TOWN OF HAYMARKET PLANNING COMMISSION

PUBLIC HEARING/REGULAR MEETING

~ AGENDA ~

Emily Lockhart, Town Planner
http://www.townofhaymarket.org/

15000 Washington Street, Suite 100
Haymarket, VA 20169

Monday, August 19, 2019 | 7:00 PM | Council Chambers

I. Call to Order

II. Pledge of Allegiance

III. Public Hearing SUP#2019-004 Van Metre/Smith Property

IV. Minutes Approval

1. Planning Commission - Regular Meeting - May 22, 2019 7:00 PM
2. Planning Commission - Public Hearing/Regular Meeting - Jul 25, 2019 7:00 PM

V. Citizen's Time

VI. Agenda Items

1. SUP#2019-004, Van Metre/Smith Property, 6701 Hunting Path & 14850/14860 Washington Street

VII. New Business

1. Chairman and Vice Chairman Appointments

VIII. Old Business

IX. Architectural Review Board Update

X. Town Council Update

XI. Adjournment

TOWN OF HAYMARKET PLANNING COMMISSION

REGULAR MEETING
~ MINUTES ~

Emily Lockhart, Town Planner
http://www.townofhaymarket.org/

15000 Washington Street, Suite 100
Haymarket, VA 20169

Wednesday, May 22, 2019 | 7:00 PM | Council Chambers

A Regular Meeting of the Planning Commission of the Town of Haymarket, VA, was held this evening in the Council Chambers, commencing at 7:00 PM.

Chairman Matt Caudle called the meeting to order.

I. Call to Order

Chairman Matt Caudle: Present, Councilman Steve Shannon: Present, Commissioner Nicholas Pulire: Present, Commissioner Tony James: Absent, Commissioner Aayush Kharel: Present.

II. Pledge of Allegiance

III. Minutes Approval

1. Planning Commission - Work Session - Apr 22, 2019 6:30 PM
Councilman Shannon moves *to accept the minutes from the April 22, 2019 work session*. Commissioner Kharel seconds the motion.

There is no discussion on the motion.

RESULT:	**ACCEPTED [UNANIMOUS]**
MOVER:	Steve Shannon, Councilman
SECONDER:	Aayush Kharel, Commissioner
AYES:	Matt Caudle, Steve Shannon, Nicholas Pulire, Aayush Kharel
ABSENT:	Tony James

2. Planning Commission - Public Hearing/Regular Meeting - Apr 22, 2019 7:00 PM
Commissioner Kharel moves *to accept the minutes from the April 22, 2019 public hearing/regular meeting.* Councilman Shannon seconds the motion.

There is no discussion on the motion.

RESULT:	**ACCEPTED [UNANIMOUS]**
MOVER:	Aayush Kharel, Commissioner
SECONDER:	Steve Shannon, Councilman
AYES:	Matt Caudle, Steve Shannon, Nicholas Pulire, Aayush Kharel
ABSENT:	Tony James

IV. Citizen's Time

There is no one to speak at Citizen's time.

V. Agenda Items

1. Morais Vineyard, Aroma II Site Plan Review

Town Planner, Emily Lockhart, states that this is the second submission. She adds that they have addressed the majority of the Town Engineer's comments and have returned with an updated landscape plan. She further adds that there is a change to the exit as well.

Lee Baines, Civil Engineer for the Morais properties project, addresses the Commission. He discussed the change in the exit and entrance, parking spaces, landscaping along the property line, the privacy fence in the rear of the property and relocating the town's crepe myrtle tree.

Commissioner Pulire moves the Planning Commission to approve Aroma II site plan with the condition that all outstanding comments from the Town Engineer be addressed prior to the final approval. Commissioner Kharel seconds the motion.

There is no discussion on the motion.

RESULT:	**ADOPTED [UNANIMOUS]**
MOVER:	Nicholas Pulire, Commissioner
SECONDER:	Aayush Kharel, Commissioner
AYES:	Matt Caudle, Steve Shannon, Nicholas Pulire, Aayush Kharel
ABSENT:	Tony James

VI. New Business

1. SUP#2019-003, Wonderful Haymarket, LLC - 14901 Washington Street -- Informational Purposes

Ms. Lockhart shares information regarding the Special Use Permit for the Wonderful Haymarket, LLC. office space. She states that it is for an existing town dental office to relocate to the former BB&T building at 14901 Washington Street. She concludes that she will send out the Public Hearing agenda packet electronically tomorrow.

VII. Old Business

1. SUP#2019-001 - Williams Holdings 6604 & 6608 Jefferson Street, Mixed Use Development

Ms. Lockhart states that Ms. Michelle Williams, of Williams Holdings, is here this evening to present the changes she has made to her plans that were previously presented to the Planning Commission. Ms. Lockhart shares with the Planning Commission that a few citizen's have walked in since the meeting began, and asked the Commission if it would be okay to have them address the dais. The Chairman states yes and reopens Citizen's Time.

Susie Bailey, Jefferson Street, approaches the podium. She states that she lives next door to the proposed project and that she is in favor of the development.

Dottie Leonard, 14801 Washington Street, speaks to the Commission. She states that she is also in support of the new project as well as the progress that has been made regarding the blighted structures that have been demolished across the street.

Ms. Williams addresses the Commission. At this time, Councilman Shannon discloses that he spoke with applicant off of the dais and received a pre-brief of the changes prior to this meeting. He adds that he was representing VDOT and not the Town Council.

Michelle Williams Daczkowski, the applicant, addresses the dais. She identifies the changes that were made to the plans. The revisions she outlines include decreased square footage, setback changes, 7 residential units and 7 retail spaces. Discussion ensues concerning the various town homes amenities and parking.

Councilman Shannon discusses informally the possible changes to the intersection at Jefferson and Washington.

Ms. Lockhart also updates on the demolition of the structures across the street.

VIII. Architectural Review Board Update

Commissioner Kharel, liaison, states that they approved Morais Vineyard with the condition of the fence. He adds that if it were to ever come down, whoever the current owner is at the time would have to put up a new fence. He concludes that they approved Eugene's Sausage and Fries and a community board.

IX. Town Council Update

Councilman Shannon, liaison, states that there were 3 meetings for the Town Council. He states that at the regular Council meeting, they had the VML essay, "Mayor of the Day", winner Lily Konopka. He adds that Council amended the vehicle town sticker to a one time purchase and military and first responders

are free. He goes on to say that they had two public hearings on the real property tax and budget with a lengthy discussion on a possible 1% increase in the meal's tax.

A brief discussion ensues on the status of the playground and notification of the nearby property owners.

X. Adjournment

1. Motion to Adjourn

RESULT:	**ADOPTED [UNANIMOUS]**
MOVER:	Steve Shannon, Councilman
SECONDER:	Aayush Kharel, Commissioner
AYES:	Matt Caudle, Steve Shannon, Nicholas Pulire, Aayush Kharel
ABSENT:	Tony James

Submitted: Approved:

_____ _____

Shelley M. Kozlowski, Clerk of the Council Matt Caudle, Chairman

TOWN OF HAYMARKET PLANNING COMMISSION

PUBLIC HEARING/REGULAR MEETING
~ MINUTES ~

Emily Lockhart, Town Planner
http://www.townofhaymarket.org/

15000 Washington Street, Suite 100
Haymarket, VA 20169

Thursday, July 25, 2019 | 7:00 PM | Council Chambers

A Public Hearing/Regular Meeting of the Planning Commission of the Town of Haymarket, VA, was held this evening in the Council Chambers, commencing at 7:00 PM.

Councilman Steve Shannon called the meeting to order.

I. Call to Order

Town Planner and secretary of the Planning Commission, Emily Lockhart, calls the meeting to order in the absence of the chair and due to the lack of a vice chair. She adds that the first order of business is to elect a temporary Chair. She further adds at the August regularly scheduled meeting the Planning Commission will hold its election per section 4-2 of the Planning Commission by-laws for Chair and Vice Chair for the current fiscal year. Ms. Lockhart asks for nominations for temporary Chair. Commission Pulire nominates Councilman Steve Shannon. There were no further nominations. The Commission voted unanimously to vote Councilman Shannon as temporary Chair. Ms. Lockhart hands the gavel over to Councilman Shannon.
Chairman Matt Caudle: Absent, Councilman Steve Shannon: Present, Commissioner Nicholas Pulire: Present, Commissioner Aayush Kharel: Present.

II. Pledge of Allegiance

III. Minutes Approval

Ms. Lockhart inadvertently left the minutes from the previous meeting out of the packet. Councilman Shannon states they will be voted on at the next meeting.

IV. Citizen's Time

Dottie Leonard, 14801 Washington Street, reiterates on what she said at the ARB meeting the night before. She feels the Planning Commission is doing a good job but has concerns with some of the decisions made by the ARB.

Bob Weir, 6853 St. Paul Drive, shares concerns with the haste of some projects. Suggests looking at other town's requirements for height and more research in the staff reports.

V. Public Hearing SUP#2019-001 AMENDED Williams Holdings. 6604 & 6608 Jefferson Street

Ms. Lockhart shares a brief timeline of the project with the Commission stating that this was a previous plan presented before and there was a public hearing several months back. She adds since then the applicant has revised her plan and is back for a second public hearing. Revisions include reduction in the building footprint, town homes, retail services, no parking variances required, and the request for a setback reduction to the south property line. She further highlights her staff report which has been made part of tonight's agenda packet. She concludes that the planner is in support of the project.

Michelle Williams, applicant, addresses the Commission and her presents her plans for the property.

Dottie Leonard thinks this is a splendid project. Questioned the non-conforming use for the setback in Ms. Lockhart's staff report. Ms. Lockhart states that it was an error and the property is currently zoned residential.

With no one else to speak, Councilman Shannon closes the public hearing.

VI. Public Hearing ZTA#2019-001 Zoning Text Amendment B-1 Height Regulations

ZTA#2019-001, Zoning Text Amendment B-1 Height Regulations, was withdrawn by the applicant.

VII. Agenda Items

1. SUP#2019-001, AMENDED, Williams Holdings, 6604 & 6608 Jefferson Street

Commissioner Pulire moves *the Planning Commission to recommend approval to Town Council for the 7 residential town home units above commercial retail at 6604 and 6608 Jefferson Street, with the condition that the applicant follow the proposed concept plan submitted in the application materials.* Commissioner Kharel seconds the motion.

Councilman Shannon asks if there is any discussion.

Commissioner Kharel asks Ms. Lockhart if this would include the setback. She states yes and it will come back up for site plan review to the Planning Commission.

There is no further discussion.

RESULT:	**ADOPTED [UNANIMOUS]**
MOVER:	Nicholas Pulire, Aayush Kharel
AYES:	Steve Shannon, Nicholas Pulire, Aayush Kharel
ABSENT:	Matt Caudle

2. ZTA#2019-001 Zoning Text Amendment B-1 Height Regulations

VIII. New Business

1. RV/Camper/Other Recreational Vehicle Ordinance

Ms. Lockhart states that this is a new item. Council has given a directive to Staff to work on an RV/Camper and other recreational vehicle ordinance. She adds that many residents have started to park RV's along their streets. She continues stating the town is looking to have a ordinance developed that is vetted by the public, commission and council and go forth with taking care of the current situation. She concludes that this will be coming up to the Planning Commission soon and will be working on with the Chief and Town Attorney to develop a draft.

Councilman Shannon asks if other jurisdictions have an ordinance similar to this? Ms. Lockhart states yes.

Commissioner Pulire asks if commercial vehicles would be included. Ms. Lockhart states that she can look at what the Town currently has and can make necessary changes or additions.

IX. Old Business

Ms. Lockhart states that the citizen's survey is going live. The link will be in the newsletter, on the website and social media. Councilman Shannon asks to possibly include it in our text alerts and recommends setting an ending date for the survey. The Commission selected November 1.

Ms. Lockhart states that construction for the playground is slated for September 9th.

Reminded the Commission about the Haymarket Music Fest on August 24th.

X. Architecture Review Board Update

Commission Kharel's update includes the Haymarket Hotel Venture's demolition application that was denied, the Taco Bell review and the old BB&T building additions that received conditional approval.

XI. Town Council Update

Councilman Shannon states at the continuation meeting the Council discussed a budget amendment that is forthcoming.

Councilman Shannon's closing remarks includes thanking Kris Spitler for attending tonight's meeting as our counsel representative.

XII. Adjournment

1. Motion to Adjourn

RESULT:	**ADOPTED [UNANIMOUS]**
MOVER:	Aayush Kharel, Commissioner
SECONDER:	Nicholas Pulire, Commissioner
AYES:	Steve Shannon, Nicholas Pulire, Aayush Kharel
ABSENT:	Matt Caudle

Submitted:

Shelley M. Kozlowski, Clerk of the Council

Approved:

Steve Shannon, Acting Chairman

Town of Haymarket
15000 Washington Street, #100
Haymarket, VA 20169
703-753-2600

Emily K. Lockhart
TOWN PLANNER
ZONING ADMINISTRATOR

MEMORANDUM

TO: Planning Commission
FROM: Emily K. Lockhart, Town Planner
DATE: August 5, 2019
SUBJECT: Special Use Permit Request – Van Metre, 38 Residential Townhomes

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APPLICATION SUMMARY:

Applicant, Van Metre Communities, LLC, has requested a Special Use Permit for the Smith Property – 6701 Hunting Path Road, 14860 Washington Street, and 14850 Washington Street - to construct 38 residential townhomes in the B-1 zoning district. The proposed townhomes would occupy the north half of the property and abut the Longstreet Commons neighborhood (see attached Special Use Permit Plan). The south portion of the property abutting Washington Street, would be occupied by a B-1 commercial use.

Land Summary:

- Site Address: 6701 Hunting Path Road, 14860 Washington Street, and 14850 Washington Street.
- Acreage: 4.8 acres (designated to SUP use, additional acreage designated to commercial use)
- Current Land Status: Undeveloped
- Zoning District: B-1, Town Center
- Historic Resources on Site: based on the Cultural Resources Study three artifacts were found dating back to the prehistoric time period, late 18th/19th century and 19th/20th century. Based on these artifacts and the opinion of the Thunderbird Archeology – *"the site lacks research potential and is not eligible for listing in the National Register of Historic Places under Criterion D, no further work is recommended in association with the site."*(Thunderbird Archeology, page i).

The Zoning Ordinance requires the following standards are considered and met prior to approval.

(1) The proposed use at the stipulated location shall be in accordance with the official policies of an adopted comprehensive plan, and with any specific element of such plan.

(2) The proposed use shall be in accordance with the general purpose and intent of the applicable zoning district requirements.

(3) The proposed use shall not adversely affect the use or values of surrounding properties and structures.

(4) The proposed use shall not adversely affect the health, safety or general welfare of persons residing or working in the neighborhood.

(5) Pedestrian and vehicular traffic generated by the proposed use shall not be hazardous or conflict with the existing and anticipated traffic in the neighborhood.

(6) Utility, drainage, parking, loading and other necessary facilities provided to serve the proposed use shall be adequate.

Staff Analysis of these standards can be found below;

Special Use Permit Standards (Sec 58-1.7, (d)):

1. *The proposed use at the stipulated location shall be in accordance with the official policies of an adopted comprehensive plan, and with any specific element of such plan.*

   Commercial/Residential Blend East of Town's Center

   Traveling east from the central portion of town, Haymarket unfolds in a pleasant mix of older, residential homes and low intensity commercial uses such as a veterinary clinic and a Baptist Church. This blend of uses continues to the eastern town limit, where a neo-colonial residential development is across the street from public uses in two Sears houses fronted by a planned village green. The two Sears structures fit this area architecturally and historically and should be preserved, if at all possible. Almost all the land north and south of Washington Street is developed. ***Much of the available land on the north side of Washington Street seems well suited to low intensity commercial uses, with adequate buffering to separate it from residential neighborhoods.*** *Whenever possible, existing residential buildings should be converted to commercial use, rather than have new buildings constructed, to continue the open, small town atmosphere and sense of place. As per the ARB guidelines, any new development must follow architectural styles represented by the surviving historic buildings in Haymarket. In general, developments within the last seven years have been styled as neocolonial. As other residential developments are planned, the ARB will encourage developers to move away from "cookie cutter" designs and explore styles that reflect*

a post-Civil War era. This would include Victorian styles. Modern or industrial designs do not fit into the overall feel of the town and would not be appropriate.

The Town Comprehensive Plan adopted in 2008, designates the properties as Planned Transitional Commercial. Our current Zoning Ordinance allows for townhouses as a by-right use in the transitional commercial district, thus creating a direct conflict with the intent of the Comp Plan for low-intensity commercial uses on this property with adequate buffering. Furthermore, the properties are currently zoned B-1, Town Center District, and the addition of townhouses in the B-1 would be in direct conflict with the Comprehensive Plan's intent.

While the Comprehensive Plan and Zoning Ordinance have conflicting definitions and designations of transitional commercial and the intent for the property, the proposed project would actively work to achieve blending of residential to commercial along Washington Street and secondary streets.

2. *The proposed use shall be in accordance with the general purpose and intent of the applicable zoning district requirements.*

Sec. 58-10.1. - Intent.

The Town Center District, B-1, provides primarily for retail shopping and personal services to be developed either as a unit or in individual parcels oriented to attracting pedestrian shoppers, tourism and local convenience. Recognizing the economic value of the existing historical area, it shall further be the intent of the district to encourage the retention and rehabilitation of structures and uses in the district that have historic and/or architectural significance. The range, size, hours of operation, lighting, signs and other developmental aspects of permitted uses may be limited in order to enhance the general character and historic nature of the district.

While the Zoning Ordinance allows applicants and landowners to request a special use permit for townhouses and multi-family dwellings, the proposed 38 townhouses do not conform with the general intent of the B-1 Zoning District purpose as stated above. The townhouses would allow an opportunity to blend the residential and commercial zoning in an area that was planned as transitional commercial in the 2008 Comprehensive Plan. The proposed townhouse neighborhood would not provide commercial uses that would attract pedestrian users, rather it would create an additional pedestrian base.

As proposed on the GDP all other zoning district requirements have been met to include; height, setbacks, parking, landscaping and other requirements as set forth in the Ordinance. As noted on the GDP, upon further research and

engineering these proposed improvements are subject to change, however will be in keeping with the requirements.

3. *The proposed use shall not adversely affect the use or values of surrounding properties and structures.*

   Currently, there are no known adverse effects on the use or values of the surrounding properties and structures. Further economic analysis and research will need to be completed to determine the effects on use and value.

   Surrounding Properties abutting the Special Use Request include; Longstreet Commons, Haymarket Baptist Church, VCA Healthy Paws, and Dr. Kayes Dental Office.

   The proposed townhouse neighborhood would provide a buffer for the Longstreet Commons neighborhood and any new commercial construction on the remainder of the Smith Property. This "buffer" could be viewed as a benefit to the existing homes that abut the Smith Property.

4. *The proposed use shall not adversely affect the health, safety or general welfare of persons residing or working in the neighborhood.*

   The proposed townhouse project is not anticipated to adversely affect the health, safety, or general welfare of those residing and working in the neighborhood. The proposed townhouses are new construction and shall conform to current building code regulations and all site development will be analyzed and held to current standards.

5. *Pedestrian and vehicular traffic generated by the proposed use shall not be hazardous or conflict with the existing and anticipated traffic in the neighborhood.*

   The proposed use will create additional vehicular trips per day throughout Town, specifically, Hunting Path Road, as this is the single entry/exit into the proposed neighborhood. The proposed trip generation as stated in the Pennoni Traffic Impact Statement dated, June 21, 2019 for the multifamily housing at 38 dwelling units is projected to be 304 trips (Table 3: Trip Generation, page 6, Pennoni). The am peak hour trip generation is expected to be 23 trips while the pm peak hour is expected to be 26 trips (Pennoni, page 13). While the by-right uses are projected at 782 trips for general office use at 73,000 sq. ft facility and 2,606 trips for a 30,000

sq. ft shopping center and restaurant (Table 3: Trip Generation, page 6). For the complete traffic impact statement data please review the Pennoni Report attached.

While the trip counts for the proposed residential neighborhood show a significant decrease from the potential by-right use trip counts, the potential increased cut-through traffic volume within Longstreet Commons will conflict with the existing traffic flow and patterns in Town. Currently, the Longstreet Commons neighborhood experiences a higher volume of cut-through traffic than any other neighborhood as it is a convenient path for those avoiding the intersection of Washington Street and Jefferson Street. This issue shall be discussed further with the Planning Commission and applicant. If the project moves forward, the Planning Commission shall request traffic mitigation or abatement options so that the Longstreet Commons neighborhood is not negatively impacted by the proposed project.

6. *Utility, drainage, parking, loading and other necessary facilities provided to serve the proposed use shall be adequate.*

   As shown on the generalized development plan the applicant has accounted for adequate utilities, drainage, parking, loading and other necessary improvements on the site. Specifically, the applicant has proposed a stormwater retention dry pond at the east property line abutting the rear of several townhouses, the Haymarket Baptist Church property, the proposed daycare facility on site and the VCA Clinic. The applicant has provided adequate parking for the proposed residents by means of driveway parking, street parking and visitor parking on site.

STAFF RECOMMENDATION:

It is Staff's recommendation to the Planning Commission to hear all public comment at the August 19th public hearing and provide the applicant with questions and concerns to address prior to the September Planning Commission Meeting.

As proposed the townhouse project provides an opportunity to blend the residential and commercial zoning districts, specifically the existing Longstreet Commons neighborhood with the abutting commercial zoned property (Smith Property). Alternative commercial by-right uses on this property have the potential to create noise disturbances, significantly greater traffic volumes, and other adverse effects for the residents of Longstreet Commons and those adjoining property owners

Staff's Concerns include; traffic flow along Hunting Path Road, increase cut-through traffic in the Longstreet Commons neighborhood, long wait periods at the Hunting Path Road/Washington Street intersection, increased street parking on Hunting Path Road and lack of amenities for the new residents.

RECEIVED APR 24 2019

Van Metre

April 24, 2019

Emily Lockhart, Town Planner
Town of Haymarket
15000 Washington Street, #100
Haymarket, VA 20169

RE: Smith Property – SUP-2019-XXXX

Dear Emily,

Enclosed herein please find the following documents in support of the Special Use Permit request for the Smith Property at Haymarket:

1. Executed Special Use Permit Application
2. Development Narrative
3. Conditions of Approval
4. Design Guidelines
5. Geotechnical Engineering Report
6. Phase 1 Cultural Resources Investigation
7. Phase 1 Environmental Site Assessment
8. Special Use Permit Plan for Smith Property dated April 12, 2019

I look forward to working with you and the Town on this project. Please let me know if you have any questions. I can be reached at dharrover@vanmetreco.com or 703-425-2610.

Sincerely,

Denise M. Harrover
Vice-President, Planning & Entitlements

VAN METRE COMPANIES
9900 Main Street, Suite 500, Fairfax, VA, 22031 | 703.425.2600 | Fax: 703.239.0395 | VanMetreCcompanies.com

PAID APR 24 2019 By ekl

SUP#_____

SPECIAL USE PERMIT APPLICATION

NOTE: This application must be filled out completely and all submission requirements must be met before the application can be accepted and scheduled for review/Public Hearing.

NAME OF BUSINESS/APPLICANT: Van Metre Communities LLC

SITE ADDRESS: Washington Street, Haymarket

ZONING DISTRICT: ☐ R-1 ☐ R-2 ■ B-1 ☐ B-2 ☐ I-1 ☐ C-1 **SITE PLAN PROPOSED:** ■ Yes ☐ No

PROPOSED USE(S): Residential R-1 **CODE SECTION(S) #:** Sec. 587.2

BRIEF DESCRIPTION OF ACTIVITY: *In the space below or in an attached narrative, please describe in detail the proposed activity including size and type of proposed/existing structures, hours of operation, type of clientele, number of vehicles anticipated to visit the site during an average workday and any other changes that will affect the nature or appearance of the structure(s) or site.*

4.8 acres to be developed with 38 Townhomes; 86 required parking spaces, providing 105 spaces.

Supporting Documentation (*attached*): ■ Narrative (*addressing criteria of Section 58-9(d)*) ■ Plan/Plat

ADDITIONAL INFORMATION FOR HOME OCCUPATIONS (SUBJECT TO SECTION 58-16):

TYPE OF STRUCTURE: ☐ SFD ☐ TH TOTAL FLOOR AREA OF MAIN STRUCTURE: _____(sq. ft.)

FLOOR AREA DEVOTED TO HOME OCCUPATION: _____(sq. ft.)

NUMBER / TYPE OF VEHICLES: _____

NUMBER / TYPE OF EQUIPMENT AND METHOD OF STORAGE (*i.e. garage, accessory storage, etc.*):

_____

OFF-STREET PARKING SPACES PROVIDED: _____ NO. OF EMPLOYEES WORKING FROM SITE: _____

FEE: ■ $500 Residential ☐ $200 Residential In-Home Business
☐ $350 Commercial (no land disturbance) ■ $1,500 Commercial (land disturbance)

APPLICANT/PERMIT HOLDER INFORMATION	PROPERTY OWNER INFORMATION
Van Metre Communities, LLC	BMS Jr. 2011 Trust
Name	Name
Denise Harrover	Benjamin M. Smith, Trustee
Address	Address
9900 Main Street, 5th Floor	2407 Columbia Pike, Suite 200
City State Zip	City State Zip
Fairfax, VA 22031	Arlington, VA 22204
Phone#(s)	Phone#(s)
703-425-2610; dharrover@vanmetreco.com	703-920-2200
Email Address	Email Address

TOWN OF HAYMARKET
SPECIAL USE PERMIT APPLICATION

SUP#_____

APPLICANT / PROPERTY OWNER CONSENT ******REQUIRED******

I, as owner or authorized agent for the above-referenced parcel, do hereby certify that I have the authority to make the foregoing application and that the information provided herein or attached hereto is correct and a true representation of the activity and method of operation described. Construction of any improvements described herein and as shown on the attached plat, plan and/or specifications will comply with the ordinances of the Town of Haymarket, any additional restrictions and/or conditions prescribed by the Planning Commission or the Town Council, and all other applicable laws.

Van Metre Communities, LLC
By: Van Metre Homes, Inc.

Applicant Signature

X

By: Ray Barnett 4/03/19

Property Owner Signature

18 Apr. 19

Date

*****OFFICE USE ONLY*****

DATE FILED: _____ **FEE AMOUNT:** _____ **DATE PAID:** _____

DATE TO ZONING ADMINISTRATOR: _____ STAFF REVIEW COMPLETE: _____

APPLICABLE ZONING ORDINANCE SECTION(S) / RECOMMENDED CONDITIONS:

_____

_____

_____ _____

ZONING ADMINISTRATOR *DATE*

DATE TO PLANNING COMMISSION: _____ PUBLIC HEARING DATE: _____

☐ RECOMMEND APPROVAL ☐ RECOMMEND DENIAL ☐ NO RECOMMENDATION

RECOMMENDED CONDITIONS:

_____

_____

_____ _____

CHAIRMAN *DATE*

DATE TO TOWN COUNCIL: _____ PUBLIC HEARING DATE: _____

☐ APPROVED ☐ DENIED

CONDITIONS:

_____

_____

RECEIVED APR 24 2019

APR 24 2019
By

VAN METRE COMMUNITIES, L.L.C.
THE SMITH PROPERTY
GPINS: 7298-90-7006, 7297-99-8684 (Partial), 397-09-0978 (Partial)
Development Narrative
April 22, 2019

PROPERTY AND AREA OVERVIEW

Van Metre Communities, L.L.C. (the ***"Applicant"***), has submitted a Special Use Permit application (the ***"Application"***) on approximately 4.8 acres (the ***"Property"***) that includes a portion of the Tax Parcels described as GPIN: 7297-99-8684 and GPIN: 7397-09-0978, and all of the Tax Parcel described as GPIN: 7298-90-7006. The Application proposes to develop the property as a R-2 Single-Family Residential zoning district with a maximum density of 8 dwelling units per acre and up to 38 single family attached dwelling units.

The Property is vacant and is located on the north side of Washington Street, the east side of Hunting Path Road, and south of the Longstreet Commons subdivision in the Town of Haymarket. The proposed development will be accessed from Hunting Path Road.

The land uses adjacent to the proposed development include single-family attached homes zoned R-2 located directly to the north, the Haymarket Baptist Church zoned R-1 to the east, B-1 property to the south, with a portion improved with the Stanley Kayes offices, and the open space to the west of the property.

SPECIAL USE PROPOSAL

The Application proposes to develop 4.8 acres of the Property zoned B-1 via special use permit to allow a maximum density of 8 dwelling units per acre for the development of up to 38 single family attached residential dwelling units. The proposed plan locates the single-family attached homes south of the existing Longstreet Commons subdivision single family attached homes. A 25' wide landscaped area will be provided between the two single family attached properties. The property will be separated along the eastern edge from the church site by a storm water management pond and open space. To the south, the Property will provide a landscaped buffer between the existing and future B-1 uses. The western edge of the Property is tree lined along Hunting Path Road. The 38 proposed single-family attached homes will be developed with a minimum lot size of 2,000 sq.ft. per lot.

The maximum building height will be three stories not to exceed 40 feet. Therefore, the side yards of the lots have been increased to 18' to accommodate the extra distance required to develop a three-story structure in accordance with Sec. 58-8.8 of the Town of Haymarket Zoning and Subdivision Ordinance.

The single-family attached homes will be served by private streets with sidewalks (minimum 5 feet wide) on both sides. The Property will be improved with a sidewalk (minimum 5 feet wide) to be located along the western edge of the property, and on the east side of Hunting Path Road.

The proposed layout for the Property takes into consideration the natural environmental features. In particular, the layout preserves existing trees along the western edge of the Property, as well as a community garden along the northern edge. The archeological and environmental reports submitted with the Application note that there are no cultural resources nor endangered species within the Property.

COMPREHENSIVE PLAN COMPLIANCE

The Property is designated as planned Transitional Commercial in the Town of Haymarket's 2008 Comprehensive Plan. The proposed residential development with a maximum density of 8 dwelling units per acre is consistent with property immediately adjacent to the site to the north. A landscaped buffer will be installed along the southern boundary of the property, while transitioning to the balance of the B-1 site.

1. *"The proposed use at the stipulated location shall be in accordance with the official policies of an adopted comprehensive plan, and with any specific element of such plan."*

The Transitional Commercial plan calls for low-intensity commercial uses to serve as a distinct transition between low and moderate density residential areas. The 7-acre B-1 site will be subdivided along the center of the site in keeping with the commercial sites flanking the east and west side of the side. The B-1 site fronting Washington Street is in line with the Town's 'main street' plan of having commercial uses located along Washington Street. The effective downzoning of 4.8 acres allows a transition from the commercial use to the 38 single family detached dwelling units located behind the commercial use. At eight dwelling units per acre, the site will serve as a transition area between the B-1 use and the 6 unit per acres existing Longstreet Commons subdivision immediately north of the Property.

2. *"The proposed use shall be in accordance with the general purpose and intent of the applicable zoning district requirements. "*

The proposed residential development intends to provide an area located near the central core of the Town, with a suitable environment for families and persons seeking the convenience of town house living. The Property will provide pedestrian connectivity to allow walkable access from the Property to the town core.

3. *"The proposed use shall not adversely affect the use or values of surrounding properties and structures."*

The Property layout is intended to complement and blend in with the existing neighboring uses. The new construction will be subject to review by the Architectural Review Board to insure it is in keeping with being value additive to the community.

4. *"The proposed use shall not adversely affect the health, safety or general welfare of persons residing or working in the neighborhood."*

The residential use will not adversely affect the health, safety or general welfare of the surrounding neighborhoods.

5. *"Pedestrian and vehicular traffic generated by the proposed use shall not be hazardous or conflict with the existing and anticipated traffic in the neighborhood."*

The project proposes internal sidewalks, as well as connections to the existing sidewalks located along Hunting Path Road. Vehicular traffic generated by the proposed use will have one vehicular access point located from Hunting Path Road. As Hunting Path Road is used for the existing residential uses located north of the project, the new residential units will be in keeping with the local traffic use. The residential uses are lower intensity uses than the B-1 allowed by-right uses.

6. Utility, drainage, parking, loading and other necessary facilities provided to serve the proposed use shall be adequate.

The project will provide all required storm water management, drainage and onsite infrastructure, as well as parking. The stormwater management pond is being engineered for the entire Smith Property. The zoning ordinance requires 86 parking spaces for the 38 residential units. The Property will provide 105 spaces for the residents and their guests.

SUMMARY

The Application proposes a residential district zoning that will provide a transition from the B-1 use to the 6 units/acre existing townhome community to the north. The proposed site layout preserves natural features, proposes landscaped buffers and provides coordinated pedestrian walkways. The residential units proposed for the Property will compliment the adjacent residential communities and will provide an additional housing option for the area.

The Applicant respectfully requests favorable consideration of the Application by the Staff, the Planning Commission and the Council Members.

Conditions of Approval

SUP#2019-XXXX

April 23, 2019

1. LANDUSE

1.1 Development shall be in substantial accord with the Generalized Development and Special Use Permit Plan entitled "Smith Property at Haymarket" prepared by The Engineering Groupe and dated April 2, 2019 (4 sheets) (the "GDP") with the size, construction details and locations of buildings, roadways and other features being approximate subject to final engineering at site plan and with the color, construction materials and appearance of structures being subject to the issuance of certificates of appropriateness by the Town of Haymarket ("Town") Architectural Review Board (ARB) at advertised public meetings.

1.2 Residential Development on the Property shall not exceed 38 townhouse units in the location generally shown on the GDP.

1.3 Townhouse dwellings shall be either 20' or 24'-wide units.

1.4 Development of the Property shall be in substantial conformity with the GDP. Precise locations of roads, lot lines, lot widths and depths, utility lines, and other features generally depicted on the GDP will be determined at the time of site or subdivision plan approval.

1.5 The Property shall be developed as a single-unified development to include a common architectural theme as specifically approved through certificates of appropriateness by the ARB and integrated vehicular and pedestrian access ways as depicted on the GDP and finalized through site plan approval.

2. ARCHITECTURAL DESIGN, SIGNAGE AND LANDSCAPING

2.1 The Applicant will use best efforts to ensure that the height of Townhouse units will not exceed 40-feet as measured from the finished grade. To the extent final grading results in height, as measured from the finished grade over 40 feet, then the applicable side yard setback shall be increased by .5 feet for every foot over 40 feet. Architectural details of the townhouse units will be determined through the issuance of certificates of appropriateness issued by the ARB.

3. STORMWATER MANAGEMENT

3.1 Storm water management for the Property shall employ best management practices ("BMP").

3.2 Storm water retention shall be provided at site plan as approved by the Town.

3.3 Storm water management facilities shall be maintained by the appropriate owners' associations provided below.

4. CREATION OF HOMEOWNERS' ASSOCIATION

4.1 The Property shall be made subject a homeowners' association that shall be created and be made responsible for the maintenance and repair of common areas, including common open space that may be established in accordance with the requirements of the Town zoning ordinance. The HOA shall be granted such other responsibilities, duties and powers as a customary for such associations, or as may be required to affect the purposes for which the HOA is created. Such HOA shall also be granted sufficient powers that may be necessary, by regular dues, special dues or assessments, to raise revenue sufficient to perform the duties assigned hereby, or by the documents creating the association.

4.2 The HOA documents shall prohibit the use or conversion of garages for living space, or for the primary purpose of storage of anything other than parked vehicles.

4.3 The covenants, conditions and restrictions of the HOA shall be subject to review and approval of the Zoning Administrator prior to recordation thereof, to ensure conformance of the requirements of these proffers.

5. PARKS AND RECREATION

5.1 The Applicant shall make a contribution for park purposes in the amount of $3,792 per residential townhouse unit, payable upon the issuance of an occupancy permit for each such unit.

5.2 The Applicant shall reserve the open space or areas shown on the GDP as "Play Area" or "Tot Lot" for play areas or tot lots.

6. PUBLIC SAFETY

6.1 The Applicant shall make a contribution for public safety purposes in the amount of $280.00 per residential townhouse unit payable upon the issuance of a building permit for each such unit.

7. TRANSPORTATION

7.1 The Applicant will construct a 5-foot wide concrete sidewalk along the western edge of the property, on the east side of Hunting Path Road.

7.2 The Applicant shall make a contribution for transportation purposes in the amount of $3,799 per townhouse unit, payable upon issuance of an occupancy permit for each such townhouse unit.

8. FIRE AND RESCUE

8.1 The Applicant shall make a contribution for fire and rescue purposes in the amount of $974 per townhouse unit, payable upon the issuance of a building permit for each such unit.

9. TOWN ADMINISTRATION

9.1 The Applicant shall make a contribution for Town administration in the amount of $171 per townhouse unit, payable upon the issuance of a building permit for each such unit.

10. SCHOOLS

10.1 The Applicant shall make a contribution for schools in the amount of $10,300 per residential townhouse unit, payable upon the issuance of an occupancy permit for each such unit.

SIGNATURES ON FOLLOWING PAGES

APPLICANT:

Van Metre Communities, L.L.C.

a Virginia Limited Liability Company

By: Van Metre Homes, Inc., its manager

By: _____

Name: _____

Title: _____

Intersection	Peak Period	Existing Volume	Site Volume	Total w/ site	Site percentage (1)
Washington St./ Hunting Path Rd./ Madison St.	AM	698	**19**	717	2.7%
	PM	1094	**21**	1115	1.9%
Jefferson St./ Cheyenne Way	AM	479	**4**	483	0.8%
	PM	749	**5**	754	0.7%

DRAFT 6/6/19

For information on site context. Turn lane analysis based on through growth and other local land uses.

Based on 38 DU Townhouses (ITE Code 220) and site trip distributions to Hunting Path Rd. Existing traffic counts based on May 2019 peak period counts (6:00 – 9:00 AM and 4:00-7:00 PM) weekdays, with peak hour volumes shown, unadjusted.

(1) Site percentage = Site trips / Existing Volumes

Table 2
Trip Generation Comparisions

ITE Land Use (1,2) May 2018	USE	Size	Var.	DAILY (2-way) (3)	AM PEAK HOUR IN	AM PEAK HOUR OUT	AM PEAK HOUR TOTAL	PM PEAK HOUR IN	PM PEAK HOUR OUT	PM PEAK HOUR TOTAL
	Proposed Special Permit Uses									
220	220.1810 Multifamily Housing (Low-Rise) @ 38 DU	38.000	DU	304	6	17	23	15	11	26
	Total Parcel Trip Generation (Weekday Peak)			304	6	17	23	15	11	26

Scenario 1

ITE Land Use (1,2) CODE	USE	Size	Var.	DAILY (2-way)	AM PEAK HOUR IN	AM PEAK HOUR OUT	AM PEAK HOUR TOTAL	PM PEAK HOUR IN	PM PEAK HOUR OUT	PM PEAK HOUR TOTAL
	By-Right Uses									
710	710.183 General Office Building @ 73,000 sf	73.000	ksf e	782	82	13	95	13	71	84
	Scenario 1 Difference from Proposed Special Permit Use			-478	-76	4	-72	2	-60	-58
	Scenario 1 Percentage Difference from Proposed Special Permit Use			-61%	-93%	31%	-76%	15%	-85%	-69%

Scenario 2

ITE Land Use (1,2) CODE	USE	Size	Var.	DAILY (2-way)	AM PEAK HOUR IN	AM PEAK HOUR OUT	AM PEAK HOUR TOTAL	PM PEAK HOUR IN	PM PEAK HOUR OUT	PM PEAK HOUR TOTAL
	By-Right Uses									
820	820.181 Shopping Center @30,000 sf	20.000	ksf e	1,768	69	42	111	72	77	149
931	931.110 Quality Restaurant	10.000	ksf	838	0	7	7	52	26	78
	Scenario 2 Totals			2,606	69	49	118	124	103	227
	Scenario2 Difference from Proposed Special Permit Use			-2,302	-63	-32	-95	-109	-92	-201
	Scenario 2 Percentage Difference from Proposed Special Permit Use			-88%	-91%	-65%	-81%	-88%	-89%	-89%

TRIP RATE SOURCE: Trip Generation Manual (10th Edition), Institute of Transportation Engineers; 2017. No Discounts for pass-by or internal trips.

(1) Average trip rates used, unless noted with "e", then equations used at size shown,
with data set OK for $R^2 > .0.75$ AND SD > 110% of ave.

(2) ITE Land Code shown as the first 3 digits.

