 and 2014, the Authority's investments were rated by Standard & Poor's and the ratings are listed on the following page using the Standard & Poor's rating scale:

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	Investment ratings					
	AAA	AA+	AA	AA-	A-1+	A-1
2015:						
Certificate of deposit	\$ -	-	-	1,750,062	700,428	-
Corporate notes	939,514	1,396,960	1,889,104	1,739,476	-	-
Federal agency bonds/notes	-	5,149,629	-	-	-	-
Municipal bonds	-	906,302	-	-	-	-
U.S. Treasury notes	-	18,536,008	-	-	-	-
Total	<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>

	Investment ratings					
	AAA	AA+	AA	AA-	A-1+	A-1
2014:						
Certificate of deposit	\$ -	-	-	574,773	1,973,323	1,276,657
Corporate notes	735,770	851,689	1,390,229	1,314,784	-	-
Federal agency bonds/notes	-	2,901,557	-	-	-	-
Municipal bonds	-	300,048	-	-	-	-
U.S. Treasury notes	-	17,636,845	-	-	-	-
Total	<u>\$ 735,770</u>	<u>21,690,139</u>	<u>1,390,229</u>	<u>1,889,557</u>	<u>1,973,323</u>	<u>1,276,657</u>

Money market funds of \$2,593,852 and \$2,481,272, respectively, for 2015 and 2014, and a portion of certificate of deposit totaling \$122,425 and \$119,888 for 2015 and 2014, respectively, are unrated; therefore, they are not included in the information presented above.

(e) 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

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At June 30, 2015 and 2014, the portions of the Authority's portfolio that exceeded 5% of the total portfolio are presented below:

Issuer	% of portfolio
2015:	
U.S. Treasury	56.0%
Federal Home Loan Mortgage Corporation	10.0
Federal Home Loan Banks	5.6
Issuer	% of portfolio
2014:	
U.S. Treasury	60.8%

(f) 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.

(g) 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, 2015 and 2014, all of the Authority's investments were held in a bank's trust department in the name of James City Service Authority.

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3) Capital Assets

The following is a summary of changes in capital assets for the fiscal years ended June 30, 2015 and 2014:

	<u>Balance July 1, 2014</u>	<u>Increases</u>	<u>Decreases</u>	<u>Balance June 30, 2015</u>
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
Intangible assets-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>
Other capital assets:				
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 assets – water rights	25,000,000	-	-	25,000,000
Total other capital assets	<u>270,957,582</u>	<u>7,579,198</u>	<u>332,227</u>	<u>278,204,553</u>
Less accumulated depreciation and amortization for:				
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
Intangible assets – water rights	3,220,859	613,497	-	3,834,356
Total accumulated depreciation and amortization	<u>112,854,386</u>	<u>7,810,808</u>	<u>322,606</u>	<u>120,342,588</u>
Other capital assets, net	<u>158,103,196</u>	<u>(231,609)</u>	<u>9,620</u>	<u>157,861,967</u>
	<u>\$ 162,582,955</u>	<u>1,543,102</u>	<u>2,837,993</u>	<u>161,288,064</u>

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	Balance July 1, 2013	Increases	Decreases	Balance June 30, 2014
Capital assets not being depreciated:				
Utility plant:				
Land	\$ 962,695	300	-	962,995
Nonutility plant:				
Land	1,750,391	-	-	1,750,391
Land improvements	13,183	-	-	13,183
Construction in progress	510,598	3,769,171	2,531,149	1,748,620
Intangible assets-easements	4,570	-	-	4,570
Total capital assets not being depreciated	3,241,437	3,769,471	2,531,149	4,479,759
Other capital assets:				
Utility plant:				
Water and sewer systems	233,407,744	3,618,860	-	237,026,604
Nonutility plant:				
Central shop	4,860,309	23,810	-	4,884,119
Office fixtures and equipment	1,669,073	84,562	56,703	1,696,932
Automotive equipment	2,411,512	147,787	209,372	2,349,927
Intangible assets – water rights	25,000,000	-	-	25,000,000
Total other capital assets	267,348,638	3,875,019	266,705	270,957,582
Less accumulated depreciation and amortization for:				
Water and sewer systems	98,790,781	6,604,410	-	105,395,191
Central shop	1,235,028	142,582	-	1,377,610
Office fixtures and equipment	944,232	112,475	56,371	1,000,336
Automotive equipment	1,861,466	197,427	198,503	1,860,390
Intangible assets – water rights	2,607,362	613,497	-	3,220,859
Total accumulated depreciation and amortization	105,438,869	7,670,391	254,874	112,854,386
Other capital assets, net	161,909,769	(3,795,372)	11,201	158,103,196
	\$ 165,151,206	(25,901)	2,542,350	162,582,955

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4) 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, 2015 and 2014, advances for construction consisted of:

Funds advanced	\$	27,020
Facilities constructed		<u>5,882</u>
	\$	<u>32,902</u>

5) Long-Term Debt

A summary of the Authority's long-term debt activity for the fiscal years ended June 30, 2015 and 2014 is presented as follows:

		<u>Amounts payable at July 1, 2014</u>	<u>Increases</u>	<u>Decreases</u>	<u>Amounts payable at June 30, 2015</u>	<u>Amounts due within one year</u>
Revenue bonds	\$	24,660,000	-	545,000	24,115,000	565,000
Compensated absences		<u>373,913</u>	<u>445,120</u>	<u>461,680</u>	<u>357,353</u>	<u>268,010</u>
Total	\$	<u>25,033,913</u>	<u>445,120</u>	<u>1,006,680</u>	<u>24,472,353</u>	<u>833,010</u>

		<u>Amounts payable at July 1, 2013</u>	<u>Increases</u>	<u>Decreases</u>	<u>Amounts payable at June 30, 2014</u>	<u>Amounts due within one year</u>
Revenue bonds	\$	25,185,000	-	525,000	24,660,000	545,000
Compensated absences		<u>407,777</u>	<u>450,179</u>	<u>484,043</u>	<u>373,913</u>	<u>280,435</u>
Total	\$	<u>25,592,777</u>	<u>450,179</u>	<u>1,009,043</u>	<u>25,033,913</u>	<u>825,435</u>

General long-term obligations at June 30, 2015 are comprised of the following:

\$27,120,000 Revenue Bonds, Series 2008, issued August 2008, maturing in various annual installments through 2040, with interest payable semiannually at 3.50%	\$ <u>24,115,000</u>
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Future maturities of the Authority's debt obligation with scheduled interest payments are as follows:

Fiscal year ending June 30:	<u>Principal</u>	<u>Interest</u>
2016	\$ 565,000	1,081,856
2017	585,000	1,062,081
2018	605,000	1,041,606
2019	630,000	1,017,406
2020	655,000	992,206
2021-2025	3,690,000	4,536,144
2026-2030	3,565,000	3,669,444
2031-2035	3,110,000	2,843,088
2036-2040	10,710,000	2,128,800
	<u>\$ 24,115,000</u>	<u>18,372,631</u>

6) Salaries and Fringe Benefits

Salaries and fringe benefits, such as vacation, sick leave, paid time off, hospitalization insurance, and pension plan costs are paid by the County. The costs attributable to Authority personnel are reimbursed to the County by the Authority. Any costs associated with earned but unused vacation and sick leave are reported in the financial statements.

At June 30, 2015 and 2014, employees' earned but unused vacation was \$273,563 and \$293,654, respectively, unused sick leave was \$77,827 and \$79,943, respectively, unused paid time off was \$5,963 and \$316, respectively, and are included in compensated absences in the accompanying balance sheets. Upon termination, employees are entitled to receive cash payments for sick leave at 25% of accumulated values up to a maximum of \$5,000. Employees are entitled to sick leave reimbursement only after having been employed by the Authority for a minimum of two years.

7) Pension Plan

(a) Pensions

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 Virginia Retirement System (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.

(b) Plan Description

All full-time, salaried regular employees of the Authority are automatically covered by Virginia Retirement System (VRS) upon employment. This plan is administered by the Virginia Retirement System (the System) along with plans for other employer groups in the Commonwealth of Virginia.

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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, active military service, certain periods of leave and previously refunded VRS service as service credit in their plan.

VRS administers three different benefit plans for local government 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.

VRS PLAN 1:

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.

Eligible Members

Employees are in VRS 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 VRS Plan 1 were not eligible to elect the Hybrid Retirement Plan and remain as VRS 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 school divisions and political subdivisions elected to phase in the required 5% member contribution; 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.

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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 1.7%.

Normal Retirement Age

Age 65.

Earliest Unreduced Retirement Eligibility

Members who are not in hazardous duty positions are eligible for an unreduced retirement benefit at age 65 with at least five years (60 months) of creditable service or at age 55 with at least 30 years of creditable service.

Earliest Reduced Retirement Eligibility

Members may retire with a reduced benefit as early as age 55 with at least five years (60 months) of creditable service or age 50 with at least 10 years of creditable service.

Cost-of-Living Adjustment (COLA) in Retirement

The Cost-of-Living Adjustment (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.

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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.

VRS PLAN 2:

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 VRS Plan 2 if their membership date is on or after July 1, 2010 and before January 1, 2014, or their membership date is before July 1, 2010, and they were not vested as of January 1, 2013.

Eligible Members

Employees are in 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.

Hybrid Opt-In Election

VRS 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 VRS 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

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Retirement Plan. Members who were eligible for an optional retirement plan (ORP) and have prior service under VRS Plan 2 were not eligible to elect the Hybrid Retirement Plan and remain as VRS Plan 2 or ORP.

Retirement Contributions

Same as VRS Plan 1.

Creditable Service

Same as VRS Plan 1.

Vesting

Same as VRS Plan 1.

Calculating the Benefit

See definition under VRS 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.

Earliest Unreduced Retirement Eligibility

Members who are not in hazardous duty positions are eligible for an unreduced retirement benefit when they reach 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

Members may retire with a reduced benefit as early as age 60 with at least five years (60 months) of creditable service.

Cost-of-Living Adjustment (COLA) in Retirement

The Cost-of-Living Adjustment (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 VRS Plan 1.

Exceptions to COLA Effective Dates:

Same as VRS Plan 1.

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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 VRS Plan 1.

HYBRID RETIREMENT PLAN

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.

Eligible Members

Employees are in the Hybrid Retirement Plan if their membership date is on or after January 1, 2014. This includes members in VRS Plan 1 or VRS 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 members of the State Police Officers’ Retirement System (SPORS), the Virginia Law Officers’ Retirement System (VaLORS), or 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 VRS Plan 1 or VRS Plan 2, they are not eligible to elect the Hybrid Retirement Plan and must select VRS Plan 1 or VRS 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.

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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.

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. VRS Plan 1 or VRS 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 VRS Plan.

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

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Service Retirement Multiplier

The retirement multiplier is 1.0%. For members that opted into the Hybrid Retirement Plan from VRS Plan 1 or VRS 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 VRS Plan 2.

Defined Contribution Component:

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

Earliest Unreduced Retirement Eligibility

Defined Benefit Component:

Members are eligible for an unreduced retirement benefit when they reach 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 VRS Plan 2.

Defined Contribution Component:

Not applicable.

Eligibility:

Same as VRS Plan 1 and VRS Plan 2.

Exceptions to COLA Effective Dates:

Same as VRS Plan 1 and VRS Plan 2.

Disability Coverage

Eligible political subdivision and school division (including VRS Plan 1 and VRS Plan 2 opt-ins) participate in the Virginia Local Disability Program (VLDP) unless their local governing body provides

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an employer-paid comparable program for its members. Hybrid members (including VRS Plan 1 and VRS 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 VRS Plan 1.

Defined Contribution Component:

Not applicable.

(c) *Employees Covered by Benefit Terms*

As of the June 30, 2013, 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	34
Inactive members:	
Vested	11
Non-vested	15
Active elsewhere in VRS	31
Total inactive members	57
Active members	83
Total	174

(d) *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.

The Authority's contractually required contribution rate for the year ended June 30, 2015 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

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finance the costs of benefits earned by employee during the year, with an additional amount to finance any unfunded accrued liability. Contribution to the pension plan from the Authority were \$525,809 and \$506,097 for the years ended June 30, 2015 and June 30, 2014, respectively.

(e) Net Pension Liability

The Authority's net pension liability was measured as of June 30, 2014. The total pension liability used to calculate the net pension liability was determined by an actuarial valuation performed as of June 30, 2013, using updated actuarial assumptions, applied to all periods included in the measurement and rolled forward to the measurement date of June 30, 2014.

(f) 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, 2013, 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, 2014.

Inflation	2.5%
Salary increases, including inflation	3.5% - 5.35%
Investment rate of return	7.0%, net of pension plan investment expenses, 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

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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.

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, 2013 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

(g) 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 on the following page:

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<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%.

(h) 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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(i) Changes in Net Pension Liability

	Total pension liability	Plan fiduciary net position	Net pension liability
Balances at June 30, 2013	\$ 13,242,723	11,335,104	1,907,619
Changes for the year:			
Service cost	417,066	-	417,066
Interest	913,818	-	913,818
Contributions – employer	-	308,820	(308,820)
Contributions – employee	-	197,188	(197,188)
Net investment income		1,802,418	(1,802,418)
Benefit payments, including refunds of employee contributions	(376,365)	(376,365)	-
Administrative expense	-	(9,511)	9,511
Other changes	-	95	(95)
Net changes	954,519	1,922,645	(968,126)
Balances at June 30, 2014	\$ 14,197,242	13,257,749	939,493

(j) Sensitivity of the Net Pension Liability to Changes in the Discount Rate

The following represents the net pension liability calculated using the stated discount rate, as well as what the net position liability would be if it were calculated using a stated 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%
Plan's net pension liability	\$2,967,853	\$939,493	\$(740,025)

(k) Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

For the year ending June 30, 2015, the Authority recognized pension expense of \$144,496. At June 30, 2015 and 2014, the Authority reported deferred outflow of resources and deferred inflow of resources related to pensions from the sources on the following page:

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	Deferred Outflow of Resources	Deferred Inflow of Resources
2015		
Employer contributions made subsequent to measurement date	\$ 330,920	\$ -
Net difference between projected and actual earnings on plan investments	-	803,802
	\$ 330,920	\$ 803,802
2014		
Employer contributions made subsequent to measurement date	\$ 308,820	\$ -

Amounts reported as deferred inflow of resources related to pensions as of June 30, 2015, will be recognized in pension expense as follows:

Year ended June 30:	
2016	\$ (200,951)
2017	(200,951)
2018	(200,951)
2019	(200,949)
Total	\$ (803,802)

8) Post-Employment Benefits Other Than Pensions (OPEB)

The Authority adopted GASB Statement No. 45, *Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions*. The Statement establishes standards for reporting the liability for the Authority's nonpension postemployment benefit, the health care plan for retirees. The Authority's OPEB plan is a single-employer defined benefit plan and is administered by the County. The current year Annual Required Contribution was \$47,000. No separate actuarial information is available with regard to the Authority's participation. Detailed disclosures regarding the County's participation and related actuarial information can be found in the County's annual financial statements.

(a) Plan Provisions

In addition to providing the pension benefits described in note 7, the Authority provides postemployment health care (OPEB) for qualifying retired employees who are not yet eligible for Medicare through a single-employer defined benefit plan. 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.

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(b) Funding Policy

The Authority does not intend to establish a trust to prefund this liability. 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. Also, the estimated contributions are based on the implicit rate subsidy payments made during the year by the retirees.

(c) Plan Description

Currently, 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 postretirement 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. Dental plans are available at the retiree's cost, and therefore, have no GASB 45 liability. There is no coverage for post-Medicare retirees. There were 76 active employee participants at the time of the actuarial study. Since the retirees contribute towards their health insurance premiums based on a blended rate, the Authority has an implicit liability.

(d) Annual OPEB Cost and Net OPEB Obligation

The net OPEB obligation as of June 30, 2015 was calculated as follows:

Annual required contribution	\$ 47,000
Interest on net OPEB obligation	8,000
Actuarial adjustments	<u>(10,000)</u>
Annual OPEB cost	45,000
Contributions made	<u>(9,000)</u>
Increase in net OPEB obligation	36,000
Net OPEB obligation, beginning of year	<u>207,509</u>
Net OPEB obligation, end of year	<u>\$ 243,509</u>

<u>Year Ended June 30,</u>	<u>Annual OPEB cost</u>	<u>Actual Contribution</u>	<u>Percentage of annual OPEB cost contributed</u>	<u>Net OPEB obligation</u>
2015	\$ 45,000	9,000	20.0%	\$ 243,509
2014	43,000	7,000	16.3	207,509
2013	34,000	13,000	38.2	171,509

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(e) Actuarial Methods and Assumptions

Valuation Methods

The projected unit credit method was used to calculate all of the expense amounts and the funded status of the plan. The calculations were performed in accordance with the methodologies set forth in GASB Statement No. 45. Under these methods, 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.

Employees Included in the Calculations

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.

Actuarial Assumptions

In the July 1, 2014 actuarial valuation, the projected unit credit method was used. The actuarial assumptions included calculations based on a discount rate of 4% for the unfunded liability, rate of inflation of 2.5%, payroll growth of 3%. The amortization period of the legacy unfunded begins at 30 years on June 30, 2013 and will decrease by one in each subsequent valuation until reaching 0 years. Each subsequent year a new base will be added to the unfunded accrued liability and will be amortized over a closed 24 year period. The actuarial accrued liability was \$423,000. Future increases for medical benefits are assumed to range from an initial rate of 7.50% and gradually decrease to 5.04% thereafter. It should be noted that actuarial valuations for the OPEB plan involve estimates of the value of reported amounts and assumptions about the probability of events far into the future. As such, 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.

(f) 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
2015	\$ -	423,000	423,000	-	3,897,762	10.9%
2014	-	389,000	389,000	-	3,943,666	9.9
2013	-	343,000	343,000	-	3,779,338	9.1

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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.

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 \$807,844 and \$857,564 for the years ended June 30, 2015 and 2014, respectively, and are included in the expenses under contractual fees. The Authority also owed the County \$1,346,004 and \$455,495 at June 30, 2015 and 2014, 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 \$260,928 and \$105,195 for years ended June 30, 2015 and 2014, respectively. The County leased two buildings in 2015 and one in 2014. Rent revenue included the County's share of utilities, insurance, maintenance, housekeeping supplies, and custodial services, all of which is included in rental income in the accompanying statements of revenues, expenses, and changes in net position.

11) Commitments and Contingencies

(a) Construction in Progress

At June 30, 2015, the Authority had several major projects under construction which are presented in the accompanying financial statements as construction in progress. Presented on the following page is a list of these projects, by budget, expenditures to date, balance of contract, and budget balance.

<u>Project</u>	<u>Budget</u>	<u>Expenditures to date</u>	<u>Balance of contract</u>	<u>Budget balance</u>
Sewer improvements	\$ 4,038,585	45,100	267,488	3,725,997
Water supply	12,875,778	609,032	140,096	12,126,650
Water distribution	333,090	-	-	333,090
Water transmission	500,000	-	45,075	454,925
Water storage	185,620	-	-	185,620
Other	995,580	51,728	62,887	880,965
	<u>\$ 18,928,653</u>	<u>705,860</u>	<u>515,546</u>	<u>17,707,247</u>

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(b) *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 3 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%. For the year ended on June 30, 2015 the Authority did not make a payment to the City of Newport News for these costs. For the year ended on June 30, 2014, the Authority paid \$1,032, to the City of Newport News 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 \$1.22 per 1,000 gallons. For the years ended June 30, 2015 and 2014, 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.

(c) *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, 2015, and 2014, the Authority paid \$228,308 and \$221,909, respectively, towards this contract.

(d) *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, 2015 and 2014, the Authority paid \$218,940 and \$216,066, respectively, towards this contract.

(e) *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.

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(f) Other

The Authority is not currently involved in any litigation which management feels could have a significant impact on the Authority's financial condition.

12) 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, 2015 and 2014, the note receivable balance was \$31,531 and \$60,994, respectively.

13) Restatement

The Authority adopted GASB Statement 68, *Accounting and Financial Reporting for Pensions – an Amendment of GASB Statement 27* and GASB Statement 71, *Pension Transition for Contributions Made Subsequent to the Measurement Date – an Amendment of GASB Statement 68*, in the current year. As a result, the effect on fiscal year 2014 is as follows:

	2014		2014
	Previously	Restatement	Restated
	Presented		
Deferred pension contributions	\$ -	308,820	308,820
Net pension liability	-	1,907,619	1,907,619
Unrestricted net position	30,757,918	(1,598,799)	29,159,199
Net position	171,282,033	(1,598,799)	169,683,234

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**REQUIRED SUPPLEMENTARY INFORMATION
OTHER THAN MD&A (Unaudited)**

JAMES CITY SERVICE AUTHORITY
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Schedule of Changes in the Net Pension Liability and Related Ratios
Required Supplementary Information (Unaudited)
Year Ended June 30, 2015

	2014
Total pension liability	
Service cost	\$ 417,066
Interest	913,818
Changes of benefit terms	-
Differences between expected and actual experience	-
Changes in assumptions	-
Benefit payments, including refunds of employee contributions	(376,365)
Net change in total pension liability	954,519
Total pension liability - beginning	13,242,723
Total pension liability - ending	14,197,242
 Plan fiduciary net position	
Contributions - employer	308,820
Contributions - employee	197,188
Net investment income	1,802,418
Benefit payments, including refunds of employee contributions	(376,365)
Administrative expense	(9,511)
Other	95
Net change in plan fiduciary net position	1,922,645
Plan fiduciary net position - beginning	11,335,104
Plan fiduciary net position - ending	13,257,749
 Net pension liability	\$ 939,493
 Plan fiduciary net position as a percentage of the total pension liability	93.38%
 Covered-employee payroll	\$ 3,943,666
 Net pension liability as a percentage of the total covered-employee payroll	23.82%

See accompanying notes and independent auditors' report.

Note: Information in this schedule is presented for the year in which information is available. Information will be added each year until a full 10-year trend is presented.

JAMES CITY SERVICE AUTHORITY
 (A Component Unit of the County of James City, Virginia)
 Schedule of Employer Contributions
 Required Supplementary Information (Unaudited)
 Year Ended June 30, 2015

<u>Fiscal year</u>	<u>Contractually required contribution</u>	<u>Contributions in relation to contractually required contribution</u>	<u>Contribution deficiency (excess)</u>	<u>Employer's covered employee payroll</u>	<u>Contributions as a % of covered employee payroll</u>
2015	\$ 330,920	330,920	—	3,897,762	8.49%

See accompanying notes and independent auditors' report.

Note: Information in this schedule is presented for the year in which information is available. Information will be added each year until a full 10-year trend is presented.

JAMES CITY SERVICE AUTHORITY
(A Component Unit of the County of James City, Virginia)

Notes to Required Supplementary Information

June 30, 2015 and 2014

1) Changes of benefit terms

There have been no significant changes to the System benefit provisions since the prior actuarial valuation. A hybrid plan with changes to the defined benefit plan structure and a new defined contribution component were adopted in 2012. The hybrid plan applies to most new employees hired on or after January 1, 2014 and not covered by enhanced hazardous duty benefits. The liabilities presented do not reflect the hybrid plan since it covers new members joining the System after the valuation date of June 30, 2013, and the impact on the liabilities as of the measurement date of June 30, 2014 are minimal.

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

JAMES CITY SERVICE AUTHORITY
(A Component Unit of the County of James City, Virginia)

Schedules of Net Position – by Activity

June 30, 2015
(with comparative totals for 2014)

Assets	Water operations	Sewer operations	Totals	
			2015	2014 (as restated)
Current assets:				
Cash and cash equivalents	\$ 385,365	452,385	837,750	586,970
Investments	13,073,298	19,934,185	33,007,483	28,955,675
Accounts receivable, customers	1,258,086	1,316,308	2,574,394	2,421,307
Accounts receivable, other	38,520	—	38,520	86,623
Note receivable	31,531	—	31,531	60,994
Interest receivable	46,699	41,413	88,112	81,297
Inventories	765,272	52,160	817,432	820,200
Total current assets	15,598,771	21,796,451	37,395,222	33,013,066
Noncurrent assets:				
Capital assets:				
Utility plant:				
Land	—	962,995	962,995	962,995
Water and sewer systems	122,618,660	121,401,056	244,019,716	237,026,604
Total utility plant	122,618,660	122,364,051	244,982,711	237,989,599
Nonutility property:				
Land	1,739,491	—	1,739,491	1,750,391
Central shop	4,857,636	34,573	4,892,209	4,884,119
Office fixtures and equipment	1,318,396	491,443	1,809,839	1,696,932
Land improvements	13,183	—	13,183	13,183
Automotive equipment	1,971,943	510,846	2,482,789	2,349,927
Total nonutility property	9,900,649	1,036,862	10,937,511	10,694,552
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	660,760	45,100	705,860	1,748,620
Less accumulated depreciation and amortization	63,503,713	56,838,875	120,342,588	112,854,386
Net capital assets	94,680,926	66,607,138	161,288,064	162,582,955
Investments restricted for future use	2,716,277	—	2,716,277	2,601,160
Total noncurrent assets	97,397,203	66,607,138	164,004,341	165,184,115
Total assets	112,995,974	88,403,589	201,399,563	198,197,181
Deferred Outflow of Resources				
Deferred pension contributions	138,986	191,934	330,920	308,820
Total assets and deferred outflow	\$ 113,134,960	88,595,523	201,730,483	198,506,001
Liabilities				
Current liabilities:				
Accounts payable, trade	\$ 347,331	37,721	385,052	468,429
Accrued salaries	19,366	2,239	21,605	27,647
Compensated absences, current portion	268,010	—	268,010	280,435
Due to James City County	1,217,294	128,710	1,346,004	455,495
Deposits	196,804	—	196,804	184,406
Interest payable	496,100	—	496,100	504,847
premium, current portion	565,000	—	565,000	545,000
Total current liabilities	3,109,905	168,670	3,278,575	2,466,250
Noncurrent liabilities:				
Advances for construction	5,882	27,020	32,902	32,902
OPEB liability	131,495	112,014	243,509	207,509
Compensated absences, net of current portion	89,343	—	89,343	93,478
Bonds payable, including unamortized premium, net of current portion	23,550,000	—	23,550,000	24,115,000
Net pension liability	394,587	544,906	939,493	1,907,619
Total noncurrent liabilities	24,171,307	683,940	24,855,247	24,448,889
Total liabilities	27,281,212	852,610	28,133,822	26,915,148
Deferred Inflow of Resources				
Deferred pension investment experience	337,597	466,205	803,802	—
Net Position				
Net position:				
Net investment in capital assets	70,565,926	66,607,138	137,173,064	137,922,955
Restricted for capital projects	2,716,277	—	2,716,277	2,601,160
Unrestricted	12,233,948	20,669,570	32,903,518	29,159,119
Total net position	85,516,151	87,276,708	172,792,859	169,683,234
Total liabilities, deferred inflow of resources, and net position	\$ 113,134,960	88,595,523	201,730,483	198,506,001

See accompanying independent auditors' report.

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, 2015

(with comparative totals for year ended June 30, 2014)

	Water operations	Sewer operations	Totals	
			2015	2014 (as restated)
Operating revenues:				
Water and sewer services	\$ 6,622,338	5,966,132	12,588,470	11,825,702
Reimbursement for storm costs	—	—	—	900
Other	929,933	60,424	990,357	504,252
Total operating revenues	<u>7,552,271</u>	<u>6,026,556</u>	<u>13,578,827</u>	<u>12,330,854</u>
Operating expenses:				
Salaries	2,001,786	2,256,138	4,257,924	4,288,721
Fringe benefits	745,151	801,374	1,546,525	1,337,328
Operating supplies	584,490	251,798	836,288	882,253
Maintenance of buildings and equipment	681,951	1,385,513	2,067,464	3,501,598
Utilities	625,249	235,825	861,074	875,020
Contractual fees	453,203	462,162	915,365	836,634
Other	236,414	261,389	497,803	496,851
Total operating expenses	<u>5,328,244</u>	<u>5,654,199</u>	<u>10,982,443</u>	<u>12,218,405</u>
Operating income before depreciation and amortization	2,224,027	372,357	2,596,384	112,449
Depreciation and amortization	4,899,603	2,911,205	7,810,808	7,670,391
Operating loss	<u>(2,675,576)</u>	<u>(2,538,848)</u>	<u>(5,214,424)</u>	<u>(7,557,942)</u>
Nonoperating revenues (expenses):				
Facility charges	2,340,950	1,522,700	3,863,650	4,305,728
Investment income	146,269	101,938	248,207	267,061
Gain on disposal of capital assets	15,099	8,398	23,497	15,352
Interest, net	(1,095,684)	—	(1,095,684)	(1,114,130)
Net nonoperating revenues	<u>1,406,634</u>	<u>1,633,036</u>	<u>3,039,670</u>	<u>3,474,011</u>
Loss before capital contributions	(1,268,943)	(905,812)	(2,174,755)	(4,083,931)
Capital asset contributions	1,740,214	3,544,165	5,284,379	3,388,700
Changes in net position	471,272	2,638,353	3,109,625	(695,231)
Net position at beginning of year	<u>85,044,879</u>	<u>84,638,355</u>	<u>169,683,234</u>	<u>170,378,465</u>
Net position at end of year	<u>\$ 85,516,151</u>	<u>\$ 87,276,708</u>	<u>172,792,859</u>	<u>169,683,234</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, 2015

	<u>Water operations</u>		<u>Variance favorable (unfavorable)</u>	<u>Sewer operations</u>		<u>Variance favorable (unfavorable)</u>
	<u>Actual</u>	<u>Budget</u>		<u>Actual</u>	<u>Budget</u>	
Operating revenues:						
Water and sewer services	\$ 6,622,338	6,264,910	357,428	5,966,132	5,979,197	(13,065)
Other	929,933	252,621	677,312	60,424	20,000	40,424
Total operating revenues	<u>\$ 7,552,271</u>	<u>6,517,531</u>	<u>1,034,740</u>	<u>6,026,556</u>	<u>5,999,197</u>	<u>27,359</u>
Operating expenses:						
Salaries	\$ 2,001,786	2,082,891	81,105	2,256,138	2,424,144	168,006
Fringe benefits	745,151	887,442	142,291	801,374	998,093	196,719
Operating supplies	584,490	693,724	109,234	251,798	252,328	530
Maintenance of buildings and equipment *	681,951	1,094,992	413,041	1,385,513	1,647,934	262,421
Utilities	625,249	666,179	40,930	235,825	288,836	53,011
Contractual fees	453,203	571,204	118,001	462,162	554,846	92,684
Other	236,414	500,731	264,317	261,389	539,057	277,668
Total operating expenses	<u>\$ 5,328,244</u>	<u>6,497,163</u>	<u>1,168,919</u>	<u>5,654,199</u>	<u>6,705,238</u>	<u>1,051,039</u>

See accompanying independent auditors' report.

* Includes budget from Capital Improvements Program for maintenance expenses related to the Department of Environmental Quality consent order.

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STATISTICAL SECTION

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

	<u>2006</u>	<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>(as restated)</u>	<u>2015</u>
Net Position										
Net investment in capital assets	\$ 124,654,601	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
Restricted for capital projects	703,494	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	29,627,748	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
Total net position	<u>\$ 154,985,843</u>	<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>

Note: 2013 information is restated in the Management's Discussion and Analysis (MD&A, pages 3-8) only. For the basic financial statements, 2014 is restated.

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

	2006	2007	2008	2009	2010	2011	2012	2013	2014 (as restated)	2015
Operating revenues:										
Water and sewer services	\$ 10,269,798	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
Rental income	217,172	187,753	181,256	135,234	144,441	171,401	144,381	164,875	160,914	325,991
Water supply proffers	403,459	530,518	502,217	138,170	52,908	125,192	26,967	13,362	57,446	450,262
Reimbursements for storm costs	—	161,573	—	—	—	—	349,541	—	900	—
Other	309,429	1,029,399	615,883	241,569	450,027	190,467	198,025	242,028	285,892	214,104
Total operating revenues	<u>11,199,858</u>	<u>13,373,703</u>	<u>12,510,934</u>	<u>12,794,769</u>	<u>12,961,644</u>	<u>13,090,878</u>	<u>12,437,211</u>	<u>12,422,798</u>	<u>12,330,854</u>	<u>13,578,827</u>
Operating expenses:										
Salaries	3,468,415	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
Fringe benefits	1,157,005	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
Operating supplies	625,773	789,553	775,892	1,014,351	866,624	888,559	899,095	822,882	882,253	836,288
Maintenance of buildings and equipment	982,237	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
Utilities	692,084	739,235	893,503	1,008,602	771,544	813,478	917,498	862,665	875,020	861,074
Contractual fees	543,365	626,437	640,618	735,132	889,869	873,110	882,505	910,491	836,634	915,365
Storm costs	—	161,349	—	—	—	—	359,921	—	—	—
Other	814,832	660,802	584,824	535,001	784,305	697,629	560,671	504,573	496,851	497,803
Total operating expenses	<u>8,283,711</u>	<u>9,420,318</u>	<u>10,205,599</u>	<u>10,953,522</u>	<u>10,985,233</u>	<u>12,091,472</u>	<u>12,414,605</u>	<u>12,407,714</u>	<u>12,218,405</u>	<u>10,982,443</u>
Operating income before depreciation and amortization	2,916,147	3,953,385	2,305,335	1,841,247	1,976,411	999,406	22,606	15,084	112,449	2,596,384
Depreciation and amortization	5,330,865	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
Operating loss	<u>(2,414,718)</u>	<u>(1,640,768)</u>	<u>(3,559,585)</u>	<u>(4,568,871)</u>	<u>(5,110,813)</u>	<u>(6,274,067)</u>	<u>(7,446,410)</u>	<u>(7,604,347)</u>	<u>(7,557,942)</u>	<u>(5,214,424)</u>
Nonoperating revenues (expenses):										
Facility charges	6,132,383	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
Investment income (loss)	935,971	1,503,939	1,995,201	3,658,420	956,056	509,675	351,929	(1,249,111)	267,061	248,207
Gain (loss) on disposal of capital assets	(39,930)	(2,198,500)	181,615	74,226	(251,710)	34,324	21,285	(44,507)	15,352	23,497
Interest expense, net	(494,712)	(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)
Net nonoperating revenues	<u>6,533,712</u>	<u>4,734,757</u>	<u>5,124,353</u>	<u>4,860,887</u>	<u>2,215,322</u>	<u>2,851,986</u>	<u>2,060,484</u>	<u>1,433,984</u>	<u>3,474,011</u>	<u>3,039,670</u>
Income before contributions	4,118,994	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)
Capital asset contributions	10,077,376	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
Changes in net position	<u>\$ 14,196,370</u>	<u>11,020,445</u>	<u>4,718,926</u>	<u>4,855,041</u>	<u>532,019</u>	<u>(1,672,008)</u>	<u>9,436</u>	<u>(1,569,718)</u>	<u>(695,231)</u>	<u>3,109,625</u>

Table 3

JAMES CITY SERVICE AUTHORITY
 (A Component Unit of the County of James City, Virginia)
 Water and Sewer Rates
 Last Ten Fiscal Years

**Historical Summary of Quarterly Continuing
 Service Charges for Residential Water Service**

<u>Fiscal Year</u>	<u>Basic Charge</u>		<u>Rate per 1,000 gallons (1)</u>	<u>Quarterly Total (2)</u>	<u>Percentage Change</u>
2006	None	\$	2.30 - 2.71 - 7.60	50.76	1.3
2007	None		2.50 - 3.00 - 8.50	55.50	9.3
2008	None		2.50 - 3.00 - 8.50	55.50	—
2009	None		2.85 - 3.45 - 9.80	63.45	14.3
2010	None		2.85 - 3.45 - 9.80	63.45	—
2011	None		2.85 - 3.45 - 9.80	63.45	—
2012	None		2.85 - 3.45 - 9.80	63.45	—
2013	None		2.85 - 3.45 - 9.80	63.45	—
2014	None		2.85 - 3.45 - 9.80	63.45	—
2015	None		2.85 - 3.45 - 9.80	63.45	—

**Historical Summary of Quarterly Continuing
 Service Charges for Residential Sewer Service (1)**

<u>Fiscal Year</u>	<u>Basic Charge</u>		<u>Rate per 1,000 gallons</u>	<u>Quarterly Total (2)</u>	<u>Percentage Change</u>
2006	None	\$	2.70	56.70	—
2007	None		2.80	58.80	3.7
2008	None		2.80	58.80	—
2009	None		2.80	58.80	—
2010	None		2.80	58.80	—
2011	None		2.80	58.80	—
2012	None		2.80	58.80	—
2013	None		3.22	67.62	15.0
2014	None		3.22	67.62	—
2015	None		3.22	67.62	—

Source: James City Service Authority Schedule of Rates and Fees

(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.

Table 4

JAMES CITY SERVICE AUTHORITY
(A Component Unit of the County of James City, Virginia)

Listing of Largest Utility Customers
Current Year and Nine Years Ago

	2015			2006		
	Gallons Billed	Service Charges	Rank	Gallons Billed	Service Charges	Rank
Owens-Brockway *	25,044,250	\$ 139,016	1	**	**	
Country Village (sewer only)	19,787,592	63,716	2	**	**	
Eastern State Hospital *	16,277,500	101,005	3	**	**	
Patriots Colony	14,310,316	95,450	4	**	**	
Williamsburg-James City County Public Schools *	13,857,620	85,075	5	**	**	
Greystone	12,804,000	80,918	6	**	**	
Windy Hill Trailer (sewer only)	12,257,476	39,469	7	**	**	
Platinum Management	12,085,000	80,606	8	**	**	
Rolling Meadows	8,953,950	59,723	9	**	**	
Steeplechase	8,221,250	54,836	10	**	**	
Total	<u>143,598,954</u>	<u>\$ 799,814</u>		<u>**</u>	<u>**</u>	

* Subject to wastewater sub-meter adjustments.

** Governmental Accounting Standards Board (GASB) Statement No. 44, *Economic Condition Reporting: The Statistical Section*, was adopted by the Authority as of July 1, 2005. The information for fiscal year 2006 is 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

Fiscal year		Revenue bonds	Number of connections	Debt per connection
2006	\$	13,034,918	17,552	742.6
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

Legal Debt Margin: 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

Fiscal year	Gross revenue	Direct operating expenses	Net revenue available for debt service	Principal	Interest	Total	Coverage
2006	\$ 18,268,212	8,283,711	9,984,501	860,000	522,981	1,382,981	7.22
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	1.57
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

Legal Debt Margin: 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

Fiscal year		General obligation bonds	Capital leases	Lease revenue bonds	Other debt	Total
2006	\$	106,062,319	13,908,307	22,570,000	278,950	142,819,576
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

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

Calendar year	Population (1)	Personal income (2)	Per capita personal income (2)	Unemployment percentage (1)
2006	58,893	\$ 3,289,020,000	44,480	2.6%
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	4,037,513,000	49,563	5.5
2011	68,500	4,408,223,000	53,364	5.3
2012	69,451	4,610,247,000	54,796	5.1
2013	70,376	4,592,180,000	53,571	4.6
2014	70,711	**	**	5.0
2015	72,187	**	**	4.8*

(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 as of May 2015

** 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

	2015			2006		
	<u>Employees</u>	<u>Rank</u>	<u>Percentage of total County employment</u>	<u>Employees</u>	<u>Rank</u>	<u>Percentage of total County employment</u>
Employment:						
Principal Public/Private Employers:						
Busch Gardens (1)	**	1	**	1000+	1	25.64%
Williamsburg-James City County						
Public Schools	1000+	2	4.95%	1000+	2	6.23
Eastern State Hospital	500-999	3	2.79	1000+	3	4.46
James City County	500-999	4	2.32	500-999	5	3.71
Wal-Mart Distribution Center	500-999	5	0.19	500-999	6	3.39
Kingsmill Resort	500-999	6	1.55	500-999	4	3.75
Anheuser-Busch, Inc.	500-999	7	1.55	—	—	—
Owens and Minor	250-499	8	1.55	250-499	9	1.6
Busch Properties, Inc.	—	—	—	500-999	7	3.25
Jamestown-Yorktown Foundation	250-499	9	0.93	250-499	8	2.14
Williamsburg Landing	250-499	10	0.93	250-499	10	1.19
Total	—		16.76%	—		55.36%

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

(1) Busch Gardens became publicly traded during fiscal year 2013, and information is not available.

Table 10

JAMES CITY SERVICE AUTHORITY
 (A Component Unit of the County of James City, Virginia)

Schedule of Insurance in Force

June 30, 2015

Insurer	Type of coverage	Policy number	Policy period		Annual Premium
			from	to	
Virginia Association of Counties Group Self-Insurance Risk Pool (VACoRP)	General liability Property Automobile Crime Public officials' liability	VA-JA-131-10	07/01/14	07/01/15	\$ 134,781
Virginia Association of Counties Group Self-Insurance Association (VACoGSIA)	Workers' compensation	VA-JA-131D-10	07/01/14	07/01/15	66,853

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

Function	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Administration	61	62	63	65	65	60	63	63	63	63
Water	13	14	14	15	15	15	15	15	15	15
Sewer	11	11	11	11	11	11	11	11	11	11
Total	85	87	88	91	91	86	89	89	89	89

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

Function	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Water:										
New connections	880	694	351	263	385	388	351	448	359	388
Water main breaks	51	42	57	37	40	44	31	25	21	26
Sewer:										
New connections	884	693	389	269	380	375	296	347	261	380

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	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Water:										
Water lines (miles)	319	329	332	339	344	393	390	393	400	402
Water customers	17,552	18,283	18,770	19,085	19,368	19,719	20,070	20,549	20,858	21,246
Storage tanks (greater than 250,000 gallons)	6	6	7	7	7	7	7	7	7	7
Average ERCs (1)	19,200	19,600	20,400	25,753	20,200	20,866	19,200	18,597	18,937	19,415
Sewer:										
Sewer lines (miles)	360	370	375	379	382	419	423	425	430	435
Gallons collected (millions)	1,606	1,680	1,727	1,765	1,833	1,598	1,771	1,739	1,862	1,897
Sewer customers	17,982	18,426	18,590	18,702	18,860	21,127	21,488	21,962	22,575	22,955

Source: James City Service Authority, Administration Department

(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 14

JAMES CITY SERVICE AUTHORITY
 (A Component Unit of the County of James City, Virginia)
 Summary of Historical Flows (MGD)
 Last Ten Fiscal Years

Function	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Water:										
Average Day	4.8	4.9	4.9	4.8	5.0	5.1	4.8	4.7	4.7	4.7
Average Day in Month of Maximum Flow	6.4	6.5	6.3	7.1	6.8	7.4	6.4	6.1	5.9	6.1
Month of Maximum Flow	August	June	July	August	June	July	July	July	June	July
Sewer:										
Average Day	4.4	4.6	4.7	5.4	4.5	4.4	5.0	5.0	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 2015
 (Source: James City Service Authority)

<u>Virginia Jurisdiction</u>	<u>Water Service</u>
City of Williamsburg	\$ 297.00
City of Norfolk	436.44
City of Newport News	433.68
City of Virginia Beach	353.52
James City Service Authority	171.00

Comparison of Area Sewer Bills
Annual Consumption 60,000 Gallons as of June 2015
 (Source: James City Service Authority)

<u>Virginia Jurisdiction</u>	<u>Sewer Service *</u>
City of Hampton	\$ 171.60
City of Newport News	305.52
City of Virginia Beach	369.72
City of Norfolk	294.60
York County	288.00
James City Service Authority	193.20

* Rates charged by the municipality. Residents of these municipalities pay a separate wastewater treatment fee to Hampton Roads Sanitation District of \$5.12 per 1,000 gallons.

Table 15

JAMES CITY SERVICE AUTHORITY
 (A Component Unit of the County of James City, Virginia)
 Miscellaneous Statistics

**Historical Summary of Availability Charges
 for a Typical Residential Connection (1)**

Last Ten Fiscal Years

(Source: James City Service Authority)

Fiscal Year		Water	Sewer	Total
2006	\$	2,400	2,400	4,800
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

(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.

Table 16

JAMES CITY SERVICE AUTHORITY
(A Component Unit of the County of James City, Virginia)

Rates and Fees

June 30, 2015

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

JAMES CITY SERVICE AUTHORITY
(A Component Unit of the County of James City, Virginia)

Rates and Fees

June 30, 2015

Activity, use	Unit	Charge
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.

(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.

JAMES CITY SERVICE AUTHORITY
(A Component Unit of the County of James City, Virginia)

Rates and Fees

June 30, 2015

(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.

(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.

Charge for all collection and treatment of wastewater:

<u>Volume</u>	<u>Collection</u>
Per 1,000 gallons of water consumed	\$ 3.22
Per 100 cubic feet of water consumed	2.41

Table 16

JAMES CITY SERVICE AUTHORITY
(A Component Unit of the County of James City, Virginia)

Rates and Fees

June 30, 2015

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 on the following page shall be assessed.

Activity, use	Unit	Charge
Single-family residences	Each	\$ 42.00
Single-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.

JAMES CITY SERVICE AUTHORITY
(A Component Unit of the County of James City, Virginia)

Rates and Fees

June 30, 2015

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, listed on the following page:

Commercial, industrial, institutional, multifamily, and single-family residential:

<u>Meter size (inches)</u>	<u>Charge</u>
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

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.

JAMES CITY SERVICE AUTHORITY
(A Component Unit of the County of James City, Virginia)

Rates and Fees

June 30, 2015

(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

Water service shall be based upon a commodity charge for all consumption, as follows:

Residential

	<u>Volume</u>	<u>Charge</u>
First Block	Less than 15,000 gallons per quarter	\$2.85 per 1,000 gallons (\$2.13 per 100 cubic feet)
Second Block	More than 15,000 gallons but less than 30,000 gallons per quarter	\$3.45 per 1,000 gallons (\$2.58 per 100 cubic feet)
Third Block	More than 30,000 gallons per quarter	\$9.80 per 1,000 gallons (\$7.33 per 100 cubic feet)

Nonresidential

	<u>Volume</u>	<u>Charge</u>
	Per 1,000 gallons	\$3.45
	Per 100 cubic feet	\$2.58

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.

JAMES CITY SERVICE AUTHORITY
(A Component Unit of the County of James City, Virginia)

Rates and Fees

June 30, 2015

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.

(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

JAMES CITY SERVICE AUTHORITY
(A Component Unit of the County of James City, Virginia)

Rates and Fees

June 30, 2015

(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.

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

June 30, 2015

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

JAMES CITY SERVICE AUTHORITY
(A Component Unit of the County of James City, Virginia)

Rates and Fees

June 30, 2015

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.

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.

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COMPLIANCE SECTION

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

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, 2015, 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 23, 2015.

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 23, 2015



**Report to the
Board of Directors**

James City Service Authority

June 30, 2015



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Contacts

Leslie F. Roberts, CPA

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Communications with Those Charged with Governance

November 23, 2015

To the 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, 2015, and have issued our report thereon dated November 23, 2015. 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 19, 2015. 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. 68, *Accounting and Financial Reporting for Pensions (GASB 68)* and GASB Statement No. 71, *Pension Transition for Contributions Made Subsequent to the Measurement Date (GASB 71)*, in 2015. 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 financial statement disclosures are neutral, consistent, and clear.

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 or 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



Operations Center
119 Tewning Road
Williamsburg, VA 23188-2639
P: 757-229-7421
F: 757-229-2463
jcsa@jamescitycountyva.gov

November 23, 2015

Dixon Hughes Goodman LLP
Fountain Plaza One
701 Town Center Drive
Newport News, VA 23606-4295

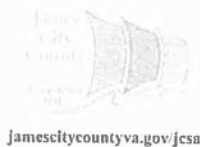
This representation letter is provided in connection with your audits of the financial statements of the James City Service Authority (the "Authority"), which comprise the statements of net position as of June 30, 2015 and 2014 and the related statements of revenues, expenses, and changes in net position 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 19, 2015 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
 - 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. 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.
9. There were no audit adjustments posted, uncorrected misstatements or omitted disclosures.
10. 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.
11. The effects of all known actual or possible litigation and claims have been accounted for and disclosed in accordance with U.S. GAAP.
12. There are no component units or joint ventures that should be included or disclosed in the financial statements.
13. The financial statements properly classify all funds and activities.
14. 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.
15. Operating expenses have been appropriately classified in the statement of revenues, expenses, and changes in net position.
16. Operating revenues are appropriately classified in the statement of revenues, expenses, and changes in net position.
17. Inter-fund, internal, and intra-entirety activity balances have been appropriately classified and reported.
18. 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.
19. 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.
20. Capital assets, including infrastructure and intangible assets, are properly capitalized, reported, and, if applicable, depreciated.

21. Net position components (net investment in capital assets; restricted; and unrestricted) and fund balance reserves and designations are properly classified and, if applicable, approved.
22. Deposits and investment securities are properly classified as to risk, and investments are properly valued.

Information Provided

23. 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. Minutes of the meetings of the Board of Directors or summaries of actions of recent meetings for which minutes have not yet been prepared. All significant board actions are included in the summaries.
 - d. Unrestricted access to persons within the Authority from whom you determined it necessary to obtain audit evidence.
24. All transactions have been recorded in the accounting records and are reflected in the financial statements.
25. 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.
26. 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, regulators, or others.
27. We have no knowledge of instances of noncompliance or suspected noncompliance with provisions of laws, regulations, contracts, or grant agreements, or abuse, whose effects should be considered when preparing the financial statements.
28. We have disclosed to you all known actual or possible litigation and claims whose effects should be considered when preparing the financial statements.
29. We have disclosed to you the identity of the Authority's related parties and all the related party relationships and transactions of which we are aware.
30. We have made available to you all financial records and related data.
31. There have been no communications from regulatory agencies concerning noncompliance with, or deficiencies in, financial reporting practices.
32. 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.
33. The Authority has no plans or intentions that may materially affect the carrying value or classification of assets, liabilities, or equity.
34. 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 grant agreements that we believe have a direct and material effect on the determination

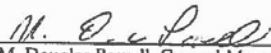


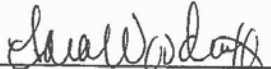
jamescitycountyva.gov/jcsa

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.

35. 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.
36. 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.
37. We have complied with all aspects of contractual agreements that would have a material effect on the financial statements in the event of noncompliance.
38. We have followed all applicable laws and regulations in adopting, approving, and amending budgets.
39. 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.
40. We acknowledge our responsibility for presenting the required supplementary information in accordance with U.S. GAAP, and we believe that the required supplementary information, including its form and content is fairly presented in accordance with U.S. GAAP. The methods of measurement and presentation of the required 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.
41. We take responsibility for the current year implementation of Governmental Accounting Standards Board (GASB) Statement No. 68, Accounting and Financial Reporting for Pensions, and GASB Statement No. 71, Pension Transition for Contributions Made Subsequent to the Measurement Date, and we have reviewed and approved the adjustments to the financial statements that you have proposed.

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


Tara Woodruff, Director of Budget and Accounting, James City County

ITEM SUMMARY

DATE: 12/8/2015
TO: The Board of Supervisors
FROM: Teresa J. Fellows, Administrative Coordinator
SUBJECT: VDOT Quarterly Report

ATTACHMENTS:

	Description	Type
▣	Quarterly Update	Exhibit

REVIEWERS:

Department	Reviewer	Action	Date
Board Secretary	Fellows, Teresa	Approved	11/30/2015 - 4:10 PM

VDOT Quarterly Transportation Update

James City Board of Supervisor's Meeting

December 8, 2015

Maintenance Accomplishments for Quarter and County Requests

August 1 – November 30

We have completed 359 of 425 maintenance work orders this quarter with 66 outstanding (84% complete).

38-Drainage

10-Vegetation

18-Roadway and Signs

Residency Direct Line 757-253-5138/VDOT's Customer Service Center **1-800-FOR-ROAD (1-800-367-7623)**

A few highlight of the accomplishments are:

Sinkhole and Drop Inlet Repair; Vineyards, Rte 199/Brookwood Dr/ Hunters Ridge/ and Sheffield Road

Completed Ditching on Chanco Road, Windsor Forest and Buford Road

Trim Back Brush on Longhill Road, Mott Lane, Buford Road, Windsor Way and Centerville Road

Slope mower; Powhatan Secondary

Swept roadways on Rte 60 bridges and Rte 199

Asphalt repair Powhatan Secondary, Hornes Lake Rd, and Walmart Distribution Center on RTE 60

Current Projects

Monticello Avenue (UPC 82961)

Contractor finished installing drainage structures and storm sewer components on Ironbound Road and News Road. Grading operations have also been completed as well as completion of the signal pole foundations. Remaining in the project is milling, minor concrete work, paving, and stripping, and signal work.

Centerville Road Intersection Improvements at News Road (UPC 102944)

Proposed project plans are to improve safety and capacity by replacing the existing intersection configuration with a roundabout at Centerville Road and News Road. Design Public Hearing scheduled on Wednesday, December 16, 2015, 4 p.m. to 7 p.m. at Matoaka Elementary School, 4001 Brick Bat Road, Williamsburg, VA 23188

Williamsburg-Jamestown Airport Access Road (UPC 101871)

Construct access road to the Williamsburg- Jamestown Airport. The road base is completed on 75% of the road length and the remaining 25% base is projected for completion by the end of December. Project completion is projected for May 2016.

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 an option of a 2" overlay and the extension of acceleration and deceleration lanes at the Ft. Eustis Interchange. Construction start on 9/13/15 and will continue until the project is complete. The contractor has completed the outside shoulder strengthening and in the beginning of the December the contractor will start to install barrier service.

I-64 Widening Segment 2 (UPC 106665)

The I-64 segment 2 project is on schedule and within budget. The award is scheduled for January 20, 2016 with the Notice to Proceed scheduled for February 17, 2016.

Public Hearing	April 30, 2015
RFP Release Date	July 21, 2015
Notice to Award	November 6, 2015
Award Date	January 20, 2016
Notice to Proceed	February 17, 2016
Early Completion Incentive	May 24, 2019
Construction Completion	July 2019

VDOT Quarterly Transportation Update

Traffic Studies

Rte 1040 Ashington Way & Bournemouth Bend recommends retaining 2 way stop intersection.

Rte 60 speed review Toano recommend retaining existing speed zones

Rte 30 Barhamsville Rd at Rte 746 Old Stage Rd recommends addition of divided highway signs

Rte 30 Barhamsville Rd sign review from Weathers Dr to Old Stage Rd recommends relocate and add signs

Rte 614 Greensprings Rd review curve warning signs recommends adding chevrons for increased visibility

Rte 1190 Eagle Way recommends installation of No Parking signs

Rte 1501 Country Club Rd recommends to increase the size of the speed limit sign

Rte 60 Lightfoot Area recommends center line pavement markings at median crossovers

ITEM SUMMARY

DATE: 12/8/2015
TO: The Board of Supervisors
FROM: Teresa J. Fellows, Administrative Coordinator
SUBJECT: Presentation by Registrar

REVIEWERS:

Department	Reviewer	Action	Date
Board Secretary	Fellows, Teresa	Approved	12/1/2015 - 11:46 AM

ITEM SUMMARY

DATE: 12/8/2015
TO: The Board of Supervisors
FROM: Teresa J. Fellows, Administrative Coordinator
SUBJECT: Presentation by Treasurer

REVIEWERS:

Department	Reviewer	Action	Date
Board Secretary	Fellows, Teresa	Approved	12/1/2015 - 11:47 AM

ITEM SUMMARY

DATE: 12/8/2015
TO: The Board of Supervisors
FROM: Teresa J. Fellows, Administrative Coordinator
SUBJECT: Presentation by Communications

REVIEWERS:

Department	Reviewer	Action	Date
Board Secretary	Fellows, Teresa	Approved	12/1/2015 - 11:48 AM

ITEM SUMMARY

DATE: 12/8/2015
TO: The Board of Supervisors
FROM: Teresa J. Fellows, Administrative Coordinator
SUBJECT: Presentation of 2015 Chairman's Awards

Presentation of 2015 Chairman's Awards to staff and a citizen or group that has made significant contributions to the community.

REVIEWERS:

Department	Reviewer	Action	Date
Board Secretary	Fellows, Teresa	Approved	11/30/2015 - 8:41 AM

ITEM SUMMARY

DATE: 12/8/2015
TO: The Board of Supervisors
FROM: Teresa J. Fellows, Administrative Coordinator
SUBJECT: Recognition of Service - Ms. Jones and Mr. Kennedy

REVIEWERS:

Department	Reviewer	Action	Date
Board Secretary	Fellows, Teresa	Approved	11/24/2015 - 9:03 AM

ITEM SUMMARY

DATE: 12/8/2015
TO: The Board of Supervisors
FROM: Teresa J. Fellows, Administrative Coordinator
SUBJECT: Minutes Adoption

Minutes from November 24, 2015 Regular Meeting

ATTACHMENTS:

	Description	Type
▣	112415 BOS Minutes	Minutes

REVIEWERS:

Department	Reviewer	Action	Date
Board Secretary	Fellows, Teresa	Approved	11/30/2015 - 8:43 AM

MINUTES
JAMES CITY COUNTY BOARD OF SUPERVISORS
REGULAR MEETING
County Government Center Board Room
101 Mounts Bay Road, Williamsburg, VA 23185
November 24, 2015
6:30 PM

A. CALL TO ORDER

B. ROLL CALL

Mary K. Jones, Berkeley District
John J. McGlennon, Roberts District
Kevin D. Onizuk, Vice-Chairman, Jamestown District
James G. Kennedy, Stonehouse District
Michael J. Hipple, Chairman, Powhatan District

Bryan J. Hill, County Administrator
Michelle M. Gowdy, County Attorney

C. MOMENT OF SILENCE

D. PLEDGE OF ALLEGIANCE

1. Pledge Leader – William (Trey) Corbin, III, a student at Rawls Byrd Elementary School and resident of the Roberts District.

Mr. McGlennon announced that Trey Corbin was unable to make it to the meeting this evening due to an injury.

Mr. Onizuk announced that Zachary Prince, a 4th-grade student from Clara Byrd Baker Elementary School would be leading the pledge tonight instead.

E. PRESENTATIONS

1. Williamsburg Regional Library

Mr. Hipple announced that the Presentation would be postponed until after Public Comment.

F. PUBLIC COMMENT - Until 7 p.m.

1. Rosanne Reddin, 4700 Presidents Court, addressed the Board in regard to freedom and the individual responsibility to maintain those freedoms.
2. Betty Walker, 101 Locust Place, addressed the Board in regard to public comment and how citizens are treated in public meetings.
3. Ms. Kimberly Winn, 2 South 17th Street, Richmond, addressed the Board in regard to her family's land in Toano and the balance of the back taxes.
4. Ms. Petra Nadel, 106 Indian Circle, addressed the Board in regard to moving the County's ice skating rink from New Town.
5. Mr. Joseph Swanenburg, 3026 The Point Drive, addressed the Board in regard to the difference between policy and politics.

6. Mr. Chris Henderson, 101 Keystone, addressed the Board in regard to the Purchase of Development Rights discussion during the Work Session.

Mr. Bill Porter, Chair of the Williamsburg Regional Library Board of Trustees, addressed the Board giving an overview of Library services and community outreach programs.

Mr. McGlennon and Mr. Hipple expressed their appreciation of the Library and all the work that they do in the community and for the children.

At 7:05 p.m., Mr. Hipple recessed the Board in order to conduct the James City Service Authority Board of Directors meeting.

At 7:06 p.m., Mr. Hipple reconvened the Board of Supervisors meeting.

G. CONSENT CALENDAR

A motion to Approve was made by Mr. McGlennon and the motion result was Passed.

AYES: 5 NAYS: 0 ABSTAIN: 0 ABSENT: 0

Ayes: Jones, McGlennon, Onizuk, Kennedy, Hipple

1. Minutes Adoption - November 10, 2015 Regular Meeting
2. Grant Award - Citizen Preparedness - \$18,420
3. Grant Awards - Interregional Rail Emergency Plan - \$67,500
4. Grant Awards - Mass Care Shelter Assessment - \$62,500

H. PUBLIC HEARING(S)

1. Ordinances to Repeal and Update Certain County Code Sections

A motion to Approve was made by Mr. McGlennon and the motion result was Passed.

AYES: 5 NAYS: 0 ABSTAIN: 0 ABSENT: 0

Ayes: Jones, McGlennon, Onizuk, Kennedy, Hipple

Paralegal Elizabeth Young addressed the Board giving an overview of the ordinances included in the Agenda Packet, thus continuing the process of updating the County Code to bring it into compliance with State Code.

As there were no questions for staff, Mr. Hipple opened the Public Hearing.

1. Mr. Chris Henderson, 101 Keystone, addressed the Board questioning the zoning classification that allows pawnbrokers.

As no one else wished to speak, Mr. Hipple closed the Public Hearing.

Mr. Hipple asked Ms. Young to respond to the Mr. Henderson's question.

Ms. Young stated that this ordinance amendment does nothing to change the zoning requirement for pawnbrokers, this change is to bring the ordinance into compliance with State Code regarding application requirements.

Mr. McGlennon questioned if all four ordinances can be moved and voted on in block.

Ms. Gowdy stated yes.

I. BOARD CONSIDERATION(S)

J. BOARD REQUESTS AND DIRECTIVES

Several Board members discussed their activities in the community and throughout the region since the previous Board meeting.

The Board wished the community a Happy Thanksgiving holiday.

K. REPORTS OF THE COUNTYADMINISTRATOR

1. County Administrator's Report

Mr. Hill announced the appointment of Mr. Ryan Ashe as the new Fire Chief.

Mr. Hill announced that the County will provide one round of curbside leaf collection. Collection dates are as follows and are determined by voting district. District information can be found online or by calling General Services at 757-259-4080.

Voting district collection dates:

Berkeley/Roberts December 1-7

Jamestown/South Powhatan December 7-14

Stonehouse/North Powhatan December 14-16

Leaves must be in clear bags no larger than lawn or leaf-size (40 gallons or less). Bagged leaves must be left curbside by 8 a.m. on the first day of collection in each district. Each street will be collected one time only. Bulky materials such as brush and tree limbs cannot be accepted.

L. PUBLIC COMMENT

M. CLOSED SESSION

N. ADJOURNMENT

1. Adjourn until 6:30 p.m. on December 8, 2015, for the Regular Meeting

A motion to Adjourn was made by Mr. McGlennon and the motion result was Passed.

AYES: 5 NAYS: 0 ABSTAIN: 0 ABSENT: 0

Ayes: Jones, McGlennon, Onizuk, Kennedy, Hipple

At 7:46 p.m., Mr. Hipple adjourned the meeting.

Bryan J. Hill
County Administrator

ITEM SUMMARY

DATE: 12/8/2015
TO: Board of Supervisors
FROM: Grace A. Boone, Assistant General Services Director
SUBJECT: Contract Award - Recreation Center HVAC Replacement

Over the past decade, the Department of General Services has been incorporating Trane HVAC controls and equipment into County facilities. Standardization reduces equipment down time and improves response time and customer service because parts will be on hand and interchangeable from facility to facility. In addition, troubleshooting and diagnosis of service issues requires less time. Standardization promotes safety because staff members can rely on their previous experience and training when servicing the equipment. The Recreation Center HVAC upgrade includes the removal and installation of 11 Trane HVAC units to include air handling units, roof top unit with new controls, as well as reprogramming of the current controls system. There are sufficient funds available in the project budget for the HVAC upgrade. General Services, in consultation with the Purchasing Office, determined that Damuth Trane’s proposal to replace and install the new systems at a proposed cost of \$146,500 is reasonable in comparison to other current County HVAC replacements and current construction cost indices. Staff recommends approval of the attached resolution authorizing the sole source purchase of installation services from Damuth Trane in the amount of \$146,500 for the Recreation Center HVAC. Funding is already available in the FY16 Capital Improvement Program budget.

ATTACHMENTS:

	Description	Type
▣	Contract Award - Recreation Center HVAC Replacement	Cover Memo
▣	Contract Award - Recreation Center HVAC Replacement	Resolution

REVIEWERS:

Department	Reviewer	Action	Date
General Services	Horne, John	Approved	11/20/2015 - 8:43 AM
Publication Management	Burcham, Nan	Approved	11/20/2015 - 9:43 AM
Legal Review	Gowdy, Michelle	Approved	11/20/2015 - 1:12 PM
Board Secretary	Fellows, Teresa	Approved	11/20/2015 - 3:31 PM
Board Secretary	Kinsman, Adam	Approved	11/23/2015 - 8:37 AM

Board Secretary
Board Secretary
Board Secretary

Mellen, Sue
Kinsman, Adam
Fellows, Teresa

Approved
Approved
Approved

11/23/2015 - 11:38 AM
12/1/2015 - 8:14 AM
12/1/2015 - 8:19 AM

M E M O R A N D U M

DATE: December 8, 2015
TO: The Board of Supervisors
FROM: Grace A. Boone, Assistant Director of General Services
SUBJECT: Contract Award – Recreation Center HVAC Replacement

Over the past decade the Department of General Services has been incorporating Trane HVAC controls and equipment into County facilities. Standardization reduces equipment down time and improves response time and customer service because parts will be on hand and interchangeable from facility to facility. In addition, troubleshooting and diagnosis of service issues requires less time. Standardization promotes safety because staff members can rely on their previous experience and training when servicing the equipment.

The Recreation Center HVAC upgrade includes the removal and installation of 11 Trane HVAC units to include air handling units, roof-top unit with new controls, as well as reprogramming of the current controls system. There are sufficient funds available in the project budget for the HVAC upgrade.

General Services, in consultation with the Purchasing Office, determined that Damuth Trane’s proposal to replace and install the new systems at a proposed cost of \$146,500 is reasonable in comparison to other current County HVAC replacements and current construction cost indices.

Staff recommends approval of the attached resolution authorizing the sole source purchase of installation services from Damuth Trane in the amount of \$146,500 for the Recreation Center HVAC.

GAB/ab
CA-RecCenterHVAC-mem

Attachment

RESOLUTION

CONTRACT AWARD – RECREATION CENTER HVAC REPLACEMENT

WHEREAS, the James City County Department of General Services is standardizing HVAC building controls and equipment in County facilities to promote operational efficiency and safety; and

WHEREAS, a portion of the current Recreation Center HVAC controls and equipment will be replaced; and

WHEREAS, it has been determined by General Services, in consultation with the Purchasing Office, that Damuth Trane is the only source practicably available to install the HVAC controls and equipment required; and

WHEREAS, Damuth Trane submitted a proposal to perform the required services, the proposed rates have been determined to be reasonable and adequate funds are available in the Capital Improvement budget.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of James City County, Virginia, hereby authorizes the Contract Award in the amount of \$146,500 to Damuth Trane and Trane Corporate for the Recreation Center controls and equipment.

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>
JONES	_____	_____	_____
MCGLENNON	_____	_____	_____
ONIZUK	_____	_____	_____
KENNEDY	_____	_____	_____
HIPPLE	_____	_____	_____

Adopted by the Board of Supervisors of James City County, Virginia, this 8th day of December, 2015.

CA-RecCenterHVAC-res

ITEM SUMMARY

DATE: 12/8/2015

TO: The Board of Supervisors

FROM: Ryan Ashe, Fire Chief

SUBJECT: Adoption of the James City County Emergency Operations Plan 2015

The Code of Virginia, §44-146.19, requires each local jurisdiction to prepare and keep current a local Emergency Operations Plan. Every four years each local agency conducts a comprehensive review and revision of its emergency operations plan to ensure that the plan remains current and the revised plan must be formally adopted by the locality's governing body.

Staff recommends approval of the attached resolution to adopt the Emergency Operations Plan.

ATTACHMENTS:

	Description	Type
☐	Memorandum	Cover Memo
☐	Resolution	Resolution
☐	Emergency Operations Plan 2015	Exhibit

REVIEWERS:

Department	Reviewer	Action	Date
Fire	Ashe, Ryan	Approved	11/20/2015 - 10:48 AM
Publication Management	Burcham, Nan	Approved	11/20/2015 - 11:14 AM
Legal Review	Gowdy, Michelle	Approved	11/20/2015 - 1:21 PM
Board Secretary	Fellows, Teresa	Approved	11/20/2015 - 3:30 PM
Board Secretary	Kinsman, Adam	Approved	11/23/2015 - 8:34 AM
Board Secretary	Fellows, Teresa	Approved	11/23/2015 - 10:42 AM

MEMORANDUM

DATE: December 8, 2015
TO: The Board of Supervisors
FROM: Ryan Ashe, Interim Fire Chief
SUBJECT: Adoption of the James City County Emergency Operations Plan 2015

The Board of Supervisors of James City County recognizes the threats that natural, technological and human-caused hazards pose to citizens and property within our community.

The Code of Virginia, §44-146.19, requires each local jurisdiction to prepare and keep current a local Emergency Operations Plan. Every four years each local agency conducts a comprehensive review and revision of its emergency operations plan to ensure that the plan remains current and the revised plan must be formally adopted by the locality's governing body.

The Board of Supervisors last adopted the Emergency Operations Plan in 2011.

This 2015 plan was developed and updated by the James City County Fire Department's Emergency Management Division with the assistance of the Commonwealth of Virginia Department of Emergency Management, which has reviewed its contents for compliance.

A resolution that complies with the Commonwealth of Virginia requirements is attached.

Staff recommends approval of the attached resolution to adopt the Emergency Operations Plan.

RA/ab
EmergOperationsPlan-mem

Attachment

RESOLUTION

ADOPTION OF THE JAMES CITY COUNTY EMERGENCY OPERATIONS PLAN 2015

WHEREAS, the Board of Supervisors of James City County recognizes the threats that natural, technological and human-caused hazards pose to citizens and property within our community; and

WHEREAS, the safety and protection of citizens and property is of foremost concern to the Board of Supervisors of James City County; and

WHEREAS, the Virginia Department of Emergency Management has reviewed the James City County Emergency Operations Plan; and

WHEREAS, the Board of Supervisors desires and the Virginia Department of Emergency Management requires the adoption of appropriate planned protective measures.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of James City County, Virginia, hereby adopts the James City County Emergency Operations Plan dated November 2015.

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>
JONES	_____	_____	_____
MCGLENNON	_____	_____	_____
ONIZUK	_____	_____	_____
KENNEDY	_____	_____	_____
HIPPLE	_____	_____	_____

Adopted by the Board of Supervisors of James City County, Virginia, this 8th day of December, 2015.

EmergOperationsPlan-res

I. Introduction

A hazard is defined as a natural, technological, or human-caused source or cause of harm or difficulty. Risk is defined as the potential for an unwanted outcome resulting from an incident or occurrence, as determined by its likelihood and the associated consequences. The anticipated level of threat to public safety and personal property determines the hazard risk. Hazards can have a cascading consequence starting on a continuum of minimal damage towards catastrophic damage and loss of life.

One responsibility of local government is public safety and diverting an appropriate level of local government resources to emergency response when a hazard threatens. James City County requests the resources of state and federal agencies when local resources diminish or the incident is of such magnitude that it exceeds local resources. To manage its local responsibility, James City County has established an emergency management program of preparedness, protection, response, recovery, and mitigation. The James City County Administrator serves as the Director of Emergency Management; James City County Emergency Management Administrator serves as the Coordinator of Emergency Management. Day-to-day operations are also managed by the Emergency Management Administrator. They develop response plans; policy and procedures; training and exercise programs; public outreach programs; maintain an emergency operations center in a constant state of readiness; and establish regional and state collaboration strategies for response and recovery.

Purpose:

This Basic Plan describes the legal and organizational responsibility for James City County government departments, associated agencies, and volunteer organizations to prepare, protect, respond, recover, and mitigate natural, technological, and human - caused hazards. This Basic Plan also establishes the foundation for the James City County Emergency Operations Plan (EOP), which is a compilation of annexes for emergency support functions (ESFs) and hazard specific annexes. The ESF annexes describe a specific emergency response function and provide guidance for emergency response actions for James City County government departments and associated agencies that have emergency response responsibility. This Basic Plan along with ESF annexes and hazard specific annexes, appendices and related documents provide a standard for emergency management training and exercises.

Scope:

The Basic Plan provides an overview of James City County (Situation), describes planning assumptions, concept of operations, and organizational responsibility. Specific policies and procedures are attachments to this plan, ESF and Hazard Specific annexes. These documents include maps and charts as appropriate. This Basic Plan and associated documents comply with the provisions of The Commonwealth of Virginia Emergency Services and Disaster Laws of 2000, as amended.

The hazard threat and the potential for a cascading events determine activation of this plan. The CAO, Emergency Coordinator, Emergency Management Administrator or their designee can activate this plan.

Situation:

James City County's Comprehensive Plan describes the geography as "... located on a peninsula approximately 50 miles southeast of Richmond and 40 miles northwest of Norfolk. The County is bounded by three rivers: the James to the south, the York to the northeast, and the Chickahominy to the west. Total land area, including inland water, is about 144 square miles, or approximately 92,400 acres. There are 152 miles of shoreline along the three rivers, containing about 138 miles of marshlands and 14 miles of beach. Along these shores are both tidal and non-tidal wetlands.

The James City County border is contiguous with the Cities of Newport News and Williamsburg and the Counties of York, New Kent and Charles City. The County is part of the greater Hampton Roads area and one of 17 members of the Hampton Roads Planning District Commission (HRPDC). The US Office of Management and Budget includes the Hampton Roads area in the Virginia Beach, Norfolk, Newport News, VA/North Carolina Metropolitan Statistical Area (MSA).

The James City County population, according to the US Census Bureau 2014 American Community Survey (ACS) 1 year estimate is 72,583. This represents an increase of 8.3% from the 2010 Census which cited the James City County population as 67,009. ACS data shows the County has 29,312 occupied housing units with an average household size of 2.65 persons. The median age in the County is 46.8 years which is higher than the national average of 37.7 years. The ACS identified 22.7% of the County population as over 65 years, again higher than the national average of 14.5% which indicates a larger senior population than most localities. One reason for the growth in the aging population has been the influx of retirees from colder regions of the US Northeast.

Approximately 1,712,746 people reside in the HRPDC region. The region's land area is separated by several rivers and estuaries. Bridges and tunnels link the communities' commercial, cultural and other economic activities. Interstate 64, a major east/west route passes through the northeast quadrant of James City County. This interstate serves the beach resort areas of North Carolina and Virginia; international shipping activity within the region; the region's military facilities; and commuter movement within the region's urban area. In the event of a major hurricane evacuation of North Carolina and Southeast Virginia, the Virginia Department of Emergency Management projects as many as 900,000 people may seek to evacuate the region with significant numbers using Interstate 64 as well as Routes 60 and 143.

Among the regional emergency management collaboration efforts is the reciprocal agreement between James City County and the City of Hampton to open shelters for their residents. James City County will provide shelter for Hampton residents during a hurricane evacuation and in

turn, the City of Hampton opens shelters for James City County residents in the event of an incident at the Surry Power Station.

The County is within the 10-mile Emergency Planning Zone (EPZ) for Surry Nuclear Power Station and maintains a hazard specific plan which is an annex to the EOP. Along with other localities within the EPZ, as well as state agencies, the County participates in exercises including a biennial, federally evaluated exercise to demonstrate response capabilities.

Thomas Nelson Community College at Williamsburg is located in upper James City County. James City County and Thomas Nelson emergency management regularly share information with regard to special events, potential emergencies, exercises, emergency notifications system testing and emergency contact information. James City County coordinates with the Virginia Fusion Center for the collection, analysis and dissemination of threat information.

The Hampton Roads 2016 Regional Hazard Mitigation Plan update process is under way and will reflect 22 communities in the HRPDC region. The current plan, adopted in 2011, included only the five Peninsula localities (James City County, York County, City of Hampton, City of Newport News and City of Williamsburg). The James City County component of both plans details hazards, the history of emergency events, and establishes goals to mitigate those hazards.

The County has vulnerability to flooding, winter storms, and tornadoes. While the County is not in a hurricane storm surge zone, it can experience the effects of tropical and hurricane force winds and flooding due to extreme rainfall. The County participates in the National Flood Insurance program and maintains a Community Rating System (CRS) score of Class 7 since 2013.

Along with the interstate system, other transportation modes include the main line for the CSX railroad, the Jamestown-Scotland ferry, and a small private airport. All of these systems are considered in the emergency management planning process.

The James City County Comprehensive Plan discusses how the County has transitioned from an agricultural rural jurisdiction to a suburban residential community. The County's principal tool for managing growth is a Primary Service Area (PSA) Policy. The policy concentrates growth in a compact geographical area in order to accomplish the following goals:

- Encourage efficient utilization of public facilities and services (water and sewer, roadways, schools, fire and police stations, libraries, etc.);
- Help ensure such facilities and services are available where and when needed;
- Increase public benefit per dollar spent;
- Promote public health and safety through improved emergency response time;
- Minimize well and septic failures; and preserve rural lands.

On the James City County Land Use Map, the Primary Service Area identifies areas with public water and sewer and high levels of other public services, as well as areas expected to receive those services over the next 20 years. This policy contributes to public safety by providing for response times and ensuring adequate public services and identifies areas, where there is a wild

land-urban interface. These areas can be at a higher threat for wild land fires during times when vegetation is extremely dry.

James City County is part of the Historic Triangle that includes York County and Williamsburg. Along with historic sites, the area includes a 3,892-acre national park. The historic sites provide for major economic tourist activities and a welcoming environment for meetings among international economic and policy leaders and for sporting events. These special events require detailed security strategies with coordination among international, federal, state, and local public safety officials.

Annually, James City County's Division of Emergency Management completes a capability assessment as a means to evaluate the County's preparedness and response resources. The revision to the Hazard Mitigation plan also provides an opportunity to evaluate the County's hazards, vulnerabilities, and formulate additional goals for hazard mitigation, preparedness, and response.

Assumptions:

James City County government will function throughout a partial or full response activation to an emergency event consistent with the organizational adjustments required for emergency response. Depending on the risk or consequences, County government operations could be limited to only those essential to protect life and property with incremental levels of normal operations returning as conditions permit.

The County declares a local emergency when response may require resources beyond those used in normal day-to-day emergencies.

In the event an emergency exceeds local emergency response capabilities, outside assistance is available either through mutual support agreements with nearby jurisdictions and volunteer emergency organizations or through the Virginia Department of Emergency Management's, Emergency Operations Center (VEOC).

James City County Board of Supervisors adopted the National Incident Management System by resolution January 2005. The basic premise of the National Incident Management System (NIMS) is that all emergencies begin and end locally.

James City County uses the Incident Command System (ICS), which is scalable and allows for the expansion and contraction of the response and recovery organization relative to the evolution of the emergency or disaster.

All County government employees may assume some support role to emergency support functions and in operations.

The Division of Emergency Management maintains the Emergency Operations Plan and as required by the Virginia Emergency Services and Disaster Laws of 2000 as amended, updates the Basic Plan every four years with re-adoption by the Board of Supervisors. The EOP is available on the County's Intranet making it available to all employees with emergency planning

and response responsibilities. The Division of Emergency Management provides copies of the EOP, either in printed format or electronically, as required. All stakeholders with emergency planning responsibilities have electronic access through the CEMPlanner software. A copy of the EOP (basic plan) is also available on the County's intranet site.

Emergency Management is a Division of James City County Fire Department. The Emergency Management Administrator serves as Coordinator of Emergency Management and is responsible for day-to-day program management.

James City County complies with Virginia Emergency Services and Disaster Laws, which requires an annual emergency management capability assessment be submitted to the Virginia Department of Emergency Management (VDEM) on or before July 1.

The County regularly exercises the Radiological Preparedness Plan to meet a requirement of the Nuclear Regulatory Commission in licensing the Dominion Virginia Power, Surry Power Station. In doing so, the County evaluates its emergency management system and response capability.

James City County participates in various regional and state organizations including the Hampton Roads Metropolitan Medical Response System, The Peninsula Local Emergency Planning Committee (SARA Title III), the Hampton Roads Emergency Management Committee, the all Hazards Advisory Committee to the HRPDC, the HRPDC Hazard Mitigation Plan process, the Virginia Hurricane Evacuation Coordinating Group and the Hampton Roads Adaptation Forum. These organizations represent regional and state collaboration efforts to develop hazard response and recovery strategies.

James City County's Division of Emergency Management provides core public outreach programs for emergency preparedness to the public, non-profits and the private sector. The public outreach message urges residents to be prepared, to be able to shelter in place, evacuate as directed, and to be self-sufficient for a minimum of three to seven days.

James City County's Division of Emergency Management is responsible for the JCC-CERT program (Community Emergency Response Teams). Since 2003, this program has trained more than 400 citizens in basic emergency response to assist until professional emergency responders can arrive on scene. They also train to assist in emergency activations at the EOC, in public outreach, and to serve as force multipliers in their neighborhoods in post-emergency operations.

II. Organization and Assignment of Responsibilities

All James City County Departments and staff may be given emergency and post-disaster assignments as determined by the CAO, the Emergency Coordinator/Emergency Management Administrator. The following section identifies pre-assigned responsibilities by department.

- A. James City County Fire Department and James City County Police Department provide the following public safety services 24-hours, 7 days a week:

Fire Department

Operations Division: includes fire suppression, emergency medical services, marine incident response, rescue operations and hazardous materials response.

Emergency Communications Division (ECC): includes E911 system.

Fire Marshal's Office: includes the fire origin/cause and arson investigation, site plan review, and Fire Prevention Code enforcement.

Support Services Division: EMS Service Delivery quality assurance, training and fire prevention education.

Division of Emergency Management: Coordinates the County's emergency planning, response and recovery from natural, technological or human caused emergencies.

Police Department

Law Enforcement

Traffic Control

Criminal Investigation

Site and Force Protection/Security

Intelligence gathering

- B. In addition to the above departments, in the event of an actual or threatened large-scale emergency, the following departments have emergency services duties beyond their primary, day-to-day functions:

James City County Attorney Office

James City County Communications Division (James City County PIO)

James City County Department of Community Services

James City County Department of Economic Development

James City County Department of Development Management

James City County Department of Financial and Management Services

James City County Department of General Services

James City County Department of Parks and Recreation

James City County Department of Community Services

James City Service Authority

Williamsburg-James City County Public Schools

The County also includes the following agencies and volunteer organizations in the emergency management system consistent with responsibilities assigned by the Commonwealth of Virginia Emergency Operations Plan.

American Red Cross

Radio Amateur Communicators in Emergency Services (RACES)

CERT Program

Peninsula & Hampton Health District

Salvation Army

Virginia Cooperative Extension Service

Williamsburg Area Transit Authority

The Commonwealth of Virginia Emergency Services and Disaster Laws of 2000, as amended, provide that emergency management organizations and operations be structured around existing constitutional government.

The following list includes duties and assigned responsibilities for emergency management organization in James City County: (See Attachment 1)

Board of Supervisors

CAO

Emergency Coordinator

With the following staff support:

Communications Division Director (PIO)

County Attorney

Emergency Management Administrator

Responsibilities

Provide continuity of government (Includes adoption of emergency ordinances, such as an ordinance to declare a local emergency).

Provide direction and control of emergency operations (decision-making concerning evacuation and opening of shelters or other public protective measures; monitor and maintain a situation assessment and planning process).

Prepare and submit state required reports and records.

Determine appropriate public protective actions, i.e., evacuation.

Provide emergency public information.

Coordinate damage assessment.

Coordinate post-disaster needs assessment.

Coordinate disaster assistance and recovery.

Coordinate volunteer and donations management with quasi-public and volunteer organizations.

Determine and coordinate post-disaster redevelopment.

James City County Fire Department

Responsibilities:

Assist with incident command and command support.

Provide fire prevention and suppression.

Provide emergency medical care and transportation.

Provide rescue operations (including water, dive, and technical rescue).

Assist with evacuation.

Assist with the initial warnings and alerting.

Assist with radiological monitoring.

Provide other functions as set forth in the Hampton Roads MMRS plan.
Provide staff to FEMA USAR Virginia Task Force 2.
Provide hazardous materials incident response.
Provide radiological monitoring and decontamination.
Coordinate mass-casualty search and rescue and assist Police Department with lost persons search and rescue.
Participate in situation assessment and post disaster needs assessment.
Inspect damaged areas to determine when reentry is safe.
Provide inspections to ensure that all repairs and redevelopment activities comply with James City County Fire Code as applicable.
Maintain an E-911 system and emergency communications (ECC) capability to dispatch emergency services and other county services.
Maintain radio and telephone communications among the EOC and public safety/public services in the field.
Maintain a database that interfaces with the Computer Aided Dispatch System (CADS) of persons whose unique needs affect emergency response within the County.
Assist at the EOC as requested by the Emergency Management Coordinator and Emergency Management Administrator.
Operate and maintain the Hampton Roads Emergency Management Committee (HREMC) Radio according to policy and procedures, the regional video teleconferencing and the secure voice over Internet protocol communications capability, and the Virginia Dominion Power insta-phone.

James City County Police Department

Responsibilities

Provide law enforcement.
Manage crowds.
Provide security and force protection at an emergency site, evacuated areas, shelter areas, vital facilities, and points of distribution (PODs).
Intelligence gathering.
Provide traffic management.
Manage evacuation as directed by Coordinator and access to threatened areas.
Assist the medical examiner with identification of the dead.
Assist with post-disaster family assistance services.
Participate in situation assessment and post disaster needs assessment.
Security to the EOC.
Secure crime scenes.
Conduct backup route alerting.
Provide animal control services.

James City County Department of Community Services

Responsibilities

Participate in planning for mass care and emergency related human services.
Coordinate shelter services with WJCC Schools, the Peninsula Hampton Health Department, the Red Cross, and County departments and staff as assigned.
Coordinate and provide reception and care of evacuees.
Provide registration and records at shelters.
Coordinate mass feedings.
Coordinate crisis counseling services as required.
Coordinate emergency welfare services for displaced person.
Coordinate the services of quasi-public and volunteer relief organizations as required.
Provide assistance to the elderly and special/functional and access needs population as required.
Assist with post-disaster family assistance services.
Assist with applications for federal disaster assistance through various housing and community development programs.
Assign housing rehabilitation staff to assist in damage assessment as necessary.
Participate in situation assessments and post-disaster needs assessments.
Assist with donations management as necessary.

James City County Department of General Services

Responsibilities

Secure County facilities. Of special concern are those facilities housing IT equipment, and telephone systems, County offices, fire stations, the EOC, and the Emergency Communications Center.
Fuel and maintain generators.
Fuel and secure County vehicles.
Secure the County telephone system.
Complete primarily damage assessment of County facilities and grounds and report findings to Emergency Management to be included in the FEMA damage assessment.
Initiate immediate repairs to County facilities starting with the EOC and Emergency Communications Center, the IT and telephone facilities, fire stations, County offices, and vehicle maintenance.
Participate in situation assessments and post disaster needs assessments.
Develop and maintain a debris management strategy.
Coordinate a minimum standard of solid waste collection.
Assist with damage assessment.
Assist with hazardous material clean up.
Maintenance of storm water drainage ways.
Assist with post disaster redevelopment activities.

Manage the County's participation in the National Flood Insurance Program and the Community Rating System.

James City County Department of Financial and Management Services

Responsibilities

Provide IT and GIS services.

Coordinate post-disaster damage assessment documents. Coordinate FEMA financial reports.

Establish cost codes for disaster expenditures; develop a process for County departments to use to track expenditures and personnel duty hours; assist departments to prepare financial reports.

Provide timely resolution of policy issues for the bidding and purchasing process during pre and post disaster response.

Participate in situation assessments and post disaster needs assessments.

James City County Department of Development Management

Responsibilities:

Coordinate all damage assessment.

Provide a site plan review process to ensure redevelopment that occurs within the County complies with the county's Comprehensive Plan.

Conduct inspections to enforce and carry out the James City County building codes (i.e., structural, mechanical, electrical, etc.).

Provide comprehensive planning services during the post disaster redevelopment phase.

Participate in situation assessment and post disaster needs assessments.

James City County Department of Economic Development

Responsibilities:

Provide assistance and guidance to local businesses for preparedness and recovery.

Participate in situation assessment and post disaster needs assessments.

James City Service Authority

Responsibilities:

Coordinate the maintenance and continued operation of sewer and water services.

Participate in situation assessment and post disaster needs assessments.

Williamsburg-James City County Public Schools

Responsibilities

Coordinate shelter plans with the Division of Emergency Management, the Department of Community Services, and the Peninsula and Hampton Health District. Provide facilities for the reception and care of evacuees.
Provide evacuation transportation and coordinate additional resources with Williamsburg Area Transit.
Participate in situation assessments and post disaster needs assessments.
Prepare and keep current school system emergency response plans.
Provide facilities for Neighborhood Emergency Health Centers (NEHC) in event of biological or chemical terrorist attack.
Assist in distribution of prophylaxis medications.

Salvation Army

Responsibilities

Provide support to relief operations.
Provide post-disaster assistance to victims.

Peninsula & Hampton Health District

Responsibilities

Support shelter services with the Department of Community Services.
Coordinate hazardous waste management and enforcement.
Establish epidemic control measures.
Assist with medical support in shelters.
Issue health advisories.
Coordinate emergency mortuary and interment with a local medical examiner.
Coordinate post-disaster insect and rodent control.
Inspect food, milk, and water supply.
Coordinate control of biological and radiological contamination.
Assist the medical examiner to identify the dead, in cooperation with the Sheriff and State Police.
Coordinate with area hospitals.
Coordinate provision of a minimum standard of sanitation services.
Participate in situation assessments and post disaster needs assessment.
Provide public information, direct public protective actions, and provide public health services during biological and chemical attacks.
Staff Neighborhood Community Health Services (NEHC)

Prepare Bioterrorism and Vaccination/Prophylaxis Plan

Virginia Cooperative Extension Service

Responsibilities:

Coordinate with County damage assessment team to provide documented agriculture related damage assessment information.

Participate in situation assessments and post-disaster needs assessments.

Provide horticultural and agricultural assistance in hazardous materials or radiological events.

Department of Parks and Recreation

Responsibilities:

Provide support to the Department of Community Services in all phases of emergency operations and shelter operations as required.

Notify County marinas, transients, and individuals in Parks and Recreation facilities, parks and waterways of evacuations.

Coordinate with the Department of General Services for emergency use of Parks and Recreation assets and resources.

RACES (Radio Amateur Communicators in Emergency Services)

Responsibilities:

Provide emergency back-up radio communications at James City County Emergency Operations Center, shelters, and other county facilities as required..

Coordinate radio communications with radiological monitoring teams.

James City County CERT Program

Responsibilities

Provide CERT training to citizens.

Develop and maintain a listing of trained JCC CERT volunteers.

Provide initial CERT first-responder response to events as requested by the Coordinator or Emergency Management Administrator.

Assist with additional emergency response activities as requested by the Emergency Coordinator.

James City County government departments, agencies, and associated organizations develop and maintain detailed plans and Standard Operating Procedures (SOPs) and other documentation to support their functional requirements, including:

- Sources of emergency supplies, equipment and transportation.
- Accurate records of disaster-related expenditure and documentation.
- Protect and preserve records essential for continuity of government.
- A line of succession for key personnel with emergency responsibilities.

Emergency Support Functions

ESF	James City County EOP	National Response Framework	Commonwealth of Virginia EOP
1	Transportation	Transportation	Transportation
2	Communications	Communications	Communications
3	Public Works and Engineering	Public Works and Engineering	Public Works and Engineering
4	Firefighting	Firefighting	Firefighting
5	Emergency Management	Information and Planning	Emergency Management
6	Mass Care, Emergency Assistance Housing & Human Services	Mass Care, Emergency Assistance Housing & Human Services	Mass Care, Emergency Assistance Housing & Human Services
7	Logistics	Logistics	Logistics Management and Resource Support
8	Public Health and Medical Services	Public Health and Medical Services	Public Health and Medical Services
9	Search and Rescue	Search and Rescue	Search and Rescue
10	Oil and Hazardous Materials	Oil and Hazardous Materials	Oil and Hazardous Materials
11	Agriculture and Natural Resources	Agriculture and Natural Resources	Agriculture and Natural Resources
12	Energy	Energy	Energy
13	Law Enforcement and Security	Public Safety and Security	Public Safety and Security
14	Recovery and Mitigation	Superseded by National Disaster Recovery Framework	Recovery and Mitigation
15	Emergency Public Information	External Affairs	External Affairs
16	Damage Assessment		Military Affairs
17	Volunteer and Donations Management		Volunteer and Donations Management

III. Concept of Operations:

A. General

1. The County Administrator is the Chief Administrative Officer (CAO) for James City County government and serves as the Director of Emergency Management. The Coordinator/Emergency Management Administrator provides day-to-day management of the preparedness, protection, response, recovery, and mitigation program. The CAO, in conjunction with the Coordinator or designee, direct and control emergency operations in time of emergency and issue directives to departments and organizations concerning emergency response and recovery.
2. The Coordinator/Emergency Management Administrator, will develop and maintain a primary Emergency Operations Center (EOC) from which to direct operations in times of emergency. The primary EOC is currently located at 3127 Forge Road, Toano, Virginia 23168. The alternate EOC is located at the Law Enforcement Center, 4600 Opportunity Way, Williamsburg, 23188.
3. The day-to-day activities of the emergency management program, for which the Coordinator is responsible, include developing and maintaining an Emergency Operations Plan, maintaining the County EOC in a constant state of readiness, and other responsibilities as outlined in local and state regulations.
4. The CAO with the consent of the County Board of Supervisors is the constituted legal authority for approving Emergency Operations Plans and declaring a local state of emergency.
5. The CAO with the consent of the Board of Supervisors (see Section 44-146.21, Virginia Emergency Management and Disaster Laws) may declare a local emergency. The declaration of a local emergency activates the Emergency Operations Plan and authorizes emergency response. The CAO can issue a declaration when a coordinated response among several local agencies/organizations must be directed or when it becomes necessary to incur substantial financial obligations in order to protect the health and safety of persons and property or to assist the victims of a disaster.
6. The CAO or, in his absence, the Coordinator will determine the need to evacuate large areas and will issue orders for evacuation or other protective action as needed. The James City County Police Department will implement evacuation and provide security for the evacuated area. In the event of a hazardous materials incident, the James City County Fire Chief or his representative on the scene should implement immediate protective action to include evacuation as appropriate.