(3) Daily trip rate for Townhomes (LUC: 220) defaulted to PWC DCSM rate @ 8.00 trips/DU (Higher than Trip Generation Manual (10th Edition))

VDOT Virginia Department of Transportation

PRE-SCOPE OF WORK MEETING FORM

Information on the Project
Traffic Impact Analysis Base Assumptions

The applicant is responsible for entering the relevant information and submitting the form to VDOT and the locality no less than three (3) business days prior to the meeting. If a form is not received by this deadline, the scope of work meeting may be postponed.

Contact Information				
Consultant Name: Tele: E-mail:	Pennoni Associates, Inc. Douglas Kennedy: (703) 840-4830 dkennedy@pennoni.com			
Developer/Owner Name: Tele: E-mail:	Van Metre Companies Denise Harrover (703) 425-2610 dharrover@vanmetrecompanies.com			
Project Information				
Project Name:	Smith Property at Haymarket	Locality/County:	Town of Haymarket	
Project Location: (Attach regional and site specific location map)	North of Washington Street (VA Rte. 55), east of Hunting Path Road SEE ATTACHED FIGURE 1 (SU Permit Plan from Engineering Groupe)			
Submission Type	Comp Plan ☐	Rezoning ☒	Site Plan ☐	Subd Plat ☐
Project Description: (Including details on the land use, acreage, phasing, access location, etc. Attach additional sheet if necessary)	Proposed Special Use Permit for 38 TH DUs on 4.8+/- acres currently zoned B-1 (Town Center) as part of 7.1+/- acres undeveloped. Proposed Land Uses: Residential (Townhomes) Acreage: 4.8+/- acres Development will occur in a single phase Access will be via Hunting Path Road (Rte 1304) north of Washington Street (VA Rte. 55)			
Proposed Use(s): (Check all that apply; attach additional pages as necessary)	Residential ☒	Commercial ☐	Mixed Use ☐	Other ☐

It is important for the applicant to provide sufficient information to county and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

	Residential Uses(s) Number of Units: 38 DU ITE LU Code(s): LUC 220 (Townhouse, Multifamily Housing (Low-Rise) per ITE) _____ **Commercial Use(s)** ITE LU Code(s): N/A Square Ft or Other Variable:		**Other Use(s)** ITE LU Code(s): N/A Independent Variable(s):	
Total Peak Hour Trip Projection:	Less than 100 ☒	100 – 499 ☐	500 – 999 ☒	1,000 or more ☐

Traffic Impact Analysis Assumptions

Study Period	Existing Year: 2019	Build-out Year: 2022	Design Year: 2028
Study Area Boundaries (Attach map)	North: Cheyenne Way (N.I.S)	South: Washington Street (Rte. 55)	
	East: Hunting Path Road (Rte. 1304)	West: Jefferson Street (Rte 625)	
External Factors That Could Affect Project (Planned road improvements, other nearby developments)	No roadway improvements are currently funded or programmed in the study area. Nearby planned development includes: - UPLAND MANOR Approved for 144 DU with Commercial located north of Rte. 55 in Prince William County, approximately 3/4 mile east of Jefferson Street - DAYCARE CENTER Assumed 120-student facility to be located north of Washington Street, immediately SE of the subject site, existing B-1 use by-right - CROSSROADS VILLAGE CENTER Mixed use development, situated north of Washington Street, approx 1/4 mile west of Jefferson Street. development is proposed to include: Residential - 79 Townhouse DU Hotel - 110 rooms Day Care - assume 120 students Retail - 28,277 GSF Fast Food Restaurants - (2) 3,500 sf w/ Drive-Thru (1) 3,000 sf w/ Drive-Thru Bank - 3,500 sf w/ 3 Drive-Thrus		

It is important for the applicant to provide sufficient information to county and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

Consistency With Comprehensive Plan (Land use, transportation plan)	Current Zoning is B-1 (Town Center District) The Town Center District is designated as primarily for development as retail shopping and personal services with potential limitations in order to enhance the "general character" and " historic nature" of the district. Residential uses, to include townhouses, are permitted in the B-1 district with a special use permit.		
Available Traffic Data (Historical, forecasts)	See attached Table 1 for historical VDOT AADT for Washington Street (Rte. 55)		
Trip Distribution (Attach sketch)	Road Name: Jefferson Street (from north): 20%	Road Name: Washington Street (from east) 35%	
	Road Name: Washington Street (from west) 40%	Road Name: Jefferson Street (from south) 5%	
Annual Vehicle Trip Growth Rate:	2% for through movements on Washington Street & Jefferson Street	Peak Period for Study (check all that apply)	☒ AM ☒ PM ☐ SAT
		Peak Hour of the Generator	N/A
Study Intersections and/or Road Segments (Attach additional sheets as necessary)	1.Washington St/Hunting Path Rd/ Madison St	6.	
	2.Jefferson St/Cheyenne way	7.	
	3.Hunting Path Rd/Cheyenne Way/Rising Sun Ln	8.	
	4.Hunting Path Rd/ Site Entrance	9.	
	5.	10.	
Trip Adjustment Factors	Internal allowance: ☐ Yes ☒ No Reduction: N/A% trips	Pass-by allowance: ☐ Yes ☒ No Reduction: N/A% trips	
Software Methodology	☒ Synchro ☐ HCS (v.2000/+) ☐ aaSIDRA ☐ CORSIM ☐ Other S		
Traffic Signal Proposed or Affected (Analysis software to be used, progression speed, cycle length)	None		
Improvement(s) Assumed or to be Considered	None		

It is important for the applicant to provide sufficient information to county and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

Background Traffic Studies Considered	John Marshall Commons TIA (Revised), Pennoni, December 2013 John Marshall Commons Route 55/Piedmont Center Plaza/Gillis Way Roundabout Traffic Study Certification, Pennoni, December 2018
Plan Submission	☐ Master Development Plan (MDP) ☒ Generalized Development Plan (GDP) ☐ Preliminary/Sketch Plan ☐ Other Plan type (Final Site, Subd. Plan)
Additional Issues to be Addressed	☐ Queuing analysis ☐ Actuation/Coordination ☐ Weaving analysis ☐ Merge analysis ☐ Bike/Ped Accommodations ☒ Intersection(s) ☐ TDM Measures ☒ Other Turn-lane warrants (right and left turns) at Site Entrance on Hunting Path Road; existing volume (AM & Midday) at Haymarket Baptist Church (14800 Washington Street) for peak daycare to be provided.

NOTES on ASSUMPTIONS:

VDOT form used for information. VDOT 527 study not required since less than 5,000 VPD.

1. Traffic Counts: 6-9 AM and 4-7 PM at Study Intersections 1, 2, and 3. Additional counts for Washington Street at Church daycare for peak use at drop-off.

2. Peak Hour Factors based on existing counts. Future PHF at 0.92 or existing, whichever is higher, per TOSAM guidelines.

3. Assign growth only for through movements on N. Jefferson St. and E. Washington St. Commercial uses for others assigned with pass-by included. Daily trip rate for townhomes default to PWC DCSM @ 8.0 trips/DU (higher than ITE 10th).

4. TIA to include the following scenarios:
   a) Existing (2019)
   b) Background with Growth and Other Development "No Build" (2028)
   c) 6 Year "Build" (2028)

5. Comparison of proposed Special Permit use to By Right uses (2 scenarios) for trip generation
   Scenario 1 - Office @ 73,000 GSF (assumed 0.35 FAR for Special Use area)
   Scenario 2 - Commercial @ 20,000 GSF, and
   Quality Restaurant @ 10,000 GSF (assumed 0.15 FAR for Special Use area).

SIGNED: _____ DATE: 6-5-19
Applicant or Consultant

PRINT NAME: _____
Applicant or Consultant

It is important for the applicant to provide sufficient information to county and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

Haymarket Smith Property | Table 1 | June 2019

Historical Daily Traffic Volumes

Daily Traffic Growth Trends
Route 55 (Washington Street)
between Jefferson St & ECL Haymarket

YEAR	AADT	Effective Annual Growth Rate	Eff. Growth Rate (10 YR)	Eff. Growth Rate (5 YR)	Eff. Growth Rate (3 YR)
2018	**11000**	-8.3%	2.0%	3.0%	5.8%
2017	**12,000**	9.1%	3.8%	5.2%	8.5%
2016	**11,000**	18.3%	1.1%	3.9%	5.0%
2015	**9,300**	-1.1%	-1.7%	0.4%	0.0%
2014	**9,400**	-1.1%	-0.6%	3.0%	1.1%
2013	**9,500**	2.2%	1.0%	1.1%	1.4%
2012	**9,300**	2.2%	1.6%	2.3%	4.7%
2011	**9,100**	0.0%	1.8%	-1.7%	0.4%
2010	9,100	12.3%		-3.7%	3.1%
2009	8,100	-10.0%		-4.1%	-6.5%
2008	9,000	8.4%		0.9%	-6.5%
2007	8,300	-16.2%		1.0%	-6.0%
2006	9,900	-10.0%		5.4%	4.8%
2005	11,000	10.0%			11.7%
2004	10,000	16.3%			9.6%
2003	**8,600**	8.9%			
2002	**7,900**	3.9%			
2001	**7,600**				
Average Growth Rate		**3.3%**	**1.0%**	**1.1%**	**1.5%**

Average of Average Growth Rates on Route 55	1.7%
Average of Effective Growth data points on Route 55	2.0%

Table 2
Trip Generation Comparisions

ITE Land Use (1,2) May 2018	USE	Size	Var.	DAILY (2-way) (3)	AM PEAK HOUR IN	AM PEAK HOUR OUT	AM PEAK HOUR TOTAL	PM PEAK HOUR IN	PM PEAK HOUR OUT	PM PEAK HOUR TOTAL
	Proposed Special Permit Uses									
220	220.1810 Multifamily Housing (Low-Rise) @ 38 DU	38.000	DU	304	6	17	23	15	11	26
	Total Parcel Trip Generation (Weekday Peak)			304	6	17	23	15	11	26

Scenario 1

ITE Land Use (1,2) CODE	USE	Size	Var.	DAILY (2-way)	AM PEAK HOUR IN	AM PEAK HOUR OUT	AM PEAK HOUR TOTAL	PM PEAK HOUR IN	PM PEAK HOUR OUT	PM PEAK HOUR TOTAL
	By-Right Uses									
710	710.183 General Office Building @ 73,000 sf	73.000	ksf e	782	82	13	95	13	71	84
	Scenario 1 Difference from Proposed Special Permit Use			-478	-76	4	-72	2	-60	-58
	Scenario 1 Percentage Difference from Proposed Special Permit Use			-61%	-93%	31%	-76%	15%	-85%	-69%

Scenario 2

ITE Land Use (1,2) CODE	USE	Size	Var.	DAILY (2-way)	AM PEAK HOUR IN	AM PEAK HOUR OUT	AM PEAK HOUR TOTAL	PM PEAK HOUR IN	PM PEAK HOUR OUT	PM PEAK HOUR TOTAL
	By-Right Uses									
820	820.181 Shopping Center @30,000 sf	20.000	ksf e	1,768	69	42	111	72	77	149
931	931.110 Quality Restaurant	10.000	ksf	838	0	7	7	52	26	78
	Scenario 2 Totals			2,606	69	49	118	124	103	227
	Scenario2 Difference from Proposed Special Permit Use			-2,302	-63	-32	-95	-109	-92	-201
	Scenario 2 Percentage Difference from Proposed Special Permit Use			-88%	-91%	-65%	-81%	-88%	-89%	-89%

TRIP RATE SOURCE: Trip Generation Manual (10th Edition), Institute of Transportation Engineers; 2017. No Discounts for pass-by or internal trips.

(1) Average trip rates used, unless noted with "e", then equations used at size shown,
with data set OK for $R^2 > .0.75$ AND SD > 110% of ave.

(2) ITE Land Code shown as the first 3 digits.

(3) Daily trip rate for Townhomes (LUC: 220) defaulted to PWC DCSM rate @ 8.00 trips/DU (Higher than Trip Generation Manual (10th Edition))

NOTES:

1) THE LAYOUT, AS SHOWN HEREON, IS CONCEPTUAL, SUBJECT TO MODIFICATIONS BASED ON ADDITIONAL RESEARCH INTO EXISTING CONDITIONS, TOWN OF HAYMARKET ZONING/DESIGN STANDARDS AND FINAL ENGINEERING.

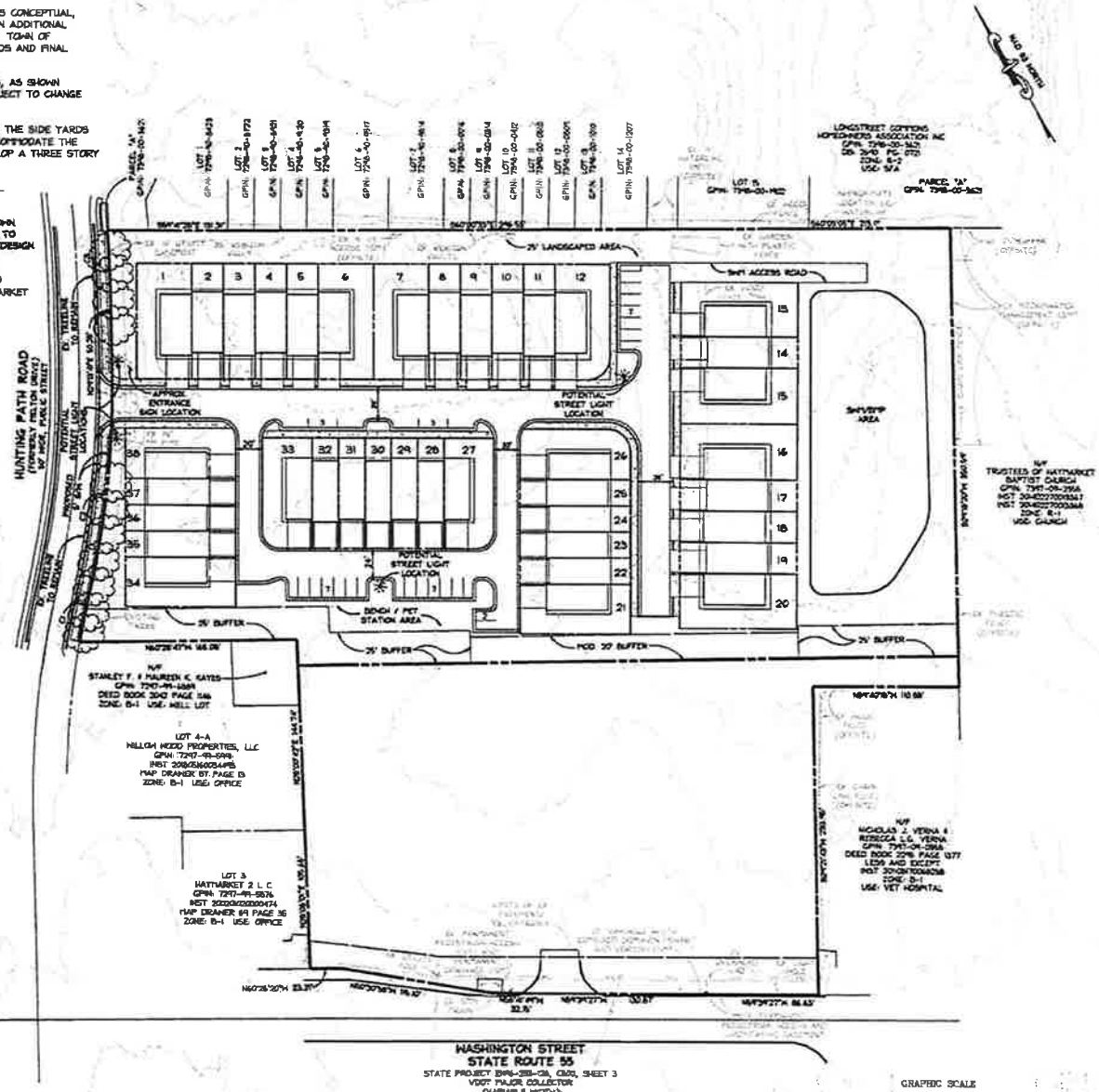
2) STORMWATER MANAGEMENT AREAS, AS SHOWN HEREON, ARE APPROXIMATE AND SUBJECT TO CHANGE WITH FINAL ENGINEERING.

3) IN ACCORDANCE WITH SEC. 58-5.8, THE SIDE YARDS HAVE BEEN INCREASED TO 15' TO ACCOMMODATE THE EXTRA DISTANCE REQUIRED TO DEVELOP A THREE STORY STRUCTURE.

4) ALL TOWNHOUSE REAR YARDS WILL BE FENCED.

5) STREET LIGHT LOCATIONS, AS SHOWN HEREON, ARE PRELIMINARY, SUBJECT TO MODIFICATIONS IN ACCORDANCE WITH DESIGN STANDARDS AND FINAL ENGINEERING.

6) ENTRANCE SIGN WILL BE DESIGNED IN ACCORDANCE WITH TOWN OF HAYMARKET ZONING STANDARDS, SEC. 58-16.10.



DEVELOPMENT SUMMARY:

PARCEL GPINS: 7298-90-7006, 7297-99-8684 (A PORTION), 7297-04-0778 (A PORTION)
PARCEL ACREAGE: ±7.1 AC
EXISTING ZONE: B-1
PROPOSED ZONE: B-1 (WITH SUP)
PROPOSED USE: TOWNHOUSE
MAXIMUM DENSITY: 5 DU/AC, 35 LOTS (4.8 AC x 8 DU/AC=38 LOTS)
TOTAL LOTS SHOWN: 36 TOTAL (20 FRONT LOAD, 16 REAR LOAD)

TOWNHOUSE STANDARDS (R-2): ±4.8 ACRES

MIN. AVERAGE LOT AREA: 2,000 SQ. FT.
AVERAGE LOT AREA PROV'D: 2,490 SQ. FT.

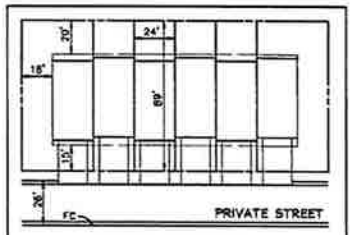
MAX. COVERAGE: 40% (1.9 AC.)
LOT COVERAGE PROV'D: 36% (1.7 AC)

MIN. LOT FRONTAGE: 20', 35' END UNITS
LOT FRONTAGE PROV'D: 20'/24', 38'/42' END UNITS

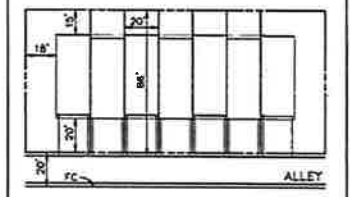
MAX. HEIGHT: 2.5 STORIES / 35'
PROP. BLDG HEIGHT: 3 STORIES, 40' MAX. (SEE NOTE 3.)

YARDS:
FRONT: 15'
SIDE: 15'
REAR: 20'

PARKING REQUIRED: 86 SPACES (2.25 SP/DU)
PARKING PROVIDED: 105 SPACES (74 GARAGES, 29 SURFACE)



TYPICAL LOT DETAIL:
SINGLE FAMILY ATTACHED
FRONT LOAD
(NOT TO SCALE)



TYPICAL LOT DETAIL:
SINGLE FAMILY ATTACHED
REAR LOAD
(NOT TO SCALE)

CURVE TABLE:

CURVE	RADIUS	ARC	DELTA	TANGENT	CHORD BEARING	CHORD
C1	440.00'	34.99'	4°33'57"	17.50'	N87°49'53"E	34.98'
C2	100.00'	157.62'	90°19'40"	100.19'	S89°38'05"E	141.86'
C3	1,109.00'	99.88'	5°09'37"	49.96'	N87°43'27"E	99.85'

The Engineering Group Inc.
Engineers | Surveyors | Planners

NO	DATE	COUNTY REVISIONS

SPECIAL USE PERMIT PLAN
SMITH PROPERTY
AT HAYMARKET
TOWN OF HAYMARKET, VIRGINIA

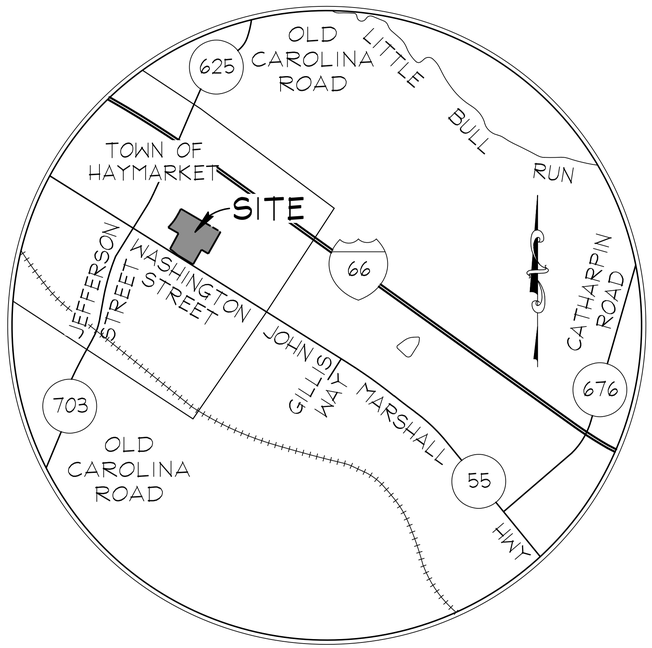
ENGINEERING GROUP PROJECT STATUS

DATE	ACTION

DATE: APRIL 2, 2019
SCALE: 1"=60'
DESIGNER: DA
DRAFTSMAN: DWG
FILE NO.:
SHEET 3 OF 3

SPECIAL USE PERMIT PLAN
FOR
SMITH PROPERTY AT HAYMARKET

TOWN OF HAYMARKET,
VIRGINIA



VICINITY MAP
SCALE: 1"=1000'

SHEET INDEX:

SHEET NUMBER	TITLE
1.	COVER SHEET
2.	EXISTING CONDITIONS PLAN
3.	SPECIAL USE PERMIT PLAN
4.	PRELIMINARY LANDSCAPE PLAN

OWNER:

BENJAMIN M SMITH JR TR
C/O BM SMITH & ASSOCIATES INC
2407 COLUMBIA PIKE, SUITE 200
ARLINGTON, VA 22204

APPLICANT

VAN METRE COMMUNITIES, LLC
9900 MAIN STREET, SUITE 500
FAIRFAX, VA 22031
(703) 425–2610

ENGINEER:

THE ENGINEERING GROUPE, INC.
13580 GROUPE DRIVE, SUITE 200
WOODBRIDGE, VA 22192
(703) 670–0985

The Engineering Groupe Inc.
Engineers | Surveyors | Planners
www.enggroupe.com
Central Office
13580 Groupe Drive, Suite 200
Woodbridge, VA 22192
South Office
4936 Southpoint Parkway
Fredericksburg, VA 22407
West Office
21001 Sycolin Road, Suite 200
Ashburn, VA 20147

NO.	DATE	COUNTY REVISIONS

COVER SHEET
SMITH PROPERTY AT HAYMARKET
TOWN OF HAYMARKET, VIRGINIA

ENGINEERING GROUPE PROJECT STATUS	
6/11/19	REVISED PER COUNTY COMMENTS
DATE	ACTION

DATE: APRIL 12, 2019
SCALE: 1"=40'
DESIGNER: DA
DRAFTSMAN: DMB
FILE NO.
SHEET 1 OF 3

G:\PROJECT\Smith Property-Haymarket\PLANNING\DWG\Rezoning\Cover sheet.dwg, 6/11/2

NOTES:

1) TITLE REPORT FURNISHED BY FIRST AMERICAN TITLE INSURANCE COMPANY, COMMITMENT NO: AI801168, EFFECTIVE DATE: JANUARY 4, 2019, REVISED FEBRUARY 7, 2019.

2) THE PROPERTIES DELINEATED ON THIS PLAN ARE LOCATED AT GPIN: 7298-90-7006, (A PORTION OF) GPIN: 7297-09-0978, AND (A PORTION OF) GPIN: 7397-99-8684 AND ARE ZONED: B-1, GENERAL BUSINESS.

3) THE BOUNDARY AND EXISTING CONDITIONS ARE SHOWN HEREON IN ACCORDANCE WITH AN ALTA SURVEY PREPARED BY THE ENGINEERING GROUPE INC. IN JANUARY 2019.

4) THE SUBJECT PROPERTY LIES WITHIN ZONE X DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOODPLAIN AS DELINEATED ON THE FLOOD INSURANCE RATE MAP NUMBERS 51153C0059D AND 51153C0067D, EFFECTIVE DATE: JANUARY 5, 1995.

5) PHYSICAL IMPROVEMENTS SHOWN IN ALONG THE PUBLIC RIGHT-OF-WAYS WERE LOCATED USING PHOTOGRAMMETRIC MAPPING.

6) TOPOGRAPHY IS SHOWN HEREON IN ACCORDANCE WITH PRINCE WILLIAM COUNTY GIS DATA.

CURVE TABLE:

CURVE	RADIUS	ARC	DELTA	TANGENT	CHORD BEARING	CHORD
C1	650.00'	34.99'	3°05'02"	17.50'	N41°49'53"E	34.98'
C2	700.00'	172.82'	14°08'43"	86.85'	N36°18'03"E	172.38'
C3	1,105.00'	58.83'	3°03'01"	29.42'	N27°42'10"E	58.82'

HUNTING PATH ROAD
(FORMERLY MELTON DRIVE)
(50' WIDE)

N/F
KENNEDY HAYMARKET PROPERTIES LLC
C/O SHEEHAN INSURANCE GROUP
GPIN: 7298-90-5413
INST 200603130041706
ZONE: B-1 USE: VACANT

PARCEL "A"
GPIN: 7398-00-3621

LOT 1
GPIN: 7298-90-8423

LOT 2
GPIN: 7298-90-8722

LOT 3
GPIN: 7298-90-8421

LOT 4
GPIN: 7298-90-9120

LOT 5
GPIN: 7298-90-9819

LOT 6
GPIN: 7298-90-9617

LOT 7
GPIN: 7298-90-9814

LOT 8
GPIN: 7398-00-0216

LOT 9
GPIN: 7398-00-0314

LOT 10
GPIN: 7398-00-0412

LOT 11
GPIN: 7398-00-0510

LOT 12
GPIN: 7398-00-0809

LOT 13
GPIN: 7398-00-1010

LOT 14
GPIN: 7398-00-1207

EX. 15' WATERLINE ESMT (OFFSITE)

LOT 15
GPIN: 7398-00-1902

LONGSTREET COMMONS HOMEOWNERS ASSOCIATION INC
GPIN: 7398-00-3621
DB: 2690 PG: 0721
ZONE: R-2
USE: SFA

PARCEL "A"
GPIN: 7398-00-3621

S59°41'28"E 131.31'

S60°00'35"E 296.58'

S60°03'05"E 213.11'

EX. VERIZON VAULT

EX. 5' I/E ACCESS ESMT (OFFSITE)

EX. VERIZON VAULTS

EX. WOOD FENCE

APPROXIMATE LOCATION EX. WATERLINE

EX. GARDEN WITH PLASTIC FENCE

EX. 25 BUFFER (OFFSITE)

EX. STORMWATER MANAGEMENT ESMT (OFFSITE)

EX. 10' UTILITY EASEMENT

EX. 10' TEMPORARY CONSTRUCTION ESMT

N29°13'41"E 50.38'

EX. 15" STM PIPE

EX. WOOD FENCE

EX. CHAIN LINK FENCE

GPIN: 7298-90-7006
BENJAMIN M SMITH JR TRUSTEES C/O B M SMITH AND ASSOCIATES, INC.
INST 201408070057135
EX. ZONE: B-1, GENERAL BUSINESS
EX USE: VACANT
±1.00 ACRES

GPIN: 7297-99-8684
BENJAMIN M SMITH JR TRUSTEES C/O B M SMITH AND ASSOCIATES, INC.
INST 201202270017605
EX. ZONE: B-1, GENERAL BUSINESS
EX USE: VACANT
±3.94 ACRES

GPIN: 7397-09-0978
BENJAMIN M SMITH JR TRUSTEES C/O B M SMITH AND ASSOCIATES, INC.
INST 201409250069445
EX. ZONE: B-1 GENERAL BUSINESS
EX USE: VACANT
±2.16 ACRES

N/F
TRUSTEES OF HAYMARKET BAPTIST CHURCH
GPIN: 7397-09-2355
INST 201402270013367
INST 201402270013368
ZONE: R-1
USE: CHURCH

S24°18'20"W 350.59'

N28°02'16"E 312.72'

EX. WETLANDS

N27°47'42"E 583.59'

EX. PLASTIC FENCE (OFFSITE)

EXISTING TREES

N60°28'47"W 165.08'

N/F
STANLEY F. & MAUREEN K. KAYES
GPIN: 7297-99-6889
DEED BOOK 2042 PAGE 1146
ZONE: B-1 USE: WELL LOT

N59°40'15"W 110.88'

EX. WOOD FENCE (OFFSITE)

LOT 4-A
WILLOW WOOD PROPERTIES, LLC
GPIN: 7297-99-5991
INST 201805160034493
MAP DRAWER 87 PAGE 13
ZONE: B-1 USE: OFFICE

N28°00'42"E 144.74'

EX. CHAIN LINK FENCE (OFFSITE)

S24°21'43"W 233.95'

N/F
NICHOLAS J. VERNA & REBECCA L.G. VERNA
GPIN: 7397-09-0355
DEED BOOK 2295 PAGE 1377
LESS AND EXCEPT
INST 201108170068258
ZONE: B-1
USE: VET HOSPITAL

LOT 3
HAYMARKET 2 L C
GPIN: 7297-99-5876
INST 200201020000474
MAP DRAWER 69 PAGE 35
ZONE: B-1 USE: OFFICE

N28°26'01"E 105.68'

LIMITS OF EX. PAVEMENT/ EX. ENTRANCE

EX. PERMANENT PEDESTRIAN ACCESS ESMT AND PERMANENT DRAINAGE ESMT

EX. VARIABLE WIDTH COMBINED DOMINION POWER AND VERIZON ESMT

EX. OVERHEAD WIRE

EX. LIGHT POLE

EX. UTILITY POLE

N60°26'20"W 23.21'

N50°30'58"W 115.10'

EX. STM DRAIN

N58°41'49"W 32.15'

N59°39'27"W 130.87'

N59°39'27"W 86.63'

EX. PERMANENT PEDESTRIAN ACCESS AND LANDSCAPING EASEMENT

WASHINGTON STREET
STATE ROUTE 55
STATE PROJECT EN96-233-128, C502, SHEET 3
VDOT MAJOR COLLECTOR
(VARIABLE WIDTH)

NAD 83 NORTH

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

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South Office
4936 Southpoint Parkway
Fredericksburg, VA 22407
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15580 Groupe Drive, Suite 200
Woodbridge, VA 22192
ph: 703.797.0006

West Office
21001 Syolin Road, Suite 200
Ashburn, VA 20147
ph: 571.291.0006

NO.	DATE	COUNTY REVISIONS

EXISTING CONDITIONS
SMITH PROPERTY AT HAYMARKET
TOWN OF HAYMARKET, VIRGINIA

Attachment: SUP Van Metre - 14850, 14860 Wash St, 6701 HP Road (4147 : SUP#2019-004, Van Metre/Smith Property, 6701 Hunting Path & 14850/14860 Washington Street)

ENGINEERING GROUPE PROJECT STATUS

DATE	ACTION
6/11/19	REVISED PER COUNTY COMMENTS

DATE: APRIL 12, 2019
SCALE: 1"=40'
DESIGNER: DA
DRAFTSMAN: DMB
FILE NO.
SHEET 2 OF 3

G:\PROJECT\Smith Property-Haymarket\PLANNING\DWG\Rezoning\Existing Conditions.dwg, 6/11/2

NOTES:

1) THE LAYOUT, AS SHOWN HEREON, IS CONCEPTUAL, SUBJECT TO MODIFICATIONS BASED ON ADDITIONAL RESEARCH INTO EXISTING CONDITIONS, TOWN OF HAYMARKET ZONING/DESIGN STANDARDS AND FINAL ENGINEERING.

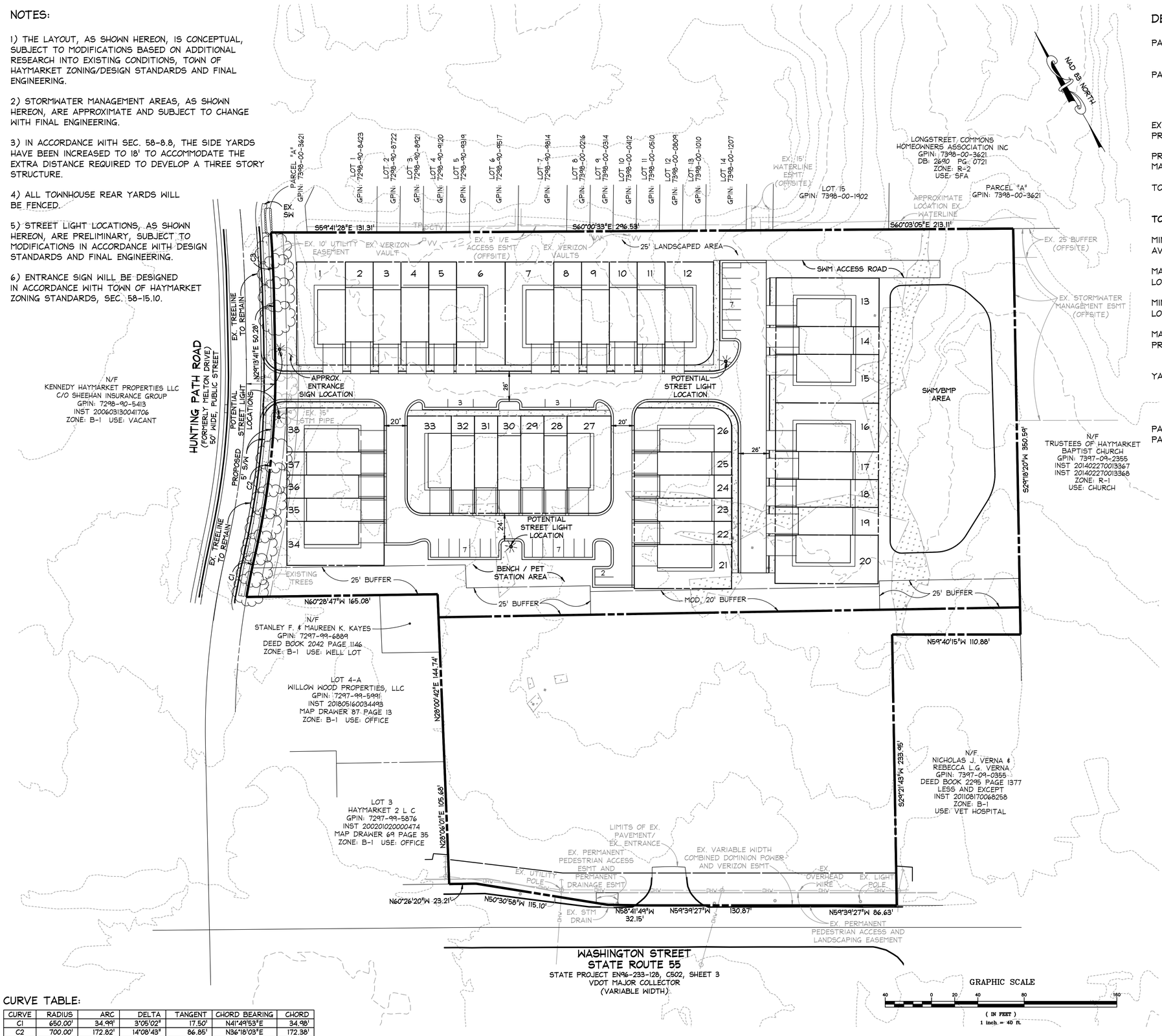
2) STORMWATER MANAGEMENT AREAS, AS SHOWN HEREON, ARE APPROXIMATE AND SUBJECT TO CHANGE WITH FINAL ENGINEERING.

3) IN ACCORDANCE WITH SEC. 58-8.8, THE SIDE YARDS HAVE BEEN INCREASED TO 18' TO ACCOMMODATE THE EXTRA DISTANCE REQUIRED TO DEVELOP A THREE STORY STRUCTURE.

4) ALL TOWNHOUSE REAR YARDS WILL BE FENCED.

5) STREET LIGHT LOCATIONS, AS SHOWN HEREON, ARE PRELIMINARY, SUBJECT TO MODIFICATIONS IN ACCORDANCE WITH DESIGN STANDARDS AND FINAL ENGINEERING.

6) ENTRANCE SIGN WILL BE DESIGNED IN ACCORDANCE WITH TOWN OF HAYMARKET ZONING STANDARDS, SEC. 58-15.10.



GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

DEVELOPMENT SUMMARY:

PARCEL GPINS.....7298-90-7006, 7297-99-8684 (A PORTION), 7397-09-0978 (A PORTION)
PARCEL ACREAGE.....±4.83 AC
7298-90-7006: 1.00 AC
7297-99-8684: 2.26 AC
7397-09-0978: 1.57 AC

EXISTING ZONE.....B-1
PROPOSED ZONE.....B-1 (WITH SUP)

PROPOSED USE.....TOWNHOUSE
MAXIMUM DENSITY.....8 DU/AC, 38 LOTS
(4.8 AC x 8 DU/AC=38 LOTS)
TOTAL LOTS SHOWN.....38 TOTAL
(20 FRONT LOAD, 18 REAR LOAD)

TOWNHOUSE STANDARDS (R-2): ±4.8 ACRES

MIN. AVERAGE LOT AREA.....2,000 SQ. FT.
AVERAGE LOT AREA PROV'D.....2,490 SQ. FT.