7. Succession to the CAO during emergency operations will be:

Assistant County Administrator
Emergency Coordinator
Deputy Coordinator

8. The CAO, the Coordinator or their designee will notify the Virginia Department of Emergency Management immediately upon the declaration of a local emergency. Daily situation reports are also required. The Emergency Management Administrator/Coordinator is responsible for daily situation reports for the Virginia Department of Emergency Management Emergency Operations Center (VEOC) receives the report by WebEOC.
9. All manpower and resource inventory must be committed before requesting assistance from the state.
10. The County documents all disaster-related expenditures. This documentation assists in requesting state and federal assistance post-disaster
11. The Emergency Management Administrator will assure compatibility between the County's, ESF annexes, and the plans and procedures of key facilities and private organizations within the County as appropriate.
12. The Division of Emergency Management ensures the EOP and associated plans comply with the Americans with Disabilities Act, which requires the emergency policies be modified to enable people with disabilities to evacuate, use emergency transportation, stay in shelters, and participate in all emergency and disaster-related programs together with their service animals.
13. James City County facilities comply with the Architectural Barriers Act of 1968; the County also complies with the Americans with Disabilities Act of 1990 as amended by the American with Disabilities Act Amendments Act of 2008, Public Law 110-325. The County Office of Emergency Services is preparing a plan to comply with the Pets Evacuation and Transportation Standards Act of 2006, Public Law 109-308.
14. The CAO and the Coordinator or their designee, with support from designated local officials, will exercise direction and control from the EOC during disaster operations. The EOC may be partially or fully staffed depending on type and scope of the disaster. The EOC will provide logistical and administrative support to response personnel deployed to the disaster site(s). Available warning time will be used to implement increased readiness measures, which will ensure maximum protection of the population, property, and supplies from the consequences of threatened disasters.
15. Department and agency directors develop and maintain detailed plans and standing operating procedures necessary for their departments to accomplish their assigned tasks in a timely manner. Department and agency directors will identify sources for emergency

supplies, equipment and transportation, which can be obtained promptly when required. Accurate records of disaster-related expenditures will be maintained.

16. In time of emergency, County departments and agency directors continue to be responsible for the protection and preservation of records essential for the continuity of government operations.
17. Department and agency heads establish lists of succession of key emergency personnel (see Attachment 2).
18. Day-to-day functions that do not contribute directly to the emergency operation may be suspended for the duration of any emergency.
19. Declaration of a Local Emergency
 - a. The County Board of Supervisors, by resolution, should declare an emergency to exist whenever the threat or actual occurrence of a disaster is, or threatens to be, of sufficient severity and magnitude to require significant expenditures and a coordinated response in order to prevent or alleviate damage, loss, hardship, or suffering. A declaration of a local emergency activates the response and recovery programs of all applicable local, inter jurisdictional Emergency Operations Plans and authorizes the furnishing of aid and assistance in accordance with those plans.
 - b. In the event the Board of Supervisors cannot convene due to the disaster, the CAO may declare a local emergency to exist subject to confirmation of the entire Board, within fourteen days. In the absence of the CAO, the Assistant County Administrator, the Emergency Coordinator or the Deputy Coordinator may declare a local emergency using the procedures described above. The Emergency Coordinator or Deputy Emergency Coordinator will advise the VEOC immediately following the declaration of a local emergency.
20. When local resources are insufficient to cope with the effects of a disaster and the County requests state assistance, the following procedures will apply.
 - a. The CAO, by letter to the State Coordinator of Emergency Management, will indicate that a local emergency has been declared, the local Emergency Operations Plan has been implemented, available resources have been committed, state assistance is being requested and, if appropriate, recommends that the Governor declare a state of emergency.
 - b. A copy of the resolution declaring a local emergency to exist should accompany this letter (see Attachment 6).
21. The public receives alerts and warnings via the Emergency Alert System (EAS), National Weather Service (NWS) weather radio, the Surry Nuclear Power Station siren system, JCCAlert, route alerting, and TV and radio, and social media.

22. The VEOC requires the submission of the following reports by local government in time of emergency.

Local Situation Report

Resource Request Form, which includes size, amount, location, type, and time needed.

Damage Assessment Report

All of these report forms are located on a server at VEOC. A Web based computer program, WebEOC, enables the forms to be completed and electronically submitted to the VEOC. James City County tasks the Planning Section to complete these forms for the Coordinator or designee to review and then post to the WebEOC site. Hard copies of these forms will be available to fax, Email or send to VEOC by other means in the event Web services are not available. The Planning Section is responsible for monitoring the status of the request for resources and provides regular status updates to the Coordinator or designee.

23. Support by military units may be requested through the VEOC. Military forces, when made available, will support and assist local forces and may receive from the CAO or his designated representative, mission-type requests, to include objectives, priorities, and other information necessary to accomplish missions.
24. Emergency assistance may be made available from neighboring jurisdictions in accordance with the Statewide Mutual Aid agreements or other mutual aid agreements. Emergency forces can be sent from James City County to assist adjoining jurisdictions. Such assistance will be in accordance with existing mutual aid agreements or, in the absence of official agreements, directed by the CAO or the Coordinator when he/she determines that such assistance is necessary and feasible.
25. The CAO, the Coordinator/Emergency Management Administrator, and the Department of Community Services will assist disaster victims in obtaining post-disaster assistance, such as temporary housing and low-interest loans.
26. The Virginia Department of Criminal Justice Services and the Virginia Criminal Injuries Compensation fund shall be contacted to assist local victims and families in an emergency when there are victims as defined in the Code of Virginia §19.2-11.01.
27. This plan is effective as a basis for training and pre-disaster preparedness upon receipt. It is effective for execution when:
 - a. Any disaster threatens or occurs in the County and a local disaster is declared under the provisions of Section 44-146.21, the Commonwealth of Virginia Emergency Management and Disaster Laws of 2000, as amended.
 - b. A state of emergency is declared by the Governor.

28. The CAO, assisted by the Coordinator/Emergency Management Administrator, have overall responsibility for maintaining and updating this Basic Plan, ESF annexes, and hazard specific plans. Exercises and actual events provide opportunities to evaluate plans and recommendations for updates. The Emergency Management Administrator maintains a schedule for regular plans review and updates. The Basic Plan to the EOP will be readopted every four years. The Virginia Department of Emergency Management provides guidance and assistance. The Emergency Management Administrator maintains a plan distribution list. See Attachment 4.

Sequence of Actions

Non-Emergency/Normal Operations

Public information and educational materials will be provided to the public via local newsletters, brochures, publications, local web sites and other media.
Develop, review, and exercise emergency operations plans and standard operating procedures.
Assure the accuracy of emergency contact lists, resource lists, and emergency contracts.
Update, review, and maintain all elements of the Emergency Operations Plan (EOP).

Pre-Incident Actions

These are actions that are implemented if the County receives notice of a potential emergency from the federal Homeland Security Advisory System, National Weather Service watches and warnings or other reliable sources.

Communication alert and warning;
Public health and safety;
Responder health and safety;
Property protection; and
Possible activation of the EOC.
Alert emergency response personnel and develop a staffing pattern.
Determine appropriate level of protective actions.

Response Actions

Law enforcement actions;
Fire services;
Protection of responder health and safety;
Emergency medical services;
Evacuations;
Dissemination of emergency public information;
Actions to mitigate additional damage;
Urban search and rescue;
Public health and medical services;
Distribution of emergency supplies;
Debris clearance; and
Protection and restoration of critical infrastructure.

Other actions that may be necessary at this point in the incident are:

Declaration of Emergency;
Suspend daily functions of the government that do not contribute directly to the emergency operation for the duration of the emergency response;
Redirect response and resources to accomplish an emergency task;
Implement evacuation orders as needed; and,
Open and staff emergency shelters as needed.

Once immediate response missions and life-saving activities conclude, the emphasis shifts from response to recovery. Brief the Board of Supervisors of the situation, response and recovery operations, and if applicable, hazard mitigation.

Recovery Actions

Preliminary damage assessment;
Long-term recovery planning;
Cleanup and restoration of public facilities, businesses, and residences;
Re-establishment of habitats and prevention of subsequent damage to natural resources and protection of cultural or archeological sites during other recovery operations;
Coordinate with VDEM and FEMA through a Joint Field Office (JFO) to assist those impacted by the disaster if the event is declared a Federal Disaster.
Within 72 hours of impact, complete an Initial Damage Assessment and submit to the VEOC.
Assess local infrastructure and determine viability for re-entry of residents.
Begin immediate repairs to electric, water and sewer lines and stations.

Mitigation Actions

Maintain and update the Hazard Mitigation Plan and recommend actions to reduce or eliminate future losses;
Maintain flood maps to permit expedited and accurate implementation of both recovery and mitigation programs;
Provide loss reduction building science guidance;
Coordinate the Community Rating System process with other program efforts;
Coordinate with the Virginia Department of Emergency Management Mitigation Program to develop mitigation grant funded projects to prevent repetitive losses and implement measures to reduce the risk of infrastructure losses;
Coordinate, when possible, mitigation actions with local, regional and state agencies.

Activation of the Emergency Operations Center (EOC)

The CAO, Emergency Coordinator or their designee may activate the EOC if the following conditions exist:

An imminent threat to public safety or health on a large scale;
County opens an emergency shelter; or
Response and recovery require extensive multiagency/jurisdictional collaboration.

B. Organization:

National Incident Management System (NIMS):

James City County adopted the NIMS elements essential to efficient management of emergencies and disasters that will involve local, state and federal response agencies. The federal government places criteria for all emergency plans to comply with Homeland Security Presidential Directive #5(HSPD-5) and Homeland Security Presidential Directive # 8 (HSPD 8). “To prevent, prepare for, respond to and recover from terrorist attacks, major disasters, and other emergencies, the United States Government shall establish a single, comprehensive approach to domestic incident management. The objective of the United States Government is to ensure that all levels of government across the Nation have the capability to work efficiently and effectively together, using a national approach to domestic incident management. In these efforts, with regard to domestic incidents, the United States Government treats crisis management and consequence management as a single, integrated function, rather than as two separate functions.”

The following describes how James City County complies with the NIMS criteria:

- Adopted the Incident Command System (ICS) and trained staff and emergency responders in ICS 100, 200, 700, and 800
- NIMS adopted by Board of Supervisors resolution
- Maintains a tracking program for continuing ICS education and training
- See Attachment 1, Emergency Management Organization Chart

IV. Administration, Finance and Logistics

A. General

1. The Emergency Management Administrator is responsible for the operational readiness and operations of the Emergency Operations Center.
2. The County warning point is operated 24/7 by the Fire Department.

B. Records and Reports

1. County government and the individual agencies, departments and associated organizations, must maintain records of expenditures and obligations during emergency operations.
2. Logs and records of response actions will be maintained.

C. Consumer Protection

1. Consumer complaints pertaining to allege unfair or illegal business practices during emergencies will be referred to the State Attorney General's Consumer Protection Division.

D. Non-Discrimination

1. There will be no discrimination on grounds of race, color, religion, nationality, sex, age, or economic status in the execution of emergency preparedness or disaster relief and assistance functions.

E. Mutual Aid

1. Statewide Mutual Aid (SMA): James City County as well as most Virginia jurisdictions signed an agreement to participate in the SMA. VDEM manages the program and established procedures to request assistance through VEOC.
2. Emergency Management Assistance Compact (EMAC). Congress ratified and signed into law (Public Law 104-321) in 1996. VDEM coordinates requests for assistance through this agreement.
3. James City County has a reciprocal agreement with the City of Hampton for emergency shelter services.

V. Plan Development and Maintenance

Commonwealth of Virginia Emergency Services and Disaster Laws of 2000, as amended, requires jurisdictions to develop, adopt, and keep current a written crisis and emergency management plan;

Every four years, James City County shall conduct a comprehensive review and revision of its crisis and emergency management plans to ensure the plan remains current, and the Board of Supervisors shall adopt the revised Basic Plan by resolution

Virginia Department of Emergency Management receives a copy of the resolution.

Drafting the ESF annexes and hazard specific annexes relies heavily on the James City County administrators and subject matter experts to provide comprehensive guidance on hazard analysis, exercise design, evacuation planning, emergency management, mitigation, recovery, emergency preparedness, and educational awareness.

The Emergency Management Administrator will review the various sections of the EOP annually and update as required, and will coordinate with each emergency resource organization and assure the development and maintenance of an appropriate emergency response capability.

It is the responsibility of the Coordinator/ Emergency Management Administrator to assure that all plans are tested and exercised on a scheduled basis.

VI. Exercises and Training

Trained and knowledgeable personnel are essential for the prompt and proper execution of the James City County Emergency Operations Plan. James City County will ensure that all response personnel have a thorough understanding of their assigned responsibilities in a disaster situation, as well as how their role and responsibilities interface with the other response components of the James City County Emergency Operations Plan. All personnel will be provided with the necessary training to execute those responsibilities in an effective and responsible manner.

The Emergency Management Administrator is responsible for the development, administration, and maintenance of a comprehensive training and exercise program tailored to the needs of

James City County. This program will be comprised of a general core, functionally specific, as well as on-going refresher training programs designed to attain and sustain an acceptable level of emergency preparedness for James City County.

Training will be based on federal and state guidance. Instructors will be selected from James City County government officials and staff, federal and state governments, private industry, the military, as well as quasi-public and volunteer groups trained in Emergency Management and response. All training and exercises conducted in James City County will be documented. Training needs will be identified and records maintained for all personnel assigned emergency response duties in a disaster

The Emergency Management Administrator will develop, plan, and conduct functional and/or full-scale exercises annually. These exercises will be designed to not only test the James City County Emergency Operations Plan, but to train all appropriate officials, emergency response personnel, County employees, and improve the overall emergency response organization and capability of James City County. Quasi-public and volunteer groups and/or agencies will be encouraged to participate. Issues identified by the exercise will be addressed immediately.

The Homeland Security Exercise and Evaluation Program (HSEEP) is a capabilities and performance-based exercise program that provides a standardized methodology and terminology for exercise design, development, conduct, evaluation, and improvement planning. The Emergency Management Administrator can use this tool to assist in maintaining an exercise program.



AUTHORITIES:

Federal

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Code of Federal Regulations, Title 44, Chapter 1, Federal Emergency Management Agency, October 1, 2009

Homeland Security Act of 2002, 6 USC.101, et seq., as amended

Executive Order 12148, Federal Emergency Management

Executive Order 12656, Assignment of Emergency Preparedness Responsibilities

Presidential Decision Directive 39 and 62 (Consequence of Terrorism)

Homeland Security Presidential Directive/HSPD-5, *Management of Domestic Incidents*. (Establishes National Incident Management System) February 2003.

Homeland Security Presidential Directive 8, *National Preparedness*, December 17, 2003

Pets Evacuation and Transportation Standards Act of 2006, Public Law 109-308

Americans with Disabilities Act of 1990 as amended by the Americans with Disabilities Act Amendments of 2008, Public Law 110-325

State

Commonwealth of Virginia Emergency Services and Disaster Laws of 2000, as amended.
The Commonwealth of Virginia Emergency Operations Plan, December 2007

RERERENCES:

U.S. Census Bureau. American Community Survey 2014 1- year estimates.

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FEMA. *Developing and Maintaining Emergency Operations Plans*. Comprehensive Preparedness Guide 101 version 2.0. November 2010

Virginia Department of Emergency Management. Emergency Operations Plan Template. 2010.
Peninsula Hazard Mitigation Plan January 2011

James City County. *Historic Past, Sustainable Future*, adopted 2009; update - *Towards 2035: Leading the Way*, adopted 2015.

GLOSSARY

Access and Functional Needs

Those actions, services, accommodations, and programmatic, architectural, and communication modifications that a covered entity must undertake or provide to afford individuals with disabilities a full and equal opportunity to use and enjoy programs, services, activities, goods, facilities, privileges, advantages, and accommodations in the most integrated setting. These actions are in light of the exigent circumstances of the emergency and the legal obligation to undertake advance planning and prepare to meet the disability-related needs of individuals who have disabilities as defined by the Americans with Disabilities Act Amendments Act of 2008, P. L. 110-325, and those associated with them.

Access and functional needs may include modifications to programs, policies, procedures, architecture, equipment, services, supplies, and communication methods. Examples of “access and functional needs” services may include a reasonable modification of a policy, practice, or procedure or the provision of auxiliary aids and services to achieve effective communication, including but not limited to:

- An exception for service animals in an emergency shelter where there is a no-pets policy:
- The provision of way-finding assistance to someone who is blind to orient to new surroundings
- The transferring and provision of toileting assistance to an individual with a mobility disability
- The provision of an interpreter to someone who is deaf and seeks to fill out paperwork for public benefits.

American Red Cross

A nongovernmental humanitarian organization led by volunteers that provides relief to victims of disasters and helps people prevent, prepare for, respond to, and recover from emergencies. The American Red Cross accomplishes this through services that are consistent with its Congressional Charter and the Principles of the International Red Cross Movement.

Attack

A hostile action taken against the United States by foreign forces or terrorists, resulting in the destruction of or damage to military targets, injury or death to the civilian population, or damage to or destruction of public and private property.

Capabilities-based Planning

Planning, under uncertainty, to provide capabilities suitable for a wide range of threats and hazards while working within an economic framework that necessitates prioritization and choice. Capabilities-based planning addresses uncertainty by analyzing a wide range of scenarios to identify required capabilities.

Checklist

Written (or computerized) enumeration of actions to be taken by an individual or organization meant to aid memory rather than provide detailed instruction.

James City County Emergency Response Team (JCC CERT)

A community based program managed by the Division of Emergency Management since 2003 to train citizens in basic disaster response skills such as fire safety, light search and rescue, team organization and disaster medical operations, as well as to provide support to public outreach, County exercises, EOC activations, and neighborhood based response operations. This program was initially directed and supported by FEMA through the Virginia Department of Emergency Management as part of the Citizens Corps program. Since FY2012 the program has been primarily funded with State Homeland Security Program dollars and operates under the direction of James City County.

Command Section

One of the five functional areas of the Incident Command System. The function of command is to direct, control, or order resources, including people and equipment, to the best possible advantage.

Command Post

That location at which primary Command functions are executed; usually collocated with the Incident Base. Also referred to as the Incident Command Post.

Community

Community has more than one definition. Each use depends on the context:

A political or geographical entity that has the authority to adopt and enforce laws and ordinances for the area under its jurisdiction. In most cases, the community is an incorporated town, city, township, village, or unincorporated area of a county. However, each state defines its own political subdivisions and forms of government.

A group of individuals (community of interest) who have a religion, a lifestyle, activity interests, an interest in volunteer organizations, or other characteristics in common. These communities may belong to more than one geographic community. Examples include faith-based and social organizations; nongovernmental and volunteer organizations; private service providers; critical infrastructure operators; and local and regional corporations.

Consequence

An effect of an incident or occurrence.

Dam

A barrier built across a watercourse for the purpose of impounding, controlling, or diverting the flow of water.

Damage Assessment

The process used to appraise or determine the number of injuries and deaths, damage to public and private property, and status of key facilities and services (e.g., hospitals and other health care facilities, fire and police stations, communications networks, water and sanitation systems, utilities, transportation networks) resulting from a human-caused or natural disaster.

Disability

According to the Americans with Disabilities Act, the term “individual with a disability” refers to “a person who has a physical or mental impairment that substantially limits one or more major life activities, a person who has a history or record of such an impairment, or a person who is regarded by others as having such an impairment.” The term “disability” has the same meaning as that used in the Americans with Disabilities Act Amendments Act of 2008, P.L. 110-325, as incorporated into the Americans with Disabilities Act. See <http://www.ada.gov/pubs/ada.htm> for the definition and specific changes to the text of the Americans with Disabilities Act. State laws and local ordinances may also include individuals outside the Federal definition.

Disaster

An occurrence of a natural catastrophe, technological accident, or human-caused incident that has resulted in severe property damage, deaths, and/or multiple injuries. As used in this Guide, a “large-scale disaster” is one that exceeds the response capability of the local jurisdiction and requires state, and potentially Federal, involvement. As used in the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), a “major disaster” is “any natural catastrophe [...] or, regardless of cause, any fire, flood, or explosion, in any part of the United States, which in the determination of the President causes damage of sufficient severity and magnitude to warrant major disaster assistance under [the] Act to supplement the efforts and available resources of states, local governments, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby” (Stafford Act, Sec. 102(2), 42 U.S.C. 5122(2)).

Earthquake

The sudden motion or trembling of the ground produced by abrupt displacement of rock masses, usually within the upper 10 to 20 miles of the earth’s surface.

Emergency

Any incident, whether natural or human-caused, that requires responsive action to protect life or property. Under the Stafford Act, an emergency “means any occasion or instance for which, in the determination of the President, Federal assistance is needed to supplement state and local efforts and capabilities to save lives and to protect property and public health and safety, or to lessen or avert the threat of a catastrophe in any part of the United States” (Stafford Act, Sec. 102(1), 42 U.S.C. 5122(1)).

Emergency Assistance

According to the National Response Framework, emergency assistance is “assistance required by individuals, families, and their communities to ensure that immediate needs beyond the scope of the traditional ‘mass care’ services provided at the local level are addressed. These services include: support to evacuations (including registration and tracking of evacuees); reunification of families; provision of aid and services to special needs populations; evacuation, sheltering, and other emergency services for household pets and services animals; support to specialized shelters; support to medical shelters; nonconventional shelter management; coordination of donated goods and services; and coordination of voluntary agency assistance.”

Emergency Management

The preparation for and the carrying out of functions (other than functions for which military forces are primarily responsible) to prevent, minimize, and repair injury and damage resulting from natural or manmade disasters. These functions include fire-fighting, police, medical and health, rescue, warning, engineering, communications, evacuation, resource management, plant protection, restoration of public utility services, and other functions related to preserving the public health, safety, and welfare.

Emergency Medical Services

Services, including personnel, facilities, and equipment, required to ensure proper medical care for the sick and injured from the time of injury to the time of final disposition (which includes medical disposition within a hospital, temporary medical facility, or special care facility; release from the site; or being declared dead). Further, emergency medical services specifically includes those services immediately required to ensure proper medical care and specialized treatment for patients in a hospital and coordination of related hospital services.

Emergency Operations Center

The physical location at which the coordination of information and resources to support incident management (on-scene operations) activities normally takes place. An Emergency Operations Center may be a temporary facility or may be located in a more central or permanently established facility, perhaps at a higher level of organization within a jurisdiction. Emergency Operations Centers may be organized by major disciplines (e.g., fire, law enforcement, medical services), by jurisdiction (e.g., Federal, state, tribal, regional, city, county), or by some combination thereof.

Emergency Operations Plan

The ongoing plan maintained by various jurisdictional levels for responding to a wide variety of potential hazards. It describes how people and property will be protected; details who is responsible for carrying out specific actions; identifies the personnel, equipment, facilities, supplies, and other resources available; and outlines how all actions will be coordinated.

Emergency Support Function

Used by the Federal Government and many state governments as the primary mechanism at the operational level to organize and provide assistance. Emergency Support Functions align categories of resources and provide strategic objectives for their use. Emergency Support Functions use standardized deployment and recovery of resources before, during, and after an incident.

James city county ESFs serve as planning units for essential functions and provide support to ICS positions during operations. ESFs provide trained staff to ICS positions.

Evacuation

The organized, phased, and supervised withdrawal, dispersal, or removal of civilians from dangerous or potentially dangerous areas, and their reception and care in safe areas.

A **spontaneous evacuation** occurs when residents or citizens in the threatened areas observe an incident or receive unofficial word of an actual or perceived threat and, without receiving

instructions to do so, elect to evacuate the area. Their movement, means, and direction of travel are unorganized and unsupervised.

A **voluntary evacuation** is a warning to persons within a designated area that a threat to life and property exists or is likely to exist in the immediate future. Individuals issued this type of warning or orders are not required to evacuate; however, it would be to their advantage to do so.

A **mandatory or directed evacuation** is a warning to persons within the designated area that an imminent threat to life and property exists and individuals must evacuate in accordance with the instructions of local officials.

Evacuees

All persons removed or moving from areas threatened or impacted by emergency events.

Federal Coordinating Officer

The official appointed by the President to execute Stafford Act authorities, including the commitment of FEMA resources and mission assignments of other Federal departments or agencies. In all cases, the Federal Coordinating Officer represents the FEMA Administrator in the field to discharge all FEMA responsibilities for the response and recovery efforts underway. For Stafford Act incidents, the Federal Coordinating Officer is the primary Federal representative with whom the State Coordinating Officer and other response officials interface to determine the most urgent needs and to set objectives for an effective response in collaboration with the Unified Coordination Group.

Flood

A general and temporary condition of partial or complete inundation of normally dry land areas from overflow of inland or tidal waters, unusual or rapid accumulation or runoff of surface waters, or mudslides/mudflows caused by accumulation of water.

Governor's Authorized Representative

An individual empowered by a Governor to: (1) execute all necessary documents for disaster assistance on behalf of the state, including certification of applications for public assistance; (2) represent the Governor of the impacted state in the Unified Coordination Group, when required; (3) coordinate and supervise the state disaster assistance program to include serving as its grant administrator; and (4) identify, in coordination with the State Coordinating Officer, the state's critical information needs for incorporation into a list of Essential Elements of Information.

Hazard

A natural, technological, or human-caused source or cause of harm or difficulty.

Hazardous Material

Any substance or material that, when involved in an accident and released in sufficient quantities, poses a risk to people's health, safety, and/or property. These substances and materials include explosives, radioactive materials, flammable liquids or solids, combustible liquids or solids, poisons, oxidizers, toxins, and corrosive materials.

Hazardous Materials Emergency Response Plan

The plan was developed in response to the requirements of Section 303 (a) of the Emergency Planning and Community Right-to-Know Act (Title III) of Superfund Amendments and Reauthorization Act of 1986. It is intended to be a tool for our community's use in recognizing the risks of a hazardous materials release, in evaluating our preparedness for such an event, and in planning our response and recovery actions. This plan is separate from the county's Emergency Operations Plan.

Household Pet

According to FEMA Disaster Assistance Policy 9253.19, “[a] domesticated animal, such as a dog, cat, bird, rabbit, rodent, or turtle, that is traditionally kept in the home for pleasure rather than for commercial purposes, can travel in commercial carriers, and be housed in temporary facilities. Household pets do not include reptiles (except turtles), amphibians, fish, insects/arachnids, farm animals (including horses), and animals kept for racing purposes.” This definition is used by FEMA to determine assistance that FEMA will reimburse and is the definition used in the production of this Guide. Individual jurisdictions may have different definitions based on other criteria.

Hurricane

A tropical cyclone, formed in the atmosphere over warm ocean areas, in which wind speeds reach 74 miles per hour or more and blow in a large spiral around a relatively calm center or eye. Circulation is counter-clockwise in the Northern Hemisphere and clockwise in the Southern Hemisphere.

Incident

An occurrence or event—natural, technological, or human-caused—that requires a response to protect life, property, or the environment (e.g., major disasters, emergencies, terrorist attacks, terrorist threats, civil unrest, wildland and urban fires, floods, hazardous materials spills, nuclear accidents, aircraft accidents, earthquakes, hurricanes, tornadoes, tropical storms, tsunamis, war-related disasters, public health and medical emergencies, other occurrences requiring an emergency response).

Incident Command System

A model for disaster response that uses common terminology, modular organization, integrated communications, unified command structure, action planning, manageable span of control, pre-designed facilities, and comprehensive resource management. In ICS there are five functional elements: Command, Operations, Logistics, Planning and Finance/Administration.

Incident Management Assistance Team

A national-based or regional-based team composed of SMEs and incident management professionals, usually composed of personnel from multiple Federal departments and agencies, which provide incident management support during a major incident.

Joint Field Office

The primary Federal incident management field structure. The Joint Field Office is a temporary Federal facility that provides a central location for the coordination of Federal, state, territorial, tribal, and local governments and private sector and nongovernmental organizations with

primary responsibility for response and recovery. The Joint Field Office structure is organized, staffed, and managed in a manner consistent with National Incident Management System principles and is led by the Unified Coordination Group. Although the Joint Field Office uses an Incident Command System structure, the Joint Field Office does not manage on-scene operations. Instead, the Joint Field Office focuses on providing support to on-scene efforts and conducting broader support operations that may extend beyond the incident site.

Joint Information Center

A facility established to coordinate all incident-related public information activities. It is the central point of contact for all news media. Public information officials from all participating agencies should co-locate at the Joint Information Center.

Jurisdiction

Jurisdiction has more than one definition. Each use depends on the context:

A range or sphere of authority. Public agencies have jurisdiction at an incident related to their legal responsibilities and authority. Jurisdictional authority at an incident can be political or geographical (e.g., city, county, tribal, state, or Federal boundary lines) or functional (e.g., law enforcement, public health).

A political subdivision (e.g., Federal, state, county, parish, municipality) with the responsibility for ensuring public safety, health, and welfare within its legal authorities and geographic boundaries.

Likelihood

Estimate of the potential for an incident's occurrence.

Limited English Proficiency

Persons who do not speak English as their primary language and who have a limited ability to read, speak, write, or understand English.

Local Emergency

The condition declared by the local governing body when, in its judgment, the threat or actual occurrence of a disaster is or threatens to be of sufficient severity and magnitude to warrant coordinated local government action to prevent, or alleviate loss of life, property damage, or hardship. Only the Governor, upon petition of a local governing body, may declare a local emergency arising wholly or substantially out of a resource shortage when he deems the situation to be of sufficient magnitude to warrant coordinated local government action to prevent or alleviate the hardship or suffering threatened or caused thereby.

Local Emergency Planning Committee

Appointed representatives of local government, private industry, business, environmental groups, and emergency response organizations responsible for ensuring that the hazardous materials planning requirements of the Superfund Amendments and Reauthorization Act of 1986 (SARA Title III) are complied with.

Mass Care

The actions that are taken to protect evacuees and other disaster victims from the effects of the disaster. Activities include mass evacuation, mass sheltering, mass feeding, access and functional needs support, and household pet and service animal coordination.

Mitigation

Activities providing a critical foundation in the effort to reduce the loss of life and property from natural and/or human-caused disasters by avoiding or lessening the impact of a disaster and providing value to the public by creating safer communities. Mitigation seeks to fix the cycle of disaster damage, reconstruction, and repeated damage. These activities or actions, in most cases, will have a long-term sustained effect.

National Incident Management System

A set of principles that provides a systematic, proactive approach guiding government agencies at all levels, nongovernmental organizations, and the private sector to work seamlessly to prevent, protect against, respond to, recover from, and mitigate the effects of incidents, regardless of cause, size, location, or complexity, in order to reduce the loss of life or property and harm to the environment.

National Response Framework

This document establishes a comprehensive, national, all-hazards approach to domestic incident response. It serves as a guide to enable responders at all levels of government and beyond to provide a unified national response to a disaster. It defines the key principles, roles, and structures that organize the way U.S. jurisdictions plan and respond.

Nongovernmental Organization

An entity with an association that is based on the interests of its members, individuals, or institutions. It is not created by a government, but it may work cooperatively with government. Such organizations serve a public purpose and are not for private benefit. Examples of nongovernmental organizations include faith-based charity organizations and the American Red Cross.

Planning Assumptions

Parameters that are expected and used as a context, basis, or requirement for the development of response and recovery plans, processes, and procedures. If a planning assumption is not valid for a specific incident's circumstances, the plan may not be adequate to ensure response success. Alternative methods may be needed. For example, if a decontamination capability is based on the planning assumption that the facility is not within the zone of release, this assumption must be verified at the beginning of the response.

Preparedness

Actions that involve a combination of planning, resources, training, exercising, and organizing to build, sustain, and improve operational capabilities. Preparedness is the process of identifying the personnel, training, and equipment needed for a wide range of potential incidents, and developing jurisdiction-specific plans for delivering capabilities when needed for an incident.

Presidential Declaration

A presidential declaration frees up various sources of assistance from the Federal government based on the nature of the request from the governor.

Prevention

Actions to avoid an incident or to intervene to stop an incident from occurring. Prevention involves actions to protect lives and property. It involves applying intelligence and other information to a range of activities that may include such countermeasures as deterrence operations; heightened inspections; improved surveillance and security operations; investigations to determine the full nature and source of the threat; public health and agricultural surveillance and testing processes; immunizations, isolation, or quarantine; and, as appropriate, specific law enforcement operations aimed at deterring, preempting, interdicting, or disrupting illegal activity and apprehending potential perpetrators and bringing them to justice.

Primary Agency

While several County departments will be performing varied and critical tasks during a disaster, in most cases only one agency will be considered the ‘primary agency.’ The primary agency shall be responsible for detailed planning, testing, and evaluation of their respective emergency support function. The Department Director of the primary agency shall serve as the principle advisor to the County Executive during the response and recovery phase. In addition, the Department Director or the primary agency must assure that essential operations of his/her agency will continue, unless otherwise directed by the County Executive or his/her designee.

Protected Group

A group of people qualified for special protection by a law, policy, or similar authority. For example, Title VI of the Civil Rights Act of 1964 protects against discrimination on the grounds of race, color, or national origin.

Protection

Actions to reduce or eliminate a threat to people, property, and the environment. Primarily focused on adversarial incidents, the protection of critical infrastructure and key resources is vital to local jurisdictions, national security, public health and safety, and economic vitality. Protective actions may occur before, during, or after an incident and prevent, minimize, or contain the impact of an incident.

Recovery

The development, coordination, and execution of service and site restoration plans; the reconstitution of government operations and services; individual, private sector, nongovernmental, and public assistance programs to provide housing and to promote restoration; long-term care and treatment of affected persons; additional measures for social, political, environmental, and economic restoration; evaluation of the incident to identify lessons learned; post-incident reporting; and development of initiatives to mitigate the effects of future incidents.

Resource Management

A system for identifying available resources at all jurisdictional levels to enable timely, efficient, and unimpeded access to resources needed to prepare for, respond to, or recover from an incident. Resource management under the National Incident Management System includes mutual aid and assistance agreements; the use of special Federal, state, territorial, tribal, and local teams; and resource mobilization protocols.

Response

Immediate actions to save and sustain lives, protect property and the environment, and meet basic human needs. Response also includes the execution of plans and actions to support short-term recovery.

Risk

The potential for an unwanted outcome resulting from an incident or occurrence, as determined by its likelihood and the associated consequences.

Risk Analysis

A systematic examination of the components and characteristics of risk.

Risk Assessment

A product or process that collects information and assigns values to risks for the purpose of informing priorities, developing or comparing courses of action, and informing decision making.

Risk Identification

The process of finding, recognizing, and describing potential risks.

Risk Management

The process of identifying, analyzing, assessing, and communicating risk and accepting, avoiding, transferring, or controlling it to an acceptable level at an acceptable cost.

Scenario

Hypothetical situation composed of a hazard, an entity impacted by that hazard, and associated conditions including consequences when appropriate.

Scenario-based Planning

A planning approach that uses a hazard vulnerability assessment to assess the hazard's impact on an organization on the basis of various threats that the organization could encounter. These threats (e.g., hurricane, terrorist attack) become the basis of the scenario.

Senior Official

The elected or appointed official who, by statute, is charged with implementing and administering laws, ordinances, and regulations for a jurisdiction. He or she may be a mayor, city manager, etc.

Service Animal

Any guide dog, signal dog, or other animal individually trained to assist an individual with a disability. Service animals' jobs include, but are not limited to:

- Guiding individuals with impaired vision
- Individuals with impaired hearing (to intruders or sounds such as a baby's cry, the doorbell, and fire alarms)
- Pulling a wheelchair
- Retrieving dropped items
- Alerting people of impending seizures
- Assisting people who have mobility disabilities with balance or stability

Situation Report

A form which, when completed at the end of each day of local Emergency Operations Center operations, will provide the County with an official daily summary of the status of an emergency and of the local emergency response. A copy should be submitted to the State EOC via fax or submitted through the Virginia Department of Emergency Management website.

Span of Control

As defined in the Incident Command System, Span of Control is the number of subordinates one supervisor can manage effectively. Guidelines for the desirable span of control recommend three to seven persons. The optimal number of subordinates is five for one supervisor.

Standard Operating Procedure/Guideline

A reference document or operations manual that provides the purpose, authorities, duration, and details for the preferred method of performing a single function or a number of interrelated functions in a uniform manner.

State Coordinating Officer

The individual appointed by the Governor to coordinate state disaster assistance efforts with those of the Federal Government. The State Coordinating Officer plays a critical role in managing the state response and recovery operations following Stafford Act declarations. The Governor of the affected state appoints the State Coordinating Officer, and lines of authority flow from the Governor to the State Coordinating Officer, following the state's policies and laws.

State of Emergency

The condition declared by the Governor when, in his judgment, a threatened or actual disaster in any part of the State is of sufficient severity and magnitude to warrant disaster assistance by the State to supplement local efforts to prevent or alleviate loss of life and property damage.

Superfund Amendments and Reauthorization Act of 1986

Established Federal regulations for the handling of hazardous materials.

Storm Surge

A dome of sea water created by strong winds and low barometric pressure in a hurricane that causes severe coastal flooding as the hurricane strikes land.

Terrorism

Activity that involves an act that is dangerous to human life or potentially destructive of critical infrastructure or key resources; is a violation of the criminal laws of the United States or of any state or other subdivision of the United States; and appears to be intended to intimidate or coerce a civilian population, to influence the policy of a government by intimidation or coercion, or to affect the conduct of a government by mass destruction, assassination, or kidnapping.

Tornado

A local atmospheric storm, generally of short duration, formed by winds rotating at very high speeds, usually in a counter-clockwise direction. The vortex, up to several hundred yards wide, is visible to the observer as a whirlpool-like column of winds rotating about a hollow cavity or funnel. Winds can be as low as 65 miles per hour, but may reach 300 miles per hour or higher.

Tsunami

Sea waves produced by an undersea earthquake. Such sea waves can reach a significant height resulting in damage or devastation to coastal cities and low-lying coastal areas.

Uncertainty

The degree to which a calculated, estimated, or observed value may deviate from the true value.

Unified Command

Shared responsibility for overall incident management as a result of a multi-jurisdictional or multi-agency incident. In the event of conflicting priorities or goals, or where resources are scarce, there must be a clear line of authority for decision-making. Agencies contribute to unified command by determining overall goals and objectives, jointly planning for tactical activities, conducting integrated tactical operations and maximizing the use of all assigned resources.

Vulnerability

A physical feature or operational attribute that renders an entity open to exploitation or susceptible to a given hazard.

Warning

The alerting of emergency response personnel and the public to the threat of extraordinary danger and the related effects that specific hazards may cause.

Weapons of Mass Destruction

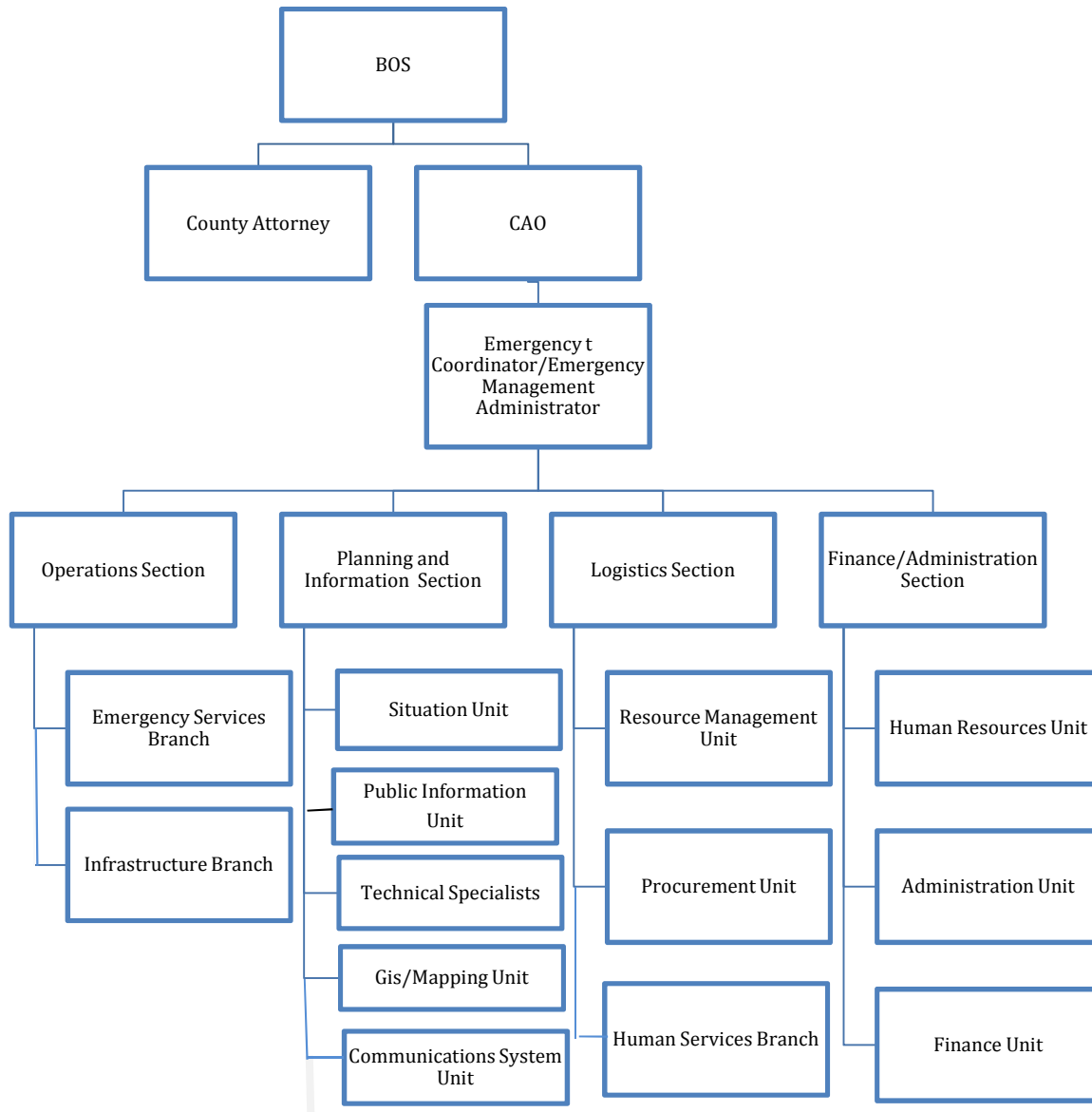
Any explosive, incendiary, or poison gas, bomb, grenade, rocket having a propellant charge of more than 4 ounces, or a missile having an explosive incendiary charge of more than 0.25 ounce, or mine or device similar to the above; poison gas; weapon involving a disease organism; or weapon that is designed to release radiation or radioactivity at a level dangerous to human life. (Source: 18 USC 2332a as referenced in 18 USC 921).

Glossary of Acronyms

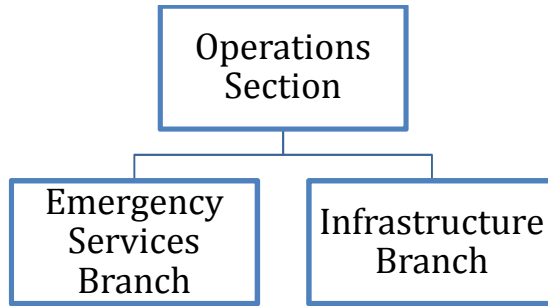
APHIS	Animal and Plant Health Inspection Service
CERT	Community Emergency Response Team
CFO	Chief Financial Officer
CR	Community Relations
DSCO	Deputy State Coordinating Officer
DHS	Department of Homeland Security
DRC	Disaster Recovery Center
DMME	Department of Mines, Minerals, and Energy
DRM	Disaster Recovery Manager
EAS	Emergency Alert System
EOC	Emergency Operations Center
ESF	Emergency Support Function
EPA	Environmental Protection Agency
ERT-A	Emergency Response Team – Advance Element
FBI	Federal Bureau of Investigation
FCO	Federal Coordinating Officer
FEMA	Federal Emergency Management Agency
ICS	Incident Command System
JIC	Joint Information Center
JFO	Joint Field Office
MACC	Multi-agency Command Center
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
NAWAS	National Warning System
NCR	National Capital Region
NGO	Nongovernmental Organization
NIMS	National Incident Management System
NOAA	National Oceanic and Atmospheric Administration
NRC	Nuclear Regulatory Commission
NRP	National Response Plan
NWS	National Weather Service
PDA	Preliminary Damage Assessment
PIO	Public Information Officer
POC	Point of Contact
RACES	Radio Amateur Civil Emergency Services
SAR	Search and Rescue
SCC	State Corporation Commission
SOP	Standard Operating Procedures
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USDA	U.S. Department of Agriculture
VOAD	Voluntary Organizations Active in Disaster
WAWAS	Washington Area Warning System
WMD	Weapons of Mass Destruction

Attachment 1

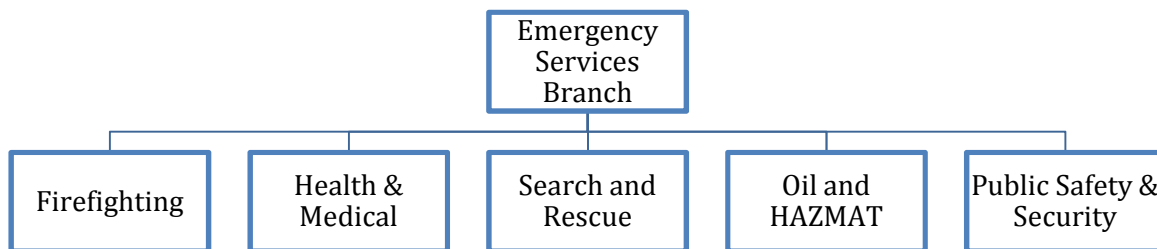
EMERGENCY MANAGEMENT ORGANIZATION CHART*



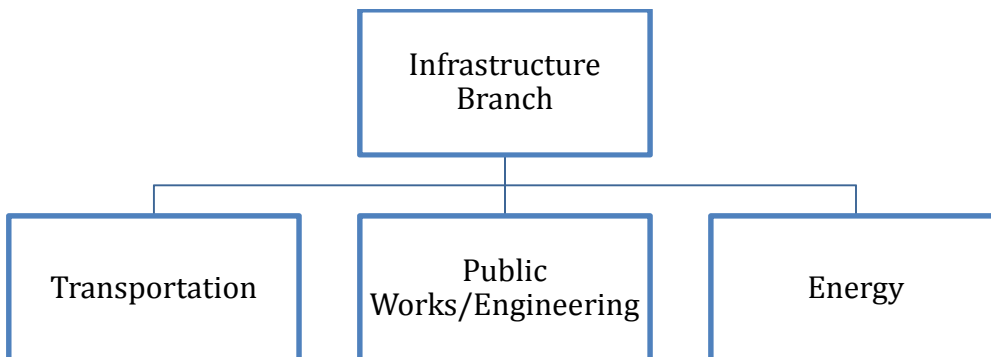
Operations



Emergency Services



Infrastructure Support



Attachment 3

SUCCESSION OF AUTHORITY

Continuity of emergency operations is critical to the successful execution of emergency operations. Therefore, the following lines of succession are specified in anticipation of any contingency that might result in the unavailability of the ranking member of the administrative hierarchy. The decision-making authority for each organization or service function is listed below by position in decreasing order.

Organization/Service Function	Authority in Line of Succession
Emergency Management Direction and Control	1. CAO 2. Assistant County Administrator 3. Coordinator 4. Deputy Coordinator
Emergency Public Information	1. James City County PIO 2. Fire Department PIO
Police Department	1. Police Chief 2. Police Deputy Chief 3. Police Duty Major
Fire Department	1. Fire Chief 2. Deputy Fire Chief 3. Fire Battalion Chief
Williamsburg-JCC Public Schools	1. Superintendent 2. Assistant Superintendent 3. Director of Operations
James City County Department of General Services	1. Director 2. Assistant Director
James City County Department of Development Management	1. Director 2. Assistant Director
James City County Department of Financial and Management Services	1. Director 2. Assistant Director
James City County Department of Community Services	1. Director 2. Assistant Director
James City County Department of Parks and Recreation	1. Director 2. Community Centers Administrator
Peninsula & Hampton Health District	1. Medical Director 2. Deputy Medical/Director
James City Service Authority	1. General Manager 2. Assistant General Manager 3. Operations Administrator
Virginia Cooperative Extension	1. Extension Agent
County Attorney's Office	1. County Attorney 2. Assistant County Attorney

Attachment 4

EMERGENCY OPERATIONS PLAN DISTRIBUTION LIST

County Administrative Officer	Williamsburg James City County Schools
Assistant County Administrator	Sheriff's Department
County Attorney	Virginia Department of Emergency Management
Coordinator of Emergency Management	James City- <u>Bruton</u> Volunteer Fire Department
Deputy Coordinator of Emergency Management	James City County Volunteer Rescue Squad
Police Department	RACES
Financial Management Services	Hampton Roads Planning District Commission
James City Service Authority	Virginia Cooperative Extension Office
Fire Department/Emergency Medical Services	
Emergency Communication	

Distribution of hard copies of the Emergency Operations Plan is limited. The Emergency Operations Plan is posted on the County's intranet site. Electronic copies can also be made available as required.

Electronic access to the Emergency Operations Plan is made available with permissions to all stakeholders who participate in planning through CEMPlanner. The list of stakeholders is maintained by the Division of Emergency Management.

Attachment 5

Continuity of Government

James City County has a system to preserve records pertinent to the continuity of government.

Court Records

The preservation of essential records for James City County is the responsibility of the Clerk of Circuit Court. All essential records are to be stored in the records vault located in the Office of the Clerk of Circuit Court. These records include the following:

- Real Estate Records*
- Criminal Records
- Wills
- Civil Records
- Chancery Records
- Marriage Licenses

The evacuation of records in the event of an emergency will be accomplished only by approval of Clerk of Circuit Court, Williamsburg, Virginia.

The loading and transportation of these records is the responsibility of the Williamsburg- James City County Sheriff's Department.

* A microfilm copy of all real estate records for James City County is stored in the Archives, State Library in Richmond, Virginia.

Agencies/Organizations

Each agency/organization should establish its own records protection program. Those records deemed essential for continuing government functions should be identified and procedures should be established for their protection, such as duplicate copies in a separate location and/or the use of safe and secure storage facilities. Provisions should be made for the continued operations of automated data processing systems and record.

Attachment 6

**SAMPLE RESOLUTION FOR THE
DECLARATION OF A LOCAL EMERGENCY**

AT A SPECIAL MEETING OF THE BOARD OF SUPERVISORS OF JAMES CITY
COUNTY, VIRGINIA, HELD AT , ON , , 201_

RESOLUTION - DECLARING A LOCAL EMERGENCY TO EXIST IN JAMES
CITY COUNTY, VIRGINIA

WHEREAS, the Board of Supervisors of the County of James City, Virginia, does hereby find as follows:

1. That due to the occurrence of , the County of James City is facing a condition of extreme peril to the lives, safety and property of the residents of James City County;
2. That as a result of this extreme peril, the proclamation of the existence of an emergency is necessary to permit the full powers of government to deal effectively with this condition of peril.

NOW, THEREFORE, BE IT HEREBY PROCLAIMED by the Board of Supervisors of the County of James City, Virginia, that a local emergency now exists throughout the County of James City; and

IT IS FURTHER PROCLAIMED AND ORDERED that during the existence of this emergency the powers, functions, and duties of the Director of Emergency Management and the Emergency Management organization and functions of the County of James City shall be those prescribed by the laws of the Commonwealth of Virginia and the ordinances, resolutions, and approved plans of the County of James City in order to mitigate the effects of said emergency.

Dated: _____ Board of Supervisors, County of James City, VA

Attest:

ITEM SUMMARY

DATE: 12/8/2015
TO: The Board of Supervisors
FROM: Jason Purse, Zoning Administrator
SUBJECT: Adoption of the Mooretown Road Extended Corridor Study Report

In 2009, the Mooretown Road extension was incorporated into the adopted James City County Comprehensive Plan. The Mooretown Road extension remained a recommendation of the adopted Comprehensive Plan update, Toward 2035 Leading the Way, and was included in a corridor vision section. The study began in early 2014 with a data collection phase that has included three community meetings.

The results of the work from the data collection and public meetings have now been compiled into the Mooretown Road Extended Corridor Study Report.

ATTACHMENTS:

	Description	Type
▣	Mooretown Road Extended Corridor Study Memo	Staff Report
▣	resolution	Resolution
▣	Mooretown Road Extended Corridor Study Report	Exhibit
▣	Mooretown Road Extended Corridor Study Appendix	Exhibit
▣	Un-approved PC Minutes	Minutes
▣	Consultant Presentaion	Presentation

REVIEWERS:

Department	Reviewer	Action	Date
Planning	Holt, Paul	Approved	11/18/2015 - 2:38 PM
Development Management	Kinsman, Adam	Approved	11/23/2015 - 8:34 AM
Publication Management	Burcham, Nan	Approved	11/23/2015 - 8:52 AM
Legal Review	Gowdy, Michelle	Approved	12/1/2015 - 10:19 AM
Board Secretary	Fellows, Teresa	Approved	12/1/2015 - 10:25 AM
Board Secretary	Kinsman, Adam	Approved	12/1/2015 - 1:58 PM
Board Secretary	Fellows, Teresa	Approved	12/1/2015 - 1:58 PM

MEMORANDUM

DATE: December 8, 2015

TO: The Board of Supervisors

FROM: Jason Purse, Zoning Administrator

SUBJECT: Adoption of the Mooretown Road Extended Corridor Study Report

In 2009, the Mooretown Road extension was incorporated into the adopted James City County Comprehensive Plan after analysis revealed that such a road could improve evacuation options during severe weather events and had the potential to alleviate traffic congestion. It was also noted that this road extension could open several large parcels of land to economic development. However, the Comprehensive Plan did not define a specific route for the Mooretown Road extension.

The Mooretown Road extension remained a recommendation of the adopted Comprehensive Plan update, *Toward 2035 Leading the Way*, and was included in a corridor vision section with the following:

It has been recommended to extend Mooretown Road from its current terminus in York County to Croaker Road or Rochambeau Drive. Development within the vicinity of the proposed Mooretown Road extension should be discouraged until master plans are approved and infrastructure is planned to handle intensive development that does not solely rely on Richmond Road. Private funding is expected, although public and private efforts may be beneficial to fund infrastructure improvements.

In October 2012 the Board of Supervisors appropriated \$400,000 in federal Regional Surface Transportation Program (RSTP) funds to conduct a feasibility study of the potential Mooretown Road Extended Corridor. The RSTP funds are eligible for 100% reimbursement to the County by the Virginia Department of Transportation and require no local match. The study sought to identify a preferred alignment, evaluate potential environmental impacts, estimate construction costs, as well as identify design constraints for multiple development patterns based on land use alternatives. In November 2013 Vanasse Hangen Brustlin (VHB) was chosen as the consultant for the study.

The study began in early 2014 with a data collection phase that has included the following public meetings:

- April 29, 2014. VHB gave a presentation of the current and projected traffic conditions in the study area, a review of the known environmental conditions, current and planned land uses and an overview of the real estate market. The public was encouraged to provide input on issues and opportunities that should be considered during the development of alternative alignments for the potential roadway.
- October 20, 2014. The consultant team presented information about potential alternative alignments and road features for the Mooretown Road extension, as well as an analysis of future traffic conditions, land use and real estate market potential for the study area. Attendees had the opportunity to comment on the alternative alignments and road design concepts and the overall project in an interactive work session following the presentation.
- March 21, 2015. Based on public input from the previous two community meetings, as well as technical information gathered in the study area, VHB presented a potential alignment for the Mooretown Road Extension. The community had an opportunity to comment on the alignment and overall project prior to the final study recommendation document.

- Check-ins with the Policy Committee and Board of Supervisors. Staff and the consultant provided updates and opportunities for feedback to the Policy Committee at its meeting in November 2014. Staff and the consultant also provided updates to the Board of Supervisors and Planning Commission at their joint work session in May 2015.

The results of the work from the data collection and public meetings have now been compiled into the Mooretown Road Extended Corridor Study Report, which is attached. The study document includes detailed discussions of existing conditions, traffic forecasts, development of alternatives, as well as recommendations. It should be noted that there are no existing plans to construct any of these potential alignments and no funding has been identified.

Adoption of this study document does not dictate future decisions about a potential extension of Mooretown Road; however, all of the potential impacts of the various alignments will have already been evaluated should a proposal for the road be submitted in the future. Staff concurs with VHB that Alternative 2 limits the environmental impacts, leaves the most developable area acreage available and also confines the roadway to those properties that originally “opted-in” to the Economic Opportunity designation area in 2009. Given uncertainty regarding ultimate land use needs surrounding the potential roadway in the future, staff also understands the need to preserve a certain amount of flexibility with respect to final alignment options and believes it is important to keep the pro/con discussion of all three alignments should future conditions dictate the need for a modified design.

It should be noted that other proposed road projects have been shown on the Comprehensive Plan Land Use Map prior to final alignment decisions or construction. The Route 199 extension was originally shown on the 1982 Comprehensive Plan, but was not built until 1999. There was a previously proposed loop road connecting Croaker Road and Centerville Road that was shown on the 1982 plan as well. This project was never built and was subsequently removed from the 1997 Comprehensive Plan Land Use Map.

Recommendation:

Staff recommends that the Board of Supervisors adopt the Mooretown Road Extended Corridor Study Report.

Planning Commission Recommendation:

At its November 4, 2015 meeting, the Planning Commission voted 6-0 to recommend adoption of this study document.

JP/ab

MooretownRdReport-mem

Attachments:

1. Resolution
2. Mooretown Road Extended Corridor Study Report
3. Mooretown Road Extended Corridor Study Appendix
4. Unapproved Minutes from the November 4, 2015, Planning Commission Meeting

RESOLUTION

ADOPTION OF THE MOORETOWN ROAD EXTENDED CORRIDOR STUDY REPORT

- WHEREAS, in 2009 the proposed Mooretown Road extension, from its current terminus in York County to Croaker Road or Rochembeau Drive, was incorporated into the adopted James City County Comprehensive Plan; and
- WHEREAS, in 2015 the Mooretown Road extension remained a recommendation of the adopted Comprehensive Plan update, *Toward 2035 Leading the Way*, and was included in a corridor vision section which recommended a corridor study be completed that identified preferred alignments, environmental impacts and construction cost estimates; and
- WHEREAS, the County received an allocation of federal Regional Surface Transportation Program (RSTP) funds in FY 2012 to fully fund a study of the Mooretown Road extension; and
- WHEREAS, in November 2013 the Board of Supervisors authorized the Award of Contract to Vanasse Hangen Brustlin; and
- WHEREAS, the study included data collection, such as a detailed discussions of existing conditions, traffic forecasts and potential land use/market analysis, as well as three public input meetings and multiple check-ins with the Policy Committee and Board of Supervisors; and
- WHEREAS, the results of the work on these components have been documented in the Mooretown Road Extended Corridor Study Report; and
- WHEREAS, the Planning Commission, at its November 4, 2015 meeting, voted 6-0 to recommend adoption of the final study document.
- NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of James City County, Virginia, hereby adopts the Mooretown Road Corridor Study as the official guidance document for extension of Mooretown Road.

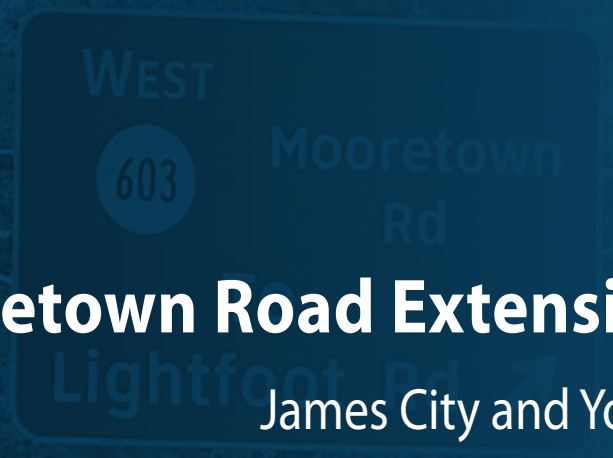
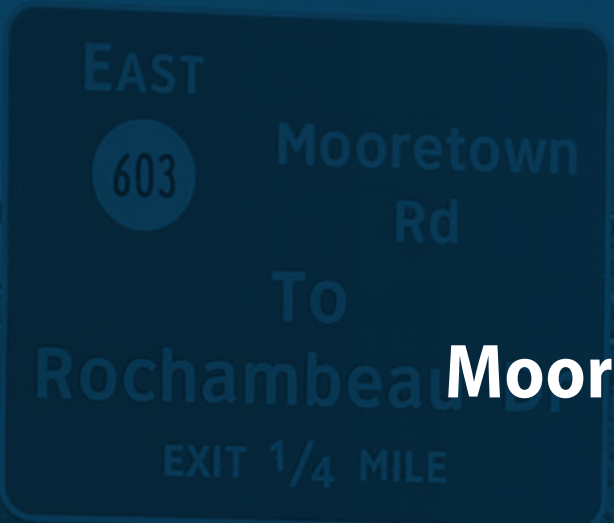
Michael J. Hipple
Chairman, Board of Supervisors

ATTEST:

Bryan J. Hill
Clerk to the Board

	VOTES		
	<u>AYE</u>	<u>NAY</u>	<u>ABSTAIN</u>
JONES	_____	_____	_____
MCGLENNON	_____	_____	_____
ONIZUK	_____	_____	_____
KENNEDY	_____	_____	_____
HIPPLE	_____	_____	_____

Adopted by the Board of Supervisors of James City County, Virginia, this 8th day of December, 2015.



Mooretown Road Extension Corridor Study

James City and York Counties, Virginia





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1.0 INTRODUCTION

The Mooretown Road Extension Corridor Study was conducted to examine and compare alternative alignments for a potential extension of Mooretown Road (SR 603) from Lightfoot Road (SR 646) to Croaker Road (SR 607). The following report is a summary of the analysis and recommendations prepared as part of the Mooretown Road Corridor Extension Study.

Corridor studies are conducted in Virginia as part of the preliminary planning and engineering process. They allow for early public involvement in the selection of roadway improvements.

1.1 PROJECT PURPOSE AND GOALS

The purpose of the Corridor Study is to identify and evaluate a range of options to address the long-term mobility needs and economic development potential of the parcels in northern James City and York Counties. Both the 2009 and 2035 James City County Comprehensive Plans recommend extending Mooretown Road from its current terminus in York County (at the intersection with Lightfoot Road) to Croaker Road. The extended road will serve two purposes: To alleviate traffic on Richmond Road (US 60) while providing an alternative corridor during emergency situations, and to provide primary access for the Economic Opportunity area situated between the Croaker and Lightfoot I-64 interchanges.

The primary goals of the study are:

- Through professional analysis and public and stakeholder input, determine what context-sensitive design characteristics should be implemented to provide access to the Economic Opportunity properties, provide an alternative route for Richmond Road (US 60), and provide minimal impact to sensitive environmental and rural areas affected by the road extension; and
- Determine the preferred road alignment and costs associated with right-of-way acquisition and construction.

1.2 PROJECT BACKGROUND

Mooretown Road is primarily a two lane road, widening to four lanes approximately 1.3 miles south of its present northern terminus at Lightfoot Road. It extends approximately 4.5 miles through York County from Lightfoot Road to Waller Mill Road, running along the James City and York County boundary line north east of the CSX railway.

In the late 1990's the Virginia Department of Transportation (VDOT) constructed a four lane relocation of Mooretown Road connecting the roadway to an interchange on Humelsine Parkway (SR 199) and terminating at Lightfoot Road. The possible extension of Mooretown Road is discussed in the York County 2005 Comprehensive Plan (and the 2013 Plan update). James City County discussed a potential extension of Mooretown Road during the 2009 update to their



Comprehensive Plan and the concept was ultimately adopted into the plan. The Economic Opportunity overlay district was also established in James City County as part of those actions.

In January 2010, the Hampton Roads Transportation Planning Organization (HRTPO) approved an allocation of Regional Surface Transportation Program (RSTP) funds for this Corridor Study. The Mooretown Road Extension was included as a candidate project for the Hampton Roads Long Range Transportation Plan in May 2010.

While an alignment had not been chosen, a conceptual sketch of the road was included with James City County's 2009 and 2035 Comprehensive Plans with a portion located in York County and a portion in James City County. A similar alignment is shown in the York County 2013 Comprehensive Plan. The potential route as shown in the Comprehensive Plans would impact multiple Chesapeake Bay Resource Protection Areas (RPAs) and steep slopes. Environmental constraints, as well as the concerns of citizens are key factors in determining the recommended alignment of the corridor.

James City County notes in their Comprehensive Plan that private funding of the extension is expected, although public and private efforts may be beneficial to fund infrastructure improvements. Other than funding for this corridor study, no additional funding sources have been identified at this time. The York County Comprehensive Plan's 2035 Roadway Plan map shows the extension of Mooretown Road in York County as a recommended improvement. The Plan states that although

not critical to York County in terms of relieving traffic congestion, such a road would provide an alternate route between the Lightfoot and Croaker areas and potentially divert traffic off of Richmond Road. The 2013 York County Comprehensive Plan further notes that the extension could yield economic benefits by improving accessibility to the Williamsburg Pottery property located on both sides of the proposed corridor. Accordingly, the Plan states that any extension of Mooretown Road in York County "should be funded by the property owner or developer and not with scarce public highway funds." Similar to James City County, the ultimate development of the Economic Opportunity areas in York County is envisioned as a mix of office, light industrial, commercial, and tourist related uses. The York County Comprehensive Plan also identifies this area as a potential location for mixed-use development incorporating residential as well as retail and office uses.

While there are some differences in terminology and technical approaches used, the Economic Opportunity portion of this focus area, particularly the Williamsburg Pottery property, is very similar between the two counties. One key item to note is that the comprehensive plans of both counties allow substantial flexibility. In each case, the plans would allow a purely commercial use, such as a light industrial park, but also provide for the possibility of a master-planned mixed use community that includes integrated retail and residential uses. Both counties' comprehensive plans recognize the importance and potential of this area without establishing a specific vision. In accordance with longstanding practice, any large-scale

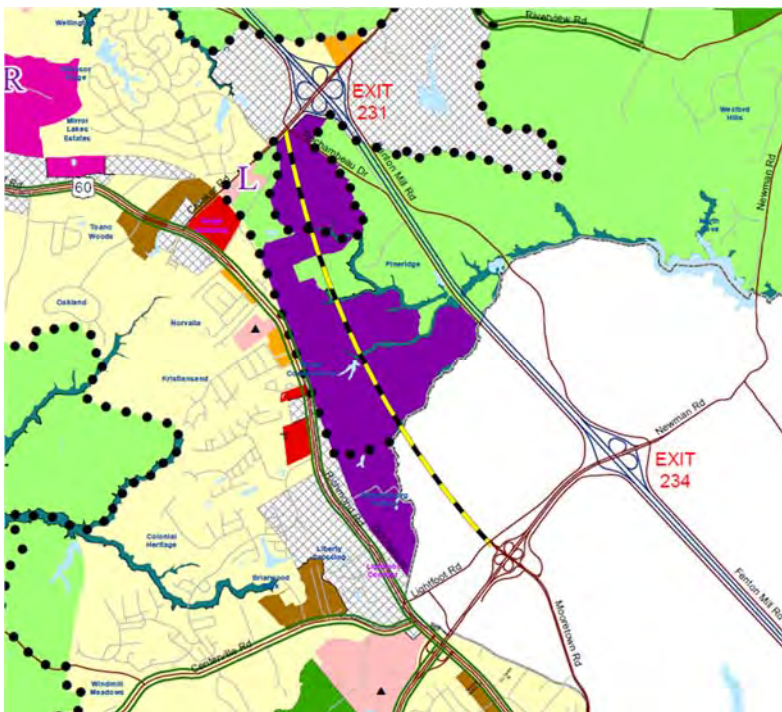
development on either side of the jurisdictional boundary would include opportunities for the other county to participate by reviewing plans and offering input. Alternatively, any master planning exercise or development project involving property on both sides of the county line would require joint participation and close cooperation on the part of both counties.

1.3 STUDY AREA

The Study Area for the Mooretown Road Extension Corridor Study is approximately 2,100 acres and is generally bounded by Humelsine Parkway on the southeast, Richmond Road on the southwest, Croaker Road on the northwest and Interstate 64 on the northeast. The study area is outlined on Figure 1.0.

The area is a mix of agricultural, residential, commercial and undeveloped areas. While the area generally appears flat, there are steep slopes associated with multiple streams that pass through the study area and divide the overall area into several sub areas. Within the study area there are approximately 250 parcels that are owned by approximately 210 different property owners. Properties range in size from half-acre residential lots to 420 acre farm tracts.

Beyond the road corridors that bound the study area, there is one road connection through the area, Rochambeau Drive which parallels Interstate 64. In addition there are a number of smaller roads within the study area that provide access to neighborhoods along the edges of the study area or private streets that provide access to individual houses. The infrastructure within the study area is limited with the major utility corridors along or adjacent to Richmond Road and Croaker Road.



Mooretown Road as shown on the James City County Comprehensive Plan



-  Study Area Boundary
-  Parcels
-  County Boundary



Mooretown Road Extension Corridor Study
James City County and York County, Virginia



FIGURE 1.0
Study Area

Surrounding the study area are a number of residential neighborhoods particularly to the west and north. In addition, Richmond Road and Lightfoot Road contain a range of commercial and retail uses. Areas to the northeast across Interstate 64 are generally lower density residential.

1.4 STUDY PREPARATION PROCESS

The Mooretown Road Extension Corridor Study was developed over a 16 month study process that included five major task elements:

- Task 1: Project Initiation and Kick-off, which involved James City County, York County and the Virginia Department of Transportation.
- Task 2: Data Collection and Analysis, which included review of existing data from public sources, on site observations and stakeholder interviews of property owners, businesses and County stakeholders such as emergency services and economic development.
- Task 3: Development of Alternatives, which included identification of multiple potential alignments for the Mooretown Road Extension.
- Task 4: Preparation of Supporting Plan Elements, which involved evaluation of the alignment alternatives, additional analysis of cultural resources and geotechnical conditions, as well as further analysis of

land use, traffic and environmental conditions and the development of recommendations.

- Task 5: Development of the Final Report and Technical Materials, which included compiling the technical research materials and public comments into a consolidated study report.



Participants at October 20, 2014 Public Meeting

During the process, the team hosted three (3) public meetings for residents, business owners and other interested stakeholders to review the project information and provide feedback to the County and consultant team. Each of these meetings was attended by 28 to 50 people and provided



valuable feedback to the team regarding citizen concerns and ideas about the corridor. Many of the comments received during these meetings focused around several key themes:

- Opposition to the roadway extension,
- Opportunity for the roadway extension to open up property for future development,
- Concerns about impacts to individual properties
- Concerns about impacts to environmental features, and
- Comments about traffic flow on the future roadway extension or on existing roads such as Rochambeau Drive.

2.0 EXISTING CONDITIONS

This section provides an evaluation of the existing conditions within the study area including:

- Roadways,
- General traffic conditions,
- Accident history,
- Environmental features, and
- Utility Systems.

2.1 EXISTING ROADWAY AND TRAFFIC CONDITIONS

The roadways in the project vicinity are classified by the Virginia Department of Transportation (VDOT) as a mixture of roadway types, ranging from interstate to local roads. Classifications listed in this report reflect the recently released VDOT 2014 Approved Functional Classification.

2.1.1 Existing Roadways

I-64

I-64 is a four lane, divided interstate with completely controlled access and serves as a regional connection between Williamsburg, Norfolk, and Richmond. The posted speed limit along I-64 is 70 mph within the study area.

Humelsine Parkway

Humelsine Parkway (SR 199) is a four lane divided facility with completely controlled access in the study area and has a full cloverleaf interchange with Mooretown Road. The posted speed limit along this roadway is 60 mph within the study area. This roadway provides access to local resources such as the medical center, resort locations, and commercial shopping areas. VDOT has classified Humelsine Parkway under “Other Freeway or Expressway,” as it is not an interstate route. On the section through the study area, Humelsine Parkway is designated a limited access facility, and pedestrian and bicycle activity is not permitted.



Richmond Road south of Norge

Richmond Road

Richmond Road (US 60) is designated by the James City County Comprehensive Plan as a “Community Character

Corridor.” It is a four-lane roadway, classified by VDOT as an “Other Principal Arterial,” running through the communities of Lightfoot and Norge, a “Community Character Area.” Through most of the study area it is a divided four-lane roadway with a depressed median, except for the five-lane section through the community of Norge. The posted speed limit along this roadway is 45 mph within the study area. Richmond Road has no dedicated bicycle facilities. There are sidewalks along most of the road through the community of Norge.

Croaker Road

Croaker Road (SR 607) is a three-lane facility that transitions to a four-lane divided facility in the study area. The posted speed limit along this roadway is 55 mph within the study area. This roadway provides a connection between I-64 and Richmond Road, and is classified as a Major Collector. VDOT is currently



Croaker Road at Maxton Lane looking southwest

developing plans to widen Croaker Road to four lanes from Richmond Road to Rochambeau Drive and to add a shared use path along the northern right of way line between Richmond Road and Rose Lane.

Lightfoot Road

Lightfoot Road (SR 646) is a two-lane road running from Richmond Road to Rochambeau Drive. From Richmond Road to Mooretown Road, it is classified as a Major Collector; from Mooretown Road to Rochambeau Drive, it is classified as a Local Road. The posted speed limit along this roadway is 45 mph within the study area. Prior to the construction of Humelsine Parkway, Lightfoot Road provided access to I-64. Mooretown Road presently ends at Lightfoot Road, which has no dedicated pedestrian or bicycle facilities.



Lightfoot Road east of Richmond Road

Rochambeau Drive

Rochambeau Drive (SR 30, SR 755, and FR-137) is a two lane road running along I-64 through most of the study area. The section northwest of Croaker Road, listed as SR 30, is posted with a 55 mph speed limit. The section between Croaker Road and north of Skimino Creek (SR 755) has a posted speed limit of 45 mph. The section in York County between Skimino Creek and Lightfoot Road (FR-137) has a posted speed limit of 55 mph. The section of Rochambeau Drive through the study area is classified as a Local Road; the section north of the study area is classified as a Major Collector. Rochambeau Drive has no dedicated pedestrian or bicycle facilities.



Rochambeau Drive south of Croaker Road

2.1.2 Existing (2014) Traffic Conditions

A traffic capacity analysis was performed on the study area roadways and intersections to determine the current level of

congestion on the network roadways and to establish a baseline for evaluating the impacts of the proposed extension on those same roadways. The roadways and intersections included in the operation analysis are:

Roadways

- Croaker Road (SR 607), northeast of Richmond Road (US 60)
- Richmond Road (US 60), southeast of Croaker Road (SR 607)
- Lightfoot Road (SR 646), northeast of Richmond Road (US 60)
- Mooretown Road (SR 603), southeast of Lightfoot Road (SR 646)

Intersections

- Croaker Road (SR 607) at I-64 Westbound Ramps – Unsignalized Intersection
- Croaker Road (SR 607) at I-64 Eastbound Ramps – Unsignalized Intersection
- Croaker Road (SR 607) at Rochambeau Drive (SR 30/SR 755) – Signalized Intersection
- Croaker Road (SR 607) at Point O Woods/Maxton Lane (SR 758) – Unsignalized Intersection



- Richmond Road (US 60) at Croaker Road (SR 607) – Signalized Intersection
- Richmond Road (US 60) at Lightfoot Road (SR 646) – Signalized Intersection
- Lightfoot Road (SR 646) at Mooretown Road (SR 603) – Signalized Intersection
- Mooretown Road (SR 603) at Humelsine Parkway (SR 199) Southbound Ramps – Unsignalized Intersection
- Mooretown Road (SR 603) at Humelsine Parkway (SR 199) Northbound Ramps – Unsignalized Intersection.



Croaker Road at Richmond Road

James City County, York County, and VDOT provided available counts and traffic impact studies which included traffic counts for intersections around the study area. Volumes

were balanced between closely spaced ramps and intersections by summing the total difference in each direction along each corridor, and adjusting the through or turn volumes to reduce discrepancies between the intersections. Counts were projected to 2014 conditions using model growth rates or existing forecasts. The specific source and forecasting method applied to each intersection are summarized in Table A-1 included in Appendix A. The exiting (2014) lane configurations and traffic control (Figure A-1) and the AM and PM peak hour turning movement counts (Figure A-2) are included in Appendix A as well. The estimated daily volumes for the corridors are mapped on Figure 2.1.

The AM and PM peak period operating conditions of the study area roadways and intersections were analyzed to determine average traffic delays, traffic densities, and other characteristics used in determining the operating level of service (LOS). LOS is a qualitative measurement of traffic operations. For intersections and ramps it is a measure of delay time; on connecting roadway sections, it is determined by the density of vehicles or the time spent following another vehicle. The Transportation Research Board’s *Highway Capacity Manual (HCM)* defines six levels of service for intersections with LOS “A” representing operating conditions with minimal constraints on traffic movements and LOS “F” representing extremely congested operating conditions.



Symbol	LOS*	Signalized	Unsignalized	Segment
[Green dashed line]	A/B	Green circle	Green square	ADT
[Yellow dashed line]	C/D	Yellow circle	Yellow square	ADT
[Red dashed line]	E/F	Red circle	Red square	ADT

*Worst peak level of service



Mooretown Road Extension Corridor Study

James City County and York County, Virginia

FIGURE 2.1
Existing (2014) Traffic Conditions





AM and PM peak period operating conditions at signalized and unsignalized intersections were analyzed using an intersection capacity analysis software called *Synchro* to determine average delays and LOS for each approach and the overall intersection. The *Highway Capacity Software (HCS)* was used to analyze the interchange ramps and the roadway links between intersections. Detailed traffic analysis results are available in the Appendix A.

According to the existing 2014 conditions analysis:

- All network intersections are currently operating at overall acceptable levels of service during typical peak travel periods (AM and PM).
- The analyzed corridor segments are operating acceptably with the exception of Croaker Road north of Richmond Road, which is operating at LOS E in the PM peak hour.
- Operations at the interchange ramps between I-64 and Croaker Road as well as Humelsine Parkway and Mooretown Road are all operating acceptably during the peak hours under current travel conditions.

The existing (2014) analysis results are summarized in the following tables. Table 2.1.2-1 lists the average delay and LOS for intersections in the study area under AM and PM peak period traffic volumes. Table 2.1.2-2 lists the LOS and traffic density on the multilane road segments around the study area. Table 2.1.2-3 and Table 2.1.2-4 present the level of service and percent of time spent following on Croaker Road, a Class I Two-Lane Segment and Lightfoot Road, a Class II Two-Lane Segment. The Class I and Class II designations are based on the descriptions in the *Highway Capacity Manual*, the document which outlines the analysis procedures used in *HCS*. Class I Two Lane Segments operate at high speeds. Class II Two Lane Segments include local roads and operate at lower speeds.

Table 2.1.2-5 lists the average delay and level of service of the ramps within the Croaker Road/I-64 interchange (Exit 231) and the Mooretown Road/Humelsine Parkway interchange. The worst case peak hour LOS values for the intersections and segments studied are mapped on Figure 2.1 as well.

**Table 2.1.2-1
Existing (2014) Conditions – Intersections**

	Intersection		Eastbound		Westbound		Northbound		Southbound		Worst Approach		Overall
	Delay	LOS ¹	Delay	LOS ¹	Delay	LOS ¹	Delay	LOS ¹	Delay	LOS ¹	Approach	LOS ¹	
AM													
Croaker Road & Rochambeau Drive	34.9	C	44.1	D	35.3	C	34.1	C	26.7	C	Eastbound	D	C (EB-D)
Croaker Road & Point O Woods	2.1	A	13.6	B	10.8	B	-	-	-	-	Eastbound	B	(EB-B)
Croaker Road & Richmond Road	50.9	D	82.1	F	24.3	C	20.3	C	27.0	C	Eastbound	F	D (EB-F)
Richmond Road & Lightfoot Road	21.8	C	19.6	B	19.0	B	18.8	B	35.0	D	Southbound	D	C (SB-D)
Lightfoot Road & Mooretown Road	21.2	C	18.7	B	25.2	C	8.6	A	30.2	C	Southbound	C	C (SB-C)
PM													
Croaker Road & Rochambeau Drive	31.6	C	45.9	D	44.5	D	24.5	C	23.1	C	Eastbound	D	C (EB-D)
Croaker Road & Point O Woods	1.5	A	12.8	B	11.4	B	-	-	-	-	Eastbound	B	(EB-B)
Croaker Road & Richmond Road	42.5	D	45.0	D	42.7	D	28.6	C	42.6	D	Eastbound	D	D (EB-D)
Richmond Road & Lightfoot Road	26.5	C	24.7	C	25.1	C	23.3	C	34.4	C	Southbound	C	C (SB-C)
Lightfoot Road & Mooretown Road	21.7	C	23.7	C	19.4	B	15.7	B	37.4	D	Southbound	D	C (SB-D)

¹LOS – Level of Service



**Table 2.1.2-2
Existing (2014) Conditions - Multilane Segments**

		AM Peak				PM Peak			
		Eastbound/ Northbound		Westbound/ Southbound		Eastbound/ Northbound		Westbound/ Southbound	
Roadway	Location	Segment LOS ¹	Density (pc/mi/ln)	Segment LOS ¹	Density (pc/mi/ln)	Segment LOS ¹	Density (pc/mi/ln)	Segment LOS ¹	Density (pc/mi/ln)
Mooretown Road	Between Lightfoot Road and Humelsine Parkway	A	5.7	A	3.8	A	6.2	A	8.0
Richmond Road	Between Croaker Road and Popular Creek	A	10.2	A	8.6	A	10.9	B	12.2
Croaker Road	Between Rochambeau Drive and I-64	A	6.6	A	5.8	A	5.0	A	6.4

¹LOS – Level of Service

**Table 2.1.2-3
Existing (2014) Conditions - Two-Lane Segment Analysis (Class I)**

		AM Peak			PM Peak		
		Segment LOS ¹	PTSF ² (%)	ATS ³ (mph)	Segment LOS ¹	PTSF ² (%)	ATS ³ (mph)
Two-Lane Highway	Location						
Croaker Road	Between Richmond Road and Rochambeau Drive	D	71.3	40.8	E	71.2	39.8

¹LOS – Level of Service

²PTSF – Percent Time Spent Following

³ATS – Average Travel Speed



Table 2.1.2-4
Existing (2014) Conditions - Two-Lane Segment Analysis (Class II)

Two-Lane Highway	Location	AM Peak		PM Peak	
		Segment LOS ¹	PTSF ² (%)	Segment LOS ¹	PTSF ² (%)
Lightfoot Road	Between Richmond Road and Mooretown Road	C	64.9	D	70.3

¹LOS – Level of Service

²PTSF – Percent Time Spent Following



**Table 2.1.2-5
Existing (2014) Conditions - Ramps**

	Intersection		Eastbound		Westbound		Northbound		Southbound		Worst		Overall
	Delay	LOS ¹	Delay	LOS ¹	Delay	LOS ¹	Delay	LOS ¹	Delay	LOS ¹	Approach	LOS ¹	
AM													
Croaker Road & I-64 Westbound Ramps	4.4	A	11.3	B	8.9	A	-	-	-	-	Eastbound	B	(EB-B)
Croaker Road & I-64 Eastbound Ramps	0.7	A	10.2	B	9.0	A	-	-	-	-	Eastbound	B	(EB-B)
Mooretown Road & SR 199 Southbound Ramps	7.6	A	-	-	-	-	21.4	C	10.0	A	Northbound	C	(NB-C)
Mooretown Road & SR 199 Northbound Ramps	7.1	A	-	-	-	-	34.7	D	9.7	A	Northbound	D	(NB-C)
PM													
Croaker Road & I-64 Westbound Ramps	6.1	A	12.7	B	9.6	A	-	-	-	-	Eastbound	B	(EB-B)
Croaker Road & I-64 Eastbound Ramps	0.8	A	10.9	B	9.2	A	-	-	-	-	Eastbound	B	(EB-B)
Mooretown Road & SR 199 Southbound Ramps	2.9	A	-	-	-	-	14.8	B	11.4	B	Northbound	B	(NB-B)
Mooretown Road & SR 199 Northbound Ramps	5.4	A	-	-	-	-	28.0	D	14.0	B	Northbound	D	(NB-D)

¹LOS – Level of Service

²PTSF – Percent Time Spent Following

³ATS – Average Travel Speed

2.1.3 Other Transportation Features

In addition to the roadway network described above, the study area contains a major railroad, supports two local bus routes, and is adjacent to a VDOT Park and Ride commuter parking lot.

2.1.3.1 CSX Railroad



Railroad crossing on Lightfoot Road

The CSX railroad line runs through the study area near Richmond Road. It carries both freight and Amtrak traffic between Newport News and Richmond. The crossings at Croaker Road and Humelsine Parkway are grade separated. There are four minor at-grade crossings in the study area providing access to part of the Williamsburg Pottery, Hill Pleasant Farm, the parcel northeast of Hill Pleasant Farm, and Peach Street properties. There are also gated crossings on the main roadway through the Williamsburg Pottery property and at Lightfoot Road. There are two tracks through most of

the study area. The railroad right-of-way width varies from 80 to 200 feet.

2.1.3.2 Bus Routes

The Williamsburg Area Transit Authority operates the area's public transportation system. Currently there are two bus routes which overlap in the southern portion of the study area, the Blue Line and Purple Line 2. Transfers can be made between these lines at the Walmart, just south of the study area. Riders can also transfer at this point to the Tan line which serves existing Mooretown Road.¹ Route modifications could be requested if development progresses within the study area.

2.1.3.3 Commuter Parking

VDOT provides a Park and Ride lot for commuters located north of the intersection of Croaker Road and Rochambeau Drive, near the Croaker Road interchange of I-64.

2.2 ACCIDENT ANALYSIS

The accident analysis was derived from three years of available collision data obtained from VDOT. The data covered the period from January 1, 2009 to December 31, 2012. The summary includes collisions that were reported along Richmond Road, Mooretown Road, Croaker Road and Lightfoot Road within the project study area.

The highest-frequency collision type in the study area was rear-end collisions, which constituted 39% of the overall

collisions during the study period; angle, ran off road, and sideswipe collisions were also common, composing 31%, 11%, and 7% of the total collisions in the area, respectively. Rear-end collisions generally indicate overall congestion issues, as these types of collisions occur mainly in areas where there is frequent “stop and go” traffic or at traffic signals where vehicles may stop suddenly to avoid running a red light. Angle collisions often indicate the need for more controlled access to side streets, thereby localizing the turning movements and making them more predictable to on-coming traffic. Table 2.2-1 summarizes the total number of crashes by type and segment; Table 2.2-2 summarizes the severity of accidents within the study area.

During the three years studied, there were no fatalities along these roadways; there was one pedestrian injury accident along Richmond Road.

2.3 ENVIRONMENTAL FEATURES

There are a number of notable environmental features within the study area, both natural and cultural. The following are descriptions of the existing environmental features that are found within the study area.

2.3.1 Streams, Wetlands and Floodplains

There are numerous hydraulic features in the study area including wetland areas, streams, and open water features. There are three main stream channels flowing through the study area with a number of tributaries and minor streams

feeding into these, ultimately flowing toward the York River approximately four miles north of the project. The impacted stream channels were classified as Stage 1 – Stable stream reaches per the Channel Evolution Model (CEM). The streams are contained in confined valleys mostly made up of sandy loam. The streams have down cut in the sandy valley but have reached equilibrium through natural geomorphic processes.



Stream between Maxton Lane and Peach Street

Since some of these streams are deep ravines, bridging may be required to reduce environmental impacts. Skimino Creek is the dominant hydrologic feature in the study area, receiving flow from multiple headwater drainage ways in James City and York County portions of the study corridor.

**Table 2.2-1
Crash Types and Totals by Segment (2009-2012)**

Segment Name	From	To	Length (mile)	Rear End	Angle	Ran Off Road	Side-swipe	Other	Total
Richmond Rd (US 60)	Croaker Rd (SR 607)	Humelsine Pkwy (SR 199)	3.1	24	16	7	3	8	58
Mooretown Rd (SR 603)	Lightfoot Rd (SR 646)	E Rochambeau Drive	0.3	4	2	1	1	1	9
Croaker Rd (SR 607)	Richmond Rd (US 60)	I-64	1.2	3	3	1	1	1	9
Lightfoot Rd (SR 646)	Richmond Rd (US 60)	Mooretown Rd (SR 603)	0.67	2	5	0	1	0	8
<i>Total</i>				33	26	9	6	10	84
<i>Percentage</i>				39%	31%	11%	7%	12%	100%

**Table 2.2-2
Crash Severity and Totals by Segment (2009-2012)**

Segment Name	From	To	Length (mile)	Fatal	Injury	PDO	Total
Richmond Rd (US 60)	Croaker Rd (SR 607)	Humelsine Pkwy (SR 199)	3.1	0	30	28	58
Mooretown Rd (SR 603)	Lightfoot Rd (SR 646)	E Rochambeau Drive	0.3	0	6	3	9
Croaker Rd (SR 607)	Richmond Rd (US 60)	I-64	1.2	0	4	5	9
Lightfoot Rd (SR 646)	Richmond Rd (US 60)	Mooretown Rd (SR 603)	0.67	0	1	7	8
<i>Total</i>				0	41	43	84
<i>Percentage</i>				0%	49%	51%	100%

The dominant Waters of the United States (WOUS) resource type is freshwater forested wetlands [classified by Cowardin et al. 1979 as Palustrine Forested (PFO) systems]. These PFO wetlands exist in most drainage ways within the study area, and usually include jurisdictional stream channels internal to the wetland boundary. Other stream channels in the upper headwaters, near the transition to non-wetland communities, often flow perennially and can have narrow riparian wetlands along the top of bank. These resources are regulated by the U.S. Army Corps of Engineers (USACE) and Virginia Department of Environmental Quality (VADEQ) and would require permits (i.e., Clean Water Act compliance) if impacts resulting from land disturbance activities are proposed.

Under the Chesapeake Bay Act, each of these perennial streams and its associated wetland areas is protected by a 100 foot Resource Protection Area (RPA) buffer. Each of the Counties has additional regulations limiting development in the RPA and on the steep slopes of the ravines. FEMA identifies the bottom of these ravines as part of the 100-year and 500-year floodplains. However, local RPA and wetlands permitting requirements govern construction in these areas, discouraging construction of residences or commercial buildings in these floodplains.

2.3.2 Rare, Threatened, and Endangered Species

The project study area contains habitat for three rare, threatened, or endangered (RTE) species: Mabee’s salamander

(*Ambystoma mabeei*), small whorled pogonia (*Isotria medeoloides*), and northern long-eared bat (*Myotis septentrionalis*). Mabee’s salamander is a state-threatened animal that breeds in fish-free vernal pools and is regulated by the Virginia Department of Game and Inland Fisheries (VDGIF). Small whorled pogonia is a federally-threatened plant that inhabits certain forested upland habitats of a particular composition and maturity and is regulated by the U.S. Fish and Wildlife Service (USFWS). Northern long-eared bats are a federally threatened species which inhabit forested areas during summer months while rearing pups.



Pond along Rochambeau Drive

Alternatives that cross potential habitat for any of these protected species will likely require site-specific habitat assessments, as well as detailed ground surveys at the time of permitting. Further, it is important to note that natural resources agencies regularly update their databases of known RTE species occurrences. Therefore, appropriate coordination with these agencies as the project progresses to obtain the most recent data available is recommended. As mentioned above, these resources are regulated by either VDGIF or USFWS and coordination would be expected to occur during any future federal environmental permit review process for land disturbance activities within the study corridor.

The streams, wetlands, RPAs, and potential small whorled pagonia and Mabee's salamander habitats are noted on the Environmental Features Map, Figure 2.2.

2.3.3 Soils Conditions

The Corridor Study included review of the USGS and USDA Soil Surveys, and the area topography. The alternatives were reviewed in the field to provide an overview of soil conditions in the study area. As part of this review, soils and substructure engineering considerations to be evaluated during the design of the Mooretown Road Extension are presented below. Soils in the area are anticipated to be similar to other areas in northern James City and York Counties.

Ravine bottoms are expected to have deep organic layers over clays and silt deposits. Construction specifications for fills over these ravines typically include provisions for settlement

monitoring. Culverts would likely require 2 to 3 feet of bedding material. The maximum recommended unreinforced fill slope is 3:1 (horizontal: vertical). Steeper slopes could be designed using geogrids or other reinforcing material, allowing for smaller fill foot prints and reduced wetlands impacts

The largest ravine crossing is over Skimino Creek. Due to the magnitude of this ravine, this crossing will likely require the installation of a bridge structure. Typically, the bridge structure will consist of structural steel with a concrete deck supported on concrete bents and abutments. The substructures (bents and abutments) will need to be supported by a deep foundation system. In this region, the most economical deep foundation system would consist of concrete piles. These usually will consist of square pre-cast pre-stressed concrete piles with a width of 12 to 14 inches. Similar projects in the region have required a minimum pile embedment below grades of about 70 to 90 feet. Pile lengths and size will be dependent on actual soil conditions and structural loading. Other alternatives of piles that could be considered are augercast piles or steel H-piles.

Soils in the upland areas are expected to be silty sands or sandy silt with ground water depths in excess of 10 feet below existing grade. According to the USDA Soil Survey, much of the upland property is expected to have infiltration rates greater than 0.5 inches per hour, suitable for infiltration based stormwater management systems.



Mooretown Road Extension Corridor Study
James City County and York County, Virginia

FIGURE 2.2
Environmental Features Map



2.3.4 Hazardous Materials

Research on specific hazardous materials sites within the study area was not part of the scope of this study. With the history of agricultural and manufacturing activities in the study area, the presence of such cannot be ruled out. Current registry research and site testing will be required during further detailed studies and the permitting process.

Research into known historic and other cultural resources was completed for the study area. Historic resources research included archival searches using the Virginia Department of Historic Resources (VDHR) online system, which included findings from county wide architectural resource surveys conducted in James City County. The most significant architectural sites noted in this research are described here. Their locations do not appear to present any concern for the evaluated project alternatives.



Norge Depot

In the western portion of the study area, near Croaker Road, there are three notable resources, two nineteenth and one early twentieth century residences associated with the Williamsburg Mennonite Church property. Research indicates that no formal determinations of eligibility have been made for any of these three resources; however, all considered alternatives clearly avoid direct impact to these resources.

2.3.5 Historic Resources

The Williamsburg region is rich with historic resources. Within the study area, there are no properties or structures listed on or determined eligible for the National Register of Historic Places (NRHP) that would be potentially impacted by the proposed project. However, there are several historic features in the area that could warrant further research.

In the eastern portion of the study area, the Levorsen House and Plantation is located along Williamsburg Pottery Road and includes a former house, barns, corn crib, sheds, a post office and blacksmith shop. A 2000 survey, however, determined that this property and associated structures was not eligible for the NRHP.



Williamsburg Mennonite Church and Lutheran Grave Yard

Hill Pleasant Farm is located in the southern part of the study area, along Richmond Road. This property was surveyed in 2000 and 2007, with no formal determination of eligibility for the NRHP being returned either time.

Archival research of potential archaeological sites and a review other archaeological sites near the study area indicate potential for previously undocumented sites. Maps of the area drawn during the Civil War era show the project area primarily wooded with minor development along Old Stage Road (now Richmond Road).

The project corridor has the environmental conditions and physiographic settings that may contain both Native American and historic archaeological resources. An analysis of Native American sites within two miles of the project corridor reveals that the majority of the sites are located along the inland streams. Given the project corridor's close proximity to streams and the fact that all of the previously identified sites for which there is soil information fall within at least one or more of the project corridor soils, the possibility of finding Native American and historic resources would be considered moderate to high. It is possible that a Native American site, most likely a lithic scatter, could be found within the undeveloped areas of the project corridor. Phase I research will most likely be required for these areas if the Mooretown Road Extension continues to the permitting stage.



Hill Pleasant Farm



While none of the architectural resources identified in the study area are currently listed on or eligible for the NRHP, this status could change. Since the undeveloped areas of the study area have not been subject to detailed archaeological surveys, and the site topography is similar to other areas in which Native American sites have been found, it is possible that additional historic resources may exist in the study area. Therefore it would be prudent to perform additional historic and archaeological surveys for the study area during the preliminary plan development stage of the project and coordinate with the Virginia Department of Historic Resources to ensure no adverse impacts are imposed on historic resources due to the project.

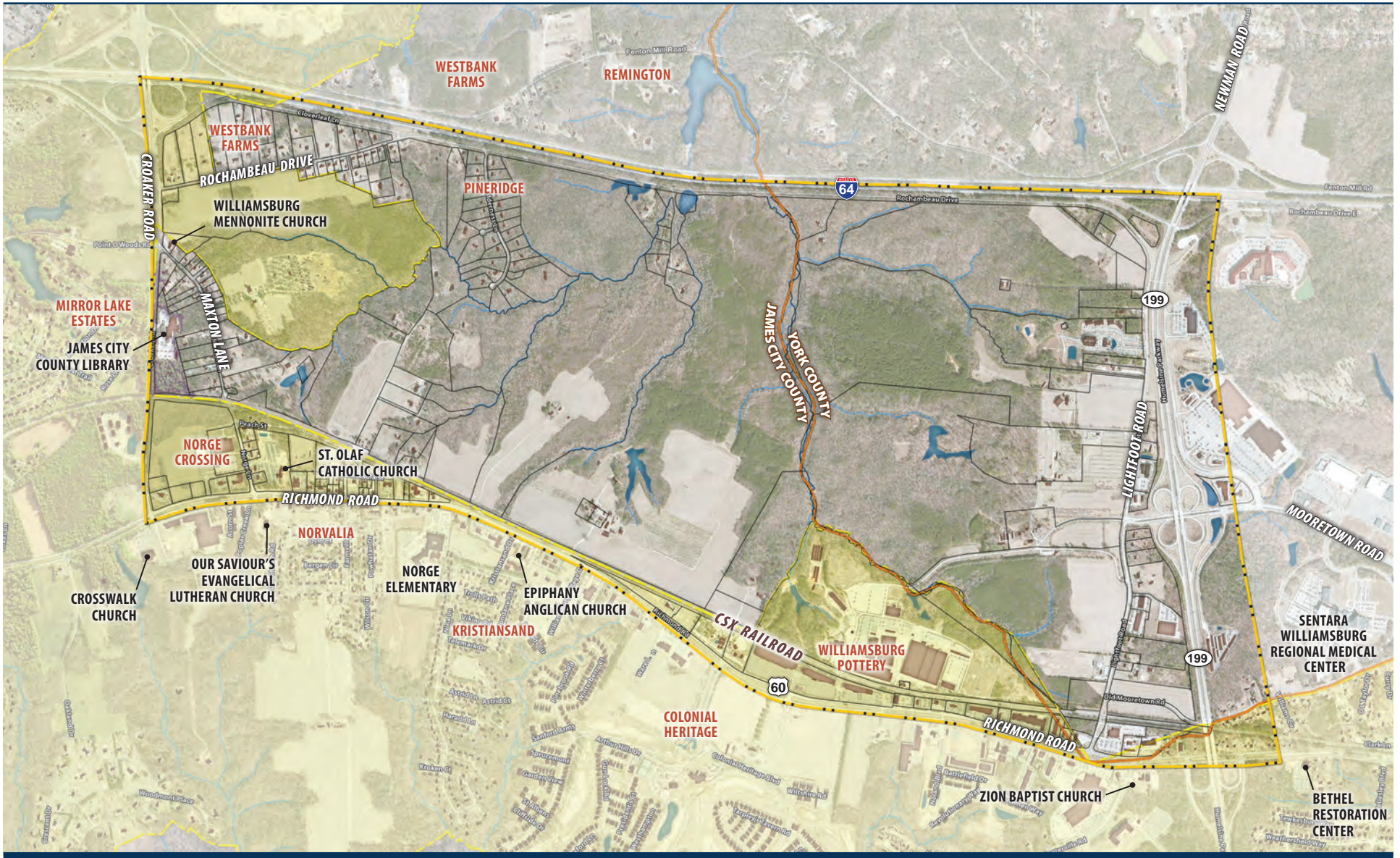
The full cultural resources report can be found in Appendix C.





2.4 UTILITIES

James City County and York County maintain separate publically owned, water distribution and sanitary sewage collection systems. Sanitary sewage treatment is provided regionally by the Hampton Roads Sanitation District. Private utility companies provide natural gas, telephone, electricity, cable television, and internet communication service.

York County has constructed wells and water mains in anticipation of future development in the York County portion of the study area. These water mains and sewer collection systems would need to be extended into the undeveloped property, most likely by the developers.

James City County maintains water mains along Richmond Road, Croaker Road and part of Rochambeau Drive through the James City Service Authority. Properties along Richmond Road and north of Croaker Road are served by public sanitary sewers, while properties within the study area are primarily served by private wells and septic systems. The James City County Zoning Ordinance prohibits the by-right expansion of public utilities into most of the study area as it is currently outside of the Primary Service Area or PSA. The intent is to include parcels within the EO designation in the PSA (where not already included) pending the outcome of master planning efforts for the EO area. The PSA is shown on Figure 2.3.



-  Study Area Boundary
-  Parcels
-  County Boundary
-  James City County Primary Service Area



Mooretown Road Extension Corridor Study
James City County and York County, Virginia

FIGURE 2.3
Primary Service Area

3.0 LAND USE

The existing land uses within the study area include private, public, institutional, and transportation uses. This evaluation includes the area generally bounded by I-64 on the east, Humelsine Parkway on the south, Richmond Road on the west, and Croaker Road on the north to provide an understanding and setting for the proposed corridor extension.

Richmond Road, Humelsine Parkway, and Mooretown Road are key features that have influenced the larger area land use with many major developments including residential communities, retail / commercial centers, and institutional users such as hospitals located along these corridors. In addition, the environmental features within the study area constitute larger areas of open space extending organically throughout the study area. Both of these patterns are represented within the study area and described in the following section.

3.1 EXISTING LAND USE

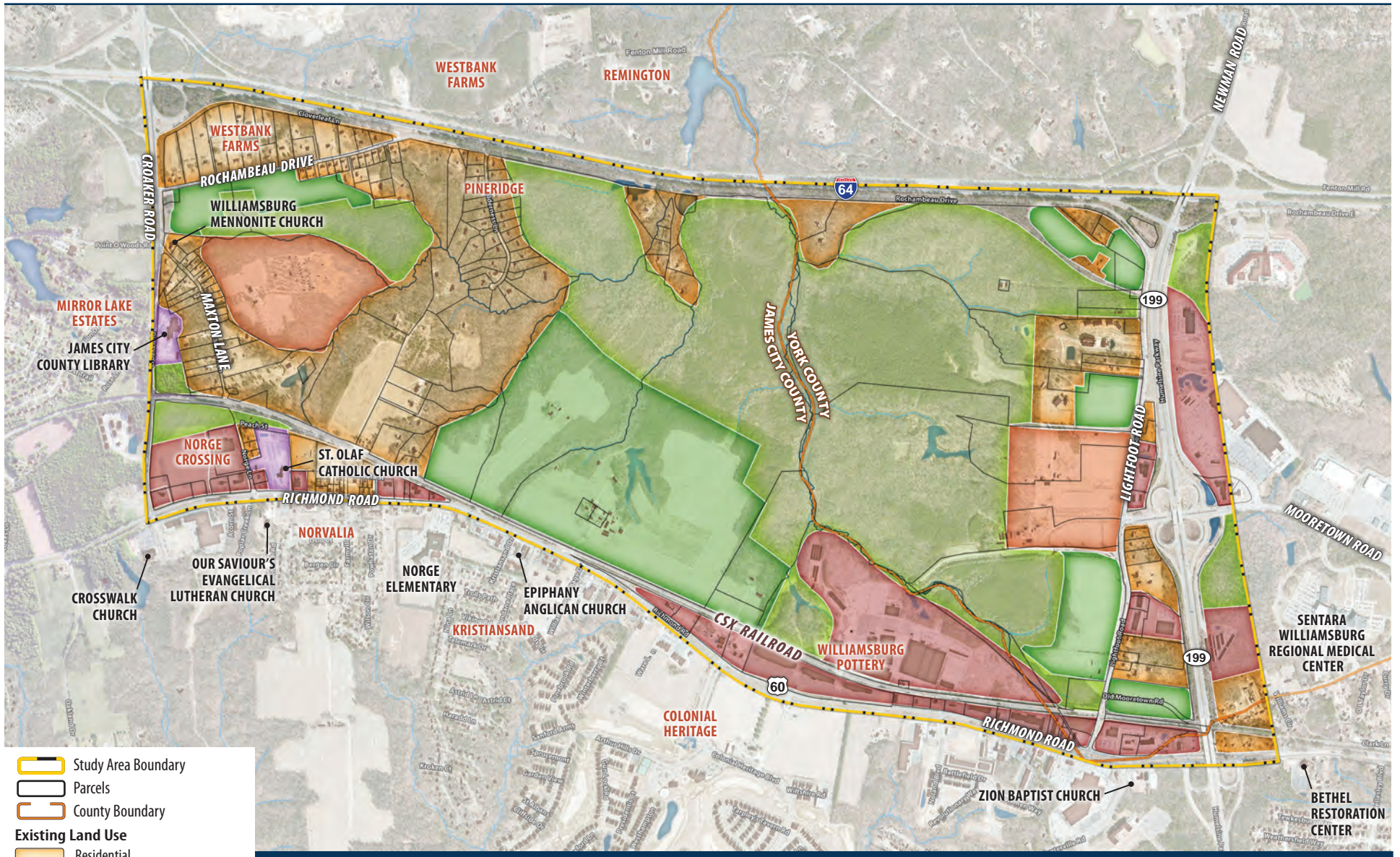
The 2,100 acre study area includes approximately 800 acres within York County and 1,300 acres within James City County. The existing land uses within the study area include a wide range from residential, to commercial / retail, to institutional, to campground to open space and farming. Figure 3.1 provides a summary map illustrating the location of each of the existing land uses with this study area.

The general pattern is described as follows:

- Along the southern portion of the study area the Richmond Road corridor includes many commercial, retail and residential areas. These include larger commercial/retail uses such as the Williamsburg Pottery and strip shopping centers as well as smaller, individual uses such as gas stations, small professional offices and a car wash.
- The community of Norge, on the western edge of the study area, is designated in the James City County Comprehensive Plan as a Community Character Area. It contains several late nineteenth and early twentieth century buildings.



Norge Storefront



- Study Area Boundary
- Parcels
- County Boundary
- Existing Land Use**
- Residential
- Retail
- Church/Library/School/Hospital
- Open Space
- Agricultural
- Campground



Mooretown Road Extension Corridor Study
James City County and York County, Virginia

FIGURE 3.1
Existing Land Use

- Croaker Road is generally characterized by lower density uses such as single family residential, open space, and institutional uses. The institutional uses include a church and a county library. There are some retail / commercial uses at the intersection of Croaker and Richmond Road.
- East Rochambeau Drive, southeast of Humelsine Parkway, includes both some larger scale uses such as a shopping center, hotel and self-storage as well as smaller scale retail and single family residential.
- Rochambeau Drive between Croaker Road and Lightfoot Road is characterized by single family housing both fronting on Rochambeau as well as along Wilderness Lane.
- Between Humelsine Parkway and the border of York and James City County, the existing land use is mainly open space which is characterized by wooded areas. There is also an existing campground in this area, some support functions for the Williamsburg Pottery, and a timeshare resort.
- The area north of the York / James City County border includes a larger area in the center of the study area that is farm and open space area. The areas further north include residential uses, a campground and some open space.



American Heritage RV Park, Maxton Lane

- In addition to the major roads forming boundaries of the study area, the CSX Railroad is also a major dividing line due to limited opportunities for crossing the line. The railroad line also creates a northern edge to the commercial, retail uses along Richmond Road.



The following table provides a summary of the existing land use acreages within the study area.

**Table 3.1-1
Existing Land Use**

	JCC	York County
Campground	71 ac	66 ac
Church/Library/School/ Hospital	16 ac	0 ac
Farm	297 ac	83 ac
Open Space	342 ac	458 ac
Residential	404 ac	106 ac
Retail	171 ac	88 ac
Subtotal by County	1300 ac	800 ac
	Total	2100 ac

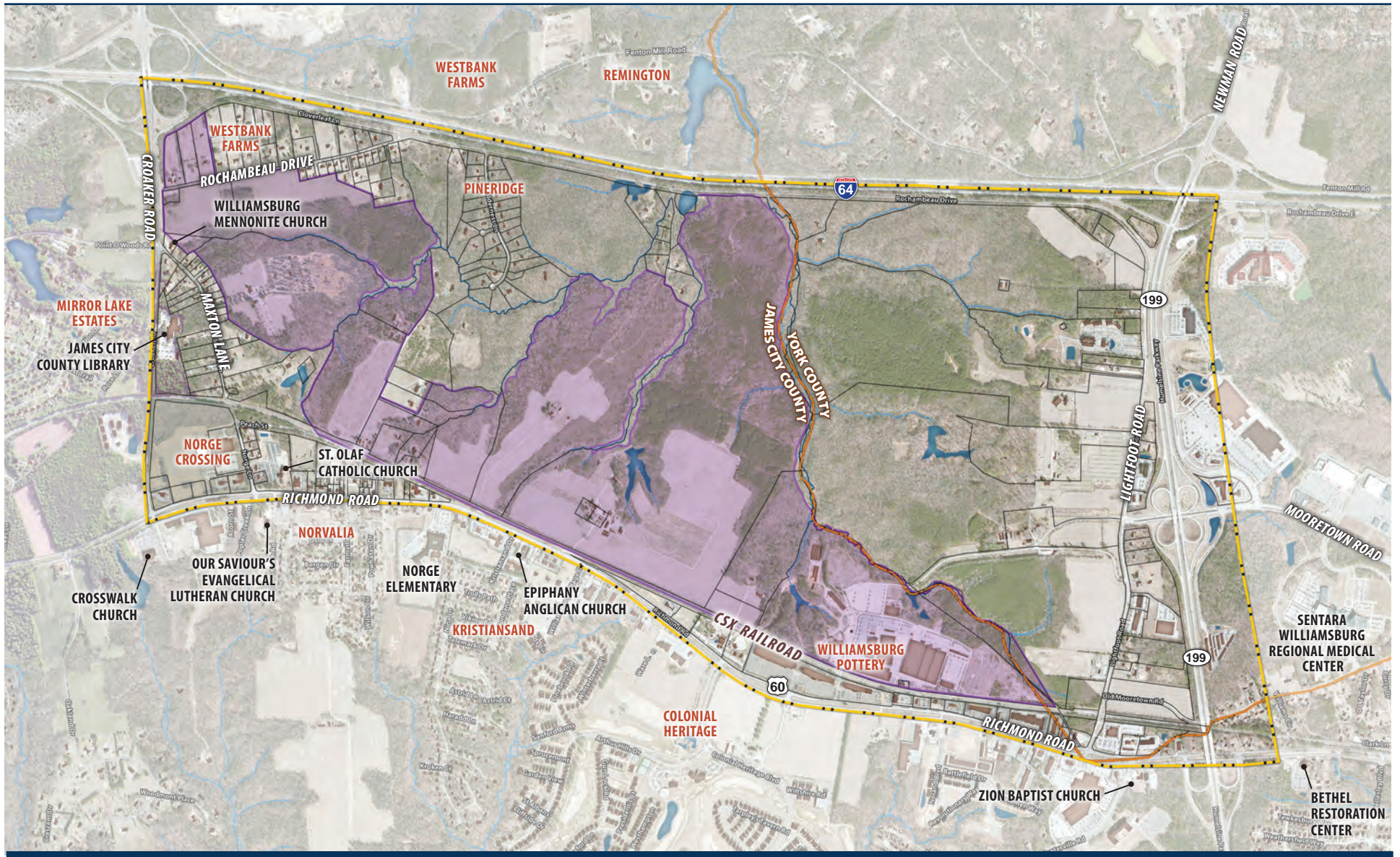
3.2 FUTURE LAND USE

The future development of the study area will be influenced by a number of factors including York and James City County’s Comprehensive Land Use Plans and Zoning Ordinances for this area, the presence of environmental features such as the streams, wetlands, topography, the location of existing and planned infrastructure such as the existing rail line, the potential alignment of the Mooretown Road Extension, and county and state policies that affect the location of development like required setbacks from existing wetland areas.

The York and James City County Comprehensive Plans show portions of the study area as economic opportunity areas, which are seen as potential locations for job growth and tax revenue generation. Much of the area is currently zoned A-1, General Agricultural, including many of the residential properties. However, there is an anticipation that the extension of the Mooretown Road corridor will also see some of these properties rezone to the Economic Opportunity designation as shown on the Comprehensive Plan Land Use Map. Master planning is at the core of this designation, and no development should occur unless incorporated into area/corridor master planning efforts. For the Mooretown Road/Hill Pleasant Farm area, the primary suggested uses include industrial, light industrial, and office uses. James City County will require rezoning with a master plan approval before allowing construction of any Economic Opportunity development. This process includes public hearings and approvals from the Board of Supervisors. The land in York County is already zoned Economic Opportunity and may be developed for many commercial uses without further legislative action. Figure 3.2 highlights the parcels in James City County that are within the Economic Opportunity Overlay Zone.

3.3 MARKET ANALYSIS SUMMARY

The market assessment included review of relevant plans and documents, and interviews with key stakeholders including municipal staff, local real estate professionals and developers, business leaders, economic development practitioners, and others. Stakeholder input provided local context for analyzing



-  Study Area Boundary
-  Parcels
-  County Boundary
-  Economic Development Area (Comp Plan 2035)



Mooretown Road Extension Corridor Study

James City County and York County, Virginia

FIGURE 3.2
**Comprehensive Plan 2035 -
 Economic Opportunity Area**



factors that will impact land uses in James City and York Counties in general, and the study area in particular.

Based on the assessment of the demographic, market and economic data the following trends were identified. The full Market Analysis Report can be found in Appendix D.

3.3.1 Demographic Analysis

The greater Mooretown Road Corridor area’s economy has supported robust population and household growth over the past decade. James City County, York County, and Williamsburg combined to add almost 12,000 new jobs from 2002 to 2013. The population in James City County alone grew by 46% from 2000 to 2013, and Williamsburg City saw a surge in population as well. As long as the area’s economy continues to expand beyond the entertainment and hospitality industries, the demand for land to accommodate both residential and non-residential uses will continue.

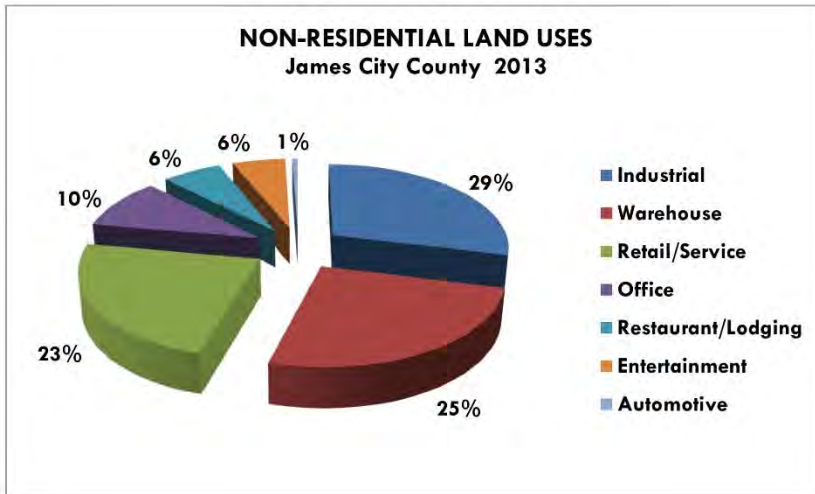
3.3.2 Residential Market Trends

In James City County, an annual average of 932 single family units were added to the inventory from 2003 through 2007, followed by apartments at 39, timeshares at 33, and condos at 20. In the six year period from 2008 through 2013, the average annual construction of single family units declined to 466, while the average annual construction of apartments increased from 39 to 105 following a national trend of apartment construction in response to tightened credit and lower demand from potential home buyers.

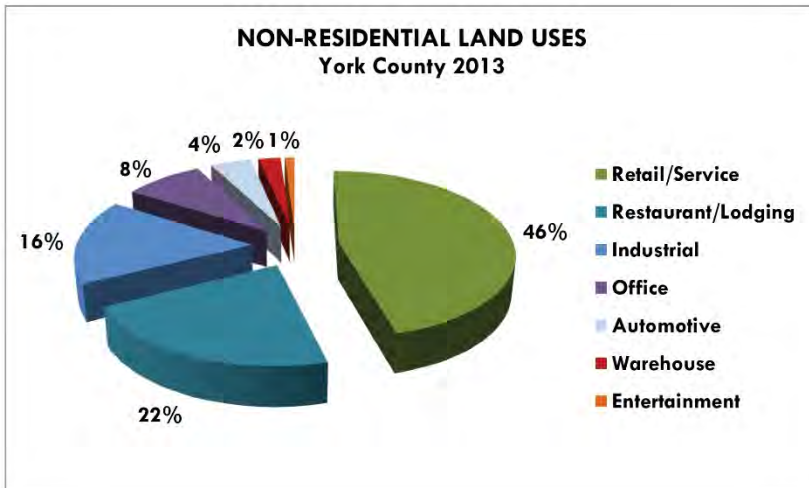
In York County, an annual average of 342 units were added to the inventory in the five-year period from 2003 through 2007. During the same period, an average of 43 apartments were added annually, followed by timeshare units at 29, condos at 27, and duplexes at 12. From 2008 to 2013, average annual construction rate for single family units was 175. Average apartment construction increased slightly to 45 units per year. Timeshare unit construction decreased to 14 per year, followed by an average of six condos per year, and zero duplexes.

Housing Characteristics — In 2013, median owner occupied dwelling unit values were as follows: James City County, \$324,200; York County, \$336,600. Median cash rents in James City and York Counties are relatively close, at \$1,066 and \$1,110 respectively.

Future Development — According to the County of York 2012-2013 Comprehensive Plan, residential development in York County is projected to add approximately 5,700 new housing units by 2035. In James City County, master planned communities, by-right subdivisions with approved construction plans and other vacant lots have an estimated development potential of 11,170 residential units with an estimated absorption of 14 to 28 years.



Source: James City County; RKG Associate 2014



Source: James City County; RKG Associate 2014

3.3.3 Non-Residential Market Trends

In James City County, industrial uses account for the largest amount of improved space at 5.3 million square feet, approximately 3.2 million square feet of which is owned and operated by a single user, the Anheuser-Busch brewery. Warehouse space comprises the second largest land use at approximately 25% or 4.7 million square feet followed by retail/service at 23% or 4.3 million square feet, and office at 10% or 1.8 million square feet.

In York County, retail/services comprises the largest amount of improved space at 3.9 million square feet or 42%, followed by restaurant/lodging at 1.8 million square feet or 20%, industrial at 1.4 million square feet or 15%, and office space at 705,000 square feet or 8%.

Retail — James City County added an average of approximately 136,000 square feet annually from 2003 through 2013, for a total of just under 1.5 million square feet. During the same period, York County added an average of approximately 120,324 square feet annually for a total of just over 1.3 million square feet. Except for grocery stores, the greater Williamsburg area is over retailled due to the preponderance of stores and shopping centers that cater to visitors, such as Williamsburg Pottery and Premium Outlets. For community and neighborhood shopping centers which are generally locally serving, there was a 15% vacancy rate, which is reflected by the empty storefronts in the area. Nonetheless,



the high visibility and access of the Mooretown Road Extension Corridor offers a very attractive site for developers and retail tenants who might overlook market trends to be in a more advantageous location.

Office — Since 2003, James City County has seen an average of 60,000 square feet of office delivered annually, compared to about 83,000 square feet in York County. This rate of absorption would support low density, suburban campus style development such as that which already characterizes much of the local marketplace, and office space as an element of mixed use development, such as that in New Town.

Industrial — Although warehousing/distribution operations prefer proximity to highway interchanges, the demand from other land uses in the Mooretown Road Extension Corridor could likely price them out of the market. In James City County, industrial development has slowed down in the past five years to one-tenth of what it was the previous five years, so the demand can be absorbed into existing industrial parks into the foreseeable future. If the market for flex space picks up in the next decade, it could be a land use that wants to reside in the Corridor.

Visitation Attractions — The owners of the Williamsburg Pottery are currently (Fall 2014) in the process of assessing the potential for “an international, family-focused entertainment and education complex” on 720 acres of land in the Mooretown Road Extension Corridor. About 80% of the land is in York County with the remainder in James City County. If

the project moves forward to fruition, it could represent the dominant use in the Corridor.

Lodging — One of the proposed uses in the aforementioned Williamsburg Pottery concept is lodging. Even in an over supplied market, a well positioned, unique product could garner enough of the market share to thrive, at other’s expense of course. A strategically sited product in the corridor could have the distinct competitive advantage of easy access and maximum visibility.

3.3.4 Summary Conclusions

Residential — The Virginia Employment Commission projects that James City and York Counties combined will add an additional 20,000 to 25,000 households by 2030. At the current rates of absorption, James City County could potentially consume its current residential development pipeline in 12 to 13 years, and York County will consume its pipeline units in just three years. Of course, rezonings and development approvals will continually add to the pipeline in both jurisdictions, (in James City County’s case, it is anticipated it could be enough for 19-38 years of growth). The consensus among real estate professionals interviewed for this analysis is that viable development tracts are becoming scarce as the inventory is consumed.

If household growth continues as projected, demand for new housing should remain steady ten to fifteen years in the future. The locational characteristics of the Mooretown Road Extension Corridor will make it attractive for developers and



residents with its easy access to I-64 and the employment centers of Richmond and Hampton Roads.

Non-Residential Summary Conclusions - Although the Mooretown Road trade area is over supplied with retail, the high visibility and access of the Mooretown Road Corridor offers a very attractive site for developers and retail tenants who might overlook market trends to be in a more advantageous location. Office absorption rates over the past eleven years indicate a market that will continue to support low density, suburban campus style development such as that which already characterizes much of the local marketplace. Office space can also function well in mixed use developments, such as that in New Town. Industrial development has slowed down in the past five years to one-tenth of what it was the previous five years, so the demand should be absorbed into existing industrial parks into the foreseeable future. A strategically sited hotel product in the corridor could have a distinct competitive advantage of easy access and maximum visibility, and may succeed in an oversupplied market. A new visitor's attraction in the marketplace may represent the riskiest investment in terms of land use, since visitation at all local attractions has been steadily declining.

Although significant development opportunities in the Mooretown Road Extension Corridor may be fifteen years or more off in the future, they should present themselves at an opportune time from a supply perspective. There is a general consensus in the planning and real estate communities in both

James City and York County that most of the prime development sites have been consumed, and developers are already facing the prospect of considering less desirable sites. Of course, the access that an extended Mooretown Road will provide to new opportunity sites will make them extremely desirable for a variety of land uses.



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4.0 TRAFFIC FORECAST

This study included traffic forecasting (which helps to identify the effects and need for a proposed facility), as well as travel demand modeling (which accounts for changes to travel patterns that might occur in the future due to changes in the transportation network, population and employment). The design year for a proposed corridor is usually at least 20 years in the future. The year 2040 was selected as the design year for this study to align with regional forecasts underway at the Hampton Roads Transportation Planning Organization (HRTPO).

4.1 TRAFFIC FORECAST

The first step in developing a travel demand forecast is to develop a future year baseline forecast. The future year baseline forecast is often referred to as the No-Build scenario, which includes all proposed improvements to the regional transportation network that have been adopted into the long range plan for the region. The 2040 traffic conditions including the proposed development, or Build conditions, are often compared to the No-Build scenario to determine the impacts with or without the proposed facility.

For this effort the travel demand forecasts were developed for year 2040 using the Hampton Roads Travel Demand Forecast Model. The model set (HRMODEL_102913) was provided by the Virginia Department of Transportation (VDOT). This version was used for developing the travel demand forecast.

Major improvements to the model set include the use of the 2009 National Household Travel Survey (NHTS) to improve the trip generation and trip distribution models, a better mode choice model and more sophisticated assignment algorithm including time-of-day assignments. In preparing the model for the analyses required for this study, none of the model constants or coefficients were altered. The only changes made were to the roadway network to validate the study corridor and test the build alternatives. This included coding the Mooretown Road extension as part of the build alternatives.

A travel demand forecast model (TDFM) is a set of computer-based mathematical relationships that attempts to capture the interaction of travel activities and choices made by a population in a specific region given a proposed network (e.g., highway, transit, etc.) and demographic or land use inputs (e.g., population, employment, etc.). The main inputs to the travel demand model are:

- Demographic and economic changes in the region, specifically the location of employment and housing, and
- Characteristics of the region's transportation system, including proposed changes in transportation facilities and operating policies.

Although VDOT maintains the TDFM for the Hampton Roads region, they are not responsible for the land use data. The Hampton Roads Transportation Planning Organization (HRTPO) provided land use forecast for the year 2034 for use in this study. Currently, the latest year that HRTPO has a land



use forecast developed for is year 2034. To develop year 2040 traffic forecasts, the year 2034 land uses were factored at the Transportation Analysis Zone (TAZ) level. Factors were applied to all zones that showed growth, if a zone did not show growth or decreased, the year 2034 land use was held. For zones that did show growth, a growth of one percent per year was applied for the six year period between 2034 and 2040. This applied to zones in the study area. In order for the growth rate to be applied the TAZ had to show a positive growth from the year 2009 forecast. The one percent growth rate reflected an approximate aggregate regional growth rate for zones in the region that showed growth over the forecasted period. It was a conservative approach to demonstrate a level of sensitivity to the potential land use growth for the study area. The number of households per zone and the number of employees by type of employment per zone were factored. Population was adjusted based on the year 2034 household size and factored to reflect the increase in zones that showed household growth. Auto ownerships was factored to reflect the increase in households for applicable zones by applying the year 2034 vehicles ownership per household rates.

4.2 DEFINED STUDY AREA

Traffic forecasts were developed for the project study area. The following list includes intersections where forecasts were developed for average morning weekday peak hour and evening peak hour.

- I-64 Westbound Ramps and Croaker Road (SR 607)
- I-64 Eastbound Ramps and Croaker Road (SR 607)
- Rochambeau Drive /Mooretown Road and Croaker Road (SR 607)
- Point O Woods/Maxton Lane and Croaker Road (SR 607)
- Richmond Road (US 60) and Croaker Road (SR 607)
- Mooretown Road and Humelsine Parkway Ramps (SR 199) and Mooretown Road
- Williamsburg Pottery Road/Mooretown Road and Lightfoot Road
- Richmond Road (US 60) and Lightfoot Road

4.3 VALIDATION

The travel demand forecast model set used in this study was calibrated and validated for the region. The base year for this calibration and validation was year 2009, and was based on data from the NHTS and data collected as part of the Hampton Roads Transit (HRT) Comprehensive Operations Analysis. The study area model was reviewed to confirm that the TDFM was adequately replicating the traffic conditions for the set validation year.



Lightfoot Road looking southeast to Mooretown Road

4.4 POST PROCESSING

Post-processing refers to analyses performed after execution of the TDFM run. Post-processing activities are applied to TDFM model results to compensate for the limitations of the model. These limitations are usually a result of the coarseness of the network and aggregate design of the model. The model used for this project produced peak period volumes by applying a set of static factors to each trip purpose. The static factors do not capture the effects of peak spreading and discretionary travel choices. Since the model chain does not specifically include a time-of-day choice model, our experience has shown that it is best practice to use the daily traffic results for post processing and then derive the peak hour from the refined average daily traffic (ADT) volume. The addition of time-of-day assignments provides a more accurate aggregated result.

The time-of-day assignments do not necessarily produce direct output that is within acceptable validation criteria for using in project planning studies.

Roadway post-processing involves three stages:

- Refinement of the raw link volumes, which is done with the direct output from the model for the ADT volumes;
- Derivation of the peak hour link volumes; and
- Calculation of the turning movements.

For this study, the post-processing activities for refining the roadway link ADT volumes and developing turning volumes involved procedures outlined in NCHRP-255 Highway Traffic Data for Urbanized Area Project Planning and Design, published by the Transportation Research Board. This technical report provides a set of procedures for refining “raw” link volumes output directly from the TDFM.

For design and analysis purposes, peak hour traffic projections are required. These were derived from the refined ADT volumes. The peak hour projections were based on the existing ratio of peak hour traffic to daily traffic. The peak hour inbound and outbound link approach volumes on the interchanges and intersections were derived from the daily volumes and then used in the iterative proportioning function (IPF) routine to calculate turning volumes that balanced the interchange and intersection approaches.



The turning movements at the intersections of interest were developed using a more elaborate methodology combining procedures from the A-Turns and B-Turns methodology outlined in NCHRP-255. This procedure utilized an IPF to calculate turning movements. In this process, the refined future forecast approach link volumes, both inbound and outbound, serve as the inputs. The existing turning volumes were used as seed volumes and the IPF routine iteratively adjusted the turns to balance forecasted approach inbound and outbound link volumes. The end results are reviewed for reasonableness against the existing conditions, future growth patterns, and raw model results. This model was used to generate the 2040 No-Build daily volumes presented in Figure 4.1 and the peak hour volumes illustrated in Figure A-4 in the Appendix.

4.5 NETWORK AND LAND USE CHANGES

As part of this project, the extension of Mooretown Road was added to the model network in one alternative as a two lane roadway facility and in another alternative as a four lane roadway facility. In both alternatives the road was extended between Croaker Road (SR 607) and Humelsine Parkway (SR 199). This was the only addition to the network. The remaining changes between the existing roadway and transit network conditions and the year 2040 conditions are documented in the HRTPO's long range transportation plan documents.

As part of the travel demand forecasting effort, the land use for the area immediate adjacent to the proposed Mooretown

Road Extension was modified based on the range of future land use projections described in Section 3. The purpose was to examine potential impacts of different land use scenarios based on the extension of the road. Three different year 2040 land use scenarios were formulated. These were run through the model in addition to the base planned regional forecast. The different scenarios looked at reducing households and adding more employment. The highest traffic volumes from these scenarios were used to formulate the 2040 Build volumes. These daily volume estimates are presented in Figure 5.5 and the intersection peak hour volumes are illustrated in Figure A-6 in the Appendix. The capacity analysis results illustrated on Figure 5-5 will be discussed in greater detail in Section 4.6.

4.6 NO-BUILD (2040) CAPACITY ANALYSIS

Using the projected volumes from the forecasting effort and illustrated on Figure 4.1, a No-Build (2040) capacity analysis was undertaken to understand the future conditions along the study area roadways and at intersections if the Mooretown Road Extension project was not in place. This analysis assumed that the Croaker Road widening plan, currently under design by VDOT, and several proposed developments with their associated proffered road improvements would be in place by 2040. These are:

- Stonehouse – Which has proffered to improve Rochambeau Drive (SR 30) northwest of Croaker Road, add turn lanes to Rochambeau Drive at the intersection

of Croaker Road and Rochambeau Drive, and add a second left turn lane to eastbound Croaker Road at this intersection, and add a left turn lane on Croaker Road to Richmond Road.

- The Candle Factory – Which has proffered to improve the right turn lane from Richmond Road into the Candle Factory.
- Lightfoot Marketplace – Which has proffered to improve the signalized intersection at Richmond Road and Lightfoot Road, improve the left turn lane onto Lightfoot Road and add a left turn lane for traffic leaving the shopping center.

According to the No-Build (2040) conditions analysis, some network intersections are projected to drop below acceptable operations during at least one peak hour. Some of the notable changes between the Existing (2014) conditions and the No-Build (2040) are:

- Assuming the widening of Croaker Road north of Richmond Road, all the analyzed corridor segments are expected to operate acceptably.
- Each of the I-64 at Croaker Road ramp approaches operate at acceptable levels, with the exception of the I-64 westbound loop approach, which drops to a LOS E during the PM peak hour.
- At the Humelsine Parkway (SR 199) and Mooretown Road interchange, both the northbound and

southbound yield-controlled approaches are expected to operate at LOS E or worse during at least in one peak.

The analysis results are summarized in the following tables. Table 4.6-1 lists the average delay and level of service (LOS) for intersections in the study area under AM and PM peak period traffic volumes. Table 4.6-2 lists the level of service and traffic density on the multilane road segments around the study area. Table 4.6-3 presents the level of service and percent of time spent following on Lightfoot Road, a Class II Two-Lane Segment. Table 4.6-4 lists the average delay and level of service of the ramps within the Croaker Road-I-64 interchange (Exit 231) and the Mooretown Road- Humelsine Parkway interchange. The worst case LOS are mapped on Figure 4.1. The No-Build (2040) land configurations and traffic control (Figure A-3) and the AM and PM peak hour turning movement volumes (Figure A-4) along with the detailed traffic analysis results are included in Appendix A.



Symbol	LOS*	Signalized	Unsignalized	Segment
Yellow dashed line				Study Area Boundary
Black outline				Parcels
Orange outline				County Boundary
Green circle	A/B	Green square	Green square	ADT
Yellow circle	C/D	Yellow square	Yellow square	ADT
Red circle	E/F	Red square	Red square	ADT

*Worst peak level of service



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FIGURE 4.1
No-Build (2040) Traffic Conditions



**Table 4.6-1
No-Build (2040) Conditions - Intersections**

	Intersection		Eastbound		Westbound		Northbound		Southbound		Worst Approach		Overall
	Delay	LOS ¹	Delay	LOS ¹	Delay	LOS ¹	Delay	LOS ¹	Delay	LOS ¹	Approach	LOS ¹	
AM													
Croaker Road & Rochambeau Drive	26.3	C	23.0	C	46.8	D	29.0	C	22.7	C	Westbound	D	C (WB-D)
Croaker Road & Point O Woods	2.2	A	20.7	C	13.0	B	-	-	-	-	Eastbound	C	(EB-C)
Croaker Road & Richmond Road	40.2	D	37.9	D	41.6	D	42.8	D	41.5	D	Northbound	D	D (NB-D)
Richmond Road & Lightfoot Road	32.3	C	31.3	C	34.5	C	41.1	D	27.4	C	Northbound	D	C (NB-D)
Lightfoot Road & Mooretown Road	25.6	C	26.7	C	28.9	C	13.2	B	34.8	C	Southbound	C	C (SB-C)
PM													
Croaker Road & Rochambeau Drive	34.3	C	27.4	C	52.6	D	39.9	D	27.7	C	Westbound	D	C (WB-D)
Croaker Road & Point O Woods	1.5	A	20.7	C	16.1	C	-	-	-	-	Eastbound	C	(EB-C)
Croaker Road & Richmond Road	63.4	E	67.8	E	50.9	D	86.0	F	70.2	E	Northbound	F	E (NB-F)
Richmond Road & Lightfoot Road	98.9	F	121.8	F	92.1	F	102.3	F	35.5	D	Eastbound	F	F (EB-F)
Lightfoot Road & Mooretown Road	54.1	D	42.6	D	45.2	D	51.7	D	80.0	F	Southbound	F	D (SB-F)

¹LOS – Level of Service



**Table 4.6-2
No-Build (2040) Conditions - Multilane Segments**

		AM Peak				PM Peak			
		Eastbound/ Northbound		Westbound/ Southbound		Eastbound/ Northbound		Westbound/ Southbound	
Roadway	Location	Segment LOS ¹	Density (pc/mi/ln)	Segment LOS ¹	Density (pc/mi/ln)	Segment LOS ¹	Density (pc/mi/ln)	Segment LOS ¹	Density (pc/mi/ln)
Mooretown Road	Between Lightfoot Road and Humelsine Parkway	A	8.2	A	5.0	A	8.9	A	9.6
Richmond Road	Between Croaker Road and Popular Creek	B	15.5	B	14	C	21.2	C	23.6
Croaker Road	Between Richmond Road and Rochambeau Drive	A	6.9	A	6.2	A	8.6	A	8.2
Croaker Road	Between Rochambeau Drive and I-64	B	12.6	A	9.7	A	10.3	B	11.6

**Table 4.6-3
No-Build (2040) Conditions - Two-Lane Segment Analysis (Class II)**

		AM Peak		PM Peak	
Two-Lane Highway	Location	Segment LOS ¹	PTSF ² (%)	Segment LOS ¹	PTSF ² (%)
Lightfoot Road	Between Richmond Road and Mooretown Road	D	72.0	D	77.9

(No Class I segments in 2040)

¹LOS – Level of Service

²PTSF – Percent Time Spent Following

**Table 4.6-4
No-Build (2040) Conditions - Ramps**

	Intersection		Eastbound		Westbound		Northbound		Southbound		Worst		Overall
	Delay	LOS ¹	Delay	LOS ¹	Delay	LOS ¹	Delay	LOS ¹	Delay	LOS ¹	Approach	LOS ¹	
AM													
Croaker Road & I-64 Westbound Ramps	6.6	A	22.3	C	10.3	B	-	-	-	-	Eastbound	C	(EB-C)
Croaker Road & I-64 Eastbound Ramps	2.4	A	17.6	C	12.3	B	-	-	-	-	Eastbound	C	(EB-C)
Mooretown Road & SR 199 Southbound Ramps	10.5	B	-	-	-	-	35.6	E	10.4	B	Northbound	E	(NB-E)
Mooretown Road & SR 199 Northbound Ramps	23.2	C	-	-	-	-	108.7	F	10.0	B	Northbound	F	(NB-F)
PM													
Croaker Road & I-64 Westbound Ramps	17.0	B	46.8	E	11.5	B	-	-	-	-	Eastbound	E	(EB-E)
Croaker Road & I-64 Eastbound Ramps	3.2	A	23.9	C	12.1	B	-	-	-	-	Eastbound	C	(EB-C)
Mooretown Road & SR 199 Southbound Ramps	4.5	A	-	-	-	-	24.9	C	13.0	B	Northbound	C	(NB-C)
Mooretown Road & SR 199 Northbound Ramps	28.6	C	-	-	-	-	167.2	F	17.6	C	Northbound	F	(NB-F)

¹LOS – Level of Service



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5.0 DEVELOPMENT OF ALTERNATIVES

The Corridor Study considered a range of alternative alignments for the extension of Mooretown Road and various roadway typical cross-sections that could be applied to these alignments. Early traffic studies found much of the traffic forecasted to use the Extension would be continuing through from existing Mooretown Road or coming from Rochambeau Drive northwest of the study area. Connecting to Croaker Road was logical to continue the through traffic movement and to not add another intersection to Croaker Road. Cultural resource and residential constraints also limited possible connection points if major impacts were to be avoided. Therefore, all of the alternatives considered extending Mooretown Road to the intersection of Croaker Road and Rochambeau Drive.

During the development of alternatives, stakeholder input and public comments on environmental protection, traffic conditions on Rochambeau Drive, and the need for alternate access routes within the study area were considered. Alternatives were developed with the goals of minimizing the lengths of stream crossings and improving traffic capacity while providing access to the Economic Opportunity areas.

5.1 DESIGN CRITERIA

5.1.1 Roadway Geometry

The Mooretown Road Extension would connect two existing roadways, both classified by VDOT as Major Collectors². The proposed roadway needs to carry forecasted traffic at speeds and

under conditions appropriate for the anticipated development and in a manner consistent with the adjoining roadways.

Although the roadway will provide an alternate route for I-64 and Richmond Road traffic, it will primarily carry traffic from the study area and connect neighborhoods and commercial areas within northern James City and York Counties. Therefore the Rural Collector design standard (VDOT standard GS-3)³ should be applied in designing the Mooretown Road Extension. James City County and northern York County are considered rolling terrain.

The Rural Collector design standard for rolling terrain has a design speed of 50 mph and a minimum radius of 760 feet. According to VDOT's Access Management Standards for collector roads, signalized intersections should be spaced at least 1,050 feet apart, while full access unsignalized intersections or entrances may be 445 feet apart.

5.1.2 Drainage

According to the VDOT Drainage Manual, the final design of culverts and stream crossings for Mooretown Road Extension should be sized to carry a minimum 25-year year storm. For the concept level designs used in developing the alternatives, culverts were selected by comparing the relative drainage areas to each crossing and on the existing stream flow cross sections. Fish or wildlife passage provisions will most likely be required for culverts in perennial streams and will be defined during the permitting process. Bridge crossings will require a detailed hydrology and hydraulics study to assess flood stage at the crossing and the potential of scour at the bridge foundations. The

hydrologic estimates should consider the potential for development and increased impervious cover and reduced time of concentration.

Open roadside ditches may be used with the Rural Collector design standard. These would provide stormwater management benefits and reduce the overall runoff volume. Curbs and gutters can be used to collect roadway runoff. Curb and gutter sections require less right-of-way width than open ditches. Either drainage option would provide a buffer between vehicle traffic and pedestrians.

5.1.3 Typical Sections

Existing Mooretown Road, southeast of Humelsine Parkway, has a four-lane divided roadway cross-section with a raised median. Rochambeau Drive northwest of the study area is a two-lane roadway at Croaker Road which transitions to a four-lane divided roadway with a depressed median approximately three-quarters of a mile north of Croaker Road. The Stonehouse development plan includes provisions, known as proffers, to widen Rochambeau Drive north of Croaker Road.

The forecasted 2040 volumes for the Mooretown Road Extension range from 18,600 vehicles per day (vpd) in the central section to 25,500 vpd at the north end. These traffic volumes warrant a four-lane cross-section. Since the Mooretown Road Extension would be connecting other four lane divided roadways, a four lane divided section with a raised median is recommended.

The typical section should address the needs of non-motorized users as well. Pedestrians and bicyclists can be served through sidewalks and bike lanes or through shared use paths. Several combinations of a four-lane divided typical section with either bike lanes and sidewalks or shared-use paths were developed. These presented both curb and gutter sections or paved shoulder and open ditches for drainage. These studied options are presented in Figure 5.1.



Mooretown Road southeast of Humelsine Parkway

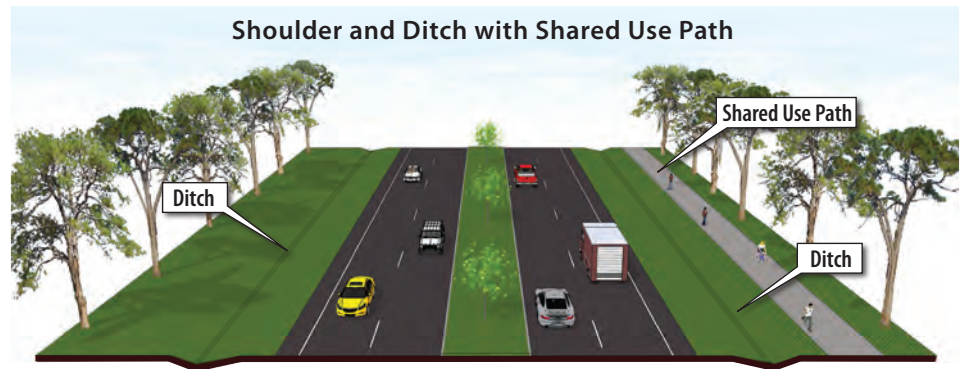
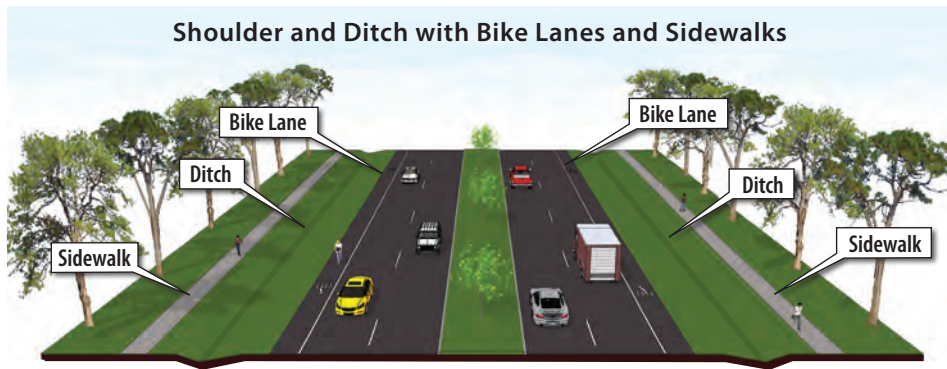
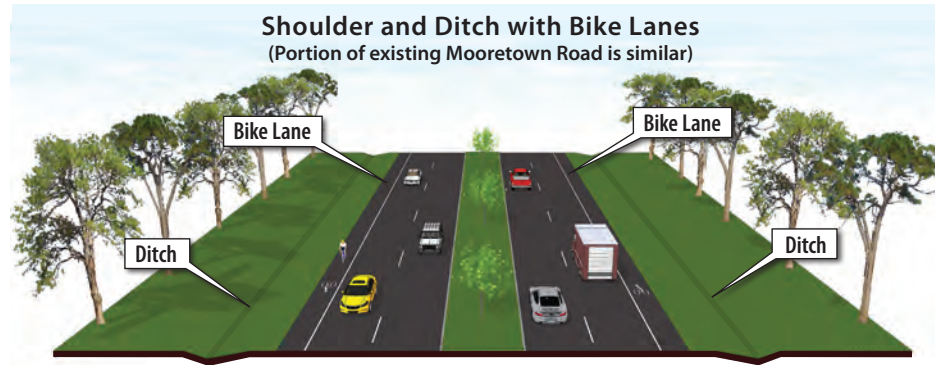


FIGURE 5.1
Typical Section Options

5.2 ALTERNATIVE 1

Alternative 1 was developed to provide the most direct connection between Lightfoot Road and the Croaker Road-Rochambeau intersection, while minimizing the stream, wetland, and residential impacts through the center of the study area. Alternative 1 is shown in Figure 5.2.

5.2.1 Roadway Improvements

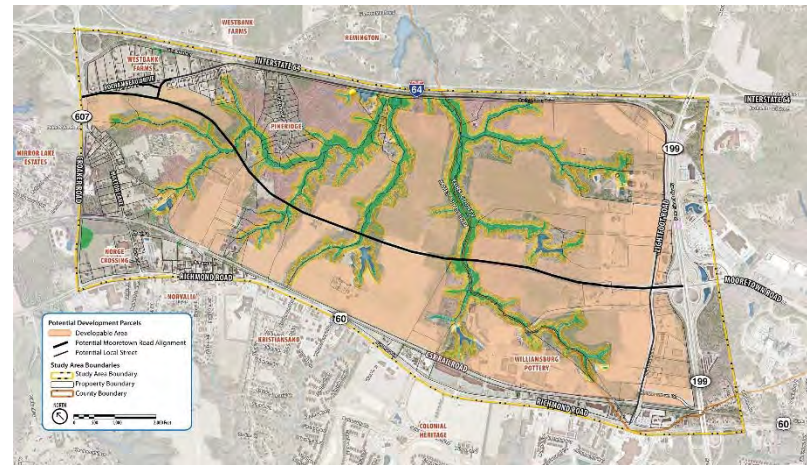
Alternative 1 begins at the existing intersection of Mooretown Road and Lightfoot Road and runs northwest through the Williamsburg Pottery property to Skimino Creek. A bridge is proposed to cross this large ravine and the wetlands surrounding the creek. The road would cross the Hill Pleasant Farm and neighboring Stevens properties, crossing two streams, before curving across the east end of Peach Street, over a fourth stream, and through the Broughton LLC property to Croaker Road at Rochambeau Drive.

This alternative includes a realignment of Rochambeau Drive to intersect the Mooretown Road Extension and discourage through traffic from using Rochambeau Drive. This intersection is expected to require a stop sign for Rochambeau Drive traffic. A right-turn lane from the Extension onto Rochambeau Drive is not needed for traffic operations based on the analysis, but should be considered for safety.

The traffic signals at Lightfoot Road and at Croaker Road would need reconfiguring to accommodate the additional lanes that would be required as part of the Mooretown Road Extension.

5.2.2 Future Land Use Analysis

Alternative 1 provides the most direct connection through the site, generally evenly dividing the study area in half between the northeast and southwest sections. A mixed-use or traditional retail/commercial development typically prefers access off of both sides of a roadway. The multiple parcels could support various uses with the ability to create buffers between uses as needed. However, part of the land traversed by this alternative classified as rural/agricultural in the James City County Comprehensive Plan. The largest, most accessible parcels occur on the eastern side of the study area. Alternative 1 provides potential developable space, with more than 400 feet of depth, along 7,200 linear feet of the railway.



Potential development areas accessed by Alternative 1



- Alternative 1
- Culvert
- Bridge
- Study Area Boundary
- Parcels
- County Boundary
- Wetlands and Waters of U.S.**
- Palustrine Forested Wetlands (PFO)
- Palustrine Emergent Wetlands (PEM)
- Palustrine Open Water (POW)
- Streams Channels (within Study Area)
- Resource Protection Areas (RPA)
- Threatened & Endangered Species**
- Potential Mabey's Salamander Habitat
- Potential Small Whorled Pogonia Habitat



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FIGURE 5.2
Alternative 1

5.3 ALTERNATIVE 2

Alternative 2 seeks to reduce environmental impacts by sweeping the road alignment upstream of the headwaters of most of the streams. The alignment runs closest to the railroad line and stays mostly in the Economic Opportunity area as shown in Figure 5.3.

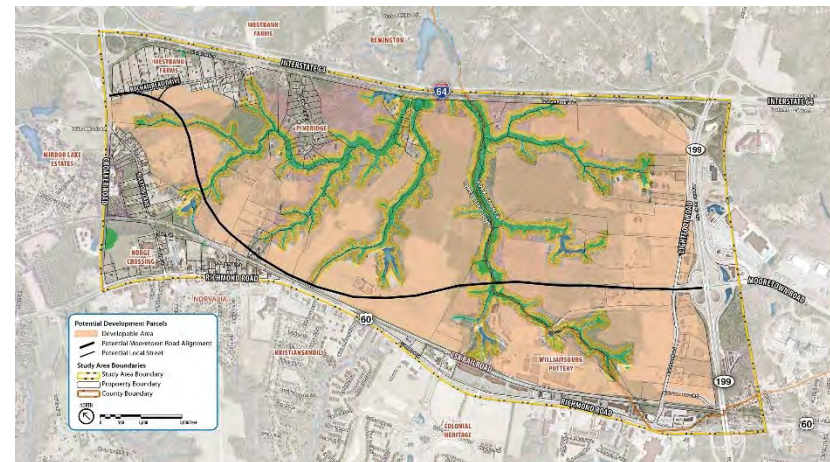
5.3.1 Roadway Improvements

Alternative 2 provides a “southwestern” alignment through the study area. It begins at the existing intersection of Mooretown Road and Lightfoot Road and runs northwest crossing Skimino Creek with a bridge, and then the alignment heads to the west toward the railroad. Alternative 2 crosses the streams on either side of the Stevens property upstream of the point of perennial flow thereby reducing the wetland impacts. Alternative 2 crosses Peach Street near the railroad tracks and turns north, crosses the American Heritage Campground property, and then turning northwest it intersects Croaker Road at Rochambeau Drive.

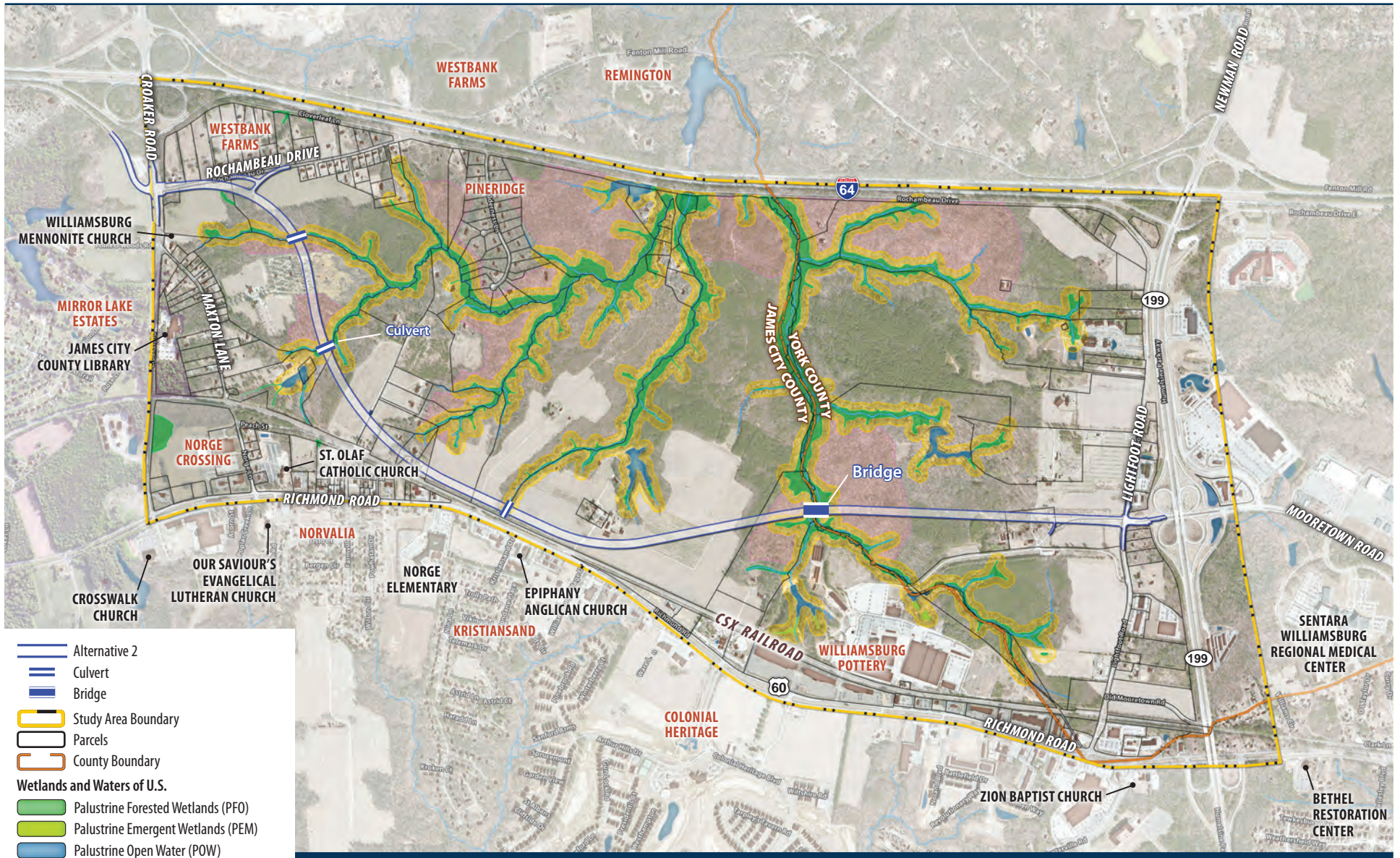
This alternative also includes a realignment of Rochambeau Drive to intersect Mooretown Road and discourage through traffic from using Rochambeau Drive. This intersection would require turn lanes and traffic control for Rochambeau Drive traffic similar to Alternative 1. The traffic signals at Lightfoot Road and at Croaker Road would need reconfiguring to accommodate the additional lanes that would be required as part of the Mooretown Road Extension.

5.3.2 Future Land Use Analysis

Alternative 2 is located primarily in land designated for economic development/opportunity through zoning and/or comprehensive plan designation. It provides access to more parcels within the James City County Economic Opportunity area, providing 130 more developable acres than Alternative 1. It impacts more residential properties than Alternative 1, but fewer than Alternative 3. This alignment, while offering the potential to develop a similar amount of property as Alternative 1, has a number of parcels that are primarily on one side of the road requiring longer internal road networks for development of the parcels. However, these very large parcels are more conducive to the industrial and light industrial development recommended in the adopted comprehensive plans, as the largest developable area sites are left contiguous. This alternative provides potential developable space along 3,500 linear feet of railway.



Potential development areas accessed by Alternative 2



- Alternative 2
- Culvert
- Bridge
- Study Area Boundary
- Parcels
- County Boundary
- Wetlands and Waters of U.S.**
 - Palustrine Forested Wetlands (PFO)
 - Palustrine Emergent Wetlands (PEM)
 - Palustrine Open Water (POW)
 - Streams Channels (within Study Area)
 - Resource Protection Areas (RPA)
- Threatened & Endangered Species**
 - Potential Mabey's Salamander Habitat
 - Potential Small Whorled Pogonia Habitat



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FIGURE 5.3
Alternative 2

5.4 ALTERNATIVE 3

Alternative 3 was developed to provide access to the largest properties in the study area while also utilizing a portion of existing Rochambeau Drive. Similar to Alternative 2, this alternative initiated as a result of comments received during the stakeholders meetings and the first public meeting. Many of the comments focused on concerns with potential impacts to environmental features and residential areas, as well as suggestions to utilize Rochambeau Drive.

Alternative 3 is shown in Figure 5.5.

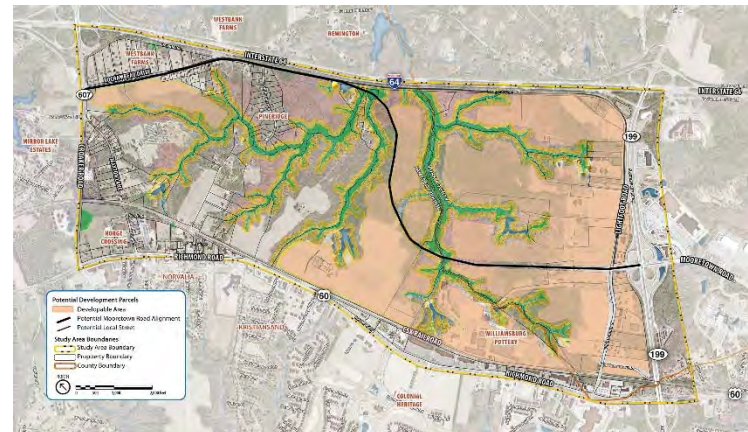
5.4.1 Roadway Improvements

Like the other Alternatives, Alternative 3 begins at the existing intersection of Mooretown Road and Lightfoot Road and runs northwest across Skimino Creek and includes a bridge crossing the creek. After crossing Skimino Creek, Alternative 3 turns east and connects to Rochambeau Drive approximately 7,300 feet southeast of Croaker Road. Rochambeau Drive south of Croaker Road would need to be widened to accommodate the additional traffic. Rochambeau Drive south of the proposed Mooretown Road Extension would be realigned to intersect with the Extension.

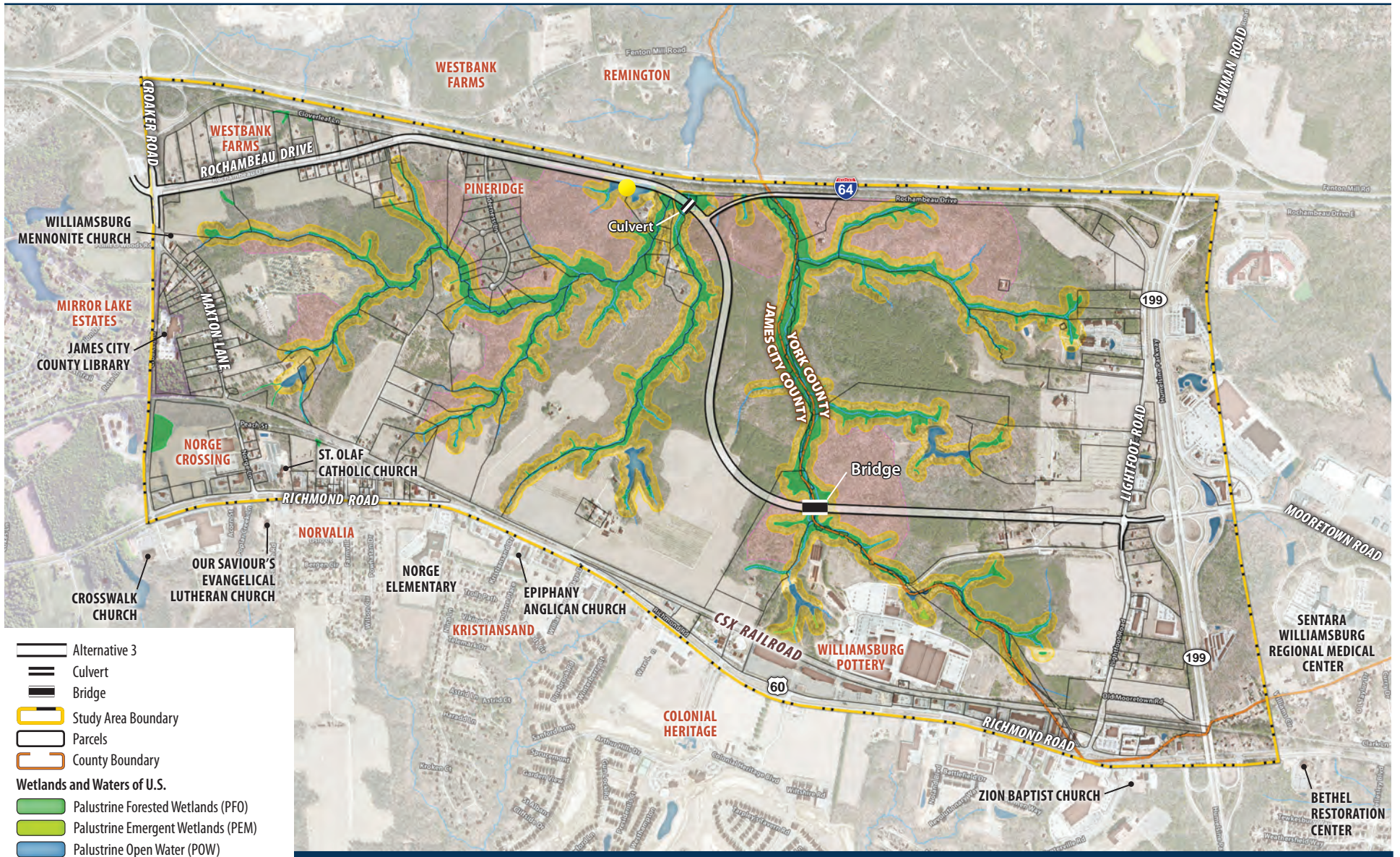
The traffic signals at Lightfoot Road and at Croaker Road would need reconfiguring to accommodate the additional lanes that would be required as part of the Mooretown Road extension.

5.4.2 Future Land Use Analysis

Alternative 3 provides a “northeastern” alignment and would only connect a portion of the study area with a new road alignment. This alternative would offer the least access to new potential development parcels of the three alternatives. The portion of Rochambeau Drive to be improved with this alternative is mostly residential with some smaller undeveloped parcels. Alternative 3 would require right-of-way acquisition along Rochambeau Drive, which would impact the residential area south of Croaker Road. The southeastern parcels of the property within York County would be well served by this alignment as would the parcels just west of Skimino Creek. The remaining portions of the site would need to rely on existing roads or new roads that would connect through the parcels to the Mooretown Road Extension to be developable as part of the project.



Potential development areas accessed by Alternative 3



- Alternative 3
- Culvert
- Bridge
- Study Area Boundary
- Parcels
- County Boundary
- Wetlands and Waters of U.S.**
 - Palustrine Forested Wetlands (PFO)
 - Palustrine Emergent Wetlands (PEM)
 - Palustrine Open Water (POW)
 - Streams Channels (within Study Area)
 - Resource Protection Areas (RPA)
- Threatened & Endangered Species**
 - Potential Mabee's Salamander Habitat
 - Potential Small Whorled Pogonia Habitat



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FIGURE 5.4
Alternative 3





5.5 BUILD (2040) TRAFFIC CAPACITY ANALYSIS

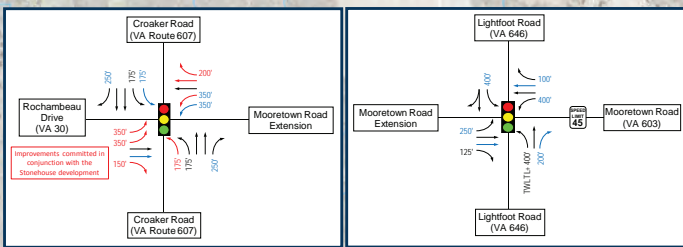
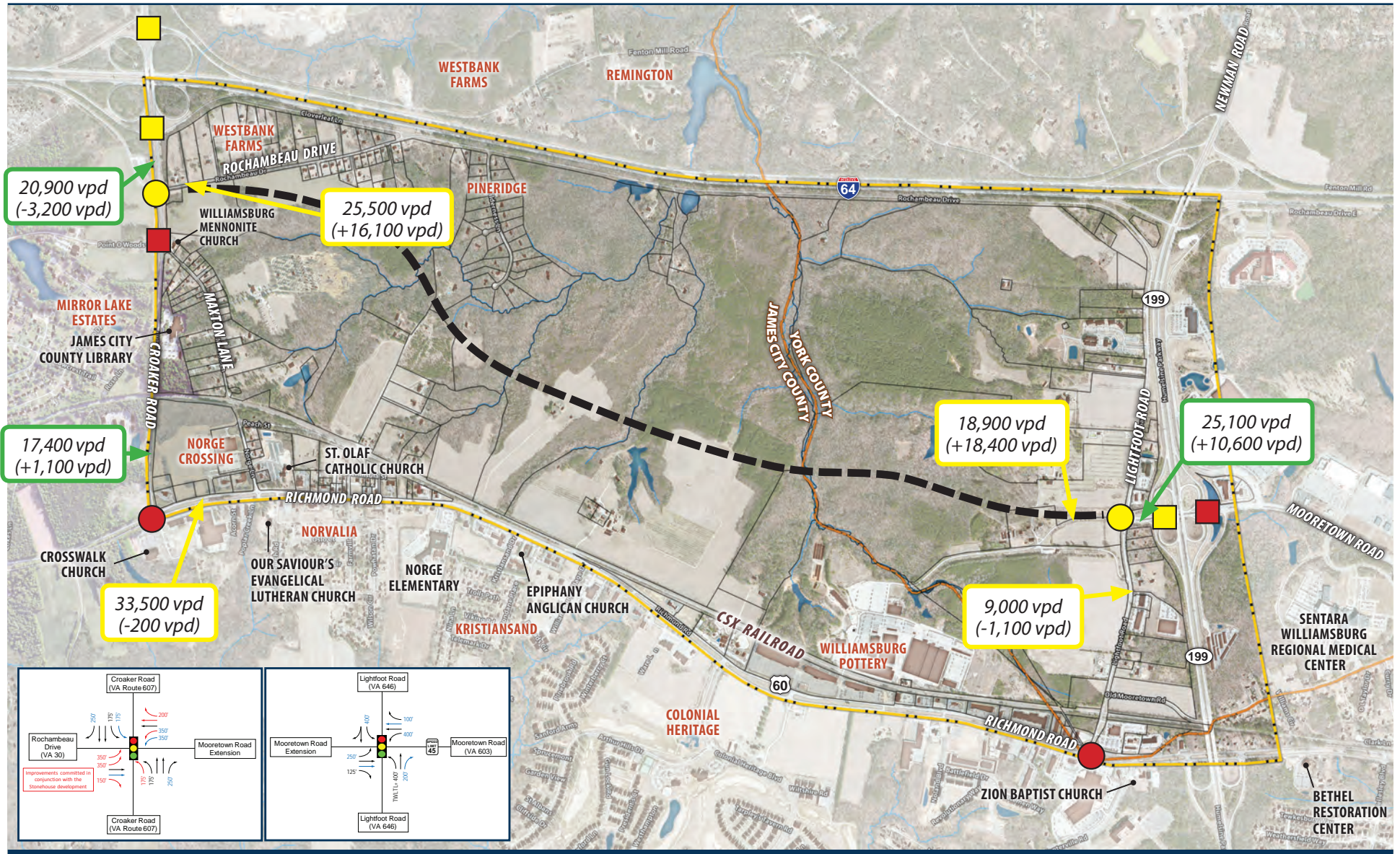
Regardless of the alternative selected, the impacts to the surrounding network traffic are expected to be similar under the 2040 Build traffic conditions. All alternatives begin at the same point on Lightfoot Road and eventually route traffic to the same intersection on Croaker Road. The travel time along the alternatives is similar. Figure 5.5 illustrates the highlights of the capacity analysis. The Build (2040) daily volumes are listed for each segment as well as the change relative to the No-Build (2040) volumes. The worst case peak hour level of service for each of the intersections and segments is also listed.

Based on the analysis, some of the intersections continue operating at undesirable levels of service; however, there is a decrease in delay at some of the intersections due to rerouting of traffic on to Mooretown Road extension.

All the analyzed corridor segments are expected to continue operating acceptably. At the I-64 and Croaker Road interchange, both the westbound and eastbound ramps are projected to operate acceptably. The yield-controlled southbound ramp at the Humelsine Parkway (SR 199) and Mooretown Road interchange is projected to operate acceptably and the northbound ramp is projected to operate at LOS E in the AM peak and LOS F during the PM peak hour.

It is important to note that the 2040 Build Traffic analysis includes traffic that would be generated by potential development of the land along the Mooretown Road Extension Corridor. The analysis demonstrates that the Extension will support development along the corridor with no increase in LOS except in the segment of Mooretown Road between Lightfoot Road and East Rochambeau Drive. Intersection improvements will reduce delays at the intersection of Lightfoot Road and Mooretown Road if Mooretown Road is extended. This will offset the increased delay in the segment to the southeast. The analysis also shows improved traffic operations along Richmond Road and Lightfoot Road for most scenarios.

Capacity analysis results of the 2040 Build Traffic Conditions are reported in the following tables. Table 5.5-1 lists the average delay and level of service (LOS) for intersections in the study area under AM and PM peak period traffic volumes. Table 5.5-2 lists the level of service and traffic density on the multilane road segments around the study area. Table 5.5-3 presents the level of service and percent of time spent following on Lightfoot Road, a Class II Two-Lane Segment. Table 5.5-4 lists the average delay and level of service of the ramps within the Croaker Road-I-64 interchange (Exit 231) and the Mooretown Road- Humelsine Parkway interchange. Detailed traffic analysis information, including intersection lane geometrics, traffic control, peak hour volumes, and *Synchro/HCS* output are contained in Appendix A.



Symbol	LOS*	Signalized	Unsignalized	Segment
[Yellow dashed line]		Green circle	Green square	ADT
[Black outline]		Yellow circle	Yellow square	ADT
[Orange outline]		Red circle	Red square	ADT
[Black dashed line]				

*Worst peak level of service



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FIGURE 5.5
Build (2040) Traffic Conditions



**Table 5.5-1
Build (2040) Conditions - Intersections**

	Intersection		Eastbound		Westbound		Northbound		Southbound		Worst Approach		Overall
	Delay	LOS ¹	Delay	LOS ¹	Delay	LOS ¹	Delay	LOS ¹	Delay	LOS ¹	Approach	LOS ¹	
AM													
Croaker Road & Rochambeau Drive	30.2	C	34.0	C	42.0	D	24.6	C	19.7	B	WB	D	C (WB-D)
Croaker Road & Point O Woods	3.7	A	27.9	D	14.6	B	-	-	-	-	EB	D	(EB-D)
Croaker Road & Richmond Road	53.4	D	52.1	D	69.8	E	33.4	C	31.4	C	WB	E	D (WB-E)
Richmond Road & Lightfoot Road	28.3	C	24.6	C	32.8	C	52.6	D	21.5	C	NB	D	C (NB-D)
Lightfoot Road & Mooretown Road	34.4	C	38.8	D	31.3	C	21.3	C	40.8	D	SB	D	C (SB-D)
PM													
Croaker Road & Rochambeau Drive	35.2	D	41.7	D	35.1	D	28.5	C	34.3	C	EB	D	D (EB-D)
Croaker Road & Point O Woods	3.8	A	47.6	E	19.5	C	-	-	-	-	EB	E	(EB-E)
Croaker Road & Richmond Road	62.3	E	62.0	E	58.8	E	79.6	E	61.9	E	NB	E	E (NB-E)
Richmond Road & Lightfoot Road	75.6	E	68.6	E	92.1	F	97.7	F	37.3	D	NB	F	E (NB-F)
Lightfoot Road & Mooretown Road	32.3	C	32.5	C	33.5	C	19.9	B	43.1	D	SB	D	C (SB-D)

¹LOS – Level of Service

**Table 5.5-2
Build (2040) Conditions - Multilane Segments**

		AM Peak				PM Peak			
		Eastbound/ Northbound		Westbound/ Southbound		Eastbound/ Northbound		Westbound/ Southbound	
Roadway	Location	Segment LOS ¹	Density (pc/mi/ln)	Segment LOS ¹	Density (pc/mi/ln)	Segment LOS ¹	Density (pc/mi/ln)	Segment LOS ¹	Density (pc/mi/ln)
Mooretown Road	Between Lightfoot Road and Humelsine Parkway	B	14.3	A	8.8	B	12.6	B	17.0
Richmond Road	Between Croaker Road and Popular Creek	B	15.4	B	14.1	C	21.0	C	23.4
Croaker Road	Between Richmond Road and Rochambeau Drive	A	7.3	A	6.7	A	8.9	A	8.9
Croaker Road	Between Rochambeau Drive and I-64	A	10.8	A	8.7	A	8.5	A	10.3
Mooretown Road Extension	Between Lightfoot Road and Croaker Road	B	12.6	A	9.0	B	15.9	C	18.4

**Table 5.5-3
Build (2040) Conditions - Two-Lane Segment Analysis (Class II)**

		AM Peak		PM Peak	
Two-Lane Highway	Location	Segment LOS ¹	PTSF ² (%)	Segment LOS ¹	PTSF ² (%)
Lightfoot Road (SR 646)	Between Richmond Road and Mooretown Road	C	68.3	D	76.4

¹LOS – Level of Service

²PTSF – Percent Time Spent Following



**Table 5.5-4
Build (2040) Conditions - Ramps**

	Intersection		Eastbound		Westbound		Northbound		Southbound		Worst		Overall
	Delay	LOS ¹	Delay	LOS ¹	Delay	LOS ¹	Delay	LOS ¹	Delay	LOS ¹	Approach	LOS ¹	
AM													
Croaker Road & I-64 Westbound Ramps	4.7	A	15.8	C	9.4	A	-	-	-	-	EB	C	(EB-C)
Croaker Road & I-64 Eastbound Ramps	2.6	A	16.3	C	10.7	B	-	-	-	-	EB	C	(EB-C)
Mooretown Road & SR 199 Southbound Ramps	2.8	A	-	-	-	-	12.4	B	13.7	B	SB	B	(SB-B)
Mooretown Road & SR 199 Northbound Ramps	6.8	A	-	-	-	-	44.6	E	11.1	B	NB	E	(NB-E)
PM													
Croaker Road & I-64 Westbound Ramps	8.0	A	21.1	C	10.6	B	-	-	-	-	EB	C	(EB-C)
Croaker Road & I-64 Eastbound Ramps	3.6	A	21.3	C	10.6	B	-	-	-	-	EB	C	(EB-C)
Mooretown Road & SR 199 Southbound Ramps	2.1	A	-	-	-	-	16.0	C	25.6	D	SB	D	(SB-D)
Mooretown Road & SR 199 Northbound Ramps	20.1	C	-	-	-	-	183.5	F	31.3	D	NB	F	(NB-F)

¹LOS – Level of Service

6.0 OPINION OF PROBABLE COST

Planning-level opinion of probable costs were determined using VDOT’s Planning Estimate spreadsheet. Costs for each alternative are based on constructing a four-lane divided roadway with a sixteen-foot raised median and outside shoulders. Four-foot bike lanes would be marked on the shoulder. The costs for each alternative include a bridge over Skimino Creek. Sidewalks were not recommended due to anticipated low pedestrian demand for light industrial and industrial land use development as shown in the James City County Comprehensive Plan. As a result, sidewalks are not included in the construction costs, but costs are shown separately.

6.1 RIGHT-OF-WAY ESTIMATES

The study area is primarily rural and undeveloped, with few utilities. Most of the alternatives transect large parcels, so a minimal number of parcels are expected to be impacted. Therefore, in accordance with VDOT planning policies, right-of-way acquisition costs have been estimated as 25% of the construction costs.

6.2 CONSTRUCTION ESTIMATES

The estimated planning-level construction costs for each alternative is shown in Table 6.2–1 with the major design parameters affecting those costs. The estimated construction, mitigation, and right-of-way costs of each alternative are:

**Table 6.2-1
Opinion of Probable Construction Costs**

Design Parameters	Alt. 1	Alt. 2	Alt. 3
Bridge (linear feet)	400	320	350
Major Pipe/Box Culvert (linear feet)	1,375	510	450
Length (miles)	2.91	3.19	3.35
Total Right-of-Way Area Needed (ac)	45.8	51.6	50.9
Construction Cost	\$ 50,400,000	\$ 51,600,000	\$ 53,100,000
Mitigation	\$700,000	\$75,000	\$500,000
Right-of-way & Utilities	\$12,600,000	12,900,000	\$13,300,000
Total	\$ 63,700,000	\$ 64,600,000	\$ 66,900,000

Adding five foot sidewalks along each side would increase construction costs \$2,000,000 to \$2,350,000.



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7.0 ALTERNATIVES EVALUATION

The alternatives were evaluated using a variety of measurable criteria. The evaluation considered social, economic, and environmental factors, as well as the roadway’s ability to improve traffic flows within the study area. Impacts for each category are summarized in Table 7.0-1.

Impacted businesses were counted from active business entities which would lose operating area as a result of the right-of-way acquisition. Impacted residences were counted from residential parcels impacted to a point where their existing use would be altered.

The impacts to natural resources were measured based on the resources identified on the environmental features map. The critical resource impacts measured include areas of wetland impacts, and number and length of stream impacts. Economic impacts were measured both in terms of the developable acreage which would be opened by construction of the road, the length of the proposed road extension in the Economic Opportunity Area (EOA), and by the cost of right-of-way and construction. Construction of any of the alternatives will present social impacts in the disruption of businesses and residences, and were compared based on the number which would need to be relocated or substantially impacted, and on the amount of right-of way acquisition required.

**Table 7.0-1
Alternatives Comparison**

Impact	Alternative 1 (Center)	Alternative 2 (West)	Alternative 3 (East)
<i>Social Impacts</i>			
Impacted - Businesses	0	2	0
Impacted – Residences Designated EO	0	4	0
Impacted – Residences Designated Rural Lands	2	0	4
<i>Environmental Impacts</i>			
Wetlands Impacted (ac)	3.5	1.4	4.25
Stream Crossings (USGS Blue Line)	4	4	3
Stream Impacts (lf)	1,177	480	852
<i>Economic Impacts</i>			
Developable acreage served (ac)	955	1085	825
Frontage in EOA (linear feet)	13,700	16,700	10,300
Total Right-of-Way (R/W) Area Needed (ac)	45.8	51.6	50.9
<i>Construction Cost (inc. R/W and Mitigation)</i>	\$ 63,700,000	\$ 64,600,000	\$ 66,900,000



7.1 SOCIAL IMPACTS

As a new roadway alignment, the Mooretown Road Extension would require full right-of-way acquisition. All of the acquisition analyses are based on a 130-foot wide right-of way. Most of the land needed for the routes considered is either agricultural or wooded and undeveloped. These acquisitions would also have potential environmental impacts. Each of the alternatives would require some acquisitions from residential and business properties. All of the alternatives require right-of way from the Williamsburg Pottery properties, Hill Pleasant Farm, and the parcels at the southeast corner of Croaker Road and Rochambeau Drive. Intersection improvements at the intersection with Croaker Road, common to all alternatives, would impact a residential structure at 4392 Rochambeau Drive and would likely require a relocation. Alternative 2 and Alternative 3 would each require the relocation of three additional homes. Alternative 1 would require a total of two residential relocations, and the least amount of new right-of-way, impacting the fewest parcels. Alternate 2 would impact businesses more directly than the other alternatives, crossing through the American Heritage RV Park and the Drinkwater equine property, however both of these properties opted into and are currently designated Economic Opportunity. Alternative 3 requires right-of-way from the largest number of parcels. Most of the right-of-way required for Alternative 3 is located along the 7,600 linear feet of Rochambeau Drive that would be widened for this alternative.

The alternatives were developed to avoid churches, community property, and known, visible, historic architectural resources. However, this area is rich in history and only minimal archaeological investigations have been undertaken for this study. Additional archaeological investigations would be required as the road extension plans progress to the permitting stage, or if it receives state or federal funds to continue project development or construction.

Since Alternative 3 involves a long section of widening an existing roadway, it requires the least area of new right-of-way. Alternative 2 is the longest route, and is all on new alignment, therefore it will require the greatest amount of new right-of-way.

7.2 ENVIRONMENTAL IMPACTS

All alternatives must cross the main channel of Skimino Creek, which forms the boundary between York and James City Counties. This will be a substantial stream crossing and would likely require Individual Permits from the US Army Corps of Engineers (USACE) and the Virginia Department of Environmental Quality (VADEQ); crossings of smaller streams would also require permitting. All stream crossings would include two crossings of the 100 foot wide Resource Protection Areas (RPAs) which surround the streams. Alternatives 1 and 2 cross one more stream than Alternative 3, but at points further upstream, thereby reducing the total area of impacted streams and wetlands. Alternative 3 impacts the greatest area of wetlands, most of which are open water impacts associated

with merging to and widening of Rochambeau Drive where it abuts a pond. This pond has been identified as a potential habitat for Mabee’s Salamander, a listed threatened species in Virginia. All three alternatives cross multiple streams and areas of potential small whorled pagonia (*Isotria medeoloides*) and northern long-eared bat (*Myotis septentrionalis*) habitat.



Wetlands near Rochambeau Drive

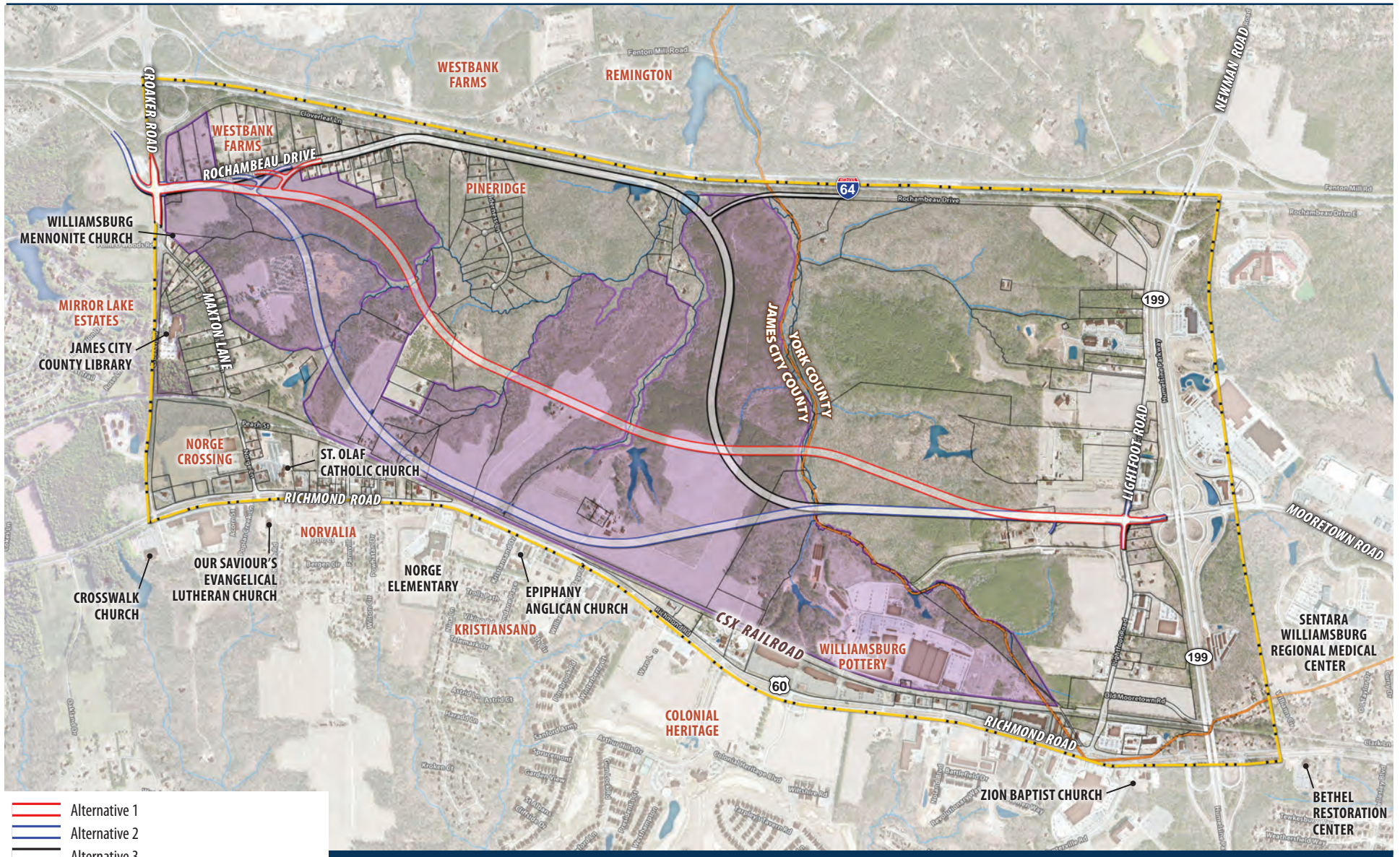
The land within the study area is primarily wooded and agricultural, with some residential development at the northern and eastern edges. Not surprisingly, most of the required right-of-way is wooded or agricultural. Alternative 1 encompasses the most wooded and agricultural land. Alternative 3 requires the least amount of wooded and agricultural land, but also requires the most right-of-way from residential parcels.

7.3 ECONOMIC IMPACTS

One of the primary purposes of the Mooretown Road Extension is to provide access to large developable parcels in the James City County Economic Opportunity overlay area and the York County Economic Opportunity zone. Section 3.0 of this report provides results of the land use and market analyses prepared for this study which researched development trends and possible uses in this area.

Each alternative brings improved access to different sections of the study area. With its central location, Alternative 1 provides the most direct connection between points outside the study area. It shortens travel times from all points within the study area to Humelsine Parkway or Croaker Road. The alignment divides the major parcels into large areas. The alignment of Alternative 2 is closest to the CSX railroad line, opening the potential for the largest development parcels on the Hill Pleasant Farm and neighboring Steven’s properties, but leaves small wedges of property between the proposed road and the railroad. It also divides three properties near Peach Street into parcels which could be redeveloped if combined. Alternative 3 only provides improved access to the Hill Pleasant Farm and Williamsburg Pottery parcels.

As shown in Figure 7.1, each alignment alternative provides a different relationship to the Economic Opportunity Area as outlined in the both JCC and York County’s comprehensive plans.



- Alternative 1
- Alternative 2
- Alternative 3
- Study Area Boundary
- Parcels
- County Boundary
- Economic Development Area (Comp Plan 2035)



Mooretown Road Extension Corridor Study

James City County and York County, Virginia

FIGURE 7.1
**Comprehensive Plan 2035 -
 Economic Opportunity Area and Alternatives 1-3**

- Alternative 1 is the most centrally located of the alternatives, and with the irregular configuration of the Economic Opportunity Area (EOA), this alternative provides good access to the portion of the EOA just north of Skimino Creek, but not as strong access to the eastern portion of the EOA that is closer to Croaker Road.
- Alternative 2 is the most western located alternative, and while this alternative has a section running adjacent to the existing rail line, it also provides the most centrally located alignment through the overall EOA and therefore has the greatest linear footage within the EOA.
- Alternative 3 is the most eastern alignment and runs through only a portion of the EOA in the center of the study area.