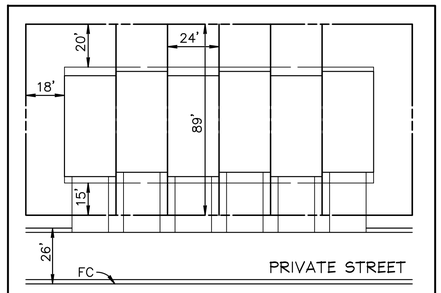
MAX. COVERAGE.....40% (1.9 AC)
LOT COVERAGE PROV'D.....36% (1.7 AC)

MIN. LOT FRONTAGE.....20', 35' END UNITS
LOT FRONTAGE PROV'D.....20'/24', 38'/42' END UNITS

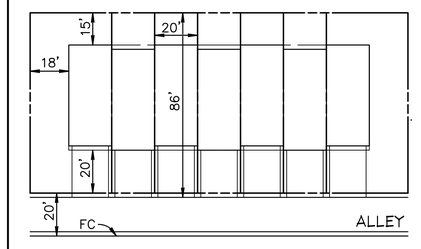
MAX. HEIGHT.....2.5 STORIES / 35'
PROP. BLDG HEIGHT.....3 STORIES, 40' MAX.
(SEE NOTE 3)

YARDS:
FRONT.....15'
SIDE.....15'
REAR.....20'

PARKING REQUIRED.....86 SPACES (2.25 SP/DU)
PARKING PROVIDED.....105 SPACES
(76 GARAGES, 29 SURFACE)



TYPICAL LOT DETAIL:
SINGLE FAMILY ATTACHED
FRONT LOAD
(NOT TO SCALE)



TYPICAL LOT DETAIL:
SINGLE FAMILY ATTACHED
REAR LOAD
(NOT TO SCALE)

CURVE TABLE:

CURVE	RADIUS	ARC	DELTA	TANGENT	CHORD BEARING	CHORD
C1	650.00'	34.99'	3°05'02"	17.50'	N41°49'53"E	34.98'
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Central Office 13580 Groupe Drive, Suite 200 Woodbridge, VA 22192 PH 703.670.0065
South Office 4936 Southpoint Parkway Fredericksburg, VA 22407 PH 540.710.5987

NO.	DATE	COUNTY REVISIONS

SPECIAL USE PERMIT PLAN
SMITH PROPERTY AT HAYMARKET
TOWN OF HAYMARKET, VIRGINIA

ENGINEERING GROUPE PROJECT STATUS	
6/11/19	REVISED PER COUNTY COMMENTS
DATE	ACTION

DATE: APRIL 12, 2019
SCALE: 1"=40'
DESIGNER: DA
DRAFTSMAN: DMB
FILE NO.
SHEET 3 OF 3

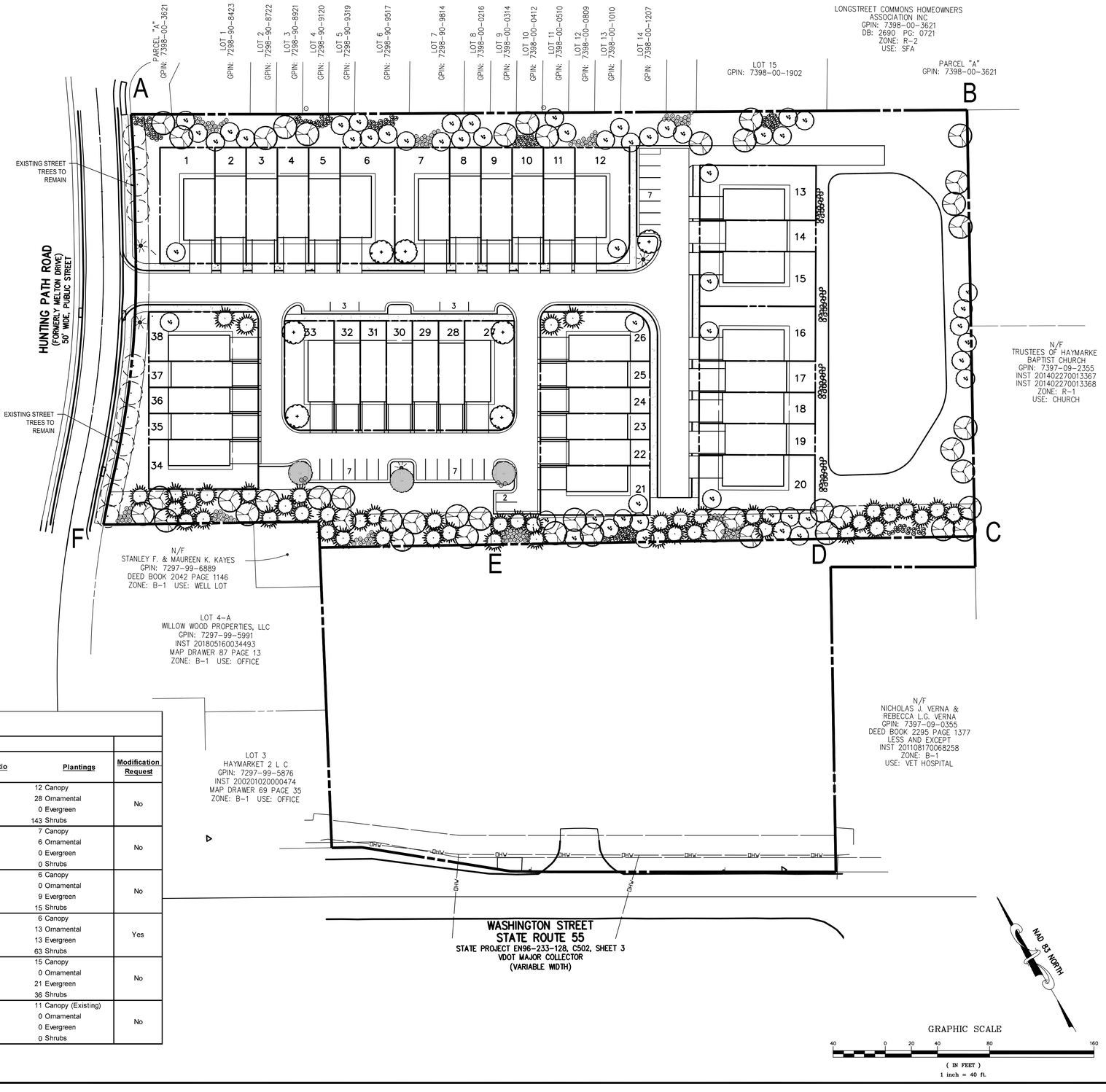
G:\PROJECT\Smith Property-Haymarket\PLANNING\DWG\Rezoning\SUP.dwg, 6/11/2

LEGEND

- EXISTING CANOPY TREE
- INTERIOR PARKING LOT TREE
- DECIDUOUS CANOPY TREE
- DECIDUOUS ORNAMENTAL TREE
- EVERGREEN TREE
- DECIDUOUS SHRUBS
- EVERGREEN SHRUBS
- ORNAMENTAL GRASSES
- A BUFFER KEY TAG

NOTES:

1. THIS LANDSCAPE PLAN IS PRELIMINARY AND REFLECTS THE GENERAL CHARACTER AND INTENT OF THE PROPOSED DEVELOPMENT BASED ON PRELIMINARY ENGINEERING, ARCHITECTURE AND LANDSCAPE ARCHITECTURE DESIGN. MODIFICATIONS AND VARIATIONS MAY OCCUR WITH FINAL DESIGN AND SITE PLAN. DRAWINGS ARE NOT FOR CONSTRUCTION.
2. STORMWATER MANAGEMENT AREAS, AS SHOWN HEREON, ARE APPROXIMATE AND SUBJECT TO CHANGE WITH FINAL ENGINEERING. PLANT MATERIAL WILL BE PROVIDED TO ENHANCE THE APPEARANCE AND AS ALLOWED PER CONSTRAINTS OF DAM EMBANKMENT AND EASEMENTS.
3. PARKING LOT LANDSCAPING WILL BE PROVIDED PER SECTION 58-17.13 OF THE ZONING ORDINANCE.
4. SCREENING AND BUFFER YARDS SHOWN WILL BE PLANTED IN ACCORDANCE WITH THE REQUIREMENTS OF SECTIONS 58-17.8 AND 58-17.10 OF THE ZONING ORDINANCE.



LANDSCAPE AREAS, BUFFERS AND SCREENING

Proposed Use: Townhouse (B-1 with SUP to R-2 Standards)

		Required					*Provided*				
Landscape Area Segment	Length (lf)	Total Width (lf)	Area (sf)	Screen Type	Planting Ratio	Plantings	Width (lf)	Area (sf)	Planting Ratio	Plantings	Modification Request
A to B	630	N/A								12 Canopy 28 Ornamental 0 Evergreen 143 Shrubs	No
B to C	275	N/A								7 Canopy 6 Ornamental 0 Evergreen 0 Shrubs	No
C to D (Note 1)	120	25	3,000	TS (Alt 3)	1 Canopy / 500 sf 0 Ornamental 1 Evergreen / 350 sf 1 Shrubs / 200 sf	6 Canopy 0 Ornamental 9 Evergreen 15 Shrubs	25	3,000	1 Canopy / 500 sf 0 Ornamental 0 Evergreen / 350 sf 1 Shrubs / 200 sf	6 Canopy 0 Ornamental 9 Evergreen 15 Shrubs	No
D to E	250	25	6,250	SS (Alt 1)	1 Canopy / 1000 sf 1 Ornamental / 500 sf 1 Evergreen / 500 sf 1 Shrubs / 100 sf	6 Canopy 13 Ornamental 13 Evergreen 63 Shrubs	20	5,000	1 Canopy / 1000 sf 1 Ornamental / 500 sf 1 Evergreen / 500 sf 1 Shrubs / 100 sf	6 Canopy 13 Ornamental 13 Evergreen 63 Shrubs	Yes
E to F	290	25	7,250	TS (Alt 3)	1 Canopy / 500 sf 0 Ornamental 1 Evergreen / 350 sf 1 Shrubs / 200 sf	15 Canopy 0 Ornamental 21 Evergreen 36 Shrubs	25	7,250	1 Canopy / 500 sf 0 Ornamental 0 Evergreen / 350 sf 1 Shrubs / 200 sf	15 Canopy 0 Ornamental 21 Evergreen 36 Shrubs	No
F to A	230	N/A								11 Canopy (Existing) 0 Ornamental 0 Evergreen 0 Shrubs	No

Notes

1. Plant material to be ce coordinated with final SWM design. Locations, quantity and species are subject to revision due to constraints of dam embankment or easements.

J2 Engineers, Inc.
4080 Lafayette Center Drive
Suite 330
Chantilly, Va. 20151

703.361.1550 (office)
703.956.6845 (fax)
www.j2engineers.com

PLAN# VM1907
DATE: APRIL 11, 2019
CONTOUR INT.=
SCALE: 1" = 40'

PLAN DATE
04/11/19
06/11/19

PRELIMINARY LANDSCAPE PLAN

SMITH PROPERTY

TOWN OF HAYMARKET
PRINCE WILLIAM COUNTY, VIRGINIA

REVISIONS

No.	DATE	DESCRIPTION

SHEET 4 OF 4

13880 Dulles Corner Lane, Suite 100
Herndon, VA 20171
T: 703-449-6700
F: 703-449-6713

www.pennoni.com

July 8, 2019

Ms. Emily K. Lockhart
Town Planning & Zoning Administrator
Town of Haymarket
15000 Washington Street, Suite 100
Haymarket, Virginia 20169

Re: ***Smith Properties – Haymarket***
Traffic Impact Statement – Operational Update
7298-90-7006, 7299-8684 (portion), and 7397-09-0978
Pennoni VANMT19001

Dear Ms. Lockhart:

As requested as part of the Longstreet HOA community meeting, Pennoni has undertaken an alternate-scenario operational analysis to support the special use permit application for the development of the Smith Properties – Haymarket. The proposed development consists of 38 townhome DU. The alternate-scenario operational analysis considers the impacts of revised distribution of site traffic since the link of Cheyenne Way west of Hunting Path Road is a private street. The results of the alternate analysis are described if no new through trips were assigned to the neighborhood.

Revised Distributions

The distributions of site traffic presented in the Traffic Impact Statement (TIS) (Pennoni, June 21, 2019) projected that 20% of site traffic would travel to and from Jefferson Street via Hunting Path Road and Cheyenne Way. The TIS also allowed for 5% of other Washington Street redevelopment trips may cut through to and from Jefferson Street via Hunting Path Road and Cheyenne Way. Cheyenne Way is a private street. The alternate-scenario analysis assumes that no other trips and no daycare trips will travel to and from Jefferson Street via Hunting Path Road and Cheyenne Way.

All site traffic is routed through the Washington Street/Hunting Path Road/Madison Street intersection. The resulting distributions at this intersection are as follows:

	Site Trips	Proposed Other Trips
Outbound:	45% as SBL	50% as WBT
	55% as SBR	
Inbound:	45% as WBR	50% as EBT
	55% as EBL	

Operational Analysis

The Washington Street/Hunting Path Road/Madison Street intersection was modelled for AM and PM peak hour operations with the traffic volumes resulting from the distribution changes described above. Operational analysis was conducted using Synchro 10 and reported as HCM 6th edition for a Two-Way Stop-Controlled intersection; no modelling parameters were changed from the original TIS analysis except for turning volumes. The detailed Synchro outputs are included as **Appendix A**.

The alternate-scenario analysis reveals no changes in Levels of Service (LOS) grade for any of the approaches in either the AM or PM peak hour when compared to the 2028 LOS from the TIS. The northbound approach (Madison Street) shows delay increases in both peak hours; however, it is notable that the northbound entering volumes are only 5 vehicles in the AM and only 7 vehicles in the PM. Site impacts remain at 2% or less in the alternate-scenario analysis in comparison to the no-build background volumes. Side street volumes remain well below the thresholds for the hourly volume signal warrants. **Table 1** presents a comparison of the LOS and delays by approach for the AM peak hour. **Table 2** presents the PM peak hour comparison.

Table 1: AM Peak Hour LOS and Delay Comparison

	TIS Distributions		Alt. Distributions		Delay
	LOS	Delay	LOS	Delay	Change
EB Approach	A	0.1	A	0.1	0.0
WB Approach	A	0.1	A	0.1	0.0
NB Approach	C	21.7	C	22.3	0.6
SB Approach	C	23.7	C	22.6	-1.1

LOS reported using HCM 6th edition
Delays reported as seconds per vehicle

Table 2: PM Peak Hour LOS and Delay Comparison

	TIS Distributions		Alt. Distributions		Delay
	LOS	Delay	LOS	Delay	Change
EB Approach	A	0.2	A	0.3	0.1
WB Approach	A	0.0	A	0.0	0.0
NB Approach	F	53.2	F	59.1	5.9
SB Approach	E	45.6	E	45.0	-0.6

LOS reported using HCM 6th edition
Delays reported as seconds per vehicle

Conclusions

The updated intersection analysis for the Washington Street/Hunting Path Road/Madison Street intersection reveals no significant changes from the results presented in the TIS. Notable findings include

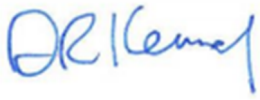
- Northbound approach on Madison Street continues to operate at LOS "F" in the PM peak hour. The alternative LOS grade matches results presented for 2028 Background traffic and 2028 Total traffic in the TIS.
- Southbound approach on Hunting Path Road continues to operate at LOS "E" in the PM peak hour. The alternative LOS grade matches results presented for 2028 Background traffic and 2028 Total traffic in the TIS. The southbound approach on Hunting Path Road improves in delay for both peak periods with increased right turns.
- The increased delays shown for the northbound approach are experienced by less than one-half of one percent of total entering volume.
- Site impacts on this intersection continue to be 2% or less. Revised distributions with alternative would increase site turns at Washington Street by 4 vehicles in the AM and 5 vehicles in the PM.
- Hourly volume signal warrants continue to be unlikely to be met in the foreseeable future.

The proposed special use permit development of 38 townhome DU does not negatively impact traffic operations in the study area. The above analysis demonstrates that consideration of Cheyenne Way as a private street and the resulting distributions through the subject intersection produces no changes in operational LOS. Overall operations at the Washington Street/Hunting Path Road/Madison Street intersection continue at LOS "A" with the revised distribution.

If you should have any questions, please contact our office at (703) 840-4830.

Sincerely,

PENNONI



Mr. Douglas R. Kennedy, P.E.
Associate Vice President

Enclosures: Appendix A: Synchro Outputs

Cc: Denise Harrover – Van Metre Companies
R. Scott Leary- Pennoni

U:\Accounts\VANMT\VANMT19001 - Haymarket Smith Property\DOC PREP\Operational Update\Smith Prop_Haymarket_TIS Operational Update_Pennoni_VANMT19001_20190708.docx

Appendix A

Synchro Outputs

Smith Properties - Haymarket
Traffic Impact Statement – Operational Update

Town of Haymarket, Virginia

VANMT19001

July 2019

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↰	↱		↕			↕	
Traffic Vol, veh/h	8	580	3	3	468	9	3	0	2	23	1	22
Future Vol, veh/h	8	580	3	3	468	9	3	0	2	23	1	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	250	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	630	3	3	509	10	3	0	2	25	1	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	519	0	0	633	0	0	1183	1175	632	1166	1166	509
Stage 1	-	-	-	-	-	-	650	650	-	515	515	-
Stage 2	-	-	-	-	-	-	533	525	-	651	651	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1047	-	-	950	-	-	166	192	480	171	194	564
Stage 1	-	-	-	-	-	-	458	465	-	543	535	-
Stage 2	-	-	-	-	-	-	531	529	-	457	465	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1047	-	-	950	-	-	156	189	480	168	191	564
Mov Cap-2 Maneuver	-	-	-	-	-	-	156	189	-	168	191	-
Stage 1	-	-	-	-	-	-	452	459	-	536	533	-
Stage 2	-	-	-	-	-	-	505	527	-	449	459	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	22.3	22.6
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	214	1047	-	-	950	-	-	254
HCM Lane V/C Ratio	0.025	0.008	-	-	0.003	-	-	0.197
HCM Control Delay (s)	22.3	8.5	0	-	8.8	0	-	22.6
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.7

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	725	1	4	846	19	5	0	2	12	1	20
Future Vol, veh/h	19	725	1	4	846	19	5	0	2	12	1	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	250	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	788	1	4	920	21	5	0	2	13	1	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	941	0	0	789	0	0	1781	1780	789	1760	1759	920
Stage 1	-	-	-	-	-	-	831	831	-	928	928	-
Stage 2	-	-	-	-	-	-	950	949	-	832	831	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	729	-	-	831	-	-	64	82	391	66	85	328
Stage 1	-	-	-	-	-	-	364	384	-	321	347	-
Stage 2	-	-	-	-	-	-	312	339	-	363	384	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	729	-	-	831	-	-	56	77	391	63	80	328
Mov Cap-2 Maneuver	-	-	-	-	-	-	56	77	-	63	80	-
Stage 1	-	-	-	-	-	-	345	364	-	305	344	-
Stage 2	-	-	-	-	-	-	287	336	-	343	364	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	59.1	45
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	74	729	-	-	831	-	-	125
HCM Lane V/C Ratio	0.103	0.028	-	-	0.005	-	-	0.287
HCM Control Delay (s)	59.1	10.1	0	-	9.4	0	-	45
HCM Lane LOS	F	B	A	-	A	A	-	E
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	1.1

Pennoni

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June 21, 2019

Ms. Emily K. Lockhart
Town Planning & Zoning Administrator
Town of Haymarket
15000 Washington Street, Suite 100
Haymarket, Virginia 20169

Re: ***Smith Properties – Haymarket***
Traffic Impact Statement
7298-90-7006, 7299-8684 (portion), and 7397-09-0978
Pennoni VANMT19001

Dear Ms. Lockhart:

On behalf of the developers, Van Metre Companies, Pennoni has prepared the following summary to support the special use permit application for the development of the Smith Properties – Haymarket. The proposed development consists of 38 townhome DU on 4.8± acres, designated as 7298-90-7006, 7299-8684 (portion), and 7397-09-0978. The summary includes existing traffic patterns, trip generation for the proposed development and nearby approved and/or planned development, trip distribution, and level of service analysis for the 3 local intersections potentially impacted by the site activities. The analysis also includes turn lane warrants for Hunting Path Road at the proposed site entrance, and site impacts at 2 points of entry to the public street roadway network.

Pennoni staff did provide a draft VDOT 527 scoping document to demonstrate to the Town of Haymarket the intended points of analysis. The 38-townhome development is proposed to access the roadway network via Hunting Path Road and development impacts have been analyzed at Washington Street/Hunting Path Road/Madison Street, Jefferson Street/Cheyenne Way, and Hunting Path Road/Cheyenne Way/Rising Sun Road. Due to the proposed site trips at less than 5,000 vpd, a formal VDOT 527 review is not required. The proposed site uses as townhome residential can be accommodated with the existing roadway network without changes in peak hour level of service grades. Additionally, the site trip generation as residential is significantly less than the trip generation as employment/commercial uses if the site were developed as by-right uses.

The site vicinity is shown in **Exhibit 1**, and the concept plan is included as **Exhibit 2.**

Site Context

The proposed residential development is located in Town Center District B-1. Townhouse dwellings are explicitly permitted in this district with a special use permit. The relevant zoning information, located at www.townofhaymarket.org, is excerpted below:

ARTICLE X. - TOWN CENTER DISTRICT B-1[2]

Sec. 58-10.1 - Intent.

The Town Center District, B-1, provides primarily for retail shopping and personal services to be developed either as a unit or in individual parcels oriented to attracting pedestrian shoppers, tourism and local convenience. Recognizing the economic value of the existing historical area, it shall further be the intent of the district to encourage the retention and rehabilitation of structures and uses in the district that have historic and/or architectural significance. The range, size, hours of operation, lighting, signs and other developmental aspects of permitted uses may be limited in order to enhance the general character and historic nature of the district.

Sec. 58-10.3 - Special uses.

The following uses may be permitted in the B-1 district with a special use permit:

Residential

Multi-family dwelling

Townhouse

Exhibit 1: Site Location (Source: Prince William County GIS, annotated by Pennoni)

VDOT Chapter 527/870 Requirements

The analysis is formatted following the generalized VDOT 527 Traffic, study to summarize traffic assumptions; however, the proposed site activities do not require a formal VDOT 527 study submission. As part of the requirements of VDOT's Chapter 527/870 regulations, a traffic impact

analysis must be submitted with any rezoning or special exception action if the site trip generation is over 5,000 vehicles per day. For the subject site, trip generation for the site does not trigger additional Chapter 527/870 review for land use or site plan review. See **Appendix A** for scoping outline.

Proposed Access

The proposed site plan would develop 38 townhome DU on 4.8± acres of the total 7.1± acres east of Hunting Path Road. This residential development is proposed to have a single ingress/egress point on Hunting Path Road (Rte. 1304), north of the existing commercial entrances and south of the Cheyenne Way/ Rising Sun Road intersection. The site area fronting on Washington Street is not included in the special use permit request. Development of this area is included in the background growth. No interparcel access is envisioned. The concept plan is shown below as **Exhibit 2**.

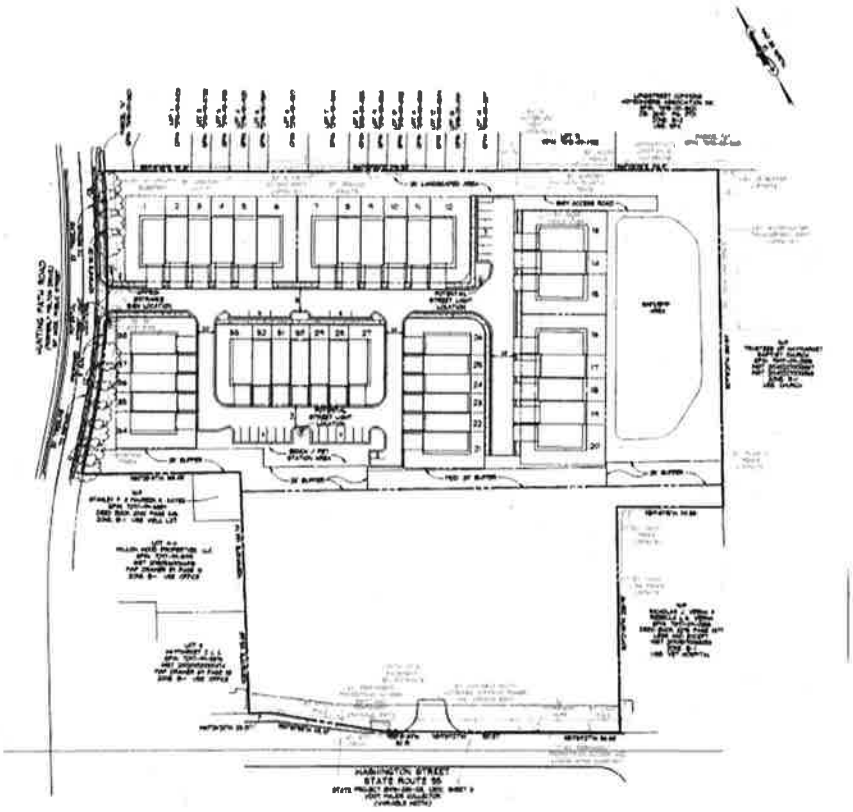


Exhibit 2: Site Concept Plan (Source: The Engineering Groupe, excerpted by Pennoni)

2019 Existing Conditions

To assess the existing traffic patterns, Pennoni had Quality Counts collect turning movement counts on Thursday, May 9, 2019 at the following intersections:

1) Washington Street (Rte. 55)/Hunting Path Road (Rte. 1304)/Madison Street (Rte. 1304)
2) Jefferson Street (Rte. 625)/Cheyenne way (N.I.S.)
3) Hunting Path Road/Cheyenne Way/Rising Sun Road (N.I.S.)

These counts were collected in the AM and PM peak periods (6:00 AM to 9:00 AM and 4:00 PM to 7:00 PM, respectively) with Prince William County Schools in session. These counts reveal the morning peak hour to have occurred 8:00 AM to 9:00 AM and the evening peak hour to have occurred 4:30 PM to 5:30 PM. The count data are included as **Appendix B**. The peak hour volumes are included graphically in **Figure 1**. Existing levels of service are discussed in the Traffic Operations section of this report.

2028 Future Conditions

- The total build-out traffic volumes were derived by factoring the following traffic volume changes:
- Localized traffic growth from 2019 to 2028,
- Nearby planned and/or approved development – Crossroads Village Center to the west in the Town of Haymarket and Upland Manor (formerly John Marshall Commons) to the east in Prince William County,
- Proposed daycare to be located on the north side of Washington Street, east of Hunting Path Road and west of the existing Haymarket Baptist Church, and
- Site traffic associated with the proposed special use permit.

Growth Trends

The VDOT Historical traffic volumes are summarized in **Table 1.** The effective average 10-year annual growth on Washington Street is 1.0 percent; the overall average effective annual growth is 2.0 percent. This is consistent with the growth applied in John Marshall Commons Revised Traffic Impact Analysis (Pennoni, December 2013) and Traffic Study Certification (Pennoni, December 2018). 2.0 percent average annual compound growth was applied only to through movements on Washington Street and Jefferson Street.

Trip Generation (Site Activities)

The proposed special use permit activities are summarized in **Table 2,** below. Peak hour trips are based on trip equations for Multifamily Housing (Low-Rise) (LUC: 220) from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (10th Edition). The Low-Rise rate is the most applicable to townhome uses in *Trip Generation Manual* (10th edition). Land Use Code 221 would typically be applied to multifamily apartment uses, which are not proposed for the subject site. The daily two-way trip rate for this use is defaulted to 8.0 per DU (greater than ITE rate) to conform with the Prince William County DCSM.

Table 1: Washington Street (Rte. 55) Historical Traffic Trends

YEAR	AADT	Effective Annual Growth Rate	Eff. Growth Rate (10 YR)	Eff. Growth Rate (5 YR)	Eff. Growth Rate (3 YR)
2018	11000	-8.3%	2.0%	3.0%	5.8%
2017	12,000	9.1%	3.8%	5.2%	8.5%
2016	11,000	18.3%	1.1%	3.9%	5.0%
2015	9,300	-1.1%	-1.7%	0.4%	0.0%
2014	9,400	-1.1%	-0.6%	3.0%	1.1%
2013	9,500	2.2%	1.0%	1.1%	1.4%
2012	9,300	2.2%	1.6%	2.3%	4.7%
2011	9,100	0.0%	1.8%	-1.7%	0.4%
2010	9,100	12.3%		-3.7%	3.1%
2009	8,100	-10.0%		-4.1%	-6.5%
2008	9,000	8.4%		0.9%	-6.5%
2007	8,300	-16.2%		1.0%	-6.0%
2006	9,900	-10.0%		5.4%	4.8%
2005	11,000	10.0%			11.7%
2004	10,000	16.3%			9.6%
2003	8,600	8.9%			
2002	7,900	3.9%			
2001	7,600				
Average Growth Rate		3.3%	1.0%	1.1%	1.5%

Average of Average Growth Rates on Route 55	1.7%
Average of Effective Growth data points on Route 55	2.0%

Table 2: Proposed Special Use Permit Trip Generation

ITE Land Use (1,2) May 2018	USE	Size	Var.	DAILY (2-way)(3)	AM PEAK HOUR IN	AM PEAK HOUR OUT	AM PEAK HOUR TOTAL	PM PEAK HOUR IN	PM PEAK HOUR OUT	PM PEAK HOUR TOTAL
Proposed Special Permit Uses										
220	220 1810 Multifamily Housing (Low-Rise) @ 38 DU	38.000	DU	304	6	17	23	15	11	26
	Total Parcel Trip Generation (Weekday Peak)			304	6	17	23	15	11	26

Effective Trip Rates	ITE Code	Var.	Daily Wkday (2-way)	AM Peak Hour (2-way)	AM Peak Hour % Inbound	PM Peak Hour (2-way)	PM Peak Hour % Inbound
Multifamily Housing (Low-Rise) @ 38 DU	220	DU	8.00	0.61	26%	0.68	58%

TRIP RATE SOURCE Trip Generation Manual (10th Edition), Institute of Transportation Engineers; 2017 No Discounts for pass-by or internal trips

(1) Average trip rates used, unless noted with "e", then equations used at size shown,
with data set OK for R^2 > 0.75 AND SD > 110% of ave

(2) ITE Land Code shown as the first 3 digits

(3) Daily trip rate for Townhomes (LUC 220) defaulted to PWC DCSM rate @ 8.00 trips/DU (Higher than Trip Generation Manual (10th Edition))

Trip Generation Sensitivity

The subject site is zoned B-1 as described above. The by-right uses for this zoning district include retail, office, and restaurant uses, among others. The maximum buildable area is 85% of available land area. To test trip generation sensitivity between by-right uses and the proposed special permit use, Pennoni derived 2 scenarios of by-right development for the subject 4.8± acres and

the associated trip generation values. Pennoni considered development of office uses at 0.35 FAR and retail & restaurant uses at 0.15 FAR.

The office uses are shown at 73,000 GSF. The retail/restaurant uses assume a total of 30,000 GSF – 20,000 GSF of retail and a quality restaurant at 10,000 GSF. By comparison of these scenarios to the proposed special use permit uses, the proposed development shows reductions of 61-88% from by-right uses for daily trips, and reductions of 69-89% for peak hour volumes. Trip generation values and comparisons are presented in **Table 3**.

Table 3: Trip Generation Comparison

ITE Land Use (1,2) May 2018 CODE	USE	Size	Var.	DAILY (2-way) (3)	AM PEAK HOUR IN	AM PEAK HOUR OUT	AM PEAK HOUR TOTAL	PM PEAK HOUR IN	PM PEAK HOUR OUT	PM PEAK HOUR TOTAL
	Proposed Special Permit Uses									
220	220 1810 Multifamily Housing (Low-Rise) @ 38 DU	38.000	DU	304	6	17	23	15	11	26
	Total Parcel Trip Generation (Weekday Peak)			304	6	17	23	15	11	26

Scenario 1

ITE Land Use (1,2) CODE	USE	Size	Var.	DAILY (2-way)	AM PEAK HOUR IN	AM PEAK HOUR OUT	AM PEAK HOUR TOTAL	PM PEAK HOUR IN	PM PEAK HOUR OUT	PM PEAK HOUR TOTAL
	By-Right Uses									
710	710 183 General Office Building @ 73.000 sf	73.000	ksf e	782	82	13	95	13	71	84
	Scenario 1 Difference from Proposed Special Permit Use			-478	-76	4	-72	2	-60	-58
	Scenario 1 Percentage Difference from Proposed Special Permit Use			-61%	-93%	31%	-76%	15%	-85%	-69%

Scenario 2

ITE Land Use (1,2) CODE	USE	Size	Var.	DAILY (2-way)	AM PEAK HOUR IN	AM PEAK HOUR OUT	AM PEAK HOUR TOTAL	PM PEAK HOUR IN	PM PEAK HOUR OUT	PM PEAK HOUR TOTAL
	By-Right Uses									
820	820 181 Shopping Center @ 30.000 sf	20.000	ksf e	1,768	69	42	111	72	77	149
931	931 110 Quality Restaurant	10.000	ksf	838	0	7	7	52	26	78
	Scenario 2 Totals			2,606	69	49	118	124	103	227
	Scenario2 Difference from Proposed Special Permit Use			-2,302	-63	-32	-95	-109	-92	-201
	Scenario 2 Percentage Difference from Proposed Special Permit Use			-88%	-91%	-65%	-81%	-88%	-89%	-89%

TRIP RATE SOURCE: Trip Generation Manual (10th Edition), Institute of Transportation Engineers, 2017. No Discounts for pass-by or internal trips

(1) Average trip rates used, unless noted with "e", then equations used at size shown
with data set OK for R^2 > 0.75 AND SD < 110% of ave

(2) ITE Land Code shown as the first 3 digits

(3) Daily trip rate for Townhomes (LUC: 220) defaulted to PWC DCSM rate @ 6.00 trips/DU (Higher than Trip Generation Manual (10th Edition))

Trip Generation (Background Development)

Nearby approved and/or planned development uses are considered in the projected 2028 total conditions. For the Upland Manor development, trip generation values with pass-by reductions were referred from the John Marshall Commons Traffic Study Certification (December 2018) and are included in **Appendix C**. For Crossroads Village Center, trip generation was developed for the following uses:

LUC	Use	Density
220	Multifamily Housing (Low-rise)	79 DU
310	Hotel	110 Rooms
565	Daycare	120 Students
820	Shopping Center	28,277 GLA
912	Drive-In Bank	3 Lanes
934	Fast-Food w/ Drive-Thru	2 @ 3,500 GSF 1 @ 3,000 GSF.

Trip Generation Manual (10th edition) equations were used where available – LUC: 220, except for daily two-way trips as noted above, and for LUC: 820. Trip generation totals and pass-by reductions are included in **Appendix C**.

Additionally, trip generation values for Daycare (LUC: 565) were applied to proposed facility to be located on north side of Washington Street, between Hunting Path Road/Madison Street and St. Paul Drive. The use is a potential activity consistent with by-right uses in the B-1 zoning district and is shown for future traffic growth to be conservative.

Trip Distribution

Proposed site trips were generally distributed 80% coming from and going to the south on Hunting Path Road towards Washington Street and 20% coming from and going to the north towards Jefferson Street via Cheyenne Way. At the Washington Street/Hunting Path Road/Madison Street intersection, the site trips were generally distributed as 45% coming from and going to the west and 35 % coming from and going to the east. At the Jefferson Street/Cheyenne Way intersection it was generally assumed that 20% of site traffic was coming from the north and 15% of site traffic was going to the north. An allowance of 5% of site trips as entering southbound throughs, 5% of site trips as entering northbound rights, and 5% of site trips as exiting westbound lefts was made at this intersection.

Upland Manor trip distribution was referred from Revised Traffic Impact Analysis for John Marshall Commons (December 2013) and result in the following assignments:

- 45% of commercial trips as through movements on Washington Street at Hunting Path Road/Madison Street,
- 30% of residential trips as through movements on Washington Street at Hunting Path Road/Madison Street, and
- 10% each of commercial and residential trips as through movements on Jefferson Street at Cheyenne Way.

Crossroads Village Center trips assigned to the affected intersections as follows:

- 20% of commercial trips as through movements on Washington Street at Hunting Path Road/Madison Street,
- 30% of residential trips as through movements on Washington Street at Hunting Path Road/Madison Street, and
- 10% each of commercial and residential trips as through movements on Jefferson Street at Cheyenne Way.

Proposed Daycare trips for the adjacent redevelopment on Washington Street were generally distributed as 50% to/from the east and 50% to/from the west. A 5% allowance was made for trips originating or returning to the northwest as cut through trips along Hunting Path Road and Cheyenne Way.

Site trip volumes and background development volumes for each location are included graphically in **Figure 1**. Background levels of service without the site are discussed in the Traffic Operations section.

Future Traffic Volumes

Future traffic volumes for 3 existing intersections and proposed site entrance are presented graphically in **Figure 1**. These volumes were calculated using the inputs described below:

Washington St./Hunting Path Rd./Madison St.

- 9 years of growth in the through movements on Washington Street at 2.0 percent annually,
- No growth of turns from Washington Street applied,
- No growth applied to northbound approach (Madison Street),
- Site trips assigned as peak hour trips – 45% as SBR (outbound) and EBL (inbound) and 35% as SBL (outbound) and WBR (inbound).
- Background trips assigned as through movements as described above.

Jefferson St./Cheyenne Way (Private Street)

- 9 years of growth in the through movements on Jefferson Street at 2.0 percent annually,
- No growth of turns from Jefferson Street applied,
- No growth applied to westbound approach (Cheyenne Way),
- Site trips assigned 15% WBR and 5% WBL (outbound) and 15% SBL and 5% SBT (inbound),
- Background trips assigned as through movements as described above.

Hunting Path Rd. (north leg as Private Street)/Cheyenne Way (Private Street)/Rising Sun Rd. (Private Street)

- No growth applied to intersection movements,
- Site trips assigned as 20% NBL (outbound) and 20% EBR (inbound).

Traffic Operations and Level of Service Analysis

Existing traffic volumes, growth on Washington Street and Jefferson Street, background development traffic, and site generated trip values were utilized to produce projected traffic operations for Design Year 2028. Total projected volumes are depicted graphically in **Figure 1**. Synchro outputs are included as **Appendix D**. Level of Service analysis was accomplished using Synchro 10, applying the Transportation Research Board (TRB) Highway Capacity Manual 2010 Two-Way Stop Conditions.

Table 4 depicts the existing levels of service for the Washington Street/Hunting Path Road/Madison Street and Jefferson Street/Cheyenne Way intersections. All approaches and movements operate at LOS "C" or better under existing conditions. **Table 5** depicts the projected levels of service for these intersections under background conditions without site-generated traffic. Under these conditions, level of service for the northbound and southbound approaches at the Washington Street intersection degrade to LOS "F" and "E", respectively, in the PM peak hour. The reported delays are 51.4 seconds per vehicle on the northbound approach and 38.1 seconds per vehicle on the southbound approach.

Table 4: 2019 Existing Level of Service

#	Intersection	Traffic Control/ Mitigation	Lane/Approach	Storage Lengths (ft)	AM Peak Hour			PM Peak Hour		
					LOS	Delay (sec/veh)	Back of Queue	LOS	Delay (sec/veh)	Back of Queue
1	Washington St./ Hunting Path Rd./ Madison St.	Unsignalized	EBL,T,R	-	A	8.2	0.0	A	8.7	0.0
			EB LOS		**A**	**0.1**	-	**A**	**0.2**	-
			WBL,T	-	A	8.5	0.0	A	8.4	0.0
			WBR	250	-	-	-	-	-	-
			WB LOS		**A**	**0.1**	-	**A**	**0.1**	-
			NBL,T,R	-	C	17.5	2.5	C	22.4	2.5
			NB LOS		**C**	**17.5**	-	**C**	**22.4**	-
			SBL,T,R	-	C	17.4	10.0	C	17.6	5.0
			SB LOS		**C**	**23.7**	-	**C**	**17.6**	-
2	Jefferson St./ Cheyenne Way	Unsignalized	WBL,R	-	B	10.4	0.0	B	12.3	2.5
			WB LOS		**B**	**10.4**	-	**B**	**12.3**	-
			NBT,R	-	A	0.0	0.0	A	0.0	0.0
			NB LOS		**A**	**0.0**	-	**A**	**0.0**	-
			SBL,T	-	A	7.7	0.0	A	8.2	2.5
			SB LOS		**A**	**0.3**		**A**	**0.5**	-

EB=Eastbound, NB=Northbound, SB=Southbound
Storage lengths are existing and include 1/2 the existing taper.
Back of Queue expressed in feet, coverted from Synchro output which reports queue as total vehicles. 1 veh = 25 feet
(June 2019)

Table 5: 2028 Background Level of Service

#	Intersection	Traffic Control/ Mitigation	Lane/Approach	Storage Lengths (ft)	AM Peak Hour			PM Peak Hour		
					LOS	Delay (sec/veh)	Back of Queue	LOS	Delay (sec/veh)	Back of Queue
1	Washington St./ Hunting Path Rd./ Madison St.	Unsignalized	EBL/T/R	-	A	8.4	0.0	A	9.9	0.0
			EB LOS		**A**	**0.1**	-	**A**	**0.1**	-
			WBL/T	-	A	8.8	0.0	A	9.3	0.0
			WBR	250	-	-	-	-	-	-
			WB LOS		**A**	**0.1**	-	**A**	**0.0**	-
			NBL/T/R	-	C	21.5	2.5	F	51.4	7.5
			NB LOS		**C**	**21.5**	-	**F**	**51.4**	-
			SBL/T/R	-	C	22.4	12.5	E	38.1	17.5
			SB LOS		**C**	**22.4**	-	**E**	**38.1**	-
2	Jefferson St./ Cheyenne Way	Unsignalized	WBL/R	-	B	10.5	0.0	B	14.3	5.0
			WB LOS		**B**	**10.5**	-	**B**	**14.3**	-
			NBT/R	-	A	0.0	0.0	A	0.0	0.0
			NB LOS		**A**	**0.0**	-	**A**	**0.0**	-
			SBL/T	-	A	7.8	0.0	A	8.6	2.5
			SB LOS		**A**	**0.3**		**A**	**0.4**	-

EB=Eastbound, NB=Northbound, SB=Southbound

Storage lengths are existing and include 1/2 the existing taper.

Back of Queue expressed in feet, coverted from Synchro output which reports queue as total vehicles. 1 veh = 25 feet

(June 2019)

Table 6: 2028 Level of Service with Site

#	Intersection	Traffic Control/ Mitigation	Lane/Approach	Storage Lengths (ft)	AM Peak Hour			PM Peak Hour		
					LOS	Delay (sec/veh)	Back of Queue	LOS	Delay (sec/veh)	Back of Queue
1	Washington St./ Hunting Path Rd./ Madison St.	Unsignalized	EBL/T/R	-	A	8.5	0.0	A	10.0	3
			EB LOS		**A**	**0.1**	-	**A**	**0.2**	-
			WBL/T	-	A	8.8	0.0	A	9.3	0.0
			WBR	250	-	-	-	-	-	-
			WB LOS		**A**	**0.1**	-	**A**	**0.0**	-
			NBL/T/R	-	C	21.7	2.5	F	53.2	7.5
			NB LOS		**C**	**21.7**	-	**F**	**53.2**	-
			SBL/T/R	-	C	23.7	20.0	E	45.6	27.5
			SB LOS		**C**	**23.7**	-	**E**	**45.6**	-
2	Jefferson St./ Cheyenne Way	Unsignalized	WBL/R	-	B	10.7	2.5	B	14.5	5.0
			WB LOS		**B**	**10.7**	-	**B**	**14.5**	-
			NBT/R	-	A	0.0	0.0	A	0.0	0.0
			NB LOS		**A**	**0.0**	-	**A**	**0.0**	-
			SBL/T	-	A	7.8	0.0	A	8.6	2.5
			SB LOS		**A**	**0.3**		**A**	**0.5**	-
3	Hunting Path Rd./ Cheyenne Way/ Rising Sun Rd.	Unsignalized	EBL/T/R	-	A	8.7	2.5	A	8.9	2.5
			EB LOS		**A**	**8.7**	-	**A**	**8.9**	-
			WBL/T/R	-	A	8.9	0.0	A	9.1	0.0
			WB LOS		**A**	**8.9**	-	**A**	**9.1**	-
			NBL/T/R	-	A	7.3	0.0	A	7.2	0.0
			NB LOS		**A**	**3.9**	-	**A**	**4.7**	-
			SBL/T/R	-	A	8.7	2.5	A	8.9	2.5
			SB LOS		**A**	**0.0**	-	**A**	**0.0**	-
4	Hunting Path Rd./ Site Entrance	Unsignalized	WBL/R	-	A	8.7	2.5	A	8.7	0.0
			WB LOS		**A**	**8.7**	-	**A**	**8.7**	-
			NBT/R	-	A	0.0	0.0	A	0.0	0.0
			NB LOS		**A**	**0.0**	-	**A**	**0.0**	-
			SBL/T	-	A	7.2	0.0	A	7.3	0.0
			SB LOS		**A**	**0.2**		**A**	**1.5**	-

EB=Eastbound, NB=Northbound, SB=Southbound

Storage lengths are existing and include 1/2 the existing taper.

Back of Queue expressed in feet, coverted from Synchro output which reports queue as total vehicles. 1 veh = 25 feet

(June 2019)

Table 6, above, depicts the results of the level of service analysis at all 4 study intersections and includes site-generated trips. The proposed site entrance and the intersection of Hunting Path Road/Cheyenne Way/Rising Sun Road operate at LOS "A" for all movements and approaches. There no letter grade changes noted in the total conditions for the Washington Street and Jefferson Street intersections when compared to the background conditions.

The total conditions analysis notes an approach delay of 53.2 seconds on the northbound (Madison Street) approach – an increase of 1.8 seconds per vehicle, and an approach delay of 45.6 seconds per vehicle on the southbound (Hunting Path Road) approach – an increase of 7.5 seconds per vehicle. No changes are noted in northbound queuing, while the southbound queue is shown to increase 10 feet (less than 1 car length), when compared to an analysis of background-only traffic volumes. The operational site impacts are negligible.

Madison Street (northbound approach) serves a built-out low-density residential community and is not anticipated to experience growth. Hunting Path Road also demonstrates little potential for growth; although, some development opportunities will exist beyond the proposed special use permit development. In light of this, Pennoni assessed the projected minor street approach volumes as percentages of the hourly volume thresholds for 8-hour volume signalization warrant. The southbound approach is the greater side street volume and the PM peak hour volumes only achieve 22% of the hourly threshold for Condition A and 44% of the hourly threshold for Condition B. It is unlikely that the required minor street volumes for the hourly warrants will be achieved in the foreseeable future.

Site Impacts

As expressed above in the Trip Generation sections, the proposed special use permit development is expected to generate significantly fewer peak hour and daily trips than by-right development would be expected to generate. **Table 7** demonstrates the impacts of site-generated traffic on the Washington Street and Jefferson Street Intersections. The impacts are shown as the percentage of increase contributed by site trips to background traffic and are shown to be 2% or less of total traffic.

Table 7: Site Impacts

	Washington Street Intersection			Jefferson Street Intersection		
	Background	Site	Impact	Background	Site	Impact
AM	1099	19	2%	656	5	1%
PM	1628	17	1%	990	5	1%

Peak Hour Turn Warrants

Turn lane warrants for peak hour volumes on Hunting Path Road at the proposed site entrance are based on VDOT RDM Appendix F, Access Management. Turn lanes are not warranted on Hunting Path Road at the proposed site entrance. Turn lane warrants are included as **Appendix E**.

For right turns, the VDOT Appendix F Figure 3-26 was used for right turn lane on a two-lane road. No adjustment applied to the volumes, which are based on right turn volume and the approach volumes.

For left turn warrants, the warrant is a function of speed, percentage left and the x and y variables in the charts in VDOT Appendix F figures F3-5 and F3-8 are based on opposing volumes (vertical axis) and advancing volumes (horizontal axis). The VDOT left turn graphs are based on design speed ranging from 40 to 60 MPH. To account for lower speed conditions for Hunting Path Road, the 40 MPH curves are used as initial test. However, the warrant sensitivity also interpolates the results to develop thresholds for a 30 MPH speed, which would relate to the 25 MPH speed on Hunting Path Road, based on the advancing volumes (Va.) in the VDOT Road Design Manual Appendix F Table 3-1. Pennoni has interpolated the table volumes for design speed changes, these interpolated graphs are also included in **Appendix E**. **Table 8** summarizes the turn lane warrant results.

Table 8: Turn Lane Warrant Summary

Hunting Path Road at proposed Site Entrance	Warranted	
	AM	PM
NB Right Turn	Not Warranted	Not Warranted
SB Left Turn	Not Warranted	Not Warranted

NB = Northbound, SB = Southbound

Haymarket Baptist Church Daycare Existing Conditions

As requested by the Town to supplement the traffic analysis, traffic counts were collected on Washington Street to verify trips at the Haymarket Baptist Church daycare for peak trips at drop-off in the AM (8:30 AM to 9:30 AM) and midday (12:30 PM to 1:30 PM). The AM peak hour for this facility does not correspond to the network consensus peak presented earlier in this report and the midday peak hour is a special case. The peak hour volumes are presented in **Figure 2**, with 197 trips in the morning peak and 58 trips in the midday peak hours. Traffic splits are 60% to west and 40% to the east.

Conclusions

Based on the trip generation, intersection analysis, and peak hour warrant analysis, Pennoni offers the following conclusions:

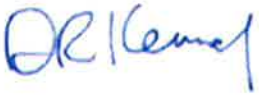
1) The trips generated by the proposed special use permit redevelopment generates approximately 23 AM peak and 26 PM peak hour trips weekday. Daily traffic is estimated at 304 VPD. The trip generation values for the proposed development represent reductions of 61-89% from by-right uses.
2) Applying a 2 percent annual compound growth rate for regional through traffic on Washington Street and Jefferson Street and considering the traffic volumes expected to be generated by Upland Manor to the east and Crossroads Village Center to the west as background traffic, the proposed site traffic impacts are 2% or less at the Washington Street/Hunting Path Road/Madison Street and Jefferson Street/Cheyenne Way intersections.
3) Level of service for the Hunting Path Road and Madison Street approaches at Washington Street degrade to LOS "E" and LOS "F" respectively in the PM peak hour in future conditions analysis with or without the site. This is a function of the increased through traffic on Washington Street and the side street volumes are not anticipated to achieve hourly warrant volume thresholds for signalization in the foreseeable future. Level of service letter grades do not change with the site trips and changes in delay on the Hunting Path road approach is less than 8 seconds in the PM peak.
4) Based on the projected peak hour volumes at the site entrance, neither southbound left turn nor northbound right turn lanes are warranted.

The proposed special use permit development of 38 townhome DU does not negatively impact traffic operations in the study area. The special permit use is expected to generate significantly fewer trips than by-right uses allowed in Town Center District (B-1). The operational deficiency identified (Item 3, above) is a function of growth and other development, and mitigation is not warranted. Overall operations at the Washington Street/Hunting Path Road/Madison Street intersection are at LOS "A" with the site.

If you should have any questions, please contact our office at (703) 840-4830.

Sincerely,

PENNONI



Mr. Douglas R. Kennedy, P.E.
Associate Vice President

Enclosures: Figure 1: Haymarket Smith Properties Volume Summary
Figure 2: Haymarket Baptist Church Daycare Existing Traffic

Appendix A: Scoping
Appendix B: Existing Traffic Counts
Appendix C: Background Development Trip generation
Appendix D: Synchro Outputs
Appendix E: Turn Lane Warrants

Cc: Denise Harrover – Van Metre Companies
R. Scott Leary- Pennoni

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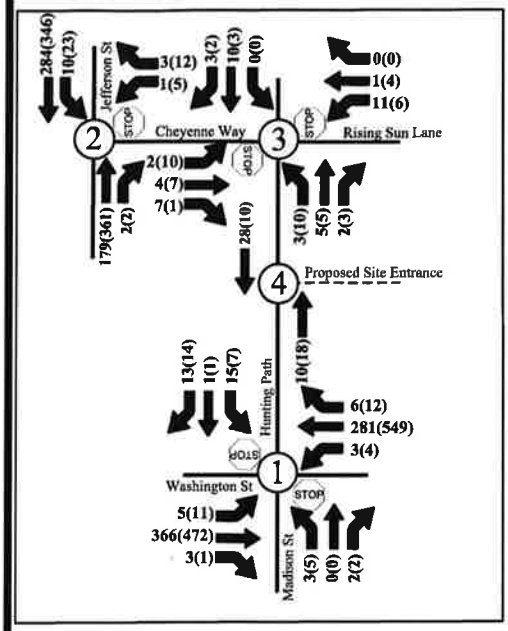
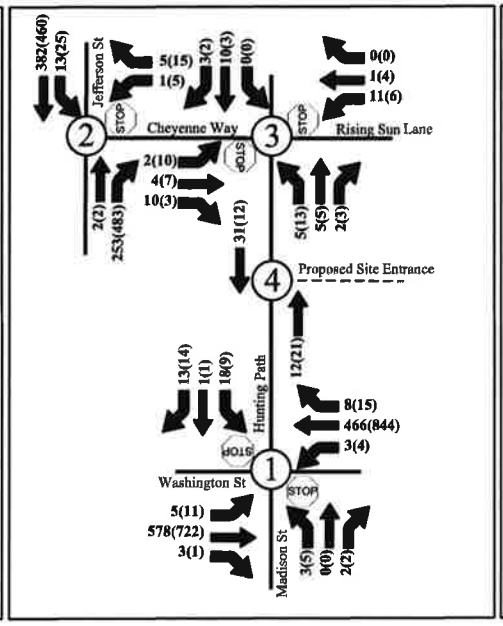
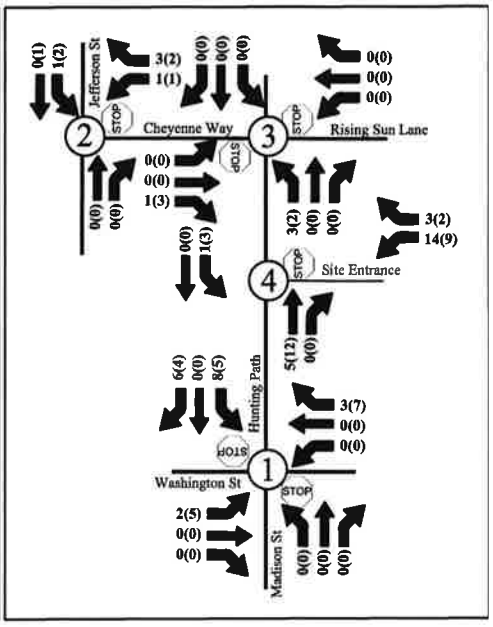


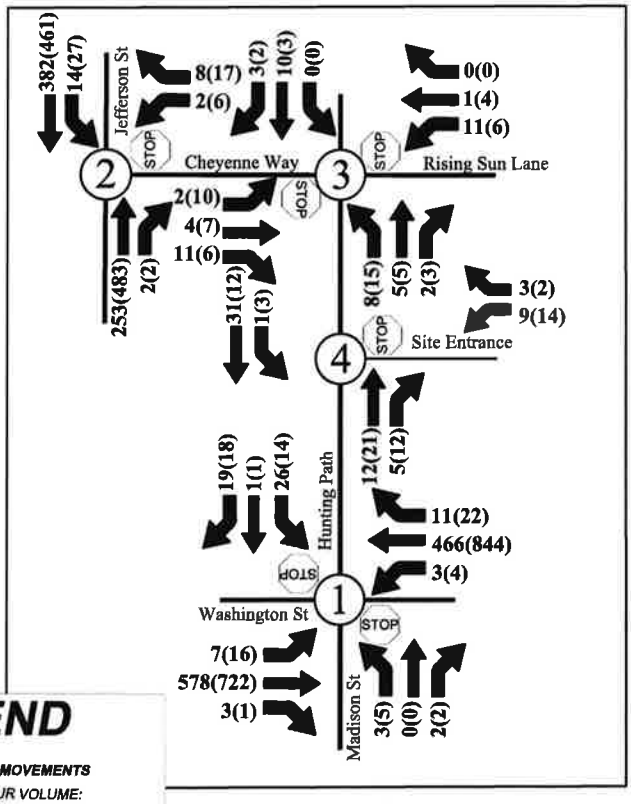
Existing Volumes (2019)



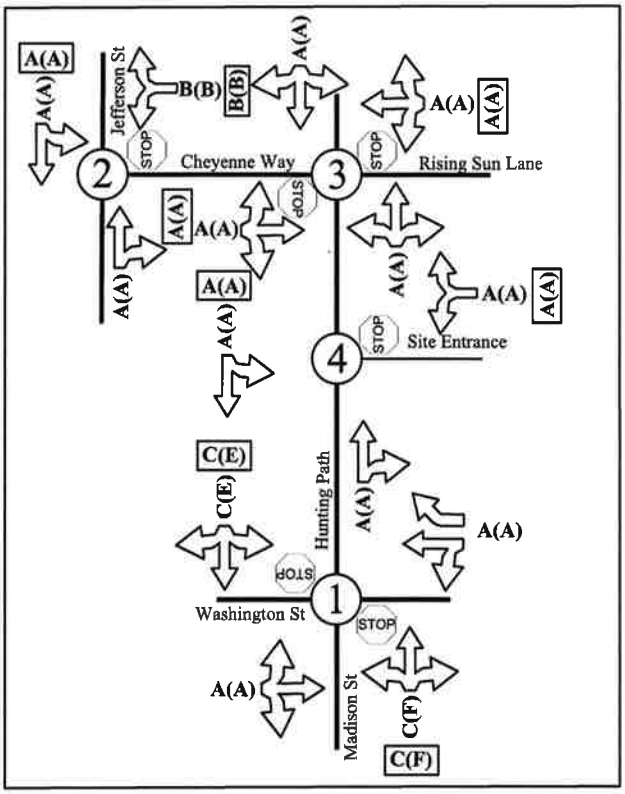
Background Volumes (2028)



Site Trips



2028 Total Build Volumes

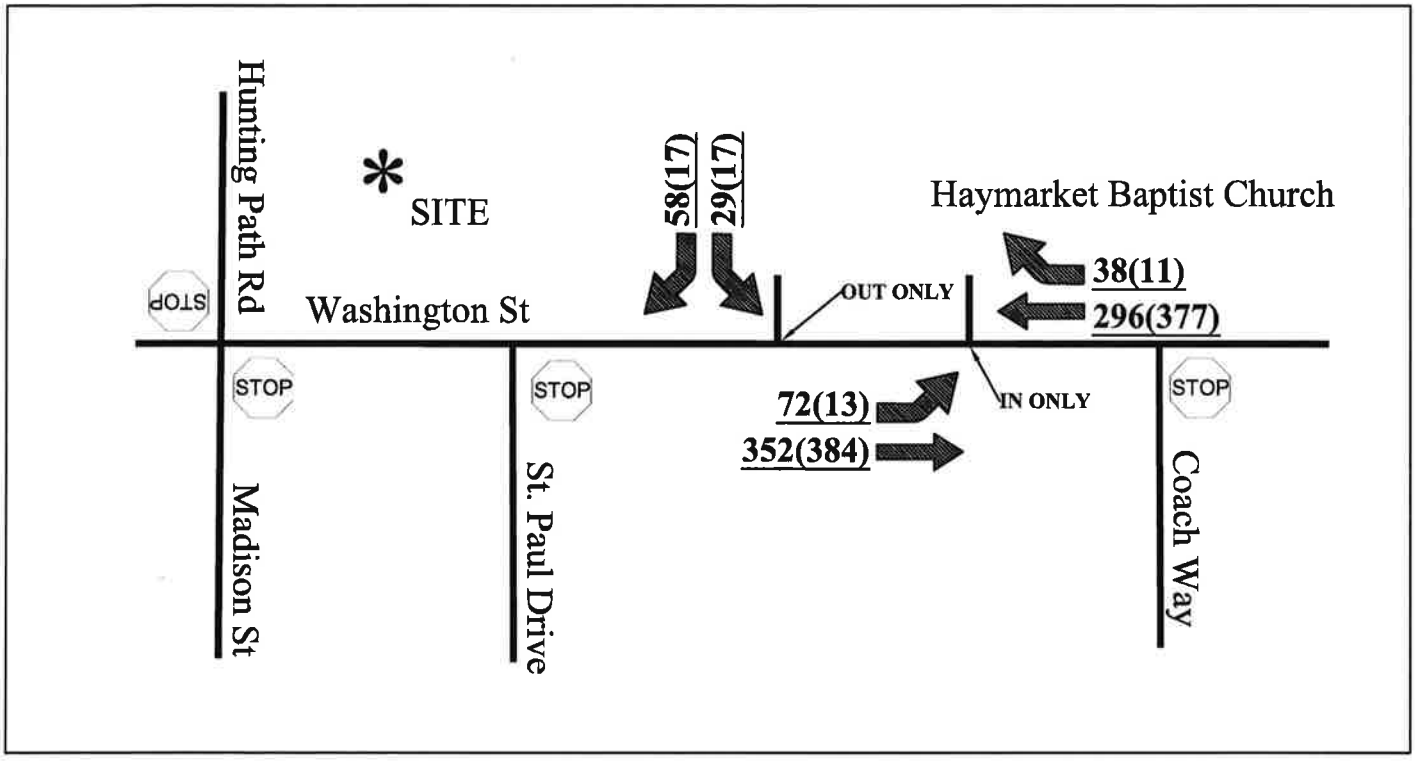


2028 Total Build LOS

LEGEND

- TURNING MOVEMENTS
- 100(100) PEAK HOUR VOLUME: AM (PM)
- LANE GEOMETRY
- A (A) PEAK HOUR LOS: AM (PM)
- A (A) APPROACH LOS

Pennoni	SMITH PROPERTIES - HAYMARKET SPECIAL USE PERMIT TRAFFIC IMPACT STATEMENT TOWN OF HAYMARKET, VA	SMITH PROPERTIES - HAYMARKET VOLUME SUMMARY	FIGURE 1 Project #VANMT19001 June 2019



LEGEND

100(100) TURNING MOVEMENTS
PEAK HOUR VOLUME: AM (MIDDAY)

PROVIDED FOR INFORMATION ONLY.

AM PEAK (**8:30 AM - 9:30 AM**) VOLUMES DO NOT CORRESPOND TO NETWORK PEAK VOLUMES AS IN FIGURE 1.

MIDDAY PEAK (**12:30 PM TO 1:30 PM**) VOLUMES ARE USED INSTEAD OF PM PEAK VOLUMES AS IN FIGURE 1.

Pennoni	**SMITH PROPERTIES - HAYMARKET SPECIAL USE PERMIT** TRAFFIC IMPACT STATEMENT TOWN OF HAYMARKET, VA	*HAYMARKET BAPTIST CHURCH DAYCARE EXISTING TRAFFIC*	*FIGURE 2* *Project #VANMT19001* *June 2019*

Appendix A

Scoping

Smith Properties - Haymarket
Traffic Impact Statement

Town of Haymarket, Virginia

VANMT19001

June 2019

	Residential Uses(s) Number of Units: 38 DU ITE LU Code(s): LUC 220 (Townhouse, Multifamily Housing (Low-Rise) per ITE) **Commercial Use(s)** ITE LU Code(s): N/A Square Ft or Other Variable:	**Other Use(s)** ITE LU Code(s): N/A Independent Variable(s):

Total Peak Hour Trip Projection:	Less than 100 ☒	100 – 499 ☐	500 – 999 ☒	1,000 or more ☐

Traffic Impact Analysis Assumptions

Study Period	Existing Year: 2019	Build-out Year: 2022	Design Year: 2028
Study Area Boundaries (Attach map)	North: Cheyenne Way (N.I.S)	South: Washington Street (Rte. 55)	
	East: Hunting Path Road (Rte. 1304)	West: Jefferson Street (Rte 625)	
External Factors That Could Affect Project (Planned road improvements, other nearby developments)	No roadway improvements are currently funded or programmed in the study area. Nearby planned development includes: - UPLAND MANOR Approved for 144 DU with Commercial located north of Rte. 55 in Prince William County, approximately 3/4 mile east of Jefferson Street - DAYCARE CENTER Assumed 120-student facility to be located north of Washington Street, immediately SE of the subject site, existing B-1 use by-right - CROSSROADS VILLAGE CENTER Mixed use development, situated north of Washington Street, approx 1/4 mile west of Jefferson Street. development is proposed to include: Residential - 79 Townhouse DU Hotel - 110 rooms Day Care - assume 120 students Retail - 28,277 GSF Fast Food Restaurants - (2) 3,500 sf w/ Drive-Thru (1) 3,000 sf w/ Drive-Thru Bank - 3,500 sf w/ 3 Drive-Thrus		

It is important for the applicant to provide sufficient information to county and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

Background Traffic Studies Considered	John Marshall Commons TIA (Revised), Pennoni, December 2013 John Marshall Commons Route 55/Piedmont Center Plaza/Gillis Way Roundabout Traffic Study Certification, Pennoni, December 2018
Plan Submission	☐ Master Development Plan (MDP) ☒ Generalized Development Plan (GDP) ☐ Preliminary/Sketch Plan ☐ Other Plan type (Final Site, Subd. Plan)
Additional Issues to be Addressed	☐ Queuing analysis ☐ Actuation/Coordination ☐ Weaving analysis ☐ Merge analysis ☐ Bike/Ped Accommodations ☒ Intersection(s) ☐ TDM Measures ☒ Other Turn-lane warrants (right and left turns) at Site Entrance on Hunting Path Road; existing volume (AM & Midday) at Haymarket Baptist Church (14800 Washington Street) for peak daycare to be provided.

NOTES on ASSUMPTIONS:

VDOT form used for information. VDOT 527 study not required since less than 5,000 VPD.

1. Traffic Counts: 6-9 AM and 4-7 PM at Study Intersections 1, 2, and 3. Additional counts for Washington Street at Church daycare for peak use at drop-off.

2. Peak Hour Factors based on existing counts. Future PHF at 0.92 or existing, whichever is higher, per TOSAM guidelines.

3. Assign growth only for through movements on N. Jefferson St. and E. Washington St. Commercial uses for others assigned with pass-by included. Daily trip rate for townhomes default to PWC DCSM @ 8.0 trips/DU (higher than ITE 10th).

4. TIA to include the following scenarios:
   a) Existing (2019)
   b) Background with Growth and Other Development "No Build" (2028)
   c) 6 Year "Build" (2028)

5. Comparison of proposed Special Permit use to By Right uses (2 scenarios) for trip generation
   Scenario 1 - Office @ 73,000 GSF (assumed 0.35 FAR for Special Use area)
   Scenario 2 - Commercial @ 20,000 GSF, and
   Quality Restaurant @ 10,000 GSF (assumed 0.15 FAR for Special Use area).

SIGNED: _____ DATE: 6-5-19
Applicant or Consultant

PRINT NAME: _____
Applicant or Consultant

It is important for the applicant to provide sufficient information to county and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

Table 2
Trip Generation Comparisions

ITE Land Use (1,2) May 2018	USE	Size	Var.	DAILY (2-way) (3)	AM PEAK HOUR IN	AM PEAK HOUR OUT	AM PEAK HOUR TOTAL	PM PEAK HOUR IN	PM PEAK HOUR OUT	PM PEAK HOUR TOTAL
	Proposed Special Permit Uses									
220	220.1810 Multifamily Housing (Low-Rise) @ 38 DU	38.000	DU	304	6	17	23	15	11	26
	Total Parcel Trip Generation (Weekday Peak)			304	6	17	23	15	11	26

Scenario 1

ITE Land Use (1,2) CODE	USE	Size	Var.	DAILY (2-way)	AM PEAK HOUR IN	AM PEAK HOUR OUT	AM PEAK HOUR TOTAL	PM PEAK HOUR IN	PM PEAK HOUR OUT	PM PEAK HOUR TOTAL
	By-Right Uses									
710	710.183 General Office Building @ 73,000 sf	73.000	ksf e	782	82	13	95	13	71	84
	Scenario 1 Difference from Proposed Special Permit Use			-478	-76	4	-72	2	-60	-58
	Scenario 1 Percentage Difference from Proposed Special Permit Use			-61%	-93%	31%	-76%	15%	-85%	-69%

Scenario 2

ITE Land Use (1,2) CODE	USE	Size	Var.	DAILY (2-way)	AM PEAK HOUR IN	AM PEAK HOUR OUT	AM PEAK HOUR TOTAL	PM PEAK HOUR IN	PM PEAK HOUR OUT	PM PEAK HOUR TOTAL
	By-Right Uses									
820	820.181 Shopping Center @30,000 sf	20.000	ksf e	1,768	69	42	111	72	77	149
931	931.110 Quality Restaurant	10.000	ksf	838	0	7	7	52	26	78
	Scenario 2 Totals			2,606	69	49	118	124	103	227
	Scenario2 Difference from Proposed Special Permit Use			-2,302	-63	-32	-95	-109	-92	-201
	Scenario 2 Percentage Difference from Proposed Special Permit Use			-88%	-91%	-65%	-81%	-88%	-89%	-89%

TRIP RATE SOURCE: Trip Generation Manual (10th Edition), Institute of Transportation Engineers; 2017. No Discounts for pass-by or internal trips.

(1) Average trip rates used, unless noted with "e", then equations used at size shown,
with data set OK for R^2 > .0.75 AND SD > 110% of ave.

(2) ITE Land Code shown as the first 3 digits.

(3) Daily trip rate for Townhomes (LUC: 220) defaulted to PWC DCSM rate @ 8.00 trips/DU (Higher than Trip Generation Manual (10th Edition))

Appendix B

Existing Traffic Counts

Smith Properties - Haymarket
Traffic Impact Statement

Town of Haymarket, Virginia

VANMT19001

June 2019

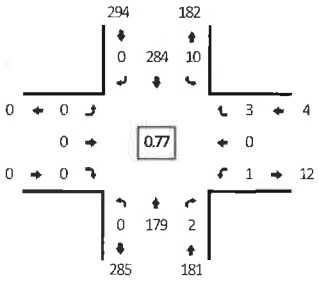
Type of peak hour being reported: Intersection Peak

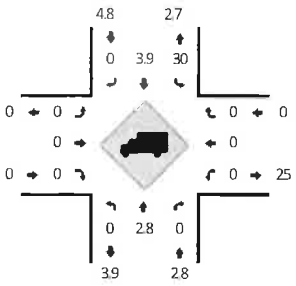
Method for determining peak hour: Total Entering Volume

LOCATION: Jefferson St -- Cheyenne Way
CITY/STATE: Haymarket, VA

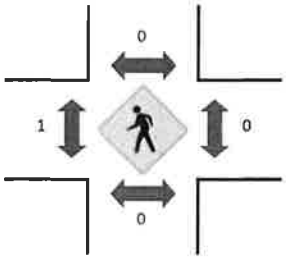
QC JOB #: 14965005
DATE: Thu, May 9 2019

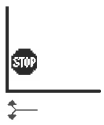
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM

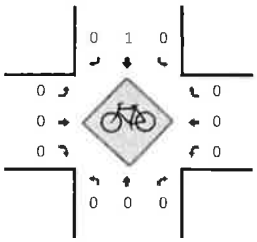


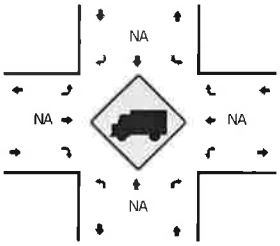


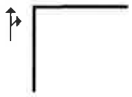
Quality Counts
DATA THAT DRIVES COMMUNITIES

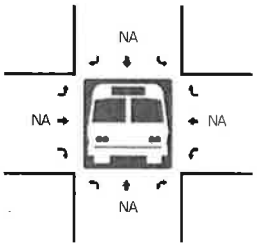












15-Min Count Period Beginning At	Jefferson St (Northbound)				Jefferson St (Southbound)				Cheyenne Way (Eastbound)				Cheyenne Way (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	29	0	0	0	16	0	0	0	0	0	0	1	0	3	0	49	
6:15 AM	0	34	0	0	0	20	0	0	0	0	0	0	0	0	4	0	58	
6:30 AM	0	52	0	0	1	18	0	0	0	0	0	0	2	0	5	0	78	
6:45 AM	0	68	0	0	0	35	0	0	0	0	0	0	1	0	1	0	105	290
7:00 AM	0	41	0	0	0	32	0	0	0	0	0	0	2	0	4	0	79	320
7:15 AM	0	41	0	0	0	30	0	0	0	0	0	0	4	0	5	0	80	342
7:30 AM	0	47	0	0	1	40	0	0	0	0	0	0	2	0	3	0	93	357
7:45 AM	0	45	0	0	3	65	0	0	0	0	0	0	2	0	2	0	117	369
8:00 AM	0	32	0	0	2	54	0	0	0	0	0	0	0	0	1	0	89	379
8:15 AM	0	46	1	0	4	68	0	0	0	0	0	0	0	0	2	0	121	420
8:30 AM	0	47	0	0	1	65	0	0	0	0	0	0	1	0	0	0	114	441
8:45 AM	0	54	1	0	3	97	0	0	0	0	0	0	0	0	0	0	155	479

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	216	4	0	12	388	0	0	0	0	0	0	0	0	0	0	620
Heavy Trucks	0	8	0		0	16	0		0	0	0		0	0	0		24
Pedestrians		0				0				4				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad Stopped Buses																	

Comments:

Report generated on 5/16/2019 11:45 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

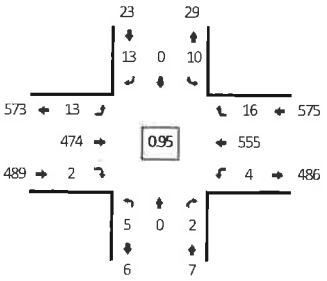
Type of peak hour being reported: Intersection Peak

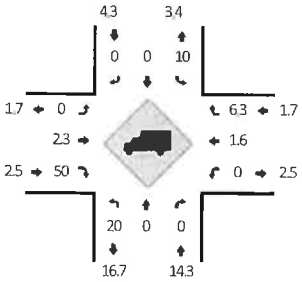
Method for determining peak hour: Total Entering Volume

LOCATION: Madison St/Hunting Path Rd -- Washington St
CITY/STATE: Haymarket, VA

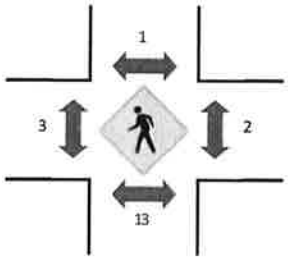
QC JOB #: 14965014
DATE: Thu, May 9 2019

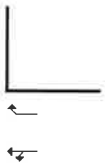
Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

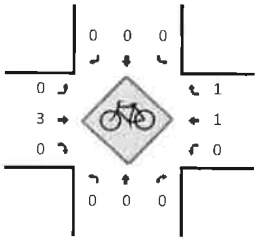


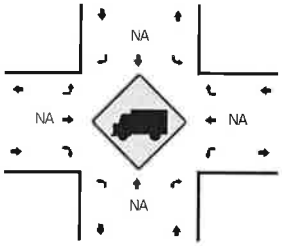


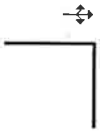
Quality Counts
DATA THAT DRIVES COMMUNITIES

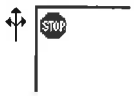


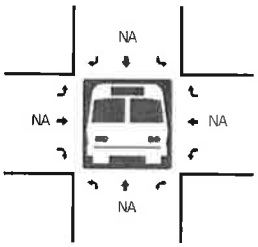












15-Min Count Period Beginning At	Madison St/Hunting Path Rd (Northbound)				Madison St/Hunting Path Rd (Southbound)				Washington St (Eastbound)				Washington St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	0	3	0	1	0	1	0	4	117	0	0	2	118	6	0	253	
4:15 PM	2	0	1	0	3	0	2	0	4	108	1	0	2	130	5	0	258	
4:30 PM	2	0	0	0	2	0	2	0	4	126	1	0	0	146	3	0	286	
4:45 PM	1	0	0	0	2	0	6	0	0	106	0	0	1	142	4	0	262	1059
5:00 PM	0	0	1	0	3	0	3	0	5	134	0	0	1	137	4	0	288	1094
5:15 PM	2	0	1	0	0	1	3	0	2	106	0	0	2	124	1	0	242	1078
5:30 PM	0	0	2	0	4	0	0	0	6	118	1	0	2	108	7	0	248	1040
5:45 PM	0	0	1	0	1	0	5	0	6	118	1	0	1	130	2	0	265	1043
6:00 PM	0	0	1	0	3	0	4	0	6	114	0	0	2	116	8	0	254	1009
6:15 PM	0	0	0	0	1	0	2	0	6	98	3	0	1	110	2	0	223	990
6:30 PM	1	0	0	0	0	0	7	0	6	104	0	0	0	123	5	0	246	988
6:45 PM	0	0	0	0	5	0	8	0	7	84	0	0	1	87	6	0	198	921

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	4	0	12	0	12	0	20	536	0	0	4	548	16	0	1152
Heavy Trucks	0	0	0		0	0	0		0	12	0		0	8	0		20
Pedestrians		20				0				0				0			20
Bicycles	0	0	0		0	0	0		0	1	0		0	0	1		2
Railroad Stopped Buses																	

Comments:

Report generated on 5/16/2019 11:45 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

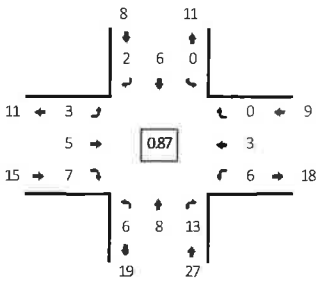
Type of peak hour being reported: Intersection Peak

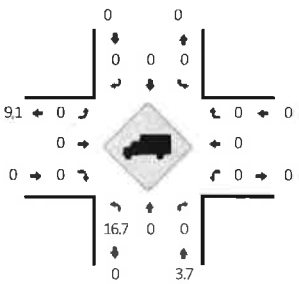
Method for determining peak hour: Total Entering Volume

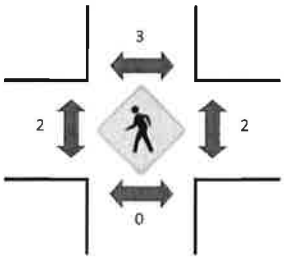
LOCATION: Hunting Path Rd -- Rising Sun Ln
CITY/STATE: Haymarket, VA

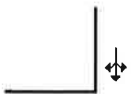
QC JOB #: 14965016
DATE: Thu, May 9 2019

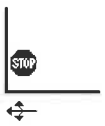
Peak-Hour: 5:30 PM -- 6:30 PM
Peak 15-Min: 6:00 PM -- 6:15 PM

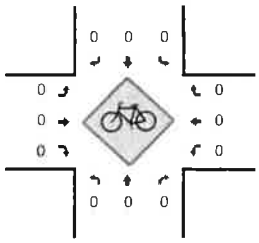


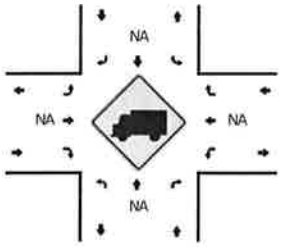


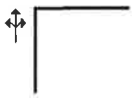


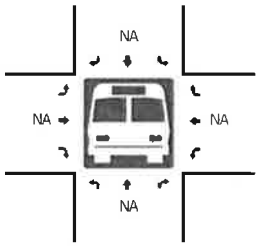












15-Min Count Period Beginning At	Hunting Path Rd (Northbound)				Hunting Path Rd (Southbound)				Rising Sun Ln (Eastbound)				Rising Sun Ln (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	5	2	0	0	2	0	0	1	2	0	0	0	1	0	0	14	
4:15 PM	2	2	1	2	0	1	1	0	0	1	2	0	0	0	0	0	12	
4:30 PM	2	1	1	0	0	0	0	0	3	3	0	0	0	2	0	0	12	
4:45 PM	4	0	0	0	0	2	1	0	2	1	0	0	4	1	0	0	15	53
5:00 PM	3	4	1	0	0	1	0	0	5	0	0	0	1	0	0	0	15	54
5:15 PM	1	0	1	0	0	0	1	0	0	3	1	0	1	1	0	0	9	51
5:30 PM	3	1	3	0	0	3	1	0	1	2	1	0	0	0	0	0	15	54
5:45 PM	1	1	4	0	0	2	0	0	0	2	2	0	4	0	0	0	16	55
6:00 PM	2	5	3	0	0	1	1	0	0	1	2	0	1	1	0	0	17	57
6:15 PM	0	1	3	0	0	0	0	0	2	0	2	0	1	2	0	0	11	59
6:30 PM	1	1	3	0	0	2	1	0	0	0	3	0	1	0	0	0	12	56
6:45 PM	1	5	2	0	0	2	0	0	0	2	1	0	3	1	0	0	17	57

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	20	12	0	0	4	4	0	0	4	8	0	4	4	0	0	68
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				4				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad Stopped Buses																	

Comments:

Report generated on 5/16/2019 11:45 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

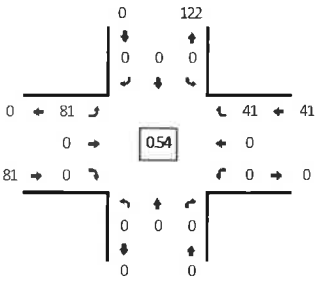
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

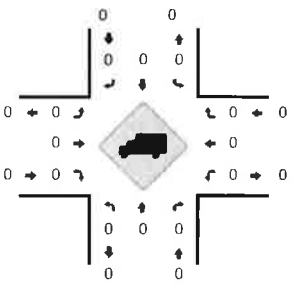
LOCATION: Haymarket Baptist Church East Dwy -- Washington St
CITY/STATE: Haymarket, VA

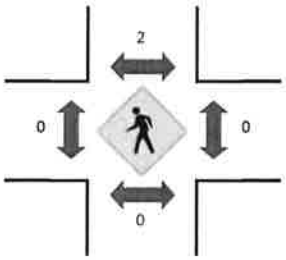
QC JOB #: 14965011
DATE: Thu, May 9 2019

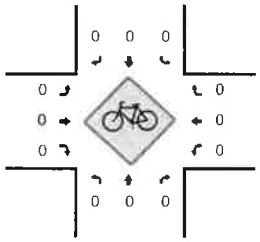
Peak-Hour: 8:15 AM -- 9:15 AM
Peak 15-Min: 8:45 AM -- 9:00 AM

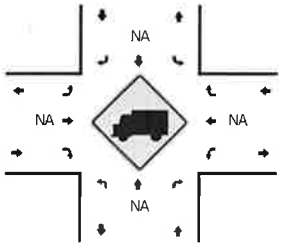


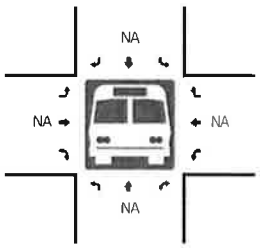
Quality Counts
DATA THAT DRIVES COMMUNITIES











15-Min Count Period Beginning At	Haymarket Baptist Church East Dwy (Northbound)				Haymarket Baptist Church East Dwy (Southbound)				Washington St (Eastbound)				Washington St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
8:00 AM	0	0	0	0	0	0	0	0	3	0	0	0	0	0	1	0	4	
8:15 AM	0	0	0	0	0	0	0	0	12	0	0	0	0	0	3	0	15	
8:30 AM	0	0	0	0	0	0	0	0	9	0	0	0	0	0	1	0	10	
8:45 AM	0	0	0	0	0	0	0	0	36	0	0	0	0	0	20	0	56	85
9:00 AM	0	0	0	0	0	0	0	0	24	0	0	0	0	0	17	0	41	122
9:15 AM	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	110

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	0	0	144	0	0	0	0	0	80	0	224
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				4				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/16/2019 11:45 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

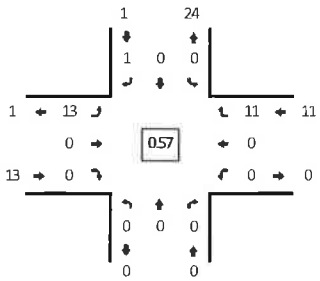
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

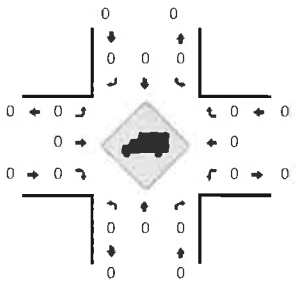
LOCATION: Haymarket Baptist Church East Dwy -- Washington St
CITY/STATE: Haymarket, VA

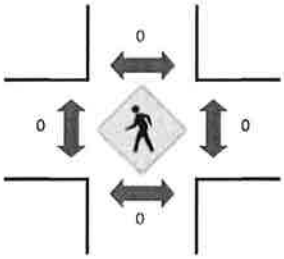
QC JOB #: 14965012
DATE: Thu, May 9 2019

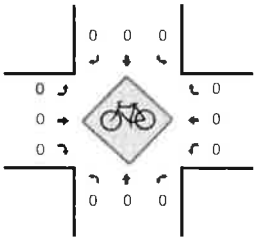
Peak-Hour: 12:30 PM -- 1:30 PM
Peak 15-Min: 12:45 PM -- 1:00 PM

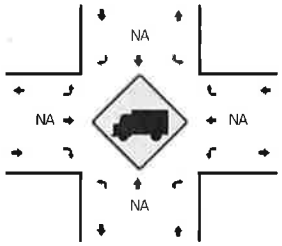


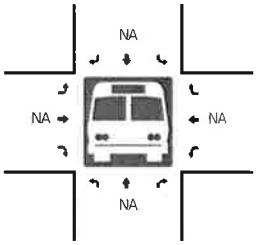
Quality Counts
DATA THAT DRIVES COMMUNITIES











15-Min Count Period Beginning At	Haymarket Baptist Church East Dwy (Northbound)				Haymarket Baptist Church East Dwy (Southbound)				Washington St (Eastbound)				Washington St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
12:30 PM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	4	0	6	
12:45 PM	0	0	0	0	0	0	0	0	7	0	0	0	0	0	4	0	11	
1:00 PM	0	0	0	0	0	0	0	0	4	0	0	0	0	0	2	0	6	
1:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2	25
1:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	20
1:45 PM	0	0	0	0	0	0	0	0	7	0	0	0	0	0	3	0	10	19

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	0	0	28	0	0	0	0	0	16	0	44
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad Stopped Buses																	

Comments:

Report generated on 5/16/2019 11:45 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Appendix C
Crossroads Village Center Trip Generation

ITE Land Use (1,2)					DAILY	AM PEAK HOUR			PM PEAK HOUR		
	USE	Size	Var.		(2-way) [3]	IN	OUT	TOTAL	IN	OUT	TOTAL
	Crossroads Village Center										
220	220.1900 Multifamily Housing (Low-Rise) @ 79 DU	79.000	DU	e	632	13	32	45	32	22	54
565	565.3100 Daycare	120.000	Stud		491	50	44	94	45	50	95
310	310.1100 Hotel	110.000	Rm		920	31	21	52	34	32	66
820	820.189 Shopping Center @ 28,277 sf	28.277	ksf	e	2,547	103	63	166	102	111	213
934	934.110 Fast-Food w/ Drive-Thru	3.000	ksf		1,413	62	59	121	51	47	98
934	934.110 Fast-Food w/ Drive-Thru	3.500	ksf		1,648	72	69	141	59	55	114
934	934.110 Fast-Food w/ Drive-Thru	3.500	ksf		1,648	72	69	141	59	55	114
912	912.210 Drive-In Bank	3.000	Lanes		374	16	10	26	40	41	81
	Total Parcel Trip Generation (Weekday Peak)				9,673	419	367	786	422	413	835

ITE Land Use (1,2)		Percentage reduction			DAILY	AM PEAK HOUR			PM PEAK HOUR		
CODE	USE	Daily	AM	PM	(2-way)	IN	OUT	TOTAL	IN	OUT	TOTAL
	Pass-By Reductions										
820	Shopping Center	25%	25%	25%	637	26	16	42	26	28	54
934	Fast-Food w/ Drive Thru	50%	50%	50%	2,355	103	99	202	85	79	164
912	Drive-In Bank	50%	50%	50%	187	8	5	13	20	21	41
	Crosroads Village Center Prop. Pass-By Trips				-3,179	-137	-120	-257	-131	-128	-259
	Crossroads Village Center Total Weekday External Trips				6,494	282	248	530	291	285	576

TRIP RATE SOURCE: Trip Generation Manual (10th Edition), Institute of Transportation Engineers; 2017. No Discounts for pass-by or internal trips.