7.4 TRANSPORTATION NETWORK IMPACTS

In addition to providing access to the property along the corridor, the Mooretown Road Extension is expected to attract through traffic from Rochambeau Drive, Richmond Road, and Humelsine Parkway. The development traffic will increase delay at the intersections on Croaker Road, but improve traffic conditions on Lightfoot Road. Overall, the Mooretown Road Extension will provide additional capacity to the area roadway network. This would be beneficial in carrying traffic diverted from I-64 or Richmond Road during emergency conditions or

when incidents reduce the capacity of those roads. VDOT has identified a need for an improved alternate route in northern James City County should I-64 be used for one-way emergency evacuations. This would allow another route for emergency vehicles to travel in the opposite direction of the evacuation to assist those in need. Alternatives 1 and 2 provide the best routes for emergency traffic as they are more direct than Alternative 3.

7.5 PUBLIC COMMENT

Engaging the public during a planning process is a key element in contributing to a successful outcome. Understanding what the public envisions for their community, concerns they have, ideas, and providing them with an understanding of the market demands, environmental impacts, and transportation analysis for the area enables them to comment and understand the tradeoffs that may result in the delivery of a final project. During the Mooretown Road Extension planning process, the County and their consultant team facilitated both a series of smaller stakeholder meetings and three (3) public meetings for residents, business owners and other interested stakeholders to review the project information and provide feedback to the project team. These meetings provided an opportunity for presentation of information and dialogue between the stakeholders, the County and consultant team. The summary of the meetings is included below.



Small Group Stakeholder Meetings

This stakeholder meetings were held on March 31 and April 1, during the project initiation phase, before any Public Meetings were held. The intention of these meetings was to engage stakeholders with similar interests (residents, business owners, etc.) and gain an understanding of what they envisioned as the future of the area where the Mooretown Road Extension is proposed and what expectations they may have of such a project. Eight (8) small groups were identified: Nearby Business Interests, Emergency Services, Large Property Holders, Rochambeau Road Residents, Peach Street Residents, Pineridge Residents, Maxton Lane Residents, and Economic Development Directors. These groups were invited to send representatives to the small group meetings, and each group was represented during the focus group discussions.

Each group brought a unique perspective to the discussion of the potential roadway extension. Representatives of the Nearby Business Interests, Large Property Holders, and Economic Development Directors expressed support for the potential land development opportunities. Emergency Services representatives and Rochambeau Road residents described the traffic backups that occur on Rochambeau Drive, especially when there are traffic incidents on I-64. The Peach Street residents, and Pineridge residents voiced concern over potential impacts to their neighborhoods and property.

7.5.1 Public Meetings

The three (3) public meetings were held during the process for residents, business owners and other interested stakeholders to review the project information and provide feedback to the County and consultant team. Each of these meetings was attended by 28 to 50 people and provided valuable feedback to the team regarding citizen concerns and ideas about the corridor. Summaries of each meeting are below.

Public Meeting #1

This meeting was held on the evening of April 29, 2014 at the Croaker Road Library in James City County and provided an introduction to the project. The primary goals for this initial meeting were to inform the public about the process, solicit feedback and gain a general understanding of the public's view on this project. The general sentiment received during the meeting was a mix of those in favor and those against the idea of extending Mooretown Road. Some individuals opposed the road due to impacts to their properties and the natural environment and favored improving existing facilities before building a new one; others felt the project could benefit a specific set of landowners and potentially benefit economic development in the area. Overall the public provided good feedback for guiding the planning and development process for the project.



Public Meeting #2

This meeting was held on the evening of October 20, 2014 at Norge Elementary School and provided the public with three alternative alignments that had been developed by the County and consultant team. The goal of the meeting was to gather feedback from the community on these alternative alignments. Along with a presentation the community participating in review and comment through several activities and discussions. The activities included voting on which alignment was their preferred concept, voting on typical section concepts, and identifying the public's priorities and ideas for development along the proposed extension. Based on the feedback from the participants, their preferred alternative alignment was Alternative 1, followed by Alternative 2, including curb and gutter with a shared use path along the corridor. Most people prioritized protection of natural resources and encouraging development of the area. Additionally, most people felt that no development or maintenance of the existing rural residential nature of the area was ideal for future development; but if development was to occur, a mix of uses (commercial and residential) would be ideal.

Public Meeting #3

This meeting was held on the evening of March 12, 2015 at Toano Middle School and included a presentation describing the preferred alignment and provide more information about this alignment. The recommended alternative received a mixed review from the community. Many said they preferred Alternative #2 and said that Alternative #1 would not offer the most development opportunities for the area. Some attendees did note that this alignment did minimize the environmental impacts. There were suggestions made to change the alignment or project approach slightly for varying interests; however, there were still a number of citizens present that felt strongly the project should not be built at all.

In summary, including the public during the project planning process allows the project team to consider specific comments and interests that may otherwise be unknown throughout the project duration. It is important to balance these opinions and interests with the overall benefit that a project would have for the community and region as a whole. More detailed summaries of the public meeting activities and comments can be found in Appendix E.



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8.0 RECOMMENDATIONS

8.1 RECOMMENDED ALTERNATIVE

After consideration of public comments, the environmental impacts, and potential to improve access to the Economic Opportunity areas, Alternative 2 was selected as the Recommended Alternative. Alternative 2 provides a number of benefits including avoiding and minimizing the impacts to the existing streams and wetlands, and providing the greatest amount of access to the EOA. By locating the roadway along this alignment, Alternative 2 has the least impact to the sensitive environmental resources associated with Skimino Creek and other tributaries within the study area. A comparison summary of these impacts is included in Table 7.0 - 1. This alternative also provides the best and most extensive access into the Economic Opportunity Areas (EOA). The alignment provides 16,700 linear feet of access to the EOA compared to 13,700 linear feet and 10,300 linear feet for Alternatives 1 and 3. The Recommended Alternative (Alternative 2) is shown in Figure 8.1.

8.2 RECOMMENDED TYPICAL SECTION

The typical cross-section for the Mooretown Road Extension should provide adequate capacity for the traffic forecasted as a result of future development and growth, as well as providing a more direct route, and a less congested alternative route for some users, saving them travel time. It should also provide

flexibility with other modes of travel. The ultimate typical section would need to provide capacity for up to 25,500 vehicles per day. This will require four through-lanes of traffic, two in each direction.

A raised median is recommended for safety and access management. The median should be wide enough to accommodate left-turn lanes, and could be narrowed at the approaches to provide a single bridge or the width would be maintained for dual two-lane bridges. This would be evaluated based on surrounding development and a cost analysis.

The existing section of Mooretown Road south of East Rochambeau Drive includes bike lanes on the shoulder. The bike lanes should be continued along the proposed extension to provide continuity for users. Paved shoulders are a recognized provision for pedestrians in areas with low pedestrian volumes. The need for sidewalks would be evaluated as the project develops and would be dependent on the type of land use developed in the study area. If sidewalks are included with the recommended typical section, they should be constructed offset from the roadway and separated from the bike lanes and roadway shoulder by the roadside ditches, or swales. This separation and swales would provide a distance clear of the roadway adding pedestrian comfort and safety, and the swales could be incorporated into the roadway's stormwater management plan.

The Recommended Typical Section is shown on Figure 8.2.



- Alternative 2
- Study Area Boundary
- Parcels
- County Boundary
- Wetlands and Waters of U.S.**
- Palustrine Forested Wetlands (PFO)
- Palustrine Emergent Wetlands (PEM)
- Palustrine Open Water (POW)
- Streams Channels (within Study Area)
- Resource Protection Areas (RPA)
- Threatened & Endangered Species**
- Potential Mabee's Salamander Habitat
- Potential Small Whorled Pogonia Habitat

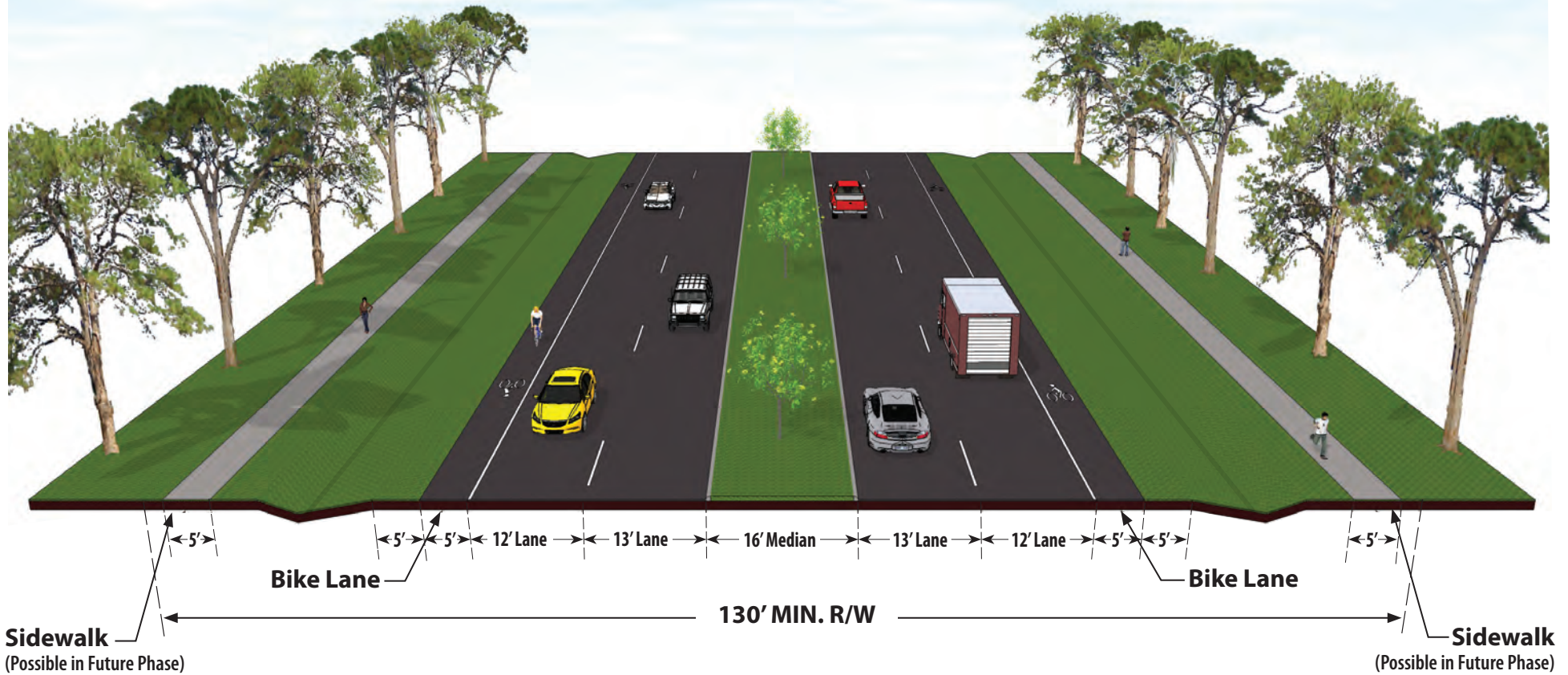


Mooretown Road Extension Corridor Study

James City County and York County, Virginia

FIGURE 8.1
Recommended Alternative

Shoulder and Ditch with Bike Lanes



Mooretown Road Extension Corridor Study
James City County and York County, Virginia

FIGURE 8.2

Recommended Typical Section



8.3 RECOMMENDED DESIGN DETAILS

8.3.1 Stormwater Management

All development in southeast Virginia shall consider the impacts of increased stormwater runoff and the potential pollution of water ways and groundwater during construction and after the installation of pavement and roofs. James City County and York County require that stormwater runoff rates be maintained at or below pre-development rates.

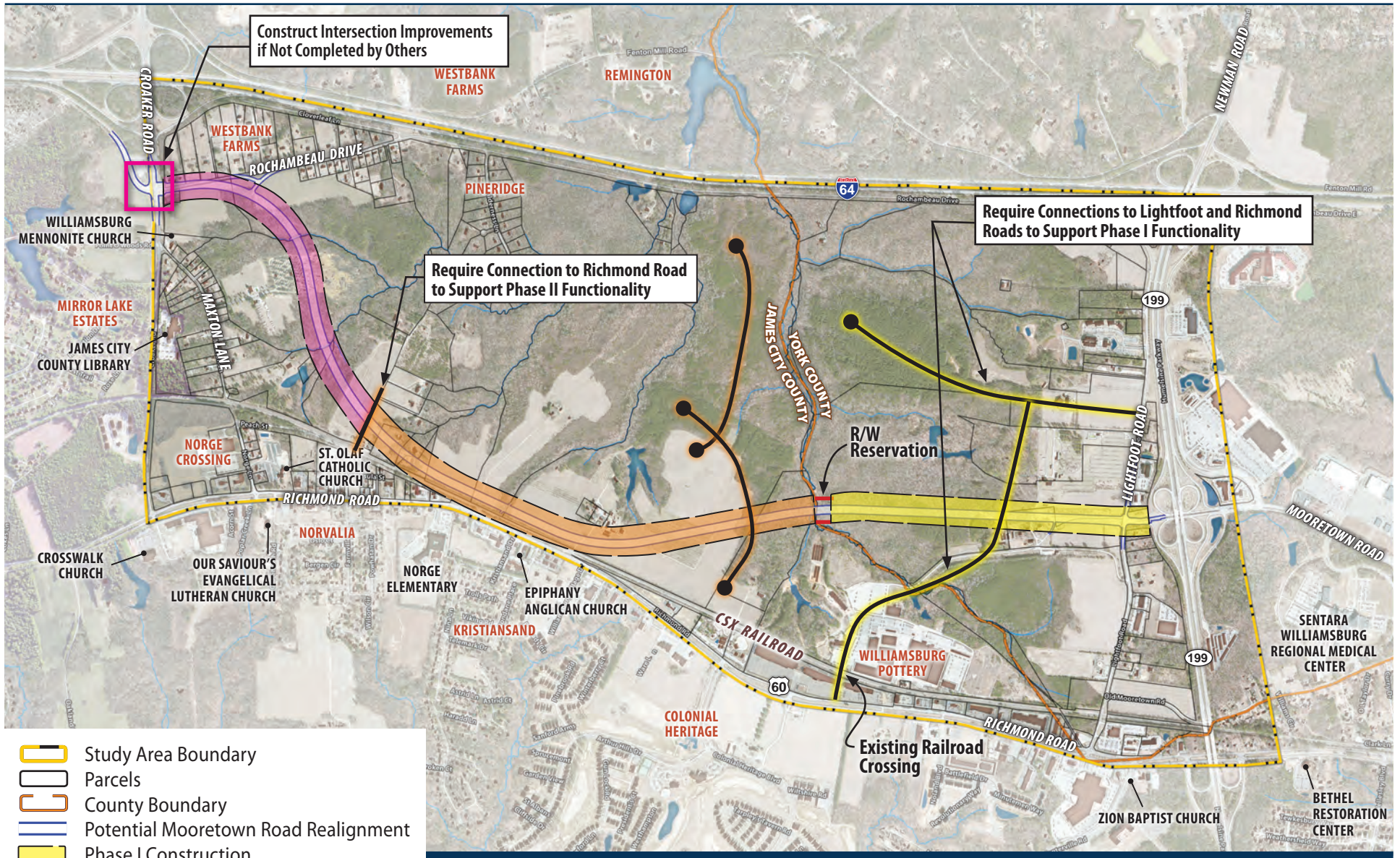
The upland areas of the study area contain several large areas with soils noted to have moderately high to moderate infiltration rates. These are suitable for infiltration based stormwater treatment systems. These areas are highlighted in Figure 8.3. Infiltration based treatment systems reduce runoff rates and provide pollutant reduction. Infiltration based systems include enhanced roadside swales. Dry Swales are also ideal for linear projects. Other opportunities for water quality treatment would be in some of the smaller eroding swales adjacent to the proposed road alignment. These areas present a good opportunity for Regenerative Stormwater Conveyance Systems (RSC) per the DEQ BMP Clearinghouse Specification #10 which provide stabilization to the intermittent ditches will encouraging stormwater infiltration through a linear infiltration step pool system. These systems

could potentially provide a 75% phosphorous removal efficiency. Based on the preliminary assessment of the soils, geomorphic, and environmental setting, the proposed alignment alternative has numerous best management practice opportunities to provide runoff reduction and nutrient reduction.

The majority of the streams in the study area are stable and show minimal signs of active erosion. However there are several reaches that are eroding and are candidates for stream restoration. Under current Virginia guide lines, stream restoration can be used to provide storm water pollution reduction. The candidate areas are also illustrated in Figure 8.3

8.3.2 Pavement

Typical pavement sections for anticipated traffic loadings on the Mooretown Road Extension are detailed in Table 8.3.2-1. These recommendations are based on subgrade conditions typical of James City County. Several options are presented to account for the anticipated range of truck percentages and total traffic volumes on the roadway. A thorough geotechnical evaluation should be conducted prior to final design of the proposed extension.



- Study Area Boundary
- Parcels
- County Boundary
- Potential Mooretown Road Realignment
- Phase I Construction
- Phase II Construction
- Phase III Construction
- Potential Local Street Phase I
- Potential Local Street Phase II



Mooretown Road Extension Corridor Study

James City County and York County, Virginia

FIGURE 8.4
Potential Developer Led Phasing



**Table 8.3.2-1
Recommended Pavement Sections**

Section	% Heavy Commercial Vehicles	Hot Mix Asphalt			Aggregate Base ¹	Subgrade ²
		Surface	Intermediate	Base		
Mooretown Extension with ADT up to 18,660 vpd	5	1.5	2	6	8	Stable and Compacted
Mooretown Extension with ADT up to 25,500 vpd	5	2	2	6	8	Stable and Compacted
Mooretown Extension with ADT up to 18,660 vpd	10	2	2	7	8	Stable and Compacted
Mooretown Extension with ADT up to 25,500 vpd	10	2	2	7.5	8	Stable and Compacted

1 - VDOT Type 21-A, compacted to a dry density of at least 100% of the Standard Proctor maximum dry density (ASTM D 698).
 2 - Compacted to a dry density of at least 95% of the Standard Proctor maximum dry density (ASTM D 698).

8.3.3 Environmental Protection and Permitting

Any plan to extend Mooretown Road into James City County will require environmental permits from the US Army Corps of Engineers (USCOE) and the Virginia Department of Environmental Quality (DEQ) to cross Skimino Creek. Due to the extent of wetland impacts that will be associated with the total project, an individual permit (IP) would most likely be required. During the permitting phase, updated

environmental and cultural impact assessments would be required. It is possible for the Recommended Alternative to be approved through a State Program General Permit as a result of the lower stream and wetland impacts. However, this would be evaluated further after detailed designs have determined the final impacts.

8.3.4 Transportation Interconnections

The degree of interconnectivity between transportation features will depend on the land uses ultimately developed within the study area. Larger parcels such as the Hill Pleasant Farm and Williamsburg Pottery properties may be subdivided into smaller parcels or planned as one large development. The developer of these parcels would provide roads within their development to access the proposed Mooretown Road Extension and other adjacent roads regardless of whether they are building neighborhood streets or commercial access roads. These developments may result in the opportunity for local connector roads between the proposed Extension and other sections of Lightfoot Road or Rochambeau Drive.

As these road networks are planned, consideration should be given to whether the existing railroad crossings would be allowed to be maintained or improved. Typically, railroad companies have been very restrictive on allowing improvements to existing at-grade crossings and hesitant to allow a new at-grade crossing. In recent years they have been focused on eliminating at-grade crossings. Extensive coordination and approvals would be necessary with CSX Railroad for any roadway improvements crossing the railroad.



Williamsburg Pottery railroad crossing

The main Williamsburg Pottery entrance crossing and the Peach Street crossing have potential to provide interconnections between Richmond Road and the Mooretown Road Extension at a safe grade and with minimal improvements. The main Williamsburg Pottery railroad crossing is already gated, although currently the Williamsburg Pottery has blocked access for the general public. This crossing provides direct access to an existing traffic signal on Richmond Road.

The Peach Street railroad crossing is minor and is not gated. The crossing allows property owners access to several properties. It is at a relatively flat grade, is a perpendicular crossing, and could be improved to connect to Richmond Road. The viability of improving this crossing depends on approval of CSX Railroad, and how it would benefit the

potential development. Any development with access to this railroad crossing would introduce more traffic and require a gated crossing.



Peach Street railroad crossing

The crossings serving the Stevens' property, the Hill Pleasant Farm property, and the northern portion of the Williamsburg Pottery should be closed to the public if Mooretown Road is extended and the properties developed. It is likely CSX may require closing of an at-grade crossing for the approval of improving others. This would be the appropriate one to close as a result of its close distance and grade differential between Richmond Road and the railroad. A public roadway could not be constructed to meet current standards without major realignment of Richmond Road or the railroad, neither of which is reasonable to maintain this crossing. The recommended alternative would provide alternate, and improved access to the properties now using this crossing.



Hill Pleasant Farm railroad crossing

The northern Williamsburg Pottery railroad crossing is a driveway crossing used mainly for access to a couple of residences and farming activities. This location would not be a good candidate for a potential connection to Richmond Road. It is not a crossing likely to be approved by CSX for upgrading to a public roadway. In addition, it would require right-of-way acquisition, would impact the Williamsburg Pottery buildings, and the resulting intersection with Richmond Road would need to remain unsignalized as the spacing to existing traffic signals is too close.

8.3.5 Phasing

Under the current roadway financing guidelines, the Mooretown Road Extension is most likely to be constructed by developers seeking access to parcels along the road. This could result in a phased development of Mooretown Road, but the

phasing would all depend on the developer's interest in certain properties, the type of development, required access, and many other factors. Based on the current configuration and ongoing planning for development, it is anticipated that the phasing would begin on the southern end where Mooretown Road currently terminates. A potential phasing pattern is illustrated in Figure 8.4.

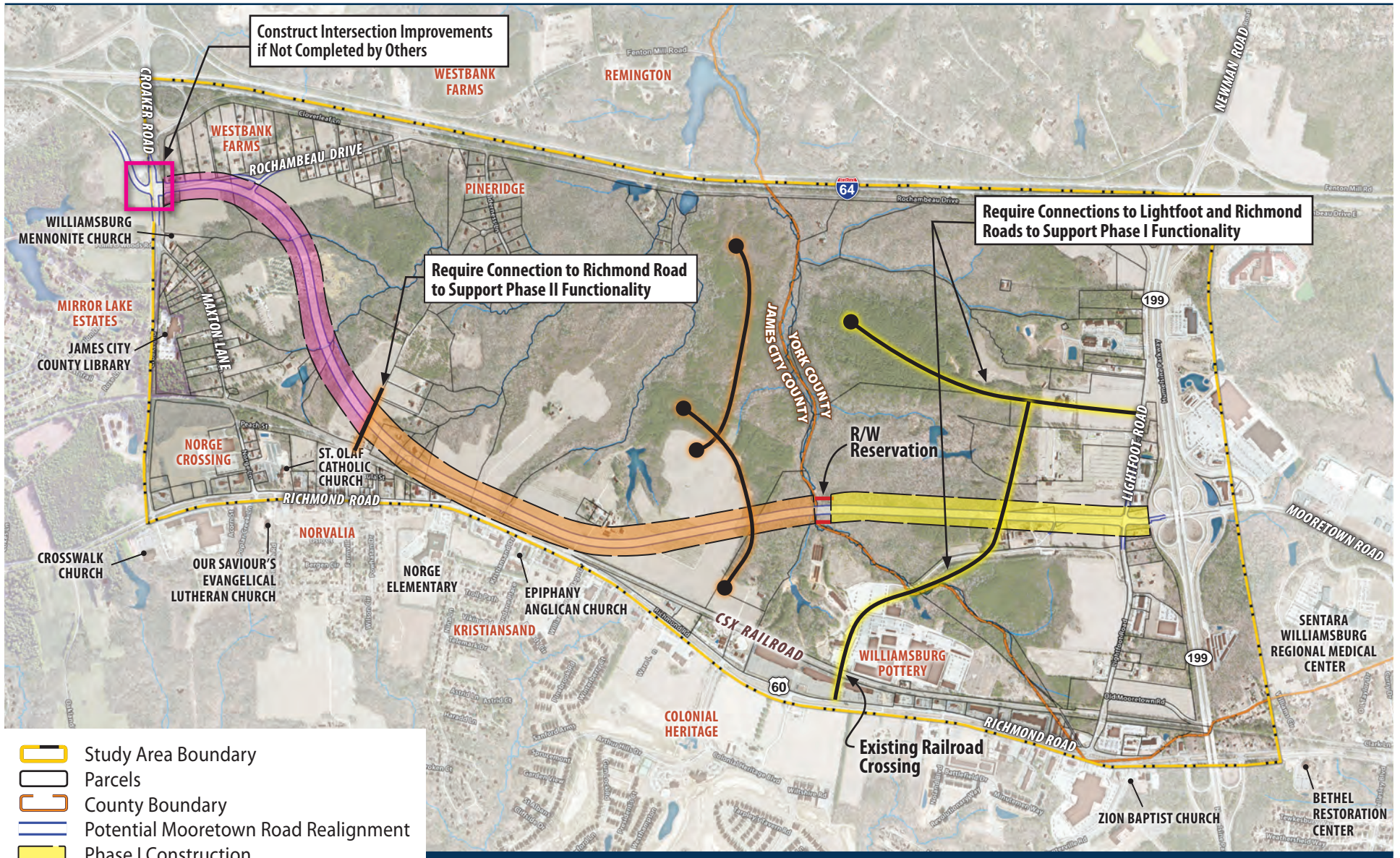
The planning for development of these parcels should include construction of the appropriate portion of Mooretown Road, right-of-way reservations to the adjoining parcels, and construction of other roadway interconnections. These interconnections will be important as the road is only partially completed so the extension is not just a cul-de-sac but provides alternative connections to adjacent roads. The potential first phase includes construction of a local road which would interconnect to Richmond Road across the existing railroad crossing and another which would connect to Lightfoot Road near the Colonial Crossings timeshare entrance.

The potential second phase would require construction of the bridge over Skimino Creek. Interconnections to Rochambeau Drive are not recommended due to the expansive areas of wetlands which would need to be crossed. Peach Street could provide a good terminus for the second phase as it could end construction at a "T" intersection and provide interconnectivity of the partially completed road.

The final phase would complete the corridor. The required intersection improvements at Croaker Road and Rochambeau

Drive may be constructed earlier, as they have been proffered as part of the Stonehouse development plan.

Another consideration in phasing of the Mooretown Road Extension relates to the project likely occurring in advance of full development of the Economic Opportunity properties which surround it. Although four travel lanes of traffic would ultimately be needed along the entire route at full development, initially two lanes would be adequate if funding is not available for the ultimate typical cross-section. However, most intersections would still need dedicated turn lanes. If only two lanes are to be constructed initially, sufficient right-of-way should be acquired or reserved for the full four-lane typical section and the two-lane section should be designed to accommodate the four-lane section. In addition, crossing drainage pipes and culverts should be constructed to accommodate the four-lane roadway, and bike lanes, and if the development warrants, sidewalks, should be included. The initial permitting effort should also address the ultimate build-out of the roadway.



- Study Area Boundary
- Parcels
- County Boundary
- Potential Mooretown Road Realignment
- Phase I Construction
- Phase II Construction
- Phase III Construction
- Potential Local Street Phase I
- Potential Local Street Phase II



Mooretown Road Extension Corridor Study

James City County and York County, Virginia

FIGURE 8.4
Potential Developer Led Phasing

9.0 CONCLUSIONS

The Mooretown Road Extension would provide vehicle access to several large parcels of land that have been designated for economic development in both James City County and York County. Extending the road into James City County would require crossing a significant stream at Skimino Creek, probably with a bridge. Extending the road the remaining distance to Croaker Road requires several other stream crossings and impacts to existing residential and commercial properties, the extent of which would vary with the road alignment chosen.

The recommended alternative provides access to the greatest number of economic opportunity parcels while minimizing impacts to streams, wetlands, Resource Protection Areas, and potential small whorled pagonia habitat. This alternative would satisfy the transportation needs of future economic development.

Phased construction of two lanes of an ultimate four-lane facility is recommended for economy of construction and to reduce the immediate environmental impacts. However, if forecasted traffic from planned development warrants a four-lane roadway it should be constructed initially. It is understood that development will determine when and how much of the proposed roadway would be constructed, likely in segments as development grows through the area.

Although the Mooretown Road Extension has been under consideration for many years, many steps would be required before construction could commence. In the current climate of slow real estate development and tight competition for public construction dollars, this process is unlikely to continue. However, should a developer come forth in the near future with a proposal for these economic opportunity zones, this report can be used as a guideline for extending Mooretown Road as the connector road through the region.



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REFERENCES

¹ <http://gowata.org/Pages/busroutes.html>, April 23, 2015

² http://www.virginiadot.org/projects/fxn_class/maps.asp, April 28, 2015

³ http://www.extranet.vdot.state.va.us/locdes/Electronic_Pubs/2005%20RDM/appenda.pdf, March 13, 2015, p A-13



APPENDICES

Appendix A
Appendix B
Appendix C
Appendix D
Appendix E

Traffic Analysis Output
Geotechnical Considerations Memo
Cultural Resource Report
Market Analysis Report
Public Involvement Summaries

APPENDIX A

Traffic Analysis Output

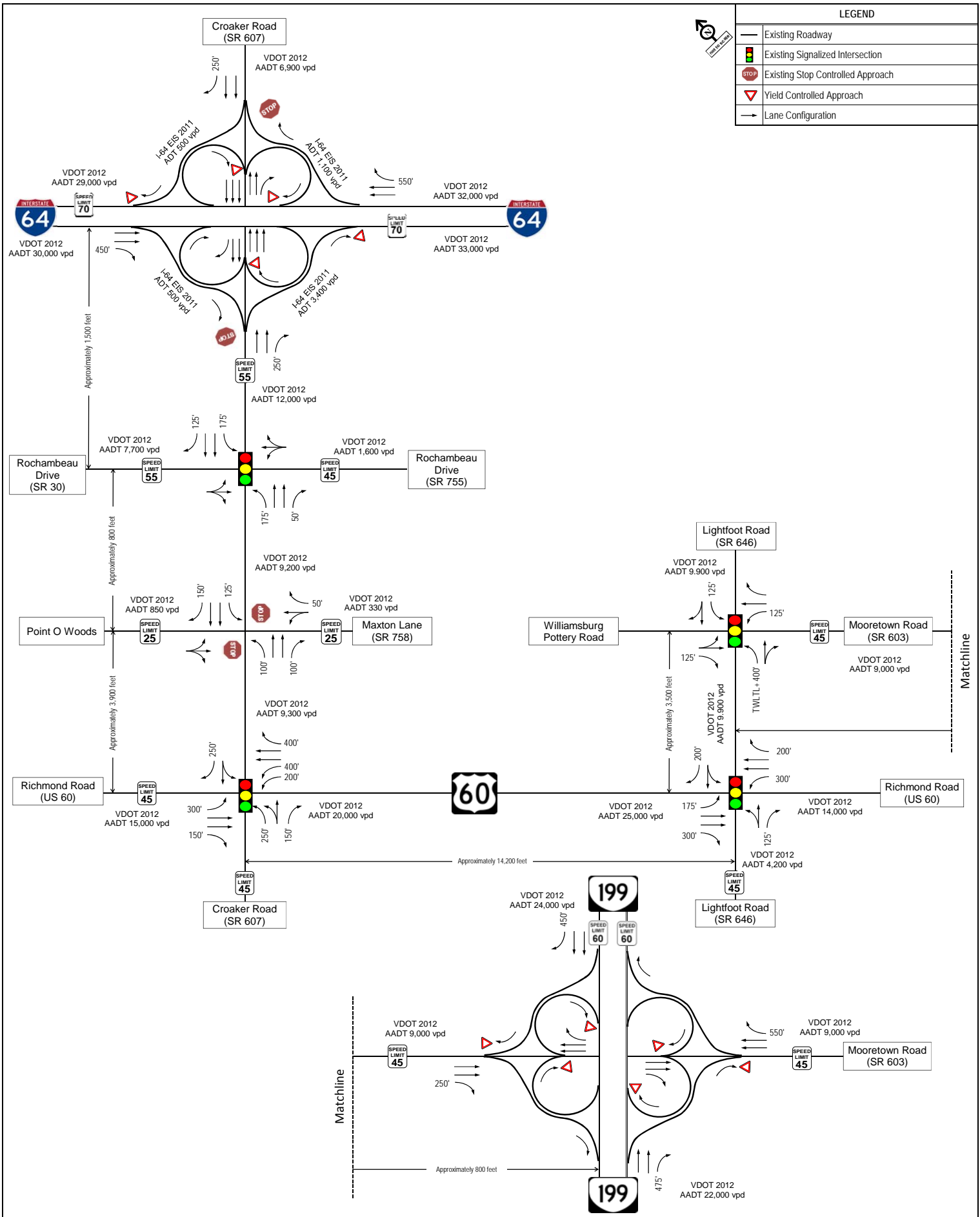
Existing Conditions

(2014)

**Table A-1
Intersection Data Collection Summary**

Intersection Name	Source	Count Date	Approach	Growth Rate	2014 Forecast Methodology*
I-64 Westbound Ramps & Croaker Road	I-64 EIS (Appendix B, Figure 1 & 2, Base Year, Sheet 4 of 7)	2011	NB	-	Based on the straight-line growth rate between 2011 and 2040 EIS volumes (Appendix G, Figure 1 & 2, 2040 Build Alt 1, Sheet 4 of 7)
			SB	-	
			EB	-	
			WB	-	
I-64 Eastbound Ramps & Croaker Road	I-64 EIS (Appendix B, Figure 1 & 2, Base Year, Sheet 4 of 7)	2011	NB	-	Based on the straight-line growth rate between 2011 and 2040 EIS volumes (Appendix G, Figure 1 & 2, 2040 Build Alt 1, Sheet 4 of 7)
			SB	-	
			EB	-	
			WB	-	
Rochambeau Drive & Croaker Road	I-64 EIS (Appendix B, Figure 1 & 2, Base Year, Sheet 4 of 7)	2011	NB	-	Based on the growth rate between 2011 and EIS volumes and 2017 CVS TIA Build Volumes
			SB	-	
			EB	-	
			WB	-	
Point O Woods & Croaker Road	2014 VDOT Count	2/6/2014	NB	-	No Growth (2014 counts)
			SB	-	
			EB	-	
			WB	-	
Richmond Road & Croaker Road	CVS TIA (Figure #6) and 2014 VDOT Count	2010	NB	0.00%	The 2010 volumes were grown at model rates, 2014 volumes applied to driveway volumes
			SB	1.64%	
			EB	1.45%	
			WB	2.19%	
Richmond Road & Lightfoot Road	Lightfoot Marketplace	4/16/2013	NB	1.64%	The volumes obtained from Lightfoot Marketplace were grown at model rates between 2013 and 2014
			SB	1.64%	
			EB	2.33%	
			WB	1.98%	
Williamsburg Pottery Road & Lightfoot Road	Mooretown Road Data from York County	5/1/2008	NB	1.64%	The 2008 volumes were grown at model rates between 2008 and 2014, eastbound volumes reduced to reflect closure of Pottery driveway
			SB	1.64%	
			EB	0.00%	
			WB	0.90%	
Mooretown Road & VA 199 Southbound Ramps	Mooretown Road Data from York County	5/1/2008	NB	1.19%	The 2008 volumes were grown at model rates between 2008 and 2014
			SB	0.94%	
			EB	0.90%	
			WB	0.90%	
Mooretown Road & VA 199 Northbound Ramps	Mooretown Road Data from York County	5/1/2008	NB	1.19%	The 2008 volumes were grown at model rates between 2008 and 2014
			SB	0.94%	
			EB	0.90%	
			WB	0.90%	

* After counts were projected to 2014 volumes, intersection balancing adjustments were made to reduce discrepancies between closely spaced intersections.



LEGEND	
	Existing Roadway
	Existing Signalized Intersection
	Existing Stop Controlled Approach
	Yield Controlled Approach
	Lane Configuration



Figure A-1
Existing (2014) Lane Configurations and Traffic Control

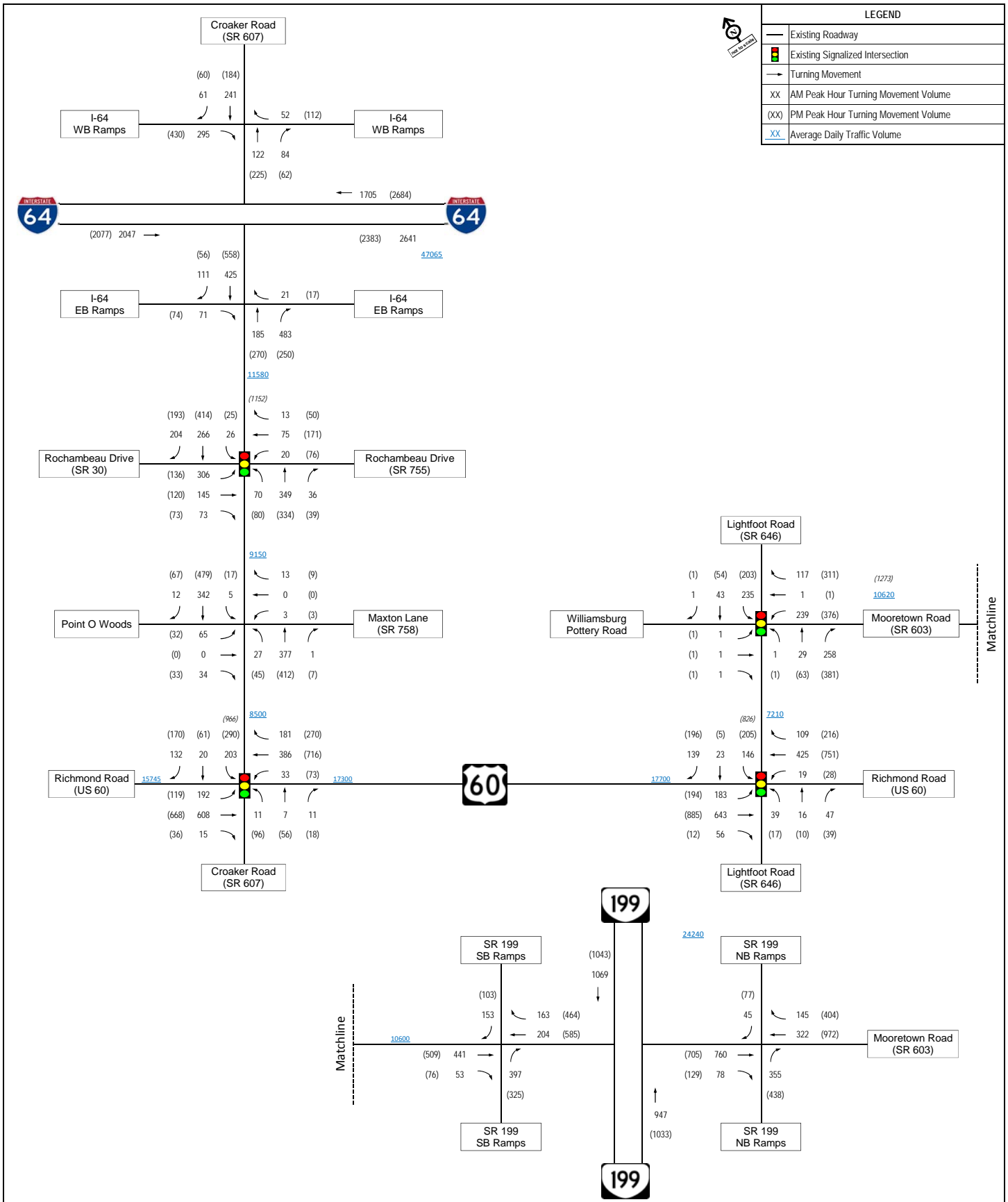


Figure A-2
Existing (2014) AM and PM Peak Hour Turning Movement Volumes

Mooretown Road Corridor Study
Williamsburg, VA

Mooretown Road Extension Traffic Analysis Existing (2014) AM Peak 3: Rochembeau Dr & Croaker Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	306	145	73	20	75	13	70	349	36	26	266	204
Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	0	0	0	0	0	0	175	50	175	125	1	1
Storage Length (ft)	100	100	100	100	100	100	100	100	100	100	100	100
Taper Length (ft)	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Lane Util. Factor	0.981	0.972	0.984	0.991	0.950	0.850	0.950	0.950	0.950	0.850	0.950	0.850
Fit Protected	0	1759	0	0	1799	0	1736	3471	1553	1736	3471	1553
Satd. Flow (prot)	0	0.972	0	0	0.991	0	0.950	0.950	0.950	0.850	0.950	0.850
Fit Permitted	0	1759	0	0	1799	0	1736	3471	1553	1736	3471	1553
Satd. Flow (perm)	0	0.972	0	0	0.991	0	0.950	0.950	0.950	0.850	0.950	0.850
Right Turn on Red		Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)	12		7				31					283
Link Speed (mph)	45		55				55				55	
Link Distance (ft)	763		1413				845				689	
Travel Time (s)	11.6		17.5				10.5				8.5	
Peak Hour Factor	0.81	0.81	0.69	0.69	0.91	0.91	0.91	0.91	0.72	0.72	0.85	0.72
Heavy Vehicles (%)	3%	3%	3%	3%	3%	4%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	378	179	90	29	109	19	77	384	40	36	369	283
Shared Lane Traffic (%)	0	647	0	0	157	0	77	384	40	36	369	283
Lane Group Flow (vph)	No	No	No	No	No	No	No	No	No	No	No	No
Enter Blocked Intersection	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Lane Alignment	0	0	0	0	0	0	0	0	0	0	0	0
Median Width(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Link Offset(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Crosswalk Width(ft)	16		16				16				16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9		15		15		9		15	
Number of Detectors	1	2	1	2	1	2	1	2	1	2	1	2
Detector Template	Left	Thru	Left	Thru	Left	Thru	Right	Left	Thru	Right	Left	Thru
Leading Detector (ft)	20	100	20	100	20	100	20	100	20	100	20	100
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	6	20	6	20	6	20	6	20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94		94		94		94		94		94	
Detector 2 Size(ft)	6		6		6		6		6		6	
Detector 2 Type	Cl+Ex		Cl+Ex		Cl+Ex		Cl+Ex		Cl+Ex		Cl+Ex	
Detector 2 Channel	0.0		0.0		0.0		0.0		0.0		0.0	
Detector 2 Extend (s)	0.0		0.0		0.0		0.0		0.0		0.0	
Turn Type	Split		Split		Prot		Perm		Prot		Perm	
Protected Phases	4	4	8	8	5	2	2	2	1	6	6	6
Permitted Phases												

Mooretown Road Extension Traffic Analysis Existing (2014) AM Peak 3: Rochembeau Dr & Croaker Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	8	8	5	2	1	6	6			
Switch Phase	10.0	10.0	10.0	10.0	12.0	16.0	16.0	12.0	16.0	16.0	16.0	16.0
Minimum Initial (s)	17.0	17.0	17.0	17.0	12.0	16.0	16.0	12.0	16.0	16.0	16.0	16.0
Total Split (%)	35.0	35.0	0.0	17.0	17.0	0.0	12.0	16.0	16.0	12.0	16.0	16.0
Total Split (s)	43.8%	43.8%	0.0%	21.3%	21.3%	0.0%	15.0%	20.0%	20.0%	15.0%	20.0%	20.0%
Maximum Green (s)	28.0	28.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0	10.0
Yellow Time (s)	4.5	4.5	4.5	4.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.0	1.0	1.0	2.0	1.0	2.0	1.0	2.0
Lost Time Adjust (s)	-1.0	-3.0	-3.0	-1.0	-3.0	-1.0	-3.0	-2.0	-2.0	-3.0	-2.0	-2.0
Total Lost Time (s)	6.0	4.0	1.0	6.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag					Lead	Lead	Lead	Lag	Lag	Lag	Lag	Lag
Lead-Lag Optimize?	3.0	3.0			2.0	5.0	5.0	2.0	5.0	2.0	5.0	5.0
Vehicle Extension (s)	None	None	None	None	None	Min	Min	None	Min	Min	Min	Min
Recall Mode	None	None	None	None	None	Min	Min	None	Min	Min	Min	Min
Act Effct Green (s)	30.3		13.1		8.1	14.4	14.4	8.1	12.1	12.1	12.1	12.1
Actuated g/C Ratio	0.39		0.17		0.11	0.19	0.19	0.11	0.16	0.16	0.16	0.16
vic Ratio	0.92		0.50		0.42	0.59	0.13	0.20	0.67	0.59	0.59	0.59
Control Delay	44.1		35.3		41.7	34.6	15.2	36.0	38.6	9.8	9.8	9.8
Queue Delay	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.1		35.3		41.7	34.6	15.2	36.0	38.6	9.8	9.8	9.8
LOS	D		D		D	C	B	D	D	D	D	A
Approach Delay	44.1		35.3		34.1		26.7					
Approach LOS	D		D		C		C					
Intersection Summary	Other											
Area Type:	Other											
Cycle Length:	80											
Actuated Cycle Length:	76.8											
Natural Cycle:	80											
Control Type:	Actuated-Uncoordinated											
Maximum vic Ratio:	0.92											
Intersection Signal Delay:	34.9											
Intersection LOS:	C											
Intersection Capacity Utilization:	59.5%											
Analysis Period (min):	15											
ICU Level of Service:	B											
Splits and Phases:	3: Rochembeau Dr & Croaker Rd											

Mooretown Road Extension Traffic Analysis Existing (2014) AM Peak 4: Point O Woods & Croaker Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	65	0	34	3	0	13	27	377	1	5	342	12
Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Sloped				Sloped		Free		Free			
Grade	0%				0%		0%		0%			
Peak Hour Factor	0.73	0.73	0.73	0.67	0.67	0.67	0.77	0.77	0.77	0.78	0.78	0.78
Hourly flow rate (vph)	89	0	47	4	0	19	35	490	1	6	438	15
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						2						
Median type							Raised			Raised		
Median storage (veh)							1			1		
Upstream signal (ft)										845		
pX, platoon unblocked	0.93	0.93	0.93	0.93	0.93	0.93	0.93					
vC1, conflicting volume	766	1012	219	838	1026	245	454			491		
vC2, stage 1 conf vol	451	451		560	560							
vC2, stage 2 conf vol	315	561		279	467							
vCu, unblocked vol	596	861	7	673	876	245	259			491		
IC, single (s)	7.6	6.6	7.0	7.6	6.6	7.0	4.2			4.2		
IC, 2 stage (s)	6.6	5.6		6.6	5.6							
IF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	80	100	95	99	100	97	97			99		
cM capacity (veh/h)	449	366	994	383	360	753	1196			1055		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4		
Volume Total	136	24	35	245	245	1	6	219	15	15		
Volume Left	89	4	35	0	0	0	0	0	0	0		
Volume Right	47	19	0	0	0	1	0	0	15	15		
cSH	553	926	1196	1700	1700	1055	1700	1700	1700			
Volume to Capacity	0.25	0.03	0.03	0.14	0.14	0.00	0.01	0.13	0.13	0.01		
Queue Length 95th (ft)	24	2	2	0	0	0	0	0	0	0		
Control Delay (s)	13.6	10.8	8.1	0.0	0.0	0.0	8.4	0.0	0.0	0.0		
Lane LOS	B	B	A				A					
Approach Delay (s)	13.6	10.8	0.5				0.1					

Mooretown Road Extension Traffic Analysis Existing (2014) AM Peak 5: Richmond Rd & Croaker Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	23.0	23.0	10.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (%)	13.8%	30.0%	30.0%	12.5%	28.8%	28.8%	28.8%	28.8%	28.8%	28.8%	28.8%	28.8%
Maximum Green (s)	5.0	18.0	18.0	4.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Max	Max	Max	None	None	None
Act Effct Green (s)	6.3	20.9	20.9	5.0	15.2	15.2	18.1	18.1	18.1	15.3	15.3	15.3
Actuated g/C Ratio	0.08	0.28	0.28	0.07	0.20	0.20	0.24	0.24	0.24	0.20	0.20	0.20
v/c Ratio	1.41	0.68	0.68	0.16	0.59	0.42	0.03	0.02	0.03	0.68	0.33	0.33
Control Delay	251.7	30.1	11.9	36.8	31.2	7.2	24.4	24.4	13.3	38.6	7.4	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	251.7	30.1	11.9	36.8	31.2	7.2	24.4	24.4	13.3	38.6	7.4	7.4
LOS	F	C	B	D	C	A	C	C	B	D	A	A
Approach Delay		82.1			24.3			20.3			27.0	
Approach LOS		F			C			C			C	

Intersection Summary
 Area Type: Other
 Cycle Length: 80
 Actuated Cycle Length: 75.1
 Natural Cycle: 80
 Control Type: Semi Act-Uncoordinated
 Maximum v/c Ratio: 1.41
 Intersection Signal Delay: 50.9
 Intersection Capacity Utilization: 52.8%
 Analysis Period (min): 15
 Intersection LOS: D
 ICU Level of Service A



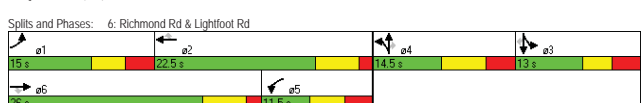
Mooretown Road Extension Traffic Analysis Existing (2014) AM Peak 6: Richmond Rd & Lightfoot Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1	1	1	1	1	1	1	1	1	1	1	1
Volume (vph)	183	643	56	19	425	109	39	16	47	146	23	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175	300	300	200	0	125	0	125	0	200	0	200
Storage Lanes	1	1	1	1	0	1	0	1	0	1	0	1
Taper Length (ft)	100	100	100	100	100	100	100	100	100	100	100	100
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.850			0.850				0.850
Flt Protected	0.950			0.950				0.966				0.959
Satd. Flow (prot)	1752	3505	1568	1752	3505	1568	0	1782	1568	0	1769	1568
Flt Permitted	0.950			0.950				0.966				0.959
Satd. Flow (perm)	1752	3505	1568	1752	3505	1568	0	1782	1568	0	1769	1568
Right Turn on Red			Yes			Yes		Yes		Yes		Yes
Satd. Flow (RTOR)			68			158		81		81		178
Link Speed (mph)		45			45			45				45
Link Distance (ft)		2866			884			391				2806
Travel Time (s)		43.4			13.4			5.9				42.5
Peak Hour Factor	0.82	0.82	0.82	0.69	0.69	0.69	0.58	0.58	0.58	0.58	0.78	0.78
Adj. Flow (vph)	223	784	68	28	616	158	67	28	81	187	29	178
Shared Lane Traffic (%)												
Lane Group Flow (vph)	223	784	68	28	616	158	0	95	81	0	216	178
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		50			50			12				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	15	9	15	15	9	15	15	9	15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Size(ft)	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94		94		94		94		94		94	
Detector 2 Size(ft)	6		6		6		6		6		6	
Detector 2 Type	Cl+Ex		Cl+Ex		Cl+Ex		Cl+Ex		Cl+Ex		Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0		0.0		0.0		0.0		0.0		0.0	
Turn Type	Prot	1	Perm	5	2	Perm	Split	4	4	Perm	Split	3
Protected Phases	1	6										
Permitted Phases			6			2		4		4		3
Detector Phase	1	6	6	5	2	2	4	4	4	4	3	3

Mooretown Road Extension Traffic Analysis Existing (2014) AM Peak 6: Richmond Rd & Lightfoot Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	15	15	5	15	15	7	7	7	7	7	7
Switch Phase												
Minimum Initial (s)	11.5	21.0	21.0	11.5	21.0	21.0	14.5	14.5	14.5	13.0	13.0	13.0
Minimum Split (s)	15.0	26.0	26.0	11.5	22.5	22.5	14.5	14.5	14.5	13.0	13.0	13.0
Total Split (%)	23.1%	40.0%	40.0%	17.7%	34.6%	34.6%	22.3%	22.3%	20.0%	20.0%	20.0%	20.0%
Maximum Green (s)	8.5	20.0	20.0	5.0	16.5	16.5	7.0	7.0	7.0	7.0	7.0	7.0
Yellow Time (s)	3.5	4.5	4.5	3.5	4.5	4.5	4.5	4.5	4.5	3.0	3.0	3.0
All-Red Time (s)	3.0	1.5	1.5	3.0	1.5	1.5	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-2.5	-2.0	-2.0	-2.5	-2.0	-2.0	-1.0	-3.5	-3.5	-1.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	6.5	4.0	4.0	5.0	4.0	4.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None
Act Effct Green (s)	11.1	29.1	29.1	7.6	18.4	18.4	10.6	10.6	9.1	9.1	9.1	9.1
Actuated g/C Ratio	0.18	0.47	0.47	0.12	0.30	0.30	0.17	0.17	0.15	0.15	0.15	0.15
v/c Ratio	0.71	0.47	0.09	0.13	0.59	0.27	0.31	0.24	0.83	0.46	0.46	0.46
Control Delay	40.6	14.9	4.9	27.5	22.2	5.1	27.4	8.8	56.1	9.4	9.4	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.6	14.9	4.9	27.5	22.2	5.1	27.4	8.8	56.1	9.4	9.4	9.4
LOS	D	B	A	C	C	A	C	A	E	A	A	A
Approach Delay		19.6			19.0			18.8			35.0	
Approach LOS		B			B			B			D	

Intersection Summary
 Area Type: Other
 Cycle Length: 65
 Actuated Cycle Length: 61.7
 Natural Cycle: 65
 Control Type: Actuated Uncoordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 21.8
 Intersection Capacity Utilization: 48.6%
 Analysis Period (min): 15
 Intersection LOS: C
 ICU Level of Service A



Mooretown Road Extension Traffic Analysis Existing (2014) AM Peak 7: Williamsburg Pottery Rd & Lightfoot Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1	1	1	1	1	1	1	1	1	1	1	1
Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	0	125	125	0	400	0	125	0	125	0	125	0
Storage Length (ft)												

Moortown Road Extension Traffic Analysis
Existing (2014) PM Peak

5: Richmond Rd & Croaker Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	119	668	36	73	716	270	94	56	18	290	41	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300	1	1	2	400	250	150	0	1	0	1	250
Storage Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Taper Length (ft)	100	100	100	100	100	100	100	100	100	100	100	100
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	1.00
Frt			0.850			0.850			0.850			0.850
Fit Protected	0.950			0.950			0.950	0.986			0.960	
Satd. Flow (prot)	1752	3505	1568	3400	3505	1568	1649	1711	1553	0	1754	1553
Fit Permitted	0.950			0.950			0.950	0.986			0.960	
Satd. Flow (perm)	1752	3505	1568	3400	3505	1568	1649	1711	1553	0	1754	1553
Right Turn on Red			Yes			Yes			Yes		Yes	
Satd. Flow (RTOR)			38			293			20			185
Link Speed (mph)		45			45			30			55	
Link Distance (ft)		924			1194			582			3154	
Travel Time (s)		14.0			18.1			13.2			43.6	
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
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	129	726	39	79	778	293	104	61	20	315	66	185
Shared Lane Traffic (%)							22%					
Lane Group Flow (vph)	129	726	39	79	778	293	81	84	20	0	381	185
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		45			50			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	15	9	15	15	9	15	9	15	9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot		Perm		Prot		Perm	Split		Perm	Split	Perm
Protected Phases	7	4		4	3	8		8	2	2	2	6
Permitted Phases			4			8			2		2	6

Moortown Road Extension Traffic Analysis 5:00 pm 3/5/2014 Existing (2014) PM Peak
VHB

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Moortown Road Extension Traffic Analysis
Existing (2014) PM Peak

5: Richmond Rd & Croaker Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	2	2	6	6	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	23.0	23.0	10.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	12.0	28.0	28.0	10.0	26.0	26.0	25.0	25.0	25.0	27.0	27.0	27.0
Total Split (%)	13.3%	31.1%	31.1%	11.1%	28.9%	28.9%	27.8%	27.8%	27.8%	30.0%	30.0%	30.0%
Maximum Green (s)	6.0	22.0	22.0	4.0	20.0	20.0	19.0	19.0	21.0	21.0	21.0	21.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Last Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Max	Max	Max	None	None	None
Act Effect Green (s)	7.0	25.1	25.1	5.0	21.0	21.0	20.0	20.0	20.0	21.5	21.5	21.5
Actuated g/C Ratio	0.08	0.28	0.28	0.06	0.23	0.23	0.22	0.22	0.22	0.24	0.24	0.24
vic Ratio	0.94	0.74	0.08	0.42	0.95	0.49	0.22	0.22	0.06	0.90	0.36	0.00
Control Delay	107.4	35.8	9.6	48.0	55.6	6.8	30.6	30.5	12.5	60.1	6.6	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	107.4	35.8	9.6	48.0	55.6	6.8	30.6	30.5	12.5	60.1	6.6	6.6
LOS	D	D	A	D	E	A	C	C	B	E	E	A
Approach Delay		45.0			42.7			28.6		42.6		
Approach LOS		D			D			C		D		

Intersection Summary
Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 89.5
Natural Cycle: 90
Control Type: Semi Act-Uncoordinated
Maximum vic Ratio: 0.95
Intersection Signal Delay: 42.5
Intersection Capacity Utilization 64.8%
Analysis Period (min) 15
Intersection LOS: D
ICU Level of Service C



Moortown Road Extension Traffic Analysis 5:00 pm 3/5/2014 Existing (2014) PM Peak
VHB

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Moortown Road Extension Traffic Analysis
Existing (2014) PM Peak

6: Richmond Rd & Lightfoot Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	194	685	12	28	751	216	17	10	39	205	5	196
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175	300	300	200	0	125	0	1	0	1	0	200
Storage Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Taper Length (ft)	100	100	100	100	100	100	100	100	100	100	100	100
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Fit Protected	0.950			0.950			0.969			0.953		
Satd. Flow (prot)	1752	3505	1568	1752	3505	1568	0	1787	1568	0	1758	1568
Fit Permitted	0.950			0.950			0.969			0.953		
Satd. Flow (perm)	1752	3505	1568	1752	3505	1568	0	1787	1568	0	1758	1568
Right Turn on Red			Yes			Yes			Yes		Yes	
Satd. Flow (RTOR)			13			300			60			272
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		2866			884			391			2806	
Travel Time (s)		43.4			13.4			5.9			42.5	
Peak Hour Factor	0.91	0.91	0.91	0.72	0.72	0.65	0.65	0.65	0.65	0.72	0.72	0.72
Adj. Flow (vph)	213	973	13	39	1043	300	26	15	60	285	7	272
Shared Lane Traffic (%)												
Lane Group Flow (vph)	213	973	13	39	1043	300	0	41	60	0	292	272
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		50			50			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	15	9	15	15	9	15	9	15	9
Number of Detectors	1	2	1	1								

Mooretown Road Extension Traffic Analysis Existing (2014) PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1	1	1	1	1	1	1	1	1	1	1	1
Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	0	125	125	0	400	0	125	0	0	0	0	0
Storage Length (ft)	0	1	1	1	1	1	1	1	1	1	1	1
Taper Length (ft)	100	100	100	100	100	100	100	100	100	100	100	100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.850		0.871			0.998		
Flt Protected	0.976		0.950		0.950		0.950		0.950		0.950	
Satd. Flow (prot)	0	1818	1583	1770	1863	1583	1752	1607	0	1752	1841	0
Flt Permitted	0.976		0.950		0.950		0.950		0.950		0.950	
Satd. Flow (perm)	0	1818	1583	1770	1863	1583	1752	1607	0	1752	1841	0
Right Turn on Red		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Satd. Flow (RTOR)		2			327		390			1		
Link Speed (mph)	30			45			45			45		
Link Distance (ft)	636			405			633			1283		
Travel Time (s)	14.5			6.1			9.6			19.4		
Peak Hour Factor	0.59	0.59	0.59	0.95	0.95	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	2	2	2	396	1	327	1	72	433	231	61	1
Shared Lane Traffic (%)	0	4	2	396	1	327	1	505	0	231	61	0
Lane Group Flow (vph)	No	No	No	No	No	No	No	No	No	No	No	No
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	12			12			12			12		
Link Offset(ft)	0			0			0			0		
Crosswalk Width(ft)	16			16			16			16		
Two way Left Turn Lane							Yes					
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	15	9	15	15	9	15	15	9	15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94			94			94		
Detector 2 Size(ft)	6			6			6			6		
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel	0.0			0.0			0.0			0.0		
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3						

Mooretown Road Extension Traffic Analysis Existing (2014) PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	3	3	3	1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	11.5	11.5	11.5	13.0	13.0	13.0	11.5	16.0		12.0	16.0	
Total Split (s)	11.5	11.5	11.5	23.0	23.0	23.0	11.5	19.5	0.0	16.0	24.0	0.0
Total Split (%)	16.4%	16.4%	16.4%	32.9%	32.9%	32.9%	16.4%	27.9%	0.0%	22.9%	34.3%	0.0%
Maximum Green (s)	7.0	7.0	7.0	17.0	17.0	17.0	5.0	13.5		9.0	18.0	
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0	4.0	5.0		4.0	5.0	
All-Red Time (s)	1.5	1.5	1.5	2.0	2.0	2.0	2.5	1.0		3.0	1.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.5	3.5	3.5	5.0	5.0	5.0	5.5	5.0	3.0	6.0	5.0	3.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0		2.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min		None	Min	
Act Effect Green (s)	8.1	8.1	17.3	17.3	17.3	6.1	12.7			10.1	27.0	
Actuated g/C Ratio	0.14	0.14	0.30	0.30	0.30	0.10	0.22			0.17	0.46	
vic Ratio	0.02	0.01	0.75	0.00	0.47	0.01	0.77			0.76	0.07	
Control Delay	25.5	20.0	31.3	17.0	5.1	27.0	15.7			44.1	12.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	
Total Delay	25.5	20.0	31.3	17.0	5.1	27.0	15.7			44.1	12.6	
LOS	C	B	C	B	A	C	B			D	B	
Approach Delay	23.7			19.4			15.7			37.4		
Approach LOS	C			B			B			D		
Intersection Summary	Area Type: Other											
Cycle Length	70											
Actuated Cycle Length	58.2											
Natural Cycle	70											
Control Type	Actuated-Uncoordinated											
Maximum vic Ratio	0.77											
Intersection Signal Delay	21.7											
Intersection Capacity Utilization	78.1%											
Analysis Period (min)	15											
Intersection LOS	C											
ICU Level of Service	D											
Splits and Phases: 7: Williamsburg Pottery Rd & Lightfoot Rd												

HCS 2010: Multilane Highways Release 6.65

Phone: E-mail: OPERATIONAL ANALYSIS

Analyst: SS
 Agency/Co: VHB
 Date: 3/24/2014
 Analysis Period: AM Peak
 Highway: Mooretown Road
 From/To: Lightfoot Road and VA 199
 Jurisdiction: Williamsburg, VA
 Analysis Year: 2014
 Project ID: Mooretown Road Corridor Study

FREE-FLOW SPEED

Direction	1	2
Lane width	12.0 ft	12.0 ft
Lateral clearance:		
Right edge	6.0 ft	6.0 ft
Left edge	6.0 ft	6.0 ft
Total lateral clearance	12.0 ft	12.0 ft
Access points per mile	8	10
Median type	Divided	Divided
Free-flow speed:	Base	Base
FPS or BFPS	52.0 mph	52.0 mph
Lane width adjustment, FLW	0.0 mph	0.0 mph
Lateral clearance adjustment, FLC	0.0 mph	0.0 mph
Median type adjustment, FM	0.0 mph	0.0 mph
Access points adjustment, FA	2.0 mph	2.5 mph
Free-flow speed	50.0 mph	49.5 mph

VOLUME

Direction	1	2
Volume, V	494 vph	357 vph
Peak-hour factor, PHF	0.87	0.95
Peak 15-minute volume, v15	142	94
Trucks and buses	2 %	2 %
Recreational vehicles	0 %	0 %
Terrain type	Level	Level
Grade	0.00 %	0.00 %
Segment length	0.00 mi	0.00 mi
Number of lanes	2	2
Driver population adjustment, fp	1.00	1.00
Trucks and buses PCE, ET	1.5	1.5
Recreational vehicles PCE, ER	1.2	1.2
Heavy vehicle adjustment, fhv	0.990	0.990
Flow rate, vp	286 pcp/hpl	189 pcp/hpl

RESULTS

Direction	1	2
Flow rate, vp	286 pcp/hpl	189 pcp/hpl
Free-flow speed, FFS	50.0 mph	49.5 mph
Avg. passenger-car travel speed, S	50.0 mph	50.0 mph
Level of service, LOS	A	A
Density, D	5.7 pc/mi/ln	3.8 pc/mi/ln

Bicycle Level of Service

Direction	1	2
Posted speed limit, Sp		45
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	283.9	187.9
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	4.42	4.42
Bicycle LOS Score, BLOS	2.11	1.90
Bicycle LOS	B	B

Overall results are not computed when free-flow speed is less than 45 mph.

	Direction	1	2	
Flow rate, vp		310	pcphpl 399	pcphpl
Free-flow speed, FFS		50.0	mph 49.5	mph
Avg. passenger-car travel speed, S		50.0	mph 50.0	mph
Level of service, LOS		A	A	
Density, D		6.2	pc/mi/ln 8.0	pc/mi/ln

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: SS
Agency/Co: VHB
Date: 3/24/2014
Analysis Period: PM Peak
Highway: Mooretown Road
From/To: Lightfoot Road and VA 199
Jurisdiction: Williamsburg, VA
Analysis Year: 2014
Project ID: Mooretown Road Corridor Study

FREE-FLOW SPEED

	Direction	1	2	
Lane width		12.0	ft 12.0	ft
Lateral clearance:				
Right edge		6.0	ft 6.0	ft
Left edge		6.0	ft 6.0	ft
Total lateral clearance		12.0	ft 12.0	ft
Access points per mile		8	10	
Median type		Divided	Divided	
Free-flow speed:		Base	Base	
FFS or BFFS		52.0	mph 52.0	mph
Lane width adjustment, FLW		0.0	mph 0.0	mph
Lateral clearance adjustment, FLC		0.0	mph 0.0	mph
Median type adjustment, FM		0.0	mph 0.0	mph
Access points adjustment, FA		2.0	mph 2.5	mph
Free-flow speed		50.0	mph 49.5	mph

VOLUME

	Direction	1	2	
Volume, V		585	vph 688	vph
Peak-hour factor, PHF		0.95	0.87	
Peak 15-minute volume, v15		154	198	
Trucks and buses		2	% 2	%
Recreational vehicles		0	% 0	%
Terrain type		Level	Level	
Grade		0.00	% 0.00	%
Segment length		0.00	mi 0.00	mi
Number of lanes		2	2	
Driver population adjustment, fp		1.00	1.00	
Trucks and buses PCE, ET		1.5	1.5	
Recreational vehicles PCE, ER		1.2	1.2	
Heavy vehicle adjustment, fhv		0.990	0.990	
Flow rate, vp		310	pcphpl 399	pcphpl

RESULTS

Bicycle Level of Service

Posted speed limit, Sp		45
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	307.9	395.4
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	4.42	4.42
Bicycle LOS Score, BLOS	2.15	2.28
Bicycle LOS	B	B

Overall results are not computed when free-flow speed is less than 45 mph.

	Direction	1	2	
Flow rate, vp		508	pcphpl 428	pcphpl
Free-flow speed, FFS		48.3	mph 49.5	mph
Avg. passenger-car travel speed, S		50.0	mph 50.0	mph
Level of service, LOS		A	A	
Density, D		10.2	pc/mi/ln 8.6	pc/mi/ln

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: SS
Agency/Co: VHB
Date: 3/24/2014
Analysis Period: AM Peak
Highway: Richmond Road
From/To: Lightfoot Rd and Croaker Rd
Jurisdiction: Williamsburg, VA
Analysis Year: 2014
Project ID: Mooretown Road Corridor Study

FREE-FLOW SPEED

	Direction	1	2	
Lane width		12.0	ft 12.0	ft
Lateral clearance:				
Right edge		6.0	ft 6.0	ft
Left edge		6.0	ft 6.0	ft
Total lateral clearance		12.0	ft 12.0	ft
Access points per mile		15	10	
Median type		Divided	Divided	
Free-flow speed:		Base	Base	
FFS or BFFS		52.0	mph 52.0	mph
Lane width adjustment, FLW		0.0	mph 0.0	mph
Lateral clearance adjustment, FLC		0.0	mph 0.0	mph
Median type adjustment, FM		0.0	mph 0.0	mph
Access points adjustment, FA		3.8	mph 2.5	mph
Free-flow speed		48.3	mph 49.5	mph

VOLUME

	Direction	1	2	
Volume, V		822	vph 600	vph
Peak-hour factor, PHF		0.82	0.71	
Peak 15-minute volume, v15		251	211	
Trucks and buses		3	% 3	%
Recreational vehicles		0	% 0	%
Terrain type		Level	Level	
Grade		0.00	% 0.00	%
Segment length		0.00	mi 0.00	mi
Number of lanes		2	2	
Driver population adjustment, fp		1.00	1.00	
Trucks and buses PCE, ET		1.5	1.5	
Recreational vehicles PCE, ER		1.2	1.2	
Heavy vehicle adjustment, fhv		0.985	0.985	
Flow rate, vp		508	pcphpl 428	pcphpl

RESULTS

Bicycle Level of Service

Posted speed limit, Sp		45
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	501.2	422.5
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	4.42	4.42
Bicycle LOS Score, BLOS	2.63	2.55
Bicycle LOS	C	C

Overall results are not computed when free-flow speed is less than 45 mph.

	Direction	1	2	
Flow rate, vp		544	610	pcphpl
Free-flow speed, FFS		48.3	49.5	mph
Avg. passenger-car travel speed, S		50.0	50.0	mph
Level of service, LOS		A	B	
Density, D		10.9	12.2	pc/mi/ln

Phone: Fax:
E-mail:

Bicycle Level of Service

Posted speed limit, Sp		45
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	536.3	601.7
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	4.42	4.42
Bicycle LOS Score, BLOS	2.67	2.72
Bicycle LOS	C	C

Overall results are not computed when free-flow speed is less than 45 mph.

OPERATIONAL ANALYSIS

Analyst: SS
Agency/Co: VHB
Date: 3/24/2014
Analysis Period: PM Peak
Highway: Richmond Road
From/To: Lightfoot Rd and Croaker Rd
Jurisdiction: Williamsburg, VA
Analysis Year: 2014
Project ID: Mooretown Road Corridor Study

FREE-FLOW SPEED

	Direction	1	2	
Lane width		12.0	12.0	ft
Lateral clearance:				
Right edge		6.0	6.0	ft
Left edge		6.0	6.0	ft
Total lateral clearance		12.0	12.0	ft
Access points per mile		15	10	
Median type		Divided	Divided	
Free-flow speed:		Base	Base	
FFS or BFFS		52.0	52.0	mph
Lane width adjustment, FLW		0.0	0.0	mph
Lateral clearance adjustment, FLC		0.0	0.0	mph
Median type adjustment, FM		0.0	0.0	mph
Access points adjustment, FA		3.8	2.5	mph
Free-flow speed		48.3	49.5	mph

VOLUME

	Direction	1	2	
Volume, V		976	1059	vph
Peak-hour factor, PHF		0.91	0.88	
Peak 15-minute volume, v15		268	301	
Trucks and buses		3	3	%
Recreational vehicles		0	0	%
Terrain type		Level	Level	
Grade		0.00	0.00	%
Segment length		0.00	0.00	mi
Number of lanes		2	2	
Driver population adjustment, fp		1.00	1.00	
Trucks and buses PCE, ET		1.5	1.5	
Recreational vehicles PCE, ER		1.2	1.2	
Heavy vehicle adjustment, fhv		0.985	0.985	
Flow rate, vp		544	610	pcphpl

RESULTS

	Direction	1	2	
Flow rate, vp		394	349	pcphpl
Free-flow speed, FFS		58.3	59.5	mph
Avg. passenger-car travel speed, S		60.0	60.0	mph
Level of service, LOS		A	A	
Density, D		6.6	5.8	pc/mi/ln

Phone: Fax:
E-mail:

Bicycle Level of Service

Posted speed limit, Sp		45
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	388.4	344.4
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	4.42	4.42
Bicycle LOS Score, BLOS	2.50	2.44
Bicycle LOS	C	B

Overall results are not computed when free-flow speed is less than 45 mph.

OPERATIONAL ANALYSIS

Analyst: SS
Agency/Co: VHB
Date: 3/24/2014
Analysis Period: AM Peak
Highway: Croaker Road
From/To: Rochambeau Rd and I-64 EB Ramp
Jurisdiction: Williamsburg, VA
Analysis Year: 2014
Project ID: Mooretown Road Corridor Study

FREE-FLOW SPEED

	Direction	1	2	
Lane width		12.0	12.0	ft
Lateral clearance:				
Right edge		6.0	6.0	ft
Left edge		6.0	6.0	ft
Total lateral clearance		12.0	12.0	ft
Access points per mile		15	10	
Median type		Divided	Divided	
Free-flow speed:		Base	Base	
FFS or BFFS		62.0	62.0	mph
Lane width adjustment, FLW		0.0	0.0	mph
Lateral clearance adjustment, FLC		0.0	0.0	mph
Median type adjustment, FM		0.0	0.0	mph
Access points adjustment, FA		3.8	2.5	mph
Free-flow speed		58.3	59.5	mph

VOLUME

	Direction	1	2	
Volume, V		668	496	vph
Peak-hour factor, PHF		0.86	0.72	
Peak 15-minute volume, v15		194	172	
Trucks and buses		3	3	%
Recreational vehicles		0	0	%
Terrain type		Level	Level	
Grade		0.00	0.00	%
Segment length		0.00	0.00	mi
Number of lanes		2	2	
Driver population adjustment, fp		1.00	1.00	
Trucks and buses PCE, ET		1.5	1.5	
Recreational vehicles PCE, ER		1.2	1.2	
Heavy vehicle adjustment, fhv		0.985	0.985	
Flow rate, vp		394	349	pcphpl

RESULTS

	Direction	1	2	
Flow rate, vp		299	386	pcphpl
Free-flow speed, FFS		58.3	59.5	mph
Avg. passenger-car travel speed, S		60.0	60.0	mph
Level of service, LOS		A	A	
Density, D		5.0	6.4	pc/mi/ln

Phone: _____ Fax: _____
 E-mail: _____

OPERATIONAL ANALYSIS

Analyst: SS
 Agency/Co: VHB
 Date: 3/24/2014
 Analysis Period: PM Peak
 Highway: Croaker Road
 From/To: Rochambeau Rd and I-64 EB Ramp
 Jurisdiction: Williamsburg, VA
 Analysis Year: 2014
 Project ID: Mooretown Road Corridor Study

FREE-FLOW SPEED

	Direction	1	2	
Lane width		12.0	12.0	ft
Lateral clearance:				
Right edge		6.0	6.0	ft
Left edge		6.0	6.0	ft
Total lateral clearance		12.0	12.0	ft
Access points per mile		15	10	
Median type		Divided	Divided	
Free-flow speed:		Base	Base	
FFS or BFFS		62.0	62.0	mph
Lane width adjustment, FLW		0.0	0.0	mph
Lateral clearance adjustment, FLC		0.0	0.0	mph
Median type adjustment, FM		0.0	0.0	mph
Access points adjustment, FA		3.8	2.5	mph
Free-flow speed		58.3	59.5	mph

VOLUME

	Direction	1	2	
Volume, V		520	632	vph
Peak-hour factor, PHF		0.88	0.83	
Peak 15-minute volume, v15		148	190	
Trucks and buses		3	3	%
Recreational vehicles		0	0	%
Terrain type		Level	Level	
Grade		0.00	0.00	%
Segment length		0.00	0.00	mi
Number of lanes		2	2	
Driver population adjustment, fP		1.00	1.00	
Trucks and buses PCE, ET		1.5	1.5	
Recreational vehicles PCE, ER		1.2	1.2	
Heavy vehicle adjustment, fHV		0.985	0.985	
Flow rate, vp		299	386	pcphpl

RESULTS

Phone: _____ Fax: _____
 E-Mail: _____

Directional Two-Lane Highway Segment Analysis

Analyst: SS
 Agency/Co: VHB
 Date Performed: 3/24/2014
 Analysis Time Period: AM Peak
 Highway: Croaker Road (VA 607)
 From/To: Richmond Rd to Point O Woods
 Jurisdiction: Williamsburg, VA
 Analysis Year: 2014
 Description: Mooretown Road Corridor Study

Input Data

Highway class	Class 1	Peak hour factor, PHF	0.77
Shoulder width	3.0 ft	% Trucks and buses	4 %
Lane width	11.5 ft	% Trucks crawling	0.0 %
Segment length	0.6 mi	Truck crawl speed	0.0 mi/hr
Terrain type	Level	% Recreational vehicles	0 %
Grade: Length	- mi	% No-passing zones	100 %
Up/down	-	Access point density	5 /mi

Analysis direction volume, Vd 380 veh/h
 Opposing direction volume, Vo 355 veh/h

Average Travel Speed

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.2	1.2
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adj. factor,(note-5) fHV	0.992	0.992
Grade adj. factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	497 pc/h	465 pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	55.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	3.0	mi/h
Adj. for access point density,(note-3) fA	1.3	mi/h
Free-flow speed, FFSd	50.8	mi/h
Adjustment for no-passing zones, fnp	2.5	mi/h
Average travel speed, ATSD	40.8	mi/h
Percent Free Flow Speed, PFFS	80.5	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	1.0
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	1.000	1.000
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	494 pc/h	461 pc/h
Base percent time-spent-following,(note-4) BPTSFD	50.0 %	
Adjustment for no-passing zones, fnp	41.2	
Percent time-spent-following, PTSFD	71.3 %	

Level of Service and Other Performance Measures

Level of service, LOS	D
Volume to capacity ratio, v/c	0.29
Peak 15-min vehicle-miles of travel, VMT15	74 veh-mi
Peak-hour vehicle-miles of travel, VMT60	228 veh-mi
Peak 15-min total travel time, TT15	1.8 veh-h
Capacity from ATS, CdATS	1686 veh/h
Capacity from PTSF, CdPTSF	1700 veh/h
Directional Capacity	1686 veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.6	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSD (from above)	40.8	mi/h
Percent time-spent-following, PTSFD (from above)	71.3	%
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSp1	-	
Percent free flow speed including passing lane, PFFSp1	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFp1	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSp1	E
Peak 15-min total travel time, TT15	- veh-h

Bicycle Level of Service

Posted speed limit, Sp 45
 Percent of segment with occupied on-highway parking 0
 Pavement rating, P 3
 Flow rate in outside lane, vOL 493.5
 Effective width of outside lane, We 14.50
 Effective speed factor, St 4.42
 Bicycle LOS Score, BLOS 4.70
 Bicycle LOS E

Phone: Fax:
 E-Mail:

Notes:

- Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
- If v_i (vd or vo) \geq 1,700 pc/h, terminate analysis-the LOS is F.
- For the analysis direction only and for $v > 200$ veh/h.
- For the analysis direction only.
- Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Directional Two-Lane Highway Segment Analysis

Analyst SS
 Agency/Co. VHB
 Date Performed 3/24/2014
 Analysis Time Period PM Peak
 Highway Croaker Road (VA 607)
 From/To Richmond Rd to Point O Woods
 Jurisdiction Williamsburg, VA
 Analysis Year 2014
 Description Mooretown Road Corridor Study

Input Data

Highway class	Class 1	Peak hour factor, PHF	0.82
Shoulder width	3.0 ft	% Trucks and buses	4 %
Lane width	11.5 ft	% Trucks crawling	0.0 %
Segment length	0.6 mi	Truck crawl speed	0.0 mi/hr
Terrain type	Level	% Recreational vehicles	0 %
Grade: Length	- mi	% No-passing zones	100 %
Up/down	-	Access point density	5 /mi

Analysis direction volume, Vd 445 veh/h
 Opposing direction volume, Vo 521 veh/h

Average Travel Speed

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.2	1.1
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adj. factor,(note-5) fHV	0.992	0.996
Grade adj. factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	547 pc/h	638 pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	55.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	3.0	mi/h
Adj. for access point density,(note-3) fA	1.3	mi/h
Free-flow speed, FFSd	50.8	mi/h
Adjustment for no-passing zones, fnp	1.8	mi/h
Average travel speed, ATSD	39.8	mi/h
Percent Free Flow Speed, PFFS	78.4	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	1.0
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	1.000	1.000
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	543 pc/h	635 pc/h
Base percent time-spent-following,(note-4) BPTSFD	55.4 %	
Adjustment for no-passing zones, fnp	34.2	
Percent time-spent-following, PTSFD	71.2 %	

Level of Service and Other Performance Measures

Level of service, LOS	E
Volume to capacity ratio, v/c	0.32
Peak 15-min vehicle-miles of travel, VMT15	81 veh-mi
Peak-hour vehicle-miles of travel, VMT60	267 veh-mi
Peak 15-min total travel time, TT15	2.0 veh-h
Capacity from ATS, CdATS	1693 veh/h
Capacity from PTSF, CdPTSF	1700 veh/h
Directional Capacity	1693 veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.6	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSD (from above)	39.8	mi/h
Percent time-spent-following, PTSFD (from above)	71.2	
Level of service, LOSd (from above)	E	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSp1	-	
Percent free flow speed including passing lane, PFFSp1	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp 45
 Percent of segment with occupied on-highway parking 0
 Pavement rating, P 3
 Flow rate in outside lane, vOL 542.7
 Effective width of outside lane, We 14.50
 Effective speed factor, St 4.42
 Bicycle LOS Score, BLOS 4.75
 Bicycle LOS E

Notes:

- Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
- If v_i (vd or vo) \geq 1,700 pc/h, terminate analysis-the LOS is F.
- For the analysis direction only and for $v > 200$ veh/h.
- For the analysis direction only.
- Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst SS
Agency/Co. VHB
Date Performed 3/24/2014
Analysis Time Period AM Peak
Highway Lightfoot Road (VA 646)
From/To Richmond Rd to Mooretown Rd
Jurisdiction Williamsburg, VA
Analysis Year 2014
Description Mooretown Road Corridor Study

Input Data

Highway class	Class 2	Peak hour factor, PHF	0.82
Shoulder width	2.0 ft	% Trucks and buses	1 %
Lane width	11.5 ft	% Trucks crawling	0.0 %
Segment length	0.7 mi	Truck crawl speed	0.0 mi/hr
Terrain type	Level	% Recreational vehicles	0 %
Grade: Length	- mi	% No-passing zones	100 %
Up/down	-	Access point density	11 /mi

Analysis direction volume, Vd 308 veh/h
Opposing direction volume, Vo 308 veh/h

Average Travel Speed

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.3	1.3
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adj. factor,(note-5) fHV	0.997	0.997
Grade adj. factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	377 pc/h	377 pc/h

Free-Flow Speed from Field Measurement:
Field measured speed,(note-3) S_{FM} - mi/h
Observed total demand,(note-3) V - veh/h
Estimated Free-Flow Speed:
Base free-flow speed,(note-3) BFFS 55.0 mi/h
Adj. for lane and shoulder width,(note-3) fLS 3.0 mi/h
Adj. for access point density,(note-3) fA 2.8 mi/h
Free-flow speed, FFSd 49.3 mi/h
Adjustment for no-passing zones, fnp 2.8 mi/h
Average travel speed, ATSD 40.5 mi/h
Percent Free Flow Speed, PFFS 82.3 %

Posted speed limit, Sp 45
Percent of segment with occupied on-highway parking 0
Pavement rating, P 3
Flow rate in outside lane, vOL 375.6
Effective width of outside lane, We 13.50
Effective speed factor, St 4.42
Bicycle LOS Score, BLOS 4.01
Bicycle LOS D

- Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.1	1.1
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	0.999	0.999
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	376 pc/h	376 pc/h
Base percent time-spent-following,(note-4) BPTSFD	40.4 %	
Adjustment for no-passing zones, fnp	49.0	
Percent time-spent-following, PTSFD	64.9 %	

Level of Service and Other Performance Measures

Level of service, LOS	C
Volume to capacity ratio, v/c	0.22
Peak 15-min vehicle-miles of travel, VMT15	66 veh-mi
Peak-hour vehicle-miles of travel, VMT60	216 veh-mi
Peak 15-min total travel time, TT15	1.6 veh-h
Capacity from ATS, CdATS	1695 veh/h
Capacity from PTSF, CdPTSF	1698 veh/h
Directional Capacity	1698 veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.7 mi
Length of two-lane highway upstream of the passing lane, Lu	- mi
Length of passing lane including tapers, Lpl	- mi
Average travel speed, ATSD (from above)	40.5 mi/h
Percent time-spent-following, PTSFD (from above)	64.9 %
Level of service, LOSd (from above)	C

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	- mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	- mi
Adj. factor for the effect of passing lane on average speed, fpl	-
Average travel speed including passing lane, ATSp1	-
Percent free flow speed including passing lane, PFFSp1	0.0 %

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	- mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	- mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-
Percent time-spent-following including passing lane, PTSFpl	- %

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A
Peak 15-min total travel time, TT15	- veh-h

Bicycle Level of Service

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst SS
Agency/Co. VHB
Date Performed 3/24/2014
Analysis Time Period PM Peak
Highway Lightfoot Road (VA 646)
From/To Richmond Rd to Mooretown Rd
Jurisdiction Williamsburg, VA
Analysis Year 2014
Description Mooretown Road Corridor Study

Input Data

Highway class	Class 2	Peak hour factor, PHF	0.88
Shoulder width	2.0 ft	% Trucks and buses	1 %
Lane width	11.5 ft	% Trucks crawling	0.0 %
Segment length	0.7 mi	Truck crawl speed	0.0 mi/hr
Terrain type	Level	% Recreational vehicles	0 %
Grade: Length	- mi	% No-passing zones	100 %
Up/down	-	Access point density	11 /mi

Analysis direction volume, Vd 420 veh/h
Opposing direction volume, Vo 406 veh/h

Average Travel Speed

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.2	1.2
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adj. factor,(note-5) fHV	0.998	0.998
Grade adj. factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	478 pc/h	462 pc/h

Free-Flow Speed from Field Measurement:
Field measured speed,(note-3) S_{FM} - mi/h
Observed total demand,(note-3) V - veh/h
Estimated Free-Flow Speed:
Base free-flow speed,(note-3) BFFS 55.0 mi/h
Adj. for lane and shoulder width,(note-3) fLS 3.0 mi/h
Adj. for access point density,(note-3) fA 2.8 mi/h
Free-flow speed, FFSd 49.3 mi/h
Adjustment for no-passing zones, fnp 2.4 mi/h
Average travel speed, ATSD 39.5 mi/h
Percent Free Flow Speed, PFFS 80.2 %

Percent Time-Spent-Following			
Direction	Analysis (d)	Opposing (o)	
PCE for trucks, ET	1.0	1.0	
PCE for RVs, ER	1.0	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	1.000	
Grade adjustment factor, (note-1) fg	1.00	1.00	
Directional flow rate, (note-2) vi	477 pc/h	461	pc/h
Base percent time-spent-following, (note-4) BPTSFD	48.9 %		
Adjustment for no-passing zones, fnp	42.1		
Percent time-spent-following, PTSFD	70.3 %		

Level of Service and Other Performance Measures			
Level of service, LOS	D		
Volume to capacity ratio, v/c	0.28		
Peak 15-min vehicle-miles of travel, VMT15	84	veh-mi	
Peak-hour vehicle-miles of travel, VMT60	294	veh-mi	
Peak 15-min total travel time, TT15	2.1	veh-h	
Capacity from ATS, CdATS	0	veh/h	
Capacity from PTSF, CdPTSF	1700	veh/h	
Directional Capacity	1700	veh/h	

Passing Lane Analysis			
Total length of analysis segment, Lt	0.7	mi	
Length of two-lane highway upstream of the passing lane, Lu	-	mi	
Length of passing lane including tapers, Lpl	-	mi	
Average travel speed, ATSD (from above)	39.5	mi/h	
Percent time-spent-following, PTSFD (from above)	70.3		
Level of service, LOSd (from above)	D		

Average Travel Speed with Passing Lane			
Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi	
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi	
Adj. factor for the effect of passing lane on average speed, fpl	-		
Average travel speed including passing lane, ATSp1	-		
Percent free flow speed including passing lane, PFFSp1	0.0	%	

Percent Time-Spent-Following with Passing Lane			
Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi	
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi	
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-		
Percent time-spent-following including passing lane, PTSFpl	-	%	

Level of Service and Other Performance Measures with Passing Lane			
Level of service including passing lane, LOSpl	A		
Peak 15-min total travel time, TT15	-	veh-h	

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	477.3
Effective width of outside lane, We	13.50
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	4.13
Bicycle LOS	D

- Notes:
- Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
 - If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
 - For the analysis direction only and for v>200 veh/h.
 - For the analysis direction only.
 - Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Mooretown Road Extension Traffic Analysis Existing (2014) AM Peak 1: I-64 WB Ramps & Croaker Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↖			↗		↑	↘		↙	↘
Volume (veh/h)	0	0	295	0	0	52	0	122	84	0	241	61
Sign Control			Yield			Slop		Free	Free		Free	Free
Grade			-1%			-1%		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)	0	0	321	0	0	57	0	133	91	0	262	66
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								Raised			Raised	
Median storage (veh)								1			1	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	385	395	131	264	395	66	262			133		
vC1, stage 1 conf vol	262	262		133	133							
vC2, stage 2 conf vol	123	133		131	262							
vCu, unblocked vol	385	395	131	264	395	66	262			133		
IC, single (s)	7.6	6.6	7.0	7.6	6.6	7.0	4.2			4.2		
IC, 2 stage (s)	6.6	5.6		6.6	5.6							
IF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	64	100	100	94	100			100		
cM capacity (veh/h)	580	576	891	476	576	980	1292			1443		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3				
Volume Total	321	57	66	66	91	131	131	66				
Volume Left	0	0	0	0	0	0	0	0				
Volume Right	321	57	0	0	91	0	0	66				
cSH	891	980	1700	1700	1700	1700	1700	1700				
Volume to Capacity	0.36	0.06	0.04	0.04	0.05	0.08	0.08	0.04				
Queue Length 95th (ft)	41	5	0	0	0	0	0	0				
Control Delay (s)	11.3	8.9	0.0	0.0	0.0	0.0	0.0	0.0				
Lane LOS	B	A										
Approach Delay (s)	11.3	8.9	0.0			0.0						
Approach LOS	B	A										
Intersection Summary												
Average Delay	4.4											
Intersection Capacity Utilization	31.6%		ICU Level of Service					A				
Analysis Period (min)	15											

Mooretown Road Extension Traffic Analysis Existing (2014) AM Peak 2: I-64 EB Ramps & Croaker Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↖			↗		↑	↘		↙	↘
Volume (veh/h)	0	0	71	0	0	21	0	185	483	0	425	111
Sign Control			Yield			Slop		Free	Free		Free	Free
Grade			-1%			-1%		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)	0	0	77	0	0	23	0	201	525	0	462	121
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								Raised			Raised	
Median storage (veh)								1			1	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	562	663	231	432	663	101	462			201		
vC1, stage 1 conf vol	462	462		201	201							
vC2, stage 2 conf vol	101	201		231	462							
vCu, unblocked vol	562	663	231	432	663	101	462			201		
IC, single (s)	7.6	6.6	7.0	7.6	6.6	7.0	4.2			4.2		
IC, 2 stage (s)	6.6	5.6		6.6	5.6							
IF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	90	100	100	98	100			100		
cM capacity (veh/h)	466	455	768	534	455	932	1088			1361		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3				
Volume Total	77	23	101	101	525	231	231	121				
Volume Left	0	0	0	0	0	0	0	0				
Volume Right	77	23	0	0	525	0	0	121				
cSH	768	932	1700	1700	1700	1700	1700	1700				
Volume to Capacity	0.10	0.02	0.06	0.06	0.31	0.14	0.14	0.07				
Queue Length 95th (ft)	8	2	0	0	0	0	0	0				
Control Delay (s)	10.2	9.0	0.0	0.0	0.0	0.0	0.0	0.0				
Lane LOS	B	A										
Approach Delay (s)	10.2	9.0	0.0			0.0						
Approach LOS	B	A										
Intersection Summary												
Average Delay	0.7											
Intersection Capacity Utilization	33.2%		ICU Level of Service					A				
Analysis Period (min)	15											

Mooretown Road Extension Traffic Analysis Existing (2014) AM Peak 8: Mooretown Rd & Rt. 199 SB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑			↑			↑
Volume (veh/h)	0	441	53	0	204	163	0	0	397	0	0	153
Sign Control		Free			Free			Yield			Yield	
Grade		0%			0%			-1%			-1%	
Peak Hour Factor	0.87	0.87	0.87	0.80	0.80	0.80	0.74	0.74	0.74	0.88	0.88	0.88
Hourly flow rate (vph)	0	507	61	0	255	204	0	0	536	0	0	174
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		405										
pX, platoon unblocked												
vC, conflicting volume	255			507			634	762	253	508	762	128
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	255			507			634	762	253	508	762	128
IC, single (s)	4.1			4.1			7.6	6.6	7.0	7.6	6.6	7.0
IC, 2 stage (s)												
IF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	28	100	100	81
cM capacity (veh/h)	1307			1054			291	331	743	124	331	896
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	253	253	61	128	128	204	536	174				
Volume Left	0	0	0	0	0	0	0	0				
Volume Right	0	0	61	0	0	204	536	174				
cSH	1700	1700	1700	1700	1700	1700	743	896				
Volume to Capacity	0.15	0.15	0.04	0.07	0.07	0.12	0.72	0.19				
Queue Length 95th (ft)	0	0	0	0	0	0	157	18				
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	21.4	10.0				
Lane LOS							C	A				
Approach Delay (s)	0.0			0.0			21.4	10.0				
Approach LOS							C	A				
Intersection Summary												
Average Delay			7.6									
Intersection Capacity Utilization			43.4%		ICU Level of Service						A	
Analysis Period (min)			15									