(1) Average trip rates used, unless noted with "e", then equations used at size shown,
with data set OK for R^2 > .0.75 AND SD > 110% of ave.

(2) ITE Land Code shown as the first 3 digits.

(3) Daily trip rate for Townhomes (LUC: 220) defaulted to PWC DCSM rate @ 8.00 trips/DU (Higher than Trip Generation Manual (10th Edition))

Appendix D

Synchro Outputs

Smith Properties - Haymarket
Traffic Impact Statement

Town of Haymarket, Virginia

VANMT19001

June 2019

Intersection	
Int Delay, s/veh	0.3

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	179	2	10	284	1	3
Future Vol, veh/h	179	2	10	284	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	232	3	13	369	1	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	235	0	629	234
Stage 1	-	-	-	-	234	-
Stage 2	-	-	-	-	395	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1332	-	446	805
Stage 1	-	-	-	-	805	-
Stage 2	-	-	-	-	681	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1332	-	441	805
Mov Cap-2 Maneuver	-	-	-	-	441	-
Stage 1	-	-	-	-	795	-
Stage 2	-	-	-	-	681	-

Approach	NB	SB	NW
HCM Control Delay, s	0	0.3	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBT	NBR	NWLn1	SBL	SBT
Capacity (veh/h)	-	-	667	1332	-
HCM Lane V/C Ratio	-	-	0.008	0.01	-
HCM Control Delay (s)	-	-	10.4	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↰	↱		↕			↕	
Traffic Vol, veh/h	11	472	1	4	549	12	5	0	2	7	1	14
Future Vol, veh/h	11	472	1	4	549	12	5	0	2	7	1	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	250	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	502	1	4	584	13	5	0	2	7	1	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	597	0	0	503	0	0	1134	1132	503	1120	1119	584
Stage 1	-	-	-	-	-	-	527	527	-	592	592	-
Stage 2	-	-	-	-	-	-	607	605	-	528	527	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	980	-	-	1061	-	-	180	203	569	184	207	512
Stage 1	-	-	-	-	-	-	535	528	-	493	494	-
Stage 2	-	-	-	-	-	-	483	487	-	534	528	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	980	-	-	1061	-	-	171	198	569	180	202	512
Mov Cap-2 Maneuver	-	-	-	-	-	-	171	198	-	180	202	-
Stage 1	-	-	-	-	-	-	526	519	-	485	491	-
Stage 2	-	-	-	-	-	-	465	484	-	523	519	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.1	22.4	17.6
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	214	980	-	-	1061	-	-	309
HCM Lane V/C Ratio	0.035	0.012	-	-	0.004	-	-	0.076
HCM Control Delay (s)	22.4	8.7	0	-	8.4	0	-	17.6
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	6.4

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	5	3	0	3	2	10	7	1	6	4	0
Future Vol, veh/h	10	5	3	0	3	2	10	7	1	6	4	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	6	4	0	4	2	12	8	1	7	5	0

Major/Minor	Major1			Major2			Minor2			Minor1		
Conflicting Flow All	6	0	0	10	0	0	40	39	5	42	38	8
Stage 1	-	-	-	-	-	-	5	5	-	32	32	-
Stage 2	-	-	-	-	-	-	35	34	-	10	6	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1615	-	-	1610	-	-	964	853	1078	961	854	1074
Stage 1	-	-	-	-	-	-	1017	892	-	984	868	-
Stage 2	-	-	-	-	-	-	981	867	-	1011	891	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1615	-	-	1610	-	-	954	847	1078	948	848	1074
Mov Cap-2 Maneuver	-	-	-	-	-	-	954	847	-	948	848	-
Stage 1	-	-	-	-	-	-	1010	892	-	977	862	-
Stage 2	-	-	-	-	-	-	969	861	-	1001	891	-

Approach	NB	SB	SE	NW
HCM Control Delay, s	4	0	9	9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBL	NBT	NBR	NWLn1	SELn1	SBL	SBT	SBR
Capacity (veh/h)	1615	-	-	905	915	1610	-	-
HCM Lane V/C Ratio	0.007	-	-	0.013	0.023	-	-	-
HCM Control Delay (s)	7.2	0	-	9	9	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	253	2	13	382	1	5
Future Vol, veh/h	253	2	13	382	1	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	275	2	14	415	1	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	277	0	719	276
Stage 1	-	-	-	-	276	-
Stage 2	-	-	-	-	443	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1286	-	395	763
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	647	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1286	-	389	763
Mov Cap-2 Maneuver	-	-	-	-	389	-
Stage 1	-	-	-	-	760	-
Stage 2	-	-	-	-	647	-

Approach	NB	SB	NW
HCM Control Delay, s	0	0.3	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBT	NBR	NWLn1	SBL	SBT
Capacity (veh/h)	-	-	658	1286	-
HCM Lane V/C Ratio	-	-	0.01	0.011	-
HCM Control Delay (s)	-	-	10.5	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↰	↱		↕			↕	
Traffic Vol, veh/h	11	722	1	4	844	15	5	0	2	9	1	14
Future Vol, veh/h	11	722	1	4	844	15	5	0	2	9	1	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	250	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	768	1	4	898	16	5	0	2	10	1	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	914	0	0	769	0	0	1715	1715	769	1700	1699	898
Stage 1	-	-	-	-	-	-	793	793	-	906	906	-
Stage 2	-	-	-	-	-	-	922	922	-	794	793	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	746	-	-	845	-	-	71	90	401	73	92	338
Stage 1	-	-	-	-	-	-	382	400	-	331	355	-
Stage 2	-	-	-	-	-	-	324	349	-	381	400	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	746	-	-	845	-	-	65	87	401	71	89	338
Mov Cap-2 Maneuver	-	-	-	-	-	-	65	87	-	71	89	-
Stage 1	-	-	-	-	-	-	371	389	-	322	351	-
Stage 2	-	-	-	-	-	-	306	346	-	368	389	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	51.4	38.1
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	85	746	-	-	845	-	-	134
HCM Lane V/C Ratio	0.088	0.016	-	-	0.005	-	-	0.191
HCM Control Delay (s)	51.4	9.9	0	-	9.3	0	-	38.1
HCM Lane LOS	F	A	A	-	A	A	-	E
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.7

Intersection	
Int Delay, s/veh	6.5

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	13	5	3	0	3	2	10	7	3	6	4	0
Future Vol, veh/h	13	5	3	0	3	2	10	7	3	6	4	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	5	3	0	3	2	11	8	3	7	4	0

Major/Minor	Major1			Major2			Minor2			Minor1		
Conflicting Flow All	5	0	0	8	0	0	41	40	4	45	40	7
Stage 1	-	-	-	-	-	-	4	4	-	35	35	-
Stage 2	-	-	-	-	-	-	37	36	-	10	5	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1616	-	-	1612	-	-	963	852	1080	957	852	1075
Stage 1	-	-	-	-	-	-	1018	892	-	981	866	-
Stage 2	-	-	-	-	-	-	978	865	-	1011	892	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1616	-	-	1612	-	-	952	844	1080	941	844	1075
Mov Cap-2 Maneuver	-	-	-	-	-	-	952	844	-	941	844	-
Stage 1	-	-	-	-	-	-	1009	892	-	972	858	-
Stage 2	-	-	-	-	-	-	964	857	-	999	892	-

Approach	NB	SB	SE	NW
HCM Control Delay, s	4.5	0	9	9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBL	NBT	NBR	NWLn1	SELn1	SBL	SBT	SBR
Capacity (veh/h)	1616	-	-	900	927	1612	-	-
HCM Lane V/C Ratio	0.009	-	-	0.012	0.023	-	-	-
HCM Control Delay (s)	7.2	0	-	9	9	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	253	2	14	382	2	8
Future Vol, veh/h	253	2	14	382	2	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	275	2	15	415	2	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	277	0	721	276
Stage 1	-	-	-	-	276	-
Stage 2	-	-	-	-	445	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1286	-	394	763
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	646	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1286	-	388	763
Mov Cap-2 Maneuver	-	-	-	-	388	-
Stage 1	-	-	-	-	759	-
Stage 2	-	-	-	-	646	-

Approach	NB	SB	NW
HCM Control Delay, s	0	0.3	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBT	NBR	NWLn1	SBL	SBT
Capacity (veh/h)	-	-	639	1286	-
HCM Lane V/C Ratio	-	-	0.017	0.012	-
HCM Control Delay (s)	-	-	10.7	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	3	10	5	1	28
Future Vol, veh/h	14	3	10	5	1	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	3	11	5	1	30

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	46	14	0	0	16	0
Stage 1	14	-	-	-	-	-
Stage 2	32	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	964	1066	-	-	1602	-
Stage 1	1009	-	-	-	-	-
Stage 2	991	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	963	1066	-	-	1602	-
Mov Cap-2 Maneuver	963	-	-	-	-	-
Stage 1	1008	-	-	-	-	-
Stage 2	991	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	0.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	980	1602	-
HCM Lane V/C Ratio	-	-	0.019	0.001	-
HCM Control Delay (s)	-	-	8.7	7.2	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	483	2	27	461	6	17
Future Vol, veh/h	483	2	27	461	6	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	525	2	29	501	7	18

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	527	0	1085	526
Stage 1	-	-	-	-	526	-
Stage 2	-	-	-	-	559	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1040	-	240	552
Stage 1	-	-	-	-	593	-
Stage 2	-	-	-	-	572	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1040	-	231	552
Mov Cap-2 Maneuver	-	-	-	-	231	-
Stage 1	-	-	-	-	570	-
Stage 2	-	-	-	-	572	-

Approach	NB	SB	NW
HCM Control Delay, s	0	0.5	14.5
HCM LOS			B

Minor Lane/Major Mvmt	NBT	NBR	NWLn1	SBL	SBT
Capacity (veh/h)	-	-	405	1040	-
HCM Lane V/C Ratio	-	-	0.062	0.028	-
HCM Control Delay (s)	-	-	14.5	8.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	2	21	12	3	12
Future Vol, veh/h	9	2	21	12	3	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	2	23	13	3	13

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	49	30	0	0	36	0
Stage 1	30	-	-	-	-	-
Stage 2	19	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	960	1044	-	-	1575	-
Stage 1	993	-	-	-	-	-
Stage 2	1004	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	958	1044	-	-	1575	-
Mov Cap-2 Maneuver	958	-	-	-	-	-
Stage 1	991	-	-	-	-	-
Stage 2	1004	-	-	-	-	-

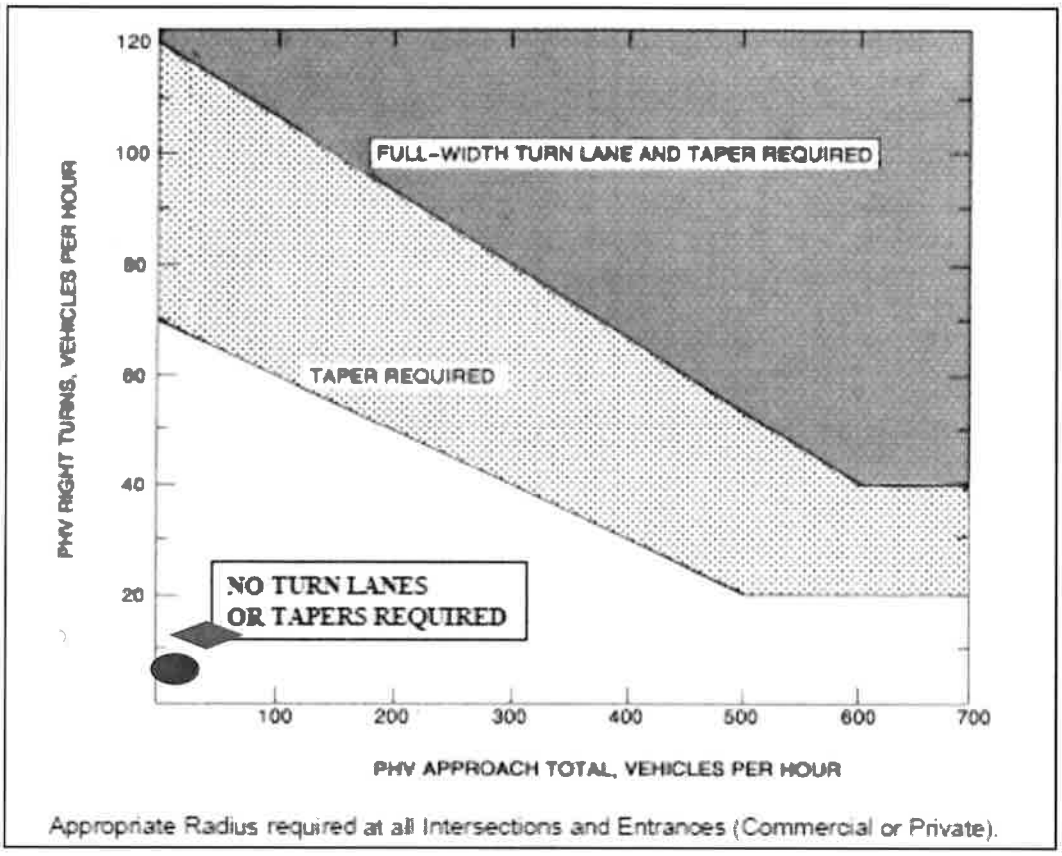
Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	1.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	973	1575	-
HCM Lane V/C Ratio	-	-	0.012	0.002	-
HCM Control Delay (s)	-	-	8.7	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

2028 Total Conditions

Hunting Path Road & Site Entrance

NB Right-Turn Lane



Peak Hour:	AM	PM
Hunting Path Road	*NB*	*NB*
NB Approach Total	**15 VPH**	**33 VPH**
Right Turns	**5 VPH**	**12 VPH**
% Right Turns	**33.3%**	**36.4%**
Right Turn Vol Adjusted?	No	No

Right Turn Lane Warrant - NOT SATISFIED

Source: VDOT RDM, Appendix, F, Figure 3-26 (Rev. 1-15). Calculations by Pennoni

Appendix E
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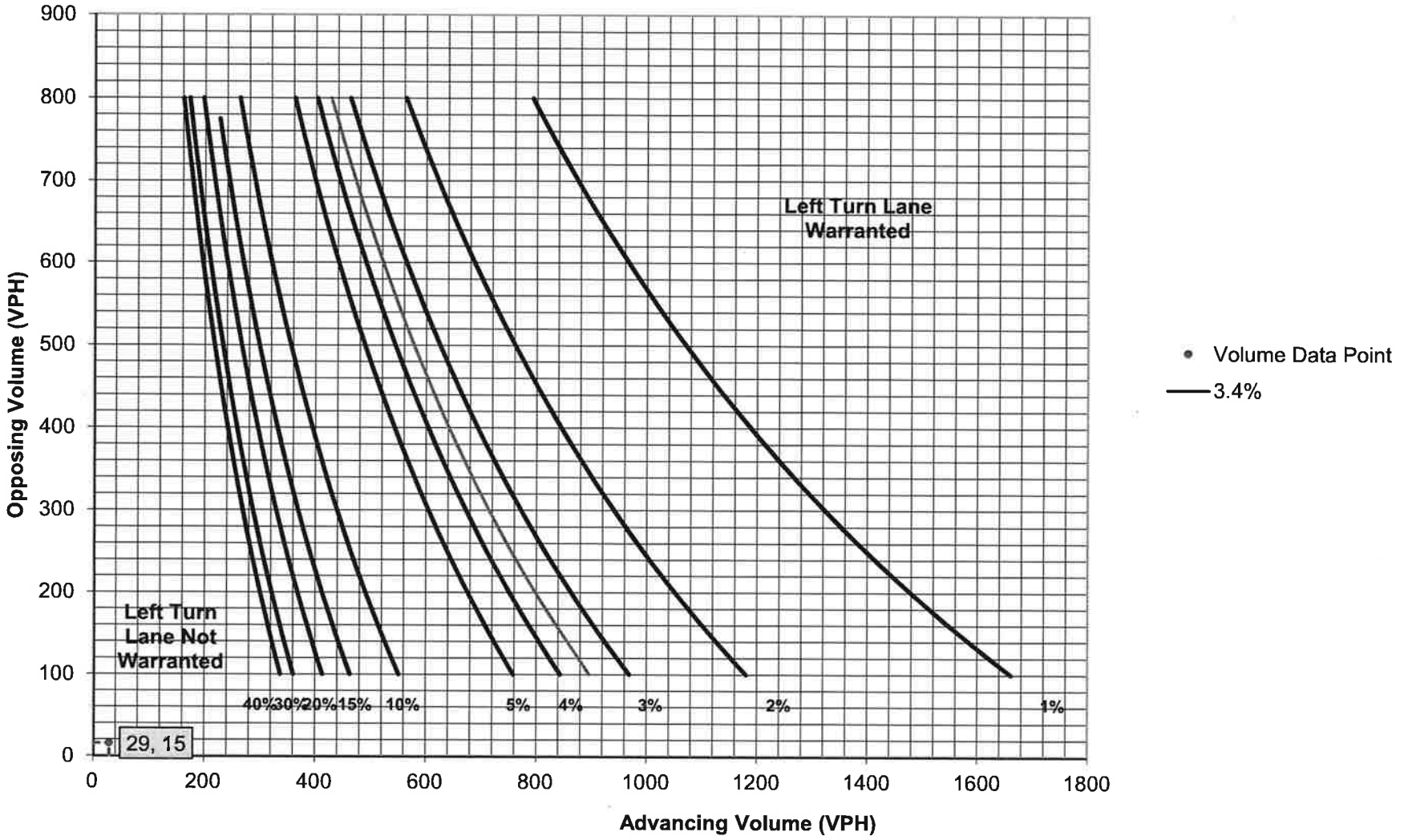
2028 Total Conditions

Hunting Path Road & Site Entrance
SB Left-Turn Lane

(speeds to 35 mph, unsignalized and signalized intersections)

(L = % Left Turns in Advancing Volume)

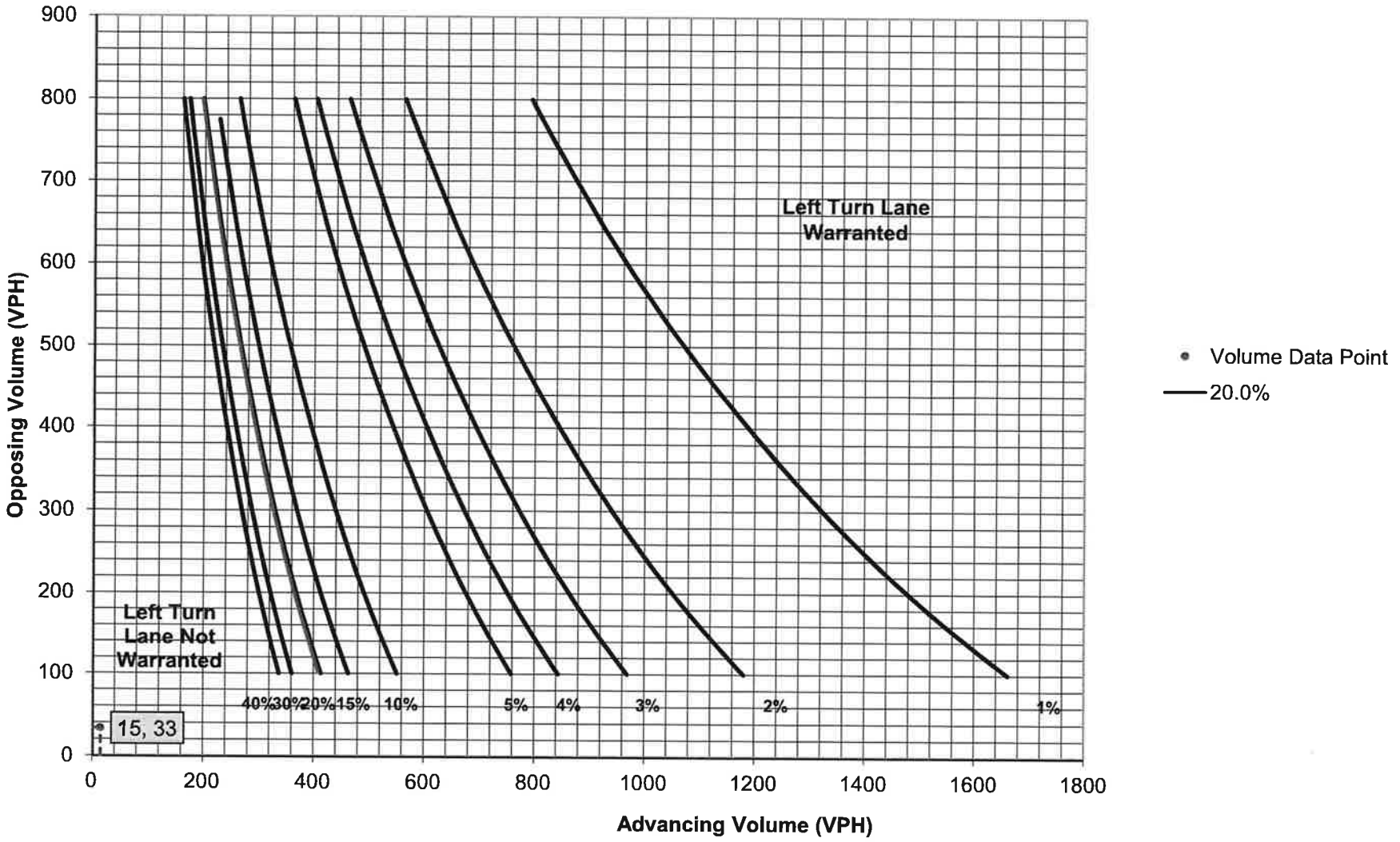


2028 Total Conditions

Hunting Path Road & Site Entrance
SB Left-Turn Lane

(speeds to 35 mph, unsignalized and signalized intersections)

(L = % Left Turns in Advancing Volume)



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PHASE I ENVIRONMENTAL SITE ASSESSMENT

Smith Property
Town of Haymarket, Virginia
ECC Project #18-13435
January 15, 2019

Prepared For: Van Metre Communities, LLC
Attn: Mr. Roy Barnett
P.O. Box 888
Fairfax, Virginia 22038

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FIGURES

APPENDICES

1.0 Executive Summary

1.1 Project Summary

ECC has performed a Phase I Environmental Site Assessment (ESA) in conformance with the scope and limitations of ASTM Practice E 1527-13 of the Smith Property (the *Subject Property*), located in the City of Haymarket, Virginia. Any exceptions to or deletions from this practice are described in Section 2.0 of this report.

ECC did not identify any *recognized environmental conditions* (RECs) in connection with the Subject Property. A summary of environmental concerns for the Subject Property identified during this investigation is provided in Table 1.

Table 1 – Project Summary

	NFA	REC	HREC	CREC	BER	Comments
Site Inspection					✓	ECC observed scattered household trash and debris on the northern portion of the Subject Property.
Interviews	✓					
Historical Use	✓					
State Env. Databases	✓					
Federal Env. Databases	✓					
Surrounding Properties	✓					

NFA = No Further Action
REC = Recognized Environmental Condition
HREC = Historical Recognized Environmental Condition
CREC = Controlled Recognized Environmental Condition
BER = Business Environmental Risk

1.2 Conclusions

The Subject Property is located on the northeast side of Washington Street and the southeast side of Hunting Path Road, in the City of Haymarket, Virginia. The Subject Property consist of 7.11 acres (309,711 square feet) of unimproved, wooded and open land. The Subject Property is planned to be improved with a residential development that includes two roads, 37 residential townhomes, a playground area, and a swimming pool.

Historical resources indicate that the Subject Property has consisted primarily of unimproved land since at least 1933. A residence was constructed on the southern portion of the Subject Property sometime prior to 1933. The residence was razed sometime between 1937 and 1944, and a second structure was constructed on the southeast corner sometime between 1960 and 1962. The second structure was eventually razed in 2011. What appears to be a contractor storage yard occupied the southwest portion of the Subject Property from sometime between 1980 and 1987, until 1995.

ECC observed scattered household trash and debris on the northern portion of the Subject Property. Based on the location and type of trash/debris, some of it may have been dumped on the Subject Property by residents of the north-adjacent town homes. The remainder of the debris was old and partially buried, and was likely dumped on the Subject Property by its past occupants. ECC observed a pile of metal and wood debris on Parcel 7298-90-7006 that appeared to be the remnant of an outbuilding/shed that was previously located on the Subject Property.

No adverse environmental conditions were observed on the Subject Property. No surface staining or evidence of vehicle maintenance were observed on the Subject Property. No groundwater monitoring wells or other evidence of environmental site investigations or environmental remediation were observed on the Subject Property. No aboveground storage tanks (ASTs), evidence of underground storage tanks (USTs), or former monitoring wells were observed on the Subject Property.

1.3 Recommendations

ECC recommends abandoning the potable well in accordance with applicable Prince William County regulations prior to redevelopment.

ECC recommends removing and properly disposing of all scattered debris on the Subject Property prior to redevelopment. If previously undetected drums, USTs, other containers, or discolored or otherwise contaminated soils are encountered during any future excavation or construction development, a determination should be made concerning the origin and nature of the contamination.

2.0 Authorization and Scope of Investigation

Environmental Consultants and Contractors, Inc. (ECC), was authorized by Mr. Derek DiDonato of Van Metre Communities, LLC, to perform a Phase I Environmental Site Assessment (ESA) of the Smith Property (the *Subject Property)*, located in the City of Haymarket, Virginia.

This report was prepared for and may be relied upon by Van Metre Communities, LLC. No other person or organization is entitled to rely upon this report without the written authorization of ECC.

This assessment was conducted in accordance with the American Society for Testing and Materials (ASTM) standard E 1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, and the U.S. Environmental Protection Agency (EPA)'s *All Appropriate Inquiries* rule. The purpose of this Phase I Environmental Site Assessment was to identify suspected areas of contamination on the Subject Property or in the immediate area in accordance with our interpretation of the scope and intent of the "due diligence" clause of Section 107 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA, a.k.a. Superfund) as amended from time to time. Specifically, the scope of services for this Phase I Environmental Site Assessment consisted of the following:

- Visual examination of the Subject Property for evidence of surface dumping, buried debris, and/or environmental misuse.
- Interviews with the User, Key Site Manager, and current and former occupants/owner (if available) of the Subject Property who have good knowledge of the uses and physical characteristics of the Subject Property, and material information regarding the potential for contamination of the Subject Property.
- Review of available historical maps, city directories, and aerial photographs; available information provided by local and other regulatory agencies.
- Review of federal and Commonwealth of Virginia environmental databases for the Subject Property and surrounding properties obtained through Environmental Risk Information Service (ERIS).
- Review of reports of previous environmental investigations of the Subject Property, if available.

This assessment does not address naturally occurring hazardous substances such as elevated heavy metal concentrations in plants and soil, or radon gas accumulations in water. No soil or groundwater sampling was performed due to the preliminary nature of this assessment.

3.0 Site Overview

3.1 Site Description

The Subject Property is located on the northeast side of Washington Street and the southeast side of Hunting Path Road, in the City of Haymarket, Virginia. The Subject Property consist of three parcels identified as Prince William County GPIN Number 7297-99-8684 (addressed 14680 Washington Street), 7397-09-0978 (addressed 14850 Washington Street), and 7298-90-7006 (addressed 6701 Hunting Path Road). The Subject Property is located in ZIP Code area 20169, and is centered at approximately 38° 48' 43" North latitude and 77° 37' 59" West longitude. A Site Location Map and Site Plan are presented as Figure 1 and Figure 2, respectively.

The Subject Property consist of 7.11 acres (309,711 square feet) of unimproved, wooded and open land. The Subject Property is planned to be improved with a residential development that includes two roads, 37 residential townhomes, a playground area, and a swimming pool.

Vehicular access to the Subject Property is provided by a curb cut located on the northeast side of Washington Street. Pedestrian access to the Subject Property is generally unrestricted. Public utilities are not currently available to the Subject Property. Electric, telephone, municipal water and sewer, and natural gas utilities are planned to be extended to the future residential development. Vegetation on the Subject Property consists of grass, trees, and shrubs.

3.2 Site Reconnaissance

ECC representative Brady Riles conducted an inspection of the Subject Property on January 7, 2019. ECC located the perimeter boundary lines of the Subject Property and examined the Subject Property for visible signs of contamination and other adverse environmental conditions. ECC was unaccompanied during the inspection of the Subject Property. Information obtained during the site inspection is presented below. Relevant photographs of the site are presented in Appendix A.

At the time of the inspection, the southern portion of the Subject Property consisted of primarily unimproved, open land. The southern portion of the Subject Property was well maintained and free of trash and debris. ECC observed a potable well on the southern corner of the Subject Property, adjacent to Washington Street. Historical records indicate that two residences were previously located on the southern portion of the Subject Property (at different times). ECC observed uneven ground and some concrete and stone rubble in the vicinity of the former residences. ECC also observed an in-ground concrete structure in the vicinity of the former residences. The concrete structure appears to be located north of the original residence (constructed prior to 1933) and may have been a cistern or old septic system connected to the residence.

The northern portion of the Subject Property consisted of unimproved, wooded land. ECC observed a ruined wooden fence that previously divided Parcel 7397-09-0978 and 7297-99-8684, and a pile of wooden debris at the southern end of the fence line. ECC observed scattered household trash and debris on the northern portion of the Subject Property. Based on the location and type of trash/debris, some of it may have been dumped on the Subject Property by residents of the north-adjacent town homes. The remainder of the debris was old and partially buried by accumulated leaf litter, and was likely dumped on the Subject Property by its past occupants. ECC observed a pile of metal and wood debris on Parcel 7298-90-7006 that appeared to be the remnant of an outbuilding/shed that was previously located on the Subject Property.

ECC observed white and orange boring location markers throughout the Subject Property. The boring markers are likely associated with a geotechnical investigation of the Subject Property.

3.2.1 Aboveground / Underground Storage Tanks (ASTs / USTs)

No ASTs or evidence of former or existing UST systems were observed on the Subject Property.

3.2.2 Surface Dumping & Evidence of Buried Debris

ECC observed trash and miscellaneous debris on the northern portion of the Subject Property. Some of the debris appeared to be relatively modern and may have been dumped on the Subject Property by residents of the north-adjacent town homes. The remainder of the debris was old and partially buried by accumulated leaf litter, and was likely dumped on the Subject Property by its past occupants. ECC observed a pile of metal and wood debris on Parcel 7298-90-7006 that appeared to be the remnant of an outbuilding/shed that was previously located on the Subject Property.

3.2.3 Transformers, Hydraulics, & Other PCB-Containing Equipment

ECC observed two pole-mounted transformers located on the southern property boundary, adjacent to Washington Street. The transformers were in good condition; no evidence of leakage or spillage was observed in the vicinity of the transformers. The transformers were not labeled regarding the presence or absence of PCBs in their dielectric fluid.

3.2.4 On-Site Hazardous/Regulated Substance Identification

No evidence of the use or disposal of hazardous or regulated wastes was observed on the Subject Property. The Subject Property does not generate or dispose of hazardous wastes.

3.2.5 Stained Soil / Pavement & Stressed Vegetation

ECC did not observe stained soil, surface staining, or evidence of vehicle maintenance on the Subject Property. Vegetation observed on the site consists of lawn grasses,

shrubs/undergrowth, and trees. No dead or stressed vegetation was observed on the Subject Property.

3.2.6 Solid Waste & Wastewater

Solid or sanitary waste is not currently generated on the Subject Property.

3.2.7 Floor Drains & Sumps

No floor drains or sumps are currently located on the Subject Property.

3.2.8 Pits, Ponds, & Lagoons

ECC did not observe pits, ponds, or lagoons on the Subject Property. No surface water features are mapped on the Subject Property. ECC observed an ephemeral drainage channel on the eastern portion of the Subject Property. Surface runoff from the site is directed by topography towards storm drains on the roads surrounding the Subject Property.

3.2.9 Potable Wells and Septic Systems

ECC observed a potable well on the southern corner of the Subject Property. The potable well served the former residence on the southern corner of the Subject Property. The potable well did not appear to be properly abandoned.

3.3 Non-Scope Issues

3.3.1 Asbestos-Containing Materials (ACMs)

The U.S. EPA issued a moratorium on the use of friable ACMs in 1978, and there has been a marked decrease in use of non-friable ACMs since 1982. No structures are currently located on the Subject Property. ECC did not observe any debris that my contain ACMs.

3.3.2 Lead-Based Paint (LBP)

No structures are currently located on the Subject Property. ECC did not observe any debris that may contain lead-based paint.

3.3.3 Mold

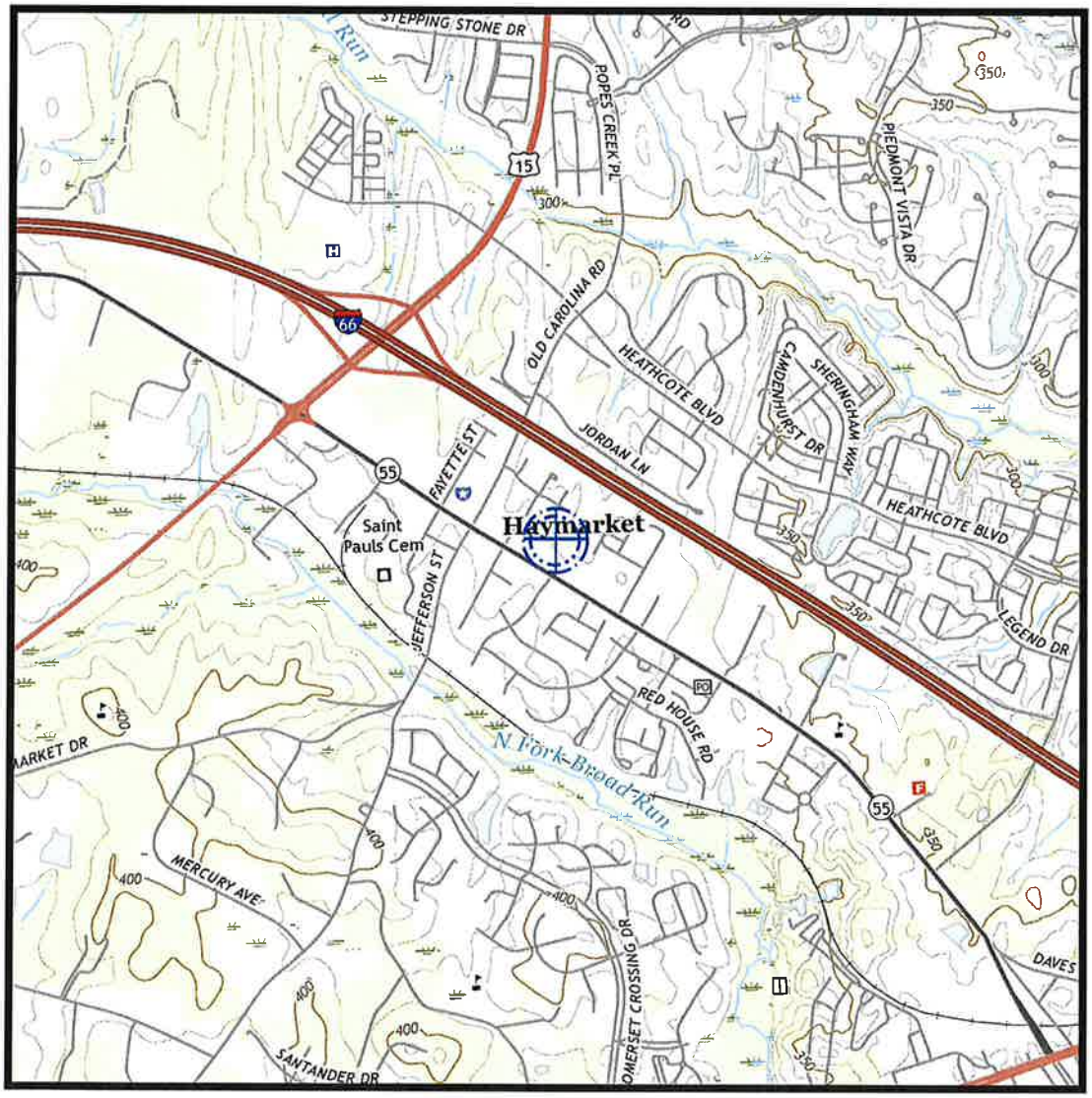
ECC did not observe visual or olfactory evidence of mold or ongoing water intrusion on the Subject Property.