Mooretown Road Extension Traffic Analysis Existing (2014) AM Peak 9: Mooretown Rd & Rt. 199 NB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑			↑			↑
Volume (veh/h)	0	760	78	0	322	145	0	0	355	0	0	45
Sign Control		Free			Free			Yield			Yield	
Grade		0%			0%			-1%			-1%	
Peak Hour Factor	0.77	0.77	0.77	0.86	0.86	0.86	0.85	0.85	0.85	0.83	0.83	0.83
Hourly flow rate (vph)	0	987	101	0	374	169	0	0	418	0	0	54
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		1190										
pX, platoon unblocked												
vC, conflicting volume	374			987			1174	1361	494	868	1361	187
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	374			987			1174	1361	494	868	1361	187
IC, single (s)	4.1			4.1			7.6	6.6	7.0	7.6	6.6	7.0
IC, 2 stage (s)												
IF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	19	100	100	93
cM capacity (veh/h)	1181			696			136	146	519	48	146	820
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	494	494	101	187	187	169	418	54				
Volume Left	0	0	0	0	0	0	0	0				
Volume Right	0	0	101	0	0	169	418	54				
cSH	1700	1700	1700	1700	1700	1700	519	820				
Volume to Capacity	0.29	0.29	0.06	0.11	0.11	0.10	0.81	0.07				
Queue Length 95th (ft)	0	0	0	0	0	0	193	5				
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	34.7	9.7				
Lane LOS							D	A				
Approach Delay (s)	0.0			0.0			34.7	9.7				
Approach LOS							D	A				
Intersection Summary												
Average Delay			7.1									
Intersection Capacity Utilization			49.7%		ICU Level of Service						A	
Analysis Period (min)			15									

Mooretown Road Extension Traffic Analysis Existing (2014) PM Peak 1: I-64 WB Ramps & Croaker Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑			↑↑	↑	↑↑	↑
Volume (veh/h)	0	0	430	0	0	112	0	225	62	0	184	60
Sign Control			Yield		Slope			Free			Free	
Grade			-1%		-1%			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)	0	0	467	0	0	122	0	245	67	0	200	65
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								Raised			Raised	
Median storage (veh)								1			1	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	444	445	100	345	445	122	200			245		
vC1, stage 1 conf vol	200	200		245	245							
vC2, stage 2 conf vol	244	245		100	200							
vCu, unblocked vol	444	445	100	345	445	122	200			245		
IC, single (s)	7.6	6.6	7.0	7.6	6.6	7.0	4.2			4.2		
IC, 2 stage (s)	6.6	5.6		6.6	5.6							
IF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	50	100	100	87	100			100		
cM capacity (veh/h)	510	557	933	370	557	903	1362			1311		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3				
Volume Total	467	122	122	122	67	100	100	65				
Volume Left	0	0	0	0	0	0	0	0				
Volume Right	467	122	0	0	67	0	0	65				
cSH	933	903	1700	1700	1700	1700	1700	1700				
Volume to Capacity	0.50	0.13	0.07	0.07	0.04	0.06	0.06	0.04				
Queue Length 95th (ft)	72	12	0	0	0	0	0	0				
Control Delay (s)	12.7	9.6	0.0	0.0	0.0	0.0	0.0	0.0				
Lane LOS	B	A										
Approach Delay (s)	12.7	9.6	0.0			0.0						
Approach LOS	B	A										
Intersection Summary												
Average Delay			6.1									
Intersection Capacity Utilization			38.4%		ICU Level of Service						A	
Analysis Period (min)			15									

Mooretown Road Extension Traffic Analysis Existing (2014) PM Peak 2: I-64 EB Ramps & Croaker Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑			↑↑	↑	↑↑	↑
Volume (veh/h)	0	0	74	0	0	17	0	270	250	0	558	56
Sign Control			Stop		Yield			Free			Free	
Grade			-1%		-1%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92								

Mooretown Road Extension Traffic Analysis
Existing (2014) PM Peak

8: Mooretown Rd & Rt. 199 SB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑			↑			↑
Volume (veh/h)	0	509	76	0	585	464	0	0	325	0	0	103
Sign Control		Free			Free			Yield			Yield	
Grade		0%			0%			-1%			-1%	
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)	0	553	83	0	636	504	0	0	353	0	0	112
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		405										
pX, platoon unblocked												
vC, conflicting volume	636			553			871	1189	277	912	1189	318
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	636			553			871	1189	277	912	1189	318
IC, single (s)	4.1			4.1			7.6	6.6	7.0	7.6	6.6	7.0
IC, 2 stage (s)												
IF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	51	100	100	83
cM capacity (veh/h)	943			1013			203	185	718	115	185	675
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	277	277	83	318	318	504	353	112				
Volume Left	0	0	0	0	0	0	0	0				
Volume Right	0	0	83	0	0	504	353	112				
cSH	1700	1700	1700	1700	1700	1700	718	675				
Volume to Capacity	0.16	0.16	0.05	0.19	0.19	0.30	0.49	0.17				
Queue Length 95th (ft)	0	0	0	0	0	0	69	15				
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	14.8	11.4				
Lane LOS							B	B				
Approach Delay (s)	0.0			0.0			14.8	11.4				
Approach LOS							B	B				
Intersection Summary												
Average Delay				2.9								
Intersection Capacity Utilization				40.9%			ICU Level of Service		A			
Analysis Period (min)				15								

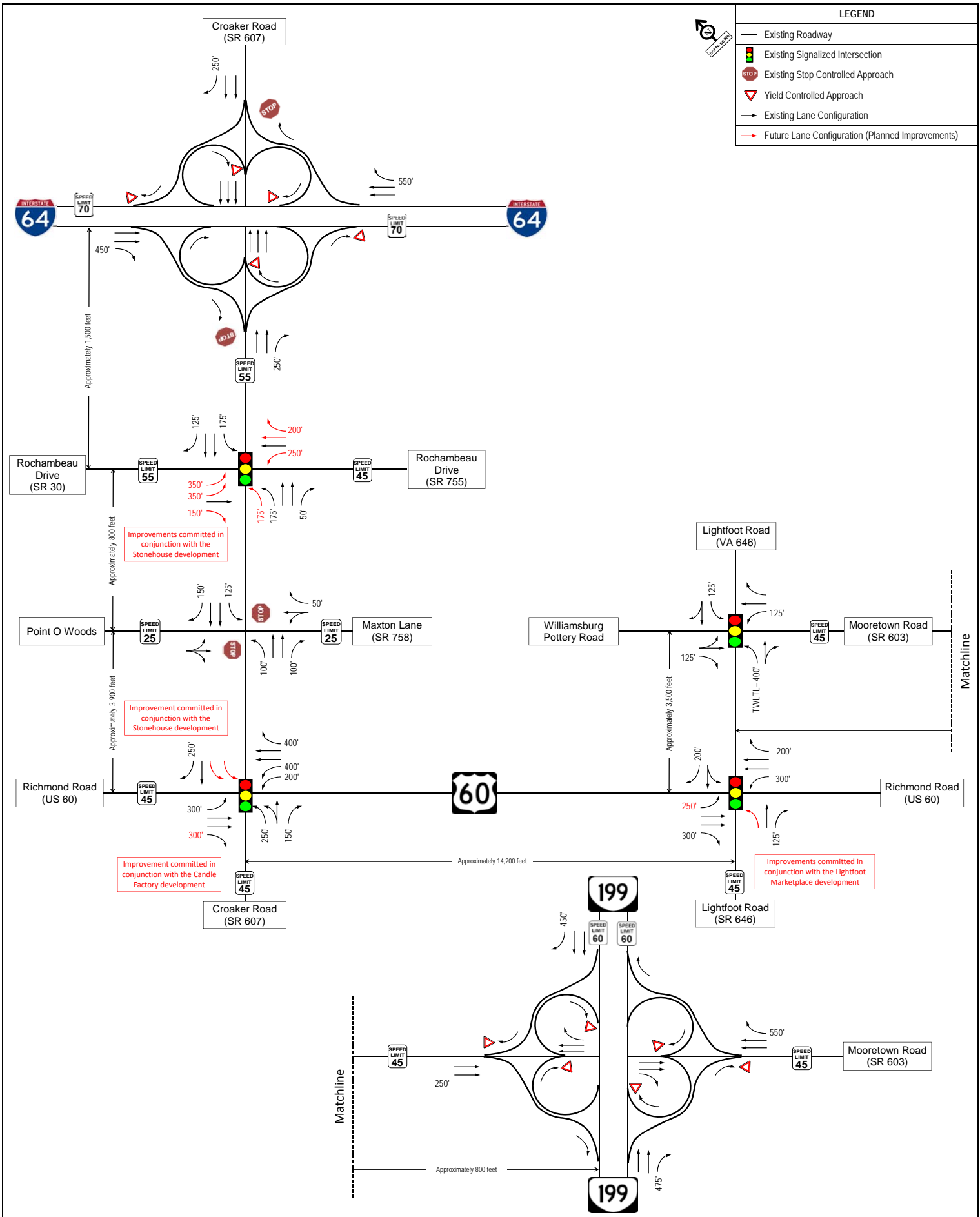
Mooretown Road Extension Traffic Analysis
Existing (2014) PM Peak

9: Mooretown Rd & Rt. 199 NB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑			↑			↑
Volume (veh/h)	0	705	129	0	972	404	0	0	458	0	0	77
Sign Control		Free			Free			Yield			Yield	
Grade		0%			0%			-1%			-1%	
Peak Hour Factor	0.89	1.00	0.89	0.97	0.97	0.97	0.87	0.87	0.87	0.68	0.68	0.68
Hourly flow rate (vph)	0	705	145	0	1002	416	0	0	503	0	0	113
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		1190										
pX, platoon unblocked												
vC, conflicting volume	1002			705			1206	1707	352	1355	1707	501
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1002			705			1206	1707	352	1355	1707	501
IC, single (s)	4.1			4.1			7.6	6.6	7.0	7.6	6.6	7.0
IC, 2 stage (s)												
IF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	21	100	100	78
cM capacity (veh/h)	687			889			108	89	641	23	89	513
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	352	352	145	501	501	416	503	113				
Volume Left	0	0	0	0	0	0	0	0				
Volume Right	0	0	145	0	0	416	503	113				
cSH	1700	1700	1700	1700	1700	1700	641	513				
Volume to Capacity	0.21	0.21	0.09	0.29	0.29	0.24	0.79	0.22				
Queue Length 95th (ft)	0	0	0	0	0	0	190	21				
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	28.0	14.0				
Lane LOS							D	B				
Approach Delay (s)	0.0			0.0			28.0	14.0				
Approach LOS							D	B				
Intersection Summary												
Average Delay							5.4					
Intersection Capacity Utilization							53.3%		ICU Level of Service		A	
Analysis Period (min)							15					

No-Build Conditions

(2040)



LEGEND	
	Existing Roadway
	Existing Signalized Intersection
	Existing Stop Controlled Approach
	Yield Controlled Approach
	Existing Lane Configuration
	Future Lane Configuration (Planned Improvements)



Figure A-3
No-Build (2040) Lane Configurations and Traffic Control

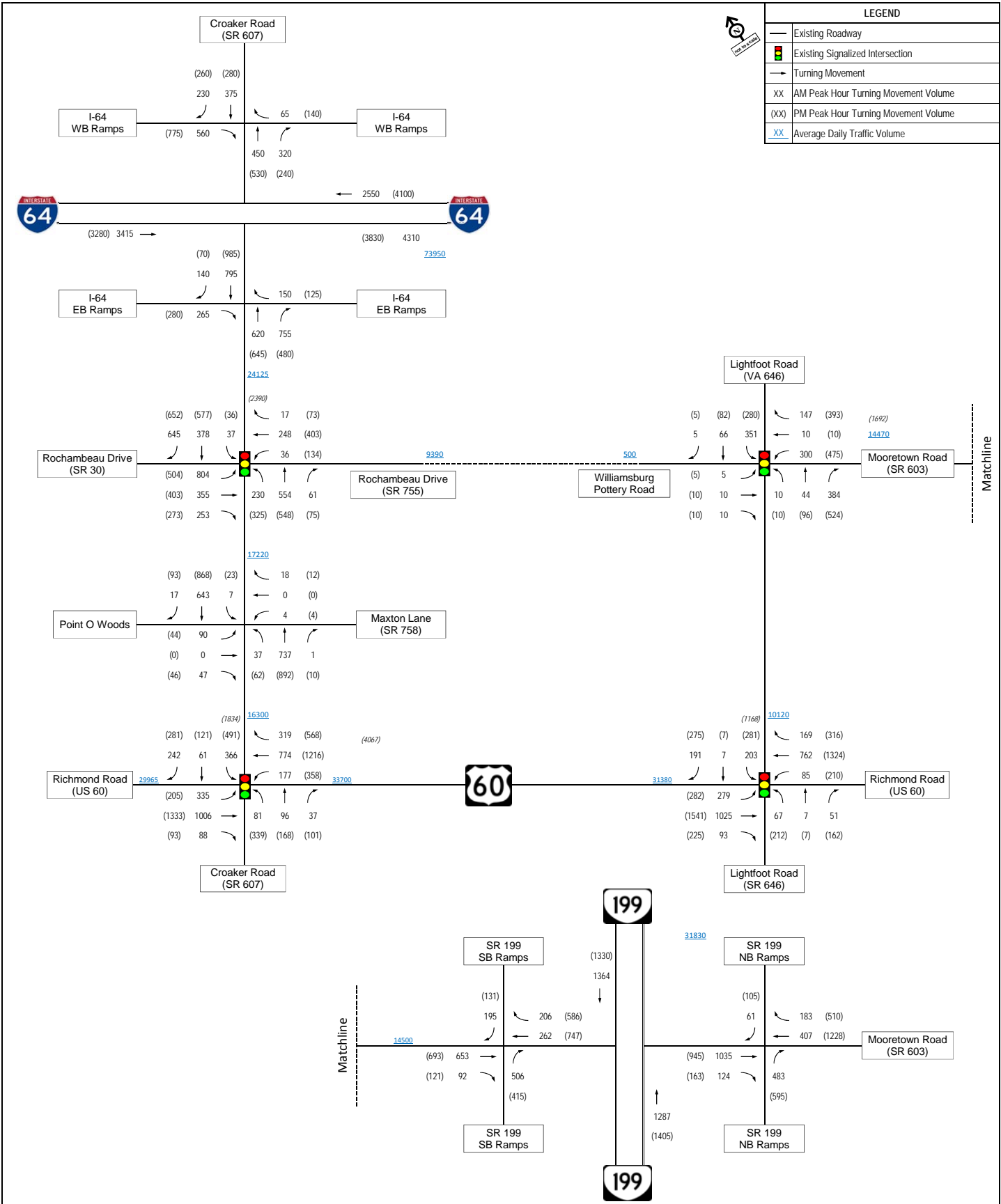


Figure A-4
No-Build (2040) AM and PM Peak Hour Turning Movement Volumes

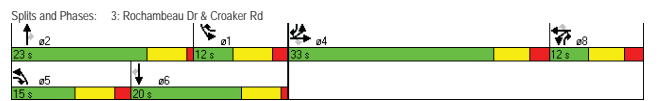
Mooretown Road Extension Traffic Analysis 3: Rochambeau Dr & Croaker Rd
2040 No-Build AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	804	355	253	36	248	17	230	554	61	37	378	645
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350	150	250	200	175	50	175	125	1	1	1	1
Storage Lanes	1	1	2	1	2	1	1	1	1	1	1	1
Taper Length (ft)	100	100	100	100	100	100	100	100	100	100	100	100
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850		0.850		0.850		0.850		0.850	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	1845	1568	1752	3505	1568	3367	3471	1553	1736	3471	1553
Fit Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3400	1845	1568	1752	3505	1568	3367	3471	1553	1736	3471	1553
Right Turn on Red			Yes		Yes		Yes		Yes		Yes	
Satd. Flow (RTOR)			274		18		45		71		71	
Link Speed (mph)	45			55			55		55		55	
Link Distance (ft)	763			1413			845		689		689	
Travel Time (s)	11.6			17.5			10.5		8.5		8.5	
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
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	874	386	275	39	270	18	250	602	66	40	411	701
Shared Lane Traffic (%)												
Lane Group Flow (vph)	874	386	275	39	270	18	250	602	66	40	411	701
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Left	Left	Right	Right
Median Width(ft)	24			24			36		36		36	
Link Offset(ft)	0			0			0		0		0	
Crosswalk Width(ft)	16			16			16		16		16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9			15		9		15	
Turn Type	Split		pm+ov	Split		pm+ov	Prot		pm+ov		Prot	
Protected Phases	4	4	5	8	8	1	5	2	8	1	6	4
Permitted Phases												
Detector Phase	4	4	4	8	8	1	5	2	8	1	6	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Total Split (s)	33.0	33.0	15.0	12.0	12.0	12.0	15.0	23.0	12.0	12.0	20.0	33.0
Total Split (%)	41.3%	41.3%	18.8%	15.0%	15.0%	18.8%	28.8%	15.0%	15.0%	25.0%	41.3%	
Maximum Green (s)	26.0	26.0	8.0	5.0	5.0	8.0	17.0	5.0	5.0	14.0	26.0	
Yellow Time (s)	4.5	4.5	5.0	4.5	4.5	5.0	5.0	4.5	4.5	5.0	4.5	
All-Red Time (s)	2.5	2.5	2.0	2.5	2.5	2.0	2.0	2.5	2.0	1.0	2.5	
Lost Time Adjust (s)	-1.0	-3.0	-3.0	-1.0	-3.0	-1.0	-3.0	-2.0	-3.0	-2.0	-2.0	
Total Lost Time (s)	6.0	4.0	4.0	6.0	4.0	6.0	4.0	5.0	4.0	4.0	5.0	
Lead/Lag			Lead			Lead		Lead		Lag		Lag
Lead-Lag Optimize?			Yes			Yes		Yes		Yes		Yes
Vehicle Extension (s)	3.0	3.0	2.0	3.0	3.0	2.0	5.0	3.0	2.0	5.0	3.0	
Recall Mode	None	None	None	None	None	None	Min	None	None	None	None	None
Act Effect Green (s)	26.5	28.5	39.2	6.0	8.0	12.0	10.8	23.3	34.3	8.0	15.6	47.1

Mooretown Road Extension Traffic Analysis 3: Rochambeau Dr & Croaker Rd
2040 No-Build AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.34	0.36	0.50	0.08	0.10	0.15	0.14	0.30	0.43	0.10	0.20	0.60
v/c Ratio	0.77	0.58	0.30	0.29	0.76	0.07	0.54	0.59	0.09	0.23	0.60	0.73
Control Delay	28.9	24.7	1.7	41.1	50.2	7.6	36.9	28.1	8.2	36.7	33.1	15.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.9	24.7	1.7	41.1	50.2	7.6	36.9	28.1	8.2	36.7	33.1	15.8
LOS	C	C	A	D	D	A	D	C	A	D	C	B
Approach Delay					46.8			29.0			22.7	
Approach LOS					D			C			C	
Queue Length 50th (ft)	197	152	0	19	70	0	60	146	7	19	98	203
Queue Length 95th (ft)	265	240	19	49	#128	10	97	204	31	48	145	348
Internal Link Dist (ft)		683			1333			765				609
Turn Bay Length (ft)	350		150	250		200	175		50	175		125
Base Capacity (vph)	1164	678	922	133	356	254	470	1025	701	176	704	966
Slantation Cap Reductn	0	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	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.57	0.30	0.29	0.76	0.07	0.53	0.59	0.09	0.23	0.58	0.73

Intersection Summary
Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 78.9
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 26.3
Intersection Capacity Utilization 64.2%
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Mooretown Road Extension Traffic Analysis 4: Point O Woods & Croaker Rd
2040 No-Build AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (veh/h)	90	0	47	4	0	18	37	737	1	7	643	17
Sign Control		Slop						Free			Free	
Grade		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)	98	0	51	4	0	20	40	801	1	8	699	18
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						2						
Median type								Raised			Raised	
Median storage (veh)								1			1	
Upstream signal (ft)											845	
pX, platoon unblocked	0.91	0.91	0.91	0.91	0.91		0.91					
vC1, conflicting volume	1195	1597	349	1297	1614	401	717			802		
vC1, stage 1 conf vol	714	714		882	882							
vC2, stage 2 conf vol	481	883		416	733							
vCu, unblocked vol	1024	1463	98	1136	1482	401	501			402		
IC, single (s)	7.6	6.6	7.0	7.6	6.6	7.0	4.2			8.2		
IC, 2 stage (s)	6.6	5.6		6.6	5.6							
IF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	66	100	94	98	100	97	96			99		
cM capacity (veh/h)	291	230	855	231	224	596	955			804		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4		
Volume Total	149	24	40	401	401	1	8	349	349	18		
Volume Left	98	4	40	0	0	0	8	0	0	0		
Volume Right	51	20	0	0	0	1	0	0	0	18		
cSH	376	729	955	1700	1700	1700	804	1700	1700	1700		
Volume to Capacity	0.40	0.03	0.04	0.24	0.24	0.00	0.01	0.21	0.21	0.01		
Queue Length 95th (ft)	46	3	3	0	0	0	1	0	0	0		
Control Delay (s)	20.7	13.0	8.9	0.0	0.0	0.0	9.5	0.0	0.0	0.0		
Lane LOS	C	B	A				A					
Approach Delay (s)	20.7	13.0	0.4				0.1					
Approach LOS	C	B										
Intersection Summary												
Average Delay			2.2									
Intersection Capacity Utilization			48.2%			ICU Level of Service			A			
Analysis Period (min)			15									

Mooretown Road Extension Traffic Analysis 5: Richmond Rd & Croaker Rd
2040 No-Build AM Peak

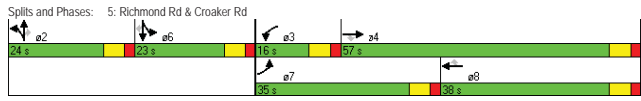
Lane Group	EBL	EBT	EBR	WBL	WBT
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Mooretown Road Extension Traffic Analysis
2040 No-Build AM Peak

5: Richmond Rd & Croaker Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.24	0.42	0.42	0.09	0.27	0.27	0.16	0.16	0.16	0.15	0.15	0.15
v/c Ratio	0.87	0.74	0.13	0.61	0.87	0.51	0.29	0.40	0.14	0.79	0.24	0.58
Control Delay	64.8	31.9	4.5	60.6	51.8	6.4	47.6	49.6	14.2	60.6	47.5	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.8	31.9	4.5	60.6	51.8	6.4	47.6	49.6	14.2	60.6	47.5	11.0
LOS	E	C	A	E	D	A	D	D	B	E	D	B
Approach Delay	37.9			41.6			42.8			41.5		
Approach LOS	D			D			D			D		
Queue Length 50th (ft)	268	360	0	75	327	0	57	84	0	155	46	0
Queue Length 95th (ft)	#424	441	32	114	#432	73	108	146	32	#222	89	78
Internal Link Dist (ft)	844			1114			502			3274		
Turn Bay Length (ft)	300		300	350		400	250		150	400		
Base Capacity (vph)	456	1581	760	325	1003	697	272	285	290	526	285	465
Slantation Cap Reductn	0	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	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.69	0.13	0.59	0.84	0.50	0.29	0.40	0.14	0.76	0.23	0.57

Intersection Summary
 Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 115.8
 Natural Cycle: 90
 Control Type: Semi Act-Uncoordinated
 Maximum v/c Ratio: 0.87
 Intersection Signal Delay: 40.2
 Intersection Capacity Utilization: 69.6%
 Analysis Period (min): 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 Intersection LOS: D
 ICU Level of Service C



Mooretown Road Extension Traffic Analysis
2040 No-Build AM Peak

6: Richmond Rd & Lightfoot Rd

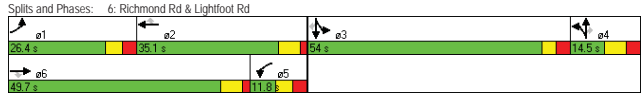
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	7	7	7	7	7	7	7	7	7	7	7
Volume (vph)	279	1070	93	85	762	169	67	7	51	203	7	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250	300	300	200	0	125	0	125	0	125	0	200
Storage Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Taper Length (ft)	100	100	100	100	100	100	100	100	100	100	100	100
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.850		0.850		0.850		0.850	0.850
Flt Protected	0.950		0.950		0.950		0.950		0.950		0.950	0.950
Satd. Flow (prot)	1752	3505	1568	1752	3505	1568	1752	1845	1568	0	1760	1568
Flt Permitted	0.950		0.950		0.950		0.950		0.950		0.950	0.950
Satd. Flow (perm)	1752	3505	1568	1752	3505	1568	1752	1845	1568	0	1760	1568
Right Turn on Red			Yes			Yes			Yes		Yes	Yes
Satd. Flow (RTOR)			96			138			55		208	208
Link Speed (mph)		45		45		45		45		45		45
Link Distance (ft)		2866		884		391		2806		42.5		2806
Travel Time (s)		43.4		13.4		5.9		42.5		0.92		0.92
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
Adj. Flow (vph)	303	1114	101	92	828	184	73	8	55	221	8	208
Shared Lane Traffic (%)												
Lane Group Flow (vph)	303	1114	101	92	828	184	73	8	55	0	229	208
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		50		50		12		12		12		12
Link Offset(ft)		0		0		0		0		0		0
Crosswalk Width(ft)		16		16		16		16		16		16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15	9	15	9	15	9	15	9
Turn Type	Prot	Perm	Prot	Perm	Split	Perm	Split	Perm	Split	Perm	Split	Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases			6			2			4			3
Detector Phase	1	6	6	5	2	2	4	4	4	3	3	3
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.5	37.0	37.0	11.5	37.0	14.5	14.5	14.5	14.5	14.5	14.5	14.5
Total Split (s)	26.4	49.7	49.7	11.8	35.1	35.1	14.5	14.5	14.5	54.0	54.0	54.0
Total Split (%)	20.3%	38.2%	38.2%	9.1%	27.0%	27.0%	11.2%	11.2%	11.2%	41.5%	41.5%	41.5%
Maximum Green (s)	19.9	43.7	43.7	5.3	29.1	29.1	7.0	7.0	7.0	48.0	48.0	48.0
Yellow Time (s)	3.5	4.5	4.5	3.5	4.5	4.5	4.5	4.5	4.5	3.0	3.0	3.0
All-Red Time (s)	3.0	1.5	1.5	3.0	1.5	1.5	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-2.5	-2.0	-2.0	-2.5	-2.0	-2.0	-1.0	-3.5	-3.5	-1.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	6.5	4.0	4.0	5.0	4.0	4.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None
Walk Time (s)		5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Flash Dont Walk (s)		26.0	26.0		26.0	26.0		26.0	26.0		26.0	26.0

Mooretown Road Extension Traffic Analysis
2040 No-Build AM Peak

6: Richmond Rd & Lightfoot Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	22.5	42.9	42.9	10.7	31.2	31.2	8.0	10.5	10.5	20.3	20.3	20.3
Actuated g/C Ratio	0.22	0.43	0.43	0.11	0.31	0.31	0.08	0.10	0.10	0.20	0.20	0.20
v/c Ratio	0.77	0.74	0.14	0.49	0.76	0.32	0.52	0.04	0.26	0.65	0.43	0.43
Control Delay	52.5	27.9	4.7	56.0	37.5	10.2	60.1	43.6	15.6	45.4	7.5	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.5	27.9	4.7	56.0	37.5	10.2	60.1	43.6	15.6	45.4	7.5	7.5
LOS	D	C	A	E	D	B	E	D	B	D	A	A
Approach Delay	31.3			34.5			41.1			27.4		
Approach LOS	C			C			D			C		
Queue Length 50th (ft)	183	289	2	58	250	21	46	5	0	135	0	0
Queue Length 95th (ft)	#346	419	33	#147	358	80	#107	21	38	213	57	57
Internal Link Dist (ft)	2786			804			311			2726		
Turn Bay Length (ft)	250		300	300		200		125		200		200
Base Capacity (vph)	391	1598	767	187	1087	582	140	193	214	878	886	886
Slantation Cap Reductn	0	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	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.70	0.13	0.49	0.76	0.32	0.52	0.04	0.26	0.26	0.23	0.23

Intersection Summary
 Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 100.5
 Natural Cycle: 130
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 32.3
 Intersection Capacity Utilization: 64.8%
 Analysis Period (min): 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 Intersection LOS: C
 ICU Level of Service C



Mooretown Road Extension Traffic Analysis
2040 No-Build AM Peak

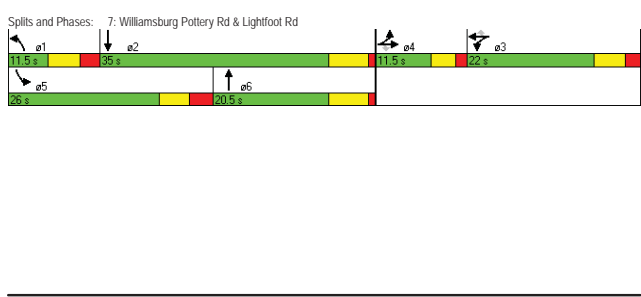
7: Williamsburg Pottery Rd & Lightfoot Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	7	7	7	7	7	7	7	7	7	7	7
Volume (vph)	5	10	10	300	210	147	10	44	384	351	46	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	125	125	0	400	0	125	0	125	0	0	0
Storage Lanes	0	1	1	1	1	1	1	1	1	1	1	1
Taper Length (ft)	100	100	100	100	100	100	100	100	100	100	100	100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.850		0.865		0.990			</

Mooretown Road Extension Traffic Analysis 7: Williamsburg Pottery Rd & Lightfoot Rd
2040 No-Build AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.12	0.12	0.24	0.24	0.24	0.09	0.19			0.27	0.52	
v/c Ratio	0.07	0.06	0.76	0.02	0.32	0.07	0.73			0.80	0.08	
Control Delay	32.2	18.7	39.9	24.0	6.9	34.3	12.7			39.6	11.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	
Total Delay	32.2	18.7	39.9	24.0	6.9	34.3	12.7			39.6	11.2	
LOS	C	B	D	C	A	C	B			D	B	
Approach Delay	26.7			28.9			13.2			34.8		
Approach LOS	C			C			B			C		
Queue Length 50th (ft)	6	0	114	3	0	4	16			129	11	
Queue Length 95th (ft)	25	15	#303	17	48	21	117			#337	51	
Internal Link Dist (ft)	556			325			553			527	1203	
Turn Bay Length (ft)		125	125			400				125		
Base Capacity (vph)	221	200	453	477	524	158	692			527	952	
Starvation Cap Reductn	0	0	0	0	0	0	0			0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0			0	0	
Storage Cap Reductn	0	0	0	0	0	0	0			0	0	
Reduced v/c Ratio	0.07	0.06	0.72	0.02	0.31	0.07	0.67			0.72	0.08	

Intersection Summary
 Area Type: Other
 Cycle Length: 80
 Actuated Cycle Length: 67.9
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 25.6
 Intersection Capacity Utilization 81.3%
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.



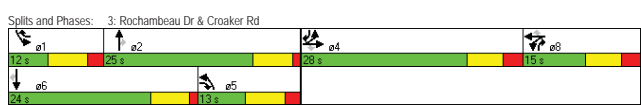
Mooretown Road Extension Traffic Analysis 3: Rochambeau Dr & Croaker Rd
2040 No-Build PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	T	T	T	T	T	T	T	T	T	T	T	T
Volume (vph)	504	403	273	134	403	73	325	548	75	36	577	652
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350	150	250	200	175	50	175	125				
Storage Lanes	1	1	2	1	2	1	1	1				
Taper Length (ft)	100	100	100	100	100	100	100	100				
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95				
Frt			0.850			0.850		0.850				0.850
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	3400	1845	1568	1752	3505	1568	3367	3471			1736	1553
Flt Permitted	0.950			0.950			0.950				0.950	
Satd. Flow (perm)	3400	1845	1568	1752	3505	1568	3367	3471			1736	1553
Right Turn on Red	Yes			Yes			Yes				Yes	
Satd. Flow (RTOR)			106			68		56				14
Link Speed (mph)		45			55			55				55
Link Distance (ft)		763			1413			845				689
Travel Time (s)		11.6			17.5			10.5				8.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			0.92	0.92
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	4%	4%			4%	4%
Adj. Flow (vph)	548	438	297	146	438	79	353	596			39	627
Shared Lane Traffic (%)												
Lane Group Flow (vph)	548	438	297	146	438	79	353	596			82	627
Enter Blocked Intersection	No	No	No	No	No	No	No	No			No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left			Right	Left
Median Width(ft)	24			24			36				36	
Link Offset(ft)	0			0			0				0	
Crosswalk Width(ft)	16			16			16				16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00
Turning Speed (mph)	15		9	15		9	15			9	15	9
Turn Type	Split	pm+ov	Split	pm+ov	Prot	pm+ov	Prot	pm+ov			pm+ov	pm+ov
Protected Phases	4	4	5	8	8	1	5	2			1	6
Permitted Phases	4	4	4	4	4	8	8	2			2	6
Detector Phase	4	4	5	8	8	1	5	2			1	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0			5.0	10.0
Minimum Split (s)	12.0	12.0	12.0	12.0	12.0	12.0	12.0	16.0			12.0	16.0
Total Split (s)	28.0	28.0	13.0	15.0	15.0	12.0	13.0	25.0			15.0	24.0
Total Split (%)	35.0%	35.0%	16.3%	18.8%	18.8%	15.0%	16.3%	31.3%			18.8%	30.0%
Maximum Green (s)	21.0	21.0	6.0	8.0	8.0	5.0	6.0	19.0			8.0	18.0
Yellow Time (s)	4.5	4.5	5.0	4.5	4.5	5.0	5.0	5.0			4.5	5.0
All-Red Time (s)	2.5	2.5	2.0	2.5	2.5	2.0	2.0	1.0			2.0	1.0
Lost Time Adjust (s)	-1.0	-3.0	-3.0	-1.0	-3.0	-1.0	-3.0	-2.0			-3.0	-2.0
Total Lost Time (s)	6.0	4.0	4.0	6.0	4.0	6.0	4.0	4.0			5.0	4.0
Lead/Lag			Lag			Lag		Lag			Lag	
Lead-Lag Optimize?	Yes		Yes			Yes		Yes			Yes	Yes
Vehicle Extension (s)	3.0	3.0	2.0	3.0	3.0	2.0	2.0	5.0			3.0	5.0
Recall Mode	None	None	None	None	None	None	None	Min			None	None
Act Effct Green (s)	21.8	23.8	36.8	9.0	11.0	21.0	9.0	23.2			33.3	19.8

Mooretown Road Extension Traffic Analysis 3: Rochambeau Dr & Croaker Rd
2040 No-Build PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.27	0.30	0.46	0.11	0.14	0.26	0.11	0.29	0.42	0.10	0.25	0.52
v/c Ratio	0.59	0.79	0.38	0.74	0.90	0.17	0.93	0.59	0.12	0.22	0.73	0.87
Control Delay	28.1	38.2	10.3	58.0	58.6	8.9	68.3	28.0	4.5	36.6	33.1	22.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.1	38.2	10.3	58.0	58.6	8.9	68.3	28.0	4.5	36.6	33.1	22.4
LOS	C	D	B	E	E	A	E	C	A	D	C	C
Approach Delay	27.4			52.6			39.9			27.7		
Approach LOS	C			D			D			C		
Queue Length 50th (ft)	121	200	56	72	115	4	91	139	5	18	151	124
Queue Length 95th (ft)	171	#344	112	#161	#200	36	#171	194	22	47	210	#317
Internal Link Dist (ft)	683			1333			765			609		
Turn Bay Length (ft)	350		150	250		200	175		50	175		125
Base Capacity (vph)	940	557	782	198	484	464	381	1013	681	175	872	822
Starvation Cap Reductn	0	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	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.79	0.38	0.74	0.90	0.17	0.93	0.59	0.12	0.22	0.72	0.86

Intersection Summary
 Area Type: Other
 Cycle Length: 80
 Actuated Cycle Length: 79.6
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.93
 Intersection Signal Delay: 34.3
 Intersection Capacity Utilization 71.6%
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.



Mooretown Road Extension Traffic Analysis 4: Point O Woods & Croaker Rd
2040 No-Build PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	T	T	T	T	T	T	T	T	T	T	T	T
Volume (veh/h)	44	0	46	4	0	12	62	892	10	23	868	93
Sign Control	Slop			Slop			Free			Free		Free
Grade	0%			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
Hourly flow rate (vph)	48	0	50	4	0	13	67	970	11	25	943	101
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						2						
Median type								Raised				Raised
Median storage (veh)								1				1
Upstream signal (ft)												845
pX, platoon unblocked	0.86	0.86	0.86	0.86	0.86	0.86	0.86					
vC, conflicting volume	1613	2109	472	1676	2199	485	1045				980	</

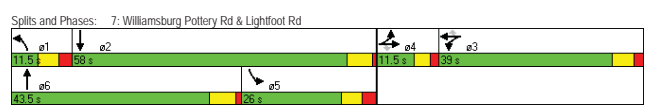
Mooretown Road Extension Traffic Analysis 7: Williamsburg Pottery Rd & Lightfoot Rd
2040 No-Build PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	5	10	10	475	10	393	10	96	524	280	62	5
Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	0	125	125	0	400	0	125	0	0	125	0	0
Storage Length (ft)	1	1	1	1	1	1	1	1	1	1	1	1
Taper Length (ft)	100	100	100	100	100	100	100	100	100	100	100	100
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fit			0.850			0.850		0.873			0.992	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	1863	1583	1752	1610	0	1752	1830	0
Fit Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	1863	1583	1752	1610	0	1752	1830	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			11			427			242			3
Link Speed (mph)		30			45				45			45
Link Distance (ft)		636			405				633			1283
Travel Time (s)		14.5			6.1				9.6			19.4
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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	5	11	11	516	11	427	11	104	570	304	89	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	11	11	516	11	427	11	674	0	304	94	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Left	Left	Right	Right
Median Width(ft)	12			12			12			12		12
Link Offset(ft)	0			0			0			0		0
Crosswalk Width(ft)	16			16			16			16		16
Two way Left Turn Lane							Yes					
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	15	9	15	15	9	15	15	9	15
Turn Type	Split	Perm	Split	Perm	Prot	Prot	Prot	Prot	Prot	Prot	Prot	Prot
Protected Phases	4	4	4	3	3	3	1	6	5	2	2	2
Permitted Phases												
Detector Phase	4	4	4	3	3	3	1	6	5	2	2	2
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	11.5	11.5	11.5	13.0	13.0	13.0	11.5	16.0	12.0	16.0	11.5	16.0
Total Split (s)	11.5	11.5	11.5	39.0	39.0	39.0	11.5	43.5	0.0	26.0	58.0	0.0
Total Split (%)	9.6%	9.6%	9.6%	32.5%	32.5%	32.5%	9.6%	36.3%	0.0%	21.7%	48.3%	0.0%
Maximum Green (s)	7.0	7.0	7.0	33.0	33.0	33.0	5.0	37.5	19.0	52.0	5.0	37.5
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0	4.0	5.0	4.0	5.0	4.0	5.0
All-Red Time (s)	1.5	1.5	1.5	2.0	2.0	2.0	2.5	1.0	3.0	1.0	3.0	1.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.5	3.5	3.5	5.0	5.0	5.0	5.5	5.0	3.0	6.0	5.0	3.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	None	Min
Act Effect Green (s)	8.0	8.0	8.0	34.1	34.1	34.1	6.0	38.6	20.0	62.4	6.0	38.6

Mooretown Road Extension Traffic Analysis 7: Williamsburg Pottery Rd & Lightfoot Rd
2040 No-Build PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.07	0.07	0.07	0.30	0.30	0.30	0.05	0.33	0.17	0.54	0.17	0.54
v/c Ratio	0.04	0.04	0.09	0.99	0.02	0.56	0.12	0.96	1.00	0.09	1.00	0.09
Control Delay	53.4	52.9	27.5	77.9	31.2	62	57.5	51.6	100.2	14.9	100.2	14.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.4	52.9	27.5	77.9	31.2	62	57.5	51.6	100.2	14.9	100.2	14.9
LOS	D	D	C	E	C	A	E	D	F	B	F	B
Approach Delay	42.6	42.6	45.2	45.2	45.2	51.7	51.7	80.0	80.0	80.0	80.0	80.0
Approach LOS	D	D	D	D	D	D	D	F	F	F	F	F
Queue Length 50th (ft)	4	4	0	-429	6	0	8	373	-255	33	-255	33
Queue Length 95th (ft)	17	14	20	#645	21	81	28	#635	#434	74	#434	74
Internal Link Dist (ft)	556			325		553		553		1203		1203
Turn Bay Length (ft)				125	125	400		125		125		125
Base Capacity (vph)	123	246	120	523	550	769	92	699	304	992	304	992
Starvation Cap Reductn	0	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	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.04	0.09	0.99	0.02	0.56	0.12	0.96	1.00	0.09	1.00	0.09

Intersection Summary
 Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 115.4
 Natural Cycle: 120
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.00
 Intersection Signal Delay: 54.1
 Intersection Capacity Utilization 98.4%
 Analysis Period (min) 15
 - Volume exceeds capacity, queue is theoretically infinite.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.



HCS 2010: Multilane Highways Release 6.65

Phone: _____ Fax: _____
 E-mail: _____

OPERATIONAL ANALYSIS

Analyst: SS
 Agency/Co: VHB
 Date: 3/24/2014
 Analysis Period: AM Peak
 Highway: Mooretown Road
 From/To: Lightfoot Road and VA 199
 Jurisdiction: Williamsburg, VA
 Analysis Year: 2040 NB
 Project ID: Mooretown Road Corridor Study

FREE-FLOW SPEED

Direction	1	2
Lane width	12.0 ft	12.0 ft
Lateral clearance:		
Right edge	6.0 ft	6.0 ft
Left edge	6.0 ft	6.0 ft
Total lateral clearance	12.0 ft	12.0 ft
Access points per mile	8	10
Median type	Divided	Divided
Free-flow speed:	Base	Base
FPS or BFFS	52.0 mph	52.0 mph
Lane width adjustment, FLW	0.0 mph	0.0 mph
Lateral clearance adjustment, FLC	0.0 mph	0.0 mph
Median type adjustment, FM	0.0 mph	0.0 mph
Access points adjustment, FA	2.0 mph	2.5 mph
Free-flow speed	50.0 mph	49.5 mph

VOLUME

Direction	1	2
Volume, V	745 vph	457 vph
Peak-hour factor, PHF	0.92	0.92
Peak 15-minute volume, v15	202	124
Trucks and buses	2 %	2 %
Recreational vehicles	0 %	0 %
Terrain type	Level	Level
Grade	0.00 %	0.00 %
Segment length	0.00 mi	0.00 mi
Number of lanes	2	2
Driver population adjustment, fp	1.00	1.00
Trucks and buses PCE, ET	1.5	1.5
Recreational vehicles PCE, ER	1.2	1.2
Heavy vehicle adjustment, fhv	0.990	0.990
Flow rate, vp	408 pcp/hpl	250 pcp/hpl

RESULTS

Direction	1	2
Flow rate, vp	408	250
Free-flow speed, FFS	50.0 mph	49.5 mph
Avg. passenger-car travel speed, S	50.0 mph	50.0 mph
Level of service, LOS	A	A
Density, D	8.2 pc/mi/ln	5.0 pc/mi/ln

Bicycle Level of Service

Posted speed limit, Sp 45
 Percent of segment with occupied on-highway parking 0
 Pavement rating, P 3
 Flow rate in outside lane, vOL 404.9
 Effective width of outside lane, We 24.00
 Effective speed factor, St 4.42
 Bicycle LOS Score, BLOS 2.29
 Bicycle LOS B

Overall results are not computed when free-flow speed is less than 45 mph.

	Direction	1	2	
Flow rate, vp		446	481	pcphpl
Free-flow speed, FFS		50.0	49.5	mph
Avg. passenger-car travel speed, S		50.0	50.0	mph
Level of service, LOS		A	A	
Density, D		8.9	9.6	pc/mi/ln

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: SS
Agency/Co: VHB
Date: 3/24/2014
Analysis Period: PM Peak
Highway: Mooretown Road
From/To: Lightfoot Road and VA 199
Jurisdiction: Williamsburg, VA
Analysis Year: 2040 NB
Project ID: Mooretown Road Corridor Study

FREE-FLOW SPEED

	Direction	1	2	
Lane width		12.0	12.0	ft
Lateral clearance:				
Right edge		6.0	6.0	ft
Left edge		6.0	6.0	ft
Total lateral clearance		12.0	12.0	ft
Access points per mile		8	10	
Median type		Divided	Divided	
Free-flow speed:		Base	Base	
FFS or BFFS		52.0	52.0	mph
Lane width adjustment, FLW		0.0	0.0	mph
Lateral clearance adjustment, FLC		0.0	0.0	mph
Median type adjustment, FM		0.0	0.0	mph
Access points adjustment, FA		2.0	2.5	mph
Free-flow speed		50.0	49.5	mph

VOLUME

	Direction	1	2	
Volume, V		814	878	vph
Peak-hour factor, PHF		0.92	0.92	
Peak 15-minute volume, v15		221	239	
Trucks and buses		2	2	%
Recreational vehicles		0	0	%
Terrain type		Level	Level	
Grade		0.00	0.00	%
Segment length		0.00	0.00	mi
Number of lanes		2	2	
Driver population adjustment, fp		1.00	1.00	
Trucks and buses PCE, ET		1.5	1.5	
Recreational vehicles PCE, ER		1.2	1.2	
Heavy vehicle adjustment, fhv		0.990	0.990	
Flow rate, vp		446	481	pcphpl

RESULTS

Bicycle Level of Service

Posted speed limit, Sp	45	45
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	442.4	477.2
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	4.42	4.42
Bicycle LOS Score, BLOS	2.34	2.38
Bicycle LOS	B	B

Overall results are not computed when free-flow speed is less than 45 mph.

	Direction	1	2	
Flow rate, vp		777	700	pcphpl
Free-flow speed, FFS		48.3	49.5	mph
Avg. passenger-car travel speed, S		50.0	50.0	mph
Level of service, LOS		B	B	
Density, D		15.5	14.0	pc/mi/ln

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: SS
Agency/Co: VHB
Date: 3/24/2014
Analysis Period: AM Peak
Highway: Richmond Road
From/To: Lightfoot Rd and Croaker Rd
Jurisdiction: Williamsburg, VA
Analysis Year: 2040 NB
Project ID: Mooretown Road Corridor Study

FREE-FLOW SPEED

	Direction	1	2	
Lane width		12.0	12.0	ft
Lateral clearance:				
Right edge		6.0	6.0	ft
Left edge		6.0	6.0	ft
Total lateral clearance		12.0	12.0	ft
Access points per mile		15	10	
Median type		Divided	Divided	
Free-flow speed:		Base	Base	
FFS or BFFS		52.0	52.0	mph
Lane width adjustment, FLW		0.0	0.0	mph
Lateral clearance adjustment, FLC		0.0	0.0	mph
Median type adjustment, FM		0.0	0.0	mph
Access points adjustment, FA		3.8	2.5	mph
Free-flow speed		48.3	49.5	mph

VOLUME

	Direction	1	2	
Volume, V		1409	1270	vph
Peak-hour factor, PHF		0.92	0.92	
Peak 15-minute volume, v15		383	345	
Trucks and buses		3	3	%
Recreational vehicles		0	0	%
Terrain type		Level	Level	
Grade		0.00	0.00	%
Segment length		0.00	0.00	mi
Number of lanes		2	2	
Driver population adjustment, fp		1.00	1.00	
Trucks and buses PCE, ET		1.5	1.5	
Recreational vehicles PCE, ER		1.2	1.2	
Heavy vehicle adjustment, fhv		0.985	0.985	
Flow rate, vp		777	700	pcphpl

RESULTS

Bicycle Level of Service

Posted speed limit, Sp	45	45
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	765.8	690.2
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	4.42	4.42
Bicycle LOS Score, BLOS	2.85	2.79
Bicycle LOS	C	C

Overall results are not computed when free-flow speed is less than 45 mph.

	Direction	1	2	
Flow rate, vp		1061	1181	pcphpl
Free-flow speed, FFS		48.3	49.5	mph
Avg. passenger-car travel speed, S		50.0	50.0	mph
Level of service, LOS		C	C	
Density, D		21.2	23.6	pc/mi/ln

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: SS
Agency/Co: VHB
Date: 3/24/2014
Analysis Period: PM Peak
Highway: Richmond Road
From/To: Lightfoot Rd and Croaker Rd
Jurisdiction: Williamsburg, VA
Analysis Year: 2040 NB
Project ID: Mooretown Road Corridor Study

FREE-FLOW SPEED

	Direction	1	2	
Lane width		12.0	12.0	ft
Lateral clearance:				
Right edge		6.0	6.0	ft
Left edge		6.0	6.0	ft
Total lateral clearance		12.0	12.0	ft
Access points per mile		15	10	
Median type		Divided	Divided	
Free-flow speed:		Base	Base	
FFS or BFFS		52.0	52.0	mph
Lane width adjustment, FLW		0.0	0.0	mph
Lateral clearance adjustment, FLC		0.0	0.0	mph
Median type adjustment, FM		0.0	0.0	mph
Access points adjustment, FA		3.8	2.5	mph
Free-flow speed		48.3	49.5	mph

VOLUME

	Direction	1	2	
Volume, V		1925	2142	vph
Peak-hour factor, PHF		0.92	0.92	
Peak 15-minute volume, v15		523	582	
Trucks and buses		3	3	%
Recreational vehicles		0	0	%
Terrain type		Level	Level	
Grade		0.00	0.00	%
Segment length		0.00	0.00	mi
Number of lanes		2	2	
Driver population adjustment, fp		1.00	1.00	
Trucks and buses PCE, ET		1.5	1.5	
Recreational vehicles PCE, ER		1.2	1.2	
Heavy vehicle adjustment, fhv		0.985	0.985	
Flow rate, vp		1061	1181	pcphpl

RESULTS

Bicycle Level of Service

Posted speed limit, Sp	45	45
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	1046.2	1164.1
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	4.42	4.42
Bicycle LOS Score, BLOS	3.00	3.06
Bicycle LOS	C	C

Overall results are not computed when free-flow speed is less than 45 mph.

	Direction	1	2	
Flow rate, vp		413	369	pcphpl
Free-flow speed, FFS		58.3	59.5	mph
Avg. passenger-car travel speed, S		60.0	60.0	mph
Level of service, LOS		A	A	
Density, D		6.9	6.2	pc/mi/ln

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: SS
Agency/Co: VHB
Date: 3/24/2014
Analysis Period: AM Peak
Highway: Croaker Road
From/To: North of Richmond Road
Jurisdiction: Williamsburg, VA
Analysis Year: 2040 NB
Project ID: Mooretown Road Corridor Study

FREE-FLOW SPEED

	Direction	1	2	
Lane width		12.0	12.0	ft
Lateral clearance:				
Right edge		6.0	6.0	ft
Left edge		6.0	6.0	ft
Total lateral clearance		12.0	12.0	ft
Access points per mile		15	10	
Median type		Divided	Divided	
Free-flow speed:		Base	Base	
FFS or BFFS		62.0	62.0	mph
Lane width adjustment, FLW		0.0	0.0	mph
Lateral clearance adjustment, FLC		0.0	0.0	mph
Median type adjustment, FM		0.0	0.0	mph
Access points adjustment, FA		3.8	2.5	mph
Free-flow speed		58.3	59.5	mph

VOLUME

	Direction	1	2	
Volume, V		750	669	vph
Peak-hour factor, PHF		0.92	0.92	
Peak 15-minute volume, v15		204	182	
Trucks and buses		3	3	%
Recreational vehicles		0	0	%
Terrain type		Level	Level	
Grade		0.00	0.00	%
Segment length		0.00	0.00	mi
Number of lanes		2	2	
Driver population adjustment, fp		1.00	1.00	
Trucks and buses PCE, ET		1.5	1.5	
Recreational vehicles PCE, ER		1.2	1.2	
Heavy vehicle adjustment, fhv		0.985	0.985	
Flow rate, vp		413	369	pcphpl

RESULTS

Bicycle Level of Service

Posted speed limit, Sp		45
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	407.6	363.6
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	4.42	4.42
Bicycle LOS Score, BLOS	2.53	2.47
Bicycle LOS	C	B

Overall results are not computed when free-flow speed is less than 45 mph.

	Direction	1	2	
Flow rate, vp		519	pcphpl 492	pcphpl
Free-flow speed, FFS		58.3	mph 59.5	mph
Avg. passenger-car travel speed, S		60.0	mph 60.0	mph
Level of service, LOS		A	A	
Density, D		8.6	pc/mi/ln 8.2	pc/mi/ln

Phone: Fax:
E-mail:

		Bicycle Level of Service	
Posted speed limit, Sp		45	45
Percent of segment with occupied on-highway parking		0	0
Pavement rating, P		3	3
Flow rate in outside lane, vOL		511.4	485.3
Effective width of outside lane, We		24.00	24.00
Effective speed factor, St		4.42	4.42
Bicycle LOS Score, BLOS		2.64	2.62
Bicycle LOS		C	C

Overall results are not computed when free-flow speed is less than 45 mph.

OPERATIONAL ANALYSIS

Analyst: SS
Agency/Co: VHB
Date: 3/24/2014
Analysis Period: PM Peak
Highway: Croaker Road
From/To: North of Richmond Road
Jurisdiction: Williamsburg, VA
Analysis Year: 2040 NB
Project ID: Mooretown Road Corridor Study

FREE-FLOW SPEED

	Direction	1	2	
Lane width		12.0	ft 12.0	ft
Lateral clearance:				
Right edge		6.0	ft 6.0	ft
Left edge		6.0	ft 6.0	ft
Total lateral clearance		12.0	ft 12.0	ft
Access points per mile		15	10	
Median type		Divided	Divided	
Free-flow speed:		Base	Base	
FFS or BFFS		62.0	mph 62.0	mph
Lane width adjustment, FLW		0.0	mph 0.0	mph
Lateral clearance adjustment, FLC		0.0	mph 0.0	mph
Median type adjustment, FM		0.0	mph 0.0	mph
Access points adjustment, FA		3.8	mph 2.5	mph
Free-flow speed		58.3	mph 59.5	mph

VOLUME

	Direction	1	2	
Volume, V		941	vph 893	vph
Peak-hour factor, PHF		0.92	0.92	
Peak 15-minute volume, v15		256	243	
Trucks and buses		3	% 3	%
Recreational vehicles		0	% 0	%
Terrain type		Level	Level	
Grade		0.00	% 0.00	%
Segment length		0.00	mi 0.00	mi
Number of lanes		2	2	
Driver population adjustment, fp		1.00	1.00	
Trucks and buses PCE, ET		1.5	1.5	
Recreational vehicles PCE, ER		1.2	1.2	
Heavy vehicle adjustment, fhv		0.985	0.985	
Flow rate, vp		519	pcphpl 492	pcphpl

RESULTS

	Direction	1	2	
Flow rate, vp		758	pcphpl 584	pcphpl
Free-flow speed, FFS		58.3	mph 59.5	mph
Avg. passenger-car travel speed, S		60.0	mph 60.0	mph
Level of service, LOS		B	A	
Density, D		12.6	pc/mi/ln 9.7	pc/mi/ln

Phone: Fax:
E-mail:

		Bicycle Level of Service	
Posted speed limit, Sp		45	45
Percent of segment with occupied on-highway parking		0	0
Pavement rating, P		3	3
Flow rate in outside lane, vOL		747.3	576.1
Effective width of outside lane, We		24.00	24.00
Effective speed factor, St		4.42	4.42
Bicycle LOS Score, BLOS		2.83	2.70
Bicycle LOS		C	C

Overall results are not computed when free-flow speed is less than 45 mph.

OPERATIONAL ANALYSIS

Analyst: SS
Agency/Co: VHB
Date: 3/24/2014
Analysis Period: AM Peak
Highway: Croaker Road
From/To: Roanoke Rd and I-64 EB Ramp
Jurisdiction: Williamsburg, VA
Analysis Year: 2040 NB
Project ID: Mooretown Road Corridor Study

FREE-FLOW SPEED

	Direction	1	2	
Lane width		12.0	ft 12.0	ft
Lateral clearance:				
Right edge		6.0	ft 6.0	ft
Left edge		6.0	ft 6.0	ft
Total lateral clearance		12.0	ft 12.0	ft
Access points per mile		15	10	
Median type		Divided	Divided	
Free-flow speed:		Base	Base	
FFS or BFFS		62.0	mph 62.0	mph
Lane width adjustment, FLW		0.0	mph 0.0	mph
Lateral clearance adjustment, FLC		0.0	mph 0.0	mph
Median type adjustment, FM		0.0	mph 0.0	mph
Access points adjustment, FA		3.8	mph 2.5	mph
Free-flow speed		58.3	mph 59.5	mph

VOLUME

	Direction	1	2	
Volume, V		1375	vph 1060	vph
Peak-hour factor, PHF		0.92	0.92	
Peak 15-minute volume, v15		374	288	
Trucks and buses		3	% 3	%
Recreational vehicles		0	% 0	%
Terrain type		Level	Level	
Grade		0.00	% 0.00	%
Segment length		0.00	mi 0.00	mi
Number of lanes		2	2	
Driver population adjustment, fp		1.00	1.00	
Trucks and buses PCE, ET		1.5	1.5	
Recreational vehicles PCE, ER		1.2	1.2	
Heavy vehicle adjustment, fhv		0.985	0.985	
Flow rate, vp		758	pcphpl 584	pcphpl

RESULTS

	Direction	1	2	
Flow rate, vp		620	697	pcphpl
Free-flow speed, FFS		58.3	59.5	mph
Avg. passenger-car travel speed, S		60.0	60.0	mph
Level of service, LOS		A	B	
Density, D		10.3	11.6	pc/mi/ln

Phone: _____ Fax: _____
 E-mail: _____

OPERATIONAL ANALYSIS

Analyst: SS
 Agency/Co: VHB
 Date: 3/24/2014
 Analysis Period: PM Peak
 Highway: Croaker Road
 From/To: Rochambeau Rd and I-64 EB Ramp
 Jurisdiction: Williamsburg, VA
 Analysis Year: 2040 NB
 Project ID: Mooretown Road Corridor Study

	Bicycle Level of Service	
Posted speed limit, Sp	45	45
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	611.4	687.5
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	4.42	4.42
Bicycle LOS Score, BLOS	2.73	2.79
Bicycle LOS	C	C

Overall results are not computed when free-flow speed is less than 45 mph.

FREE-FLOW SPEED

	Direction 1		Direction 2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	15		10	
Median type	Divided		Divided	
Free-flow speed:				
Base	62.0	mph	62.0	mph
FFS or BFFS	62.0	mph	62.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	3.8	mph	2.5	mph
Free-flow speed	58.3	mph	59.5	mph

VOLUME

	Direction 1		Direction 2	
Volume, V	1125	vph	1265	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	306		344	
Trucks and buses	3	%	3	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.985		0.985	
Flow rate, vp	620	pcphpl	697	pcphpl

RESULTS

Phone: _____ Fax: _____
 E-Mail: _____

Directional Two-Lane Highway Segment Analysis

Analyst: SS
 Agency/Co: VHB
 Date Performed: 3/24/2014
 Analysis Time Period: AM Peak
 Highway: Lightfoot Road (VA 646)
 From/To: Richmond Rd to Mooretown Rd
 Jurisdiction: Williamsburg, VA
 Analysis Year: 2040 NB
 Description: Mooretown Road Corridor Study

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.92
Shoulder width	2.0	ft	% Trucks and buses	1
Lane width	11.5	ft	% Trucks crawling	0.0
Segment length	0.7	mi	Truck crawl speed	0.0
Terrain type	Level		% Recreational vehicles	0
Grade:			% No-passing zones	100
Length	-	mi	Access point density	11
Up/down	-			/mi

Analysis direction volume, Vd 455 veh/h
 Opposing direction volume, Vo 401 veh/h

Average Travel Speed

	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.2	1.3
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adj. factor,(note-5) fHV	0.998	0.997
Grade adj. factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	496	437
	pc/h	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	55.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	3.0	mi/h
Adj. for access point density,(note-3) fA	2.8	mi/h
Free-flow speed, FFSd	49.3	mi/h
Adjustment for no-passing zones, fnp	2.5	mi/h
Average travel speed, ATSD	39.5	mi/h
Percent Free Flow Speed, PFFS	80.1	%

Percent Time-Spent-Following

	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	1.0
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	1.000	1.000
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	495	436
	pc/h	pc/h
Base percent time-spent-following,(note-4) BPTSfd	50.0	%
Adjustment for no-passing zones, fnp	41.3	
Percent time-spent-following, PTSFd	72.0	%

Level of Service and Other Performance Measures

Level of service, LOS	D
Volume to capacity ratio, v/c	0.29
Peak 15-min vehicle-miles of travel, VMT15	87
Peak-hour vehicle-miles of travel, VMT60	318
Peak 15-min total travel time, TT15	2.2
Capacity from ATS, CdATS	0
Capacity from PTSF, CdPTSF	1700
Directional Capacity	1700

Passing Lane Analysis

Total length of analysis segment, Lt	0.7	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSD (from above)	39.5	mi/h
Percent time-spent-following, PTSFd (from above)	72.0	%
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSp1	-	
Percent free flow speed including passing lane, PFFSp1	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFp1	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSp1	A
Peak 15-min total travel time, TT15	-
	veh-h

Bicycle Level of Service

Posted speed limit, Sp 45
 Percent of segment with occupied on-highway parking 0
 Pavement rating, P 3
 Flow rate in outside lane, vOL 494.6
 Effective width of outside lane, We 13.50
 Effective speed factor, St 4.42
 Bicycle LOS Score, BLOS 4.15
 Bicycle LOS D

Phone: Fax:
 E-Mail:

- Notes:
 1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
 2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
 3. For the analysis direction only and for v>200 veh/h.
 4. For the analysis direction only.
 5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Directional Two-Lane Highway Segment Analysis
 Analyst SS
 Agency/Co. VHB
 Date Performed 3/24/2014
 Analysis Time Period PM Peak
 Highway Lightfoot Road (VA 646)
 From/To Richmond Rd to Mooretown Rd
 Jurisdiction Williamsburg, VA
 Analysis Year 2040 NB
 Description Mooretown Road Corridor Study

Input Data			
Highway class	Class 2	Peak hour factor, PHF	0.92
Shoulder width	2.0 ft	% Trucks and buses	1 %
Lane width	11.5 ft	% Trucks crawling	0.0 %
Segment length	0.7 mi	Truck crawl speed	0.0 mi/hr
Terrain type	Level	% Recreational vehicles	0 %
Grade: Length	- mi	% No-passing zones	100 %
Up/down	-	Access point density	11 /mi

Analysis direction volume, Vd 605 veh/h
 Opposing direction volume, Vo 563 veh/h

Average Travel Speed			
Direction	Analysis(d)	Opposing (o)	
PCE for trucks, ET	1.1	1.1	
PCE for RVs, ER	1.0	1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.999	0.999	
Grade adj. factor,(note-1) fg	1.00	1.00	
Directional flow rate,(note-2) vi	658 pc/h	613 pc/h	

Free-Flow Speed from Field Measurement:
 Field measured speed,(note-3) S FM - mi/h
 Observed total demand,(note-3) V - veh/h
 Estimated Free-Flow Speed:
 Base free-flow speed,(note-3) BFFS 55.0 mi/h
 Adj. for lane and shoulder width,(note-3) fLS 3.0 mi/h
 Adj. for access point density,(note-3) fA 2.8 mi/h
 Free-flow speed, FFSd 49.3 mi/h
 Adjustment for no-passing zones, fnp 1.8 mi/h
 Average travel speed, ATSD 37.5 mi/h
 Percent Free Flow Speed, PFFS 76.2 %

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	1.0
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	1.000	1.000
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	658 pc/h	612 pc/h
Base percent time-spent-following,(note-4) BPTSFD	61.3 %	
Adjustment for no-passing zones, fnp	32.1	
Percent time-spent-following, PTSFD	77.9 %	

Level of Service and Other Performance Measures

Level of service, LOS	D
Volume to capacity ratio, v/c	0.39
Peak 15-min vehicle-miles of travel, VMT15	115 veh-mi
Peak-hour vehicle-miles of travel, VMT60	423 veh-mi
Peak 15-min total travel time, TT15	3.1 veh-h
Capacity from ATS, CdATS	0 veh/h
Capacity from PTSF, CdPTSF	1700 veh/h
Directional Capacity	1700 veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.7 mi
Length of two-lane highway upstream of the passing lane, Lu	- mi
Length of passing lane including tapers, Lpl	- mi
Average travel speed, ATSD (from above)	37.5 mi/h
Percent time-spent-following, PTSFD (from above)	77.9
Level of service, LOSd (from above)	D

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	- mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	- mi
Adj. factor for the effect of passing lane on average speed, fpl	-
Average travel speed including passing lane, ATSp1	-
Percent free flow speed including passing lane, PFFSp1	0.0 %

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	- mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	- mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-
Percent time-spent-following including passing lane, PTSFpl	- %

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A
Peak 15-min total travel time, TT15	- veh-h

Bicycle Level of Service

Posted speed limit, Sp 45
 Percent of segment with occupied on-highway parking 0
 Pavement rating, P 3
 Flow rate in outside lane, vOL 657.6
 Effective width of outside lane, We 13.50
 Effective speed factor, St 4.42
 Bicycle LOS Score, BLOS 4.30
 Bicycle LOS D

- Notes:
 1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
 2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
 3. For the analysis direction only and for v>200 veh/h.
 4. For the analysis direction only.
 5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Mooretown Road Extension Traffic Analysis 1: I-64 WB Ramps & Croaker Rd

2040 No-Build AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↖			↖		↖	↖		↖	↖
Volume (veh/h)	0	0	560	0	0	65	0	450	320	0	375	230
Sign Control			Yield			Stop		Free	Free		Free	Free
Grade			-1%			-1%		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)	0	0	609	0	0	71	0	489	348	0	408	250
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								Raised			Raised	
Median storage (veh)								1			1	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume												
vC1, stage 1 conf vol	723	897	204	693	897	245	408			489		
vC2, stage 2 conf vol	408	408		489	489							
vCu, unblocked vol	315	489		204	408					489		
IC, single (s)	7.6	6.6	7.0	7.6	6.6	7.0	4.2			4.2		
IC, 2 stage (s)	6.6	5.6		6.6	5.6					2.2		
IF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	24	100	100	91	100			100		
cM capacity (veh/h)	401	385	800	151	385	753	1141			1063		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3				
Volume Total	609	71	245	245	348	204	204	250				
Volume Left	0	0	0	0	0	0	0	0				
Volume Right	609	71	0	0	348	0	0	250				
cSH	800	753	1700	1700	1700	1700	1700	1700				
Volume to Capacity	0.76	0.09	0.14	0.14	0.20	0.12	0.12	0.15				
Queue Length 95th (ft)	183	8	0	0	0	0	0	0				
Control Delay (s)	22.3	10.3	0.0	0.0	0.0	0.0	0.0	0.0				
Lane LOS	C	B										
Approach Delay (s)	22.3	10.3	0.0			0.0						
Approach LOS	C	B										
Intersection Summary												
Average Delay			6.6									
Intersection Capacity Utilization			51.7%		ICU Level of Service						A	
Analysis Period (min)			15									

Mooretown Road Extension Traffic Analysis 2: I-64 EB Ramps & Croaker Rd

2040 No-Build AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↖			↖		↖	↖		↖	↖
Volume (veh/h)	0	0	265	0	0	150	0	620	755	0	795	140
Sign Control			Stop			Yield		Free	Free		Free	Free
Grade			-1%			-1%		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)	0	0	288	0	0	163	0	674	821	0	864	152
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								Raised			Raised	
Median storage (veh)								1			1	
Upstream signal (ft)											689	
pX, platoon unblocked												
vC, conflicting volume												
vC1, stage 1 conf vol	1201	1538	432	1106	1538	337	864					
vC2, stage 2 conf vol	864	864		674	674							
vCu, unblocked vol	337	674		432	864							
IC, single (s)	1201	1538	432	1106	1538	337	864					
IC, 2 stage (s)	7.6	6.6	7.0	7.6	6.6	7.0	4.2					
IF (s)	6.6	5.6		6.6	5.6							
IF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2					
p0 queue free %	100	100	49	100	100	75	100					
cM capacity (veh/h)	219	236	569	187	236	656	768					
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3				
Volume Total	288	163	337	337	821	432	432	152				
Volume Left	0	0	0	0	0	0	0	0				
Volume Right	288	163	0	0	821	0	0	152				
cSH	569	456	1700	1700	1700	1700	1700	1700				
Volume to Capacity	0.51	0.25	0.20	0.20	0.48	0.25	0.25	0.09				
Queue Length 95th (ft)	71	24	0	0	0	0	0	0				
Control Delay (s)	17.6	12.3	0.0	0.0	0.0	0.0	0.0	0.0				
Lane LOS	C	B										
Approach Delay (s)	17.6	12.3	0.0			0.0						
Approach LOS	C	B										
Intersection Summary												
Average Delay			2.4									
Intersection Capacity Utilization			50.1%		ICU Level of Service						A	
Analysis Period (min)			15									

Mooretown Road Extension Traffic Analysis 8: Mooretown Rd & Rt. 199 SB Ramps

2040 No-Build AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↖			↖		↖	↖		↖	↖
Volume (veh/h)	0	653	92	0	262	206	0	0	506	0	0	195
Sign Control		Free			Free			Yield	Yield		Yield	Yield
Grade		0%			0%			-1%	-1%		-1%	-1%
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)	0	710	100	0	285	224	0	0	550	0	0	212
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		405										
pX, platoon unblocked												
vC, conflicting volume												
vC1, stage 1 conf vol	285			710			852	995	355	640	995	142
vC2, stage 2 conf vol												
vCu, unblocked vol	285			710			852	995	355	640	995	142
IC, single (s)	4.1			4.1			7.6	6.6	7.0	7.6	6.6	7.0
IC, 2 stage (s)												
IF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	14	100	100	76
cM capacity (veh/h)	1274			885			191	242	639	50	242	876
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	355	355	100	142	142	224	550	212				
Volume Left	0	0	0	0	0	0	0	0				
Volume Right	0	0	100	0	0	224	550	212				
cSH	1700	1700	1700	1700	1700	1700	639	876				
Volume to Capacity	0.21	0.21	0.06	0.08	0.08	0.13	0.86	0.24				
Queue Length 95th (ft)	0	0	0	0	0	0	246	24				
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	35.6	10.4				
Lane LOS							E	B				
Approach Delay (s)	0.0			0.0			35.6	10.4				
Approach LOS							E	B				
Intersection Summary												
Average Delay			10.5									
Intersection Capacity Utilization			56.0%		ICU Level of Service						B	
Analysis Period (min)			15									

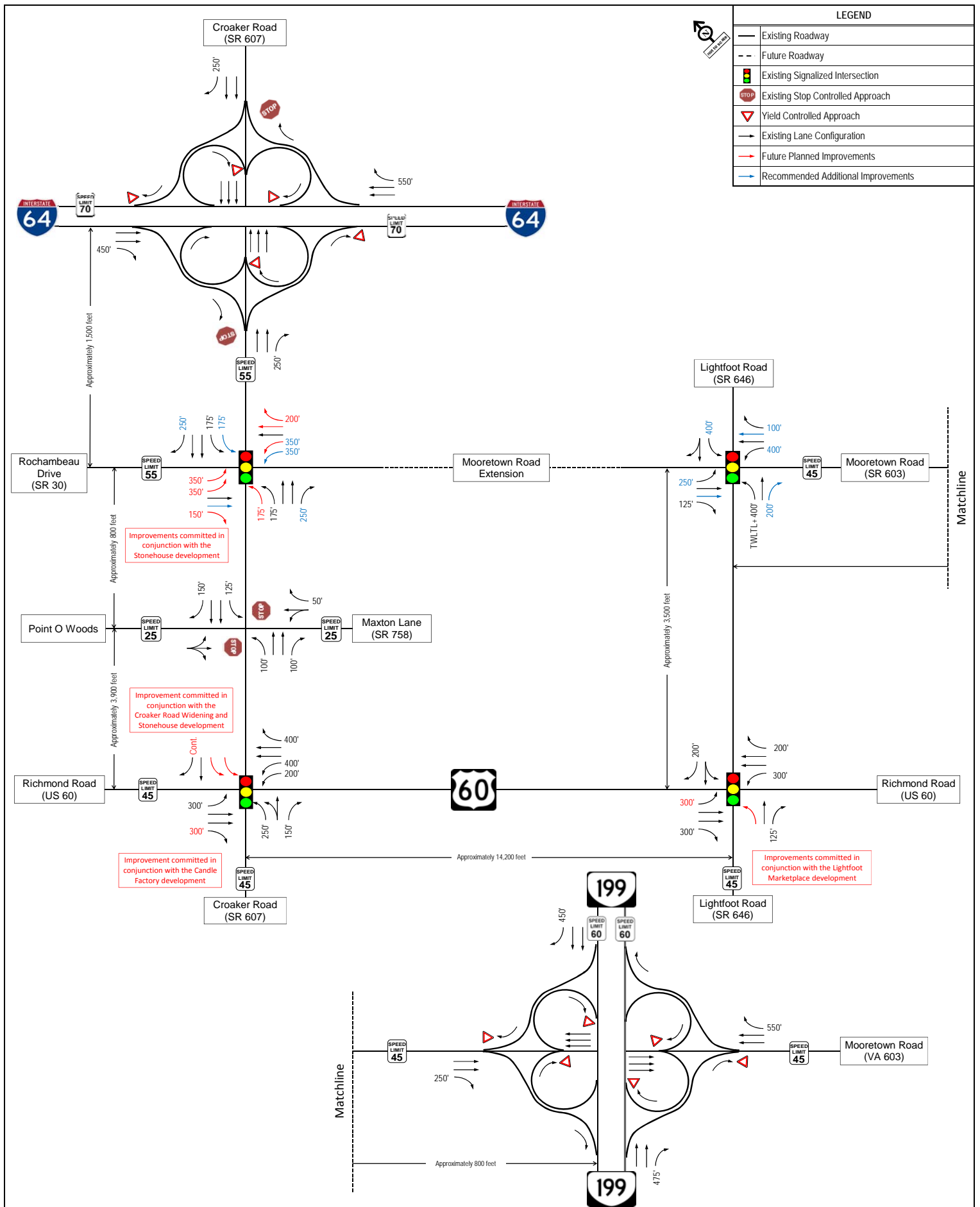
Mooretown Road Extension Traffic Analysis 9: Mooretown Rd & Rt. 199 NB Ramps

2040 No-Build AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↖			↖		↖	↖		↖	↖
Volume (veh/h)	0	1035	124	0								

Build Conditions

(2040)



LEGEND	
	Existing Roadway
	Future Roadway
	Existing Signalized Intersection
	Existing Stop Controlled Approach
	Yield Controlled Approach
	Existing Lane Configuration
	Future Planned Improvements
	Recommended Additional Improvements



Figure A-5
Build (2040) Lane Configurations and Traffic Control

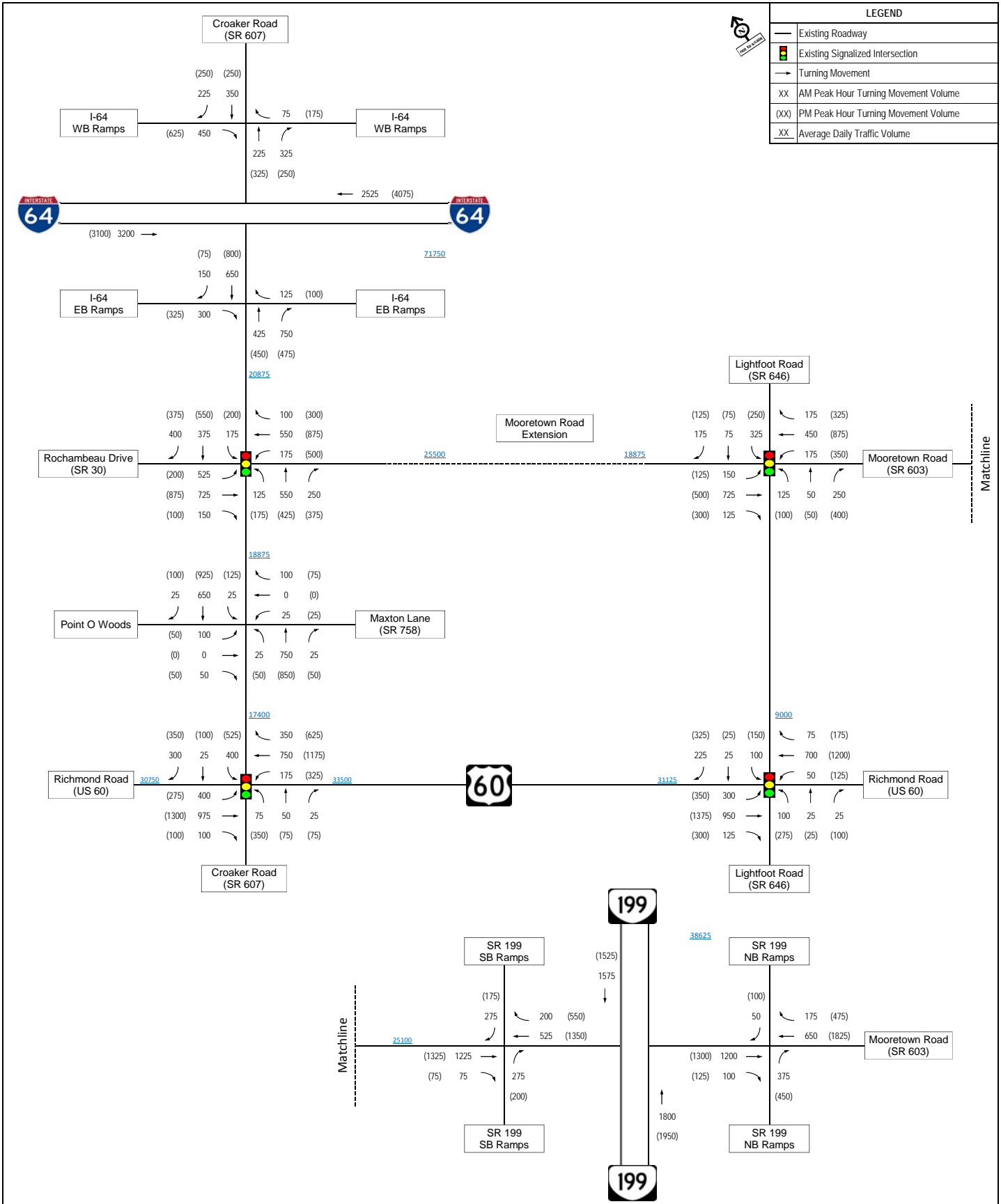


Figure A-6
Build (2040) AM and PM Peak Hour Turning Movement Volumes

Mooretown Road Extension Traffic Analysis
2040 Build AM Peak

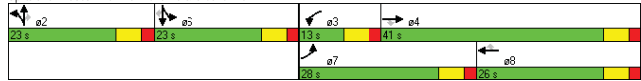
5: Richmond Rd & Croaker Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	23.0	23.0	10.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	28.0	41.0	41.0	13.0	26.0	26.0	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (%)	28.0%	41.0%	41.0%	13.0%	26.0%	26.0%	23.0%	23.0%	23.0%	23.0%	23.0%	23.0%
Maximum Green (s)	22.0	35.0	35.0	7.0	20.0	20.0	17.0	17.0	17.0	17.0	17.0	17.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Max	Max	Max	None	None	None
Act Effect Green (s)	23.0	36.0	36.0	8.0	21.0	21.0	18.0	18.0	18.0	17.2	17.2	17.2
Actuated g/C Ratio	0.23	0.36	0.36	0.08	0.21	0.21	0.18	0.18	0.18	0.17	0.17	0.17
v/c Ratio	1.07	0.83	0.17	0.69	1.10	0.60	0.22	0.23	0.09	0.74	0.09	0.60
Control Delay	103.0	36.1	5.0	58.8	101.1	8.1	37.3	37.3	13.6	47.6	35.0	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	103.0	36.1	5.0	58.8	101.1	8.1	37.3	37.3	13.6	47.6	35.0	9.4
LOS	F	D	A	E	F	A	D	D	B	D	D	A
Approach Delay		52.1			69.8				33.4		31.4	
Approach LOS		D			E				C		C	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 99.2
 Natural Cycle: 100
 Control Type: Semi Act-Uncoordinated
 Maximum v/c Ratio: 1.10
 Intersection Signal Delay: 53.4
 Intersection Capacity Utilization: 73.5%
 Analysis Period (min): 15
 Intersection LOS: D
 ICU Level of Service: D

Splits and Phases: 5: Richmond Rd & Croaker Rd



Mooretown Road Extension Traffic Analysis
2040 Build AM Peak

6: Richmond Rd & Lightfoot Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	300	950	125	50	700	75	100	25	25	100	25	225
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250	300	300	200	0	125	0	125	0	200	0	200
Storage Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Taper Length (ft)	100	100	100	100	100	100	100	100	100	100	100	100
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950					0.961
Satd. Flow (prot)	1752	3505	1568	1752	3505	1568	1752	1845	1568	0	1773	1568
Flt Permitted	0.950			0.950			0.950					0.961
Satd. Flow (perm)	1752	3505	1568	1752	3505	1568	1752	1845	1568	0	1773	1568
Right Turn on Red			Yes			Yes			Yes		Yes	
Satd. Flow (RTOR)			136			65			27		27	
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		2866			884			391			2806	
Travel Time (s)		43.4			13.4			5.9			42.5	
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
Adj. Flow (vph)	326	1033	136	54	761	82	109	27	27	109	27	245
Shared Lane Traffic (%)												
Lane Group Flow (vph)	326	1033	136	54	761	82	109	27	27	109	27	245
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		50			50			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	15	9	15	15	9	15	15	9	15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94		94		94		94		94		94	
Detector 2 Size(ft)	6		6		6		6		6		6	
Detector 2 Type	Cl+Ex		Cl+Ex		Cl+Ex		Cl+Ex		Cl+Ex		Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0		0.0		0.0		0.0		0.0		0.0	
Turn Type	Prot		Perm		Prot		Split		Perm		Split	
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases		6	6		2	2		4	4		3	3
Detector Phase	1	6	6	5	2	2	4	4	4	3	3	3

Mooretown Road Extension Traffic Analysis
2040 Build AM Peak

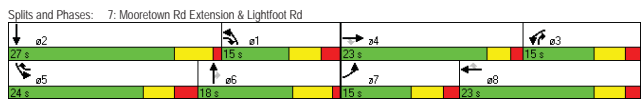
6: Richmond Rd & Lightfoot Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.5	37.0	37.0	11.5	21.0	21.0	14.5	14.5	14.5	54.0	54.0	54.0
Total Split (s)	28.0	49.3	49.3	11.5	32.8	32.8	15.2	15.2	15.2	54.0	54.0	54.0
Total Split (%)	21.5%	37.9%	37.9%	8.8%	25.2%	25.2%	11.7%	11.7%	11.7%	41.5%	41.5%	41.5%
Maximum Green (s)	21.5	43.3	43.3	5.0	26.8	26.8	7.7	7.7	7.7	48.0	48.0	48.0
Yellow Time (s)	3.5	4.5	4.5	3.5	4.5	4.5	4.5	4.5	4.5	3.0	3.0	3.0
All-Red Time (s)	3.0	1.5	1.5	3.0	1.5	1.5	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-2.5	-2.0	-2.0	-2.5	-2.0	-2.0	-1.0	-3.5	-3.5	-1.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	6.5	4.0	5.0	4.0	4.0	4.0
Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None
Walk Time (s)	5.0	5.0								5.0	5.0	5.0
Flash Dont Walk (s)		26.0	26.0							43.0	43.0	43.0
Pedestrian Calls (#/hr)	0	0	0							0	0	0
Act Effect Green (s)	24.0	45.7	45.7	9.6	28.8	28.8	8.7	11.2	11.2	14.7	14.7	14.7
Actuated g/C Ratio	0.25	0.48	0.48	0.10	0.30	0.30	0.09	0.12	0.12	0.16	0.16	0.16
v/c Ratio	0.73	0.61	0.16	0.30	0.71	0.16	0.68	0.12	0.13	0.49	0.54	0.54
Control Delay	44.4	21.2	3.3	46.5	34.3	10.1	64.6	40.4	16.6	42.9	9.6	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.4	21.2	3.3	46.5	34.3	10.1	64.6	40.4	16.6	42.9	9.6	9.6
LOS	D	C	A	D	C	B	E	D	B	D	D	A
Approach Delay		24.6			32.8				52.6		21.5	
Approach LOS		C			C				D		C	

Mooretown Road Extension Traffic Analysis 7: Mooretown Rd Extension & Lightfoot Rd
2040 Build AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	1	3	8	5	1	6	3	5	2	
Switch Phase												
Minimum Initial (s)	4.0	7.0	5.0	4.0	4.0	5.0	5.0	10.0	4.0	5.0	10.0	
Minimum Split (s)	10.0	11.5	11.5	10.0	22.0	12.0	11.5	16.0	10.0	12.0	16.0	
Total Split (s)	15.0	23.0	15.0	15.0	23.0	24.0	15.0	18.0	15.0	24.0	27.0	0.0
Total Split (%)	18.8%	28.8%	18.8%	18.8%	28.8%	30.0%	18.8%	22.5%	18.8%	30.0%	33.8%	0.0%
Maximum Green (s)	9.0	18.5	8.5	9.0	17.0	17.0	8.5	12.0	9.0	17.0	21.0	
Yellow Time (s)	4.0	3.0	4.0	4.0	4.0	4.0	5.0	4.0	4.0	4.0	5.0	
All-Red Time (s)	2.0	1.5	2.5	2.0	2.0	3.0	2.5	1.0	2.0	3.0	1.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	3.5	5.5	5.0	5.0	6.0	5.5	5.0	5.0	6.0	5.0	3.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lag	Lag	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	2.0	3.0	3.0	2.0	2.0	3.0	3.0	2.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	
Walk Time (s)						5.0						
Flash Dont Walk (s)						11.0						
Pedestrian Calls (#/hr)						0						
Act Effect Green (s)												
Actualized g/C Ratio	0.13	0.25	0.49	0.13	0.23	0.52	0.19	0.14	0.27	0.23	0.18	
v/c Ratio	0.73	0.89	0.16	0.83	0.59	0.21	0.40	0.21	0.56	0.89	0.65	
Control Delay	53.1	41.9	3.2	64.2	29.9	2.1	33.6	31.9	13.1	55.8	21.2	
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	53.1	41.9	3.2	64.2	29.9	2.1	33.6	31.9	13.1	55.8	21.2	
LOS	D	D	A	E	C	A	C	C	B	E	C	
Approach Delay	38.8					31.3			21.3		40.8	
Approach LOS		D									D	

Intersection Summary
 Area Type: Other
 Cycle Length: 80
 Actuated Cycle Length: 77.6
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay: 34.4
 Intersection Capacity Utilization 71.9%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service C



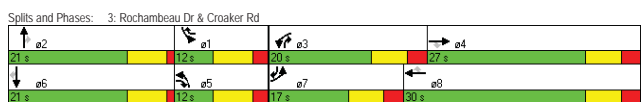
Mooretown Road Extension Traffic Analysis 3: Rochambeau Dr & Croaker Rd
2040 Build PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑↑	↑	↑↑	↑↑	↑↑	↑↑	↑↑	↑↑	↑↑	↑↑	↑↑
Volume (vph)	200	875	100	500	875	300	175	425	375	200	550	375
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350	150	350	200	175	250	175	250	175	250	175	250
Storage Lanes	2	1	2	1	2	1	2	1	2	1	2	1
Taper Length (ft)	100	100	100	100	100	100	100	100	100	100	100	100
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	3505	1568	3400	3505	1568	3367	3471	1553	3367	3471	1553
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3400	3505	1568	3400	3505	1568	3367	3471	1553	3367	3471	1553
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			21			90			21			34
Link Speed (mph)			45			55			55			55
Link Distance (ft)			763			1413			845			689
Travel Time (s)			11.6			17.5			10.5			8.5
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
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	217	951	109	543	951	326	190	462	408	217	598	408
Shared Lane Traffic (%)												
Lane Group Flow (vph)	217	951	109	543	951	326	190	462	408	217	598	408
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Left	Left	Left	Left
Median Width(ft)	24			28			36			36		
Link Offset(ft)	0			0			0			0		
Crosswalk Width(ft)	16			16			16			16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94			94			94		
Detector 2 Size(ft)	6			6			6			6		
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases												

Mooretown Road Extension Traffic Analysis 3: Rochambeau Dr & Croaker Rd
2040 Build PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	12.0	12.0	12.0	12.0	12.0	12.0	16.0	12.0	12.0	16.0	12.0	12.0
Total Split (s)	17.0	27.0	12.0	20.0	30.0	12.0	21.0	20.0	12.0	21.0	17.0	17.0
Total Split (%)	21.3%	33.8%	15.0%	25.0%	37.5%	15.0%	15.0%	26.3%	25.0%	15.0%	26.3%	21.3%
Maximum Green (s)	10.0	20.0	5.0	13.0	23.0	5.0	15.0	13.0	5.0	15.0	10.0	10.0
Yellow Time (s)	4.5	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	4.5
All-Red Time (s)	2.5	2.5	2.0	2.5	2.5	2.0	2.0	1.0	2.5	2.0	1.0	2.5
Lost Time Adjust (s)	-1.0	-3.0	-3.0	-1.0	-3.0	-1.0	-3.0	-2.0	-2.0	-3.0	-2.0	-2.0
Total Lost Time (s)	6.0	4.0	4.0	6.0	4.0	6.0	4.0	5.0	4.0	4.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	2.0	3.0	3.0	2.0	2.0	5.0	3.0	2.0	5.0	3.0
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	None
Act Effect Green (s)	10.6	23.0	31.0	14.0	26.4	30.7	8.0	16.7	30.7	8.3	17.0	27.6
Actualized g/C Ratio	0.13	0.29	0.39	0.18	0.33	0.38	0.10	0.21	0.38	0.10	0.21	0.34
v/c Ratio	0.48	0.94	0.18	0.91	0.82	0.50	0.56	0.64	0.67	0.62	0.81	0.73
Control Delay	35.9	46.9	7.3	54.7	32.3	10.9	41.4	33.4	17.1	43.1	40.2	21.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.9	46.9	7.3	54.7	32.3	10.9	41.4	33.4	17.1	43.1	40.2	21.0
LOS	D	D	A	D	C	B	D	C	B	D	C	C
Approach Delay	41.7					35.1			28.5		34.3	
Approach LOS		D							C			C

Intersection Summary
 Area Type: Other
 Cycle Length: 80
 Actuated Cycle Length: 80
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.94
 Intersection Signal Delay: 35.2
 Intersection Capacity Utilization 73.6%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service D



Mooretown Road Extension Traffic Analysis 4: Point O Woods & Croaker Rd
2040 Build PM Peak

Moortown Road Extension Traffic Analysis
2040 Build PM Peak

5: Richmond Rd & Croaker Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑↑	↑	↑↑	↑↑	↑	↑	↑	↑	↑	↑	↑
Volume (vph)	275	1300	100	325	1175	625	350	75	75	525	100	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300	300	350	400	400	250	150	400	400	0	0	0
Storage Lanes	1	1	2	1	1	1	1	2	1	2	1	1
Taper Length (ft)	100	100	100	100	100	100	100	100	100	100	100	100
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.95	0.95	1.00	0.97	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.969		0.950		
Satd. Flow (prot)	1752	3505	1568	3400	3505	1568	1649	1682	1553	3367	1827	1553
Flt Permitted	0.950			0.950			0.950	0.969		0.950		
Satd. Flow (perm)	1752	3505	1568	3400	3505	1568	1649	1682	1553	3367	1827	1553
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			97			579			82			304
Link Speed (mph)		45			45			30			55	
Link Distance (ft)		924			1194			582			3554	
Travel Time (s)		14.0			18.1			13.2			41.6	
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
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	299	1413	109	353	1277	679	380	82	82	571	109	380
Shared Lane Traffic (%)							40%					
Lane Group Flow (vph)	299	1413	109	353	1277	679	228	234	82	571	109	380
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		45			50			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	15	9	15	15	9	15	9	15	9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot		Perm		Prot		Perm	Split		Perm	Split	Perm
Protected Phases	7	4		4	3	8	8	2	2	2	6	6
Permitted Phases												

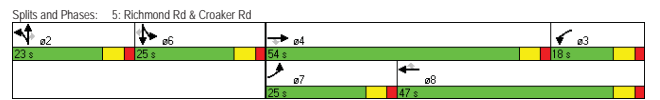
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Moortown Road Extension Traffic Analysis
2040 Build PM Peak

5: Richmond Rd & Croaker Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	2	2	2	6	6	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	23.0	23.0	10.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (%)	25.0	54.0	54.0	15.0	44.0	44.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	20.8%	45.0%	45.0%	15.0%	39.2%	39.2%	19.2%	19.2%	19.2%	19.2%	19.2%	19.2%
Maximum Green (s)	19.0	48.0	48.0	12.0	41.0	41.0	17.0	17.0	17.0	19.0	19.0	19.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Last Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Max	Max	Max	None	None	None
Act Effect Green (s)	20.0	49.0	49.0	13.0	42.0	42.0	18.0	18.0	18.0	20.0	20.0	20.0
Actuated g/C Ratio	0.17	0.41	0.41	0.11	0.35	0.35	0.15	0.15	0.15	0.17	0.17	0.17
vic Ratio	1.02	0.99	0.16	0.96	1.04	0.73	0.92	0.93	0.27	1.02	0.36	0.74
Control Delay	108.4	56.5	6.1	91.2	75.4	10.7	91.3	91.8	12.1	92.0	48.2	20.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	108.4	56.5	6.1	91.2	75.4	10.7	91.3	91.8	12.1	92.0	48.2	20.4
LOS	F	E	A	F	E	B	F	F	B	F	D	C
Approach Delay		62.0			58.8			79.6			61.9	
Approach LOS		E			E			E			E	



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6: Richmond Rd & Lightfoot Rd

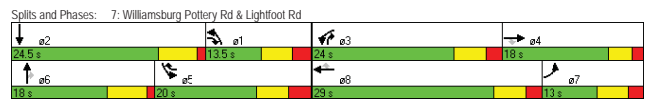
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑↑	↑	↑↑	↑↑	↑	↑	↑	↑	↑	↑	↑
Volume (vph)	350	1375	300	125	1200	175	275	25	100	150	25	325
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250	300	300	300	200	0	125	0	1	0	200	0
Storage Lanes	1	1	1	1	1	1	1	1	0	1	1	1
Taper Length (ft)	100	100	100	100	100	100	100	100	100	100	100	100
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.959		
Satd. Flow (prot)	1752	3505	1568	1752	3505	1568	1752	1845	1568	0	1769	1568
Flt Permitted	0.950			0.950			0.950			0.959		
Satd. Flow (perm)	1752	3505	1568	1752	3505	1568	1752	1845	1568	0	1769	1568
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			196			82			109			225
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		2866			884			391			2806	
Travel Time (s)		43.4			13.4			5.9			42.5	
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
Adj. Flow (vph)	380	1495	326	136	1304	190	299	27	109	163	27	353
Shared Lane Traffic (%)												
Lane Group Flow (vph)	380	1495	326	136	1304	190	299	27	109	0	190	353
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		50			50			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	15	9	15	15	9	15	9	15	9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1

Mooretown Road Extension Traffic Analysis 7: Williamsburg Pottery Rd & Lightfoot Rd
2040 Build PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	125	500	300	350	875	325	100	50	400	250	75	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250	125	400	100	400	100	400	100	200	400	100	0
Storage Lanes	1	1	1	1	1	1	1	1	1	1	0	0
Taper Length (ft)	100	100	100	100	100	100	100	100	100	100	100	100
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.906	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1752	1845	1568	1752	1671	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1752	1845	1568	1752	1671	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			326			343			80		99	
Link Speed (mph)		30			45			45			45	
Link Distance (ft)		636			405			633			1283	
Travel Time (s)		14.5			6.1			9.6			19.4	
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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	136	543	326	380	951	353	109	54	435	272	82	136
Shared Lane Traffic (%)												
Lane Group Flow (vph)	136	543	326	380	951	353	109	54	435	272	82	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Left	Left	Right	Right
Median Width(ft)	16			16			12			12		
Link Offset(ft)	0			0			0			0		
Crosswalk Width(ft)	16			16			16			16		
Two way Left Turn Lane							Yes					
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	15	9	15	15	9	15	15	9	15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	100
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	6	20	6	20	6	20	6	20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94			94			94		
Detector 2 Size(ft)	6			6			6			6		
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel	0.0			0.0			0.0			0.0		
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		
Protected Phases	7	4	1	3	8	5	1	6	3	5	2	
Permitted Phases			4			8			6			

Mooretown Road Extension Traffic Analysis 7: Williamsburg Pottery Rd & Lightfoot Rd
2040 Build PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	1	3	8	5	1	6	3	5	2	
Switch Phase												
Minimum Initial (s)	4.0	7.0	5.0	4.0	4.0	5.0	10.0	4.0	5.0	10.0	4.0	5.0
Minimum Split (s)	10.0	11.5	11.5	10.0	22.0	12.0	11.5	16.0	10.0	12.0	16.0	
Total Split (s)	13.0	18.0	13.5	24.0	29.0	20.0	13.5	18.0	24.0	20.0	24.5	0.0
Total Split (%)	16.3%	22.5%	16.9%	30.0%	36.3%	25.0%	16.9%	22.5%	30.0%	25.0%	30.6%	0.0%
Maximum Green (s)	7.0	13.5	7.0	18.0	23.0	13.0	7.0	12.0	18.0	13.0	18.5	
Yellow Time (s)	4.0	3.0	4.0	4.0	4.0	4.0	4.0	5.0	4.0	4.0	5.0	
All-Red Time (s)	2.0	1.5	2.5	2.0	2.0	3.0	2.5	1.0	2.0	3.0	1.0	
Last Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	3.5	5.5	5.0	5.0	6.0	5.5	5.0	6.0	5.0	6.0	5.0
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0	3.0	2.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	Min
Walk Time (s)												5.0
Flash Dont Walk (s)												11.0
Pedestrian Calls (#/hr)												0
Act Effect Green (s)	8.0	14.4	24.5	18.8	23.7	42.6	12.1	11.1	29.8	13.9	13.4	
Actuated g/C Ratio	0.10	0.19	0.32	0.24	0.31	0.55	0.16	0.14	0.38	0.18	0.17	
v/c Ratio	0.74	0.83	0.45	0.89	0.88	0.34	0.40	0.21	0.67	0.87	0.59	
Control Delay	60.4	42.9	3.6	53.7	37.0	2.2	36.9	32.0	14.1	59.6	22.6	
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	60.4	42.9	3.6	53.7	37.0	2.2	36.9	32.0	14.1	59.6	22.6	
LOS	E	D	A	D	D	A	D	C	B	E	C	
Approach Delay	32.5						33.5			19.9		
Approach LOS	C						C			B		



HCS 2010: Multilane Highways Release 6.65

Phone: _____ Fax: _____
E-mail: _____

OPERATIONAL ANALYSIS

Analyst: SS
Agency/Co: VHB
Date: 3/24/2014
Analysis Period: AM Peak
Highway: Mooretown Road
From/To: Lightfoot Road and VA 199
Jurisdiction: Williamsburg, VA
Analysis Year: 2040 - Build
Project ID: Mooretown Road Corridor Study

FREE-FLOW SPEED

	Direction 1		Direction 2	
	12.0	ft	12.0	ft
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	8		10	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FPS or BFFS	52.0	mph	52.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	2.0	mph	2.5	mph
Free-flow speed	50.0	mph	49.5	mph

VOLUME

	Direction 1		Direction 2	
	1300	vph	800	vph
Volume, V	1300	vph	800	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	353		217	
Trucks and buses	2	%	2	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fp	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fhv	0.990		0.990	
Flow rate, vp	713	pcphpl	439	pcphpl

RESULTS

	Direction		Bicycle Level of Service	
	1	2	1	2
Flow rate, vp	713	439	pcphpl	pcphpl
Free-flow speed, FFS	50.0	49.5	mph	mph
Avg. passenger-car travel speed, S	50.0	50.0	mph	mph
Level of service, LOS	B	A		
Density, D	14.3	8.8	pc/mi/ln	pc/mi/ln

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	706.5
Effective width of outside lane, We	24.00
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	2.58
Bicycle LOS	C

Overall results are not computed when free-flow speed is less than 45 mph.