3.4 Surrounding Area

The Subject Property is located in a commercial and residential area in the City of Haymarket, Virginia, and is bordered to the southeast by the Haymarket Baptist Church and a residential development, to the northeast by a residential development, to the northwest by commercial properties (across Hunting Path Road), and to the southwest residential properties (across Washington Street). No gasoline stations or dry cleaners are located in the

vicinity of the Subject Property. ECC observed potable wells on two properties located adjacent to the western corner of the Subject Property.

FIGURE 1



U.S. GEOLOGICAL SURVEY 7.5-MINUTE TOPOGRAPHIC QUADRANGLE MAPPING
THROUGHFARE GAP, VIRGINIA (2016)
GAINESVILLE, VIRGINIA (2016)
CONTOUR INTERVAL = 10 FEET

NORTH

LEGEND
Subject Property Location

TITLE: SITE LOCATION MAP	DATE: 1/15/2019	SCALE: 1 INCH = 2,000 FEET (0 / 2,000 / 4,000)	ecc Environmental Consultants and Contractors, Inc.
PROJECT: SMITH PROPERTY HAYMARKET, PRINCE WILLIAM COUNTY, VIRGINIA 20169	DRAWN BY: BBR		
	APPROVED BY: TMH	PROJECT NUMBER: 18-13435	REGULATORY CASE NUMBER: N/A

FIGURE 2

2018 AERIAL IMAGERY PROVIDED BY GOOGLE EARTH

LEGEND

Subject Property Boundary

TITLE: SITE PLAN	DATE: 1/15/2019	NOT TO SCALE		ecc Environmental Consultants and Contractors, Inc.
PROJECT: SMITH PROPERTY HAYMARKET, PRINCE WILLIAM COUNTY, VIRGINIA 20169	DRAWN BY: BBR			
	APPROVED BY: TMH	PROJECT NUMBER: 18-13435	REGULATORY CASE NUMBER: N/A	

4.0 Interviews and User Provided Information

4.1 Interviews

The User of this Phase I ESA report is Van Metre Communities, LLC. The reason for performing this Phase I ESA is to conduct all appropriate inquiry into the current and historical uses and prior ownership of the Subject Property as a part of a pending real estate transaction. It is ECC's understanding that the User is a prospective purchaser of the Subject Property.

ECC submitted a User Questionnaire and Current Owner Questionnaire to Mr. Derek DiDonato of Van Metre Communities LLC, to obtain additional information regarding the environmental history of the Subject Property and to comply with the EPA's All Appropriate Inquiries (AAI) rule.

Ms. Julie van der Vate, Chief Financial Officer of Van Metre Communities LLC, completed the User Questionnaire and returned it to ECC. Ms. Van der Vate indicated that she was not aware of any activity and use limitations (AULs), land use restrictions, or institutional controls in place on the Subject Property. She indicated that the purchase price being paid for the property reasonably reflects the fair market value of the property. She also indicated that she was not aware of any sources, likely sources of pollution, or other adverse environmental conditions on the Subject Property. No other pertinent information regarding the environmental history of the Subject Property was provided by Ms. Van der Vate. A copy of the User Questionnaire is provided in Appendix B.

ECC has not received a completed copy of the Current Owner Questionnaire as of the date of this report; this is not considered a significant data gap provided the current owner does not have any pertinent information regarding the environmental history of the Subject Property.

4.2 Title Records

Recorded chain of title information and land title records for the Subject Property, to aid in its historical evaluation of the site and to determine if environmental liens or activity or use limitations are currently recorded against the property, were not provided for ECC's review.

4.3 Environmental Liens or Activity and Use Limitations

The User did not provide any information regarding environmental liens or activity and use limitations (AULs) in connection with the Subject Property.

4.4 Specialized Knowledge

The User did not provide any specialized knowledge in connection with the Subject Property.

4.5 Commonly Known or Reasonably Ascertainable Information

It is ECC's understanding that the User provided ECC with all commonly known and reasonably ascertainable information pertaining to the environmental condition of the Subject Property. As required by ASTM E1527-13, if the User is aware of any commonly known or reasonably ascertainable information within the local community about the property that is material to *recognized environmental conditions* in connection with the property, it is the User's responsibility to communicate such information to the environmental professional. The User should do so before the environmental professional conducts the site reconnaissance.

4.6 Valuation Reduction for Environmental Issues

The User did not provide any information suggesting that the value of the Subject Property has decreased due to known or perceived adverse environmental conditions. ECC did not identify any information that would suggest value reduction.

4.7 Owner, Property Manager, and Occupant Information

Prince William County online property records indicate the Subject Property is owned by Benjamin M. Smith Jr. Trustees, addressed 2407 Columbia Pike, Suite 200, Arlington, Virginia 22204. Information regarding property management was not provided to ECC and it is assumed the Subject Property is managed by the owner.

4.8 Previous Investigations

4.8.1 Phase I ESA – September 2014

ECC reviewed a previous Phase I Environmental Site Assessment of Parcel 7397-09-0978, entitled *14850 Washington Street*, dated September 5, 2014, prepared by ECC. ECC observed a potable well in the vicinity of the former residence (located on the southern corner of Parcel 7397-09-0978). ECC observed two debris piles consisting of miscellaneous trash and debris on the central portion of Parcel 7397-09-0978. ECC also observed at least ten 5-gallon buckets and one 55-gallon drum located in the vicinity of the debris piles. The 55-gallon drum was resting on its side and appeared to be full. ECC did not observe evidence of leakage or spillage in the vicinity of the 55-gallon drum. ECC did not identify any *recognized environmental conditions* in connection with the Subject Property, and did not recommend any further environmental investigation at that time. ECC recommended properly disposing of the debris piles on the Subject Property and abandoning the potable well in accordance with applicable regulations.

4.8.2 Phase I ESA – April 2014

ECC reviewed a previous Phase I Environmental Site Assessment of Parcel 7298-90-7006, entitled *6701 Hunting Path Road*, dated April 17, 2014, prepared by ECC. ECC observed a small debris pile consisting of tires, metal, wood scraps, and other miscellaneous debris on the northern portion of the Subject Property. With the exception of the debris pile, site conditions observed by ECC during the previous investigation were generally consistent with

the conditions observed by ECC during the current investigation. ECC did not identify any *recognized environmental conditions* in connection with the Subject Property, and did not recommend any further environmental investigation at that time.

4.9 Local Government Agencies

ECC submitted a Freedom of Information Act (FOIA) request to the Prince William County Health District and the Prince William County Department of Fire and Rescue to obtain information pertaining to ASTs, UST systems, and other environmental concerns associated with the Subject Property. ECC has not received a response to date. Pertinent information will be forwarded to the User upon receipt.

5.0 Historical Use Information

5.1 Maps and Aerial Photographs

ECC personnel accessed the Prince William County Mapper GIS application (http://gisweb.pwcgov.org/webapps/CountyMapper/), the Historic Aerials website (www.historicaerials.com), and Google Earth to review available aerial photographs of the Subject Property and surrounding areas. Aerial photographs taken in 1937, 1952, 1954, 1962, 1963, 1965, 1979, 1980, 1981, 1987, 1989, 1991, 1994, 1995, 1998, 2000, and every year between 2002 and 2017 were reviewed (except 2007, 2010, and 2016).

ECC accessed the Historic Aerials website (http://www.historicaerials.com/) to review available historical topographic maps of the Subject Property and surrounding area. Topographic maps produced in 1933, 1944, 1960, 1969, 1973, 1979, 1984, 1996, and 1998 were available for review. In addition to topographic contours, these maps show surface water features, forests, roadways and railroads, and may also depict orchards, quarries, sand and gravel pits, marshes and potential wetlands, and property improvements. Structures are typically illustrated as solid black or red polygons.

Table 2 provides a summary of information obtained from ECC's review of historical maps and aerial photographs.

Table 2 – Historical Resources Summary

Map/Photo	Subject Property	Adjacent Properties
1933 Topographic Map	The majority of the Subject Property is shown as unimproved land. A structure was located on the southern portion of the Subject Property.	The Subject Property was bordered to the north by unimproved land and to the southeast by a church. The remaining surrounding properties were occupied by buildings in the Town of Haymarket. Washington Street is shown in its approximate current alignment.
1937 Aerial Photograph	The majority of the Subject Property is shown as unimproved land. A residence is shown on the southern portion of the Subject Property, adjacent to Washington Street.	The Subject Property was bordered to the north/ northeast by unimproved land. Washington Street is shown in its approximate current alignment. Residences and commercial buildings are shown along Washington Street.
1944 Topographic Map	The structure on the southern portion of the Subject Property is no longer shown.	No obvious changes from the 1933 topographic map.
1952-1954 Aerial Photographs	No obvious changes from the 1937 aerial photograph.	No obvious changes from the 1937 aerial photograph.
1960 Topographic Map	No obvious changes from the 1944 topographic map.	No obvious changes from the 1944 topographic map.

1962-1965 Aerial Photographs	A residence had been constructed on the southeast corner of the Subject Property, and a structure is shown on the northwest portion of the Subject Property.	No obvious changes from the 1954 aerial photograph.
1969-1973 Topographic Map	Four structures are shown on the southern portion of the Subject Property (along Washington Street). Two outbuildings are shown on the eastern portion of the Subject Property.	No obvious changes from the 1960 topographic map.
1979 Topographic Map	The two outbuildings are no longer shown on the Subject Property.	No obvious changes from the 1973 topographic map.
1979 Aerial Photograph	The structure on the northwest portion of the Subject Property is no longer shown.	No obvious changes from the 1965 aerial photograph.
1981-1980 Aerial Photographs	No obvious changes from the 1979 aerial photograph.	No obvious changes from the 1979 aerial photograph.
1984 Topographic Map	No obvious changes from the 1979 topographic map.	No obvious changes from the 1979 topographic map.
1987 Aerial Photograph	What appears to be a contractor storage yard is visible on the southwest portion of the Subject Property.	No obvious changes from the 1980 aerial photograph.
1989 Aerial Photograph	No obvious changes from the 1987 aerial photograph.	The existing north-adjacent townhome community was being constructed. Hunting Path Road is shown in its approximate current alignment.
1991-1994 Aerial Photograph	No obvious changes from the 1989 aerial photograph.	The existing north-adjacent townhome community had been completed.
1995 Aerial Photograph	The contractor storage yard is no longer shown on the Subject Property.	No obvious changes from the 1994 aerial photograph.
1996-1998 Topographic Maps	No obvious changes from the 1984 topographic map.	The existing north-adjacent townhome community is shown in its current location.
1998-2011 Aerial Photographs	No obvious changes from the 1995 aerial photograph.	No obvious changes from the 1995 aerial photograph.
2012-2018 Aerial Photographs	The residence on the southeast corner of the Subject Property is no longer shown.	No obvious changes from the 2011 aerial photograph.

Historical resources indicate that the Subject Property has consisted primarily of unimproved land since at least 1933. A residence was constructed on the southern portion of the Subject Property sometime prior to 1933. The residence was razed sometime between 1937 and

1944, and a second residence was constructed on the southeast corner sometime between 1960 and 1962. The second residence was eventually razed in 2011. What appears to be a contractor storage yard occupied the southwest portion of the Subject Property from sometime between 1980 and 1987, until 1995.

5.2 City Directories

Environmental Risk Information Service (ERIS) provided ECC with a third-party historical city directory report. ECC reviewed directories produced between 1971 and 2018 for Washington Street and Hunting Path Road. Historical occupants of the Subject Property are listed in Table 3. A copy of the historical city directory report is provided in Appendix C.

Table 3 – Historical City Directories Summary

Address	Date(s)	Occupant(s)
14850 Washington Street (Subject Property)	1971	Not Listed
	1977-1986	Marie Lunsford
	1990	Not Listed
	1995	John W. Brake
	1998-2018	Not Listed
14860 Washington Street (Subject Property)	1971	Not Listed
	1977-1986	Vacant
	1990	Babb R M Inc.
	1995-2018	Not Listed
6701 Hunting Path Road (Subject Property)	1971-2018	Not Listed

The historical city directories indicate that the Subject Property has been occupied by residential tenants from at least 1977 until 1995. The occupant of 14860 Washington Street was listed as "Babb R M Inc.," on the 1990 city directory; details regarding the nature of this business were not provided.

5.3 Historical Fire Insurance Maps

Historical fire insurance maps, such as Sanborn Maps, covering the Subject Property were not available. These maps were produced for urban and some suburban areas, but coverage of the Subject Property and the surrounding area was not available.

6.0 Environmental Setting

6.1 Topography and Drainage

The topography of the Subject Property slopes toward the southeast. According to U.S. Geological Survey (USGS) topographic mapping of the site area (USGS 7.5-minute Topographic Quadrangle Map, *Thoroughfare Gap*, Virginia, 2016), the surface elevation of the Subject Property, relative to mean sea level, ranges from approximately 370 feet on the northwestern portion of the site to approximately 360 feet on the southeastern portion of the site.

The closest mapped surface water body is North Fork Broad Run, mapped approximately 1,820 feet southeast of the Subject Property. Surface water runoff on the Subject Property is directed by topography towards storm water drains located on adjacent streets.

According to the U.S. Fish and Wildlife Service, National Wetlands Inventory, *Wetlands Online Mapper* (http://www.fws.gov/wetlands/data/Mapper.html), no wetlands are mapped on or adjacent to the Subject Property. The closest mapped wetland is a Riverine wetland (North Fork Broad Run; mapping unit R2UBH) located approximately 1,820 feet southeast of the Subject Property.

According to National Flood Insurance Program mapping (U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Insurance Rate Map, Community Panel 51153C0067D, effective January 5, 1995, revised March 18, 2013; and 51153C0059D, effective January 5, 1995, revised June 15, 2017), the Subject Property is mapped in an unshaded portion of Zone X, which is an area outside the 500-year (0.2 percent annual chance) flood plain.

6.2 Geology and Hydrogeology

Geologically, the Subject Property is located in the Culpeper (Triassic) basin, which is a portion of the central Appalachian Piedmont physiographic province. The Culpeper basin is underlain by sedimentary siltstone, sandstone, and conglomerate rocks, which have been intruded by igneous basalt flows in the form of diabase dikes, sills, and stocks. These diabase intrusions have cut through and locally metamorphosed the sedimentary rocks. The degree of metamorphism of the sedimentary rocks decreases with distance from the diabase intrusions. The Culpeper basin is characterized by thin, silty soils with shallow bedrock, resulting in broad expanses of flat and gently rolling hills, locally cut by shallow streams and rivers that reveal the underlying bedrock. Areas of diabase intrusions are characterized by broad hills or very gentle ridges, covered by thin, clayey soils underlain by very shallow bedrock.

As mapped by the U.S. Geological Survey (Geologic Map of the Vienna Quadrangle, Fairfax County, Virginia, 2013), the Subject Property is underlain by the Newark Supergroup (sandstone, undifferentiated; mapping unit *TRs*). This unit is characterized by fine- to

coarse-grained, reddish-brown to gray, primary bedding features such as cross-beds, channel lags, and ripple marks, minor conglomerate, siltstone, and shale beds.

Fractures associated with geologic lineaments are the major hydrogeologic influence in the Culpeper basin. Fractures control flow, storage, and availability of groundwater in the region by providing the most efficient connection within and between the various rock types. Groundwater flow in the Culpeper basin is complicated by the existence of different types of rock with different fracture and bedding plane characteristics.

Groundwater flow predominantly occurs via secondary porosity (along fractures and partings) in weathered rock and in fractures in hard bedrock at greater depths. Primary porosity (interstitial) in the generally thin regolith and highly weathered rock near the surface plays a relatively minor role in groundwater transport due to the fine nature of residual soils in the Culpeper Basin.

Groundwater is typically unconfined and areal variations in groundwater surfaces and flow generally reflect changes in topography and surficial drainage patterns. Flow is controlled by fractures; thus, lineaments tend to indicate the principal flow paths. Overburden in the Culpeper basin is typically too thin to provide significant groundwater storage. Precipitation is the primary means of recharge for aquifers in the Culpeper basin. Recharge occurs by infiltration of precipitation through the unsaturated zone into the aquifer. Infiltration occurs via the thin surficial soils or in the beds of ephemeral or intermittent, runoff-fed, surface water features (perennial surface water features, generally at lower elevations, are likely to be fed significantly by groundwater discharge rather than be sources of recharge). The predominant direction of groundwater flow on the site is expected to be towards the south-southeast (towards North Fork Broad Run).

Potable water in the site area has historically been acquired primarily from private wells. The Triassic sedimentary rocks can be highly productive aquifers, primarily controlled by secondary porosity associated with fracturing along bedding planes. Groundwater production yields typically increase with depth, and public wells in the basin are typically installed to depths ranging from 200 to over 1,000 feet. However, expanding and anticipated development of the region has brought municipal water supplies to the site vicinity. Potable water for the site will reportedly be obtained from the municipal water system.

6.3 Soils

6.3.1 Mapped Soil Units

According to the United States Department of Agriculture's (USDA's) Web Soil Survey (http://websoilsurvey.sc.egov.usda.gov/), the Subject Property is underlain by five soil units. Brief descriptions of these soil units are provided below:

- Arcola silt loam is a well drained soil with slopes ranging from 2 to 7 percent (mapping unit 4B). Materials in the soil are derived from Triassic residuum. Depth to the groundwater table is typically more than 80 inches.

- Arcola-Nestoria complex is a well drained soil with slopes ranging from 7 to 15 percent (mapping unit 5C). The Arcola-Nestoria complex is composed of Arcola and similar soils (50%), Nestoria and similar soils (30%), and minor components (5%). Materials in this soil are derived from Triassic residuum. Depth to the groundwater table is typically more than 80 inches.
- Manassas silt loam is a moderately well drained soil with slopes ranging from 2 to 7 percent (mapping unit 35B). Materials in this soil are derived from Triassic residuum. Depth to the groundwater table is typically about 24 to 36 inches.

6.3.2 Estimated Indoor Radon Concentrations

Radon is a colorless, odorless, radioactive gas derived from radioactive decay of uranium. Certain soils and rocks have a greater potential to cause indoor radon problems than others. A high radon potential is generally a combination of higher uranium content in rocks and soil, thus producing higher concentrations of radon, and high permeability of the soil, which allows the radon gas to flow freely through the soil. Radon gas infiltrates cracks in foundation and basement walls and may accumulate in these closed spaces.

According to the Environmental Protection Agency's (EPA) *Map of Radon Zones* for Virginia, Prince William County is an area of moderate radon potential (Zone 2). Radon concentrations in Zone 2 range from 2.0 picoCuries of radon per liter of air (pCi/L) to 4.0 pCi/L, the EPA action level for indoor radon concentrations. Note that this is a general average from the EPA for all of Prince William County.

The EPA also conducted a study of indoor radon concentrations and catalogued the results by ZIP Code area. However, indoor radon concentrations catalogued by ZIP Code area were not available for ZIP Codes 20169.

7.0 Environmental Database Review

ECC researched available federal and Commonwealth of Virginia environmental databases obtained from Environmental Risk Information Service (ERIS) for information concerning the environmental history of the Subject Property. The database listings were reviewed to determine if the Subject Property or nearby sites are present on regulatory listings of federal or Commonwealth of Virginia government agencies. Database listings are catalogued by radial zones, ranging from the Subject Property to 1.0 mile from the Subject Property. The standard environmental databases searched and their respective radial zones are provided in Table 4. A detailed description of the federal and the Commonwealth of Virginia databases searched is provided in the ERIS Database Report provided in Appendix D.

Table 4 – Environmental Database Summary

Regulatory Database	Search Radius	Subject Property Listed (Yes/No)	# of Sites Within Radius
Federal Databases			
National Priorities List (NPL)	1.0 mile	No	0
Delisted NPL	0.5 mile	No	0
SEMS	0.5 mile	No	0
SEMS Archive	0.5 mile	No	1
CERCLA	0.5 mile	No	1
CERCLA No Further Remedial Action Planned (NFRAP)	0.5 mile	No	1
RCRA Corrective Action (CORRACT)	1.0 mile	No	0
RCRA Transport, Storage, Disposal (TSD)	0.5 mile	No	0
RCRA Generator & Non-Generator Facilities	0.25 mile	No	0
Federal ERNS List	Subject Property	No	0
Federal Brownfields	0.5 mile	No	0
Federal IC/EC	0.5 mile	No	0
Commonwealth of Virginia and Tribal Databases			
Solid Waste Landfill (SWL)	0.5 mile	No	0
Leaking Underground Storage Tanks (LUST)	0.5 mile	No	19
Registered UST/AST	0.25 mile	No	4
Delisted Tanks	0.25 mile	No	0
Voluntary Remediation Program (VRP)	0.5 mile	No	0
Institutional Controls (IC)	0.5 mile	No	0
Additional Environmental Records			
SPILLS	0.125 mile	No	1
Federal Dry Cleaners	0.25 mil	No	0
Commonwealth of Virginia Dry Cleaners	0.25 mile	No	0

7.1 Federal Regulatory Agencies

7.1.1 SEMS and CERCLA Sites

The federal environmental databases did not identify the Subject Property as a SEMS or CERCLA site. The database identified 1 CERCLA/SEMS site within 0.50 mile of the Subject Property. The CERCLA/SEMS site, identified as "Gainsville Elem. Site," addressed 14550 John Marshal Highway, is located approximately 1,105 feet southeast of the Subject Property and is listed as a SEMS Archive, CERCLA, and CERCLA NFRAP (No Further Remedial Action) Site. Based on the NFRAP status of the site, the distance from the Subject Property, and the topographically cross-gradient location of this site relative to the Subject Property, the potential for this SEMS/CERCLA site to impact the Subject Property is negligible.

7.2 Commonwealth of Virginia and Tribal Database Listings

7.2.1 Registered Underground/Aboveground Storage Tank (UST/AST) Listings

The environmental database did not identify the Subject Property as registered UST or AST site. The database identified 4 off-site registered UST sites within 0.25 mile of the Subject Property. Registered UST facilities located within 500 feet of the Subject Property are presented in Table 5.

Table 5 - Registered UST/AST Facilities within 500 feet of the Subject Property

Facility	Address	Approximate Distance / Direction	Tank Information		
			Capacity	Contents	Status
GTE Haymarket Central Office*	6720 Madison Street	470 feet southwest	1 – 550-gal	Diesel	Removed
Gainesville-Haymarket Volunteer Fire Dept.*	14941 Washington Street	485 feet west	1 – 500-gal 1 – 1,000-gal	Diesel Gasoline	Removed Removed
* indicates leaking UST (LUST) site					

Both UST sites located within 500 feet of the Subject Property are listed the locations of leaking underground storage tank (LUST) incidents. Information regarding nearby LUST incidents is provided in Section 7.2.2.

7.2.2 Leaking Underground Storage Tank (LUST) Incidents

The environmental database did not identify the Subject Property as a LUST site. The environmental database identified 19 off-site LUST incidents that occurred within 0.50 mile of the Subject Property. LUST incidents that occurred within 500 feet of the Subject Property are presented in Table 6.

Table 6 – LUST Incidents Located within 500 feet of the Subject Property

Facility	Address	Approximate Distance / Direction	LUST Case No. / Status
VDOT – Washington and Madison Streets	14901 Washington Street	305 feet west	2001-3029
GTE Haymarket	6720 Madison Street	475 feet southwest	1998-3704
Former Gainseville/Haymarket VFD	14941 Washington Street	485 feet west	2013-3113

ECC accessed in-house files and submitted a Freedom of Information Act (FOIA) request to VDEQ to obtain information regarding the LUST incidents located nearest to the Subject Property. Available information is presented below.

- **VDEQ PC No. 2001-3029**, entitled "VDOT - Washington & Madison," located approximately 305 feet west of the Subject Property, references the discovery of a 550-gallon heating oil UST during road widening on Washington Street in the Town of Haymarket. Two samples collected from the bottom of the UST excavation exhibited TPH-DRO concentrations of 166.3 mg/kg and 168.8 mg/kg. The VDEQ closed this case on August 18, 2000. Based on its distance from the Subject Property and the low migration potential of heating oil, the potential for this site to impact the Subject Property appears to be minimal.
- **VDEQ PC No. 1998-3704**, entitled "GTE Haymarket", addressed 6720 Madison Street, located approximately 475 feet southwest of the Subject Property, references the discovery of contamination during the removal of a 1,000-gallon diesel fuel UST. No additional information regarding the extent of contamination was available for review by ECC. However, this PC was closed by the VDEQ on March 1, 1999, a year after it was opened, indicating that the extent of contamination was minimal. Based on its distance from the Subject Property and the cross-gradient location of this site relative to the Subject Property, the potential for this site to impact the Subject Property appears to be minimal.

Based on the distances between the remaining listed LUST incidents and the Subject Property and/or the topographically down- or cross-gradient locations of some of these sites relative to the Subject Property, the potential for the remaining LUST incidents to impact the Subject Property appears to be minimal.

7.3 Additional Environmental Record Sources

In addition to the standard environmental databases required by ASTM and the AAI Rule, ERIS searched additional environmental database resources to further assess environmental concerns in the site vicinity. The additional environmental databases searched and their respective radial zones are provided in the ERIS Database Report included as Appendix D.

7.3.1 SPILLS

The environmental database did not identify the Subject Property as the location of a SPILLS incident. The database identified one off-site SPILLS incidents within 0.125 mile of the Subject Property. The SPILLS incident, identified as "Brave Court Asphalt Millings," addressed 6601 Brave Court, occurred approximately 415 feet northwest of the Subject Property. On June 28, 2017, the VDEQ received a report that a contractor was allowing asphalt millings to pile up in a storm drain while re-paving Brave Court. The VDEQ investigated the report and determined that no corrective action was necessary. Based on the lack of corrective action required and the nature of the incident, this SPILLS incident does not appear to have the potential to impact the Subject Property.

7.4 Unplottable Summary

ERIS provided a listing of 20 sites that could not be accurately plotted due to inaccurate or incomplete address information. The unplottable listings includes 3 ERNS incidents, one HIST MLTS site, one HMIRS site, and 15 SPILLS incidents. Through additional research, ECC either generally or precisely located each site. Two of the ERNS incidents and the majority of the SPILLS incidents involved truck accidents on Interstate 66. None of the unplottable sites appear to reference the Subject Property, and the sites appear to be sufficiently distant from the Subject Property such that they do not have the potential to impact the Subject Property.

7.5 Off-Site Vapor Intrusion/Encroachment Risk

ECC did not identify any off-site properties in the Federal and Commonwealth of Virginia environmental databases that pose a vapor intrusion risk to the Subject Property.

8.0 Limitations

Our professional opinions and judgments have been made based upon the information gathered, our experience in the area with similar projects, and in accordance with generally accepted professional environmental practice under similar circumstances. Conditions observed and described at the Subject Property are representative of conditions at the specified location and on the specific date on which they were observed. The passage of time may result in changing conditions at the site location. Should additional information become available which would affect the status of this report, we reserve the right to amend our opinions and professional judgments.

As with all Phase I Environmental Site Assessments, the level of information obtained is a function of both time and budgetary constraints. Additional information regarding subsurface conditions at the study site could be obtained. Should you desire these services, ECC would be pleased to prepare an appropriate proposal outlining the cost and time frame associated with any additional services.

Should you or designated users of this report have any questions or comments regarding the information contained herein, please feel free to contact this office at (703) 327-2900.

8.1 Data Gaps

During the course of ECC's Phase I Environmental Site Assessment, the following data gap(s) were encountered with respect to the environmental history of the Subject Property:

- Chain of Title or a title abstract was not available for ECC's review. The environmental database did not identify any engineering or institutional controls on the Subject Property. This is not considered a significant data gap, however, ECC recommends conducting a review of any available Chain of Title information for the Subject Property to determine if deed restrictions or environmental liens are associated with the site.
- ECC submitted requests to the Prince William County Health District and the Prince William County Department of Fire and Rescue in an effort to obtain additional information regarding pollution complaints, the presence of underground storage tanks, underground storage tank removals, reports of spills or leaks from underground tanks, or other potential pollution sources on or near the Subject Property. A response from these agencies has not been received to date. This is not considered a significant data gap.

9.0 Environmental Professional Certification

I, William Berger, declare that, to the best of my professional knowledge and belief, I meet the definition of an Environmental Professional as defined in Part 312.10 of 40 CFR 312. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Subject Property. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

William E. Berger
Environmental Professional
will.berger@eccfirst.com

The qualifications of the environmental professional(s) who performed this Phase I ESA are provided in Appendix E.

Appendix A

Photographs of the Subject Property

PHOTO APPENDIX

PHOTO 1: Potable Well on the Subject Property

PHOTO 2: Boring Markers

PHOTO 3: Debris near north-adjacent townhomes

PHOTO 4: Debris adjaent to townhomes

PHOTO 5: Debris on northwest portion of the Subject Property

PHOTO 6: In-Ground Concrete Structure

TITLE: PHOTO PAGE	DATE: 01/15/2019	NO SCALE	ecc Environmental Consultants and Contractors, Inc.
PROJECT: SMITH PROPERTY HAYMARKET, PRINCE WILLIAM COUNTY, VIRGINIA 20169	DRAWN BY: BBR		
	APPROVED BY: TMH	PROJECT NUMBER: 18-13435	REGULATORY CASE NUMBER: N/A

Appendix B

Environmental Questionnaire

Environmental Consultants and Contractors

43045 John Mosby Highway
Chantilly, Virginia 20152
703-327-2900
www.eccfirst.com

All Appropriate Inquiries (AAI) User Questionnaire

In order to qualify for the *Landowner Liability Protections (LLPs)* offered by the Small Business Liability and Relief and Brownfields Revitalization Act of 2001 (the "*Brownfields Amendments*"), the User must provide the following information (if available) to the *environmental professional*. Failure to provide this information could result in a determination that "*all appropriate inquiry*" is not complete.

Property Description or Address: 6701 Hunting Path Road, 14850 and 14860 Washington Street, Haymarket, VA

1. Are you aware of any environmental cleanup liens against the Subject Property that are filed or recorded under federal, state, or tribal law? yes ☐ no ☑

2. Are you aware of any activity and use limitations (AULs), such as engineering controls, land use restrictions, or institutional controls that are in place at the Subject Property and/or have been filed or recorded in a registry under federal, state, or local law? yes ☐ no ☑

3. As the User of this ESA do you have any specialized knowledge or experience related to the Subject Property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the Subject Property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business? yes ☐ no ☑

4. Does the purchase price being paid for this property reasonably reflect the fair market value of the property? yes ☑ no ☐

   If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to exist at the property? yes ☐ no ☐

5. Are you aware of commonly known or reasonably ascertainable information about the Subject Property that would help the environmental professional to identify conditions indicative of releases or threatened releases? yes ☐ no ☑
   For example, as the User:
   a.) Do you know the past uses of the Subject Property? yes ☐ no ☑
   b.) Do you know of specific chemicals that are present or once were present at the site? yes ☐ no ☑
   c.) Do you know of spills or other chemicals releases that have taken place at the property? yes ☐ no ☑
   d.) Do you know of any environmental cleanups that have taken place at the property? yes ☐ no ☑

6. As the User of this Environmental Site Assessment, based on your knowledge and experience related to the Subject Property are there any obvious indicators that point to the presence or likely presence of contamination at the Subject Property. yes ☐ no ☑

Please use this space to provide any additional explanation for "yes" answers: _____

By signing below, I signify that this form has been completed to the best of my knowledge:

Signature: DocuSigned by: Van Metre Communities, L.L.C., by Van Metre Homes, Inc. its Manager Julie VanderVate, CPA 742C6C0CBAB74D9... Date: 1/4/2019

Printed Name: Julie van der Vate

Company: Van Metre Communities, L.L.C. Title: Cheif Financial Officer

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Certificate Of Completion

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Envelope Summary Events	Status	Timestamps
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Certified Delivered	Security Checked	1/4/2019 12:57:12 PM
Signing Complete	Security Checked	1/4/2019 12:57:12 PM
Completed	Security Checked	1/4/2019 12:57:12 PM

Payment Events	Status	Timestamps

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ii. send us an e-mail to vanmetrelegal@vanmetreco.com

Required hardware and software

Operating Systems:	Windows® 2000, Windows® XP, Windows Vista®; Mac OS® X
Browsers:	Final release versions of Internet Explorer® 6.0 or above (Windows only); Mozilla Firefox 2.0 or above (Windows and Mac); Safari™ 3.0 or above (Mac only)
PDF Reader:	Acrobat® or similar software may be required to view and print PDF files
Screen Resolution:	800 x 600 minimum
Enabled Security Settings:	Allow per session cookies

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Appendix C

City Directories

ENVIRONMENTAL RISK INFORMATION SERVICES

CITY DIRECTORY

Project Property:	*Smith Property* *14850 Washington Street* *Haymarket, VA 20169*
Project No:	*18-13435*
Requested By:	*Environmental Consultants + Contractors Inc. (ECC, Inc.)*
Order No:	*20181226055*
Date Completed:	*December 31, 2018*

Environmental Risk Information Services
A division of Glacier Media Inc.
1.866.517.5204 | info@erisinfo.com | erisinfo.com

December 31, 2018
RE: CITY DIRECTORY RESEARCH
Smith Property
14850 Washington Street Haymarket, VA

Thank you for contacting ERIS for an City Directory Search for the site described above. Our staff has conducted a reverse listing City Directory search to determine prior occupants of the subject site and adjacent properties. We have provided the nearest addresses(s) when adjacent addresses are not listed. If we have searched a range of addresses, all addresses in that range found in the Directory are included.

Note: Reverse Listing Directories generally are focused on more highly developed areas. Newly developed areas may be covered in the more recent years, but the older directories will tend to cover only the "central" parts of the city. To complete the search, we have either utilized the ACPL, Library of Congress, State Archives, and/or a regional library or history center as well as multiple digitized directories. These do not claim to be a complete collection of all reverse listing city directories produced.

ERIS has made every effort to provide accurate and complete information but shall not be held liable for missing, incomplete or inaccurate information. To complete this search we used the general range(s) below to search for relevant findings. If you believe there are additional addresses or streets that require searching please contact us at 866-517-5204.

Search Criteria:
14750-14850 of Washington Street
All of Hunting Path Rd

Search Results Summary

Date	Source	Comment
2018	DIGITAL BUSINESS DIRECTORY	
2013	DIGITAL BUSINESS DIRECTORY	
2008	DIGITAL BUSINESS DIRECTORY	
2003	DIGITAL BUSINESS DIRECTORY	
1998	DIGITAL BUSINESS DIRECTORY	
1995	HAINES	
1990	HAINES	
1986	HAINES	
1985	HAINES	
1981	HAINES	
1980	HAINES	
1977	HAINES	
1971	HAINES	

2018 HUNTING PATH RD
SOURCE: DIGITAL BUSINESS DIRECTORY

6735 **KAYES STANLEY F DDS**...*Dentists*

2018 WASHINGTON STREET
SOURCE: DIGITAL BUSINESS DIRECTORY

14604 **QBE LLC**...*Data Processing Software*
14604 **QBE LLC**...*Data Processing Software*
14604 **QBE LLC**...*Data Processing Software*
14710 **HAYMARKET POLICE DEPT**...*Police Departm*
14710 **HAYMARKET POLICE DEPT**...*State Governme*
14800 **HAYMARKET BAPTIST CHURCH**...*Churches*
14800 **HAYMARKET BAPTIST CHURCH**...*Missions*
14800 **HAYMARKET BAPTIST PRE-SCHOOL**...*Schools*
14800 **HAYMARKET BAPTIST PRE-SCHOOL**...*Tutorin*
14840 **VCA ANIMAL HOSPITAL**...*Animal Hospitals*
14840 **VCA ANIMAL HOSPITAL**...*Veterinarians*
14840 **VCA HEALTHY PAWS MEDICAL CTR**...*Animal*
14840 **VCA HEALTHY PAWS MEDICAL CTR**...*Veterin*
14841 **ACIE PLUMBING**...*Plumbing Htg & Air-con*
14841 **ACIE PLUMBING**...*Heating Contractors*
14890 **CRAIG JOHN M**... *Lawyers*
14891 **UPSCALE SECOND**...*Used Merchandise Stor*
14910 **EL BANQUERO WEST RESTAURANT**...*Restaura*
14910 **PIEDMONT BIBLE CHURCH**...*Churches*

2013 HUNTING PATH RD
SOURCE: DIGITAL BUSINESS DIRECTORY

6735 **LESTER PAULA**...*Dental Hygienists*
6735 **STANLEY KAYES PC**...*Dentists*

2013 WASHINGTON STREET
SOURCE: DIGITAL BUSINESS DIRECTORY

14800 **HAYMARKET BAPTIST PRE-SCHOOL**...*Schools*
14840 **VCA HEALTHY PAWS MEDICAL CTR**...*Animal*
14891 **ARTHUR S COURT**...*Pet Shops*
14901 **BB&T**...*Banks*
14901 **BB&T**...*Automated Teller Machines*
14910 **EL BANQUERO WEST RESTAURANT**...*Restaura*

2008 HUNTING PATH RD
SOURCE: DIGITAL BUSINESS DIRECTORY

6735 **STANLEY F KAYES DDS**...*Dentists*

2008 WASHINGTON STREET
SOURCE: DIGITAL BUSINESS DIRECTORY

14550 **PACE PROGRAM WEST**...*Public School*
14800 **HAYMARKET BAPTIST CHURCH**...*Churches*
14800 **HAYMARKET BAPTIST CHURCH**...*Baptist Chu*
14800 **HAYMARKET BAPTIST PRE-SCHOOL**...*Nursery*
14800 **HAYMARKET BAPTIST PRE-SCHOOL**...*Schools*
14840 **HEALTHY PAWS MEDICAL CENTER**...*Veterina*
14840 **HEALTHY PAWS MEDICAL CTR**...*Veterinary*
14841 **WATTS ACM PLUMBING**...*Plumbing Contract*
14841 **WATTS ACM PLUMBING**...*Plumbing Contract*
14851 **LINCOLN MORTGAGE**...*Mortgage Banker/cor*
14851 **STYLE ROOFING**...*Roofg Sheet Met Wk*
14851 **STYLE ROOFING**...*Roofing/siding Contrac*
14890 **RBC MORTGAGE COMPANY**...*Mortgage Banker*
14890 **REALTY 1 INC**...*Real Estate Agent/manag*
14890 **SISTERS TITLE SERVICES LLC**...*Title Abs*
14890 **WESTSTAR MORTGAGE INC**...*Real Estate Lo*
14891 **ABUNDANT LOVE FOR PETS**...*Animal Spc Se*
14891 **WINCREST INTERIORS**...*Interior Decorato*
14901 **B B & T**...*National Coml Banks<*
14901 **B B & T**...*Banks*
14914 **P WS EATERY & DESSERT SHOP**...*Eating Pl*
14914 **P WS EATERY & DESSERT SHOP**...*Restauran*

2003 HUNTING PATH RD
SOURCE: DIGITAL BUSINESS DIRECTORY

6735 KAYES STANLEY F DDS...
6735 WALIA TARAN DDS...

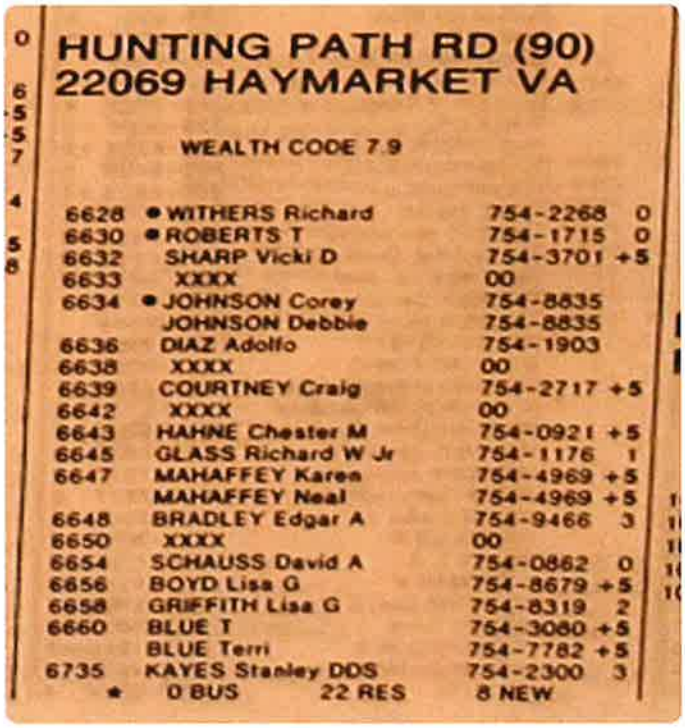
2003 WASHINGTON STREET
SOURCE: DIGITAL BUSINESS DIRECTORY

14800 HAYMARKET BAPTIST CHURCH...
14800 HAYMARKET BAPTIST PRE-SCHOOL...
14840 BULL RUN VETERINARY HOSPITAL...
14840 TOPCHY OLIVIA DVM...
14840 VAUGHN EBALINNA M DVM...
14840 VERNA REBECCA L G DVM...
14841 WATTS ACM PLUMBING...
14890 PRISM MORTGAGE...
14890 REALTY 1 INC...
14891 COLVIN S CARPETS...
14901 FIRST VIRGINIA BANK...
14920 LANES MOTOR SALES...

1998 WASHINGTON STREET
SOURCE: DIGITAL BUSINESS DIRECTORY

14800 HAYMARKET BAPTIST CHURCH...
14800 HAYMARKET BAPTIST PRE SCHOOL...*Element*
14840 BULL RUN VETERINARY HOSPITAL...*Veterin*
14901 FIRST VIRGINIA BANK BANKING OF...*Comme*
14901 FIRST VIRGINIA BANK HAYMARKET OFFICE...
14914 CHRISTIAN FELLOWSHIP CHRUCH...
14920 CHIPS CUSTOMERS...
14920 LANES MOTOR SALES...

1995 HUNTING PATH RD
SOURCE: HAINES



HUNTING PATH RD (90)
22069 HAYMARKET VA

WEALTH CODE 7.9

6628	• WITHERS Richard	754-2268	0
6630	• ROBERTS T	754-1715	0
6632	SHARP Vicki D	754-3701	+5
6633	XXXX	00	
6634	• JOHNSON Corey	754-8835	
	JOHNSON Debbie	754-8835	
6636	DIAZ Adolfo	754-1903	
6638	XXXX	00	
6639	COURTNEY Craig	754-2717	+5
6642	XXXX	00	
6643	HAHNE Chester M	754-0921	+5
6645	GLASS Richard W Jr	754-1176	1
6647	MAHAFFEY Karen	754-4969	+5
	MAHAFFEY Neal	754-4969	+5
6648	BRADLEY Edgar A	754-9466	3
6650	XXXX	00	
6654	SCHAUSS David A	754-0862	0
6656	BOYD Lisa G	754-8679	+5
6658	GRIFFITH Lisa G	754-8319	2
6660	BLUE T	754-3080	+5
	BLUE Terri	754-7782	+5
6735	KAYES Stanley DDS	754-2300	3
•	0 BUS 22 RES	8 NEW	

1995 WASHINGTON STREET
SOURCE: HAINES

WASHINGTON 22069
HAYMARKET VA

WEALTH CODE 7.9

14740	STANLEY Ronnie	754-3406	4
14800	★HAYMARKET BAPT CH	754-8546	
14801	★ADRIENNE REAL EST	754-1166	+5
14821	XXXX	00	
14840	★BULL RUN VET HSPTL	754-4146	1
	★KALBFLEISCH L DDM	754-4146	+5
	★VERNA REBECCA L DVM	754-4146	3
14850	BRAKE John W	754-3577	+5
14890	XXXX	00	
14891	EVANS John	754-8352	
	EVANS Marika	754-8352	
	★RECOLLECTIONS	754-9504	4
14901	★FIRST VA BANK	754-7154	9
	★FIRST VA BK	241-3250	9
14910	MARTIN Michelle	754-8349	+5
	YATES Donald A	754-8524	3
14914	★ADVANCED COMPUTING	754-0606	3
	★MATTHEWS RSTRNT	754-7053	+5
14920	★LANES MOTOR SALES	754-1413	0
14941	BIRD Wanda	754-1044	4
14950	★ASIAN AUTO SALES	754-4062	4
	★E&E AUTO SALES INC	754-1766	1
	★MCCARTY EQUIPMENT	754-7516	8
	★P JAYS	754-1133	3
	★TRI STATE MOTORS	754-9378	+5
	★U S A IMPORTS	754-0823	+5
14951	GILLESPIE Jason	754-3332	+5
	★KRIS&KARENS SUB&SLD	754-9210	4
15000	★COALITION HUNGER	754-1355	3
	★MADISON PARLR HAIR	754-2725	1
15001	★GOSSOM&COSTELLO PVG	754-0830	1
	★GOSSOM&COSTELLO PVG	754-4897	1
	★NORTHN VA SERV CNTR	754-0603	4
	★SOUTHRN PAC CONTRNG	754-7732	0
	★WRIGHTS ENTERPRISES	754-0924	2
15003	★HASTINGS ELECTRONIC	754-8790	3
15017	★CYCLE THERAPY	754-0383	+5
15020	★MONUMENT REAL EST	754-9999	+5
15025	★HAYMARKET TOWN OF	754-4816	
15026	★CHRISTIAN FLWSHP CH	754-9614	+5
	★SITE MANAGEMENT GRP	754-9072	3
15030	★FARR Lynda A	754-4283	0
	★HAIRMARKET	754-8320	0
	★THE HAIRMARKET	754-8320	0
15101	POSEY Robert	754-0742	+5
15151	★84 LUMBER CO	754-7188	1
15161	★ATLANTIC EQP WRHS	754-9305	3
	★B F S I	754-2293	2
	★PRECISION ENGRG&MFG	754-8332	
	★TOWN&CNTRY AUTO SLS	754-1734	2
15175	★CENTURY STAIR CO	385-0078	0
	★CENTURY STAIR CO	754-4163	0
15201	★DEPARTMENT OF TRANS	754-4242	4
	★SHEETZ INCORPORATED	754-8195	+5
15211	XXXX	00	
15241	★WOLF INDS AUCTN INC	754-0768	4
15250	★Q S T O P	754-3718	+5
NO #	SARMIENTO Louis	754-0587	4
★	44 BUS 14 RES	14 NEW	

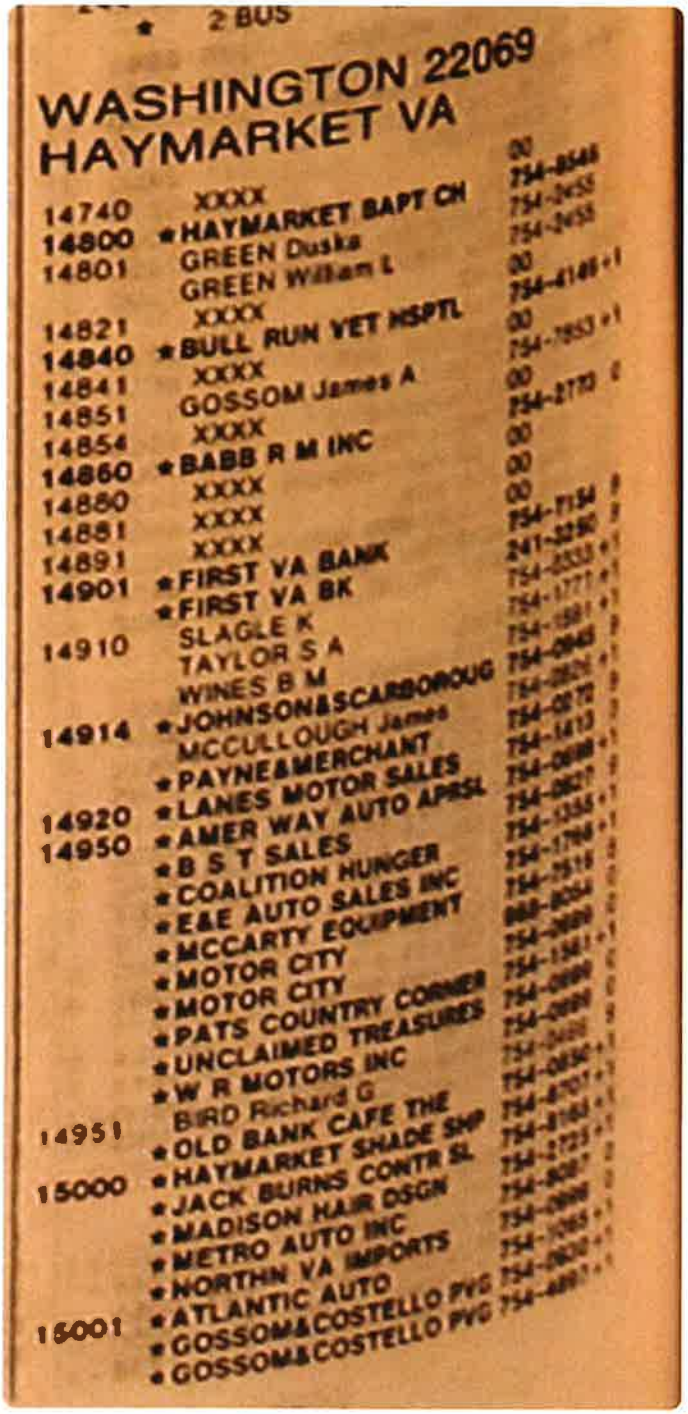
1990 HUNTING PATH RD
SOURCE: HAINES

★ 0 BUS

HUNTING PATH RD (90)
22069 HAYMARKET VA

6628	WITHERS Richard	754-2365
6630	ROBERTS T	754-1715
6633	BOHRER Daniel	754-3550
6634	JOHNSON Corey	754-8635
	JOHNSON Debbie	754-8635
6636	DIAZ Adolfo	754-1933
	DIAZ Adolfo	754-0830
	DIAZ Brenda	754-1933
6638	RUSSELL Barbara	754-1829
	RUSSELL Keith	754-1829
6639	XXXX	00
6642	PEER Michael H	754-4045
	PEER Susan M	754-4045
6645	GLASS Richard W Jr	754-1176
6650	COURTNEY Craig	754-2717
	COURTNEY Kelly	754-2717
6654	SCHAUSS David A	754-0862
6656	TURNER Clarence H	754-1884
★	0 BUS 18 RES	5 NEW

1990 WASHINGTON STREET
SOURCE: HAINES

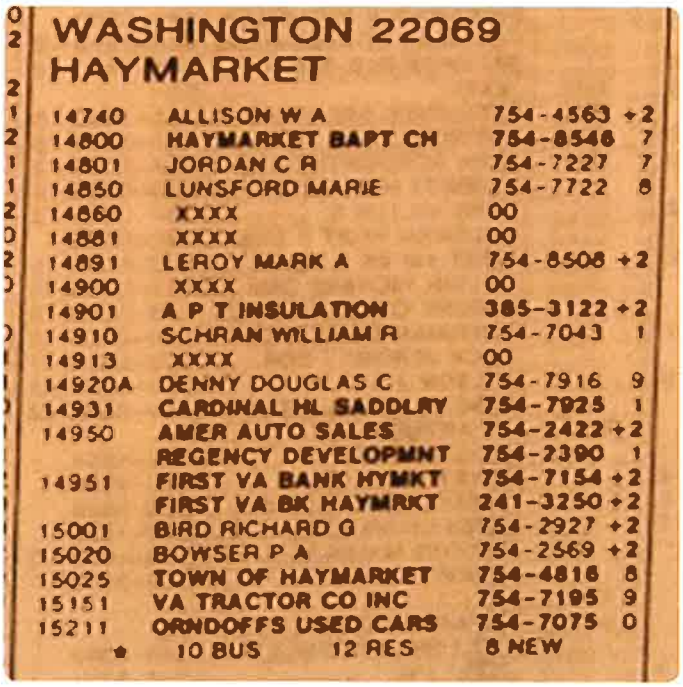


* 2 BUS

WASHINGTON 22069
HAYMARKET VA

14740	XXXX	00
14800	*HAYMARKET BAPT CH	754-8546
14801	GREEN Duska	754-3455
	GREEN William L	754-3455
14821	XXXX	00
14840	*BULL RUN VET HSPTL	754-4146+1
14841	XXXX	00
14851	GOSSOM James A	754-7853+1
14854	XXXX	00
14860	*BABB R M INC	754-2773 6
14880	XXXX	00
14881	XXXX	00
14891	XXXX	00
14901	*FIRST VA BANK	754-7154 9
	*FIRST VA BK	241-3250 9
14910	SLAGLE K	754-2333+1
	TAYLOR S A	754-1771+1
	WINES B M	754-1581+1
14914	*JOHNSON&SCARBOROUG	754-0945 9
	MCCULLOUGH James	754-0826+1
	*PAYNE&MERCHANT	754-0972 9
14920	*LANES MOTOR SALES	754-1413 9
14950	*AMER WAY AUTO APRSL	754-0888+1
	*B S T SALES	754-0821 9
	*COALITION HUNGER	754-1355+1
	*E&E AUTO SALES INC	754-1766+1
	*MCCARTY EQUIPMENT	754-7515 9
	*MOTOR CITY	888-8054 6
	*MOTOR CITY	754-2889 9
	*PATS COUNTRY CORNER	754-1581+1
	*UNCLAIMED TREASURES	754-0999 9
	*W R MOTORS INC	754-0999 9
	BIRD Richard G	754-3455 9
14951	*OLD BANK CAFE THE	754-0850+1
	*HAYMARKET SHADE SHP	754-8701+1
15000	*JACK BURNS CONTR SL	754-8163+1
	*MADISON HAIR DSGN	754-2725+1
	*METRO AUTO INC	754-8087 2
	*NORTHN VA IMPORTS	754-0999 9
	*ATLANTIC AUTO	754-1065+1
15001	*GOSSOM&COSTELLO PVG	754-0820+1
	*GOSSOM&COSTELLO PVG	754-4891+1

1986 WASHING[illegible]
SOURCE: HAINES



WASHINGTON 22069
HAYMARKET

14740	ALLISON W A	754-4563	+2
14800	HAYMARKET BAPT CH	754-8546	7
14801	JORDAN C R	754-7227	7
14850	LUNSFORD MARIE	754-7722	8
14860	XXXX	00	
14881	XXXX	00	
14891	LEROY MARK A	754-8508	+2
14900	XXXX	00	
14901	A P T INSULATION	385-3122	+2
14910	SCHRAN WILLIAM R	754-7043	1
14913	XXXX	00	
14920A	DENNY DOUGLAS C	754-7916	9
14931	CARDINAL HL SADDLRY	754-7925	1
14950	AMER AUTO SALES	754-2422	+2
	REGENCY DEVELOPMNT	754-2390	1
14951	FIRST VA BANK HYMKT	754-7154	+2
	FIRST VA BK HAYMRKT	241-3250	+2
15001	BIRD RICHARD G	754-2927	+2
15020	BOWSER P A	754-2569	+2
15025	TOWN OF HAYMARKET	754-4816	8
15151	VA TRACTOR CO INC	754-7195	9
15211	ORNDOFFS USED CARS	754-7075	0
	* 10 BUS 12 RES	8 NEW	

1985 HUNTING PATH RD
SOURCE: HAINES

STREET NOT LISTED

1981 WASHING
SOURCE: HAINES

WASHINGTON 22069
HAYMARKET

14740	ALLISON W A	754-4563
14800	HAYMARKET BAPT CH	754-8548
14801	JORDAN C R	754-7227
14850	LUNSFORD MARIE	754-7722
14860	XXXX	00
14881	XXXX	00
14891	LEROY MARK A	754-8508
14900	XXXX	00
14901	A P T INSULATION	385-3122
14910	SCHRAN WILLIAM R	754-7043

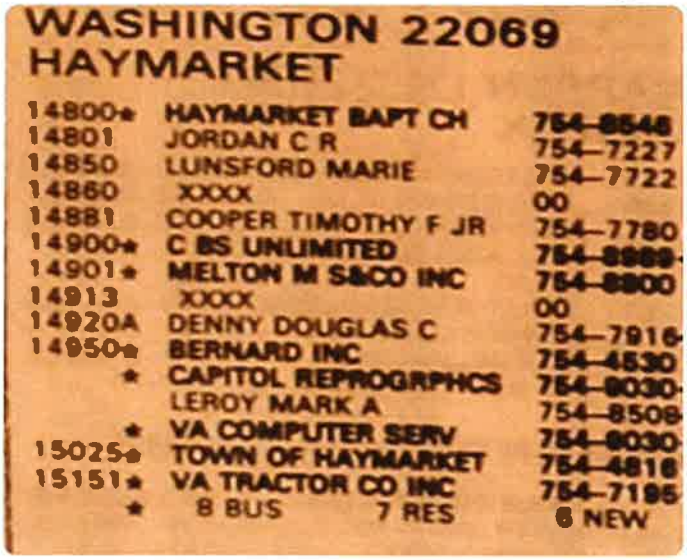
1980 HUNTING PATH RD
SOURCE: HAINES

STREET NOT LISTED

1977 HUNTING PATH RD
SOURCE: HAINES

STREET NOT LISTED

1977 WASHINGTON STREET
SOURCE: HAINES



WASHINGTON 22069
HAYMARKET

14800★	HAYMARKET BAPT CH	754-8546
14801	JORDAN C R	754-7227
14850	LUNSFORD MARIE	754-7722
14860	XXXX	00
14881	COOPER TIMOTHY F JR	754-7780
14900★	C BS UNLIMITED	754-8989
14901★	MELTON M S&CO INC	754-8900
14913	XXXX	00
14920A	DENNY DOUGLAS C	754-7916
14950★	BERNARD INC	754-4530
★	CAPITOL REPROGRPHCS	754-8030
	LEROY MARK A	754-8508
★	VA COMPUTER SERV	754-8030
15025★	TOWN OF HAYMARKET	754-4818
15151★	VA TRACTOR CO INC	754-7195
★	8 BUS 7 RES	6 NEW

1971 HUNTING PATH RD
SOURCE: HAINES

STREET NOT LISTED

1971 WASHINGTON STREET
SOURCE: HAINES

--- END REPORT ---

STREET NOT LISTED

Appendix D

ERIS Database Report

ENVIRONMENTAL RISK INFORMATION SERVICES

DATABASE REPORT

Project Property:	*Smith Property* *14850 Washington Street* *Haymarket VA 20169*
Project No:	*18-13435*
Report Type:	*Database Report*
Order No:	*20181226055*
Requested by:	*Environmental Consultants + Contractors Inc. (ECC, Inc.)*
Date Completed:	*December 28, 2018*

Environmental Risk Information Services
A division of Glacier Media Inc.
1.866.517.5204 | info@erisinfo.com | erisinfo.com

Table of Contents

Executive Summary

Property Information:

Project Property:	*Smith Property* *14850 Washington Street Haymarket VA 20169*
Project No:	*18-13435*
Coordinates:	
Latitude:	*38.811773*
Longitude:	*-77.633244*
UTM Northing:	*4,299,183.39*
UTM Easting:	*271,362.48*
UTM Zone:	*UTM Zone 18S*
Elevation:	*363 FT*

Order Information:

Order No:	*20181226055*
Date Requested:	*December 26, 2018*
Requested by:	*Environmental Consultants + Contractors Inc. (ECC, Inc.)*
Report Type:	*Database Report*

Historicals/Products:

Executive Summary: Report Summary

Database	Searched	Search Radius	Project Property	Within 0.12mi	.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
Standard Environmental Records								
Federal								
NPL	Y	1	0	0	0	0	0	0
PROPOSED NPL	Y	1	0	0	0	0	0	0
DELETED NPL	Y	.5	0	0	0	0	-	0
SEMS	Y	.5	0	0	0	0	-	0
ODI	Y	.5	0	0	0	0	-	0
SEMS ARCHIVE	Y	.5	0	0	1	0	-	1
CERCLIS	Y	.5	0	0	1	0	-	1
IODI	Y	.5	0	0	0	0	-	0
CERCLIS NFRAP	Y	.5	0	0	1	0	-	1
CERCLIS LIENS	Y	PO	0	-	-	-	-	0
RCRA CORRACTS	Y	1	0	0	0	0	0	0
RCRA TSD	Y	.5	0	0	0	0	-	0
RCRA LQG	Y	.25	0	0	0	-	-	0
RCRA SQG	Y	.25	0	0	0	-	-	0
RCRA CESQG	Y	.25	0	0	0	-	-	0
RCRA NON GEN	Y	.25	0	0	0	-	-	0
FED ENG	Y	.5	0	0	0	0	-	0
FED INST	Y	.5	0	0	0	0	-	0
ERNS 1982 TO 1986	Y	PO	0	-	-	-	-	0
ERNS 1987 TO 1989	Y	PO	0	-	-	-	-	0
ERNS	Y	PO	0	-	-	-	-	0
FED BROWNFIELDS	Y	.5	0	0	0	0	-	0
FEMA UST	Y	.25	0	0	0	-	-	0
SEMS LIEN	Y	PO	0	-	-	-	-	0
SUPERFUND ROD	Y	1	0	0	0	0	0	0
State								
SWF/LF	Y	.5	0	0	0	0	-	0

Database	Searched	Search Radius	Project Property	Within 0.12mi	.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
LST	Y	.5	0	3	6	10	-	19
DELISTED LST	Y	.5	0	0	0	0	-	0
UST	Y	.25	0	3	1	-	-	4
AST	Y	.25	0	0	0	-	-	0
DELISTED TANK	Y	.25	0	0	0	-	-	0
INST	Y	.5	0	0	0	0	-	0
VRP	Y	.5	0	0	0	0	-	0
BROWNFIELDS	Y	.5	0	0	0	0	-	0
Tribal								
INDIAN LUST	Y	.5	0	0	0	0	-	0
INDIAN UST	Y	.25	0	0	0	-	-	0
DELISTED ILST	Y	.5	0	0	0	0	-	0
DELISTED IUST	Y	.25	0	0	0	-	-	0
County	*No County standard environmental record sources available for this State.*							
Additional Environmental Records								
Federal								
FINDS/FRS	Y	PO	0	-	-	-	-	0
TRIS	Y	PO	0	-	-	-	-	0
HMIRS	Y	.125	0	0	-	-	-	0
NCDL	Y	PO	0	-	-	-	-	0
TSCA	Y	.125	0	0	-	-	-	0
HIST TSCA	Y	.125	0	0	-	-	-	0
FTTS ADMIN	Y	PO	0	-	-	-	-	0
FTTS INSP	Y	PO	0	-	-	-	-	0
PRP	Y	PO	0	-	-	-	-	0
SCRD DRYCLEANER	Y	.5	0	0	0	0	-	0
ICIS	Y	PO	0	-	-	-	-	0
FED DRYCLEANERS	Y	.25	0	0	0	-	-	0
DELISTED FED DRY	Y	.25	0	0	0	-	-	0
FUDS	Y	1	0	0	0	0	0	0
MLTS	Y	PO	0	-	-	-	-	0
HIST MLTS	Y	PO	0	-	-	-	-	0
MINES	Y	.25	0	0	0	-	-	0
ALT FUELS	Y	.25	0	0	0	-	-	0
SSTS	Y	.25	0	0	0	-	-	0
PCB	Y	.5	0	0	0	0	-	0
State								
SPILLS	Y	.125	0	1	-	-	-	1

Database	Searched	Search Radius	Project Property	Within 0.12mi	.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
PC SPILLS	Y	.125	0	0	-	-	-	0
DRYCLEANERS	Y	.25	0	0	0	-	-	0

Tribal ***No Tribal additional environmental record sources available for this State.***

County ***No County additional environmental record sources available for this State.***

Total:	0	7	10	10	0	27

*** PO – Property Only***
*** 'Property and adjoining properties' database search radii are set at 0.25 miles.***

Executive Summary: Site Report Summary - Project Property

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number

No records found in the selected databases for the project property.

Executive Summary: Site Report Summary - Surrounding Properties

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number
1	LST	VDOT - Washington and Madison Streets	14901 Washington St Haymarket VA 20169	WSW	0.07 / 354.69	7	20
			***CEDS Fac ID	Case Status:*** 200000196184 | Closed			
2	LST	Former Gainesville/Haymarket VFD	14941 Washington St Haymarket VA 20169	W	0.08 / 446.69	4	20
			***CEDS Fac ID	Case Status:*** 200000078036 | Closed			
2	UST	Gainesville-Haymarket Volunteer Fire Dept	14941 Washington St Haymarket VA 20169	W	0.08 / 446.69	4	20
			***Facility ID	Facility Active	Active UST	Inactive UST:*** 3008754 | No | 0 | 2 ***Tank No	Tank Status:*** R2 | REM FROM GRD, R1 | REM FROM GRD			
3	LST	GTE Haymarket	6720 Madison St Haymarket VA 22069	WSW	0.09 / 476.56	5	22
			***CEDS Fac ID	Case Status:*** 200000079238 | Closed			
3	UST	GTE HAYMARKET CENTRAL OFFICE	6720 Madison St Haymarket VA 22069	WSW	0.09 / 476.56	5	23
			***Facility ID	Facility Active	Active UST	Inactive UST:*** 3013098 | No | 0 | 1 ***Tank No	Tank Status:*** R1 | REM FROM GRD			
4	SPILLS	Brave Court Asphalt Millings	6601 Brave Court Haymarket VA 20169	NNW	0.09 / 483.22	-4	24
			***IR No	Status	Closure Date:*** 2017-N-3868 | Closed | 6/29/2017		
5	UST	HAYMARKET GROCERY	15000 Washington St Haymarket VA 22069	WNW	0.11 / 584.12	3	24
			***Facility ID	Facility Active	Active UST	Inactive UST:*** 3021005 | No | 0 | 2 ***Tank No	Tank Status:*** G2 | CLS IN GRD, G1 | CLS IN GRD			
6	LST	Heritage Realty of Haymarket	15030 Washington St Haymarket VA 20169	WNW	0.16 / 843.63	5	26
			***CEDS Fac ID	Case Status:*** 200000212779 | Closed			
7	LST	Hunt Complaint	6751 Madison St Haymarket VA 20169	SW	0.16 / 853.30	0	27
			***CEDS Fac ID	Case Status:*** 200000185703 | Closed			
8	LST	Jordan Lane Development LLC Property	14850 Jordan Ln Haymarket VA 20169	NNE	0.18 / 926.45	-6	27
			***CEDS Fac ID	Case Status:*** 200000859048 | Closed			
9	CERCLIS	GAINSVILLE ELEM. SITE	14550 JOHN MARSHAL HIGHWAY HAYMARKET VA 22069	SE	0.20 / 1,048.91	3	27
9	CERCLIS NFRAP	GAINSVILLE ELEM. SITE	14550 JOHN MARSHAL HIGHWAY HAYMARKET VA 22069	SE	0.20 / 1,048.91	3	29

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number
9	SEMS ARCHIVE	GAINSVILLE ELEM. SITE	14550 JOHN MARSHAL HIGHWAY HAYMARKET VA 22069	SE	0.20 / 1,048.91	3	31
10	LST	McAbee Barbara M Property	14512 John Marshall Hwy Haymarket VA 20169	SE	0.20 / 1,072.68	3	31
			***CEDS Fac ID	Case Status:*** 200000850982	Closed		
11	LST	Pace West (Gainesville) Elementary School	14550 John Marshall Hwy Gainsville VA 20155	SE	0.23 / 1,210.86	1	31
			***CEDS Fac ID	Case Status:*** 200000078034	Closed		
11	LST	Pace West Gainesville Elementary School	14550 John Marshall Hwy Gainsville VA 20155	SE	0.23 / 1,210.86	1	32
			***CEDS Fac ID	Case Status:*** 200000078034	Closed		
11	UST	PWCS Pace West	14550 John Marshall Hwy Gainsville VA 20155	SE	0.23 / 1,210.86	1	32
			***Facility ID	Facility Active	Active UST	Inactive UST:*** 3022838	No	0	3 ***Tank No	Tank Status:*** 0006	REM FROM GRD, 0005	REM FROM GRD, 0007	REM FROM GRD			
12	LST	Nosek Valerie Residence	14985 Walter Robinson Ln Haymarket VA 20169-2955	N	0.34 / 1,806.02	2	35
			***CEDS Fac ID	Case Status:*** 200000848501	Closed		
13	LST	Q Stop 616	15250 Washington St Haymarket VA 20169	WNW	0.44 / 2,321.30	7	35
			***CEDS Fac ID	Case Status:*** 200000193814	Closed		
13	LST	Holladays Market	15250 Washington St Haymarket VA 20169	WNW	0.44 / 2,321.30	7	35
			***CEDS Fac ID	Case Status:*** 200000193814	Closed		
13	LST	Quarles - Q Stop 616	15250 Washington St Haymarket VA 20169	WNW	0.44 / 2,321.30	7	36
			***CEDS Fac ID	Case Status:*** 200000193814	Closed		
13	LST	Quarles - Q Stop 116	15250 Washington St Haymarket VA 20169	WNW	0.44 / 2,321.30	7	36
			***CEDS Fac ID	Case Status:*** 200000193814	Closed		
14	LST	MIFCO Station 3008861 former	15251 Washington St Haymarket VA 22069	WNW	0.44 / 2,330.41	7	36
			***CEDS Fac ID	Case Status:*** 200000076434	Closed		
14	LST	MIFCO 3008861 former	15251 Washington St Haymarket VA 22069	WNW	0.44 / 2,330.41	7	36
			***CEDS Fac ID	Case Status:*** 200000076434	Closed		
15	LST	Mullen Walter Property	14522 John Marshall Hwy Gainesville VA 20155	SE	0.45 / 2,363.42	-7	37
			***CEDS Fac ID	Case Status:*** 200000851110	Closed		
16	LST	Sheetz 205	15315 Washington St Haymarket VA 20169	WNW	0.48 / 2,518.77	8	37

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number
			CEDS Fac ID **|** ***Case Status:*** 200000074764	Closed			
16	LST	Sheetz 205	15315 Washington St Haymarket VA 20169	WNW	0.48 / 2,518.77	8	37
			CEDS Fac ID **|** ***Case Status:*** 200000074764	Closed			

Executive Summary: Summary by Data Source

Standard

Federal

SEMS ARCHIVE - SEMS List 8R Archive Sites

A search of the SEMS ARCHIVE database, dated Aug 13, 2018 has found that there are 1 SEMS ARCHIVE site(s) within approximately 0.50 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
GAINSVILLE ELEM. SITE	14550 JOHN MARSHAL HIGHWAY HAYMARKET VA 22069	SE	0.20 / 1,048.91	9

CERCLIS - Comprehensive Environmental Response, Compensation and Liability Information System - CERCLIS

A search of the CERCLIS database, dated Oct 25, 2013 has found that there are 1 CERCLIS site(s) within approximately 0.50 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
GAINSVILLE ELEM. SITE	14550 JOHN MARSHAL HIGHWAY HAYMARKET VA 22069	SE	0.20 / 1,048.91	9

CERCLIS NFRAP - CERCLIS - No Further Remedial Action Planned

A search of the CERCLIS NFRAP database, dated Oct 25, 2013 has found that there are 1 CERCLIS NFRAP site(s) within approximately 0.50 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
GAINSVILLE ELEM. SITE	14550 JOHN MARSHAL HIGHWAY HAYMARKET VA 22069	SE	0.20 / 1,048.91	9

State

LST - Leaking Petroleum Storage Tanks

A search of the LST database, dated Nov 2, 2018 has found that there are 19 LST site(s) within approximately 0.50 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
VDOT - Washington and Madison Streets	14901 Washington St Haymarket VA 20169	WSW	0.07 / 354.69	1
	***CEDS Fac ID** | **Case Status**: 200000196184 | Closed*			
Former Gainesville/Haymarket VFD	14941 Washington St Haymarket VA 20169	W	0.08 / 446.69	2

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
	***CEDS Fac ID	Case Status**: 200000078036	Closed*			
GTE Haymarket	6720 Madison St Haymarket VA 22069	WSW	0.09 / 476.56	3
	***CEDS Fac ID	Case Status**: 200000079238	Closed*			
Heritage Realty of Haymarket	15030 Washington St Haymarket VA 20169	WNW	0.16 / 843.63	6
	***CEDS Fac ID	Case Status**: 200000212779	Closed*			
McAbee Barbara M Property	14512 John Marshall Hwy Haymarket VA 20169	SE	0.20 / 1,072.68	10
	***CEDS Fac ID	Case Status**: 200000850982	Closed*			
Pace West (Gainesville) Elementary School	14550 John Marshall Hwy Gainsville VA 20155	SE	0.23 / 1,210.86	11
	***CEDS Fac ID	Case Status**: 200000078034	Closed*			
Pace West Gainesville Elementary School	14550 John Marshall Hwy Gainsville VA 20155	SE	0.23 / 1,210.86	11
	***CEDS Fac ID	Case Status**: 200000078034	Closed*			
Nosek Valerie Residence	14985 Walter Robinson Ln Haymarket VA 20169-2955	N	0.34 / 1,806.02	12
	***CEDS Fac ID	Case Status**: 200000848501	Closed*			
Q Stop 616	15250 Washington St Haymarket VA 20169	WNW	0.44 / 2,321.30	13
	***CEDS Fac ID	Case Status**: 200000193814	Closed*			
Holladays Market	15250 Washington St Haymarket VA 20169	WNW	0.44 / 2,321.30	13
	***CEDS Fac ID	Case Status**: 200000193814	Closed*			
Quarles - Q Stop 616	15250 Washington St Haymarket VA 20169	WNW	0.44 / 2,321.30	13
	***CEDS Fac ID	Case Status**: 200000193814	Closed*			
Quarles - Q Stop 116	15250 Washington St Haymarket VA 20169	WNW	0.44 / 2,321.30	13
	***CEDS Fac ID	Case Status**: 200000193814	Closed*			
MIFCO 3008861 former	15251 Washington St Haymarket VA 22069	WNW	0.44 / 2,330.41	14
	***CEDS Fac ID	Case Status**: 200000076434	Closed*			
MIFCO Station 3008861 former	15251 Washington St Haymarket VA 22069	WNW	0.44 / 2,330.41	14
	***CEDS Fac ID	Case Status**: 200000076434	Closed*			
Sheetz 205	15315 Washington St Haymarket VA 20169	WNW	0.48 / 2,518.77	16

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
	***CEDS Fac ID	Case Status:*** *200000074764	Closed*			
Sheetz 205	15315 Washington St Haymarket VA 20169	WNW	0.48 / 2,518.77	16
	***CEDS Fac ID	Case Status:*** *200000074764	Closed*			

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
Hunt Complaint	6751 Madison St Haymarket VA 20169	SW	0.16 / 853.30	7
	***CEDS Fac ID	Case Status:*** *200000185703	Closed*			
Jordan Lane Development LLC Property	14850 Jordan Ln Haymarket VA 20169	NNE	0.18 / 926.45	8
	***CEDS Fac ID	Case Status:*** *200000859048	Closed*			
Mullen Walter Property	14522 John Marshall Hwy Gainesville VA 20155	SE	0.45 / 2,363.42	15
	***CEDS Fac ID	Case Status:*** *200000851110	Closed*			

UST - Underground Storage Tanks

A search of the UST database, dated Nov 2, 2018 has found that there are 4 UST site(s) within approximately 0.25 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
Gainesville-Haymarket Volunteer Fire Dept	14941 Washington St Haymarket VA 20169	W	0.08 / 446.69	2
	***Facility ID	Facility Active	Active UST	Inactive UST:*** *3008754	No	0	2* ***Tank No	Tank Status:*** *R2	REM FROM GRD, R1	REM FROM GRD*			
GTE HAYMARKET CENTRAL OFFICE	6720 Madison St Haymarket VA 22069	WSW	0.09 / 476.56	3
	***Facility ID	Facility Active	Active UST	Inactive UST:*** *3013098	No	0	1* ***Tank No	Tank Status:*** *R1	REM FROM GRD*			
HAYMARKET GROCERY	15000 Washington St Haymarket VA 22069	WNW	0.11 / 584.12	5
	***Facility ID	Facility Active	Active UST	Inactive UST:*** *3021005	No	0	2* ***Tank No	Tank Status:*** *G2	CLS IN GRD, G1	CLS IN GRD*			
PWCS Pace West	14550 John Marshall Hwy Gainsville VA 20155	SE	0.23 / 1,210.86	11
	***Facility ID	Facility Active	Active UST	Inactive UST:*** *3022838	No	0	3* ***Tank No	Tank Status:*** *0006	REM FROM GRD, 0005	REM FROM GRD, 0007	REM FROM GRD*			

Non Standard

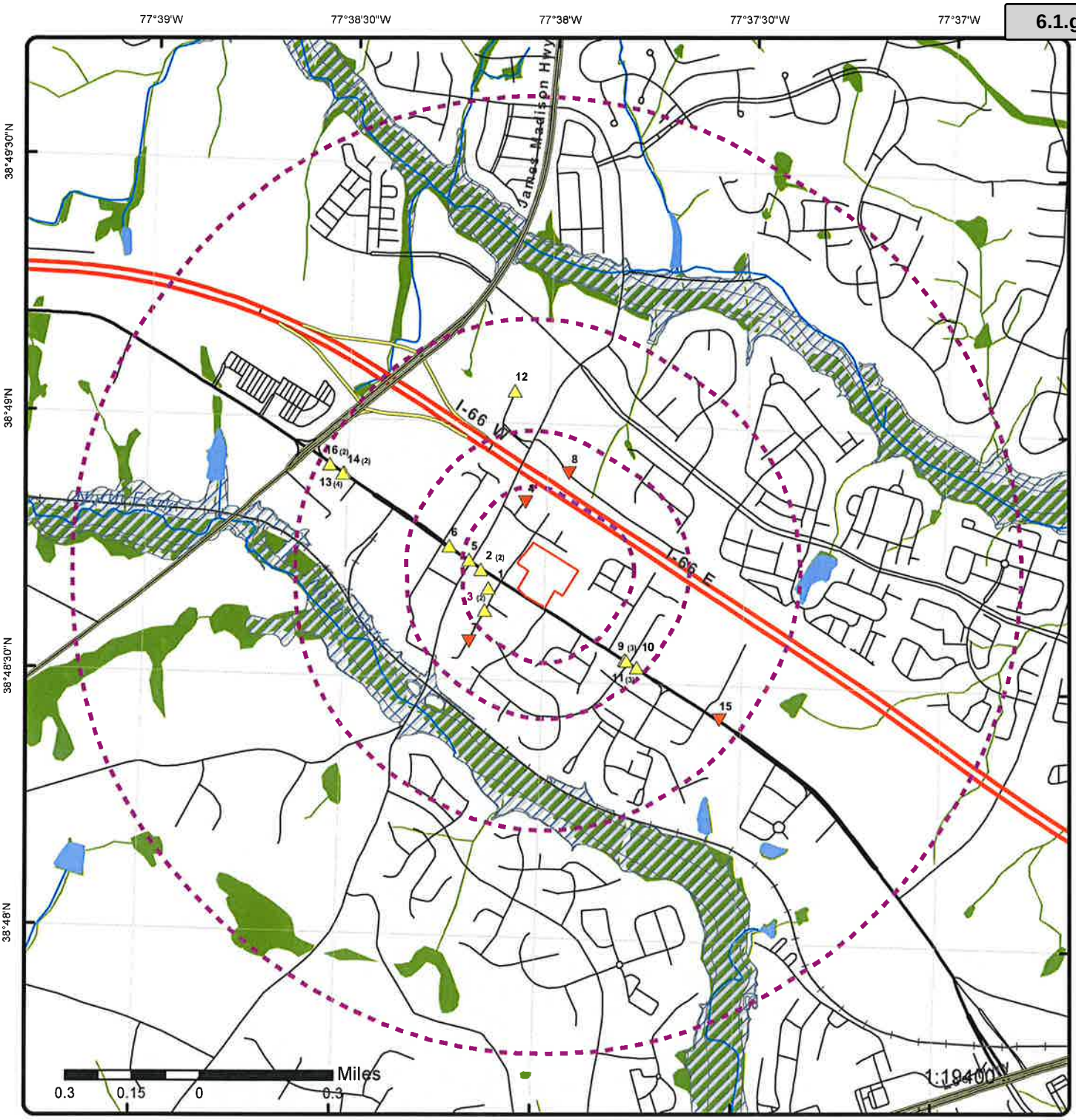
State

SPILLS - Spills

A search of the SPILLS database, dated Oct 22, 2018 has found that there are 1 SPILLS site(s) within approximately 0.12 miles of the project property.