	Direction	1	2	
Flow rate, vp		631	850	pcphpl
Free-flow speed, FFS		50.0	49.5	mph
Avg. passenger-car travel speed, S		50.0	50.0	mph
Level of service, LOS		B	B	
Density, D		12.6	17.0	pc/mi/ln

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: SS
Agency/Co: VHB
Date: 3/24/2014
Analysis Period: PM Peak
Highway: Mooretown Road
From/To: Lightfoot Road and VA 199
Jurisdiction: Williamsburg, VA
Analysis Year: 2040 - Build
Project ID: Mooretown Road Corridor Study

FREE-FLOW SPEED

	Direction	1	2	
Lane width		12.0	12.0	ft
Lateral clearance:				
Right edge		6.0	6.0	ft
Left edge		6.0	6.0	ft
Total lateral clearance		12.0	12.0	ft
Access points per mile		8	10	
Median type		Divided	Divided	
Free-flow speed:		Base	Base	
FFS or BFFS		52.0	52.0	mph
Lane width adjustment, FLW		0.0	0.0	mph
Lateral clearance adjustment, FLC		0.0	0.0	mph
Median type adjustment, FM		0.0	0.0	mph
Access points adjustment, FA		2.0	2.5	mph
Free-flow speed		50.0	49.5	mph

VOLUME

	Direction	1	2	
Volume, V		1150	1550	vph
Peak-hour factor, PHF		0.92	0.92	
Peak 15-minute volume, v15		312	421	
Trucks and buses		2	2	%
Recreational vehicles		0	0	%
Terrain type		Level	Level	
Grade		0.00	0.00	%
Segment length		0.00	0.00	mi
Number of lanes		2	2	
Driver population adjustment, fp		1.00	1.00	
Trucks and buses PCE, ET		1.5	1.5	
Recreational vehicles PCE, ER		1.2	1.2	
Heavy vehicle adjustment, fhv		0.990	0.990	
Flow rate, vp		631	850	pcphpl

RESULTS

Bicycle Level of Service

Posted speed limit, Sp		45
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	625.0	842.4
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	4.42	4.42
Bicycle LOS Score, BLOS	2.51	2.66
Bicycle LOS	C	C

Overall results are not computed when free-flow speed is less than 45 mph.

	Direction	1	2	
Flow rate, vp		772	703	pcphpl
Free-flow speed, FFS		48.3	49.5	mph
Avg. passenger-car travel speed, S		50.0	50.0	mph
Level of service, LOS		B	B	
Density, D		15.4	14.1	pc/mi/ln

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: SS
Agency/Co: VHB
Date: 3/24/2014
Analysis Period: AM Peak
Highway: Richmond Road
From/To: Lightfoot Rd and Croaker Rd
Jurisdiction: Williamsburg, VA
Analysis Year: 2040 - Build
Project ID: Mooretown Road Corridor Study

FREE-FLOW SPEED

	Direction	1	2	
Lane width		12.0	12.0	ft
Lateral clearance:				
Right edge		6.0	6.0	ft
Left edge		6.0	6.0	ft
Total lateral clearance		12.0	12.0	ft
Access points per mile		15	10	
Median type		Divided	Divided	
Free-flow speed:		Base	Base	
FFS or BFFS		52.0	52.0	mph
Lane width adjustment, FLW		0.0	0.0	mph
Lateral clearance adjustment, FLC		0.0	0.0	mph
Median type adjustment, FM		0.0	0.0	mph
Access points adjustment, FA		3.8	2.5	mph
Free-flow speed		48.3	49.5	mph

VOLUME

	Direction	1	2	
Volume, V		1400	1275	vph
Peak-hour factor, PHF		0.92	0.92	
Peak 15-minute volume, v15		380	346	
Trucks and buses		3	3	%
Recreational vehicles		0	0	%
Terrain type		Level	Level	
Grade		0.00	0.00	%
Segment length		0.00	0.00	mi
Number of lanes		2	2	
Driver population adjustment, fp		1.00	1.00	
Trucks and buses PCE, ET		1.5	1.5	
Recreational vehicles PCE, ER		1.2	1.2	
Heavy vehicle adjustment, fhv		0.985	0.985	
Flow rate, vp		772	703	pcphpl

RESULTS

Bicycle Level of Service

Posted speed limit, Sp		45
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	760.9	692.9
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	4.42	4.42
Bicycle LOS Score, BLOS	2.84	2.80
Bicycle LOS	C	C

Overall results are not computed when free-flow speed is less than 45 mph.

	Direction	1	2	
Flow rate, vp		1048	1172	pcphpl
Free-flow speed, FFS		48.3	49.5	mph
Avg. passenger-car travel speed, S		50.0	50.0	mph
Level of service, LOS		C	C	
Density, D		21.0	23.4	pc/mi/ln

Phone: Fax:
E-mail:

Bicycle Level of Service

Posted speed limit, Sp		45
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	1032.6	1154.9
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	4.42	4.42
Bicycle LOS Score, BLOS	3.00	3.06
Bicycle LOS	C	C

Overall results are not computed when free-flow speed is less than 45 mph.

OPERATIONAL ANALYSIS

Analyst: SS
Agency/Co: VHB
Date: 3/24/2014
Analysis Period: PM Peak
Highway: Richmond Road
From/To: Lightfoot Rd and Croaker Rd
Jurisdiction: Williamsburg, VA
Analysis Year: 2040 - Build
Project ID: Mooretown Road Corridor Study

FREE-FLOW SPEED

	Direction	1	2	
Lane width		12.0	12.0	ft
Lateral clearance:				
Right edge		6.0	6.0	ft
Left edge		6.0	6.0	ft
Total lateral clearance		12.0	12.0	ft
Access points per mile		15	10	
Median type		Divided	Divided	
Free-flow speed:		Base	Base	
FFS or BFFS		52.0	52.0	mph
Lane width adjustment, FLW		0.0	0.0	mph
Lateral clearance adjustment, FLC		0.0	0.0	mph
Median type adjustment, FM		0.0	0.0	mph
Access points adjustment, FA		3.8	2.5	mph
Free-flow speed		48.3	49.5	mph

VOLUME

	Direction	1	2	
Volume, V		1900	2125	vph
Peak-hour factor, PHF		0.92	0.92	
Peak 15-minute volume, v15		516	577	
Trucks and buses		3	3	%
Recreational vehicles		0	0	%
Terrain type		Level	Level	
Grade		0.00	0.00	%
Segment length		0.00	0.00	mi
Number of lanes		2	2	
Driver population adjustment, fp		1.00	1.00	
Trucks and buses PCE, ET		1.5	1.5	
Recreational vehicles PCE, ER		1.2	1.2	
Heavy vehicle adjustment, fhv		0.985	0.985	
Flow rate, vp		1048	1172	pcphpl

RESULTS

	Direction	1	2	
Flow rate, vp		441	399	pcphpl
Free-flow speed, FFS		58.3	59.5	mph
Avg. passenger-car travel speed, S		60.0	60.0	mph
Level of service, LOS		A	A	
Density, D		7.3	6.7	pc/mi/ln

Phone: Fax:
E-mail:

Bicycle Level of Service

Posted speed limit, Sp		45
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	434.8	394.0
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	4.42	4.42
Bicycle LOS Score, BLOS	2.56	2.51
Bicycle LOS	C	C

Overall results are not computed when free-flow speed is less than 45 mph.

OPERATIONAL ANALYSIS

Analyst: SS
Agency/Co: VHB
Date: 3/24/2014
Analysis Period: AM Peak
Highway: Croaker Road
From/To: North of Richmond Road
Jurisdiction: Williamsburg, VA
Analysis Year: 2040 - Build
Project ID: Mooretown Road Corridor Study

FREE-FLOW SPEED

	Direction	1	2	
Lane width		12.0	12.0	ft
Lateral clearance:				
Right edge		6.0	6.0	ft
Left edge		6.0	6.0	ft
Total lateral clearance		12.0	12.0	ft
Access points per mile		15	10	
Median type		Divided	Divided	
Free-flow speed:		Base	Base	
FFS or BFFS		62.0	62.0	mph
Lane width adjustment, FLW		0.0	0.0	mph
Lateral clearance adjustment, FLC		0.0	0.0	mph
Median type adjustment, FM		0.0	0.0	mph
Access points adjustment, FA		3.8	2.5	mph
Free-flow speed		58.3	59.5	mph

VOLUME

	Direction	1	2	
Volume, V		800	725	vph
Peak-hour factor, PHF		0.92	0.92	
Peak 15-minute volume, v15		217	197	
Trucks and buses		3	3	%
Recreational vehicles		0	0	%
Terrain type		Level	Level	
Grade		0.00	0.00	%
Segment length		0.00	0.00	mi
Number of lanes		2	2	
Driver population adjustment, fp		1.00	1.00	
Trucks and buses PCE, ET		1.5	1.5	
Recreational vehicles PCE, ER		1.2	1.2	
Heavy vehicle adjustment, fhv		0.985	0.985	
Flow rate, vp		441	399	pcphpl

RESULTS

	Direction	1	2	
Flow rate, vp		537	pcphpl	537
Free-flow speed, FFS		58.3	mph	59.5
Avg. passenger-car travel speed, S		60.0	mph	60.0
Level of service, LOS		A		A
Density, D		8.9	pc/mi/ln	8.9

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: SS
Agency/Co: VHB
Date: 3/24/2014
Analysis Period: PM Peak
Highway: Croaker Road
From/To: North of Richmond Road
Jurisdiction: Williamsburg, VA
Analysis Year: 2040 - Build
Project ID: Mooretown Road Corridor Study

FREE-FLOW SPEED

	Direction	1	2	
Lane width		12.0	ft	12.0
Lateral clearance:				
Right edge		6.0	ft	6.0
Left edge		6.0	ft	6.0
Total lateral clearance		12.0	ft	12.0
Access points per mile		15		10
Median type		Divided		Divided
Free-flow speed:		Base		Base
FFS or BFFS		62.0	mph	62.0
Lane width adjustment, FLW		0.0	mph	0.0
Lateral clearance adjustment, FLC		0.0	mph	0.0
Median type adjustment, FM		0.0	mph	0.0
Access points adjustment, FA		3.8	mph	2.5
Free-flow speed		58.3	mph	59.5

VOLUME

	Direction	1	2	
Volume, V		975	vph	975
Peak-hour factor, PHF		0.92		0.92
Peak 15-minute volume, v15		265		265
Trucks and buses		3	%	3
Recreational vehicles		0	%	0
Terrain type		Level		Level
Grade		0.00	%	0.00
Segment length		0.00	mi	0.00
Number of lanes		2		2
Driver population adjustment, fp		1.00		1.00
Trucks and buses PCE, ET		1.5		1.5
Recreational vehicles PCE, ER		1.2		1.2
Heavy vehicle adjustment, fhv		0.985		0.985
Flow rate, vp		537	pcphpl	537

RESULTS

Bicycle Level of Service

Posted speed limit, Sp				45
Percent of segment with occupied on-highway parking		0		0
Pavement rating, P		3		3
Flow rate in outside lane, vOL		529.9		529.9
Effective width of outside lane, We		24.00		24.00
Effective speed factor, St		4.42		4.42
Bicycle LOS Score, BLOS		2.66		2.66
Bicycle LOS		C		C

Overall results are not computed when free-flow speed is less than 45 mph.

	Direction	1	2	
Flow rate, vp		648	pcphpl	524
Free-flow speed, FFS		58.3	mph	59.5
Avg. passenger-car travel speed, S		60.0	mph	60.0
Level of service, LOS		A		A
Density, D		10.8	pc/mi/ln	8.7

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: SS
Agency/Co: VHB
Date: 3/24/2014
Analysis Period: AM Peak
Highway: Croaker Road
From/To: Rochambeau Rd and I-64 EB Ramp
Jurisdiction: Williamsburg, VA
Analysis Year: 2040 - Build
Project ID: Mooretown Road Corridor Study

FREE-FLOW SPEED

	Direction	1	2	
Lane width		12.0	ft	12.0
Lateral clearance:				
Right edge		6.0	ft	6.0
Left edge		6.0	ft	6.0
Total lateral clearance		12.0	ft	12.0
Access points per mile		15		10
Median type		Divided		Divided
Free-flow speed:		Base		Base
FFS or BFFS		62.0	mph	62.0
Lane width adjustment, FLW		0.0	mph	0.0
Lateral clearance adjustment, FLC		0.0	mph	0.0
Median type adjustment, FM		0.0	mph	0.0
Access points adjustment, FA		3.8	mph	2.5
Free-flow speed		58.3	mph	59.5

VOLUME

	Direction	1	2	
Volume, V		1175	vph	950
Peak-hour factor, PHF		0.92		0.92
Peak 15-minute volume, v15		319		258
Trucks and buses		3	%	3
Recreational vehicles		0	%	0
Terrain type		Level		Level
Grade		0.00	%	0.00
Segment length		0.00	mi	0.00
Number of lanes		2		2
Driver population adjustment, fp		1.00		1.00
Trucks and buses PCE, ET		1.5		1.5
Recreational vehicles PCE, ER		1.2		1.2
Heavy vehicle adjustment, fhv		0.985		0.985
Flow rate, vp		648	pcphpl	524

RESULTS

Bicycle Level of Service

Posted speed limit, Sp				45
Percent of segment with occupied on-highway parking		0		0
Pavement rating, P		3		3
Flow rate in outside lane, vOL		638.6		516.3
Effective width of outside lane, We		24.00		24.00
Effective speed factor, St		4.42		4.42
Bicycle LOS Score, BLOS		2.76		2.65
Bicycle LOS		C		C

Overall results are not computed when free-flow speed is less than 45 mph.

	Direction	1	2	
Flow rate, vp		510	pcphpl 620	pcphpl
Free-flow speed, FFS		58.3	mph 59.5	mph
Avg. passenger-car travel speed, S		60.0	mph 60.0	mph
Level of service, LOS		A	A	
Density, D		8.5	pc/mi/ln 10.3	pc/mi/ln

Phone: Fax:
E-mail:

Bicycle Level of Service

Posted speed limit, Sp		45
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	502.7	611.4
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	4.42	4.42
Bicycle LOS Score, BLOS	2.63	2.73
Bicycle LOS	C	C

Overall results are not computed when free-flow speed is less than 45 mph.

OPERATIONAL ANALYSIS

Analyst: SS
Agency/Co: VHB
Date: 3/24/2014
Analysis Period: PM Peak
Highway: Croaker Road
From/To: Rochambeau Rd and I-64 EB Ramp
Jurisdiction: Williamsburg, VA
Analysis Year: 2040 - Build
Project ID: Mooretown Road Corridor Study

FREE-FLOW SPEED

	Direction	1	2	
Lane width		12.0	ft 12.0	ft
Lateral clearance:				
Right edge		6.0	ft 6.0	ft
Left edge		6.0	ft 6.0	ft
Total lateral clearance		12.0	ft 12.0	ft
Access points per mile		15	10	
Median type		Divided	Divided	
Free-flow speed:		Base	Base	
FFS or BFFS		62.0	mph 62.0	mph
Lane width adjustment, FLW		0.0	mph 0.0	mph
Lateral clearance adjustment, FLC		0.0	mph 0.0	mph
Median type adjustment, FM		0.0	mph 0.0	mph
Access points adjustment, FA		3.8	mph 2.5	mph
Free-flow speed		58.3	mph 59.5	mph

VOLUME

	Direction	1	2	
Volume, V		925	vph 1125	vph
Peak-hour factor, PHF		0.92	0.92	
Peak 15-minute volume, v15		251	306	
Trucks and buses		3	% 3	%
Recreational vehicles		0	% 0	%
Terrain type		Level	Level	
Grade		0.00	% 0.00	%
Segment length		0.00	mi 0.00	mi
Number of lanes		2	2	
Driver population adjustment, fp		1.00	1.00	
Trucks and buses PCE, ET		1.5	1.5	
Recreational vehicles PCE, ER		1.2	1.2	
Heavy vehicle adjustment, fhv		0.985	0.985	
Flow rate, vp		510	pcphpl 620	pcphpl

RESULTS

	Direction	1	2	
Flow rate, vp		631	pcphpl 452	pcphpl
Free-flow speed, FFS		50.0	mph 49.5	mph
Avg. passenger-car travel speed, S		50.0	mph 50.0	mph
Level of service, LOS		B	A	
Density, D		12.6	pc/mi/ln 9.0	pc/mi/ln

Phone: Fax:
E-mail:

Bicycle Level of Service

Posted speed limit, Sp		45
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	625.0	448.4
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	4.42	4.42
Bicycle LOS Score, BLOS	2.51	2.34
Bicycle LOS	C	B

Overall results are not computed when free-flow speed is less than 45 mph.

OPERATIONAL ANALYSIS

Analyst: SS
Agency/Co: VHB
Date: 3/24/2014
Analysis Period: AM Peak
Highway: Mooretown Rd Extension (west)
From/To: East of Croaker Road
Jurisdiction: Williamsburg, VA
Analysis Year: 2040 - Build
Project ID: Mooretown Road Corridor Study

FREE-FLOW SPEED

	Direction	1	2	
Lane width		12.0	ft 12.0	ft
Lateral clearance:				
Right edge		6.0	ft 6.0	ft
Left edge		6.0	ft 6.0	ft
Total lateral clearance		12.0	ft 12.0	ft
Access points per mile		8	10	
Median type		Divided	Divided	
Free-flow speed:		Base	Base	
FFS or BFFS		52.0	mph 52.0	mph
Lane width adjustment, FLW		0.0	mph 0.0	mph
Lateral clearance adjustment, FLC		0.0	mph 0.0	mph
Median type adjustment, FM		0.0	mph 0.0	mph
Access points adjustment, FA		2.0	mph 2.5	mph
Free-flow speed		50.0	mph 49.5	mph

VOLUME

	Direction	1	2	
Volume, V		1150	vph 825	vph
Peak-hour factor, PHF		0.92	0.92	
Peak 15-minute volume, v15		312	224	
Trucks and buses		2	% 2	%
Recreational vehicles		0	% 0	%
Terrain type		Level	Level	
Grade		0.00	% 0.00	%
Segment length		0.00	mi 0.00	mi
Number of lanes		2	2	
Driver population adjustment, fp		1.00	1.00	
Trucks and buses PCE, ET		1.5	1.5	
Recreational vehicles PCE, ER		1.2	1.2	
Heavy vehicle adjustment, fhv		0.990	0.990	
Flow rate, vp		631	pcphpl 452	pcphpl

RESULTS

	Direction	1	2	
Flow rate, vp		795	919	pcphpl
Free-flow speed, FFS		50.0	49.5	mph
Avg. passenger-car travel speed, S		50.0	50.0	mph
Level of service, LOS		B	C	
Density, D		15.9	18.4	pc/mi/ln

Phone: _____ Fax: _____
 E-mail: _____

Bicycle Level of Service			
Posted speed limit, Sp			45
Percent of segment with occupied on-highway parking	0		0
Pavement rating, P	3		3
Flow rate in outside lane, vOL	788.0		910.3
Effective width of outside lane, We	24.00		24.00
Effective speed factor, St	4.42		4.42
Bicycle LOS Score, BLOS	2.63		2.70
Bicycle LOS	C		C

Overall results are not computed when free-flow speed is less than 45 mph.

OPERATIONAL ANALYSIS

Analyst: SS
 Agency/Co: VHB
 Date: 3/24/2014
 Analysis Period: PM Peak
 Highway: Mooretown Rd Extension (west)
 From/To: East of Croaker Road
 Jurisdiction: Williamsburg, VA
 Analysis Year: 2040 - Build
 Project ID: Mooretown Road Corridor Study

FREE-FLOW SPEED

Direction	1	2		
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	8		10	
Median type	Divided		Divided	
Free-flow speed:				
Base	52.0	mph	52.0	mph
FFS or BFFS	52.0	mph	52.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	2.0	mph	2.5	mph
Free-flow speed	50.0	mph	49.5	mph

VOLUME

Direction	1	2		
Volume, V	1450	vph	1675	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	394		455	
Trucks and buses	2	%	2	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.990		0.990	
Flow rate, vp	795	pcphpl	919	pcphpl

RESULTS

Phone: _____ Fax: _____
 E-Mail: _____

Directional Two-Lane Highway Segment Analysis

Analyst: SS
 Agency/Co: VHB
 Date Performed: 3/24/2014
 Analysis Time Period: AM Peak
 Highway: Lightfoot Road (VA 646)
 From/To: Richmond Rd to Mooretown Rd
 Jurisdiction: Williamsburg, VA
 Analysis Year: 2040 - Build
 Description: Mooretown Road Corridor Study

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.92
Shoulder width	2.0	ft	% Trucks and buses	1
Lane width	11.5	ft	% Trucks crawling	0.0
Segment length	0.7	mi	Truck crawl speed	0.0
Terrain type	Level		% Recreational vehicles	0
Grade:			% No-passing zones	100
Length	-	mi	Access point density	11
Up/down	-	%		/mi

Analysis direction volume, Vd 400 veh/h
 Opposing direction volume, Vo 350 veh/h

Average Travel Speed

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.3	1.3
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adj. factor,(note-5) fHV	0.997	0.997
Grade adj. factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	436	382

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S _{FM}	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	55.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	3.0	mi/h
Adj. for access point density,(note-3) fA	2.8	mi/h
Free-flow speed, FFSd	49.3	mi/h
Adjustment for no-passing zones, fnp	2.8	mi/h
Average travel speed, ATSD	40.1	mi/h
Percent Free Flow Speed, PFFS	81.4	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	1.1
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	1.000	0.999
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	435	381
Base percent time-spent-following,(note-4) BPTSfd	44.6	%
Adjustment for no-passing zones, fnp	44.4	
Percent time-spent-following, PTSFd	68.3	%

Level of Service and Other Performance Measures

Level of service, LOS	C
Volume to capacity ratio, v/c	0.26
Peak 15-min vehicle-miles of travel, VMT15	76
Peak-hour vehicle-miles of travel, VMT60	280
Peak 15-min total travel time, TT15	1.9
Capacity from ATS, CdATS	0
Capacity from PTSF, CdPTSF	1698
Directional Capacity	1698

Passing Lane Analysis

Total length of analysis segment, Lt	0.7	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSD (from above)	40.1	mi/h
Percent time-spent-following, PTSFd (from above)	68.3	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSp1	-	
Percent free flow speed including passing lane, PFFSp1	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFp1	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSp1	A
Peak 15-min total travel time, TT15	-

Bicycle Level of Service

Posted speed limit, Sp 45
 Percent of segment with occupied on-highway parking 0
 Pavement rating, P 3
 Flow rate in outside lane, vOL 434.8
 Effective width of outside lane, We 13.50
 Effective speed factor, St 4.42
 Bicycle LOS Score, BLOS 4.09
 Bicycle LOS D

Phone: Fax:
 E-Mail:

Notes:

- Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
- If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
- For the analysis direction only and for v>200 veh/h.
- For the analysis direction only.
- Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Directional Two-Lane Highway Segment Analysis

Analyst SS
 Agency/Co. VHB
 Date Performed 3/24/2014
 Analysis Time Period PM Peak
 Highway Lightfoot Road (VA 646)
 From/To Richmond Rd to Mooretown Rd
 Jurisdiction Williamsburg, VA
 Analysis Year 2040 - Build
 Description Mooretown Road Corridor Study

Input Data

Highway class	Class 2	Peak hour factor, PHF	0.92
Shoulder width	2.0 ft	% Trucks and buses	1 %
Lane width	11.5 ft	% Trucks crawling	0.0 %
Segment length	0.7 mi	Truck crawl speed	0.0 mi/hr
Terrain type	Level	% Recreational vehicles	0 %
Grade: Length	- mi	% No-passing zones	100 %
Up/down	- %	Access point density	11 /mi

Analysis direction volume, Vd 550 veh/h
 Opposing direction volume, Vo 500 veh/h

Average Travel Speed

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.1	1.2
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adj. factor,(note-5) fHV	0.999	0.998
Grade adj. factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	598 pc/h	545 pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	55.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	3.0	mi/h
Adj. for access point density,(note-3) fA	2.8	mi/h
Free-flow speed, FFSd	49.3	mi/h
Adjustment for no-passing zones, fnp	2.1	mi/h
Average travel speed, ATSD	38.3	mi/h
Percent Free Flow Speed, PFFS	77.7	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	1.0
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	1.000	1.000
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	598 pc/h	543 pc/h
Base percent time-spent-following,(note-4) BPTSFD	57.7 %	
Adjustment for no-passing zones, fnp	35.6	
Percent time-spent-following, PTSFD	76.4 %	

Level of Service and Other Performance Measures

Level of service, LOS	D
Volume to capacity ratio, v/c	0.35
Peak 15-min vehicle-miles of travel, VMT15	105 veh-mi
Peak-hour vehicle-miles of travel, VMT60	385 veh-mi
Peak 15-min total travel time, TT15	2.7 veh-h
Capacity from ATS, CdATS	0 veh/h
Capacity from PTSF, CdPTSF	1700 veh/h
Directional Capacity	1700 veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.7	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSD (from above)	38.3	mi/h
Percent time-spent-following, PTSFD (from above)	76.4	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSp1	-	
Percent free flow speed including passing lane, PFFSp1	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp 45
 Percent of segment with occupied on-highway parking 0
 Pavement rating, P 3
 Flow rate in outside lane, vOL 597.8
 Effective width of outside lane, We 13.50
 Effective speed factor, St 4.42
 Bicycle LOS Score, BLOS 4.25
 Bicycle LOS D

Notes:

- Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
- If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
- For the analysis direction only and for v>200 veh/h.
- For the analysis direction only.
- Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Mooretown Road Extension Traffic Analysis 1: I-64 WB Ramps & Croaker Rd
2040 Build AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	450	0	0	75	0	225	325	0	350	225
Sign Control			Yield			Stop		Free			Free	
Grade			-1%			-1%		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)	0	0	489	0	0	82	0	245	353	0	380	245
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type										Raised		Raised
Median storage (veh)										1		1
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	584	625	190	435	625	122	380			245		
vC1, stage 1 conf vol	380	380		245	245							
vC2, stage 2 conf vol	204	245		190	380							
vCu, unblocked vol	584	625	190	435	625	122	380			245		
IC, single (s)	7.6	6.6	7.0	7.6	6.6	7.0	4.2			4.2		
IC, 2 stage (s)	6.6	5.6		6.6	5.6							
IF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	40	100	100	91	100			100		
cM capacity (veh/h)	460	477	816	270	477	903	1167			1311		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3				
Volume Total	489	82	122	122	353	190	190	245				
Volume Left	0	0	0	0	0	0	0	0				
Volume Right	489	82	0	0	353	0	0	245				
cSH	816	903	1700	1700	1700	1700	1700	1700				
Volume to Capacity	0.60	0.09	0.07	0.07	0.21	0.11	0.11	0.14				
Queue Length 95th (ft)	102	7	0	0	0	0	0	0				
Control Delay (s)	15.8	9.4	0.0	0.0	0.0	0.0	0.0	0.0				
Lane LOS	C	A										
Approach Delay (s)	15.8	9.4	0.0			0.0						
Approach LOS	C	A										
Intersection Summary												
Average Delay			4.7									
Intersection Capacity Utilization			44.2%		ICU Level of Service				A			
Analysis Period (min)			15									

Mooretown Road Extension Traffic Analysis 2: I-64 EB Ramps & Croaker Rd
2040 Build AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	300	0	0	125	0	425	750	0	650	150
Sign Control			Stop			Yield		Free			Free	
Grade			-1%			-1%		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)	0	0	326	0	0	136	0	462	815	0	707	163
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type										Raised		Raised
Median storage (veh)										1		1
Upstream signal (ft)										689		
pX, platoon unblocked												
vC, conflicting volume	938	1168	353	815	1168	231	707					462
vC1, stage 1 conf vol	707	707		462	462							
vC2, stage 2 conf vol	231	462		353	707							
vCu, unblocked vol	938	1168	353	815	1168	231	707					462
IC, single (s)	7.6	6.6	7.0	7.6	6.6	7.0	4.2					4.2
IC, 2 stage (s)	6.6	5.6		6.6	5.6							
IF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2					2.2
p0 queue free %	100	100	49	100	100	82	100			100		100
cM capacity (veh/h)	294	308	640	234	308	768	881					1088
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3				
Volume Total	326	136	231	231	815	353	353	163				
Volume Left	0	0	0	0	0	0	0	0				
Volume Right	326	136	0	0	815	0	0	163				
cSH	640	768	1700	1700	1700	1700	1700	1700				
Volume to Capacity	0.51	0.18	0.14	0.14	0.48	0.21	0.21	0.10				
Queue Length 95th (ft)	73	16	0	0	0	0	0	0				
Control Delay (s)	16.3	10.7	0.0	0.0	0.0	0.0	0.0	0.0				
Lane LOS	C	B										
Approach Delay (s)	16.3	10.7	0.0			0.0						
Approach LOS	C	B										
Intersection Summary												
Average Delay			2.6									
Intersection Capacity Utilization			49.8%		ICU Level of Service				A			
Analysis Period (min)			15									

Mooretown Road Extension Traffic Analysis 8: Mooretown Rd & Rt. 199 SB Ramps
2040 Build AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1225	75	0	525	200	0	0	275	0	0	275
Sign Control		Free			Free			Yield		Yield		
Grade		0%			0%			-1%		-1%		
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)	0	1332	82	0	571	217	0	0	299	0	0	299
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		405										
pX, platoon unblocked				0.79		0.79	0.79	0.79	0.79	0.79		
vC, conflicting volume	571			1332		1617	1902	666	1236	1902		285
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	571			901		1260	1619	63	781	1619		285
IC, single (s)	4.1			4.1		7.6	6.6	7.0	7.6	6.6		7.0
IC, 2 stage (s)												
IF (s)	2.2			2.2		3.5	4.0	3.3	3.5	4.0		3.3
p0 queue free %	100			100		100	100	62	100	100		58
cM capacity (veh/h)	998			596		58	81	783	139	81		709
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	666	666	82	285	285	217	299	299				
Volume Left	0	0	0	0	0	0	0	0				
Volume Right	666	666	82	285	285	217	299	299				
cSH	1700	1700	1700	1700	1700	1700	783	709				
Volume to Capacity	0.39	0.39	0.05	0.17	0.17	0.13	0.38	0.42				
Queue Length 95th (ft)	0	0	0	0	0	0	45	53				
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	12.4	13.7				
Lane LOS							B	B				
Approach Delay (s)	0.0			0.0			12.4	13.7				
Approach LOS							B	B				
Intersection Summary												
Average Delay			2.8									
Intersection Capacity Utilization			57.6%		ICU Level of Service				B			
Analysis Period (min)			15									

Mooretown Road Extension Traffic Analysis 9: Mooretown Rd & Rt. 199 NB Ramps
2040 Build AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1200										

Mooretown Road Extension Traffic Analysis 1: I-64 WB Ramps & Croaker Rd
2040 Build PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↖		↖	↖		↖	↖		↖	↖
Volume (veh/h)	0	0	625	0	0	175	0	325	250	0	250	250
Sign Control			Yield		Stop			Free			Free	
Grade			-1%		-1%			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)	0	0	679	0	0	190	0	353	272	0	272	272
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								Raised			Raised	
Median storage (veh)								1			1	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	639	625	136	489	625	177	272			353		
vC1, stage 1 conf vol	272	272		353	353							
vC2, stage 2 conf vol	367	353		136	272							
vCu, unblocked vol	639	625	136	489	625	177	272			353		
IC, single (s)	7.6	6.6	7.0	7.6	6.6	7.0	4.2			4.2		
IC, 2 stage (s)	6.6	5.6		6.6	5.6							
IF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	23	100	100	77	100			100		
cM capacity (veh/h)	379	479	885	168	479	833	1281			1195		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3				
Volume Total	679	190	177	177	272	136	136	272				
Volume Left	0	0	0	0	0	0	0	0				
Volume Right	679	190	0	0	272	0	0	272				
cSH	885	833	1700	1700	1700	1700	1700	1700				
Volume to Capacity	0.77	0.23	0.10	0.10	0.16	0.08	0.08	0.16				
Queue Length 95th (ft)	191	22	0	0	0	0	0	0				
Control Delay (s)	21.1	10.6	0.0	0.0	0.0	0.0	0.0	0.0				
Lane LOS	C	B										
Approach Delay (s)	21.1	10.6	0.0			0.0						
Approach LOS	C	B										
Intersection Summary												
Average Delay	8.0											
Intersection Capacity Utilization	52.3%			ICU Level of Service					A			
Analysis Period (min)	15											

Mooretown Road Extension Traffic Analysis 2: I-64 EB Ramps & Croaker Rd
2040 Build PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↖		↖	↖		↖	↖		↖	↖
Volume (veh/h)	0	0	325	0	0	100	0	450	475	0	800	75
Sign Control			Stop		Yield			Free			Free	
Grade			-1%		-1%			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)	0	0	353	0	0	109	0	489	516	0	870	82
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								Raised			Raised	
Median storage (veh)								1			1	
Upstream signal (ft)								689				
pX, platoon unblocked												
vC, conflicting volume	1114	1359	435	924	1359	245	870				489	
vC1, stage 1 conf vol	870	870		489	489							
vC2, stage 2 conf vol	245	489		435	870							
vCu, unblocked vol	1114	1359	435	924	1359	245	870				489	
IC, single (s)	7.6	6.6	7.0	7.6	6.6	7.0	4.2				4.2	
IC, 2 stage (s)	6.6	5.6		6.6	5.6							
IF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	100	100	38	100	100	86	100				100	
cM capacity (veh/h)	243	262	567	168	262	753	764				1063	
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3				
Volume Total	353	109	245	245	516	435	435	82				
Volume Left	0	0	0	0	0	0	0	0				
Volume Right	353	109	0	0	516	0	0	82				
cSH	567	753	1700	1700	1700	1700	1700	1700				
Volume to Capacity	0.62	0.14	0.14	0.14	0.30	0.26	0.26	0.05				
Queue Length 95th (ft)	107	13	0	0	0	0	0	0				
Control Delay (s)	21.3	10.6	0.0	0.0	0.0	0.0	0.0	0.0				
Lane LOS	C	B										
Approach Delay (s)	21.3	10.6	0.0			0.0						
Approach LOS	C	B										
Intersection Summary												
Average Delay	3.6											
Intersection Capacity Utilization	48.9%			ICU Level of Service					A			
Analysis Period (min)	15											

Mooretown Road Extension Traffic Analysis 8: Mooretown Rd & Rt. 199 SB Ramps
2040 Build PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↖		↖	↖		↖	↖		↖	↖
Volume (veh/h)	0	1325	75	0	1350	550	0	0	200	0	0	175
Sign Control		Free			Free			Yield			Yield	
Grade		0%			0%			-1%			-1%	
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)	0	1440	82	0	1467	598	0	0	217	0	0	190
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		405										
pX, platoon unblocked					0.87			0.87	0.87	0.87	0.87	
vC, conflicting volume	1467		1440			2174	2908	720	2188	2908	734	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol	1467		1200			2047	2893	369	2062	2893	734	
vCu, unblocked vol	1467		1200			2047	2893	369	2062	2893	734	
IC, single (s)	4.1		4.1			7.6	6.6	7.0	7.6	6.6	7.0	
IC, 2 stage (s)												
IF (s)	2.2		2.2			3.5	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	100		100			100	100	60	100	100	47	
cM capacity (veh/h)	456		500			13	13	542	16	13	361	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	720	720	82	734	734	598	217	190				
Volume Left	0	0	0	0	0	0	0	0				
Volume Right	720	720	82	734	734	598	217	190				
cSH	1700	1700	1700	1700	1700	1700	542	361				
Volume to Capacity	0.42	0.42	0.05	0.43	0.43	0.35	0.40	0.53				
Queue Length 95th (ft)	0	0	0	0	0	0	48	74				
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	16.0	25.6				
Lane LOS							C	D				
Approach Delay (s)	0.0			0.0			16.0	25.6				
Approach LOS							C	D				
Intersection Summary												
Average Delay	2.1											
Intersection Capacity Utilization	55.7%			ICU Level of Service					B			
Analysis Period (min)	15											

Mooretown Road Extension Traffic Analysis 9: Mooretown Rd & Rt. 199 NB Ramps
2040 Build PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↖		↖	↖		↖	↖		↖	↖
Volume (veh/h)	0	1300	125	0	1825	475	0	0	450	0	0	100
Sign Control		Free			Free			Yield			Yield	
Grade		0%			0%			-1%			-1%	
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)	0	1413	136	0	1984	516	0					

APPENDIX B

Geotechnical Considerations Memo



February 19, 2015

TO: **VHB, Inc.**
351 McLaws Circle, Suite 3
Williamsburg, Virginia 23185-6316

Attn: Ms. Deborah Lenczeski, PE

RE: Report of Preliminary Geotechnical Considerations
Mooretown Road Corridor Study
James City and York County, Virginia
G E T Project No: WM14-107G

Dear Ms. Lenczeski:

Pursuant to your request, **G E T Solutions, Inc.** is pleased to submit this letter for the purpose of providing preliminary geotechnical engineering considerations as related to earthwork, infrastructure, pavements, and storm water management design and construction within the study area. This report is for preliminary planning purposes only. An actual subsurface investigation was not permitted or performed at this time. Our geotechnical considerations are based solely on published information such as the USDA soil surveys, information available through the USGS, previous investigations completed on nearby projects, and our experience with similar soils in this region.

Project Information:

The purpose of this study was to conduct a corridor analysis for the extension of Mooretown Road in portions of James City County and York County, Virginia. The 2009 James City County (JCC) Comprehensive Plan recommends extending Mooretown Road from its current terminus in York County (at the intersection with Lightfoot Road) to Croaker Road. In the 2009 James City County Comprehensive Plan 2035 projections, the Mooretown Road extension was factored into traffic analysis models as a four-lane road with 19,122 average daily trips. The proposed Mooretown Road extension will serve multiple purposes: to alleviate traffic on Richmond Road (Route 60), while providing an alternative corridor during emergency situations, and to provide primary access for the newly created economic opportunity designated area situated between the Croaker and Lightfoot I-64 interchanges.

In 2009, Richmond Road (Route 60) between Croaker Road and Centerville Road experienced 19,000 daily trips. For the 2035 projections, this segment of Richmond Road is anticipated to have 39,110 daily trips. In the past, during storm events, these sections of Richmond Road have become flooded, and a Mooretown extension was originally proposed as an alternative route during emergency situations.

Based on information provided by our client, the proposed Mooretown Road extension will likely consist mainly of a 2 lane roadway, but with a 4 lane right-of-way for future widening. It is possible that it will be 4 lanes initially just where the extension approaches Croaker Road. The projected average daily traffic (ADT) we have been provided ranges from 18,660 to 25,500 vehicles per day along the proposed Mooretown Road extension.

Project Location and Topography:

The proposed Mooretown Road extension would start at its current terminus in York County (at the intersection with Lightfoot Road) and continue generally northwest into James City County and terminate at Croaker Road. Several alignment alternatives have been previously considered, but the Alternative #2 alignment has been selected at this time and is the focus of this study.

The Alternative #2 alignment would extend Mooretown Road from its current terminus at the intersection with Lightfoot Road in a generally northwest direction. The proposed alignment would initially coincide with the existing Williamsburg Pottery Road for roughly 750 linear feet and then continue in the same northwest direction, whereas Williamsburg Pottery Road turns more to a westerly direction. The proposed alignment would then continue south of Williamsburg Pottery Campground into undeveloped wooded land. The alignment then continues in this northwest direction through this undeveloped wooded land where it will pass over Skimino Creek north of Williamsburg Pottery Outlets. After passing over Skimino Creek the alignment will continue across agricultural fields and come in close proximity to a CSX railroad line, then parallel the railroad for some distance. As the proposed alignment approaches Peach Street the alignment gradually turns in a more northerly direction across more agricultural fields, undeveloped wooded areas, an RV park, and finally terminate at Rochambeau Road near its intersection with Croaker Road.

The terrain along this proposed alignment is highly variable. The developed portions of the alignment such as the Williamsburg Pottery parcel near its intersection with Lightfoot Road are relatively flat. Similarly, the portions of the alignment that are located along existing agricultural land are relatively flat to gently sloping. Conversely, the undeveloped wooded areas along the proposed alignment consist of moderately to severely sloping terrain that contains multiple ravines and creeks. The elevations along the proposed alignment range from about 40 feet MSL (where Skimino Creek is located) up to 120 feet MSL.

Regional Geology:

The project site is located within the Atlantic Coastal Plain physiographic province. Bedrock of the Late Mesozoic age is present at depths of greater than 2,000 ft, and is overlain by Lower and Upper Cretaceous, Tertiary, Pleistocene and recent Sediments.

Across the outer Coastal Plain, the Pliocene age Yorktown Formation of the Tertiary Period is widespread, occurring from Maryland to North Carolina. Its age is estimated as between 4.8 million and 2.8 million years and is estimated to have been deposited during three transgressive episodes. The depositional environment was shallow marine in nature, consisting of inner shelf, barrier-island, estuarine and lagoonal patterns. The Yorktown Formation is a glauconitic, fossiliferous, Silty to Clayey greenish-gray fine Sand. This material has been pre-consolidated by an increased effective overburden pressure generated due to a drop in the sea level at the end of the Tertiary Period, and by previously overlying sediments, which eroded away as the sea level subsequently lowered.

As sea levels rose during the Pleistocene Epoch of the Quaternary Period, areas within the project limits were filled and overlain by soils of the Bacons Castle Formation. This formation is generally composed of fluvial and estuarine sand, silt, clay, organic soil and peat. In localized areas, recent Holocene sediments, primarily marsh or swamp, colluvium, and alluvium overlie these formations.

Anticipated Subsurface Conditions:

Based on previous projects completed in the vicinity of this corridor and our review of published information obtained for USGS and USDA Soil Surveys the following information is provided in regards to anticipated subsurface conditions.

The topsoil layer likely ranges from 6 to 18 inches, with an average of 12 inches anticipated. Isolated areas of deeper deposits of organics should be expected within the undeveloped wooded areas, particularly within the base of the ravines. Within the agricultural areas approximately 8 to 12 inches of till material is anticipated.

Underlying the topsoil layer, the soils will consist of various soil types. Generally, it is anticipated that the initial soil layer consists of Silty SAND (SM) or Sandy SILT (ML) with varying amounts of organics within the upper 12 to 24 inches. Underlying this initial soil layer the soils will likely consist of Lean CLAY (CL) with varying amounts of Silt and Sand and Silty and Clayey SAND (SM, SC). At greater depths (>20 to 30 feet) predominately Silty and Clayey SAND (SM and SC) soils are anticipated. Deeper deposits of organic laden soils, such as Organic Soils (OH/OL) and Peat (PT) are expected to be located within the base of the larger ravines prior to encountering inorganic soils. Other soils types are likely present along the proposed alignment, but likely at a lesser degree than those described above. These soil types could consist of SAND (SP, SP-SM, SC-SM), SILT (ML, MH), and CLAY (CH).

The groundwater level is expected to be located at depths in excess of 10 feet below existing grades for the majority of the proposed alignment that is beyond the limits of the ravines. These are generally considered areas located at an elevation of 80 feet MSL or higher. However, temporary perched water conditions should be expected at shallower depths above confining layers (such as Clays and Silts) following more significant rain events and prolonged wet periods. These temporary perched water conditions would dissipate with time and can typically be managed with sump pumps. Dewatering below the actual groundwater table may likely require well pointing. Groundwater levels will likely be near or above existing grades within the base of the ravines.

CONSTRUCTION CONSIDERATIONS

Ravine Crossings – Culverts Scenario

The proposed Mooretown Road extension will traverse several ravines with moderate to severe side slopes. It is anticipated that most of these crossing will be accomplished with the installation of culverts and significant embankment fills. After reviewing the existing topography it is expected that embankment fills on the order of 20 to 40 feet will be required at these locations. It is expected that these ravines, particularly the more significant ones, will have several feet (roughly 2 to 10 feet) of organic laden soils present within their base.

Considering the magnitude of embankment fill and expected soil conditions, it is expected that settlement magnitudes will exceed tolerable amounts for culvert installation. As a result, provisions will need to be implemented during construction to account for these settlement magnitudes. Typically this can be addressed by installing the embankment fill in its entirety. Then monitor the rate and magnitude of settlement across the embankment by installing settlement plates and risers that will need to be monitored by a licensed surveyor throughout a period of time determined by the Geotechnical Engineer. This monitoring period typically ranges from 1 to 3 months, but can approach 6 months in some instances. Once this movement has stabilized, culvert installation and subsequent backfill can proceed. In some instances, a surcharge load (additional fill placed across the embankment above finish subgrade elevations) may be required to induce or speed up the anticipated settlement prior to culvert installation in order to prevent long term embankment and pavement settlement issues after the project's construction phase is completed. Areas with more significant fills will need to be evaluated on a case by case basis. Although not likely and only when extremely poor soil conditions are encountered (considered worse case scenario) the culvert(s) would need to be supported by a deep foundation system such as piles.

Unless the culverts are required to be pile supported, it is likely that the culverts will require at least 2 to 3-feet of bedding material (possibly more) of open graded stone such as VDOT No. 57 stone wrapped in geotextile fabric to provide a suitable bearing surface.

Typically, the maximum slope recommended on an unreinforced slope is a 3:1 (horizontal: vertical). Since these embankment fills will encroach into Resource Protection Areas minimizing their overall footprint can be a benefit to the developer. In order to decrease this footprint, installing a reinforced slope, such as using geogrid for instance, could potentially (pending analysis) allow for slopes as steep as a 1.5:1 (horizontal: vertical).

Ravine Crossing – Bridge Scenario

The largest ravine crossing along the proposed alignment is where the James City County and York County jurisdictional line is located. This is also the location of Skimino Creek. Due to the magnitude of this ravine, this crossing will likely require the installation of a bridge structure. Typically, the bridge structure will consist of structural steel with a concrete deck supported on concrete bents and abutments. The substructures (bents and abutments) will need to be supported by a deep foundation system. In our region, the most economical deep foundation system would consist of concrete piles. These usually will consist of square pre-cast pre-stressed concrete piles with a width of 12 to 14-inches. Similar projects in the region have required a minimum pile embedment below grades of about 70 to 90 feet. Of course pile lengths and size will be dependant on actual soil conditions and structural loading. Other alternatives of piles that could be considered are augercast piles or steel H-piles.

Pavement Considerations

Based on our review of published information and our experience in this region, it is anticipated that the pavement subgrade will likely consist mainly of Lean CLAY (CL), SILT (ML), and Silty and Clayey SAND (SM and SC). The soaked CBR values within these soils types generally range from about 6 to 18. The soaked CBR value would then be multiplied by a factor of two-thirds to determine a pavement design CBR value. The two-thirds factor provides the necessary safety margins to compensate for some non-uniformity of the soil. Therefore, it is estimated that a design CBR value on the order of 7 to 10 would be used for the design of this roadway extension. The design ADT provided by the client ranged from 18,660 to 25,500 vehicles per day. Typical minimum pavement section designs are provided in the Table 1 on the following page.

Table 1 - Typical Pavement Sections

Section	% Heavy Commercial Vehicles	Hot Mix Asphalt			Aggregate Base ¹	Subgrade ²
		Surface	Intermediate	Base		
Mooretown Extension with ADT up 18,660 vpd	5	1.5	2	6	8	Stable and Compacted
Mooretown Extension with ADT up 25,500 vpd	5	2	2	6	8	Stable and Compacted
Mooretown Extension with ADT up 18,660 vpd	10	2	2	7	8	Stable and Compacted
Mooretown Extension with ADT up 25,500 vpd	10	2	2	7.5	8	Stable and Compacted

1 - VDOT Type 21-A, compacted to a dry density of at least 100% of the Standard Proctor maximum dry density (ASTM D 698).
 2 - Compacted to a dry density of at least 95% of the Standard Proctor maximum dry density (ASTM D 698).

Some isolated areas of instabilities should be expected along the proposed roadway alignment during construction. Where excessively unstable subgrade soils are observed during proofrolling and/or fill placement, it is expected that these weak areas can be stabilized by means of thickening the aggregate base course layer by 4 to 6 inches, lining the subgrade with geotextile stabilization fabric, and/or adding 12 inches of Structural Fill subbase. Another alternative that would be effective in stabilizing unstable subgrade, particularly in fine grained cohesive soils with elevated moistures, would be the application of lime. This would greatly reduce the amount of time delays and effort required to dry out soils with elevated moisture contents over other conventional methods such as aerating, scarifying, and discing. These recommendations would need to be addressed by the Geotechnical Engineer during construction, if necessary, who will recommend the most economical approach at the time.

Storm Water Management Considerations

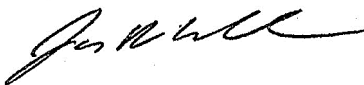
The proposed Mooretown Road extension will require the construction of storm water management (SWM) facilities. At this stage the design, type, and location of these SWM facilities have not been determined. However, we have been requested to provide potential site locations along the corridor that an infiltration type component may be feasible. In order accomplish this task the USDA Soil Survey was reviewed to determine potential locations. As indicated on the USDA Soil Survey there are numerous soil types along this corridor. With a lot of these soils types you could encounter pockets of soil with infiltration rates >0.50 inches/hour, but not consistently. As a result, we focused on the most favorable soil series where the probability of encountering soils with infiltration rates meeting or exceeding 0.50 inches/hour was greatest. Please note that this most certainly would need to be explored further as this project develops by completing actual field testing (borings and in-situ infiltration testing).

Based on our review of the USDA Soil Survey, the most likely soil series appropriate for an infiltration component would be the Kempsville (map symbol 18B), Kenansville (map symbol 20B), and Suffolk (map symbol 31B) soil series. The Kempsville soil series in some locations is grouped with Emporia soil series and identified as the Kempsville-Emporia (map symbol 19B) soil series. Some portions of this particular soil series may also be appropriate for infiltration, but not as likely as the Kempsville (map symbol 18B) soil series. Again, other locations along this corridor with other soil series identified may also provide the infiltration component needed for SWM purposes, however these listed above are most probable. The locations of these potential locations will be provided to VHB, Inc. on a map that will be submitted separately from this report.

The purpose of this study and report was for general information purposes in the planning stage. All considerations and information provided in this report may differ from actual site conditions, and variations from these descriptions are considered likely. As the design of this project develops the completion of actual subsurface investigations and geotechnical engineering will be required.

We appreciate the opportunity to submit this information, and we look forward to working with you towards a successful completion of this project. Please feel free to contact us any time at (757) 564-6452 with any questions that you may have.

Respectfully Submitted,
G E T Solutions, Inc.



James R. Wheeler
Project Geologist



Bruce R Spiro, P.E.
Principal Engineer
VA Lic. # 015791



APPENDIX C

Cultural Resources Report

Circa~ Cultural Resource Management, L.L.C.
453 McLaws Circle, Suite 3
Williamsburg, Virginia 23185
(757) 220-5023

Current Conditions Assessment
Mooretown Road Extension Project
James City and York Counties, Virginia
February 2015

In January 2014, Circa~ Cultural Resource Management, LLC (Circa~) conducted an archival search of the overall study area, bordered by Croaker Road to the north, Rochambeau Drive to the east, Lightfoot Road to the south, and Richmond Road the west, where the extension of Mooretown Road is proposed. The archival search identified nine archaeological resources and 11 architectural resources within the original study area boundaries. Mapped on the overall project mapping, this information was helpful in the guidance of the final selection for the preferred alternatives. The study proposed three alternatives for the proposed extension. James City County chose Alternative 2 out of three proposed alignments from the results of engineering and environmental studies, and the input from public meetings.

Circa~ conducted a pedestrian survey of the preferred alternative for the extension of Mooretown Road in January 2015. The right-of-way begins at the intersection of Mooretown Road and Lightfoot Road and heads northwest until it terminates at Croaker Road (see Appendix A). Three previously identified

architectural resources and no previously identified archaeological resources are located within the proposed alternative. None of the project right-of-way had been previously surveyed for archaeological resources.

The pedestrian survey started at the intersection of Mooretown Road and Lightfoot Road and continued roughly 1,000 feet northwest along the rear entrance road to the Pottery (Plate 1). Circa~ also looked at the tie-ins with the existing Mooretown and Lightfoot roads. The tie-in for the Mooretown Road extension runs roughly 500 feet to the south along the existing road right-of-way (Plate 2). The tie-in for Lightfoot Road runs roughly 500 feet to the east along the existing right-of-way (Plate 3). These areas are disturbed from the development of the existing roads.

The proposed right-of-way veers east from the Pottery back entrance road and runs roughly 600 feet through an open field and to the east of Site 099-5101 (Plate 4). Site 099-5105 is the circa 1875 Levorsen House and includes one house, two barns, one corncrib, two sheds, one well, one blacksmith shop, and one post office (Plate 5). MAAR identified the site in May 1999 during a Phase II survey, and recommended that the site was not eligible for listing on the National Register of Historic Places. VDHR concurred with their recommendation in February 2000.

The right-of-way enters the woods (Plate 6) and runs roughly 3,500 through the woods (Plates 7 and 8) and crosses a stream, then enters into an open agricultural field within Hill Pleasant Farm (Plate 9). Site 047-5157 is the circa 1904 Hill Pleasant Farm that includes two houses, four outbuildings, two barns, one shed, and one silo (Plates 10 and 11). MAAR identified the site in 2000 during a cost-share survey of resources in James City County. At the time, they did not make any recommendation as to the site's eligibility for listing on the National Register of Historic Places. In March 2007, the Ottery Group, Inc. surveyed the site during a Phase I survey. They also did not make any recommendations as to the site's eligibility for listing on the National Register of Historic Places. According to V-CRIS, to date no further survey work has occurred and no formal determination of eligibility has been made.

The right-of-way continues across the farm field, hugging the edge of the railroad track (Plate 12). The right-of-way crosses the headwaters of a small stream (Plate 13), then crosses over another field (Plate 14) until it runs through a rural neighborhood and small farms (Plates 15, 16, 17, and 18). The project-right-of-way then enters into another wooded area, crosses a stream (Plate 19), and then runs through a RV park (Plate 20). The project right-of way exits the RV park, crosses a stream, and then terminates at the intersection of Crocker Road (Route 607) and Rochambeau Drive (Plates 21, 22, and 23). Circa~ also looked at

the tie-ins with the existing Croaker Road and Rochambeau Drive. The tie-in for the Mooretown Road extension runs roughly 500 feet to the east and west along the existing Croaker Road right-of-way. These areas are disturbed from the development of the existing roads. The tie-in for Rochambeau Drive runs roughly 1,000 feet to the east along the existing right-of-way (Plate 24). Site 047-5152 is a circa 1927 house that includes two houses, one animal shelter, and one garage. This site is just to the north of the tie-in at the intersection of Rochambeau and Croaker roads (Plate 25). MAAR identified the site in 2000 during a cost-share survey of architectural resources in James City County. At the time, they did not make any recommendation as to the site's eligibility for listing on the National Register of Historic Places. In December 2006, the Ottery Group, Inc. surveyed the site during a Phase I survey. They also did not make any recommendations as to the site's eligibility for listing on the National Register of Historic Places. Sarah Clarke surveyed the site in July 2010 for a Virginia Department of Transportation (VDOT) I-64 corridor study. She recommended that the site was not eligible for listing on the National Register of Historic Places. VDHR concurred with her recommendation in July 2011. A branch road ties into Rochambeau Drive across a grassy field from the proposed right-of-way extension to Rochambeau Drive (Plate 26).

A review of previous studies indicates that information such as site location and types of artifacts can be linked with data from previous studies to produce an overall picture of the evolution of the region and how it was used over time, as well as a view how the stream dynamics affected settlement choice and type. An analysis of Native American sites within two miles of the project right-of-way reveals that the majority of the sites are located along the inland streams. The majority of the interior sites consisted of small encampments or resource procurement sites used for nut, shellfish, fish, quarries, or hunting sites. In assessing the previously identified archaeological resources with a Native American component, several similarities were discovered. Most of the resources are a variant of a lithic scatter with a few diagnostic points or other tools recovered from a plowed context.

The most influential historical studies of settlement patterns in the region have emphasized the importance of economic and ecological factors in the process by which Euro-Americans distributed themselves across the landscape. From the standpoint of cultural resource management, this “descriptive”, or “functional”, approach is most useful in creating a testable model of historic settlement patterns, taking into account variables such as soil type, the availability of fresh water, proximity to neighbors, and access to transportation routes.

European settlement of the county began in the 17th century, when large tracts of prime riverfront land were granted to the Virginia's elite tobacco planters. Since rivers served as the primary arteries of transportation and communication during the colonial period, planters and tenants alike settled initially along rivers and major tributaries. Tobacco dominated the Virginia economy from the beginnings of English settlement in the region through the American Revolution, and correspondingly dictated the nature of social and race relations. Since tobacco was overwhelmingly important as a staple crop, it should follow that planters would choose to settle on lands most conducive to growing this crop. The relative importance of a variety of environmental factors in site selection, including soils, access to drinking water, proximity of navigable waterways, and distance from the nearest neighbor, a productive soil type clearly was the most significant locational factor affecting colonial settlement.

By the latter years of the 18th century, however, regional planters, great or small, were beginning to feel the pinch of a sputtering, century-old tobacco economy. Meanwhile, decades of intensive tobacco farming had simply exhausted all the best tobacco land, making it difficult, if not impossible, to boost production in order to counteract dwindling prices. By the beginning of the 19th century, a fundamental shift had occurred in the area's rural economy. Farmers responded to the decline of tobacco by shifting their emphasis to raising grain

crops and livestock. At the same time, a small group of Virginians dedicated to “scientific agriculture” helped to usher in a new era of productive farming. In his series of essays entitled *Aerator*, Caroline County’s John Taylor demonstrated the benefits of four-field crop rotation, in which soils could be improved significantly by rotating corn, wheat, fertilizer, and clover. Similarly, in the early 1820s Edmund Ruffin publicized the effectiveness of marl in reducing soil acidity, a technique that could triple the productivity of the region’s exhausted soils. Other agricultural improvements included contour plowing to reduce erosion, cast iron plows, threshing machines, and corn sellers.

The conventional historical wisdom asserts that the decline of the tobacco economy, the introduction of new crops, and advances in farm management and fertilization had a significant effect on settlement patterns in 19th century Tidewater Virginia. Lands formerly considered marginal could now be incorporated into agricultural production, a process accelerated by the increasing subdivision of family farms through inheritance. Extrapolating from the region’s settlement model, the environmental characteristics of 19th century sites theoretically should exhibit a diminishing correlation between soil type and settlement, given that a wider variety of soils could now be made agriculturally productive. As with sites associated with the colonial period, the agricultural productivity of the upland soil types within the project right of-way suggests

that there is a moderate to good chance for the presence of 19th century domestic farmstead sites within the tract. These sites would be located on the edges of the fields or the landforms, leaving the majority of the good soil available for raising crops.

The project right-of-way has the environmental conditions and physiographic settings that may contain both Native American and historic archaeological resources. Given the project right-of-way's close proximity to streams and the fact that all of the previously identified sites for which there is soil information fall within at least one or more of the project right-of-way soils, the possibility of finding Native American and historic resources would be considered moderate to high. It is possible that a Native American site, most likely a lithic scatter, could be found within the project right-of-way. Given the previously identified sites, this site would most likely date to the general Native American period and would range in size from under one acre to less than four acres. Judging from the previously identified sites, if a site was found within the project right-of-way, it would probably not contain many Native American ceramic artifacts.

A historic archaeological site, most likely a domestic site, could be found within the project right-of-way. Given the previously identified sites, this site would most likely date to the 19th century and would range in size from under

one acre. Judging from the previously identified sites, if a site was found within the project right-of-way, it would probably not contain many historic ceramic artifacts. In sum, Circa~ recommends a Phase I survey of the project right-of-way. No further archaeological survey work is recommended for the developed areas of the project right-of-way.



Plate 1. View of the proposed Mooretown Road Alternative 2, looking along the rear entrance of The Pottery, looking north.



Plate 2. View of existing Mooretown Road, looking south.



Plate 3. View of Lightfoot Road, looking west.



Plate 4. View of the proposed right-of-way, looking south. Site 099-5105 in the right side of the photo.



Plate 5. View of Site 099-5105, looking east.



Plate 6. View of project right-of-way, looking north.



Plate 7. View of project right-of-way, looking south.



Plate 8. View of project right-of-way, looking north.



Plate 9. View of the project right-of-way, looking southeast.



Plate 10. View of Site 047-5157, looking northeast.



Plate 11. View of outbuildings at Site 047-5157, looking southeast.



Plate 12. View of the right-of-way, looking northwest.



Plate 13. View of project right-of-way near stream crossing, looking south.



Plate 14. View of project right-of-way, in agricultural field, looking north.



Plate 15. View of project right-of-way, looking south.



Plate 16. View of project right-of-way, looking north.



Plate 17. View of project right-of-way, looking south.



Plate 18. View of project right-of-way, looking north.



Plate 19. View of project right-of-way, looking south.



Plate 20. View of project right-of-way, looking north.



Plate 21. View of project right-of-way at tie-in to Croaker Road, looking west.



Plate 22. View of project right-of-way at intsection of Croaker Road and Rochambeau Drive, looking north.



Plate 23. View of project right-of-way along Croaker Road, looking east.



Plate 24. View of project right-of-way tie-in along Rochambeau Drive, looking south.



Plate 25. View of Site 047-5152, looking east.



Plate 26. View of the tie-in from Rochambeau Drive to the proposed right-of-way, looking west.

Mooretown Road Extension Corridor Study
Archival Search Results

January 2014

Prepared by:

Circa~ Cultural Resource Management, LLC

1.0 ARCHIVAL SEARCH RESULTS

Circa~ Cultural Resource Management, LLC (Circa~) performed an archival search for the Extension study of Mooretown Road project using the Virginia Department of Historic Resources (VDHR) online V-CRIS system on January 29, 2014. This research was completed to determine if historic resources exist within the project area boundaries. The project area is bordered by Croaker Road to the north, Rochambeau Drive to the east, Lightfoot Road to the south, and Richmond Road the west. The search identified nine archaeological resources and 11 architectural resources within the project area boundaries. Table 1-1 lists all of the resources within the project area boundaries. A brief summary of these resources follows Table 1. Once an alignment is selected for the extension of Mooretown Road, Circa~ will conduct further cultural resources surveys of the area impacted by the proposed alignment.

Table 1-1

Previously Identified Cultural Resources Within The Project Area Boundaries.

VDHR Survey Number	Date of resource	Description of resource	Survey Information	Recommendation
<i>Archaeological Resources</i>				
44JC0295	19 th century	Church related residence	Site was map projected from J. F. Gilmer's 1860s Vicinity of Richmond and Part of the Peninsula map 12/1/83	None made

VDHR Survey Number	Date of resource	Description of resource	Survey Information	Recommendation
44YO0260	18 th century	Indeterminate site	Site was map projected from Alexander Berthier map of the James York Peninsula 7/1/83	None made
44YO0261	18 th century	Indeterminate site	Site was map projected from Alexander Berthier map of the James York Peninsula 7/1/83	None made
44YO0262	18 th century	Indeterminate site	Site was map projected from Alexander Berthier map of the James York Peninsula 7/1/83	None made
44YO0263	19 th century	Indeterminate site	Site was map projected from J. F. Gilmer's 1860s Vicinity of Richmond and Part of the Peninsula map 12/1/83	VDHR recommended further work if the site cannot be avoided 12/6/07
44YO0301	Historic	Plantation site	Site was map projected from J. F. Gilmer's 1860s Vicinity of Richmond and Part of the Peninsula map 12/1/83	None made

VDHR Survey Number	Date of resource	Description of resource	Survey Information	Recommendation
44YO0506	No date	Indeterminate site	Phase I survey 8/9/89	None made
44YO0507	18 th century 19 th century	Indeterminate site	Phase I survey 8/9/89	None made
44YO1038	Middle Archaic Early Woodland 18 th century 19 th century 20 th century	Temporary camp and farmstead	Archaeological data recovery 10/10/02	None made
<i>Architectural Resources</i>				
047-0070	Historic	Site includes two houses, one barn, and two sheds	Phase I survey 10/15/71 Reported demolished 4/11	None made
047-0077	ca. 1870	Lutheran Parish House	Phase I survey 1971	None made
047-5151	ca. 1908	Bethany Parish Lutheran Residence, 101 Maxton Lane	Phase I survey 2000 and 3/6/07	None made
047-5152	ca. 1927	House, 4392 Rochambeau Drive (SR 30/ SR 755), site includes two houses, one animal shelter, and one garage	Phase I survey 2000, 12/21/06, and 7/1/10	VDHR determined not eligible 7/1/11
047-5157	ca. 1904	Hill Pleasant Farm, 7152 Richmond Road (US 60), site includes two houses, four outbuildings, two barns, one shed, and one silo	Phase I survey 2000 and 3/6/07	None made

VDHR Survey Number	Date of resource	Description of resource	Survey Information	Recommendation
047-5301	ca. 1908	Norge Depot aka Norge Train Depot, 7770 Croaker Road (SR 607)	Phase I survey 12/29/90 Phase II survey 9/6/05 National Register of Historic Places nomination 9/20/07	Listed on the Virginia Landmark Register (VLR) 12/5/07 Federal determination of not eligible 4/23/08
099-0003	ca. 1820	Cherry Hall, 1015 Lightfoot Road (SR 658), site includes one house and one smokehouse	Historic American Building Survey (HABS) 9/1/58 Volunteer survey 6/1/70 and 7/1/07	None made
099-5105	ca. 1875	Levorsen House, 603 Lightfoot Road (SR 658), site includes one house, two barns, one corn crib, two sheds, one well, one blacksmith shop, and one post office	Phase II survey 5/6/99	VDHR determined not eligible 2/28/00
099-5107	ca. 1920	House, 1021 Lightfoot Road (SR 658)	Phase I survey 4/1/99	Recommended not eligible 4/1/99
099-5108	ca. 1935	House, 1321 Lightfoot Road (SR 658), site includes one house and one shed	Phase I survey 7/1/10	VDHR determined not eligible 7/1/11
099-5291	ca. 1950	House, 5703 Rochambeau Drive (SR 30/ SR 755), site includes one house and one shed	Phase I survey 7/1/10	VDHR determined not eligible 7/1/11

1.1 Site 44JC0295, Church related residence

Site 44JC0295 is identified as a 19th century church related site. Martha McCartney first identified the site in December 1983 when she map projected the site using J. F. Gilmer's 1860s *Vicinity of Richmond and Part of the Peninsula* map. At the time, she conducted no fieldwork to verify the location of the site and did not make any recommendation as to the site's eligibility for listing on the National Register of Historic Places. According to V-CRIS, to date no further survey work has occurred and no formal determination of eligibility has been made.

1.2 Site 44YO0260, Indeterminate site

Site 44YO0260 is identified as an 18th indeterminate site. Martha McCartney first identified the site in July 1983 when she map projected the site using Alexander Berthier's map of the James-York peninsula. At the time, she conducted no fieldwork to verify the location of the site and did not make any recommendation as to the site's eligibility for listing on the National Register of Historic Places. According to V-CRIS, to date no further survey work has occurred and no formal determination of eligibility has been made.

1.3 Site 44YO0261, Indeterminate site

Site 44YO0261 is identified as an 18th indeterminate site. Martha McCartney first identified the site in July 1983 when she map projected the site using Alexander Berthier's map of the James-York peninsula. At the time, she conducted no fieldwork to verify the location of the site and did not make any recommendation as to the site's eligibility for listing on the National Register of Historic Places. According to V-CRIS, to date no further survey work has occurred and no formal determination of eligibility has been made.

1.4 Site 44YO0262, Indeterminate site

Site 44YO0262 is identified as an 18th indeterminate site. Martha McCartney first identified the site in July 1983 when she map projected the site using Alexander Berthier's map of the James-York peninsula. At the time, she conducted no fieldwork to verify the location of the site and did not make any recommendation as to the site's eligibility for listing on the National Register of Historic Places. According to V-CRIS, to date no further survey work has occurred and no formal determination of eligibility has been made.

1.5 Site 44YO0263, Cherry Hill Brick Clamp

Site 44YO0263 is identified as a 19th century Cherry Hill Brick Clamp site. The site represents a second or third quarter 19th century brick clamp, possibly associated with the adjacent Cherry Hill site. The site consists of brick wasters, unfired brick and rubble, air channels, and large areas of burned earth. Martha McCartney first identified the site in July 1983 when she map projected the site using J. F. Gilmer's 1860s *Vicinity of Richmond and Part of the Peninsula* map. At the time, she conducted no fieldwork to verify the location of the site and did not make any recommendation as to the site's eligibility for listing on the National Register of Historic Places. In 2007, Lyle Browning conducted a Phase II assessment survey of the site. He recommended that the research potential of the site had been exhausted and that the site was not eligible for listing on the National Register of Historic Places. In December 2007, VDHR noted that the site may contribute to the understanding of the history of Cherry Hill and settlement of that portion of York County. The recommended that the site be avoided by future work or further survey work of the site if it could not be avoided.

1.6 Site 44YO0301, Plantation site

Site 44YO0301 is identified as an historic plantation site. Martha McCartney first identified the site in December 1983 when she map projected the site using J. F. Gilmer's 1860s *Vicinity of Richmond and Part of the Peninsula* map. At the time, she conducted no fieldwork to verify the location of the site and did not make any recommendation as to the site's eligibility for listing on the National Register of Historic Places. According to V-CRIS, to date no further survey work has occurred and no formal determination of eligibility has been made.

1.7 Site 44YO0506, Indeterminate site

Site 44YO0506 is identified as an indeterminate site. The William and Mary Center for Archaeological Research (WMCAR) first identified the site in August 1989 during a survey of the Williamsburg Pottery property. They discovered the site was examining a modern road cut and noted that the site contained a small number of lithic artifacts found on the surface and through shovel testing. At the time, they did not make any recommendation as to the site's eligibility for listing on the National Register of Historic Places. According to V-CRIS, to date no further survey work has occurred and no formal determination of eligibility has been made.

1.8 Site 44YO0507, Indeterminate site

Site 44YO0507 is identified as an 18th and 19th century indeterminate site. WMCAR first identified the site in August 1989 during a survey of the Williamsburg Pottery property. They discovered the site was examining a modern road cut and noted that the site contained a small scatter of artifacts found in the road bed. At the time, they did not make any recommendation as to the site's eligibility for listing on the National Register of Historic Places.

According to V-CRIS, to date no further survey work has occurred and no formal determination of eligibility has been made.

1.9 Site 44YO1038, Laurel Springs

Site 44YO1038 is identified as a Middle Archaic and Early Woodland temporary camp and an 18th, 19th, and 20th century farmstead. In 2002, the owner of the property, Patrick Pettitt, wanted to excavate the property prior to him selling his family farm. As part of the sale of the property, and by court order, prior to the sale of the property Pettitt also had an adjacent family cemetery moved from the property. Pettitt hired MAAR to conduct the excavations and in October 2002 they conducted an archaeological data recovery of the property. They noted several features including a house foundation, one well with a cover, one filled well, one concrete pad, and three privies. At the time, they did not make any recommendation as to the site's eligibility for listing on the National Register of Historic Places. According to V-CRIS, to date no further survey work has occurred and no formal determination of eligibility has been made.

1.10 Site 047-0070, House site

Site 047-0070 is identified as a circa 1925 house site that includes two houses, one barn, and two shed. R. Perry first identified the site in October 1971 during a Phase I survey. At the time, he did not make any recommendation as to the site's eligibility for listing on the National Register of Historic Places. In April 2011, the site was reported as demolished. According to V-CRIS, to date no further survey work has occurred and no formal determination of eligibility has been made.

1.11 Site 047-0077, Lutheran Parish House

Site 047-0077 is identified as the circa 1870 Lutheran Parish House. Ed Chappell first identified the site in 1971 during a Phase I survey. At the time, he did not make any recommendation as to the site's eligibility for listing on the National Register of Historic Places. According to V-CRIS, to date no further survey work has occurred and no formal determination of eligibility has been made.

1.12 Site 047-5151, Bethany Parish Lutheran Residence

Site 047-5151 is identified as the circa 1908 Bethany Parish Lutheran Residence. MAAR first identified the site in 2000 during a cost share survey of resources in James City County. At the time, they did not make any recommendation as to the site's eligibility for listing on the National Register of Historic Places. In March 2007, the Ottery Group, Inc. surveyed the site during a Phase I survey. They also did not make any recommendations as to the site's eligibility for listing on the National Register of Historic Places. According to V-CRIS, to date no further survey work has occurred and no formal determination of eligibility has been made.

1.13 Site 047-5152, House

Site 047-5152 is identified as a circa 1927 house that includes two houses, one animal shelter, and one garage. MAAR first identified the site in 2000 during a cost share survey of resources in James City County. At the time, they did not make any recommendation as to the site's eligibility for listing on the National Register of Historic Places. In December 2006, the Ottery Group, Inc. surveyed the site during a Phase I survey. They also did not make any recommendations as to the site's eligibility for listing on the National Register of Historic Places. Sarah Clarke surveyed the site in July 2010 for a Virginia Department of

Transportation (VDOT) I-64 corridor study. She recommended that the site was not eligible for listing on the National Register of Historic Places. VDHR concurred with her recommendation in July 2011.

1.14 Site 047-5157, Hill Pleasant Farm

Site 047-5157 is identified as the circa 1904 Hill Pleasant Farm that includes two houses, four outbuildings, two barns, one shed, and one silo. MAAR first identified the site in 2000 during a cost share survey of resources in James City County. At the time, they did not make any recommendation as to the site's eligibility for listing on the National Register of Historic Places. In March 2007, the Ottery Group, Inc. surveyed the site during a Phase I survey. They also did not make any recommendations as to the site's eligibility for listing on the National Register of Historic Places. According to V-CRIS, to date no further survey work has occurred and no formal determination of eligibility has been made.

1.15 Site 047-5301, Norge Depot

Site 047-5301 is identified as the circa 1908 Norge Depot. Roberta Reid first identified the site in 1990 during a Phase I survey. At the time, she did not make any recommendation as to the site's eligibility for listing on the National Register of Historic Places. In September 2005, at the request of James City County Office of Development Management, WMCAR conducted a Phase II survey of the site. They recommended that the site was eligible for listing on the National Register of Historic Places. VDHR noted that the site was potentially eligible for listing on the National Register of Historic Places in July 2005. Two years later, in 2007, WMCAR drafted a National Register of Historic Places nomination for the site. That same year the site was listed on the VLR. However, in April 2008, a federal

determination was made that the site is not eligible for listing on the National Register of Historic Places.

1.16 Site 099-0003, Cherry Hall

Site 099-0003 is identified as the circa 1820 Cherry Hall that includes one house and one smokehouse. Robert Wiggins first identified the site in September 1958 during a HABS survey. At the time, he did not make any recommendations as to the site's eligibility for listing on the National Register of Historic Places. In June 1970, Calder Loth updated the HABS survey and also did not make any recommendations as to the site's eligibility for listing on the National Register of Historic Places. In July 2007, Lyle Browning conducted a volunteer survey of the site. At the time, he also did not make any recommendations as to the site's eligibility for listing on the National Register of Historic Places. According to V-CRIS, to date no further survey work has occurred and no formal determination of eligibility has been made.

1.17 Site 099-5105, Levorsen House

Site 099-5105 is identified as the circa 1875 Levorsen House that includes one house, two barns, one corn crib, two sheds, one well, one blacksmith shop, and one post office. MAAR first identified the site in May 1999 during a Phase II survey. At the time, they recommended that the site was not eligible for listing on the National Register of Historic Places. VDHR concurred with their recommendation in February 2000.

1.18 Site 099-5107, House

Site 099-5107 is identified as a circa 1920 house. The site was first identified during a Phase I survey in April 1999. However, V-CRIS listed no information

on the surveyor, although it did note that the site was recommended as not eligible for listing on the National Register of Historic Places. According to V-CRIS, to date no further survey work has occurred and no formal determination of eligibility has been made.

1.19 Site 099-5108, House

Site 099-5108 is identified as a circa 1935 house that includes one house and one shed. Sarah Clarke first identified the site in July 2010 for a VDOT I-64 corridor study. She recommended that the site was not eligible for listing on the National Register of Historic Places. VDHR concurred with her recommendation in July 2011.

1.20 Site 099-5291, House

Site 099-5291 is identified as a circa 1950 house that includes one house and one shed. Sarah Clarke first identified the site in July 2010 for a VDOT I-64 corridor study. She recommended that the site was not eligible for listing on the National Register of Historic Places. VDHR concurred with her recommendation in July 2011.

2.0 Historic Mapping

Maps of the area drawn during the Civil War era show the project area primarily wooded with minor development along Old Stage Road (now Route 60).

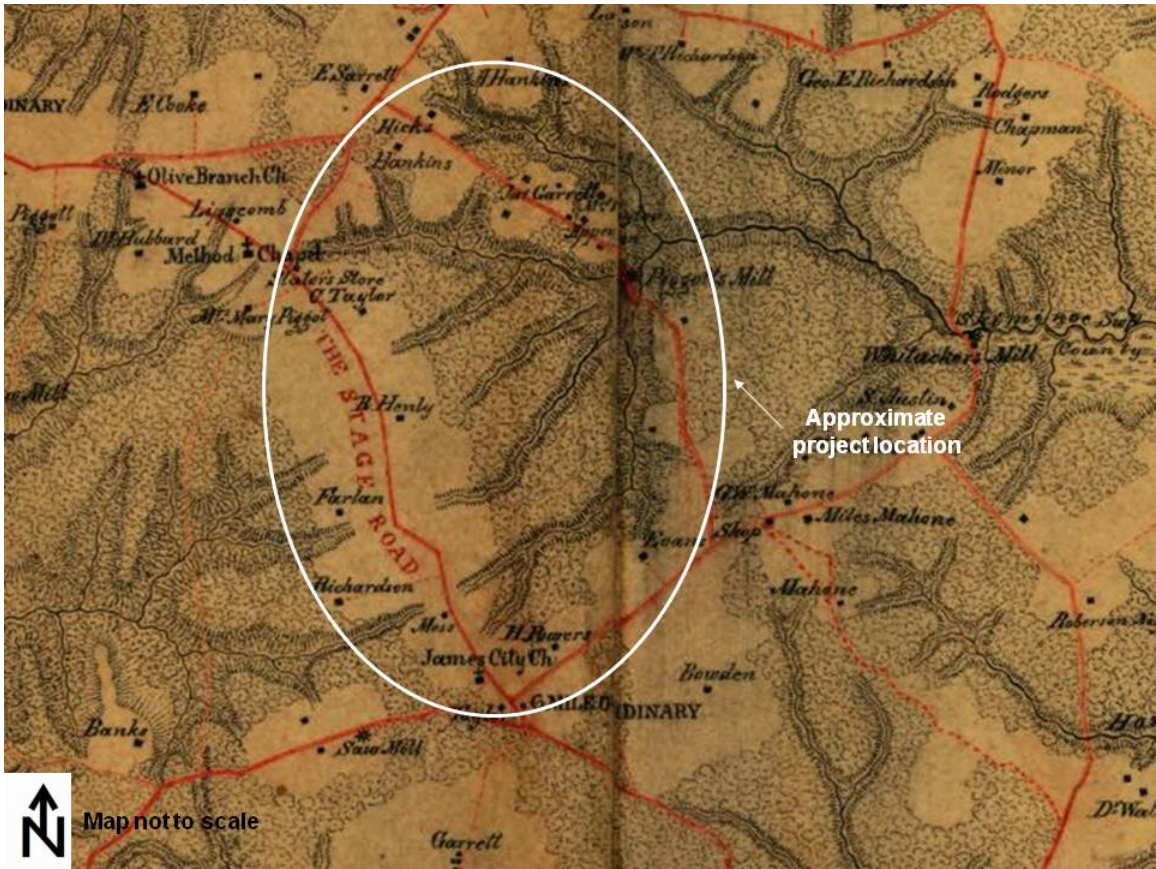


Figure 1-1

Detail of *Map of New Kent, Charles City, James City and York counties*. Map from the Confederate Engineer Bureau in Richmond, Va. General J.F. Gilmer, Chief Engineer 1863.

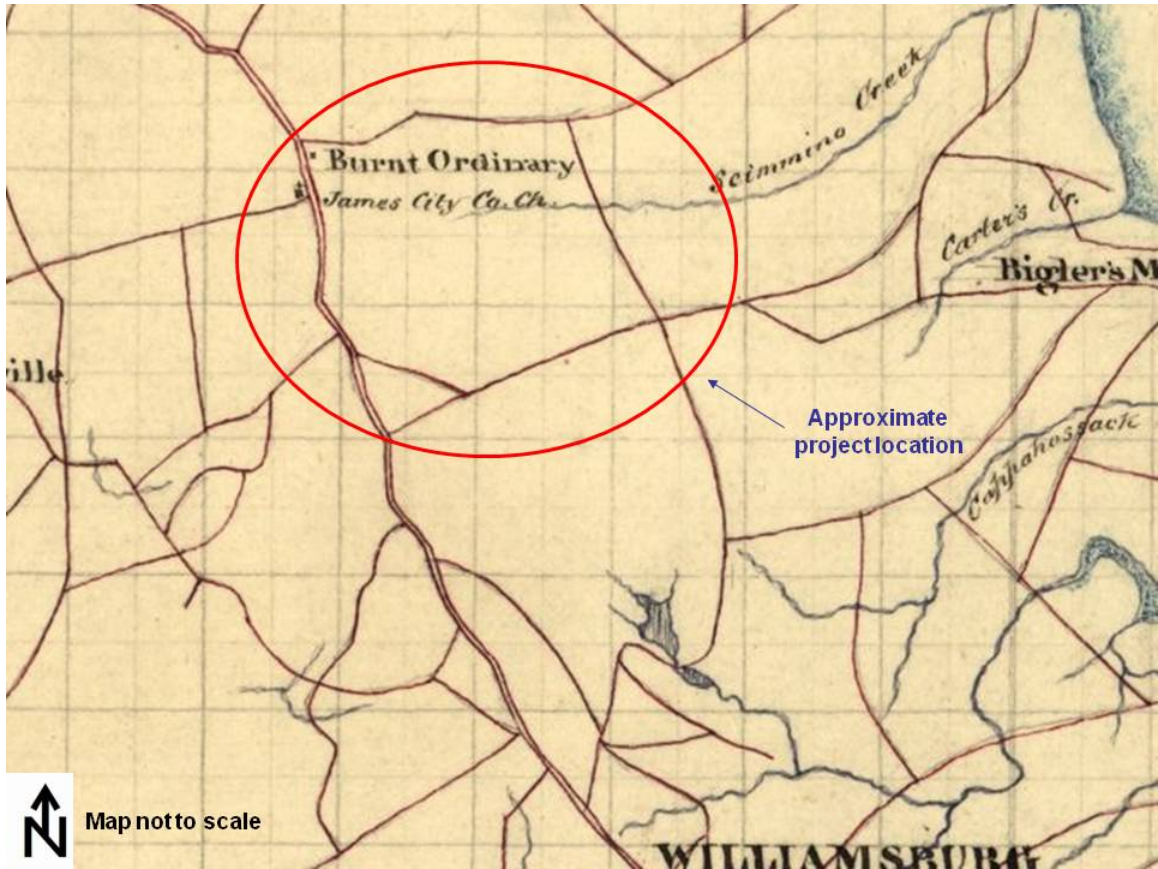


Figure 1-2

Detail of *James City, York, Warwick, and Elizabeth City counties, Virginia* by Jed. Hotchkiss, Top. Eng., Staunton, Va., 1867.

APPENDIX D

Market Analysis Report

Mooretown Road Extension Corridor Study
Market Analysis

James City County, Virginia

July 2015

Prepared by:

RKG Associates Inc.



1 EXECUTIVE SUMMARY

A. DEMOGRAPHIC TRENDS

Population & Households — James City County has experienced extremely robust population growth since 1990, growing from approximately 34,800 in 1990 to 70,000 in 2013. York County's population grew rapidly as well, from approximately 42,400 in 1990 to 66,500 in 2013. However, the rate of population growth in York County has been declining faster than James City County, due in large measure to the dwindling supply of land that can be developed to residential uses. In 2013, the number of households in James City County surpassed York County, at 28,100 to 24,400, respectively.

Household Income — In 2013, the median household income in James City and York were \$80,200 and \$80,322, respectively, compared to \$63,146 in Virginia. An examination of the counties' economic base shows growth trends in most industry sectors, including higher paying sectors such as health care, professional, services, management of companies, and finance.

B. ECONOMIC BASE ANALYSIS

At-Place Employment — James City County added 1,474 new jobs from 2002 through 2013, for a total of 23,337. York County added 9,235 new jobs during the same period, for a total of 21,344, and Williamsburg City added 1,116 jobs to its 2013 total of 16,224. Among the three jurisdictions, notable increases in employment occurred in the following industry sectors from 2002 to 2013: professional services, 74% (1,480 jobs); arts, entertainment & recreation, 65% (4,000 jobs); finance & insurance, 59% (390 jobs); retail, 47% (2,740 jobs); other services, 46% (695 jobs); and, health care, 36% (1,857 jobs).

Labor Force & Unemployment — The combined labor force of James City County, York County, and Williamsburg increased in size considerably over the past decade (2004-2013), from just over 64,400 in 2004 to 77,235 in 2013, in spite of a decline in 2009. Unemployment rates in the combined jurisdictions have remained between 0.2% and 0.5% lower than Virginia's since 2004, indicating a relatively stable economic base in the region.

C. RESIDENTIAL MARKET TRENDS

Development Trends — In James City County, 932 average annual single family units were added to the inventory from 2003 through 2007, followed by apartments at 39, timeshares at 33, and condos at 20. In the six year period from 2008 through 2013, the average annual single family units declined to 466, while the average annual apartments increased from 39 to 105 following a national trend of apartment construction in response to tightened credit and lower demand from potential home buyers.

In York County, 342 average annual units were added to the inventory in the five-year period from 2003 through 2007. During the same period, an average of 43 apartments were added annually, followed by timeshare units at 29, condos at 27, and duplexes at 12. From 2008 to 2013, average annual single family units were 175. Average apartments increased slightly to 45. Timeshare units

decreased to 14 average annual, followed by an average of six condos per year, and zero duplexes.

Housing Characteristics — In 2013, median owner occupied dwelling unit values were as follows: James City County, \$324,200; York County, \$336,600; Williamsburg City, \$326,200. Median cash rents in James City and York Counties are relatively close, at \$1,066 and \$1,110 respectively, compared to \$910 for Williamsburg City.

Pipeline Development — The James City County Planning Division estimated a pipeline of approximately 9,400 residential units in approved residential subdivisions as of December 2013. If residential construction continues to proceed at the 2008-2013 rate of 576 units per year average, it will take just over sixteen years to build 9,400 units. If the rate of residential construction proceeds at the 2003-2007 pace of 1,024 new units per year average, 9,400 units could be built in just over nine years, with a midpoint between twelve and thirteen years.

The York County Department of Environmental and Development Services estimated that approximately 1,570 residential units were within approved planned developments in September 2012. At the 2008-2013 rate of 453 new annual units average, it would take just three years to build 1,570 units, and between six and seven years at the 2008-2013 rate of 240 new units per year average. According to the County of York 2012-2013 Comprehensive Plan, residential development in York County is projected to add approximately 5,700 new housing units by 2035.

Implications — The Virginia Employment Commission projects that James City and York Counties combined will add an additional 20,000 to 25,000 households by 2030. At the current rates of absorption, James City County will consume its current residential development pipeline in 12 to 13 years, and York County will consume its pipeline units in just three years. Of course, rezonings and development approvals will continually add to the pipeline in both jurisdictions. (in James City County's case, it is anticipated it could be enough for 19-38 years of growth). The consensus among real estate professionals interviewed for this analysis is that viable development tracts are becoming scarcer as the inventory is consumed. If household growth continues as projected, demand for new housing should remain steady ten to fifteen years in the future. The locational characteristics of the Mooretown Road Corridor will make it attractive for developers and residents with its easy access to I-64 and the employment centers of Richmond and Hampton Roads.

D. NON-RESIDENTIAL MARKET TRENDS

Inventory — In James City County, industrial uses account for the largest amount of improved space at 5.3 million square feet, approximately 3.2 million square feet of which is owned and operated by a single user, the Anheuser-Busch brewery. Warehouse space comprises the second largest land use at approximately 25% or 4.7 million square feet followed by retail/service at 23% or 4.3 million square feet, and office at 10% or 1.8 million square feet.

In York County, retail/services comprises the largest amount of improved space at 3.9 million square feet or 42%, followed by restaurant/lodging at 1.8 million square feet or 20%, industrial at 1.4 million square feet or 15%, and office space at 705,000 square feet or 8%.

Retail — James City County added 136,000 square feet of retail 2008-2013, York County added 446,000 square feet during the same period. Except for grocery stores, the greater Williamsburg area is over retailed due to the preponderance of stores and shopping centers that cater to visitors, such as Williamsburg Pottery and Premium Outlets. For community and neighborhood shopping centers which are generally locally serving, there was a 15% vacancy rate, which is reflected by the empty storefronts in the area. Nonetheless, the high visibility and access of the Mooretown Road Corridor

offers a very attractive site for developers and retail tenants who might overlook market trends to be in a more advantageous location.

Office — Since 2003, James City County has seen an average of 60,000 square feet of office delivered annually, compared to about 8,000 square feet in York County. This rate of absorption would support low density, suburban campus style development such as that which already characterized much of the local marketplace, and office space as an element of mixed use development, such as that in New Town.

Industrial — Although warehousing/distribution operations prefer proximity to highway interchanges, the demand from other land uses in the Mooretown Road Corridor could likely price them out of the market. In James City County, industrial development has slowed down in the past five years to one-tenth of what it was the previous five years, so the demand can be absorbed into existing industrial parks into the foreseeable future. If the market for flex space picks up in the next decade, it could be a land use that want to reside in the Corridor.

Visitation Attractions — The owners of the Williamsburg Pottery are currently (Fall 2014) in the process of assessing the potential for “an international, family-focused entertainment and education complex” on 720 acres of land in the Mooretown Road Corridor. About 80% of the land is in York County with the remainder in James City County. If the project moves forward to fruition, it could represent the dominant use in the Corridor.

Lodging — One of the proposed uses in the aforementioned Williamsburg Pottery concept is lodging. Even in an over supplied market, a well-positioned, unique product could garner enough of the market share to thrive, at other’s expense of course. A strategically sited product in the corridor could have the distinct competitive advantage of easy access and maximum visibility.

Based on the findings of the work program, RKG concluded that the study area could support mixed used development that integrates a range of land uses that is most appropriately represented by the 365-acre New Town community.

2 INTRODUCTION

RKG Associates, Inc. (RKG) was engaged by the firm Vanasse Hangen Brustlin, Inc. (VHB) to conduct assessments of demographics, economics and real estate market sectors that will influence future development in the Mooretown Road Extension Corridor. The objective of the market assessment is to inform the provision of planning services for the Mooretown Road Extension Corridor Study through the identification of potential land uses in the context of market support ten or fifteen years in the future.

In the course of the work program, RKG professionals reviewed relevant plans and documents, and interacted with key stakeholders including municipal staff, local real estate professionals and developers, business leaders, economic development practitioners, and others. Stakeholder input provided local context for analyzing factors that will impact land uses in James City and York Counties in general, and the study area in particular. The RKG project manager also conducted physical reconnaissance of the study area and surrounding geographies.

Key sources of data analyzed in the course of the work program included:

- James City County Tax Assessors Database
- York County Tax Assessors Database
- Old Dominion University Center for Real Estate and Economic Development Real Estate Market Reviews, 2004-2014
- CoStar, First Quarter 2014 Reports, Hampton Roads Markets for Retail, Office and Industrial
- Demographics Now and Esri Business Services, census data reporting services

The real estate market analysis work program was conducted with several objectives in mind: (1) develop an understanding of the study area's context relative to the real estate market dynamics at play in the James City County/York County/Williamsburg marketplace; (2) prioritize real estate sectors to be assessed based on appropriateness for the study area; (3) assess the ability of tourism and visitation to generate support for new land uses in the study area.

The report includes the following chapters:

- Chapter 1 – Executive Summary
- Chapter 2 – Introduction
- Chapter 3 – Socioeconomic Analysis
- Chapter 4 – Real Estate Market Analysis

3 SOCIOECONOMIC ANALYSIS

A. INTRODUCTION

The following chapter analyzes demographic trends and projections in areas such as population, households, income, education attainment, and employment data. The analysis focuses on trends and conditions within James City County, York County, Williamsburg City, and includes comparative data for the Commonwealth of Virginia. The data provides insight into local and regional growth trends as well as projected future growth patterns. These factors provide the framework for understanding the factors that will influence future development. The consultant utilized several public and private data sources to complete the analysis including the U.S. Census Bureau, ESRI (Site To Do Business)¹, Demographics Now, and the Virginia Employment Commission.

Population, household, and income trend data provided by ESRI includes decennial data from the U.S. Census Bureau summarized for users in the real estate industry. ESRI incorporates projection data developed by their proprietary approach. RKG Associates uses this data unless otherwise noted. Data in tables is generally categorized by geographic area, with subject jurisdictions listed separately for comparison purposes.

B. DEMOGRAPHIC TRENDS

1. Population Trends and Projections

Information from the U.S. Census indicates that James City County has experienced extremely robust population growth since 1990, growing from approximately 34,800 in 1990 to 70,000 in 2013. York County's population grew rapidly as well, from approximately 42,400 in 1990 to 66,500 in 2013. However, the rate of population growth in York County has been declining faster than James City County, due in large measure to the dwindling supply of land that can be developed to residential uses. A review of the York County zoning map graphically illustrates the preponderance of military reservations in the county which cannot be developed, and the diminishing acreage of developable land (Table 3-1).

Table 3-1
Population Trends
1990-2018

	1990	2000	2013	2018
POPULATION COUNT				
James City Co.	34,779	47,953	69,987	77,761
York Co.	42,434	56,349	66,505	70,845
Williamsburg City	11,600	12,150	15,495	16,618
State	6,189,197	8,049,313	9,759,332	10,365,298
PERCENT CHANGE IN POPULATION				
James City Co.	—	37.9%	45.9%	11.1%
York Co.	—	32.8%	18.0%	6.5%
Williamsburg City	—	4.7%	27.5%	7.2%
State	—	30.1%	21.2%	6.2%
ANNUAL PERCENT CHANGE IN POPULATION				
James City Co.	—	3.8%	3.5%	2.2%
York Co.	—	3.3%	1.4%	1.3%
Williamsburg City	—	0.5%	2.1%	1.4%
State	—	3.0%	1.6%	1.2%

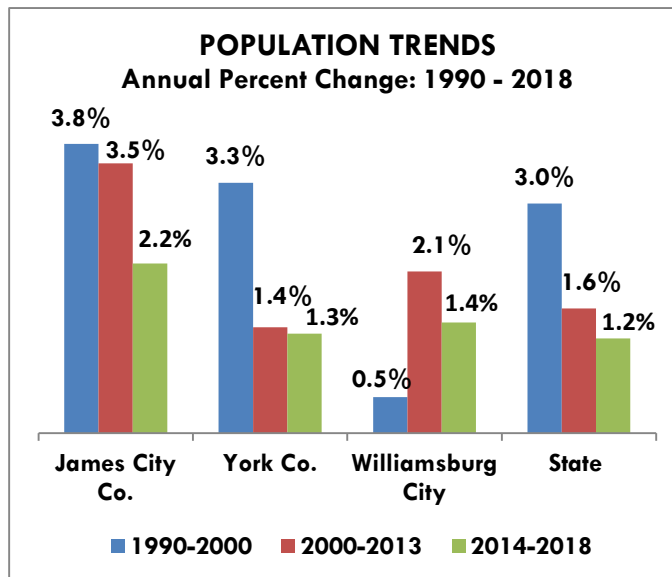
Source: Demographics Now; RKG Associates 2014

¹ ESRI is an internationally renowned data vendor of socioeconomic and market data.

The City of Williamsburg experienced a surge of growth of 27.5% from 2000 to 2013, compared to just 4.7% between 1990 and 2000. The City has added over 500 residential units since 2000 and enjoyed a net increase of over 1,470 jobs from 2002 to 2011, from 21,860 to 23,340.

Like many southern and sunbelt States, Virginia experienced strong population growth in recent decades. Both James City and York Counties have added jobs in the last decade (discussed in more detail in the Economic Base Analysis section in this report), and have also become popular destinations for empty nesters and retiring Baby Boomers to reside. Figure 3-1 graphically illustrates how population trends have shifted in the four comparative geographies. Population growth in James City County, supported by local and regional job growth as well as ample residential development, is growing at the fastest rate. York's population growth rate has slowed down as the county approaches residential build-out. Williamsburg surged from 2000 to 2013, and is projected to maintain a growth rate higher than both York County and the state through 2018.

Figure 3-1



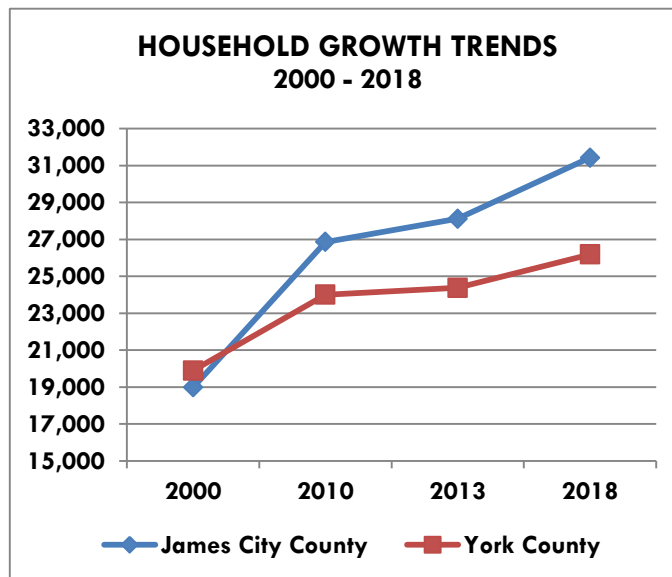
Source: ESRI and RKG Associates, Inc., 2014

2. Household Trends

Household growth trends typically parallel population trends. In 2000, York County had approximately 19,890 total households to James City County's 18,980, a difference of only 900. In 2013, the number of households in James City County surpassed York County, at 28,100 to 24,400, respectively. In Williamsburg, the number of households increased from approximately 3,640 in 2000 to 5,150 in 2013.

Decreases in the average size of households are a contributing factor in the acceleration of household growth at a faster rate than population. Average household sizes in James City County were 2.53 in 2000 compared to 2.49 in 2013. In York County, average household sizes shrunk from 2.83 in 2000 to 2.73 in 2013.

Figure 3-2



Source: ESRI and RKG Associates, Inc., 2014

A general decline in average household size has been observed nationally, as there are increasing numbers of single-adult households, one-parent households, and generally lower fertility rates than in

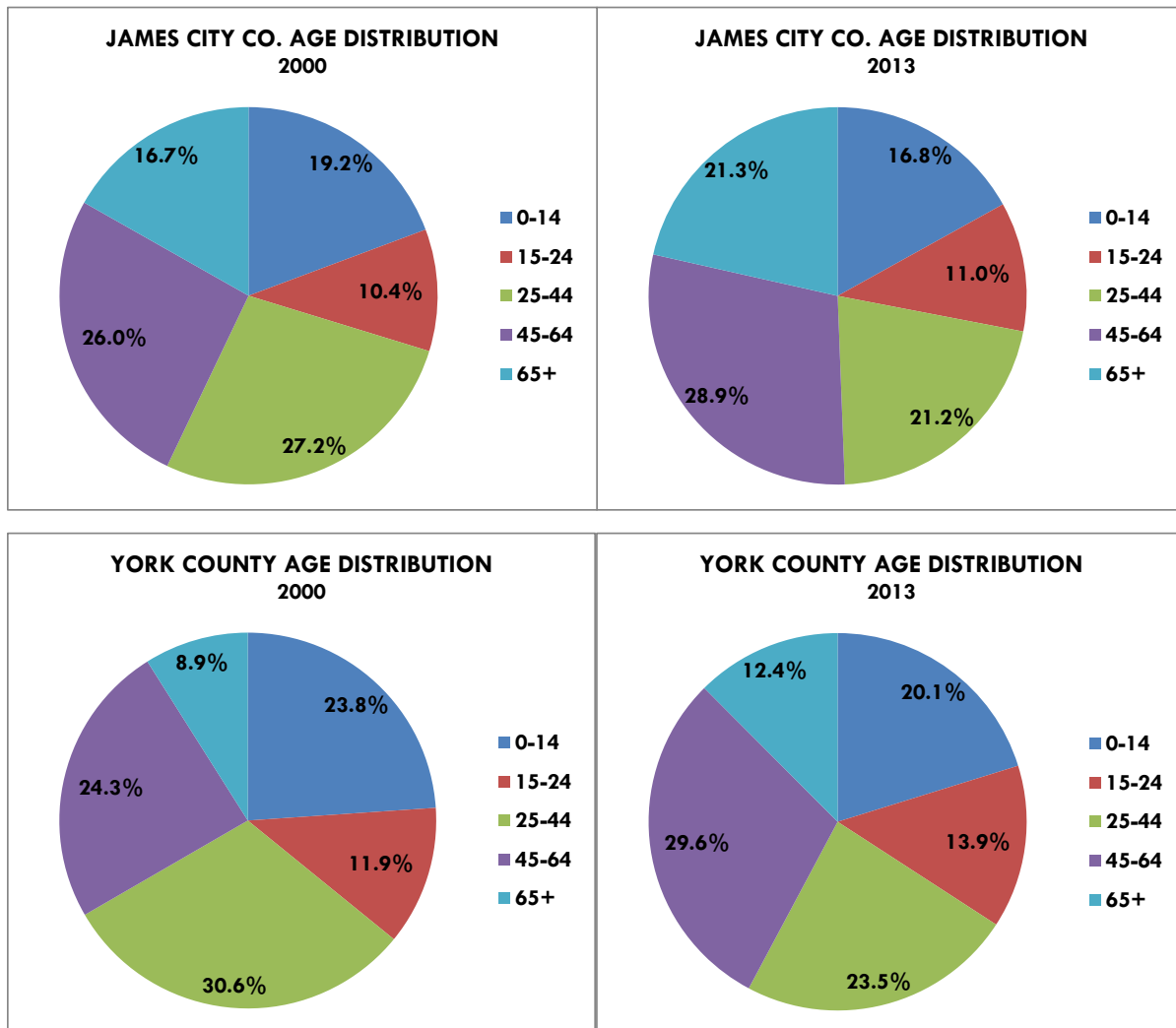
the past. Smaller household size could also be the result of an increase in the “empty-nest” retirement age population consisting largely of couples who no longer have children living with them.

3. Population by Age

Although the populations within most age groups have been on the rise in both James City and York Counties, those 65 years of age and over have seen the highest proportional increases, which reinforces the notion that the area is a popular retirement destination.

In 2000, the 65 and over age cohort of James City County comprised about 17% of the population compared to 21% in 2013. In this period, the 65 and over age cohort grew in real numbers by almost 87%. The second fastest growing age cohort was the 45-64 age group, which increased by approximately 63% to a proportion of 29% of the population. This age group is generally considered to be of working age and in their prime earning years. The younger working-age 25-44 cohort had the lowest rate of growth at 14%, and accounted for about 21% of the population compared to 27% in 2000. In York County, this age cohort actually decreased in population by 9%, and the 0-14 age cohort remained static. Otherwise, the “population by age” dynamics are similar to James City County (Figure 3-3).

Figure 3-3



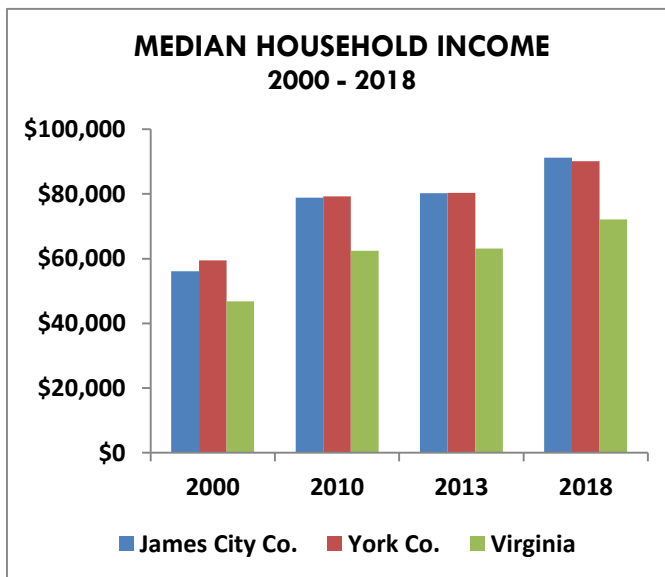
Source: ESRI and RKG Associates, Inc., 2014

4. Household Income

Household income data indicates a level of relative prosperity and much similarity in James City and York Counties with regard to household incomes. Both counties' median incomes have consistently exceeded the state since 2000. In 2013, the median household income in James City and York were \$80,200 and \$80,322, respectively, compared to \$63,146 in Virginia.

An examination of the counties' economic base shows growth trends in most industry sectors, including higher paying sectors such as health care, professional, services, management of companies, and finance. Of course retail, restaurants, entertainment and recreation, and hotels comprise the key sectors of the area's visitation based economy, and have grown as well. Employment is analyzed in more detail in the Economic Base Analysis.

Figure 3-4

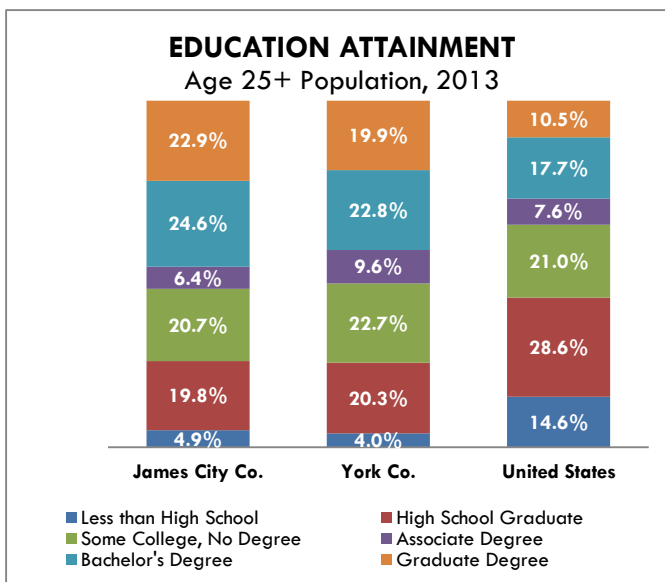


Source: ESRI and RKG Associates, 2014

5. Education Attainment

The education attainment of the local and regional labor force is a significant factor in supporting efforts to expand economic development and attract new employers. Figure 3-5 illustrates the educational attainment levels of the population 25 years and older for James City and York Counties and nation as of 2013. James City County has the largest proportions of population with bachelors and graduate degrees among the three comparative areas. James City's 25% and York's 23% proportion of bachelors degrees is significantly higher than the nation at 18%. Likewise, the proportion of graduate degrees was 23%, and 20% in James City and York Counties, respectively, compared to 11% in the nation. This finding is a positive, when considering expanding economic development recruitment for industries requiring highly skilled workers.

Figure 3-5



Source: ESRI and RKG Associates, 2014

C. ECONOMIC BASE ANALYSIS

The economic base analysis examines changes in the labor force and business characteristics of the greater study area in an effort to understand and frame the non-residential development potential in the Mooretown Road Extension Corridor. This analysis includes data on employment, major employers, labor force and unemployment trends, occupational skills and commuting patterns, which will help to establish a context for evaluating the non-residential development potential.

1. Employment Trends

At-place employment measures the number of workers within a specific geography, without regard to place of residence. For example, in 2011 James City County had approximately 23,300 people who worked in the county, which included 15,850 in-commuters and 7,490 residents who also worked in the county. At-place employment does not include working residents who commute to jobs outside of their county or city of residence.

James City County added 1,474 new jobs from 2002 through 2013, for a total of 23,337. York County added 9,235 new jobs during the same period, for a total of 21,344, and Williamsburg City added 1,116 jobs to its 2013 total of 16,224.

Employment by major industry sectors are shown for James City and York Counties as well as Williamsburg City in order to provide the most accurate depiction of industry characteristics that may impact future development in the study area. The top five industries in all of the subject jurisdictions include hotels & restaurants and retail, which reflect the preponderance of the major destination attractions in the area and associated visitation. However, each jurisdiction has its own unique employment characteristics as described in more detail below (Figure 3-6 and Table 3-2).

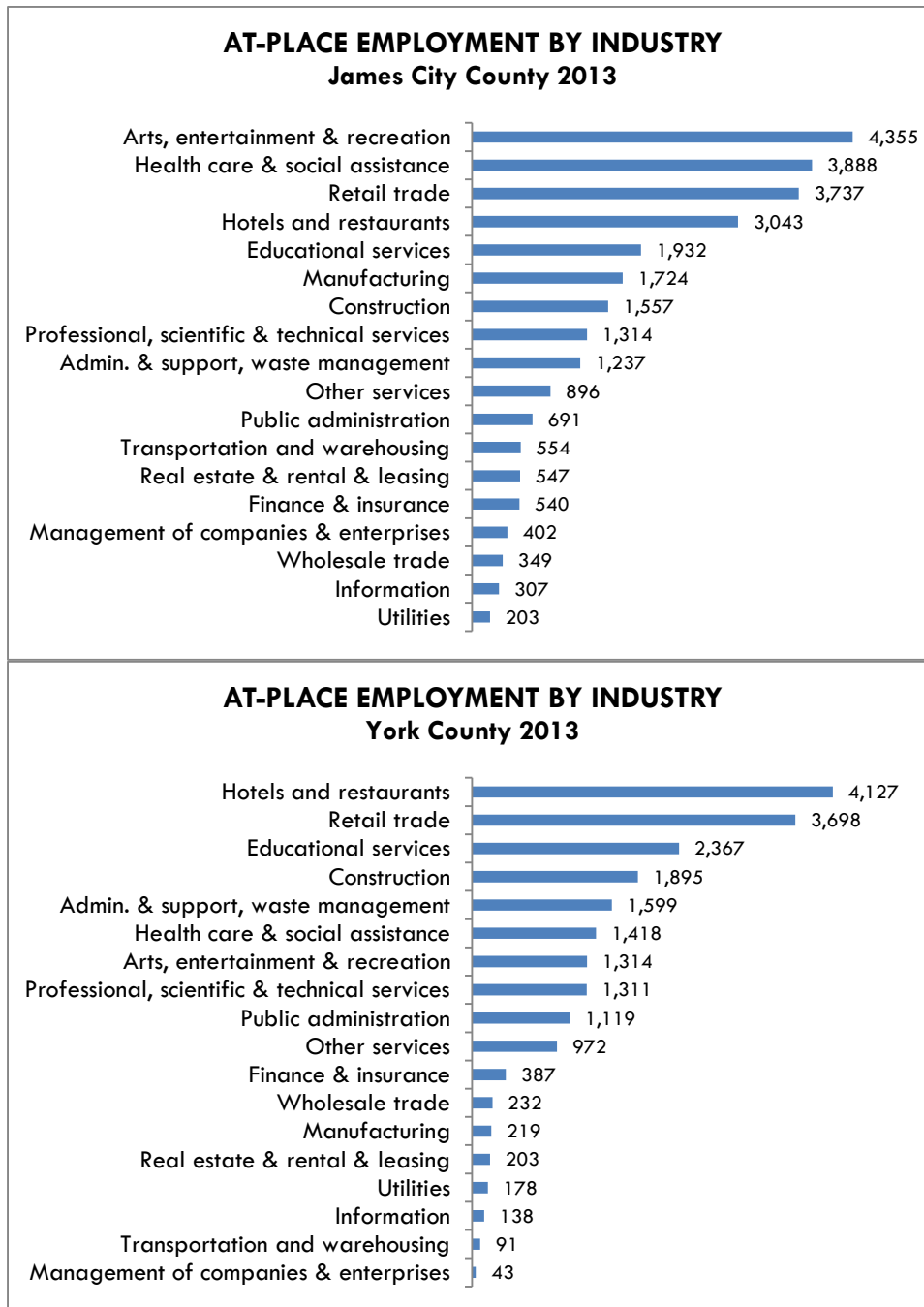
James City County — The presence of the Busch Gardens amusement park accounts for the high employment in the arts, recreation and entertainment sector which also heavily supports hotels, restaurants, and retail. The county is also home to Eastern State Hospital and several nursing homes which employ persons in the health care industry. The county has nearly 30 manufacturing establishments employing over 1,700, despite having declined in employment by 38% since 2002. White collar sectors including information, finance & insurance, professional services, management of companies, and administration account for over 3,000 jobs in the county, and have all seen increases in employment since 2002. These sectors typically occupy office buildings.

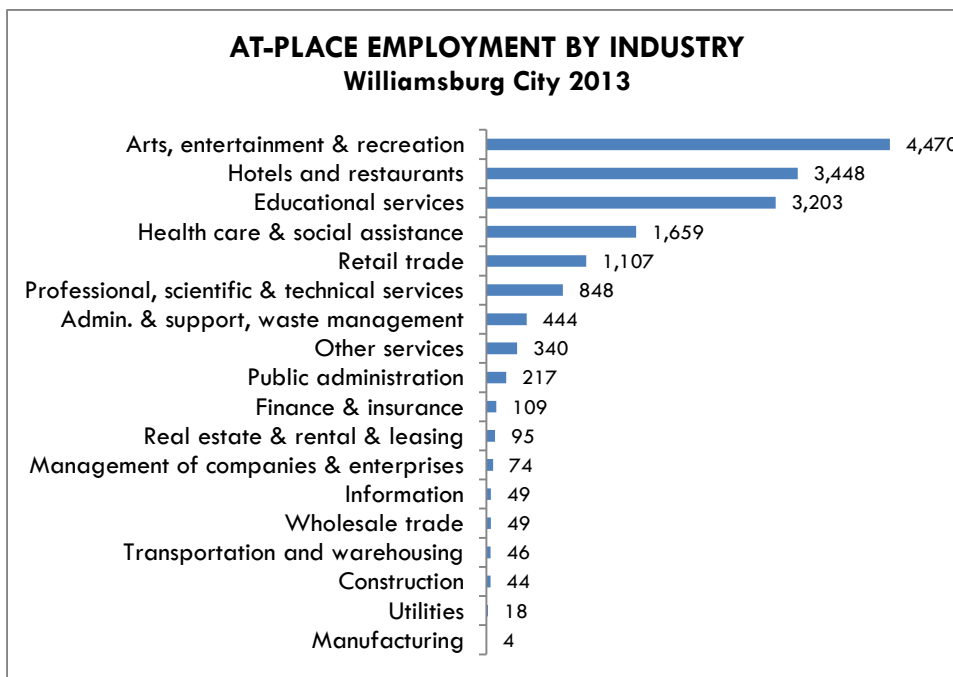
York County — Home to Water Country USA, historic Yorktown, and Williamsburg Pottery, York County also has strong hotel, restaurant and retail sectors, albeit the arts, entertainment and recreation sector is the smallest of the subject jurisdictions at just over 1,300. York County's information, finance & insurance, professional services, management of companies, and administration sectors account for nearly 3,500 jobs in the county, and similar to James City County, have added new jobs since 2002.

Williamsburg City — Williamsburg's top five industry sectors by employment are arts, entertainment and recreation (Colonial Williamsburg), hotels and restaurants, education (College of William & Mary), health care and retail.

Among the three jurisdictions, notable increases in employment occurred in the following industry sectors from 2002 to 2013: professional services, 74% (1,480 jobs); arts, entertainment & recreation, 65% (4,000 jobs); finance & insurance, 59% (390 jobs); retail, 47% (2,740 jobs); other services, 46% (695 jobs); and, health care, 36% (1,857 jobs).

Figure 3-6





Source: U.S. Census County Business Patterns, Virginia Employment Commission; RKG Associates, 2014

Table 3-2
At-Place Employment by Industry 2002-2013 Trends
James City and York Counties, Williamsburg City

NAICS*	DESCRIPTION	JAMES CITY CO.		YORK CO.		WILLIAMSBURG		TOTAL ALL		
		2013	Δ 2002 to 2013	2013	Δ 2002 to 2013	2013	Δ 2002 to 2013	2013	Δ 2002 to 2013	Percent Change
	TOTAL ALL JOBS	23,337	1,474	21,344	9,235	16,224	1,116	60,905	11,825	24%
11	Agriculture, forestry, fishing & hunting	34	1	29	1	0	(2)	63	0	—
21	Mining, oil and gas extraction	4	4	4	4	0	0	8	8	—
22	Utilities	203	20	178	36	18	(1)	399	55	16%
23	Construction	1,557	145	1,895	(221)	44	(79)	3,496	(155)	-4%
31-32	Manufacturing	1,724	(1,043)	219	(256)	4	(28)	1,947	(1,327)	-41%
42	Wholesale trade	349	(111)	232	(46)	49	(28)	630	(185)	-23%
44-45	Retail trade	3,737	990	3,698	2,081	1,107	(328)	8,542	2,743	47%
48-49	Transportation and warehousing	554	86	91	(67)	46	19	691	38	6%
51	Information	307	140	138	38	49	(158)	494	20	4%
52	Finance & insurance	540	291	387	168	109	(73)	1,036	386	59%
53	Real estate & rental & leasing	547	(45)	203	(571)	95	(372)	845	(988)	-54%
54	Professional, scientific & technical services	1,314	400	1,311	611	848	466	3,473	1,477	74%
55	Management of companies & enterprises	402	185	43	5	74	(13)	519	177	52%
56	Admin. & support, waste management	1,237	257	1,599	131	444	228	3,280	616	23%
61	Educational services	1,932	331	2,367	260	3,203	875	7,502	1,466	24%
62	Health care & social assistance	3,888	2,439	1,418	714	1,659	(1,296)	6,965	1,857	36%
71	Arts, entertainment & recreation	4,355	482	1,314	819	4,470	2,687	10,139	3,988	65%
72	Accommodation & food services	3,043	443	4,127	2,086	3,448	(800)	10,618	1,729	19%
81	Other services	896	396	972	306	340	(7)	2,208	695	46%
92	Public administration	691	62	1,119	62	217	62	2,027	186	21%

¹North American Industry Classification System Code

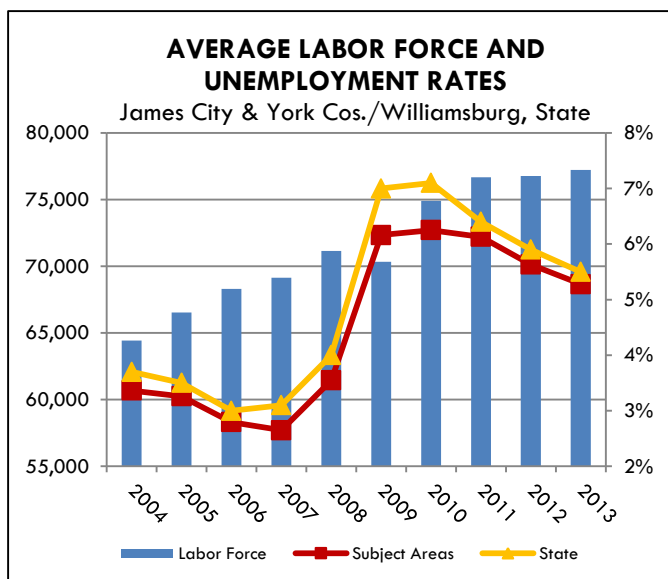
Source: US Census County Business Patterns; Virginia Employment Commission; RKG Associates

3. Labor Force and Unemployment Trends

The labor force and unemployment rate are measures of the size of a region's active, resident worker base, as well as their current employment status. The labor force includes workers who are currently employed, unemployed, or actively looking for work. The combined labor force of James City County, York County, and Williamsburg increased in size considerably over the past decade (2004-2013), from just over 64,400 in 2004 to 77,235 in 2013, in spite of a decline in 2009.

Unemployment rates in the combined jurisdictions have remained between 0.2% and 0.5% lower than Virginia's since 2004, indicating a relatively stable economic base in the region.

Figure 3-7



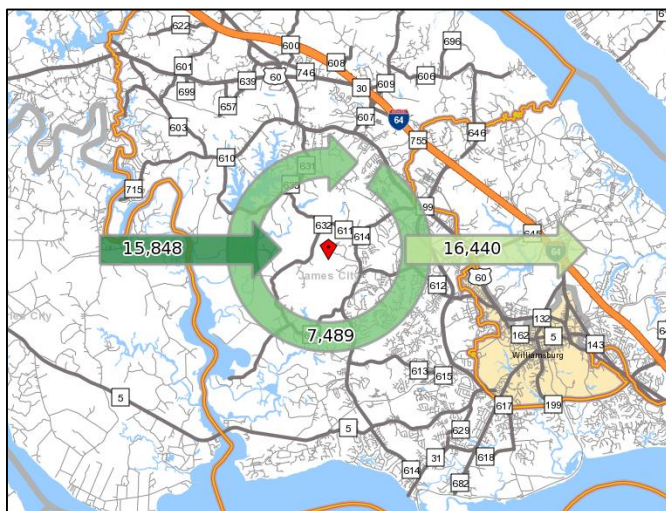
Source: U.S. Bureau of Labor Statistics; RKG Associates, 2014

5. Commuting Patterns

Understanding commuting patterns can provide useful insight into evaluating potential actions with regard to creating and retaining jobs, which will impact future residential and non-residential development. Commuting patterns highlight the flow of workers into and out of a given labor market area and as such, can help to indicate where there may be potential to capture additional jobs that are "leaking" from the local economic base.

Figures 3-7 and 3-8 illustrate 2011 commuting patterns for at-place workers and residents of James City and York Counties. Of the 23,340 persons employed in James City County in that year, 7,490 (32%) are county residents, and 15,850 (68%) live outside the county. Commuters who leave the county to work elsewhere numbered 16,440. Of this number, 22% commute into Williamsburg, 13% commute to Newport News, and the remainder commute elsewhere.

Figure 3-7: James City County Commuting Pattern



Source: US Census; RKG Associates, 2014

Of the 23,340 persons employed in York County in 2011, 7,490 (21%) are county residents, and 15,660 (79%) live outside the county. Commuters who leave the county to work elsewhere numbered 25,200. Of this number, 19% commute to Newport News, 8% commute to Hampton, and the remainder commute elsewhere.

Williamsburg City is a strong net importer of workers. In 2011 there were 16,220 at-place jobs in the city, 93% of which employed non-resident commuters. Only 1,200 at-place workers both lived and worked in Williamsburg, and 3,700 commuted to work outside the city, most to jobs in Newport News.

D. IMPLICATIONS

The area's economy has supported robust population and household growth over the past decade. James City County, York County, and Williamsburg combined to add almost 12,000 new jobs from 2002 to 2013. The population in James City County alone grew by 46% from 2000 to 2013, and Williamsburg City saw a surge in population as well. As long as the area's economy continues to expand beyond the entertainment and hospitality industries, the demand for land to accommodate both residential and non-residential uses will continue.

Figure 3-8: York County Commuting Pattern



Source: US Census; RKG Associates, 2014

4 REAL ESTATE MARKET ANALYSIS

A. INTRODUCTION

This chapter examines recent real estate trends within the region, with a focus on non-residential and residential market forces that are shaping the study area’s development environment. The analysis includes factors such as existing inventory of buildings and units, development trends within selected time frames, vacancy and absorption rates, and sales values/lease rates. In addition, RKG Associates conducted a number of interviews with local development and real estate professionals in order to understand the nuances of the market and to gain an “in-the-field” perspective on the potential demand and speculative investment climate.

Data was gathered from a number of sources, both public and private, which include: James City and York Counties; the Old Dominion University Center for Real Estate and Economic Development, Coldwell Banker Traditions, ESRI Business Solutions, CoStar, and Demographics Now.

B. GENERAL LAND USES

The first step in a sector based real estate market analysis is to determine a market area that is reasonably assumed to impact development in the subject geography, the Mooretown Road Extension Corridor. For the purposes of this analysis, James City County and York County comprise the primary market area that which will exert the greatest influence on the future development potential in the study area. Data for ratable, general land uses were obtained from the tax assessor’s databases for both James City County, and York County. Market data is also included for Williamsburg City for the analysis of certain real estate sectors.

Single family homes dominate the residential sector with an estimated total of 44,000 units, followed by apartments at nearly 5,000. As a vacation destination the area supports timeshare units, of which there are approximately 2,250. Condominiums number just over 1,800, and duplexes number just over 830.

Table 4-1
General Land Uses
James City & York Counties 2013

Land Use	James City County	York County	Total
RESIDENTIAL			
Single-Family	24,814	19,219	44,033
Apartments	3,295	1,663	4,958
Timeshares	1,104	1,145	2,249
Condominiums	927	891	1,818
Duplex	174	660	834
NON-RESIDENTIAL			
Retail/Service	4,327,779	3,869,782	8,197,561
Industrial	5,326,597	1,385,304	6,711,901
Warehouse	4,690,704	1,832,983	6,523,687
Restaurant/Lodging	1,155,343	1,832,983	2,988,326
Office	1,804,427	705,305	2,509,732
Entertainment	1,027,183	87,041	1,114,224
Automotive	101,811	362,518	464,329

Source: James City Co.; York Co.; RKG Associates 2014

In the total non-residential sector retail/service sector for both counties accounts for the highest amount of square footage at approximately 8.2 million square feet. The industrial sector comprises 6.7 million square feet, over 3 million of which belongs to Anheuser-Busch in James City County, followed by warehouses at 6.5 million. Restaurants and lodging comprise nearly 3.0 million square feet, and are heavily supported by tourism to the area. Office comprises 2.5 million square feet of space, and is characterized by low rise, campus type inventory. The entertainment industry is a key employer in the area, and accounts for over 1.1 million square feet of building space under roof along with a myriad of open air uses. Automotive uses such as gas stations and garages account for less than 500,000 square feet (Table 4-1).

C. RESIDENTIAL MARKET TRENDS

1. Development Trends

An examination of residential development trends over time is useful for projecting future absorption, even ten or fifteen years into the future. For the purpose of this analysis, the five years prior to 2008 are examined separately from 2008 through 2013, in order to assess the impact of the economic downturn on the market.

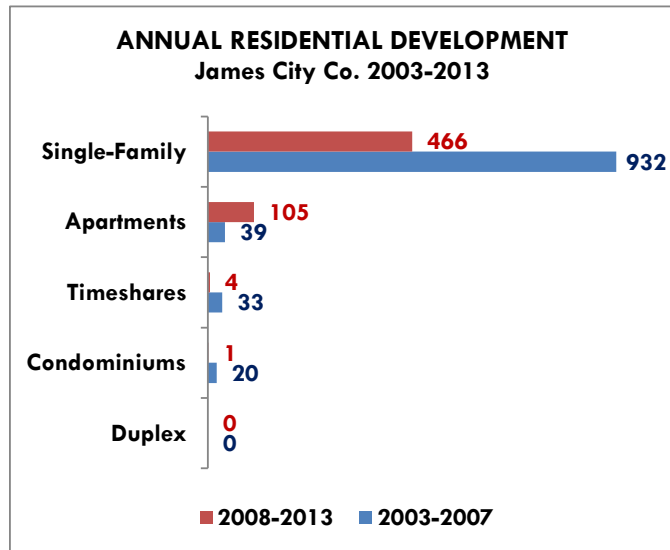
In James City County, 932 average annual single family units were added to the inventory from 2003 through 2007, followed by apartments at 39, timeshares at 33, and condos at 20.

In the six year period from 2008 through 2013, the average annual single family units declined to 466, while the average annual apartments increased from 39 to 105 following a national trend of apartment construction in response to tightened credit and lower demand from potential home buyers. Annual timeshare and condominium units dropped to four and one, respectively, likely holdovers from 2007.

In York County, 342 average annual units were added to the inventory in the five-year period from 2003 through 2007. During the same period, an average of 43 apartments were added annually, followed by timeshare units at 29, condos at 27, and duplexes at 12.

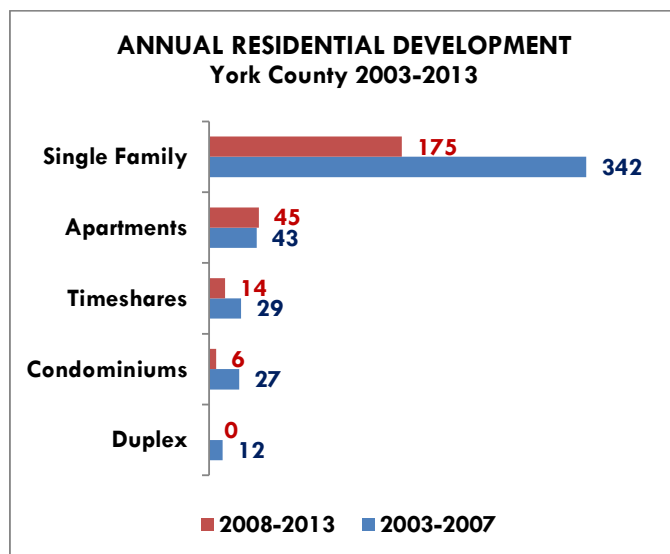
From 2008 to 2013, new single family units were added at an average of 175 annually. Annual average apartments

Figure 4-1



Source: James City Co.; York Co.; RKG Associates 2014

Figure 4-2



Source: James City Co.; York Co.; RKG Associates 2014

increased slightly to 45. Timeshare units decreased to 14 average annual, followed by an average of six condos per year, and zero duplexes.

2. Housing Characteristics

In 2013, median owner occupied dwelling unit values were as follows: James City County, \$324,200; York County, \$336,600; and, Williamsburg City, \$326,200. Based on discussions with real estate professionals, York County has a significant number of waterfront homes, which tends to drive up value. Williamsburg City has a large proportion of units in the over \$500,000 category, which also drives up the median value.

Median cash rents in James City and York Counties are relatively close, at \$1,066 and \$1,110 respectively, compared to \$910 for Williamsburg City. In James City County, 53% of monthly cash rents exceed \$1,000, compared to 59% in York County and 45% in Williamsburg City (Figure 4-4).

The size of single family dwelling units trended upward from 2003 to 2007, and generally decreased in average size after 2007. The average James City County single family dwelling unit size prior to 2003 was 2,132 square feet. Single family dwelling units constructed from 2003 through 2007 averaged 2,641 square feet in size, and units constructed from 2008 through 2013 were somewhat smaller again, averaging 2,410 square feet. In York County, single family dwelling unit size prior to 2003 was 2,102 square feet. Single family dwelling units constructed from 2003 through 2007 averaged 2,943 square feet, and units constructed from 2008 through 2013 averaged 2,573 square feet. The trend to smaller sized units from 2003-2007 to 2008-2014 reflects the tightening of the market and a market shift to more affordable product.

Figure 4-3

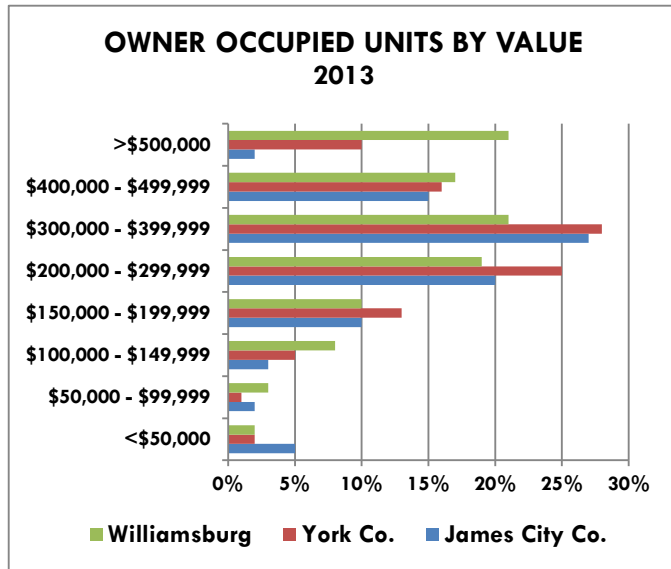
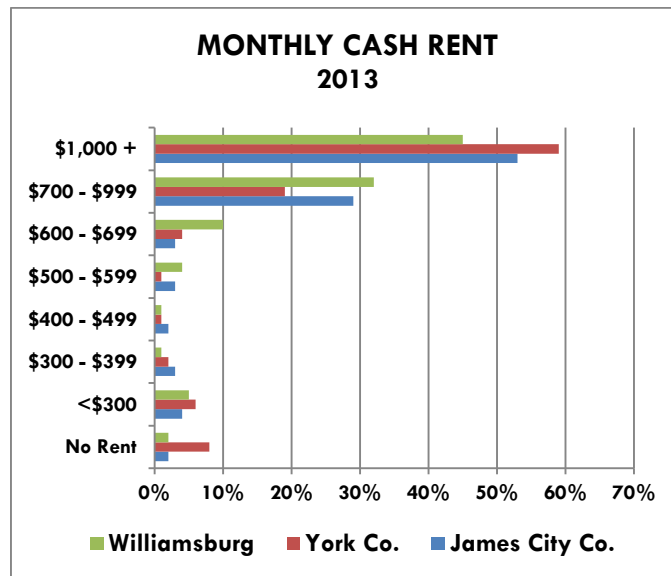


Figure 4-4



Source: James City Co.; York Co.; RKG Associates 2014

James City and York Counties have demonstrated relatively low proportions of renter occupied housing compared to owner occupied housing since 2000, although the proportion has increased slightly from 2000 to 2013. Nationally, renter occupied units accounted for approximately 30% of all occupied units in 2013, compared to approximately 25% in James City and York Counties. In Williamsburg City, the proportion of renter occupied housing exceed both the comparative counties and the nation, at approximately 56% in 2013, up from 50% in 2000.

The number of vacant units has increased in all jurisdictions since 2000, most dramatically in York County, which rose from 3.5% of total units in 2000 to 10.3% in 2013. Vacancies decreased dramatically in Williamsburg City, from 7% in 2000 to 1.4% in 2013 (Table 4-2).

**Table 4-2
Housing Occupancy Trends
James City County, York County, Williamsburg City**

	James City County	York County	W'burg City
2000			
Housing Units	20,745	20,582	3,475
Total Occupied Units	18,979	19,871	3,483
Owner Occupied Housing Units	77.0%	75.8%	42.5%
Renter Occupied Housing Units	23.0%	24.2%	50.4%
Vacant Housing Units	8.5%	3.4%	7.0%
2010			
Housing Units	29,797	26,849	5,176
Total Occupied Units	26,860	24,006	4,571
Owner Occupied Housing Units	76.1%	75.1%	38.6%
Renter Occupied Housing Units	23.9%	24.8%	49.7%
Vacant Housing Units	9.8%	10.5%	11.6%
2013			
Housing Units	31,106	27,194	5,250
Total Occupied Units	28,113	24,374	5,172
Owner Occupied Housing Units	75.5%	74.7%	42.8%
Renter Occupied Housing Units	24.5%	25.3%	55.6%
Vacant Housing Units	9.6%	10.3%	1.4%

Source: Site to do Business; RKG Associates 2014

3. Pipeline Development

Pipeline development usually refers to projects that are in the predevelopment approval phases, such as site plan or subdivision approval, which constitute an inventory of future residential dwelling units. Since taking projects to these stages typically involves considerable investments in time and money, it can be reasonably assumed that these units will be constructed in the relative near term, the pace of which is influenced by market conditions. Developers and investors maintain a close watch on the development pipeline to help inform their go/no-go decisions on new, speculative projects. As with any commodity, the housing market is subject to the laws of supply and demand.

The James City County Planning Division estimated a pipeline of approximately 9,400 residential units in approved residential subdivisions as of December 2013. If residential construction continues to proceed at the 2008-2013 rate of 576 units per year average, it will take just over sixteen years to build 9,400 units. If the rate of residential construction proceeds at the 2003-2007 pace of 1,024 new units per year average, 9,400 units could be built in just over nine years, with a midpoint between twelve and thirteen years.

The York County Department of Environmental and Development Services estimated that approximately 1,570 residential units were within approved planned developments in September 2012. At the 2008-2013 rate of 453 new annual units average, it would take just three years to build 1,570 units, and between six and seven years at the 2008-2013 rate of 240 new units per year average.

Discussions with planners and developers in both counties revealed that the rate of development will abate as the availability of developable land diminishes. In York County, Environmental and Development Services has projected an additional 10,400 units as the maximum build-out scenario assuming each parcel will be developed to the maximum extent allowed under the existing zoning. However, they concede that is unlikely due to fact that remaining sites will be increasingly encumbered by environmental and other constraints that will reduce allowable lot yields. According to the County

of York 2012 – 2013 Comprehensive Plan, residential development in York County is projected to add approximately 5,700 new housing units by 2035.

4. Implications

Although significant development opportunities in the Mooretown Road Extension Corridor may be fifteen years or more off into the future, they should present themselves at an opportune time from a supply perspective. There is a general consensus in the planning and real estate communities in both James City and York Counties that the best development sites have been taken, and developers are already facing the prospect of considering less desirable sites. Of course, the access that an extended Mooretown Road will provide to new opportunity sites will make them extremely desirable.

The area will also be desirable from the perspective of potential residents for a number of reasons: its easy access to I-64; its reasonable driving distance to Hampton Roads' urban employment centers to the south and Richmond to the east; and, the abundance of desirable amenities within close proximity.

D. NON-RESIDENTIAL MARKET TRENDS

This section details the recent and historical real estate trends in the industrial and office markets that encompass and influence the study area's development environment. This nonresidential analysis reflects the most current market conditions and includes information such as building, development trends, and lease and vacancy rates. The purpose of this analysis is to identify the existing competitive supply of real estate and provide estimates of potential future demand within the Mooretown Road Extension Corridor area.

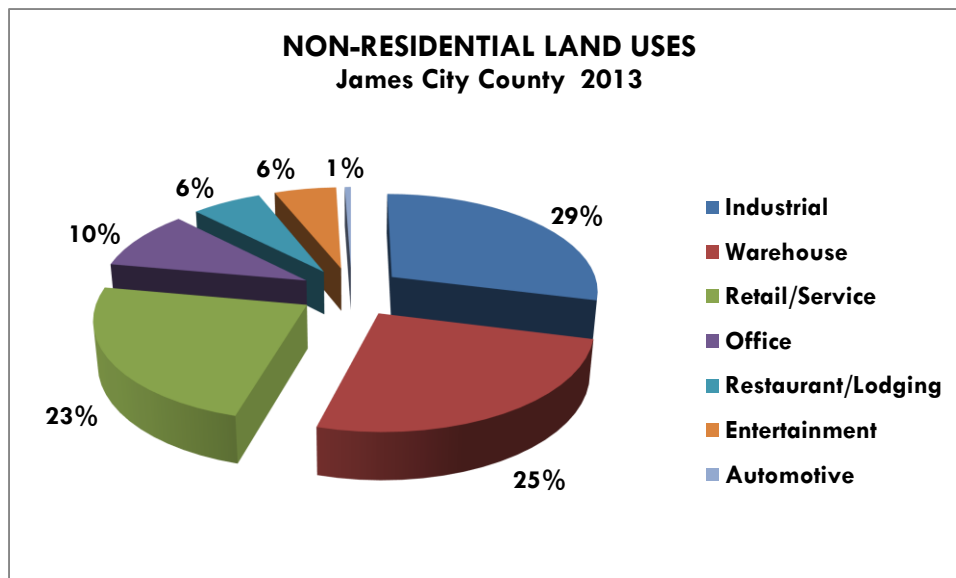
1. Nonresidential Building Inventory

Based on a review of tax assessment records, a summary inventory has been compiled that illustrates the total building square footage for nonresidential buildings in the study area. The building uses presented in Figure 4-5 and 4-6 are generalized categories of the actual use types listed in the databases.

Automotive uses include auto dealerships, gas stations and garages. Entertainment is shown as its own category to reflect its prevalence in the greater Williamsburg area, although many of the entertainment attractions are open space oriented (amusement park rides) and are not documented on a square foot basis. Restaurant and lodging includes fast food and full service restaurants, as well as hotels and motels. Office includes conventional office space not associated with warehouse or industrial uses, and medical office space. Retail and service comprises food, pharmacy, and merchandise stores as well as shopping centers and malls. Services such as drive in banking, gyms and spas and daycare are included under retail/service. The warehouses category is limited to storage and distribution, and the industrial category encompasses production facilities. Non-taxable uses such as government facilities and public schools are not shown in this analysis.

In James City County, industrial uses account for the largest amount of improved space at 5.3 million square feet, approximately 3.2 million square feet of which is owned and operated by a single user, the Anheuser-Busch brewery. Warehouse space comprises the second largest land use at approximately 25% or 4.7 million square feet followed by retail/service at 23% or 4.3 million square feet, and office at 10% or 1.8 million square feet (Figure 4-5).

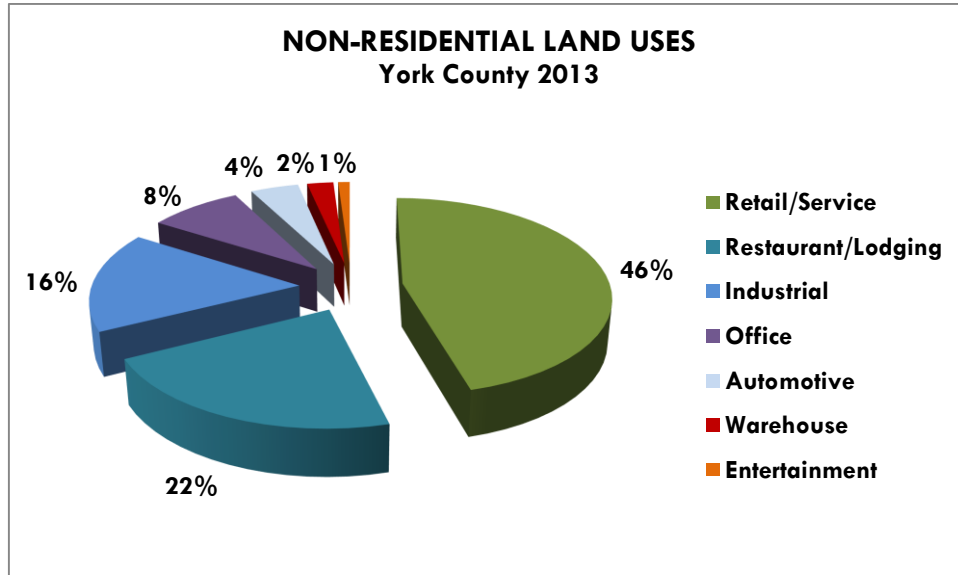
Figure 4-5



Source: James City Co.; RKG Associates 2014

York County's non-residential land use characteristics are somewhat different than James City County, with retail/services comprising the largest amount of improved space at 3.9 million square feet or 42%, followed by restaurant/lodging at 1.8 million square feet or 20%, industrial at 1.4 million square feet or 15%, and office space at 8% or 705,000 square feet (Figure 4-6).

Figure 4-6

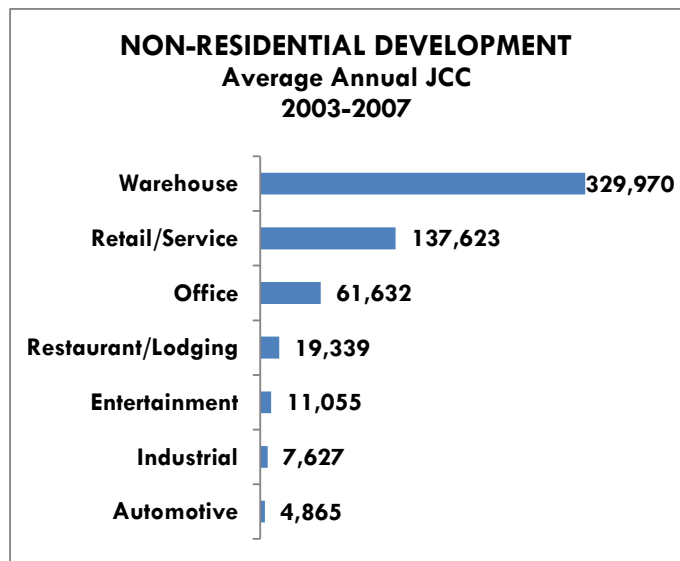


Source: York Co.; RKG Associates 2014

1. Non-Residential Development Trends

An examination of non-residential development trends since 2003 is useful for projecting how certain land use types may develop in the future. In James City County, 1.6 million square feet of warehouse space was developed from 2003 through 2007, approximately 1 million square feet of which was a single Walmart warehouse. Otherwise, warehouse development would be roughly equivalent to retail/service development at approximately 650,000-700,000 square feet over this period. Whereas warehouse development dropped to just about 110,000 total square feet in the 2008 to 2013 period, retail/service development stayed steady at 136,000 square feet annually, totaling 678,000 square feet over the period.

Figure 4-7

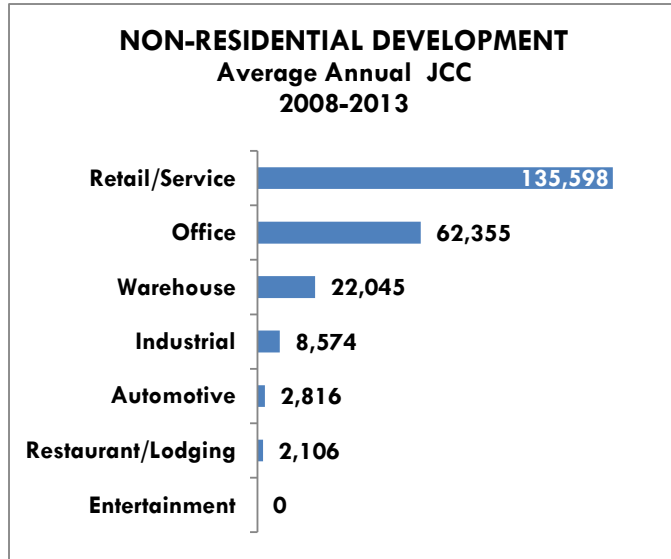


Source: James City Co.; RKG Associates 2014

Office development has stayed very consistent on an annual basis since 2003, averaging approximately 61,600 square feet in the 2003-2007 period and 62,400 in the 2008-2013 period. Restaurant/lodging development totaled nearly 97,000 square feet in the 2003-2007 period, dropping to a total of just over 10,500 square feet from 2003 through 2013. Industrial development in the 2003-2007 period totaled approximately 38,000 square feet, compared to 43,000 from 2008 through 2013. The entertainment category added just over 55,000 square feet from 2003 through 2007, with no building activity in the subsequent period (with the possible exception of amusement park rides). For illustration purposes, non-residential development is shown as average annual square feet in Figures 4-7 and 4-8.

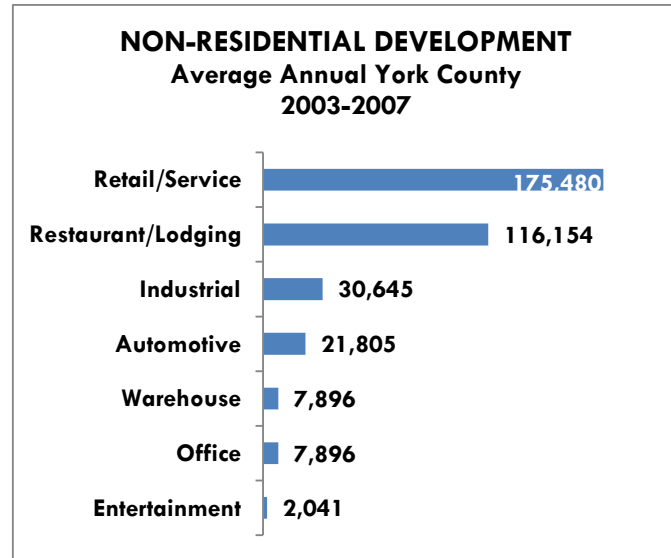
The retail/ service and restaurant / lodging categories have remained consistent leaders in non-residential development trends in York County from 2003 through 2013, although the pace of development has declined since 2007. In the 2003-2007 period, the retail /service sector added approximately 877,000 square feet, compared to 446,000 square feet in 2008-2013, but still remained the leader in development. Restaurant/lodging development declined from approximately 581,000 square feet in 2003-2007 to 196,000 square feet in 2008-2013, but still remained second in new development.

Figure 4-8



Source: James City Co.; RKG Associates 2014

Figure 4-9



Source: York Co.; RKG Associates 2014

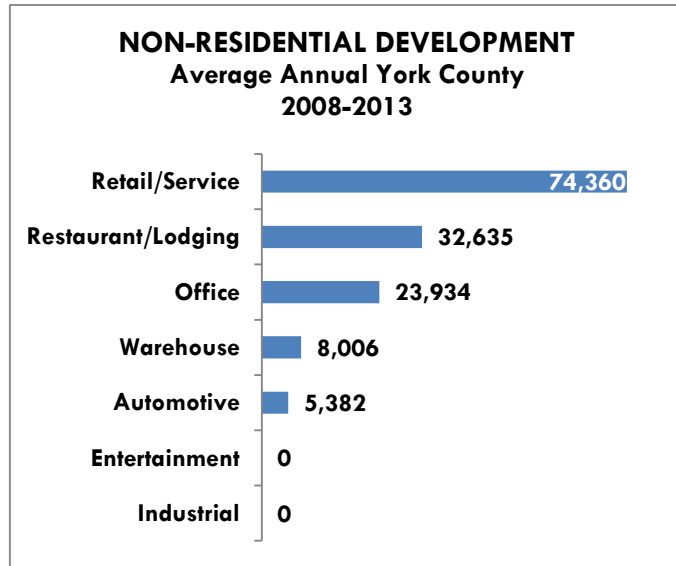
York County actually experienced an upsurge in office development, from approximately 109,000 square feet in 2003-2007 to 196,000 square feet in 2008-2013. Warehouse development also saw an increase in the pace of development, from approximately 39,500 square feet in 2003-2007 to 48,000 square feet in 2008-2013. The entertainment and industrial sectors saw no development activity from 2008 through 2013 (Figures 4-9 and 4-10).

2. Retail Market Characteristics

The term “retail” generally refers to operations involved in the sale of goods, merchandise, or services from a fixed location, such as a shopping center or freestanding store. Information on the local and regional retail marketplace is derived from CoStar, a national real estate data reporting service. CoStar generally classifies retail into five major categories by building configuration: **general retail**, which is typically single tenant freestanding general purpose commercial buildings with parking; **malls**, regional or super regional centers ranging in size from 250,000 square feet to 1.5 million square feet built around two or more full-line department stores; **power centers**, typically consisting of several freestanding anchors and a minimum amount of small specialty tenants; **shopping centers**, neighborhood or community centers ranging in size from 50,000 to 250,000 square feet built around a junior department store, variety store, super drugstore, or discount department store as the major tenant, in addition to a supermarket; and, **specialty centers**, usually located in tourist areas and include outlet centers and theme centers (e.g., Williamsburg Pottery, Premium Outlets).

CoStar recognizes 47 submarkets in the greater Hampton Roads retail marketplace. The two most relevant to the Mooretown Road Extension Corridor are the Lightfoot and Williamsburg submarkets (Figures 4-11 and 4-12). Although the Lightfoot submarket completely contains the Corridor area, the Williamsburg submarket is significant due to its close proximity and size of its inventory. Whereas the Lightfoot submarket contains 87 buildings comprising 2.7 million square feet, the Williamsburg submarket has 254 buildings comprising 4.6 million square feet. In the regional context, the greater Hampton Roads market contains over 100 million square feet of retail (Table 4-4).

Figure 4-10



Source: York Co.; RKG Associates 2014

**Table 4-3
Retail Market Characteristics
Lightfoot & Williamsburg Submarkets Q1 2014**

Submarket	Existing Inventory		Vacancy	
	Buildings	Square Feet	Square Feet	Percent
LIGHTFOOT				
General Retail	73	792,775	5,293	0.7%
Power Center	1	384,141	5,240	1.4%
Shopping Center	10	529,623	111,902	21.1%
Specialty Center	3	970,528	0	4.6%
Subtotal	87	2,677,067	122,435	4.6%
WILLIAMSBURG				
General Retail	219	1,358,457	110,869	8.2%
Mall	2	537,160	51,497	9.6%
Power Center	1	379,322	0	0.0%
Shopping Center	32	2,348,900	321,582	13.7%
Subtotal	254	4,623,839	483,948	10.5%
TOTAL	341	7,300,906	606,383	8.3%
Hampton Roads	7,646	100,107,388	6,553,987	6.5%

Source: CoStar; RKG Associates 2014

Figure 4-11

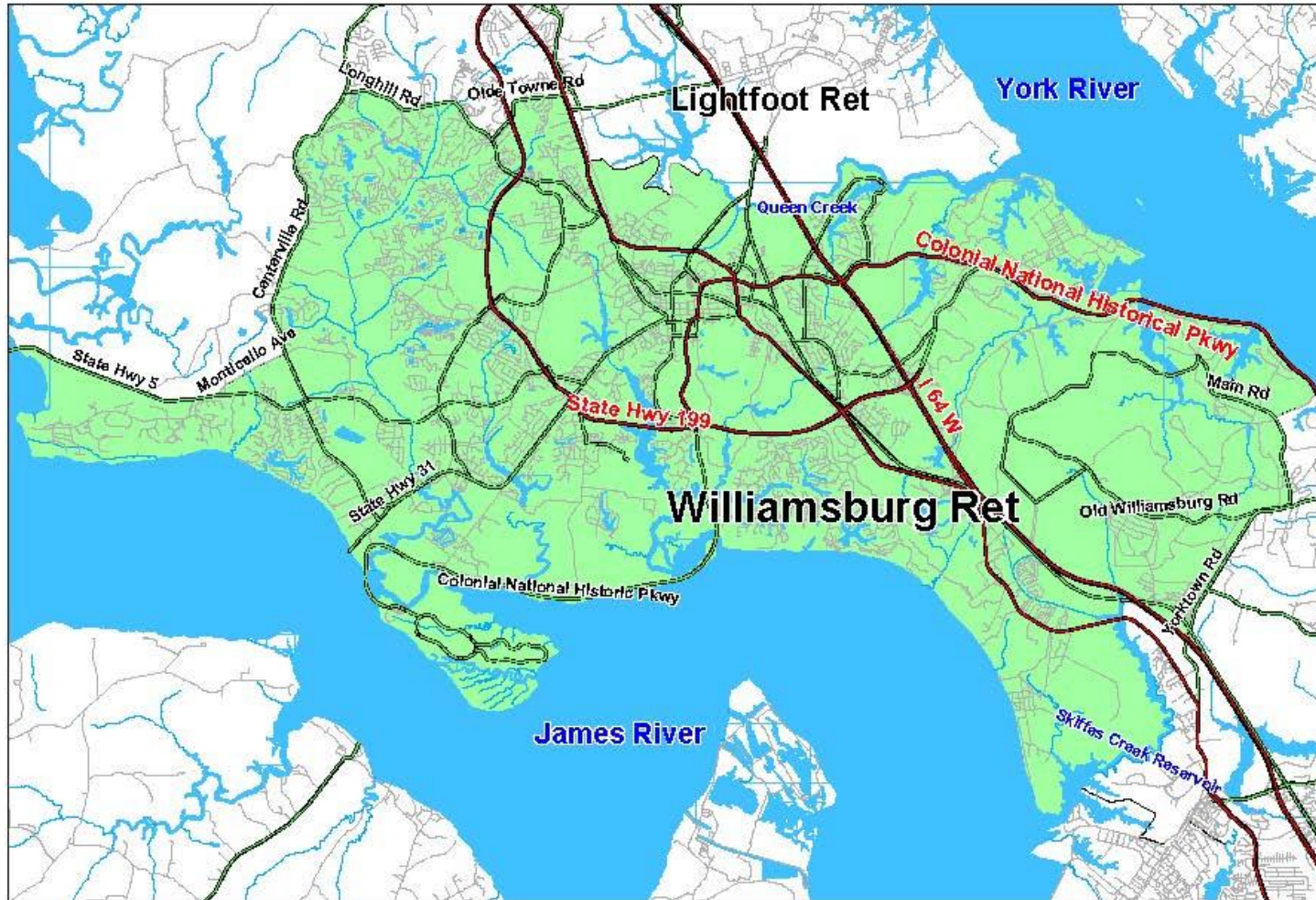


Lightfoot Retail Submarket

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Figure 4-12



Williamsburg Retail Submarket

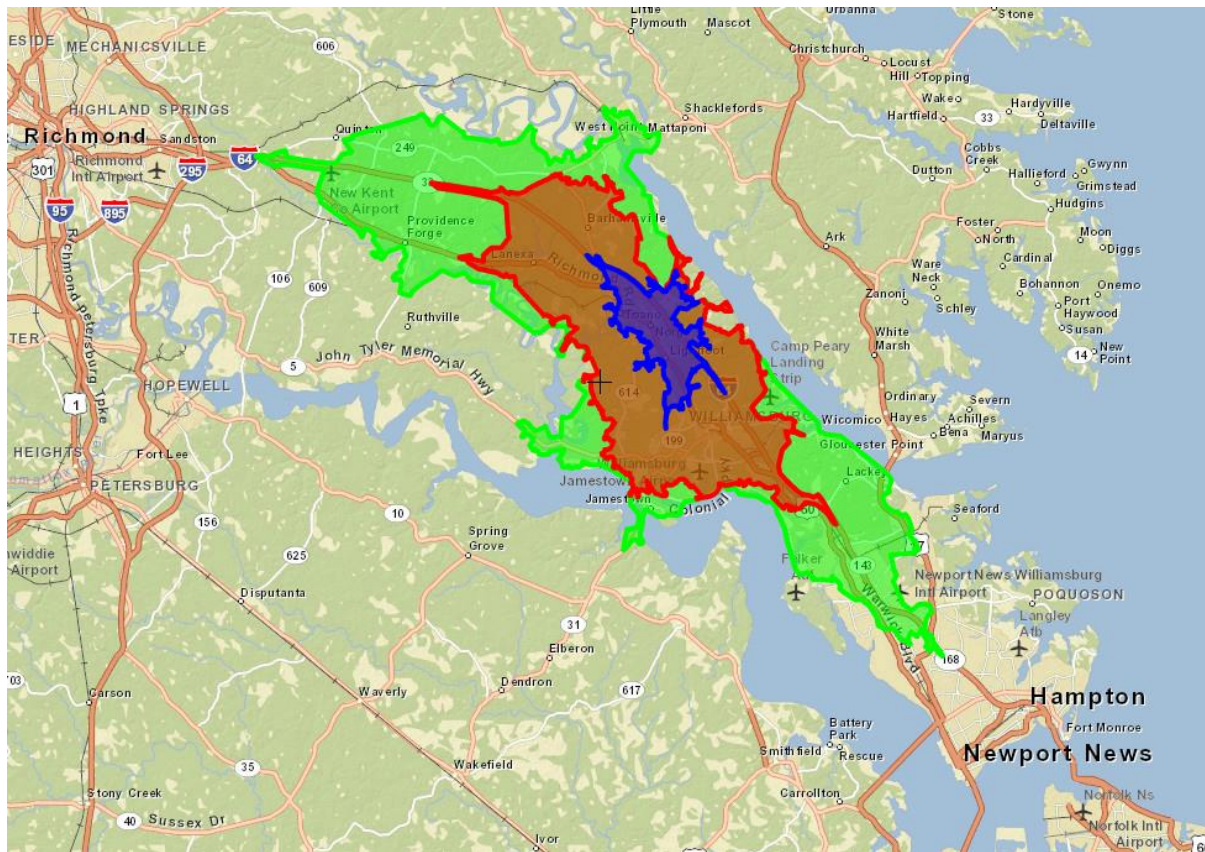
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A widely accepted measure of retail characteristics is the *Retail Market Potential*, a comparison of supply and demand to determine potential sources of revenue growth at any standard or user defined geographic level. An **opportunity gap**, otherwise referred to as leakage, appears when household expenditure levels for a specific geography are higher than the corresponding retail sales estimates. This difference signifies that resident households are meeting the available supply and supplementing their additional demand potential by going outside of their own geography. The opposite is true in the event of an **opportunity surplus**. That is, when the levels of household expenditures are lower than the retail sales estimates. In this case, local retailers are attracting residents of other areas into their stores.

Three trade areas were assessed as part of the retail market potential analysis conducted for the Mooretown Road Extension Corridor: ten-, twenty- and thirty-minute drive times. Figure 4-13 illustrates the three drivesheds, indicating ten minutes in blue, twenty minutes in red, and thirty minutes in green. The ten-minute driveshed encompasses the entire Corridor area and comprises a population of 28,476. The twenty-minute driveshed encompasses all of Williamsburg City, and most of the Lightfoot and Williamsburg retail submarkets. The thirty-minute driveshed stretches from well into Newport News to the south, up into New Kent County, ending east of the I-295 Richmond bypass.

Figure 4-13



Source: Demographics Now; RKG Associates 2014

The retail market potential for each driveshed is based on household characteristics and retail inventory in each specific area and does not take into account visitation and tourism, which supports a significant portion of the area's retail inventory. Indeed, the large opportunity surpluses (in black type) in clothing and furniture and home furnishings are most likely due to the preponderance of stores catering to tourists, as are full-service restaurants. Notable opportunity gaps (in red type) are evident in grocery stores, general merchandise (within the 20-minute driveshed) and building materials, garden equipment and supplies stores (Table 4-4).

Table 4-4
Retail Market Potential by Drive Times
Mooretown Road Extension Corridor 2013

Category	10 Minutes	20 Minutes	30 Minutes
DEMOGRAPHICS			
2013 Population	28,476	101,519	255,953
2013 Households	11,424	38,841	99,234
2013 Median Disposable Income	\$50,944	\$55,564	\$49,822
2013 Per Capita Income	\$30,882	\$35,541	\$30,873
DAILY NEEDS			
Grocery Store	\$19,089,015	\$100,028,536	\$169,858,943
Specialty food stores	\$1,567,040	\$131,215	\$1,908,833
Pharmacies & drug stores	\$33,464,340	\$22,753,872	\$16,908,678
GENERAL MERCHANDISE, APPAREL, FURNITURE, OFFICE (GAFO)			
General Merchandise	\$1,340,099	\$85,359,832	\$54,882,809
Clothing and clothing accessories	\$244,700,128	\$177,291,064	\$193,448,555
Furniture and home furnishing stores	\$13,503,547	\$10,999,525	\$30,534,495
Electronic and appliance stores	\$1,885,742	\$12,044,179	\$25,501,542
Sporting goods, hobby, book, and music stores	\$2,514,292	\$3,120,252	\$27,701
Office supplies, stationery, gift stores	\$5,418	\$37,309	\$5,707,154
Bldg materials, garden equip & supply stores	\$10,340,438	\$7,113,972	\$19,633,494
FOOD SERVICE			
Full-service restaurants	\$22,799,274	\$12,864,045	\$29,732,423
Limited service eating places	\$8,939,392	\$10,860,875	\$35,292,755

Source: ESRI Business Information Solutions; RKG Associates

The retail marketplace is currently experiencing adjustment as evidenced by the high shopping center vacancy rates in the Lightfoot (21%) and Williamsburg (14%) submarkets. The addition of over 1 million square feet of retail in James City and York Counties, combined, from 2008 through 2013 has almost certainly contributed to an oversupply of locally serving shopping centers. Going forward, the key to success for retail will be visibility and access such as that enjoyed by the power center (Walmart Super Center, Lowes, Home Depot) at Mooretown Road and East Rochambeau, just to the east of the Corridor. It is anticipated that the retail marketplace will continue to remain very competitive over the next ten to fifteen years, but centers with the best visibility and access, particularly from I-64, will enjoy a competitive advantage.

3. Office

The data provided in this section are derived from CoStar. Costar typically categorizes office buildings under three classifications:

- Class A is used to describe buildings that generally qualify as extremely desirable investment-grade properties and command the highest rents or sale prices compared to other buildings in the same market.
- Class B is use to describe buildings that generally qualify as a more speculative investment, and as such, command lower rents or sale prices compared to Class A properties.
- Class C is used to describe buildings as no-frills, older buildings that offer basic space and command lower rents or sale prices compared to other buildings in the same market.

The two relevant CoStar geographical submarkets for the office sector correspond to the geographies of James City County/Williamsburg and York County, and are referred to as such. Costar only documents office space that is leased or available for lease. Of the two submarkets, James City County/ Williamsburg has the much larger inventory at approximately 2.2 million square feet compared to York County at 860,000 square feet. The total inventory for the Hampton Roads market is 48.7 million square feet. Vacancy rates for both submarkets run slightly less than the market, which was 11.4% in the first quarter of 2014.

Future office development will depend on the area's ability to continue to attract and retain employers. From 2003 through 2013, James City County/Williamsburg has added approximately 620,000 square feet to its office inventory, compared to just over 250,000 square feet in York County. This office development corresponds to employment increases in white collar industry sectors, including finance & insurance, professional and technical services, management of companies, and administrative support services.

**Table 4-5
Office Market Characteristics
Williamsburg/JCC and York Co. Submarkets Q1 2014**

Submarket	Existing Inventory		Vacancy	
	Buildings	Square Feet	Square Feet	Percent
WILLIAMSBURG / JAMES CITY COUNTY				
Class A	2	89,898	6,483	7.2%
Class B	183	1,712,454	205,385	12.0%
Class C	88	416,650	38,356	9.2%
Subtotal	273	2,219,002	250,224	11.3%
YORK COUNTY				
Class A	1	64,992	7,460	11.5%
Class B	74	616,771	59,698	9.7%
Class C	36	178,194	47,168	26.5%
Subtotal	111	859,957	114,326	10.50%
TOTAL	384	3,078,959	364,550	
<i>Hampton Roads</i>	3,301	48,717,844	5,547,132	11.4%

Source: CoStar; RKG Associates 2014

4. Industrial

CoStar classifies industrial space into two categories by use type: **flex** is a type of building designed to be versatile, which may be used in combination with office, research and development, quasi-retail sales, and including, but not limited to production, warehouse, and distribution uses; **warehouse** is primarily used for storing and/or distributing product, and typically includes a small office component.

CoStar recognizes 22 industrial submarkets in the greater Hampton Roads market. The submarket that is relevant to the Mooretown Road Extension Corridor is Williamsburg Extended, which extends from Yorktown to the south to an area north of Croaker Road, as shown in Figure 4-14.

Figure 4-14



Williamsburg Extended Industrial Submarket

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Flex space for lease in the Williamsburg extended submarket amounts to approximately 247,000 square feet in ten buildings, and has a vacancy rate of nearly 20%. Warehouse space totals 8.3 million square feet with a 4.7% vacancy rate. The greater Hampton Roads market contains 14.3 million square feet of flex space with an 11.4% vacancy rate and 95.6 million square feet of warehouse with a 7.9% vacancy rate.

Table 4-6
Industrial Market Characteristics
Williamsburg Extended Submarket Q1 2014

Submarket	Existing Inventory		Vacancy	
	Buildings	Square Feet	Square Feet	Percent
WILLIAMSBURG EXTENDED				
Flex	10	246,598	48,717	19.8%
Warehouse	111	8,316,507	391,188	4.7%
HAMPTON ROADS				
Flex	821	14,349,809	1,628,913	11.4%
Warehouse	2,822	95,556,358	7,556,762	7.9%

Source: CoStar; RKG Associates 2014

Industrial and warehouse land uses total just over 10 million square feet in James City County/Williamsburg compared to 1.6 million square feet in York County. New industrial development in James City County/Williamsburg amounted to just over 38,000 square feet in 2003-2007 and nearly 43,000 square feet in 2008-2013. New warehouse space totaled over 1.6 million square feet in 2003-2007 and 110,000 square feet in 2008-2013.

In York County, approximately 153,000 square feet of industrial space was added in 2003-2007 and no industrial space was added in 2007-2013. New warehouse space totaled just under 40,000 square feet in 2003-2007 and just over 48,000 square feet in 2008-2013.

5. Visitation Attractions

The greater Williamsburg area is unique with regard to its cluster of tourist and visitor attractions, which includes historic sites, amusement and theme parks, golf courses, and destination shopping centers. Some of the key attractions are as follows:

- **The Historic Triangle** is an arrangement of three historic colonial communities on the Virginia Peninsula stretching from **Jamestown** through **Colonial Williamsburg** on to **Yorktown**. In 2013, paid attendance at Colonial Williamsburg was 651,000, down from its peak of 1.1 million in 1985, but up 10% from its lowest attendance year, 2004.
- The area's amusement parks include **Busch Gardens**, an "Old Europe" themed amusement park near Williamsburg, and **Water Country USA**, the Mid-Atlantic's largest water park. Busch Gardens had a paid attendance of 2.7 million in 2013, down from 3.1 million in 2008. These two amusement parks have certainly contributed to Virginia's ranking of 7th among states in amusement and theme park revenues of \$268 million in 2013 (by comparison, Florida was ranked number one with \$7.4 billion in revenues).
- **Williamsburg Pottery** is a specialty retail center encompassing 160,000 square feet of enclosed space on 19 acres. It was estimated that 3 million people visited Williamsburg Pottery on an annual basis in the 1980s and early 1990s. As of 2010, visitors had dropped to 500,000 annually, presumably due to new competition such as **Williamsburg Premium Outlets**, which was built in 1988 and has an estimated 135 stores.

Market research of the amusement park industry revealed that larger companies are currently focused on expanding internationally in order to boost profitability and revenue. Domestically, amusement parks are expanding and replacing attractions in existing parks. Resorts along the lines of Great Wolf Lodge are still being developed, which integrate a unique lodging theme with indoor amusements, such as a water park. For example, there are plans currently underway to develop a \$215 million resort which includes an indoor snow ski facility and Hard Rock International Hotel between Dallas and Fort Worth, Texas.

6. Lodging

Naturally, a tourism and visitors destination area supports a significant hospitality sector, and the greater Williamsburg area is a case in point. Analysis of the greater Williamsburg lodging market, which includes properties in James City and York Counties, as well as the City of Williamsburg, show 73 lodging properties comprising 8,508 guest rooms in 2013, up from 69 with 8,447 rooms in 2008.

Hotel occupancies are a measure of the proportion of rooms rented to rooms available, and is a key metric that potential lodging investors use when evaluating the potential for new development within a specific market area. Since the Williamsburg area is a seasonal destination, lodging occupancies are at their highest from June through August, and lowest from January through March. In the summer of 2013, lodging occupancies ranged from 60.1% to 67.4%. The lowest occupancy winter months in 2013 ranged from 18.5% to 34.7%. Annual occupancy averages for the greater Williamsburg lodging market were 43.7% in 2013, and have generally been in the low forty percent range in the past six years. PKF Hospitality Research projects a national occupancy level of 63.8% in 2014, which is nearly 20 points higher than Williamsburg.

Other key metrics for lodging investors are the trends in average room rates (ADR) and Revenue per Available Room (RevPAR). If these metrics are static or in decline, investors may hold off development decisions until there is a consistent, positive trend. Analysis indicates that the marketplace is oversupplied relative to recent and current visitation levels.

Table 4-7
Greater Willamsburg Market Hotel Operating Characteristics

	2008	2009	2010	2011	2012	2013
Properties	69	70	71	71	71	72
Rooms	8,447	8,535	8,612	8,545	8,537	8,508
Occupancy	44.7%	42.5%	42.2%	42.1%	43.8%	43.7%
Avg. Room Rate	\$92.03	\$99.31	\$95.96	\$89.28	\$85.82	\$90.18
RevPAR	\$41.13	\$42.21	\$40.50	\$37.61	\$37.60	\$39.44

Source: Smith Travel Research; RKG Associates 2014

7. Summary Conclusions

Residential — The Virginia Employment Commission projects that James City and York Counties combined will add an additional 20,000 to 25,000 households by 2030. At the current rates of absorption, James City County will consume its current residential development pipeline in 12 to 13 years, and York County will consume its pipeline units in just three years. Of course, new units will come into the pipeline, but the consensus among real estate professionals interviewed for this analysis is that viable development tracts are becoming scarce as the inventory is consumed. If household growth continues as projected, demand for new housing should remain steady ten to fifteen years in the future. The locational characteristics of the Mooretown Road Corridor will make it attractive for developers and residents with its easy access to I-64 and the employment centers of Richmond and Hampton Roads.

Retail — The retail analysis shows local, community and regional trade areas as generally over supplied, which is consistent with a destination location that draws from well outside of its marketplace. However, a closer look at occupancies show relatively high vacancies in neighborhood and community serving shopping centers (Table 4-3), which indicate a local oversupply as well. Nonetheless, the high visibility and access of the Mooretown Road Corridor offers a very attractive site for developers and retail tenants who might overlook market trends to be in a more advantageous location.

Office — Since 2003, James City County has seen an average of 60,000 square feet of office delivered annually, compared to about 8,000 square feet in York County. This rate of absorption would support low density, suburban campus style development such as that which already characterized much of the local marketplace, and office space as an element of mixed use development, such as that in New Town.

Industrial — Although warehousing/distribution operations prefer proximity to highway interchanges, the demand from other land uses in the Mooretown Road Corridor could likely price them out of the market. In James City County, industrial development has slowed down in the past five years to one-tenth of what it was the previous five years, so the demand can be absorbed into existing industrial parks into the foreseeable future. If the market for flex space picks up in the next decade, it could be a land use that wants to reside in the Corridor.

Visitation Attractions — The owners of the Williamsburg Pottery are currently (Fall 2014) in the process of assessing the potential for “an international, family-focused entertainment and education complex” on 720 acres of land in the Mooretown Road Corridor. About 80% of the land is in York County with the remainder in James City County. If the project moves forward to fruition, it could represent the dominant use in the Corridor.

Lodging — One of the proposed uses in the aforementioned Williamsburg Pottery concept is lodging. Even in an over supplied market, a clever product could garner enough of the market share to thrive, at other’s expense of course. A strategically sited product in the corridor could have the distinct competitive advantage of easy access and maximum visibility.

APPENDIX E

Public Involvement Summaries



Memorandum

To: Jason Purse, James City County

Date: May 13, 2014

Project No.: 33843.00

From: Keith Lewis, Paul Moyer

Re: Mooretown Road Extension Public Meeting #1

The following document provides a summary of the comments received during the April 29, 2014 Public Meeting held at the Croaker Road Library in James City County.

Written Comments

1. In your opinion, what are the major considerations/issues that should be addressed by this study?

- Storm water, RPA, PSA, York County Property, width of road including breakdown lanes and turn lanes.
- Diverting traffic off Rochambeau between Croaker Road and Cloverleaf Lane or widen and repair to accommodate current heavy traffic. All of Rochambeau Drive is in good repair except this section.
- Reconnecting Rochambeau at 199. Why pay taxes to construct a new road when you have one going to that same point on Croaker Road? Waste of taxes.
- Money would be better spent upgrading existing roads and not building new ones. Will require extensive condemnation.
- Cost versus benefit: Too many bridges and environmental damage. Mooretown Road in York County is 2-lane residential which limits its use as an alternative route.

2. In your opinion, what are the potential benefits or impacts of constructing the Mooretown Road extension?

- No benefits, only impacts
- Benefits service to hospital and local businesses
- Benefits to a few (Hunt, Maloney, & JCC). Destroying quality of life for current landowners in AG-1.
- Few benefits—many adverse impacts.
- Benefit accrues mostly to these large landowners: Stevens Estate, Hunt, and Pottery—let these owners pay for a road to service their land.

3. Any additional comments?

- Repair current roads effecting approach to Croaker Road.
- We don't want this road. Our land is potentially right in the path. We'd be forced to move at retirement age. Our lives as we planned it would be ruined.
- Allow development of 3 large areas without a connection to Croaker Road.

Comments from Easel Pads

Traffic

- Look at Rochambeau Rd as an alternative alignment
- Add Grade separation of Rochambeau over / under 199?
- Will new development require traffic signals?
- Make sure Croaker Rd is not a bottleneck
- There are already 4 roads – can they be expanded to support the needs?

Environmental

- Should road use bridges or culverts?
- Are there other unique species other than federal or state listed plants and animals on site?
- Is it feasible to construct a road through an area such as this with a large amount of streams and wetlands?
- Is the project worth the potential impact?
- Seems like other improvements should be done before constructing a road.
- Pineridge has opted out of the Economic Opportunity area, are they still exempt from this project?

General Comments

- Why not keep going with extension all the way to Route 60?
- Need to take into account the planned growth at Stonehouse
- Why build a new road when existing roads are in poor shape such as Rochambeau
- There are concerns about the existing wells being impacted by new development.

Mooretown Road Extension Corridor Study Public Meeting #2 Summary
Norge Elementary School
October 20, 2014
7:00 pm-8:30 pm

On October 20, 2014, James City County and Vanasse Hangen Brustlin, Inc. held the second Mooretown Road Extension Corridor Study public meeting. The meeting was held at Norge Elementary School in Williamsburg and attended by 49 citizens. The following report provides a summary of the meeting presentation, feedback of the activities, and themes of the comments received.

1. Meeting Agenda

- 7:00pm Presentation by Project Staff
- Introduction
 - Alternatives
 - Market Analysis
 - Land Use
 - Traffic Forecasts and Capacity Analysis
 - Roadway Typical Section Considerations
- 7:30pm Work Session/Open House
- 8:30pm Adjourn

During the presentation, project staff updated the public on the progress of the project, introduced the alternatives developed, and provided a review of the technical analyses. At the conclusion of the presentation, attendees were invited to provide input and participate in four activities.

2. Summary of Feedback on the Activities

Activity 1

The first activity asked citizens to identify their top choice of Typical Section Concepts. A board with renderings illustrating five section concepts was on display. The public was provided with a sticker to place on their preferred choice. The options and voting results are represented in the following table:

Typical Section Concept	Total Votes Received
Shoulder and Ditch with Bike Lanes	5
Shoulder and Ditch with Bike Lanes and Sidewalks	1
Shoulder and Ditch with Shared Use Path	1
Curb and Gutter with Bike Lanes and Sidewalks	
Curb and Gutter with Shared Use Path	10
Two Lane Country Road with Bike Path*	4
None of the Above*	12

*Reflects choice added by citizens.

Activity 2

The second activity asked citizens to identify their preferred corridor alternative. Three boards, each of which illustrated a different alternative (central, western, eastern) were on display. The public was provided with a sticker to place on their preferred choice. The options and voting results are represented in the following table.

Proposed Alternative	Total Votes Received
#1: Central	12
#2: Western	3
#3: Eastern	5

Activity 3

The third activity asked citizens to rank their top three priorities for the Mooretown Road Extension Project. The public was provided with a handout and asked to rank their top three preferred choices. Once all of the votes were collected, they were displayed on a board. The priorities and voting results are represented in the following table.

Priorities	Total Votes Received by Ranking		
	Ranked #1	Ranked #2	Ranked #3
A. Protecting natural resources	20	1	7
B. Relieving future traffic congestion on adjacent road network	5	11	3
C. Improving safety	1	6	6
D. Providing an attractive and safe pedestrian and bicycle network		5	3
E. Creating new road access to the area	3	4	5
F. Encouraging development within the area	6	3	4
Write ins: None of the above	2		
I cannot answer or rank any of these. None are any of my choices at all in any way shape or form.	1		

Activity 4

The fourth activity asked citizens to identify what kind of development they preferred for the Mooretown area. The public was provided with a handout and asked to identify their top preferred choice. Once all of the votes were collected, they were displayed on a board. The types of development and voting results are represented in the following table.

Kind of Development	Total Votes Received
A mix of uses including commercial and residential, medium scale of buildings, such as in New Town	10
B. A mix of uses including adjacent industrial/manufacturing, and a larger scale of buildings, such as in City Center in the Oyster Pint section of Newport News	3
Primarily an office park, such as Innsbruck in Hanover County	1
Primarily a light industrial area, such as Stonehouse Commerce Park	5
Write Ins:	
None of these	11
No development	2
Retain rural residential	1
Park area and athletic fields	1
Tourism related	1

3. Summary of Comments

The public was provided with a comment form to complete at the meeting or submit by mail. There were 12 comments received. The themes of the comments included:

- “Do not build” had a majority of the support, with 9 citizens sharing their opposition to the extension.
- Keep development to the East portion of the EOZ.
- A suggestion was received to create a historic triangle international trade zone and intermodal distribution center.
- A suggestion was received to extend 4 lanes on Rochambeau across from Croaker Road until it meets up the 4-lane road at Faith Baptists Church.

Mooretown Road Extension Corridor Study Public Meeting Summary
Toano Middle School
March 12, 2015
7:00 pm-8:30 pm

On March 12, 2015, James City County and Vanasse Hangen Brustlin, Inc. held the third Mooretown Road Extension Corridor Study public meeting. The meeting was held at Toano Middle School in Toano and attended by 27 citizens. The following report provides a summary of the meeting presentation, feedback of the activities, and themes of the comments received.

1. Meeting Agenda

- 7:00pm Presentation by Project Staff
- 7:30pm Work Session/Open House
- 8:30pm Adjourn

During the presentation, project staff updated the public on the history and progress of the project, reviewed the alternatives developed, provided a review of the technical analyses, and introduced the recommended alternative. At the conclusion of the presentation, attendees were invited to provide input by speaking with project staff or completing comment forms.

2. Activity:

Maps of the corridor that identified the recommended alternative were posted in the space and the public was invited to write comments. The comments received included:

- How much acreage is ROW for 2 and 4 lanes?
- Drinkwater Equestrian Center would be effectively destroyed by the proposed route.
- Industrial – use railroad access.
- Road should be double loaded.
- Eliminates at grade railroad crossings.
- Preferred alignment eliminates new business.
- General group prefers central alignment.
- If proposed, (can) road run parallel to railroad longer until after crossing Peach Street.

3. Summary of Comments

The public was provided with a comment form to complete at the meeting or submit by mail. Summary of the comments received included:

- Liked the alignment recommended and that it allows the at grade railroad crossings to be eliminated, improving safety and improves the rail corridor. Liked typical section with shoulders with ditch and bike lane.

- Can you provide a segmental approach to construction? Two lanes first and improve Croaker & Mooretown intersection.
- Using less environmental impact as a reason for the “recommended alternative” is disingenuous as the stated purpose of the road is to encourage development in this area, which will ultimately obliterate the existing environmental assets. Instead of facilitating green businesses, such as the campground and a horse farm, this alternative will force them out of business and turn their acreage into more mixed-use development or worse. The center route may be more expensive, but bridging over the wetland areas will actually preserve them better than turning them into drainage ditches for more shopping centers and business parks. Locating the extension adjacent to the railroad and existing Route 60 creates a chokepoint in emergencies with 3 routes of transport co-located and vulnerable. This alternative impacts more lives and livelihood in favor of an illusion of protecting the environment. The center route makes more sense.
- If alternative #2 as displayed tonight will be the selected route, I recommend pulling the new Mooretown Road off of the railroad tracks 700’ to 1000’ to allow for development of industrial land between the road and the railroad tracks with potential railway access.
- Route 2 Alternative is preferred to other more environmental impact routes
- Government funds should not be used to construct the road. Rather the developer(s) should be required to pay for the work.
- This will have a devastating effect on several residents in the Peach St. neighborhood. Do not recommend.

Unapproved Minutes of the November 4, 2015 Planning Commission Meeting

Mooretown Road Extended Corridor Study

Mr. Jason Purse, Zoning Administrator, stated that in 2009, the Mooretown Road extension was incorporated into the adopted James City County Comprehensive Plan; however, the Comprehensive Plan did not define a specific route for the extension. Mr. Purse stated that the Mooretown Road extension remained a recommendation of the adopted Comprehensive Plan update, *Toward 2035 Leading the Way*, and was included in a corridor vision section.

Mr. Purse stated that in October 2012, the Board of Supervisors appropriated \$400,000 in Federal Regional Surface Transportation Program (RSTP) funds to conduct a feasibility study of the potential Mooretown Road Extended Corridor. Mr. Purse stated that in November 2013, Vanasse Hangen Brustlin (VHB) was chosen as the consultant for the study. Mr. Purse stated that the study began in early 2014 with a data collection phase that included the three public meetings.

Mr. Purse stated that the final study document includes detailed discussions of existing conditions, traffic forecasts, development of alternatives, as well as recommendations. It should be noted that there are no existing plans to construct any of the potential alignments, and no funding has been identified. Mr. Purse noted that adoption of the study document does not dictate future decisions about a potential extension of Mooretown Road; however, all of the potential impacts of the various alignments will have already been evaluated should a proposal for the road be submitted in the future.

Mr. Purse stated that staff concurs with VHB that Alternative 2 limits the environmental impacts, leaves the most developable area acreage available, and also confines the roadway to those properties that originally “opted-in” to the Economic Opportunity designation area in 2009. Mr. Purse further stated that given uncertainty regarding ultimate land use needs surrounding the potential roadway, staff also understands the need to preserve a certain amount of flexibility with respect to final alignment options and believes it is important to keep the pro/con discussion of all three alignments should future conditions dictate the need for a modified design.

Mr. Purse stated that staff recommends that the Planning Commission recommend that the Board of Supervisors adopt the Mooretown Road Extended Corridor Study Report.

Mr. Keith Lewis, VHB, provided a presentation on the corridor study summarizing the study process; the public input; the three proposed alignments; and the development potential of the property.

Mr. Rich Krapf inquired, if funding were available, how long it would take to go from Step 4, Environmental Analysis, on the timeline to Step 7, Construction.

Mr. Lewis stated that it would depend on the type of environmental document required, but could be two or three years and that final designs would require approximately 18 months. Mr. Lewis further stated that the right-of-way phase would depend on the particular alignment and the amount of right-of-way required and could take two to three years. Mr. Lewis stated that for a project of this size, construction could take two to three years.

Mr. Heath Richardson inquired about which alternative was preferred by the greatest number of citizens.

Mr. Lewis stated that the greatest number of public comments opposed environmental or neighborhood impacts which guided the selection of Alternative 2 as the preferred option. Mr. Lewis further stated that of the small group participating in the voting exercise, the preference was for Alternative 1.

Mr. Richardson inquired if there was a sense of why the community preferred Alternative 1.

Mr. Lewis responded that owners of larger parcels felt that it allowed for better development of those parcels.

Mr. Wright inquired about the cost estimate for the project.

Mr. Lewis stated that the estimate was in the range of 60 to 65 million dollars.

Mr. Tim O'Connor inquired about the developable area affected by Alternative 3.

Mr. Lewis stated that it would lend to smaller development such as residential and retail. Mr. Lewis further noted that some of the area adjacent to the proposed road would not be developable due to the resource protection area.

Mr. O'Connor noted that Alternative 2 would impact development on the Northern side because of the cost to develop infrastructure to connect to the road.

Mr. O'Connor inquired about how much environmentally sensitive acreage would be impacted by Alternative 1 as opposed to Alternative 2.

Mr. Lewis stated that Alternative 1 would impact 3.5 acres of wetlands while Alternative 2 would impact 1.4 acres. Mr. Lewis further stated another factor would be the stream impacts. Mr. Lewis stated that Alternative 1 has 1,177 linear feet of stream impacts and Alternative 2 has 480 linear feet of stream impacts.

Mr. O'Connor inquired whether the use of the proposed road as an evacuation route was a primary consideration.

Mr. Purse stated that there were three initial purposes for the road: to encourage economic development; to alleviate traffic issue along Route 60 in the area of Lightfoot Road; and to provide an additional evacuation route. Mr. Purse further stated that the previous County Administrator had noted flooding issues along Route 60 during storm events. Mr. Purse further noted that the exit at Route 199 and I 64 will be the first opportunity for anyone evacuating Southside Hampton Roads to exit the interstate.

Ms. Bledsoe requested that Mr. Lewis elaborate on the neighborhood impact of each alternative alignment.

Mr. Lewis stated that Alternative 1 was designed to be as far removed from the Pineridge neighborhood as possible. Mr. Lewis noted that the alignment also attempt to avoid impacts on some smaller residential areas and farmland. Mr. Lewis further noted that there are two residences that may be impacted.

Mr. Lewis stated that Alternative 2 may have impacts on the campground and the equestrian farm.

Mr. Lewis stated that the impacts for Alternative 3 would primarily affect the residences along Rochambeau Drive as the right-of-way is fairly narrow.

Ms. Bledsoe inquired if the impacted property owners have been involved in the study process.

Mr. Lewis stated that he was not certain if the individuals had been involved; however, at this stage the consultants usually do not contact specific property owners. Mr. Lewis noted that there was substantial input from the Pineridge neighborhood. Mr. Lewis further noted that the property owners along Rochambeau Drive and Maxton lane had been invited to meet with the consultants. Mr. Lewis further noted that the consultants had spoken with the owners of the equestrian farm at the last public meeting and that they were not in favor of the new road.

Mr. O'Connor inquired whether the impact on adjacent property owner for the western third of Alternative 1 was less than the impact on adjacent property owners for the western third of Alternative 2.

Mr. Lewis stated that there would be fewer impacts with Alternative 1.

Mr. O'Connor inquired whether there would be any benefit to blending Alternatives 1 & 2.

Mr. Lewis stated that there would be trade-offs between residential impacts and environmental impacts.

Mr. Richardson inquired whether recommending adoption of the Mooretown Road Corridor Study to the Board of Supervisors would eliminate the potential to make changes to the alignment at a later date.

Mr. Holt stated that these are just conceptual alignments and analysis of the alternatives.

Ms. Bledsoe noted that by recommending adoption of the Study, the Commission is stating that the three options are acceptable.

Mr. Krapf noted that if the Board adopts the Study, it means that there is a lot of valuable data in the report in the form of analysis of the alternatives and that it has merit for future application. Mr. Krapf stated that the Study provides a starting point for future work, knowing that there are many variables such as available funding, and tweaks to the final design of the road before it becomes an approved plan.

Mr. Holt noted that Board adoption would recognize that the Study provides three potential alignments which have been vetted in public forums and has analyzed the pros and cons of each option. Mr. Holt further stated that at this time, it is unknown what the future land use may be and that the land use would ultimately drive the final design of the road.

Mr. Holt stated that staff recommends Alternative 2 based on the analyses; however, what the Commission chooses to recommend to the Board is completely their decision.

Mr. Richardson suggested that the Commission could recommend adoption with the caveat to ensure minimal impact on property owners.

Ms. Bledsoe stated that the Commission should hear the public comment before considering the content of a motion.

Ms. Bledsoe opened the public hearing.

Mr. Frank Polster, 420 Hempstead Road, stated that the Commission should not consider a recommendation on the Mooretown Road Extended Study until the Strategic Plan is completed in October of 2016. Mr. Polster noted evaluating the Study at that time would place it in the context of the County's future direction and allow for properly assessing its impacts on the environment, quality of life

for the existing residents and transportation priorities. Mr. Polster further noted that the road must be designed to address the expected increases in congestion on Croaker Road, and Lightfoot Road.

Mr. Polster recommended looking at the project from a regional perspective and exploring innovative ideas such as a revenue sharing agreement so that the County benefits from businesses which may locate and generate revenue in an adjacent locality because of the County's investment in the transportation infrastructure. Mr. Polster further suggested exploring the potential for shared cost for infrastructure.

Mr. Polster noted that the County only owns 13.5 acres of land for economic development and suggested that the County seek to obtain additional land along the proposed corridor for economic development or for a school site.

Mr. O'Conner requested that Mr. Polster clarify whether the 13.5 acres was owned by the EDA.

Mr. Polster confirmed that the land is owned by the EDA.

Mr. Jack Fowler, 109 Wilderness Lane, stated that the majority of property owners were opposed to the road and that it would only benefit specific property owners.

As no one else wished to speak, Ms. Bledsoe closed the public hearing.

Ms. Bledsoe opened the floor for questions by the Commission.

Ms. Bledsoe inquired where the 13.5 acre EDA property is located.

Mr. Purse responded that he believed it might be located in the James River Commerce Center in the Grove area.

Mr. O'Connor stated that he believed the speaker was referring in general to property owned by the County available for economic development and not to a parcel within the Study area.

Ms. Bledsoe noted that if the parcels were developed, the benefit to the County would be revenue from taxes unless the development was housing which would result in a deficit. Ms. Bledsoe inquired if the parcels were zoned for housing.

Mr. Purse responded that the parcels are Zoned A-1, General Agricultural, and that if the parcels owners wish to develop without going through legislative action the uses would be agricultural or residential. If the property owners wanted to do more intense development and follow the Economic Opportunity zoning district, they would need to go through the rezoning process which would allow for consideration of all aspects of the proposal.

Mr. O'Connor inquired whether it was intended for the developer to be responsible for the cost of extending water, sewer and other infrastructure.

Mr. Purse stated that it would be part of the conditions associated with a rezoning process. Mr. Purse stated that right-of-way acquisition could also be included in the associated proffers.

Mr. Krapf requested clarification that the requirement for a master plan for the Economic Opportunity zoning district was not connected to and not part of the process for the Mooretown Road Corridor Study.

Mr. Purse stated that they are entirely different processes. Mr. Purse further stated that, under the Economic Opportunity designation land use description in the Comprehensive Plan, if the land designated Economic Opportunity is developed a regional master plan must be developed to ensure cohesive development. Mr. Purse further stated the master plan would be developed at the time a rezoning application is submitted.

Ms. Bledsoe inquired if the road was based on development.

Mr. Purse responded that one of the aspects considered was impact to areas that are designated Economic Opportunity that would need to be served by the roadway but the actual land uses and development patterns would be a different process. Mr. Purse noted that in considering the potential alignments, it would not preclude any type of development addressed in the Comprehensive Plan.

Mr. Richardson stated that in essence the Study is a sketch that will ultimately be filled in by the Strategic Plan and any master plan for development of the Economic Opportunity parcels.

Mr. Purse noted that the Comprehensive Plan envisions the Mooretown Road Extension as a private road. Mr. Purse stated that if a developer comes forward for the Economic Opportunity parcels, they would be directed to the study as a guide.

Mr. Richardson noted that having initial studies such as this will help in determining the future needs for the County.

Ms. Bledsoe opened the floor for discussion.

Mr. Wright stated that, considering the timetable and the estimated cost, he believes other needs identified in the Strategic Plan will take precedence over development of the Mooretown Road Extension. Mr. Wright further stated that he could support recommending the Study because he believes that ultimately the right priorities will be chosen and the right development decisions will be made.

Mr. Richardson stated that he can support recommending the Study to the Board without any caveats or stipulations.

Mr. O'Connor stated that he considers the Study to be one tool in a toolbox. Mr. O'Connor stated that it is necessary to look at the potential impacts early on in order to move forward promptly when funding becomes available. Mr. O'Connor stated that he understands the concerns of the residents who oppose the road; however, if a plan is not identified and piecemeal development is allowed, the design options will be more limited and have a greater impact. Mr. O'Connor noted that this is an opportunity to analyze options and to look at a plan as a first step in looking at the future of the area. Mr. O'Connor stated that he could support forwarding the Study to the Board of Supervisors.

Mr. Krapf stated that he believes that the study should be viewed as a database, an analysis of options and as a starting point for future decisions. Mr. Krapf further stated that he concurs with the idea of tying the study into the Strategic Plan. Mr. Krapf noted that the study is flexible and can be adapted to an approved strategic plan. Mr. Krapf concurred that avoiding piecemeal development is necessary and that the study is a tool to provide for orderly development.

Ms. Bledsoe stated that she does not believe that recommending approval of the Study at this time would be in conflict with the Strategic Plan process. Ms. Bledsoe stated that the Study gives the County the opportunity to plan ahead for potential economic development. Ms. Bledsoe noted that the County needs to attract businesses that will generate a greater revenue stream and that they will need substantial parcels

of land. Ms. Bledsoe stated that she does have concerns about the impact on the residential properties. Ms. Bledsoe stated that the residential impacts are comparatively minimal, but that she believes impact to even one home is too much. Ms. Bledsoe stated that hopes that a plans move forward there will be ways to eliminate the residential and small business impacts. Ms. Bledsoe stated that she supports moving the Study forward.

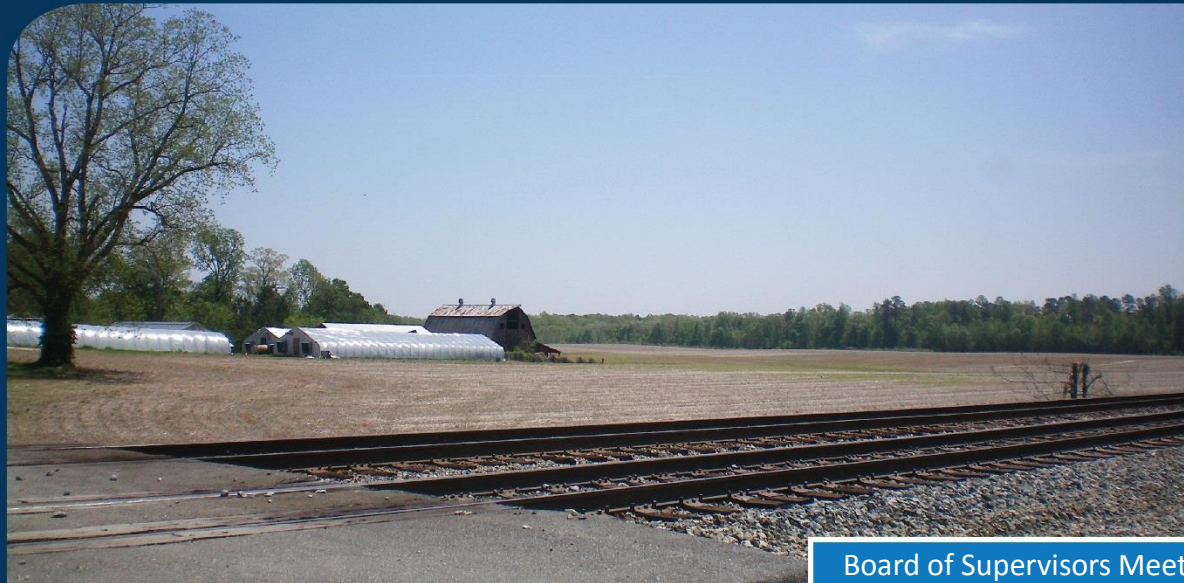
Mr. O'Connor stated that when the equestrian center brought their proposal before the DRC, staff ensured that they were well aware of the potential for a road to be built in that area.

Mr. Krapf moved that the Commission recommend that the Board of Supervisors adopt the Mooretown Road Extension Corridor Study.

On a roll call vote, the Commission voted to recommend adoption of the Mooretown Road Extension Corridor Study (6-0).

Mooretown Road Corridor Study

James City County



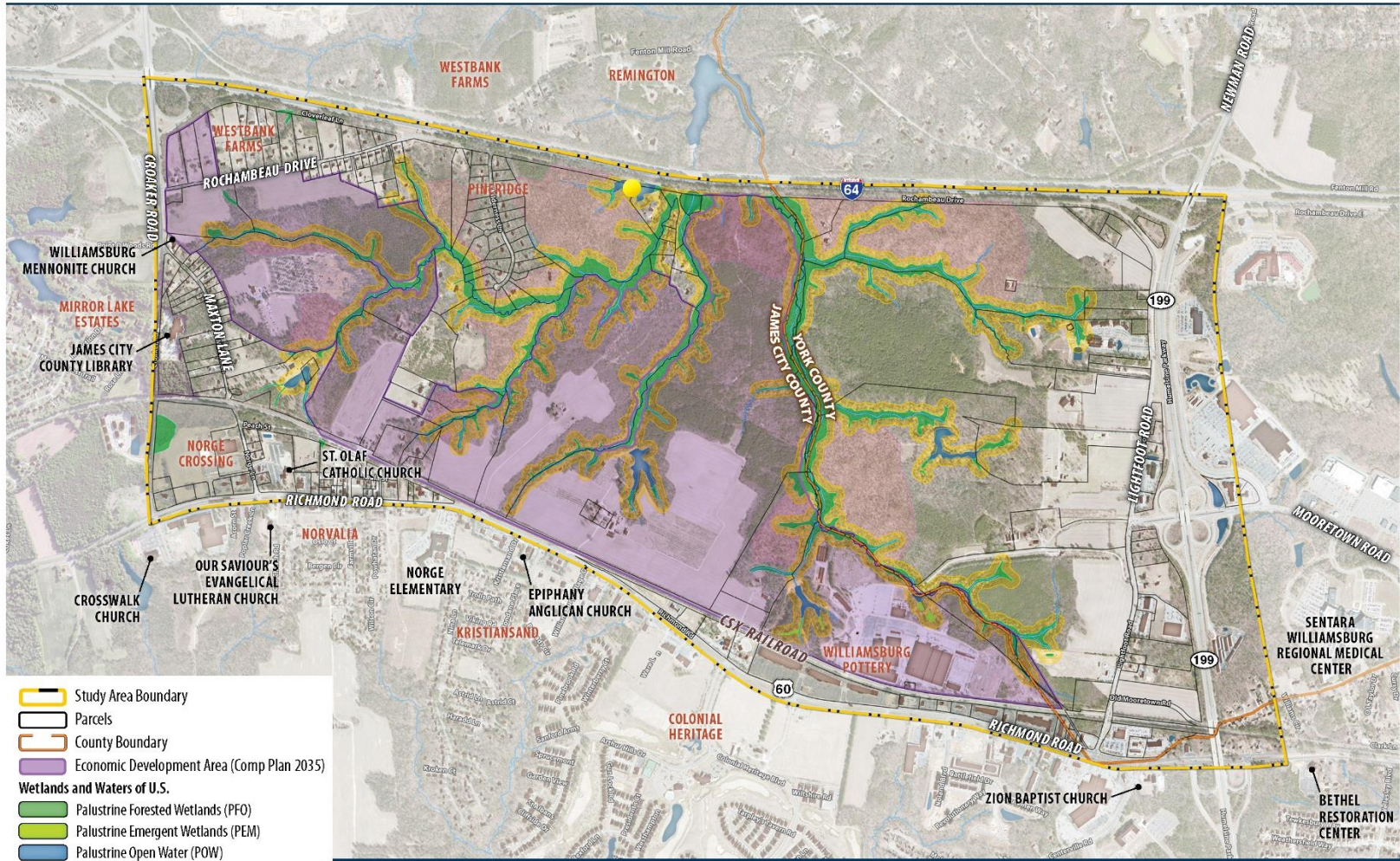
Board of Supervisors Meeting – December 8, 2015



James City County

PRESENTED BY





- Study Area Boundary
- Parcels
- County Boundary
- Economic Development Area (Comp Plan 2035)
- Wetlands and Waters of U.S.**
- Palustrine Forested Wetlands (PFO)
- Palustrine Emergent Wetlands (PEM)
- Palustrine Open Water (POW)
- Streams Channels (within Study Area)
- Resource Protection Areas (RPA)
- Threatened & Endangered Species**
- Potential Mabee's Salamander Habitat
- Potential Small Whorled Pogonia Habitat



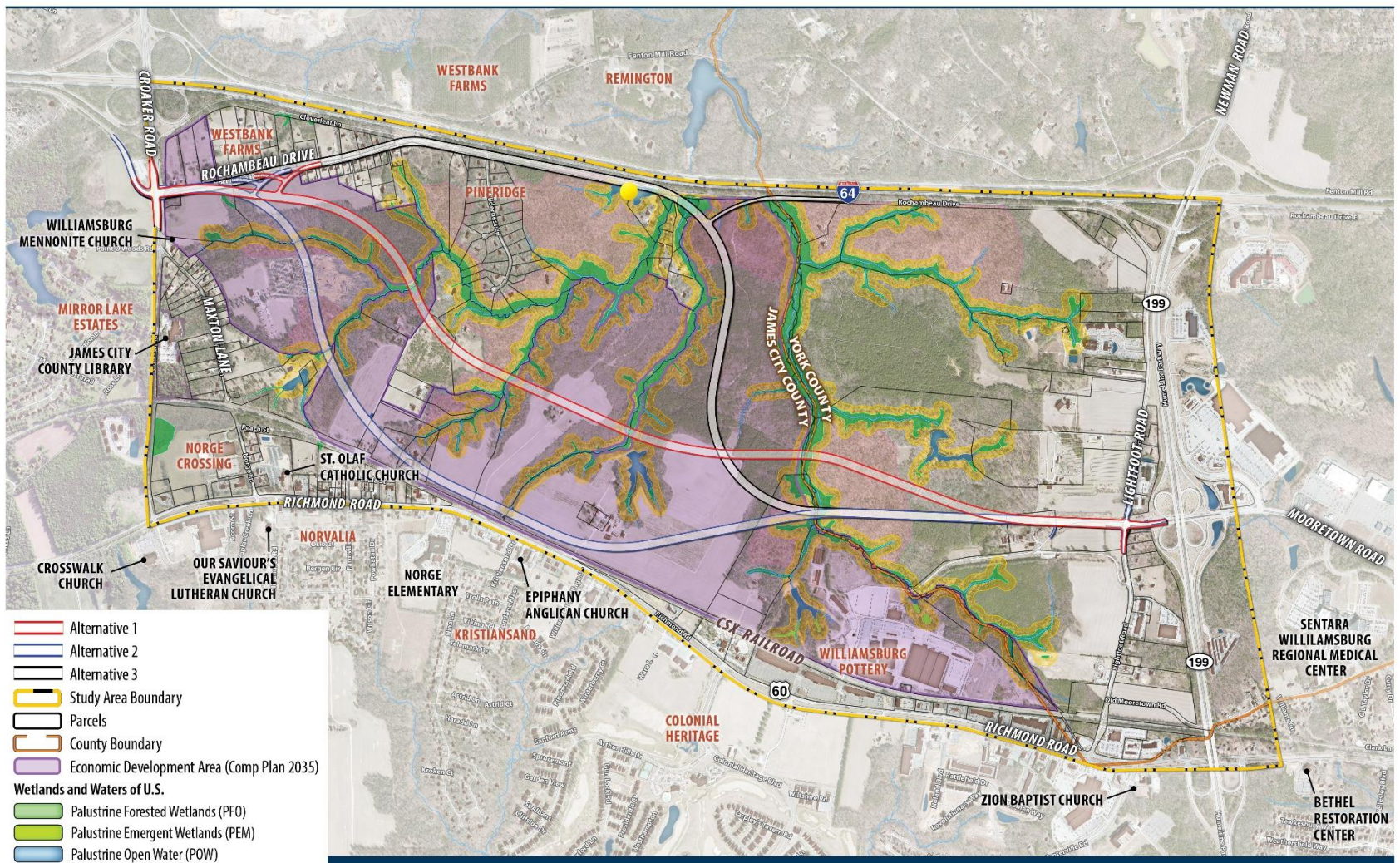
Mooretown Road Extension Corridor Study
James City County and York County, Virginia

**Comprehensive Plan 2035 -
Economic Development Area and
Environmental Constraints**



FACTORS INFLUENCING CORRIDOR ALIGNMENT

- End Points: Intersection at Croaker Road and Interchange at Humelsine Parkway (199)
- Continuation of Rochambeau Drive NW
- Public Comment
- Existing streams, wetlands and other natural resources
- Residential Areas/Neighborhoods
- Cultural Resources and Community Facilities
- Economic Development Area



- Alternative 1
- Alternative 2
- Alternative 3
- Study Area Boundary
- Parcels
- County Boundary
- Economic Development Area (Comp Plan 2035)
- Wetlands and Waters of U.S.**
 - Palustrine Forested Wetlands (PFO)
 - Palustrine Emergent Wetlands (PEM)
 - Palustrine Open Water (POW)
 - Streams Channels (within Study Area)
 - Resource Protection Areas (RPA)
- Threatened & Endangered Species**
 - Potential Mabee's Salamander Habitat
 - Potential Small Whorled Pogonia Habitat



Mooretown Road Extension Corridor Study
James City County, Virginia

Comprehensive Plan 2035 -
Economic Development Area,
Environmental Constraints, and Alts 1-3



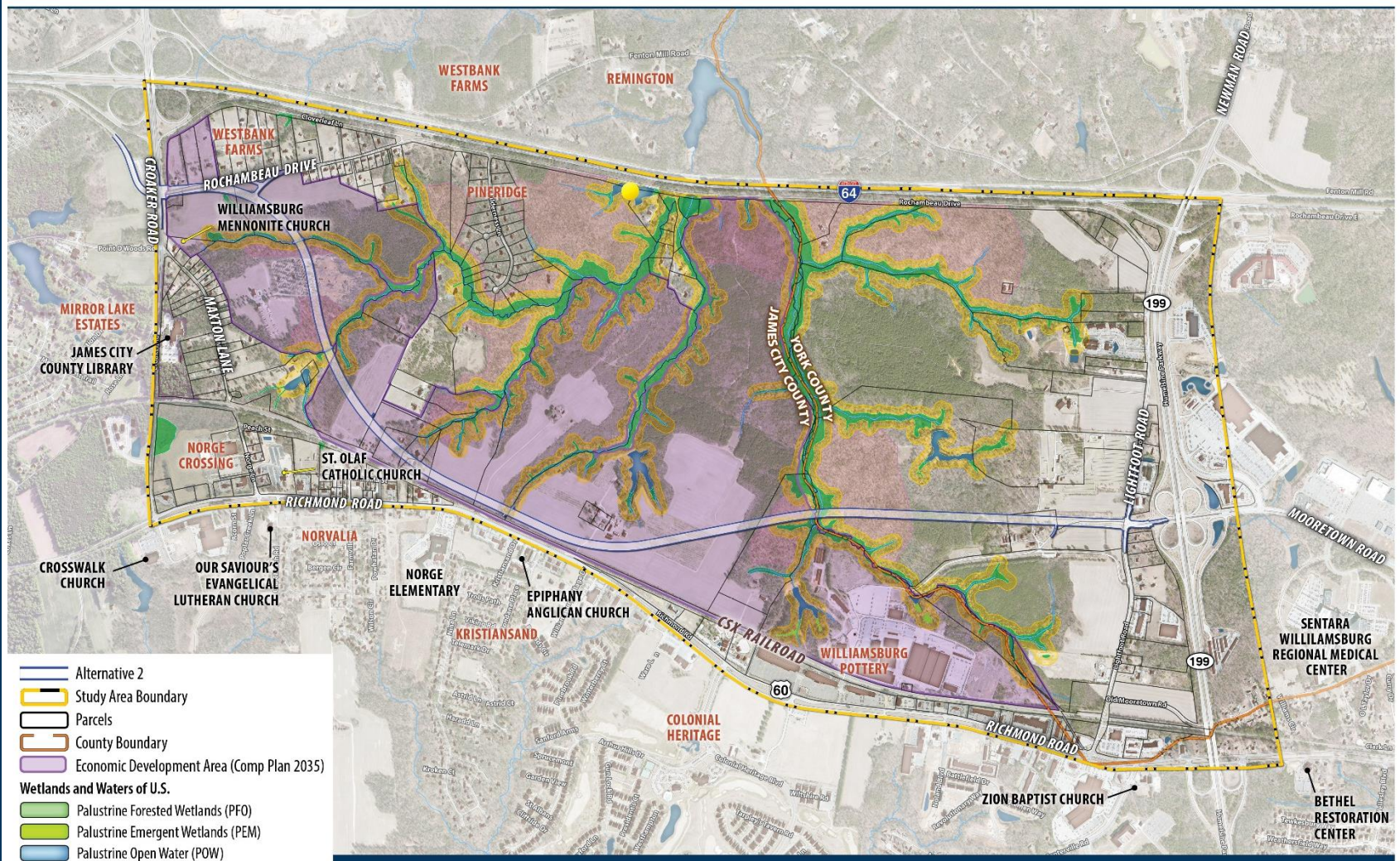
LAND USE / DEVELOPMENT

Adopted Comprehensive Plan

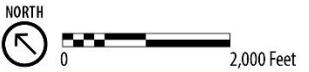
- Preferred uses for this area are industrial, light industrial and office
- Secondary or support uses are retail, commercial and housing

Land Use

- Land use concepts avoid development of the existing sensitive environmental features
- Road alignments encourage development in certain portions of study area
- Land use concepts showed ultimate build-out potential



- Alternative 2
- Study Area Boundary
- Parcels
- County Boundary
- Economic Development Area (Comp Plan 2035)
- Wetlands and Waters of U.S.**
 - Palustrine Forested Wetlands (PFO)
 - Palustrine Emergent Wetlands (PEM)
 - Palustrine Open Water (POW)
 - Streams Channels (within Study Area)
 - Resource Protection Areas (RPA)
- Threatened & Endangered Species**
 - Potential Mabee's Salamander Habitat
 - Potential Small Whorled Pogonia Habitat



Mooretown Road Extension Corridor Study
James City County, Virginia

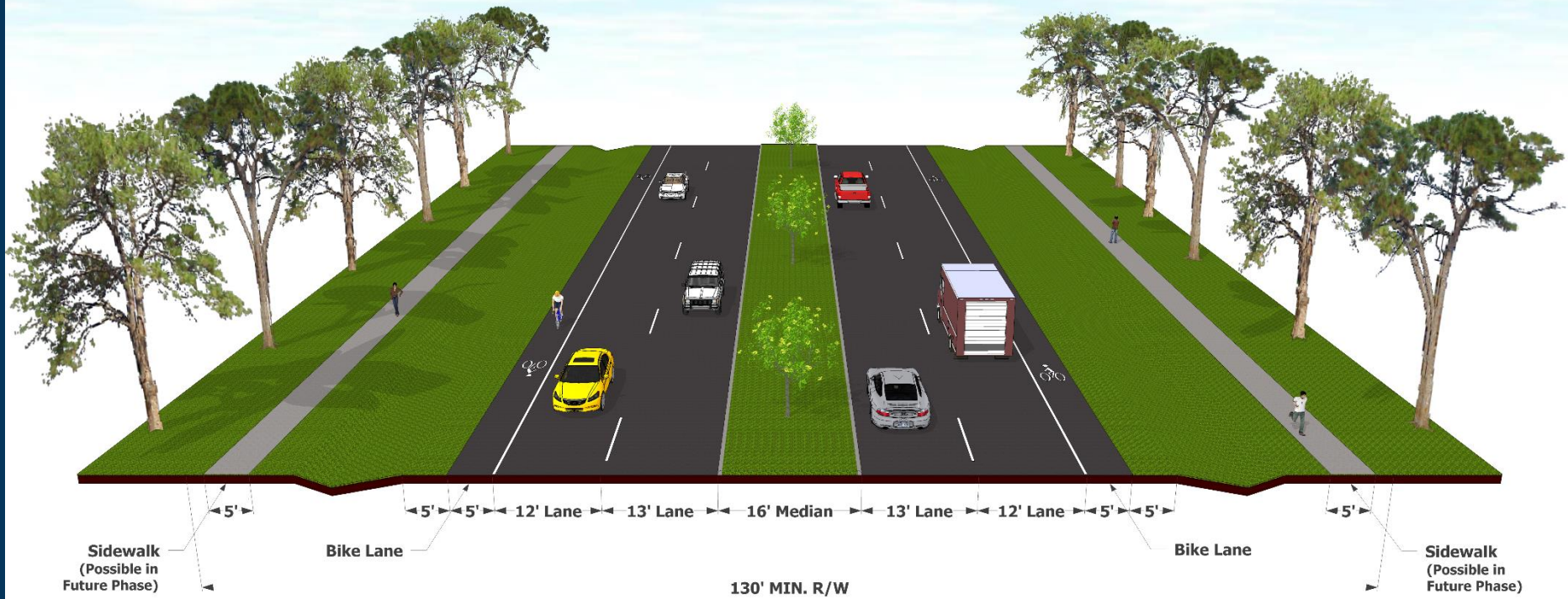
Comprehensive Plan 2035 -
Economic Development Area,
Environmental Constraints, and Alt 2



Summary of Public Meeting Comments

- Most concerns were related to;
 - Environmental Impacts
 - Neighborhood/Residential Impacts
- Majority of Comments Opposed Road
- Many with environmental concerns preferred Alternative #2 if built, however overall majority preferred Alternative #1
- Several commented to only develop eastern properties and leave the rest rural residential
- Some preferred a 2-lane road

Shoulder and Ditch with Bike Lanes



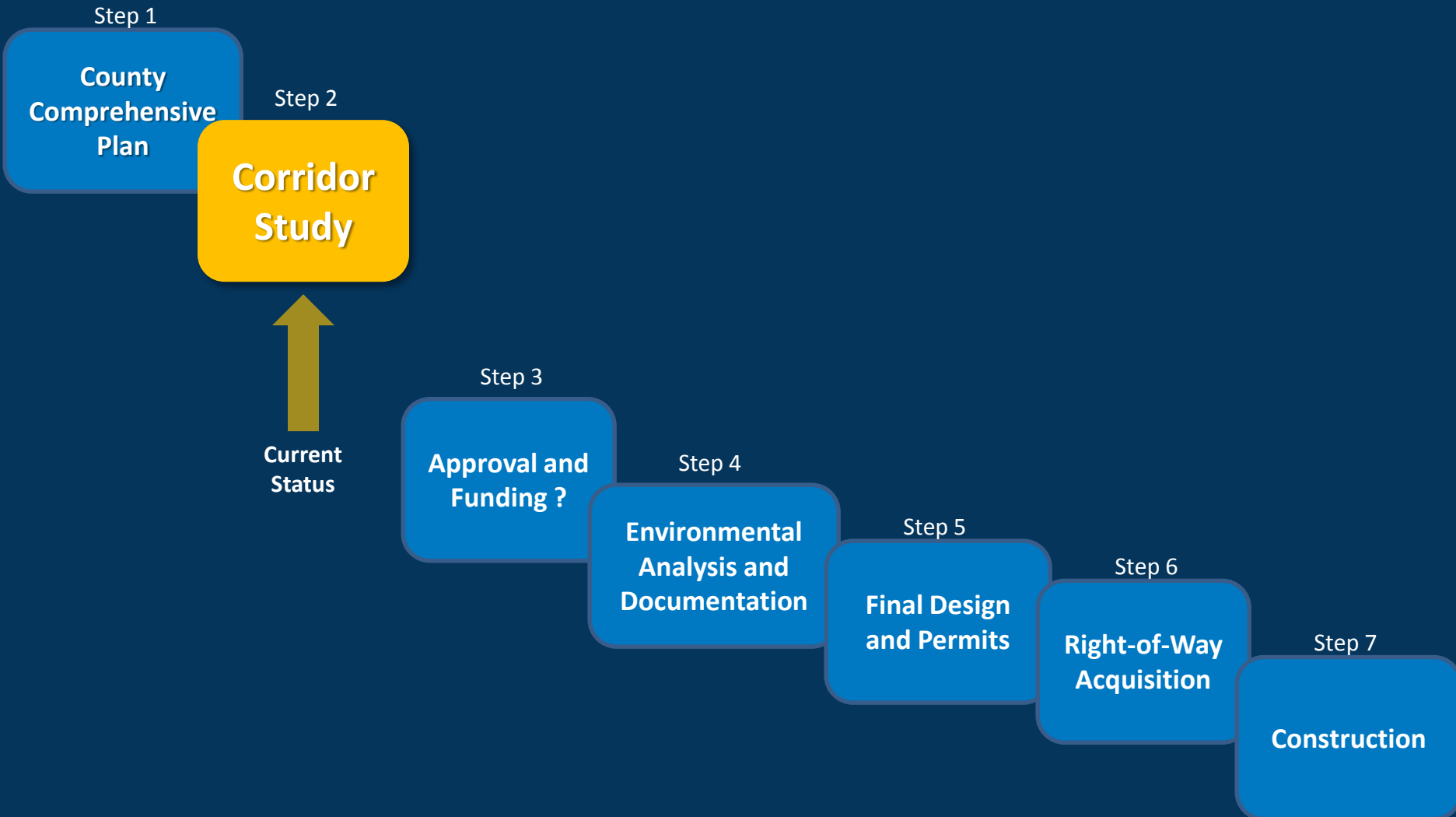


What's Next?

- Planning Commission Meeting and Public Hearing – November 4, 2015
- **Board of Supervisors Meeting and Public Hearing – December 8, 2015**
- Final Report has been completed
- Approved Report becomes guide to further planning



Project Development Process





Questions?



Comments?

ITEM SUMMARY

DATE: 12/8/2015

TO: The Board of Supervisors

FROM: Ellen Cook, Senior Planner II

SUBJECT: Consideration of a previously postponed request to change the Comprehensive Plan Land Use designation for the property at 8491 Richmond Road.

Consideration of a previously postponed request to change the Comprehensive Plan Land Use designation for the property at 8491 Richmond Road.

ATTACHMENTS:

	Description	Type
▣	Staff Report	Staff Report
▣	Land Use Designation Evaluation Table	Backup Material
▣	Draft Economic Opportunity Language	Backup Material
▣	Applicant Mixed Use Justification	Backup Material
▣	Staff Report November 20 2014	Backup Material
▣	Applicant Economic Opportunity Justification	Backup Material
▣	Staff Memo to the Planning Commission Working Group December 12, 2014	Backup Material
▣	Resolution to deny	Resolution
▣	Resolution to approve	Resolution
▣	Resolution to remand	Resolution

REVIEWERS:

Department	Reviewer	Action	Date
Planning	Holt, Paul	Approved	11/19/2015 - 4:40 PM
Development Management	Kinsman, Adam	Approved	11/23/2015 - 8:37 AM
Publication Management	Burcham, Nan	Approved	11/23/2015 - 8:59 AM
Legal Review	Gowdy, Michelle	Approved	11/23/2015 - 9:44 AM
Board Secretary	Fellows, Teresa	Approved	11/23/2015 - 10:43 AM
Board Secretary	Kinsman, Adam	Approved	11/23/2015 - 11:01 AM
Board Secretary	Fellows, Teresa	Approved	11/30/2015 - 8:44 AM

MEMORANDUM

DATE: December 8, 2015

TO: The Board of Supervisors

FROM: Ellen Cook, Senior Planner II, and Tammy Rosario, Principal Planner

SUBJECT: LU-0002-2014 8491 Richmond Road (Taylor Farm) Land Use Designation Change

At the Board meeting on June 23, 2015, the Board adopted the 2035 Comprehensive Plan. As part of its consideration of the Plan, the Board postponed the Taylor Farm application to the December 8, 2015 meeting. During the discussion the Board members noted the outstanding Department of Environmental Quality (DEQ) groundwater withdrawal permit, a future discussion of the Primary Service Area (PSA) generally and the opportunity to further examine the possible land use designations for this parcel. Updates on the DEQ permit status and the land use designation possibilities are noted below.

DEQ Permit Status

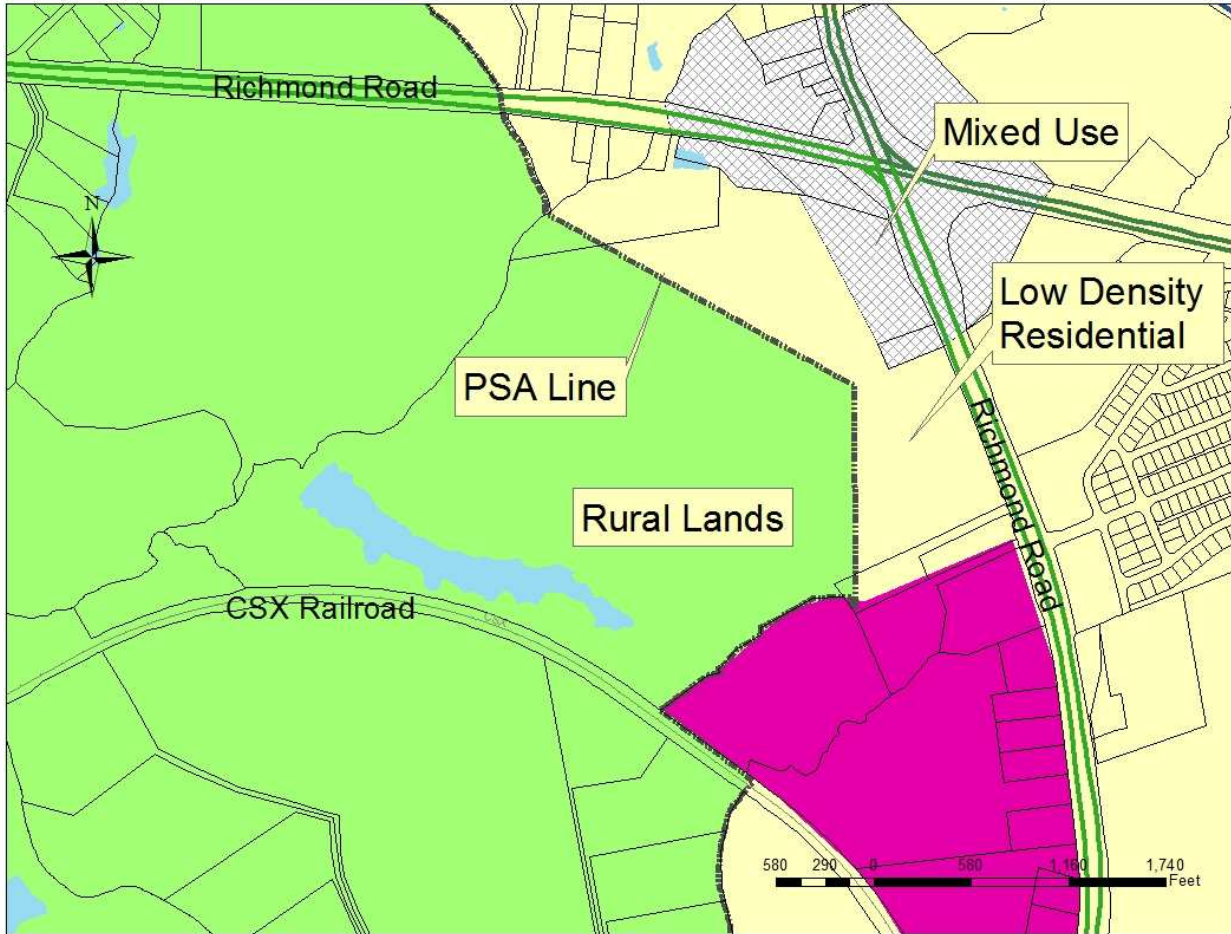
As the Board is aware the DEQ citing concerns about aquifer water levels, land subsidence and saltwater intrusion, has indicated that it may restrict the County's permitted groundwater withdrawal to amounts below what the County currently uses. During the 2015 Virginia General Assembly session, legislation established an Eastern Virginia Groundwater Management Advisory Committee (EVGMAC) to assist the DEQ in developing, revising and implementing a management strategy for groundwater in the Eastern Virginia Groundwater Management Area. This legislation also prohibits the State Water Control Board and the DEQ from issuing draft permits that would require reductions in the volume of permitted groundwater withdrawals before December 31, 2015. The EVGMAC, including representation from James City County, has already met several times. It is likely to be the end of 2016, at the soonest, before any permit is issued to the County. At this time, while there is progress on several fronts, the County's future water supply quantity, source and associated costs are unknown and the timeline for reaching a final answer remains uncertain.

Land Use Designation Possibilities

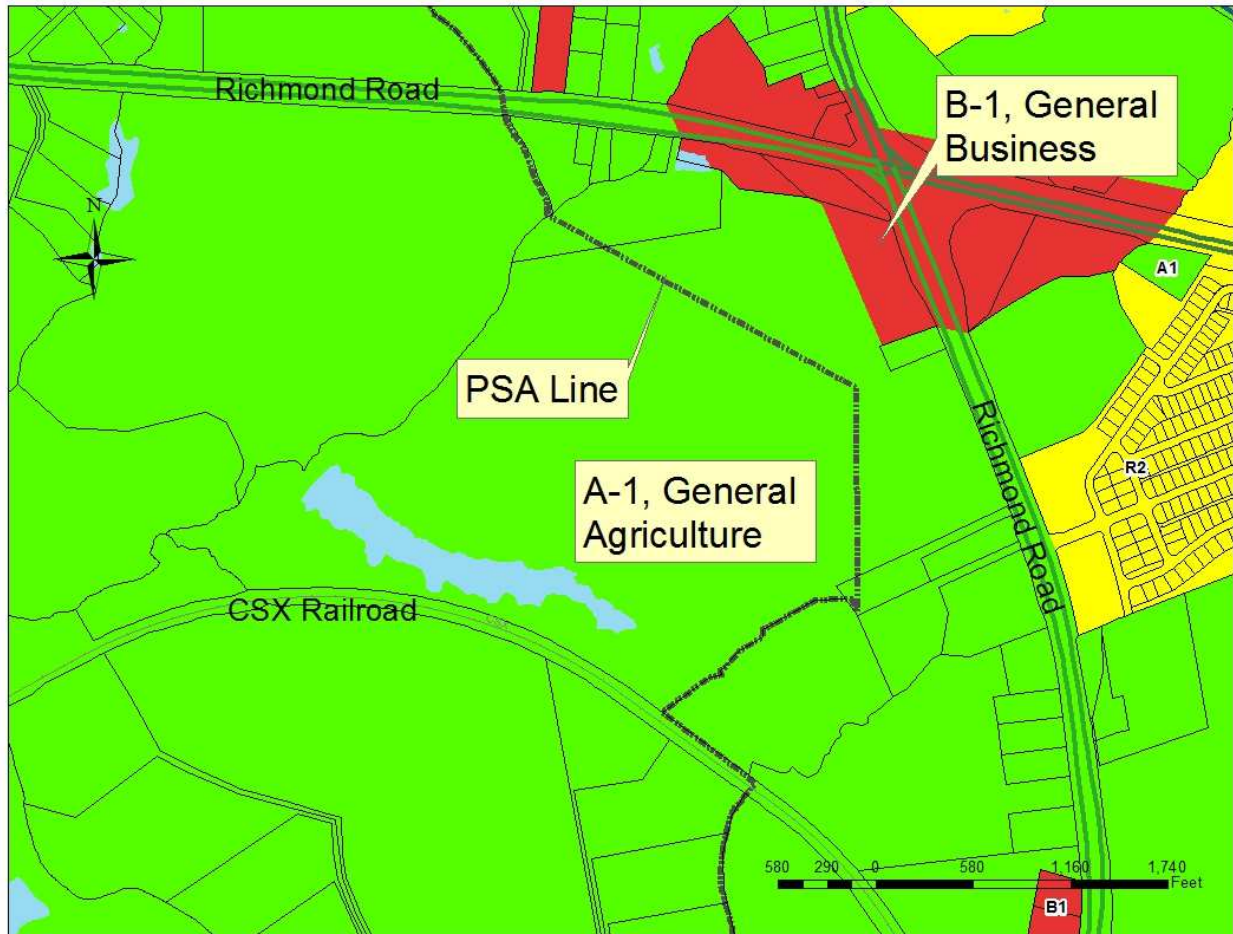
A. Current Land Use Designations

As noted on the first map below, the current Comprehensive Plan land use designations for this property are Rural Lands (approximately 141 acres), Low Density Residential (approximately 38 acres), and Mixed Use (approximately 7.5 acres). The Mixed Use designated portion is a component of the Anderson's Corner Mixed Use area, which has specific designation description language (see Attachment No. 7). The PSA corresponds to the divide between the Rural Lands and Low Density Residential Designations – thus, approximately 141 acres are outside the PSA, and approximately 45.5 acres are inside the PSA. In terms of the current zoning (which governs *current* permitted/specially permitted uses, lot sizes, setbacks, etc.), approximately 180 acres are zoned A-1, General Agricultural and approximately 6.2 acres are zoned B-1, General Business – see second map below.

Comprehensive Plan Designations



Zoning Districts



B. Property Owner's Initial and Subsequent Proposed Land Use Designations

The property owner initially submitted an application to change the entire property from the existing designations to Mixed Use. In addition, the application sought to bring the approximately 141-acre portion of the property inside the PSA. The information submitted by the applicant in support of the Mixed Use/PSA change request is included as Attachment No. 3. Staff had not recommended approval of this proposed change for the reasons previously discussed in the staff report for the case (Attachment No. 4) and noted in the land use evaluation table (Attachment No. 1). The most significant of the reasons continue to be the potential loss of prime agricultural land and the significant uncertainty with which an adequate source of water would be available to James City County to serve this property considering the amount of developable land already inside the PSA as it exists today.

The applicant subsequently submitted a letter requesting that the property be re-designated to Economic Opportunity (EO), also fully within the PSA, and listing seven reasons in support of this approach (see Attachment No. 5). Staff's evaluation of the request for a change to EO was provided in a memorandum to the Planning Commission Working Group dated December 12, 2014 (Attachment No. 6) and is summarized in the land use evaluation table (Attachment No. 1).

In November 2015, staff and the applicant met to further discuss this application. At the meeting, the applicant shared their continued desire to change to EO, and to have all of the property included in the PSA. The applicant did not have any additional information to be included with the application.

C. Previously Considered Designation – Rural Economy Support (RES)

After evaluating the property's physical attributes such as the prime farmland soil toward the front of the property, its location along an improved roadway but still in close proximity to the County's rural lands, and after considering the County's recently completed Strategy for Rural Economic Development, staff had recommended consideration of a new Comprehensive Plan Land Use Designation for this property, Rural Economy Support (RES). RES would allow for commercial or light industrial uses in addition to uses associated with traditional or innovative agriculture and forestry. Staff had prepared a description for this possible new designation (see staff report, Attachment No. 4). From discussion at its June 23, 2015 meeting staff understands that the Board may not wish to consider this designation due to the property owner's discomfort, so it is not included in the land use designation evaluation table (Attachment No. 1).

Recommendation:

Staff recommends deferral of this application. As noted above, little more about the County's future water supply is known at this time than was known when the Board postponed the discussion of this application in June. Expanding the PSA enlarges the public water service area, thereby increasing the total amount of water which the County would need to attempt to secure. In addition, a strategic plan for the County is currently on-going and will address the larger issues of water and growth.

However, should the Board wish to re-designate the property, staff has prepared a land use designation evaluation table providing information about the current designations, a change to Mixed Use and a change to EO (see Attachment No. 1). In the event that the Board wishes to consider the application at this time, staff recommends the Board consider a change to EO over a change to Mixed Use. Should the Board wish to pursue this designation, staff has prepared draft EO designation description language (see Attachment No. 2). This language description is written to cover the entire the property changing to EO; however, should the Board wish to consider an EO re-designation for just the area that is within the existing PSA boundary, the language could be revised accordingly. The applicant has had an opportunity to review the draft language and has not had any comments to date.

Finally, should the Board wish to consider re-designating this property, it may also wish to consider remanding this case to the Planning Commission for review of the application and the draft designation description language.

EC/ab

LU-RichmondRd-mem

Attachments:

1. Land Use Designation Evaluation Table
2. Draft Economic Opportunity language
3. Applicant's Mixed Use justification
4. Staff Report (November 20, 2014)
5. Applicant's Economic Opportunity justification
6. Staff memorandum to the Planning Commission Working Group, December 12, 2014
7. Anderson's Corner Mixed Use area designation description language
8. Case-related public comments received during the Comprehensive Plan update (Public Comment Sheet, James City County Citizens Coalition and Friends of Forge Road and Toano statements)
9. Resolutions

Land Use Designation Evaluation Table

Possible Development Scenario	Pro	Con
<p>Current Designations: Rural Lands, LDR, MU (See acreages for each on page 1.)</p>	<p>Rural Lands: Continue with agricultural/forestal uses, part of the rural economy. Alternatively, could potentially be developed into approx. 40 lots. LDR: Could potentially be rezoned to allow max. of approx. 164 lots (80-120 lot range also possible) MU: Potentially office or commercial building(s)</p>	<p>Activities on the rural lands portion and development on the mixed use portion have the potential to increase the non-residential tax base and to create jobs.</p> <p>From a fiscal standpoint, an increase in the non-residential tax base might be off-set by costs associated with serving the residential development, depending on the ultimate balance of uses and a variety of other factors.</p>
<p>Proposed: Mixed Use for whole property</p>	<p>One possible scenario that would be permitted by the general Mixed Use development standards could be a shopping center (423,000+/- square feet) and approximately 1,100 dwelling units (mix of single family, townhouses and low-rise apartments).</p> <p>Note that the specific designation description for each Mixed Use area can influence the ultimate balance of uses reflected on a master plan through the rezoning process.</p>	<p>A commercial use has the potential to increase the non-residential tax base.</p> <p>A commercial use has the potential to create jobs.</p> <p>Holding off on designating substantial new mixed use areas until already-planned development and redevelopment occurs would prioritize the County's infrastructure and service capacity for these existing areas.</p> <ul style="list-style-type: none"> - Considerable vacant properties designated mixed use are located nearby in the Stonehouse Mixed Use Area, and considerable amounts of land are currently zoned for commercial uses along Barhamsville Road and in Toano. With regard to the Stonehouse Mixed Use Designation area, the Stonehouse development has a Master Plan approved for about 4,000 dwelling units and 3.8 million square feet of non-residential overall, of which about 600,000 square feet has been constructed in Stonehouse Commerce Park. There are also a substantial number of acres in the Stonehouse Mixed Use area (aside from the Stonehouse itself) that are vacant. - Also in the Upper County is the village of Toano, where the County has been encouraging redevelopment, as referenced in the Toano Community Character Area Design Guidelines. - The Upper County already has a significantly higher proportion of Mixed Use designation than the County overall (8.3% versus 4.8%), as well as the only areas of the County currently designated Economic Opportunity. <p>Analysis done as part of the 2035 Comprehensive Plan estimated that the County had enough room within the PSA to accommodate future residential growth needs until at least 2033. Specifically, the analysis estimates that there are approximately 11,200 master planned or other vacant platted lots inside the PSA, with another approximately 4,000 undeveloped parcels inside the PSA which have residential Comprehensive Plan designations.</p> <p>From a fiscal standpoint, an increase in the non-residential tax base might be off-set by costs associated with serving the residential development, depending on the ultimate balance of uses and a variety of other factors.</p> <p>In terms of water use, a mixed use development would almost certainly have a substantially larger water demand than the existing designations.</p>

<p>Proposed: Economic Opportunity for whole property</p>	<p>One possible scenario that would be permitted by the general Economic Opportunity development standards could be industrial park (900,000+/- square feet), specialty retail (70,000 +/- square feet) and approximately 113 dwelling units (townhouses).</p> <p>As noted above, the specific designation description for each EO area can influence the ultimate balance of uses reflected on a master plan through the rezoning process. Please also see the separate draft EO designation description language, which as written would not include retail or residential as recommended uses.</p>	<p>A commercial use has the potential to increase the non-residential tax base. A commercial use has the potential to create jobs.</p> <p>As compared with Mixed Use, an Economic Opportunity designation would be more likely to complement and support redevelopment efforts in Toano.</p>	<p>See points made in the Mixed Use box above regarding the amount of already-planned development and redevelopment in the Upper County and prioritization of the County's infrastructure and service capacity for this existing planned development; much of this would apply in the case of an Economic Opportunity designation as well. In addition, while this parcel has good road access, it does not have the element of a strategic location adjacent to an interstate interchange.</p> <p>From a fiscal standpoint, an increase in the non-residential tax base might be off-set by costs associated with serving any residential development, depending on the ultimate balance of uses and a variety of other factors.</p> <p>In terms of water use, an economic opportunity development would likely have a substantially larger water demand than the existing designations.</p>
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Draft Economic Opportunity Designation Description Language

Economic Opportunity (This is the Existing General EO Language)

Lands designated as Economic Opportunity are intended primarily for economic development, increased non-residential tax base, and the creation of jobs. The lands should be at strategic locations in the County relative to transportation, utilities infrastructure, and adjacent uses, and the lands should only be developed consistent with comprehensive area/corridor master plans.

The principal uses and development form should maximize the economic development potential of the area and encourage development types that have certain attributes, principally that they have a positive fiscal contribution, provide quality jobs, enhance community values, are environmentally friendly and support local economic stability. Master planning is at the core of this designation, and no development should occur unless incorporated into area/corridor master planning efforts which should address environmentally sensitive areas, available infrastructure (roads, water, sewer, transit, etc.), community character and context, public facilities and adjacent land uses to include lands in adjacent jurisdictions. The intent of this designation is to include parcels with this designation in the PSA (where not already included) pending the outcome of the master planning efforts.

The master planning efforts may take the form of public-private or private-private partnerships; if public-private, the landowner(s) would need to make the majority of the investment. These area/corridor master planning efforts should phase development to be in step with, and provide for, adequate amounts or capacities of roads, water, sewer, transit, bicycle and pedestrian facilities, fire stations, police and general government services, parks and recreation facilities, schools, and other facilities and service needs generated by the development. The master plan for the area should also demonstrate appropriate variation in uses, densities/intensities, pattern, and design such that new development is compatible with the existing character of surrounding areas. If an individual landowner in lands designated Economic Opportunity does not wish to participate in the master planning effort, such land shall be recognized and adequate buffers provided in the master plan to protect the current use of that land.

Development should be designed to encourage trips by alternative transportation modes and should be concentrated on portions of the site to avoid sensitive environmental features and respect viewsheds from historic and Community Character areas and corridors.

Economic Opportunity – Toano/Anderson’s Corner Area (This is the Possible Area Specific Description)

For the Toano/Anderson’s Corner Area, the recommended uses are industrial, light industrial and office uses. Businesses that take advantage of the unique assets of the property or use agricultural or timber industry inputs are highly encouraged. In order to support Toano as the commercial center of this part of the County, retail commercial is not a recommended use unless accessory to the recommended uses. As expressed in the general Economic Opportunity language, the master plan for this area should demonstrate appropriate variation in uses, densities/intensities, pattern and design such that new development is compatible with the character of surrounding areas. In particular for this site, buffers, open space, or other similar mechanisms should be used along the south-west and western property lines in order to provide a transition to areas designated Rural Lands, and the site design and architecture

should respect the local rural character and nearby historic structures. Maintaining mobility on Route 60 is also a significant consideration, so development should utilize best practices for access management.

Applicant's Mixed Use Justification

The current land use designation is Mixed Use along a small portion of the frontage along Richmond Road; Low Density Residential for the remainder of the property inside the PSA and the rear two thirds of the property is Rural Land.

A small portion (6 acres) of the frontage is zoned B-1, General Business; the remaining 210 acres of the parcel is zoned A-1, General Agricultural. Public water and sewer are available, not served at this time. If you look at the current PSA map from Williamsburg to Toano the PSA is in a straight line until you get to this property.

If you take a look at the property you will see it is INCONSISTENT with all the surrounding properties! All the properties on each side Anderson's Corner Vet, Judy Taylor, Alan Owens, James Hall, Toano Contractors, Whitehall, and Wara's all are in the PSA and zoned business or mixed used. I would call this spot zoning and INCONSISTENT.

The rationale in the past of Planning Commission used is that Anderson's Corner is one of the few remaining areas in the PSA with significant rural agricultural vistas. To accomplish this, significant amounts of open land and farm fields should be preserved along with agricultural and rural structures in a manner that creates a traditional rural village surrounded by PERMANENTLY protected farm fields, I believe it too late!!!! Just look around you have from Toano west Greystone, Hankins Industrial Park, Toano Business Center, Nick's Lawn & Garden, Anderson's Corner Vet, Whitehall, Toano BP, Stonehouse Commerce Park and Michelle Pointe. The word PERMANENTLY means forever, to remain the same, without change, always, endures throughout so that means all my family can do is pay taxes. I have asked this many times, but who is going to farm this property in the next ten years? They are no large farms in JCC! At the present time we are leasing the farming rights to a farmer in New Kent who is in his sixties.

Please make this property at 8491 Richmond Road, Toano, CONSISTENT with the surround properties!!!!

On behalf of the Taylor family we would greatly appreciate you putting all of this property into the PSA.

Thanks and if you need any other info or would like to discuss please give me a call

Beverly Taylor Hall

757-566-0829

BACKGROUND:

The Taylor family has owned this property since 1951, and the property has been in continuous farm use during this time. Over the years, some lots were subdivided from this property for family members. The property includes wooded area, as well as area that is farmland under active cultivation (corn, soybeans, etc.).

The property is bordered on the west by rural land in agricultural and forestal use that is zoned A-1 and designated Rural Lands. To the south, a portion of the property borders the railroad line and agricultural and rural residential uses on properties that front Forge Road, while the other portion of the property borders on property inside the Primary Service Area that is designated Low Density Residential and General Industry. To the east is property that is designated Low Density Residential (Villages at Whitehall and an adjacent undeveloped property). To the north-east is the Anderson's Corner intersection which is zoned B-1 and designated Mixed Use (see designation language below). One quadrant of this intersection has an existing commercial use (gas station), a second has undeveloped land adjacent to the historic Whitehall Tavern property, and the third is currently undeveloped.

Considerable vacant properties designated mixed use are located nearby in the Stonehouse Mixed Use Area, and considerable amounts of land are currently zoned for commercial uses along Barhamsville Road and in Toano. With regard to the Stonehouse Mixed Use Designation area, the Stonehouse development has a Master Plan approved for about 4,000 dwelling units and 3.8 million square feet of non-residential overall, of which about 600,000 square feet has been constructed in Stonehouse Commerce Park. There are also a substantial number of acres in the Stonehouse Mixed Use area (aside from the Stonehouse itself) that are vacant. Also in the Upper County is the village of Toano, where the County has been encouraging redevelopment, as referenced in the Toano Community Character Area Design Guidelines. The Upper County has a significantly higher proportion of Mixed Use designation than the County overall (8.3% versus 4.8%), as well as the only area of the County currently designated Economic Opportunity.

In terms of past Comprehensive Plan activity, the Taylor farm parcel was submitted as an application in 2009 for the same Mixed Use designation/Inside the proposal as is described above. During this time, consideration was also given to changing this property to the new Economic Opportunity (EO) designation. The change in designation and PSA expansion were not approved in 2009.

AGENCY COMMENTS:*JCSA*

There is an existing 20" HRSD force main at the intersection of Rochambeau Drive and Richmond Road which could provide sewer service. There is an existing 16" JCSA water main on the east side of Richmond Road (south of Rochambeau Road).

ERP

The County's general Chesapeake Bay Plan Act map shows that RPA exists along the water bodies at the northwest and southwest portions of the property. The majority of the PSA property is Prime Farmland and hydrologic unit code A/B soils. Prime farmland soils, as defined by the USDA, are those best suited for farming – to provide food, feed, forage, fiber and oilseed crops. These soils produce the highest yields with minimal input of effort and farming of these soils results in the least amount of damage to the environment.

TRANSPORTATION IMPACTS:

While other portions of Richmond Road experience or are expected to experience capacity constraints in the future, the portions closest to the Taylor property currently operate with acceptable levels of service. Staff and Kimely Horn completed trip generation scenarios for the following four scenarios: existing designations, a change to Mixed Use for the area currently inside the PSA, a change to Mixed Use for the entire property, and a change to Economic Opportunity for the entire property. The trip generation was projected to be highest for a change to Mixed Use for the entire property (25,273 daily trips). (A trip generation scenario was not created for the new proposed Rural Economy Support ("RES") designation, but staff believes the trip generation would be less than the Mixed Use scenario.) As the highest generator, the trip generation for the change to Mixed Use was translated into the modeling software and used to calculate projected conditions for surrounding roadways. The modeling effort projects that future levels of service for the nearby portions of Richmond Road and Rochambeau Drive would operate at adequate levels of service. Kimely Horn has offered a list of

other transportation considerations, including considerations of future signalization and access management (driveway location and full versus partial movement).

STAFF RECOMMENDATION:

Staff recommends denial of a change in land use designation to Mixed Use. However, staff would recommend approval of a designation change to a newly created “Rural Economy Support” (RES) designation. As part of a change in designation to RES, staff recommends expanding the PSA to include the entire parcel.

Staff recommends the following language as a new designation description for RES:

Lands designated as Rural Economy Support are intended to provide a connection between the Rural Lands areas and centers of development in the PSA, serving as an approximate mid-point in the expected intensity of development between the two. Areas with this designation should be at an appropriate location to serve rural economic development or traditional agricultural/forestry uses, and should have access to appropriate infrastructure (collector or arterial road access, water/sewer). The primary recommended uses for this designation include agricultural and forestry uses (innovative or traditional), and commercial or light industrial uses that relate to the agricultural/forestry/rural use that is on the site (or in adjacent rural lands). Examples in this latter category could include wineries, restaurants, limited-scale food and beverage processing, limited scale agricultural product storage/distribution, outdoor or nature-based activities, and equestrian uses. Such uses should be more limited in scale or impact than uses that should more appropriately be located in an industrial/light industrial park. Residential uses are only recommended as clearly secondary uses, where they serve to support the larger goals of the designation, such as family subdivisions and caretaker residences. For all commercial, light industrial, or limited residential uses, any structures should be located on the property in a manner that complements, but limits the impacts on, the primary agricultural, forestry, or other rural use. Examples include avoiding or limiting impacts on prime soils, timber stands, or wildlife management areas. Structures should also be located in a manner that minimizes impacts to adjacent rural and residential uses.

RATIONALE:

Staff does not recommend a change to the Mixed Use Designation for the entire property for the following reasons:

1. As described in detail above, considerable vacant properties designated mixed use are located nearby, and redevelopment of the Toano area is encouraged as referenced in the Toano Community Character Area Design Guidelines. Staff recommends holding off on designating substantial new mixed use areas until development and redevelopment occurs, thereby prioritizing the County’s infrastructure and service capacity for these areas.
2. Analysis done as part of the 2035 Comprehensive Plan estimated that the County had enough room within the PSA to accommodate future residential growth needs until at least 2033.

Staff recommends approval of a change to a new RES Designation and inclusion of the property in the PSA for the following reasons:

1. Based on a recently-completed analysis of the County’s agricultural and forestry assets, much of the area previously identified as prime soil has been developed. About 30 parcels are still identified as viable for large-scale agriculture (greater than 50 acres of prime soil) with another 270 parcels viable for smaller-scale agriculture (between 10 and 49 acres of prime soil). The Taylor farm is one of the thirty parcels identified for viable for large-scale agriculture.
2. The new RES designation and a change of this property to the new designation support the Strategy for Rural Economic Development recently completed in conjunction with the Rural Economic Development Committee (REDC) of the Economic Development Authority (EDA).
3. For this particular parcel, the prime farmland soils are located closer to Richmond Road (including the area currently designated Low Density Residential), while areas further back on the site could be suitable for the commercial or light industrial uses discussed in the RES designation description.

ATTACHMENTS:

1. Location Map
2. Applicant Justification Letter
3. Public comment
4. Transportation Evaluation Sheet

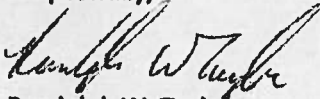
Applicant's Economic Opportunity Justification

Property Address: 8491 Richmond Road

The property owners of 8491 Richmond Road request that the current PSA line be moved to encompass the entire property. We also request the current land use designation be changed to Economic Opportunity (EO). The EO designation fits this property for the following reasons:

1. It would remove the Low Density Residential land use currently on a portion of the property. We believe there is enough housing in the area and more would be a drain on the school system and county utilities.
2. It would have the potential to increase the non-residential tax base and create jobs.
3. The property is at a strategic location. It is located at the major intersection of Rte. 60 and Rte. 30, both four lane highways and approximately a mile from I64 interchange 227.
4. A designation of EO would allow the landowner and JCC to work together to create a master plan for the property.
5. The property provides natural buffers by the way of swamp land and RPA between the bordering rural lands.
6. Allow a transition from General Industry to the south and Low Density Residential to the north.
7. Provide services and jobs needed by current and proposed surrounding residential areas.

Respectfully,



Randolph W. Taylor

MEMORANDUM

DATE: December 12, 2014

TO: Members of Planning Commission Working Group

Rich Krapf	George Drummond
Tim O'Connor	John Wright, III
Chris Basic	Heath Richardson
Robin Bledsoe	Elizabeth Friel

FROM: Tammy Mayer Rosario, Principal Planner

SUBJECT: 2035 Comprehensive Plan Planning Commission Working Group

The next meeting will be *Thursday, December 18, 2014 at 4:00 p.m.* in the Building F Board Room at the James City County Government Complex. This meeting will continue the focus on reviewing the Land Use Designation change applications.

Land Use Designation Change Applications

A. General Information

At the meeting on the 8th, a question was asked regarding the capacity analysis information in the Land Use Section. The capacity analysis attempts to look at the question of whether the existing PSA area is likely to have capacity (strictly from a density perspective) to absorb the amount of residential and non-residential growth that is estimated to occur over the next twenty years (the horizon year of the Comprehensive Plan). To recap the residential calculations, staff estimates that an additional 15,270 units could be built inside the current PSA limits, and that using the 5 and 15 year averages of the number of units that have been certified for occupancy annually, these 15,270 units could be built out somewhere in the range of 19-38 years. This calculation is meant to give a general sense of whether the PSA is approximately of the right dimensions from a pure residential construction historical trend standpoint. (More information about the residential and non-residential capacity analysis is available at the link [here](#) on pages LU-3 through LU-5.)

Historically, the County has tried to plan and put in place the services and resources needed to support the amount of growth that is shown on the adopted Plan's Land Use Map, such as when submitting permitting requests to DEQ for water resources. In addition, the County has used the Land Use Application process during Comprehensive Plan updates as the time period to holistically examine service and resource implications before changes are made to the amount or location of growth that is shown on the Map. In relation to the water issues discussed by Mr. Powell, please note that the potential changes in resource availability are in the early stages of discussions and negotiations with DEQ.

B. Cases – Follow-up Information

B.1. LU-0001-2014, 7809 Croaker Road. Mr. Massie's parcel (Parcel ID 1340100016D at 7809 Croaker Road) is 2.54 acres and the two additional properties under consideration (Parcel ID 1340100015 at 7819 Croaker Road and Parcel ID 1340100013 at 7901 Croaker Road) total approximately 12.12 acres. In total, the area being considered for redesignation would be 14.66 acres. Please note that Parcel ID

1340100013 adjacent to Point O Woods Road is part of a larger 67-acre property that is bisected by the road. The 9.5 acre piece under consideration is Low Density Residential, whereas the rest of the property (on the opposite side of Point O Woods) is currently designated Mixed Use.

B.2. LU-0002-2014, 8491 Richmond Road. The applicant for this case has submitted a letter requesting that their request be formally changed from Mixed Use to Economic Opportunity (see attachment 2). Staff has met with the Taylor family, and understands that they wish to have a designation that would allow a greater degree of flexibility and range of commercial uses than the proposed RES district, while noting that they do not have an immediate plan for developing the property.

Staff has previously recommended against a change of the entire property to Mixed Use, which would be a much more expansive designation than those in place currently. Staff notes that considerable vacant mixed use and commercial properties are located nearby, and redevelopment of Toano is a priority, rather than a continuous strip of commercial uses along Route 60. In the staff report, staff recommended holding off on designating substantial new mixed use areas until development and redevelopment occurs, thereby prioritizing the County's infrastructure and service capacity for these areas. Staff has similar concerns about a change to Economic Opportunity, also noting that this parcel, while it has good road access, does not have the element of a strategic location adjacent to an interstate interchange. Staff recommended the new RES designation as a more appropriate fit for this parcel as it maintains the ability to realize commercial uses at a level consistent with or perhaps greater amount than what could be associated with the 7.5 acres of Mixed Use designation currently existing on the parcel. The new designation also adds light industrial uses as a possible use, which would not have been a recommended use for the Mixed Use area (see the Anderson's Corner Mixed Use Area description for more information). The expansion of the Primary Service Area adds the ability for the commercial and light industrial uses to connect to public water and sewer, and adds 141 acres where those uses could be located on the site, which gives greater locational flexibility. In summary, the proposed RES district was intended to give the owner economic development options while at the same time acknowledging and building upon the other resources of the site.

B3. LU-0009-2014, 8961 Pocahontas Trail. In response to questions from the Planning Commission Working Group, staff consulted with the Office of Economic Development regarding the timeline for the renewal of the Enterprise Zone. OED noted that application results were scheduled to be released in October, but that no information has been announced for James City County or for any of the other localities seeking renewals. The County's Enterprise Zone expires at the end of 2015 so there is another application period beginning next year that the County will participate in if the pending application is not successful.

Please call me at 757-253-6688 if you have any questions or concerns. I look forward to seeing you on Thursday.


Tammy Mayer Rosario

Attachments:

1. Draft December 8, 2014 minutes
2. Letter regarding 8491 Richmond Road Designation Request

RESOLUTION

CASE NO. LU-0002-2014. 8491 RICHMOND ROAD (TAYLOR FARM)

LAND USE DESIGNATION CHANGE

WHEREAS, at its June 23, 2015, meeting the Board of Supervisors of James City County adopted the James City County Comprehensive Plan *Toward 2035: Leading the Way*; and

WHEREAS, at the June 23, 2015, meeting the Board of Supervisors postponed one component of the Comprehensive Plan, which was a land use designation change request submitted as Case No. LU-0002-2014, 8491 Richmond Road (James City County Real Estate Tax Map Parcel No. 1210100032); and

WHEREAS, the request was to change the property Rural Lands, Low Density Residential and Mixed Use to Economic Opportunity, and to expand the Primary Service Area (PSA) to encompass the entire property; and

WHEREAS, at its January 15, 2015, meeting the Planning Commission Working Group voted 7-1 to defer this case pending further discussions between the County and the Virginia Department of Environmental Quality on the County's groundwater withdrawal permit; and

WHEREAS, at its April 1, 2015, meeting the Planning Commission voted 7-0 to adopt the Comprehensive Plan, including accepting the recommendation of deferral of the Planning Commission Working Group for this case; and

WHEREAS, the groundwater withdrawal permit remains unresolved and the Board of Supervisors remains concerned about the adequacy of the future water supply to serve the existing PSA; and

WHEREAS, the Board of Supervisors finds changing the land use designations to accommodate a higher intensity of development and to expand the area served by public water and sewer to be inconsistent with prudent planning at this time.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of James City County, Virginia, hereby denies Case No. LU-0002-2014.

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>
JONES	___	___	___
MCGLENNON	___	___	___
ONIZUK	___	___	___
KENNEDY	___	___	___
HIPPLE	___	___	___

Adopted by the Board of Supervisors of James City County, Virginia, this 8th day of December, 2015.

LU-RichmondRd-res1

RESOLUTION

CASE NO. LU-0002-2014. 8491 RICHMOND ROAD (TAYLOR FARM)

LAND USE DESIGNATION CHANGE

- WHEREAS, at its June 23, 2015, meeting the Board of Supervisors of James City County adopted the James City County Comprehensive Plan *Toward 2035: Leading the Way*; and
- WHEREAS, at its June 23, 2015, meeting the Board of Supervisors postponed one component of the Comprehensive Plan, which was a land use designation change request submitted as Case No. LU-0002-2014 8491 Richmond (James City County Real Estate Tax Map Parcel No. 1210100032); and
- WHEREAS, the request was to change the property from Rural Lands, Low Density Residential and Mixed Use to Economic Opportunity (EO), and to expand the Primary Service Area to encompass the entire property; and
- WHEREAS, at its January 15, 2015, meeting the Planning Commission Working Group voted 7-1 to defer this case pending further discussions between the County and the Virginia Department of Environmental Quality on the County's groundwater withdrawal permit; and
- WHEREAS, at its April 1, 2015, meeting the Planning Commission voted 7-0 to adopt the Comprehensive Plan, including accepting the recommendation of the Planning Commission Working Group for this case; and
- WHEREAS, the Board of Supervisors finds that the change to EO will provide the opportunity for beneficial job growth and non-residential tax revenue; and
- WHEREAS, the Board of Supervisors finds changing the land use designations to accommodate a higher intensity of development and to expand the area served by public water and sewer to be consistent with prudent planning.
- NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of James City County, Virginia, hereby approves Case No. LU-0002-2014 and associated EO description language and directs that the James City County Comprehensive Plan Land Use Map and description be updated accordingly.

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>
JONES	___	___	___
MCGLENNON	___	___	___
ONIZUK	___	___	___
KENNEDY	___	___	___
HIPPLE	___	___	___

Adopted by the Board of Supervisors of James City County, Virginia, this 8th day of December, 2015.

LU-RichmondRd-res2

RESOLUTION

CASE NO. LU-0002-2014. 8491 RICHMOND ROAD (TAYLOR FARM)

LAND USE DESIGNATION CHANGE

- WHEREAS, at its June 23 2015, meeting the Board of Supervisors of James City County adopted the James City County Comprehensive Plan *Toward 2035: Leading the Way*; and
- WHEREAS, at its June 23, 2015, meeting the Board of Supervisors postponed one component of the Comprehensive Plan, which was a land use designation change request submitted as Case No. LU-0002-2014 8491 Richmond (James City County Real Estate Tax Map Parcel No. 1210100032); and
- WHEREAS, the request was to change the property from Rural Lands, Low Density Residential and Mixed Use to Economic Opportunity (EO), and to expand the Primary Service Area to encompass the entire property; and
- WHEREAS, at its January 15, 2015, meeting the Planning Commission Working Group voted 7-1 to defer this case pending further discussions between the County and the Virginia Department of Environmental Quality on the County's groundwater withdrawal permit; and
- WHEREAS, at its April 1, 2015, meeting the Planning Commission voted 7-0 to adopt the Comprehensive Plan, including accepting the recommendation of the Planning Commission Working Group for this case; and
- WHEREAS, the Board of Supervisors finds that the change to EO may provide the opportunity for beneficial job growth and non-residential tax revenue and may be consistent with prudent planning; and
- WHEREAS, the Board of Supervisors wishes the Planning Commission to review the EO designation description language and specifically provide a recommendation on a change to EO.
- NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of James City County, Virginia, hereby remands Case No. LU-0002-2014 to the Planning Commission.

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>
JONES	___	___	___
MCGLENNON	___	___	___
ONIZUK	___	___	___
KENNEDY	___	___	___
HIPPLE	___	___	___

Adopted by the Board of Supervisors of James City County, Virginia, this 8th day of December, 2015.

LU-RichmondRd-res3

ITEM SUMMARY

DATE: 12/8/2015
TO: The Board of Supervisors
FROM: Michelle M. Gowdy, County Attorney
SUBJECT: Adoption of 2016 Legislative Program

Resolution to adopt the 2016 Legislative Program.

ATTACHMENTS:

	Description	Type
▣	Legislative Agenda	Exhibit
▣	mem	Cover Memo
▣	resol	Resolution

REVIEWERS:

Department	Reviewer	Action	Date
Attorney	Gowdy, Michelle	Approved	12/1/2015 - 10:35 AM
Publication Management	Burcham, Nan	Approved	12/1/2015 - 1:39 PM
Legal Review	Gowdy, Michelle	Approved	12/1/2015 - 1:54 PM
Board Secretary	Fellows, Teresa	Approved	12/1/2015 - 1:55 PM
Board Secretary	Kinsman, Adam	Approved	12/1/2015 - 1:59 PM
Board Secretary	Fellows, Teresa	Approved	12/1/2015 - 1:59 PM



JAMES CITY COUNTY 2016 LEGISLATIVE PROGRAM

Part I. Legislative Priorities for James City County

1-1. EXEMPTIONS FROM RECORDATION TAX

James City County requests an amendment of the Virginia Code § 58.1-811(14) to include localities offering low-cost home loans to be exempt from recordation tax.

1-2. DELETE REQUIREMENT THAT THE GREATER WILLIAMSBURG CHAMBER & TOURISM ALLIANCE SERVE AS THE FISCAL AGENT FOR THE WILLIAMSBURG AREA DESTINATION MARKETING COMMITTEE

James City County requests an amendment to Virginia Code § 58.1-3823 C.3 to delete the statutory requirement that the Greater Williamsburg Chamber & Tourism Alliance serve as the fiscal agent for the Williamsburg Area Destination Marketing Committee.

Part II. Legislative Requests from Previous Years Carried Over

2-1. ALLOW JAMES CITY COUNTY THE ABILITY TO TAX CIGARETTES

James City County requests an amendment of Virginia Code § 58.1-3831 to include James City County in the list of counties that can tax cigarettes.

2-2. OBJECTIVE DEFINITION OF HYBRID CANINE

James City County requests an amendment of Virginia Code § 3.2-6581 to provide an objective method for determining what constitutes a hybrid canine.

2-3. REPORTING REQUIREMENT FOR VETERINARIANS TREATING HYBRID CANINES

James City County requests an amendment of Virginia Code to require that veterinarians report the initial visit of a hybrid canine to the local animal control office.

2-4. GRANT COMMISSIONERS OF THE REVENUE EXPLICIT AUTHORITY TO ENFORCE SUMMONSES TO APPEAR

James City County requests an amendment to Virginia Code § 58.1-3128 to grant Commissioners of the Revenue the explicit authority to enforce a summons to appear in a court of competent jurisdiction.

**JAMES CITY COUNTY
2016 LEGISLATIVE PROGRAM**



Part III. Position/Legislation/Statements Supported by the County

3-1 STATE FUNDING FOR PUBLIC EDUCATION, PRE-K, K-12 AND HIGHER EDUCATION

The County supports restoring the funding cuts made to pre-K and K-12 funding. In addition, the County supports restoring the funding cuts made to higher education which could cripple some of the most prestigious higher education institutions in the world, including the College of William & Mary.

3-2 SUPPORT THOMAS NELSON COMMUNITY COLLEGE IN ITS EFFORTS TO BUILD THE ADVANCED INTEGRATED MANUFACTURING (AIM) CENTER IN JAMES CITY COUNTY.

James City County has provided the Thomas Nelson Community College capital project requests to the state and supports the AIM Center being built on the James City County campus of Thomas Nelson Community College.

3-3 STORMWATER PROGRAMS.

James City County supports adequate funding to enable local governments to meet ongoing costs associated with local stormwater management programs that became effective July 1, 2014. Moving forward, it will be necessary to evaluate the effectiveness of the fee structure in Virginia Stormwater Management Permit regulations as the chief source of revenue for funding local stormwater management programs.

3-4 STATE FUNDING FOR TOURISM

The County urges the General Assembly to increase funding for the Virginia Tourism Corporation ("VTC") to promote tourism in Virginia generally, and in the Historic Triangle in particular.

3-5 SUPPORT WIDENING OF I-64 TO 295

James City County supports the immediate widening of I-64 to I-295 given the volume of traffic and the burden on the County's emergency responders.

3-6 MAINTENANCE OF NEW AND EXISTING SECONDARY ROADS

James City County opposes any legislation that would transfer to counties the responsibilities to construct, maintain or operate new or existing roads. Should such transfer of responsibilities occur, the state must provide continuing funding for the costs incurred by the localities.

**JAMES CITY COUNTY
2016 LEGISLATIVE PROGRAM**



3-7 APPLICATION OF TRANSIENT OCCUPANCY TAX TO TRAVEL COMPANIES AND INTERNET SALES

James City County supports a clarification of Virginia Code § 58.1-3819 *et seq.*, to make sure that the transient occupancy tax applies to the entire amount charged for rooms by travel companies and on Internet sales regardless of any discounted rates paid by such companies for such rooms. This would provide equal taxing of room sales by Virginia businesses and Internet sales companies.

3-8 ENHANCE RAIL SERVICE ON THE PENINSULA AND TO RICHMOND

The County supports improving commuter rail system from Richmond through the peninsula to connect urban centers for commuters and provide transportation alternatives for tourism.

3-9 BEHAVIORAL HEALTH AND COMPREHENSIVE SERVICES ACT (“CSA”) FUNDING

James City County urges the General Assembly to: 1) adequately fund the Medicaid waiver program to reduce the waiting list of individuals and families now eligible for services; 2) provide services to children with serious emotional disorders; and 3) cover reasonable administrative costs for CSA programs. Adequate funding and services will help prevent the mentally ill from being released early from treatment, living on the streets, going to jail, or being inappropriately placed in residential facilities or other government programs.

3-10 SUBSTANCE ABUSE AND MENTAL HEALTH TREATMENT

James City County supports maintaining state funding for mental health and substance abuse treatment in jails and juvenile detention facilities given the overwhelming percentage of adults and juveniles in the system diagnosed with mental health and/or substance abuse conditions.

3-11 TAX EQUITY BETWEEN CITIES AND COUNTIES

James City County supports equal taxing authority for cities and counties.

3-12 ALLOW ADVERTISEMENT OF REQUIRED PUBLIC NOTICES ON A LOCALITY’S WEBSITE AND THROUGH OTHER MEANS INSTEAD OF PUBLICATION IN A NEWSPAPER HAVING GENERAL CIRCULATION

James City County requests an amendment of Virginia Code § 15.2-107.1 to provide that wherever newspaper advertisement is required for public notices, a locality may instead publish such notice on its website and shall also provide, at the request of any citizen of the Commonwealth, notice by electronic or telephonic means or through the U.S. postal mail.

3-13 ADEQUATE FUNDING FOR PUBLIC LIBRARIES

James City County supports the state maintaining funding to public libraries to make sure that the state and the localities maintain their proportionate shares of funding.

**JAMES CITY COUNTY
2016 LEGISLATIVE PROGRAM**



3-14 NO NEW STATE MANDATES AND ELIMINATE OR ADEQUATELY FUND EXISTING STATE MANDATES

James City County calls upon the General Assembly to oppose unfunded mandates and to reduce existing state mandates commensurate with any reduction in state funding to localities.

3-15 PROVIDE STATE FUNDING TO MITIGATE ENCROACHMENT OF AIRFIELD SURROUNDING JOINT BASE LANGLEY-FORT EUSTIS

James City County supports the initiative to provide state funding for the land acquisition program supporting mitigation of encroachment around Joint Base Langley-Fort Eustis.

3-16 LEGISLATIVE PROGRAMS OF THE VIRGINIA MUNICIPAL LEAGUE, THE VIRGINIA ASSOCIATION OF COUNTIES AND THE VIRGINIA COALITION OF HIGH GROWTH COMMUNITIES

James City County supports the legislative programs of the Virginia Municipal League, the Virginia Association of Counties and the Virginia Coalition of High Growth Communities.

James City County will oppose any legislation that will impose any additional mandates or financial burdens on local government.

SUCSESSES IN 2015

Virginia Code § 17.1-279.1 was amended to allow for the collection of fees to offset the cost of electronic summonses for each locality sharing a courthouse.

The James City County Charter Section 7.4 was amended to remove the requirement that the Director of Planning be appointed by and serve at the pleasure of the Director of Development Management.

MEMORANDUM

DATE: December 8, 2015
TO: The Board of Supervisors
FROM: Michelle M. Gowdy, County Attorney
SUBJECT: 2016 Legislative Program

Attached for your consideration is a resolution approving James City County's 2016 Legislative Program. Also attached is the 2016 Legislative Program.

I recommend adoption of the attached resolution.

MMG/nb
16LegProgram-mem

Attachments

RESOLUTION

2016 LEGISLATIVE PROGRAM

WHEREAS, James City County has developed a Legislative Program for the consideration of the 2016 session of the General Assembly which outlines certain legislative policies which the Board believes should guide the General Assembly and proposes certain legislation that would benefit the County; and

WHEREAS, the Board has carefully considered its Legislative Program and believes that it is in the best interests of the citizens of James City County.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of James City County, Virginia, hereby approves the County's 2016 Legislative Program and commends it to the County's representatives in the General Assembly for action.

BE IT FURTHER RESOLVED that a copy of the County's 2016 Legislative Program be forwarded to the County's elected representatives to the General Assembly.

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>
JONES	_____	_____	_____
MCGLENNON	_____	_____	_____
ONIZUK	_____	_____	_____
KENNEDY	_____	_____	_____
HIPPLE	_____	_____	_____

Adopted by the Board of Supervisors of James City County, Virginia, this 8th day of December, 2015.

16LegProgram-res

ITEM SUMMARY

DATE: 12/8/2015
TO: The Board of Supervisors
FROM: Bryan J. Hill, County Administrator
SUBJECT: County Administrator's Report

ATTACHMENTS:

	Description	Type
▣	CA Report	Cover Memo

REVIEWERS:

Department	Reviewer	Action	Date
Board Secretary	Fellows, Teresa	Approved	11/24/2015 - 9:09 AM

MEMORANDUM

DATE: December 8, 2015
TO: The Board of Supervisors
FROM: Bryan J. Hill, County Administrator
SUBJECT: County Administrator's Report

The following is a summary of activities that took place November 18, 2015 through December 1, 2015:

November 18, 2015 (Wednesday)

- Attended Virginia Peninsula Regional Jail Board of Directors meeting
- Attended United Way JCC Spaghetti Luncheon
- Attended KFJH Report on Senior Transportation meeting at Williamsburg Health Foundation
- Taught Government Law class at the College of William & Mary

November 19, 2015 (Thursday)

- Met with Department of Environmental Quality, Doug Powell, JCSA manager and Mike Vergakis, JCSA engineer
- Attended 22nd Annual JCC Celebration of Business

November 20, 2015 (Friday)

- Attended Coffee with County Administrator, staff event
- Met with Doug Powell, JCSA manager
- Met with Adam Kinsman, assistant county administrator and Jason Purse, zoning administrator
- Met with Jody Puckett, communications director and Laura Messer, tourism coordinator; Bountiful Brews & Bites
- Met with James Perry, fire rescue technician IV
- Met with Ryan Ashe, interim fire chief

November 23, 2015 (Monday)

- Met with Lexie Hovey, Rawls Byrd Elementary School student

November 24, 2015 (Tuesday)

- Met with John Horne, general services director
- Met with Neil Morgan, York County administrator and Marvin Collins, Williamsburg city manager
- Attended Board of Supervisors work session
- Attended Board of Supervisors meeting

November 25, 2015 (Wednesday)

- Met with John Carnifax, parks and recreation director
- Board of Supervisors meeting video shoot

November 30, 2015 (Monday)

- Conference call with Gary Levy, Newmarket NH, operational efficiencies in emergency management

BJH/ab
CARreport120815-mem

ITEM SUMMARY

DATE: 12/8/2015
TO: The Board of Supervisors
FROM: Teresa J. Fellows, Administrative Coordinator
SUBJECT: Adjourn until 4 p.m. on January 4, 2016 for the Organizational Meeting

REVIEWERS:

Department	Reviewer	Action	Date
Board Secretary	Fellows, Teresa	Approved	11/24/2015 - 9:10 AM