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
Brave Court Asphalt Millings	6601 Brave Court Haymarket VA 20169	NNW	0.09 / 483.22	4

IR No | Status | Closure Date: *2017-N-3868 | Closed | 6/29/2017*



Map : 1 Mile Radius

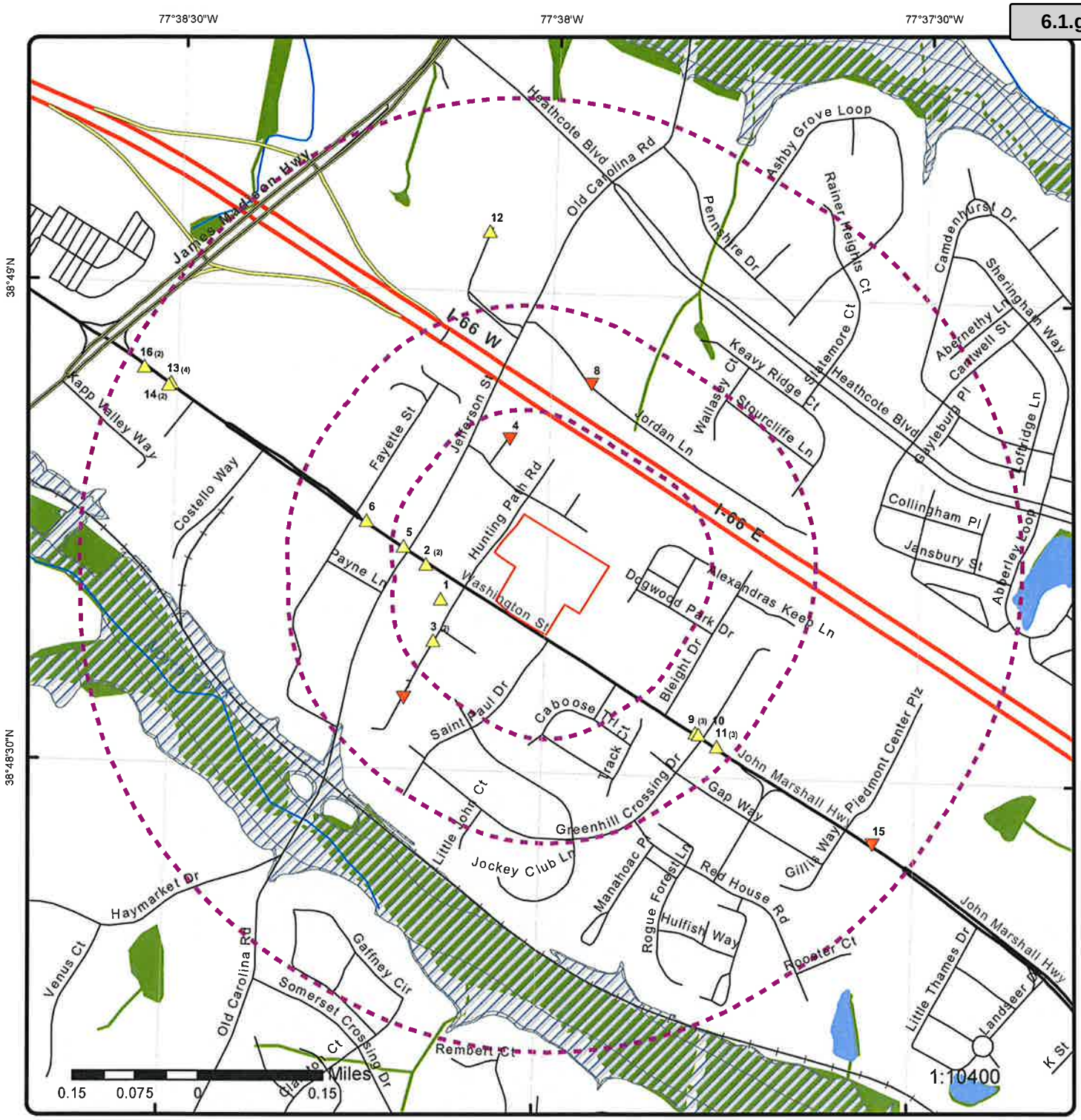
Order No: 20181226055

Address: 14850 Washington Street, Haymarket, VA, 20169

ENVIRONMENTAL RISK INFORMATION SERVICES

Project Property	Rails	State Boundary	FWS Special Designation Areas
Buffer Outline	Major Highways	National Priority List Sites	State Brownfield Sites
Eris Sites with Higher Elevation	Major Highways Ramps	National Wetland	State Brownfield Areas
Eris Sites with Same Elevation	Major Roads	Indian Reserve Land	State Superfund Areas:Dept. of Defense
Eris Sites with Lower Elevation	Major Roads Ramps	Historic Fill	State Superfund Areas:NPL
Eris Sites with Unknown Elevation	Secondary Roads	100 Year Flood Zone	WQARF Areas
County Boundary	Secondary Roads Ramps	500 Year Flood Zone	Federal Lands: Dept. of Defense (owned/administered areas)
	Local Roads and Ramps		

Source: © 2016 ESRI



Map : 0.5 Mile Radius

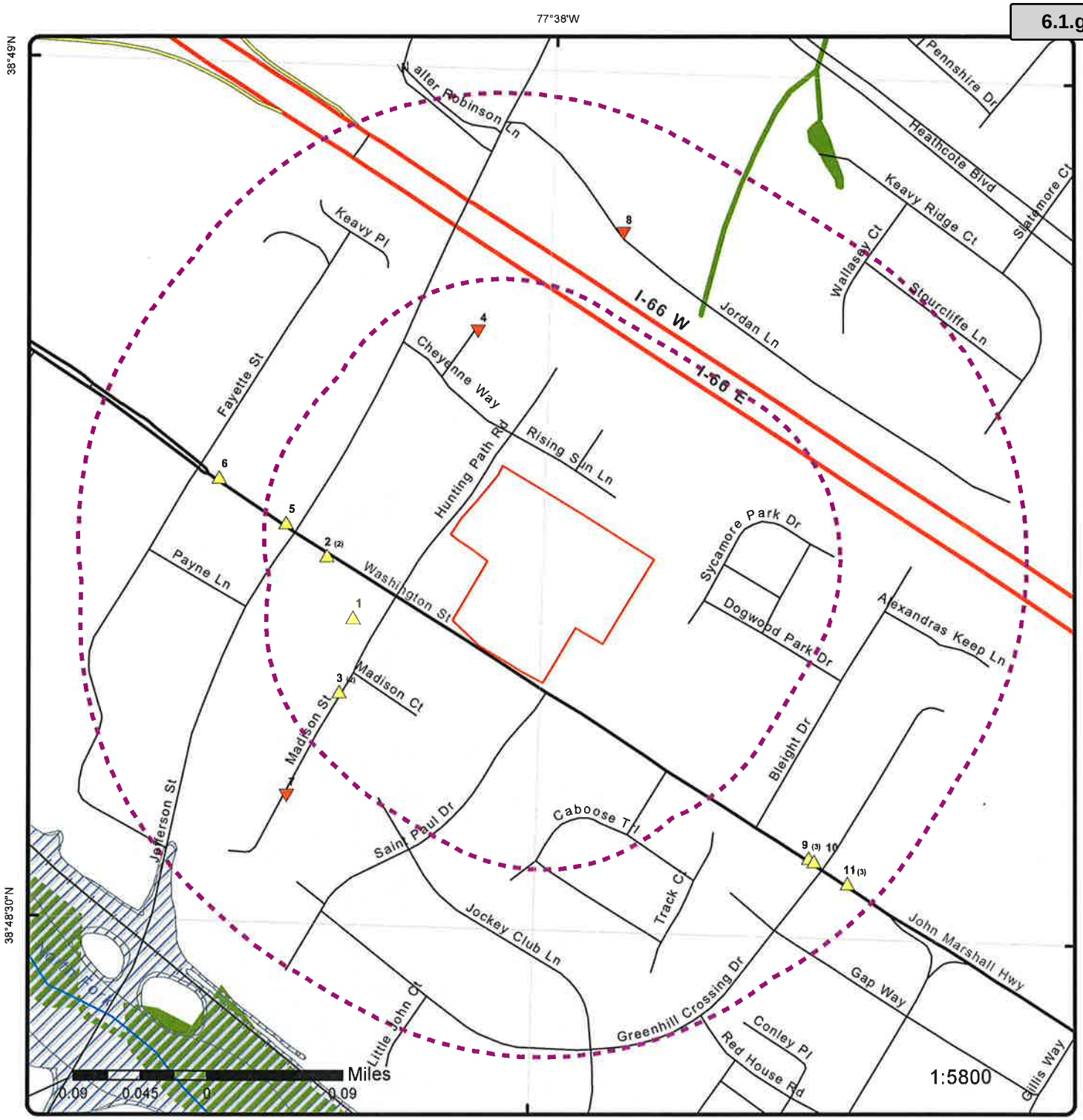
Order No: 20181226055

Address: 14850 Washington Street, Haymarket, VA, 20169

ENVIRONMENTAL RISK INFORMATION SERVICES

Project Property	Rails	State Boundary	FWS Special Designation Areas
Buffer Outline	Major Highways	National Priority List Sites	State Brownfield Sites
Eris Sites with Higher Elevation	Major Highways Ramps	National Wetland	State Brownfield Areas
Eris Sites with Same Elevation	Major Roads	Indian Reserve Land	State Superfund Areas:Dept. of Defense
Eris Sites with Lower Elevation	Major Roads Ramps	Historic Fill	State Superfund Areas:NPL
Eris Sites with Unknown Elevation	Secondary Roads	100 Year Flood Zone	WQARF Areas
County Boundary	Secondary Roads Ramps	500 Year Flood Zone	Federal Lands: Dept. of Defense (owned/administered areas)
	Local Roads and Ramps		

Source: © 2016 ESRI



Map : 0.25 Mile Radius

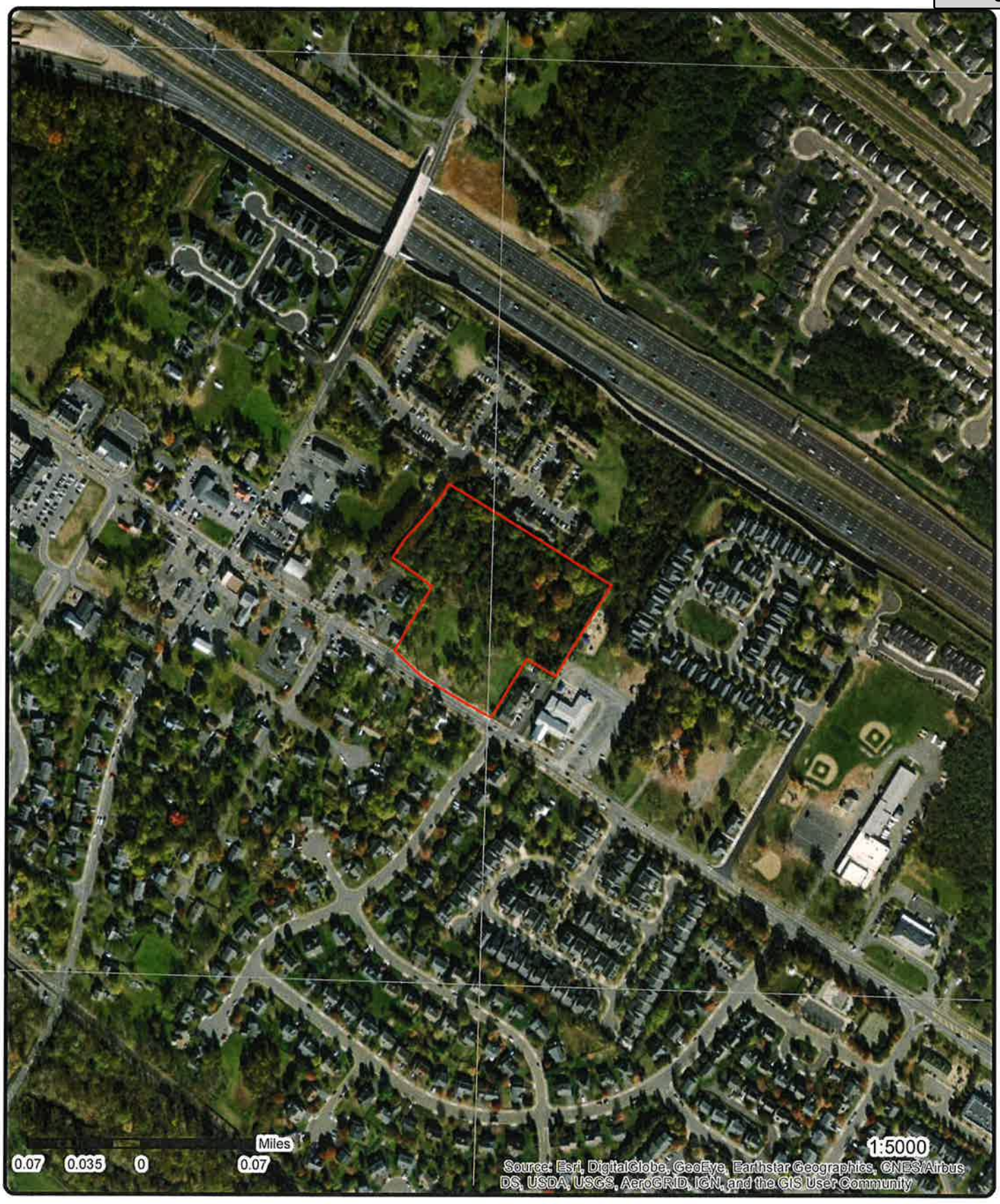
Order No: 20181226055

Address: 14850 Washington Street, Haymarket, VA, 20169

ENVIRONMENTAL RISK INFORMATION SERVICES

Project Property	Rails	State Boundary	FWS Special Designation Areas
Buffer Outline	Major Highways	National Priority List Sites	State Brownfield Sites
Eris Sites with Higher Elevation	Major Highways Ramps	National Wetland	State Brownfield Areas
Eris Sites with Same Elevation	Major Roads	Indian Reserve Land	State Superfund Areas:Dept. of Defense
Eris Sites with Lower Elevation	Major Roads Ramps	Historic Fill	State Superfund Areas:NPL
Eris Sites with Unknown Elevation	Secondary Roads	100 Year Flood Zone	WQARF Areas
County Boundary	Secondary Roads Ramps	500 Year Flood Zone	Federal Lands: Dept. of Defense (owned/administered areas)
	Local Roads and Ramps		

Source: © 2016 ESRI



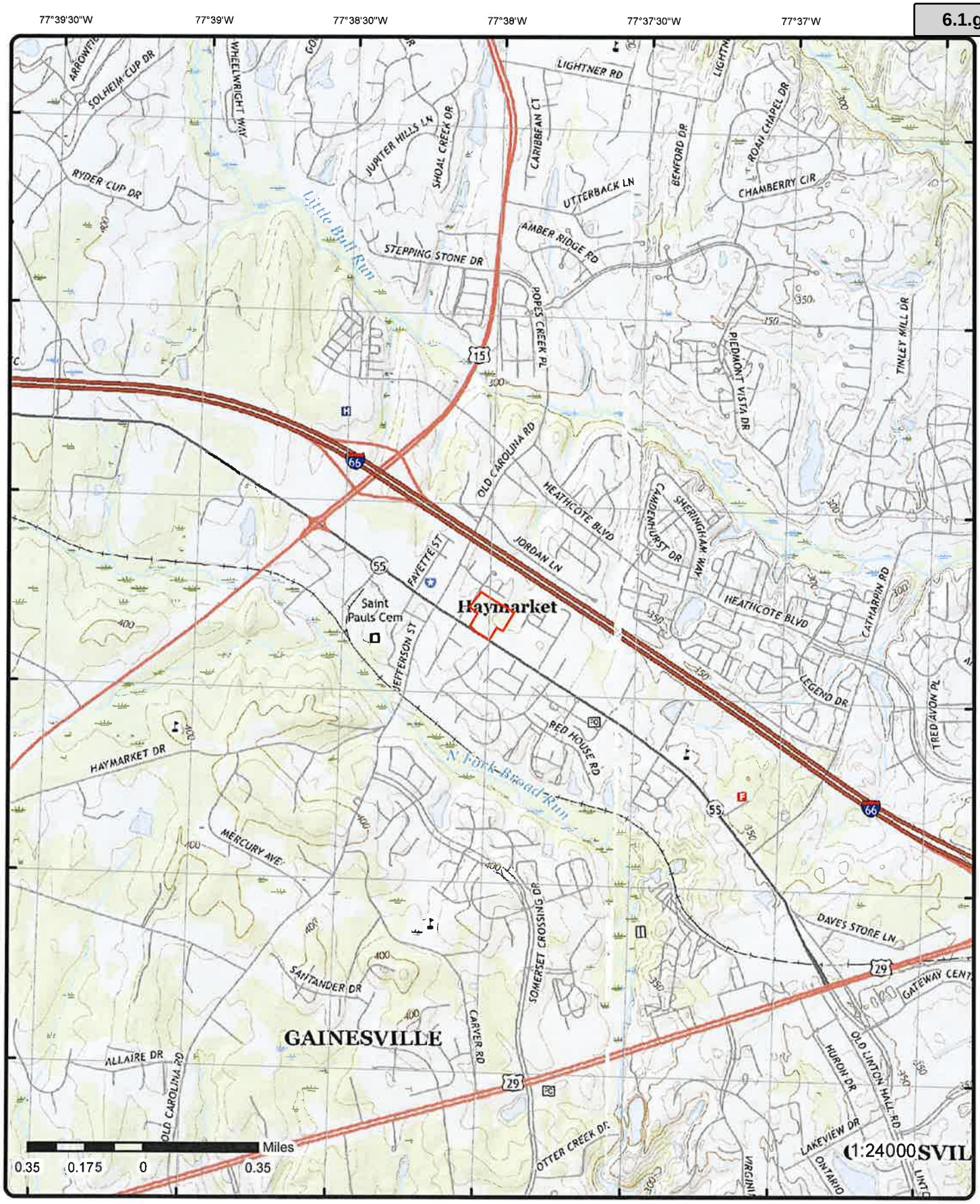
Aerial (2016)

Address: 14850 Washington Street, Haymarket, VA, 20169

Source: ESRI World Imagery

Order No: 20181226055

ERIS ENVIRONMENTAL RISK INFORMATION SERVICES



Topographic Map (2016)

Address: 14850 Washington Street, Haymarket, VA, 20169

Quadrangle(s): Thoroughfare Gap, VA; Gainesville, VA;

Source: USGS Topographic Map

Order No: 20181226055

ERIS ENVIRONMENTAL RISK INFORMATION SERVICES

Detail Report

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
1	1 of 1	WSW	0.07 / 354.69	369.75 / 7	VDOT - Washington and Madison Streets 14901 Washington St Haymarket VA 20169	LST

PC No:	20013029	Heat Oil Category:	Category 1
CEDS Fac ID:	200000196184	Exmpt1 UST2:	No
Case Status:	Closed	Exmpt2 Ht Oil UST2:	Yes
Case Closed Date:	8/18/2000	Small Ht Oil AST2:	No
Release Reported:	7/24/2000	Regulated AST3:	No
Fed Regulated UST?:	No	Unregulated AST3:	No
Program:	RP Lead	Other Tank Type?:	No
Reg Petrol UST1:	No	Oth Tank Type Desc:	
Excluded UST1:	No	Unknown Tank Type?:	No
Deferred UST1:	No	County:	Prince William County
Partial Defer UST1:	No	Region:	NRO

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
2	1 of 2	W	0.08 / 446.69	366.64 / 4	Former Gainesville/Haymarket VFD 14941 Washington St Haymarket VA 20169	LST

PC No:	20133113	Heat Oil Category:	NFA
CEDS Fac ID:	200000078036	Exmpt1 UST2:	No
Case Status:	Closed	Exmpt2 Ht Oil UST2:	No
Case Closed Date:	2/8/2013	Small Ht Oil AST2:	No
Release Reported:	1/8/2013	Regulated AST3:	No
Fed Regulated UST?:	Yes	Unregulated AST3:	No
Program:	RP Lead	Other Tank Type?:	No
Reg Petrol UST1:	Yes	Oth Tank Type Desc:	
Excluded UST1:	No	Unknown Tank Type?:	No
Deferred UST1:	No	County:	Prince William County
Partial Defer UST1:	No	Region:	NRO

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
2	2 of 2	W	0.08 / 446.69	366.64 / 4	Gainesville-Haymarket Volunteer Fire Dept 14941 Washington St Haymarket VA 20169	UST

Facility ID:	3008754	Facility Type:	LOCAL
CEDS Facility ID:	200000078036	Parent Region:	Northern
Facility Active:	No	Region:	NVRO
Federally Regulated:	Yes	County:	Prince William County
Active UST:	0	State:	VA
Inactive UST:	2	Latitude:	38.8118149567
Active AST:	0	Longitude:	-77.6359550229
Inactive AST:	0		
Facility Name:	Gainesville-Haymarket Volunteer Fire Dept		
Facility Location:	14941 Washington St		
Facility Addr 1:	14941 Washington St		
Facility Addr 2:			
Facility City:	Haymarket		

Tank Details

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Tank Owner ID:	29247	**Install Date:**	4/25/1978
Tank No:	R2	**Date Closed:**	12/1/1992
Tank Status:	REM FROM GRD	**Capacity:**	500
Tank Type:	UST	**Contents:**	DIESEL
Fed Regulated Tank:	Yes	**Other Contents:**	

Tank Materials

Asphalt/Bare Steel:	Yes	**Impressed Current:**	No
CCP/STI-P3:	No	**Polyethyl Jacket:**	No
Composite:	No	**Concrete:**	No
Fiberglass:	No	**Excavation Liner:**	No
Lined Interior:	No	**Secondary Contain:**	No
Double Walled:	No	**Repaired:**	No
Other:	No	**Unknown:**	No
Other Specify:			

Note: *Please note this record may appear incomplete as provided by the Department.

Pipe Materials

Piping Type:	VALVE: SUCTION	**Impressed Current:**	
Asphalt/Bare Steel:	Yes	**Double Walled:**	No
Galvanized Steel:	No	**Polyflexible:**	No
Fiberglass:	No	**Unknown:**	No
Copper:	No	**Secondary Contain:**	No
Cathodic Protected:	No	**Other:**	No
Repaired:	No	**Other Specify:**	

Note: *Please note this record may appear incomplete as provided by the Department.

Tank/Pipe Release Detection

Manual Gauging:	No	**Overfill Type:**	
Tank RD Tight Test:	No	**Overfill Spec:**	
Inventory Controls:	No	**Pipe RD MTG:**	No
Tank RD ATG:	No	**Pipe RD ATG:**	
Tank RD Vapor Mntr:	No	**Pipe RD GW Monitor:**	No
Tank RD GW Monitor:	No	**Pipe RD Vapor Mntr:**	No
Tnk RD IM Dbl Wall:	No	**Pipe IM Dbl Wall:**	No
Tnk RD IM Sec Cont:	No	**Pipe IM Sec Cont:**	No
Tank RD SIR:	No	**Pipe RD ALLD:**	No
Tank RD Leak Defer:	No	**Pipe RD Tight Test:**	No
Tank RD Other:	No	**Pipe RD SIR:**	No
Tank RD Other Spec:		**Pipe RD Leak Defer:**	
Spl Device Install:	No	**Pipe RD Other:**	No
Overfill Dev Inst:	No	**Pipe RD Other Spec:**	

Note: *Please note this record may appear incomplete as provided by the Department.

Tank Details

Tank Owner ID:	29247	**Install Date:**	4/25/1978
Tank No:	R1	**Date Closed:**	12/1/1992
Tank Status:	REM FROM GRD	**Capacity:**	1000
Tank Type:	UST	**Contents:**	GASOLINE
Fed Regulated Tank:	Yes	**Other Contents:**	

Tank Materials

Asphalt/Bare Steel:	Yes	**Impressed Current:**	No
CCP/STI-P3:	No	**Polyethyl Jacket:**	No
Composite:	No	**Concrete:**	No
Fiberglass:	No	**Excavation Liner:**	No
Lined Interior:	No	**Secondary Contain:**	No

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Double Walled:	No	**Repaired:**	No
Other:	No	**Unknown:**	No
Other Specify:			
Note:	*Please note this record may appear incomplete as provided by the Department.		

Pipe Materials

Piping Type:	VALVE: SUCTION	**Impressed Current:**	
Asphalt/Bare Steel:	Yes	**Double Walled:**	No
Galvanized Steel:	No	**Polyflexible:**	No
Fiberglass:	No	**Unknown:**	No
Copper:	No	**Secondary Contain:**	No
Cathodic Protected:	No	**Other:**	No
Repaired:	No	**Other Specify:**	
Note:	*Please note this record may appear incomplete as provided by the Department.		

Tank/Pipe Release Detection

Manual Gauging:	No	**Overfill Type:**	
Tank RD Tight Test:	No	**Overfill Spec:**	
Inventory Controls:	No	**Pipe RD MTG:**	No
Tank RD ATG:	No	**Pipe RD ATG:**	
Tank RD Vapor Mntr:	No	**Pipe RD GW Monitor:**	No
Tank RD GW Monitor:	No	**Pipe RD Vapor Mntr:**	No
Tnk RD IM Dbl Wall:	No	**Pipe IM Dbl Wall:**	No
Tnk RD IM Sec Cont:	No	**Pipe IM Sec Cont:**	No
Tank RD SIR:	No	**Pipe RD ALLD:**	No
Tank RD Leak Defer:	No	**Pipe RD Tight Test:**	No
Tank RD Other:	No	**Pipe RD SIR:**	No
Tank RD Other Spec:		**Pipe RD Leak Defer:**	
Spl Device Install:	No	**Pipe RD Other:**	No
Overfill Dev Inst:	No	**Pipe RD Other Spec:**	
Note:	*Please note this record may appear incomplete as provided by the Department.		

Owner

Tank Owner ID:	29247	**Owner Name:**	Gainesville Haymarket Volunteer Fire Department
No of Active AST:	0	**Owner Address 1:**	14941 Washington St
No of Active UST:	0	**Owner Address 2:**	
No of Inactive AST:	0	**Owner City:**	Haymarket
No of Inactive UST:	2	**Owner State:**	VA
Federal Regulated:	Yes	**Owner Zip 5:**	22069
Region:	NVRO	**Owner Zip 4:**	
Name:	Gainesville-Haymarket Volunteer Fire Dept	**Owner Type:**	PRIVATE

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
3	1 of 2	WSW	0.09 / 476.56	367.53 / 5	GTE Haymarket 6720 Madison St Haymarket VA 22069	LST

PC No:	19983704	**Heat Oil Category:**	
CEDS Fac ID:	200000079238	**Exmpt1 UST2:**	No
Case Status:	Closed	**Exmpt2 Ht Oil UST2:**	No
Case Closed Date:	3/1/1999	**Small Ht Oil AST2:**	No
Release Reported:	3/9/1998	**Regulated AST3:**	No
Fed Regulated UST?:	Yes	**Unregulated AST3:**	No
Program:	RP Lead	**Other Tank Type?:**	No
Reg Petrol UST1:	Yes	**Oth Tank Type Desc:**	
Excluded UST1:	No	**Unknown Tank Type?:**	No
Deferred UST1:	No	**County:**	Prince William County
Partial Defer UST1:	No	**Region:**	NRO

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
3	2 of 2	WSW	0.09 / 476.56	367.53 / 5	GTE HAYMARKET CENTRAL OFFICE 6720 Madison St Haymarket VA 22069	UST

Facility ID:	3013098	**Facility Type:**	UTILITY
CEDS Facility ID:	200000079238	**Parent Region:**	Northern
Facility Active:	No	**Region:**	NVRO
Federally Regulated:	Yes	**County:**	Prince William County
Active UST:	0	**State:**	VA
Inactive UST:	1	**Latitude:**	38.8106150045
Active AST:	0	**Longitude:**	-77.6357629981
Inactive AST:	0		
Facility Name:	GTE HAYMARKET CENTRAL OFFICE		
Facility Location:	6720 Madison St		
Facility Addr 1:	6720 Madison St		
Facility Addr 2:			
Facility City:	Haymarket		

Tank Details

Tank Owner ID:	28282	**Install Date:**	1/1/1974
Tank No:	R1	**Date Closed:**	11/6/1996
Tank Status:	REM FROM GRD	**Capacity:**	550
Tank Type:	UST	**Contents:**	EMER GENERATOR
Fed Regulated Tank:	Yes	**Other Contents:**	

Tank Materials

Asphalt/Bare Steel:	Yes	**Impressed Current:**	No
CCP/STI-P3:	No	**Polyethyl Jacket:**	No
Composite:	No	**Concrete:**	No
Fiberglass:	No	**Excavation Liner:**	No
Lined Interior:	No	**Secondary Contain:**	No
Double Walled:	No	**Repaired:**	No
Other:	No	**Unknown:**	No
Other Specify:			
Note:	*Please note this record may appear incomplete as provided by the Department.		

Pipe Materials

Piping Type:	NO VALVE: SUCTION	**Impressed Current:**	
Asphalt/Bare Steel:	Yes	**Double Walled:**	No
Galvanized Steel:	No	**Polyflexible:**	No
Fiberglass:	No	**Unknown:**	No
Copper:	No	**Secondary Contain:**	No
Cathodic Protected:	No	**Other:**	No
Repaired:	No	**Other Specify:**	
Note:	*Please note this record may appear incomplete as provided by the Department.		

Tank/Pipe Release Detection

Manual Gauging:	No	**Overfill Type:**	
Tank RD Tight Test:	No	**Overfill Spec:**	
Inventory Controls:	No	**Pipe RD MTG:**	No
Tank RD ATG:	No	**Pipe RD ATG:**	
Tank RD Vapor Mntr:	No	**Pipe RD GW Monitor:**	No
Tank RD GW Monitor:	No	**Pipe RD Vapor Mntr:**	No
Tnk RD IM Dbl Wall:	No	**Pipe IM Dbl Wall:**	No
Tnk RD IM Sec Cont:	No	**Pipe IM Sec Cont:**	No
Tank RD SIR:	No	**Pipe RD ALLD:**	No
Tank RD Leak Defer:	Yes	**Pipe RD Tight Test:**	No
Tank RD Other:	No	**Pipe RD SIR:**	No
Tank RD Other Spec:		**Pipe RD Leak Defer:**	

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Spl Device Install:	No	**Pipe RD Other:**	No
Overfill Dev Inst:	No	**Pipe RD Other Spec:**	
Note:	*Please note this record may appear incomplete as provided by the Department.		

Owner

Tank Owner ID:	28282	**Owner Name:**	GTE EAST
No of Active AST:	0	**Owner Address 1:**	P.O. BOX 407
No of Active UST:	0	**Owner Address 2:**	
No of Inactive AST:	0	**Owner City:**	WESTFIELD
No of Inactive UST:	1	**Owner State:**	IN
Federal Regulated:	Yes	**Owner Zip 5:**	46074
Region:	NVRO	**Owner Zip 4:**	
Name:	GTE HAYMARKET CENTRAL OFFICE	**Owner Type:**	PRIVATE

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
4	1 of 1	NNW	0.09 / 483.22	358.31 / -4	**Brave Court Asphalt Millings** **6601 Brave Court** **Haymarket VA 20169**	SPILLS

IR No:	2017-N-3868	**Impacts:**	
Reference ID:	102567	**Other Impacts:**	
Status:	Closed	**Steps Taken:**	
Incident Type:	Water	**System Comp:**	
Incident Subtype:	Unknown * Water	**Other System Comp:**	
Effect to Receptor:	Impacted	**Weather Status:**	N/A
Associated IR:		**Precipitation Wet:**	0
Incident Dte Time:	6/28/2017	**Discharge Type:**	N/A
Call Recvd Dte Time:	6/28/2017	**Discharge Vol:**	0
Closure Date:	6/29/2017	**Unkwn Discharge?:**	No
Agencies Notified?:		**Permitted?:**	No
Other Agencies:		**Facility Name:**	
Threat to:		**Property Owner:**	
Terrorism?:	No	**Property Company:**	
Characterize Incident:	Intentional	**Duration of Event Hrs:**	0
Quantity Units:		**Water Body:**	
Other Receptors:	storm drain	**Region:**	Northern
RP Company:		**FIPS City County:**	Prince William County
RP Name:			
Low Quantity to Water:			
High Quantity to Water:			
Incident Ongoing at time of Call:	Yes		
Call Reprtd by Name:	Alicia Gallman		
Call Reptd by Company Name:			
Call RP Company Name:			
Call RP Name:			
Call Prpty Owner Co:			
Call Prpty Owner Name:			
Steps taken Desc:			
Materials:	Asphalt (milled) (0-0 Unknown)		
Corrective Action Taken:			
Site Summary:			
Original Call Incident Desc:	repaving taking place in Brave Ct. Contractor is allowing milled asphalt to enter and pile up in storm drain.		
Originial Call Loc Desc:	6601 Brave Court in Haymarket, VA		
Cause of Event:			
Closure Comments:	Case ClosedComplaint investigated - corrective action not necessary		
Original Call Material Desc:	asphalt millings		

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
5	1 of 1	WNW	0.11 / 584.12	365.91 / 3	**HAYMARKET GROCERY** **15000 Washington St** **Haymarket VA 22069**	UST

Facility ID:	3021005	**Facility Type:**	GAS STATION
CEDS Facility ID:	200000074458	**Parent Region:**	Northern
Facility Active:	No	**Region:**	NVRO

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Federally Regulated:	Yes	**County:**	Prince William County
Active UST:	0	**State:**	VA
Inactive UST:	2	**Latitude:**	38.8124598696
Active AST:	0	**Longitude:**	-77.6361270099
Inactive AST:	0		
Facility Name:	HAYMARKET GROCERY		
Facility Location:	15000 Washington St		
Facility Addr 1:	15000 Washington St		
Facility Addr 2:			
Facility City:	Haymarket		

Tank Details

Tank Owner ID:	30928	**Install Date:**	1/1/1950
Tank No:	G2	**Date Closed:**	1/1/1965
Tank Status:	CLS IN GRD	**Capacity:**	500
Tank Type:	UST	**Contents:**	KEROSENE
Fed Regulated Tank:	Yes	**Other Contents:**	

Tank Materials

Asphalt/Bare Steel:	Yes	**Impressed Current:**	No
CCP/STI-P3:	No	**Polyethyl Jacket:**	No
Composite:	No	**Concrete:**	No
Fiberglass:	No	**Excavation Liner:**	No
Lined Interior:	No	**Secondary Contain:**	No
Double Walled:	No	**Repaired:**	No
Other:	No	**Unknown:**	No
Other Specify:			

Note: *Please note this record may appear incomplete as provided by the Department.

Pipe Materials

Piping Type:	NO VALVE: SUCTION	**Impressed Current:**	
Asphalt/Bare Steel:	No	**Double Walled:**	No
Galvanized Steel:	Yes	**Polyflexible:**	No
Fiberglass:	No	**Unknown:**	No
Copper:	No	**Secondary Contain:**	No
Cathodic Protected:	No	**Other:**	No
Repaired:	No	**Other Specify:**	

Note: *Please note this record may appear incomplete as provided by the Department.

Tank/Pipe Release Detection

Manual Gauging:	No	**Overfill Type:**	
Tank RD Tight Test:	No	**Overfill Spec:**	
Inventory Controls:	No	**Pipe RD MTG:**	No
Tank RD ATG:	No	**Pipe RD ATG:**	
Tank RD Vapor Mntr:	No	**Pipe RD GW Monitor:**	No
Tank RD GW Monitor:	No	**Pipe RD Vapor Mntr:**	No
Tnk RD IM Dbl Wall:	No	**Pipe IM Dbl Wall:**	No
Tnk RD IM Sec Cont:	No	**Pipe IM Sec Cont:**	No
Tank RD SIR:	No	**Pipe RD ALLD:**	No
Tank RD Leak Defer:	No	**Pipe RD Tight Test:**	No
Tank RD Other:	No	**Pipe RD SIR:**	No
Tank RD Other Spec:		**Pipe RD Leak Defer:**	
Spl Device Install:	No	**Pipe RD Other:**	No
Overfill Dev Inst:	No	**Pipe RD Other Spec:**	

Note: *Please note this record may appear incomplete as provided by the Department.

Tank Details

Tank Owner ID:	30928	**Install Date:**	1/1/1980

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Tank No:	G1	**Date Closed:**	1/1/1985
Tank Status:	CLS IN GRD	**Capacity:**	1000
Tank Type:	UST	**Contents:**	KEROSENE
Fed Regulated Tank:	Yes	**Other Contents:**	

Tank Materials

Asphalt/Bare Steel:	Yes	**Impressed Current:**	No
CCP/STI-P3:	No	**Polyethyl Jacket:**	No
Composite:	No	**Concrete:**	No
Fiberglass:	No	**Excavation Liner:**	No
Lined Interior:	No	**Secondary Contain:**	No
Double Walled:	No	**Repaired:**	No
Other:	No	**Unknown:**	No
Other Specify:			

Note: *Please note this record may appear incomplete as provided by the Department.

Pipe Materials

Piping Type:	NO VALVE: SUCTION	**Impressed Current:**	
Asphalt/Bare Steel:	No	**Double Walled:**	No
Galvanized Steel:	Yes	**Polyflexible:**	No
Fiberglass:	No	**Unknown:**	No
Copper:	No	**Secondary Contain:**	No
Cathodic Protected:	No	**Other:**	No
Repaired:	No	**Other Specify:**	

Note: *Please note this record may appear incomplete as provided by the Department.

Tank/Pipe Release Detection

Manual Gauging:	No	**Overfill Type:**	
Tank RD Tight Test:	No	**Overfill Spec:**	
Inventory Controls:	No	**Pipe RD MTG:**	No
Tank RD ATG:	No	**Pipe RD ATG:**	
Tank RD Vapor Mntr:	No	**Pipe RD GW Monitor:**	No
Tank RD GW Monitor:	No	**Pipe RD Vapor Mntr:**	No
Tnk RD IM Dbl Wall:	No	**Pipe IM Dbl Wall:**	No
Tnk RD IM Sec Cont:	No	**Pipe IM Sec Cont:**	No
Tank RD SIR:	No	**Pipe RD ALLD:**	No
Tank RD Leak Defer:	No	**Pipe RD Tight Test:**	No
Tank RD Other:	No	**Pipe RD SIR:**	No
Tank RD Other Spec:		**Pipe RD Leak Defer:**	
Spl Device Install:	No	**Pipe RD Other:**	No
Overfill Dev Inst:	No	**Pipe RD Other Spec:**	

Note: *Please note this record may appear incomplete as provided by the Department.

Owner

Tank Owner ID:	30928	**Owner Name:**	ALAN C. GOSSOM
No of Active AST:	0	**Owner Address 1:**	14508 JOHN MARSHALL HWY
No of Active UST:	0	**Owner Address 2:**	
No of Inactive AST:	0	**Owner City:**	GAINSVILLE
No of Inactive UST:	2	**Owner State:**	VA
Federal Regulated:	Yes	**Owner Zip 5:**	20156
Region:	NVRO	**Owner Zip 4:**	
Name:	HAYMARKET GROCERY	**Owner Type:**	COMMERCIAL

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
6	1 of 1	WNW	0.16 / 843.63	367.75 / 5	Heritage Realty of Haymarket 15030 Washington St Haymarket VA 20169	LST

PC No:	20043069	**Heat Oil Category:**	Category 2
CEDS Fac ID:	200000212779	**Exmpt1 UST2:**	No

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Case Status:	Closed			Exmpt2 Ht Oil UST2:	Yes	
Case Closed Date:	1/8/2004			Small Ht Oil AST2:	No	
Release Reported:	10/1/2003			Regulated AST3:	No	
Fed Regulated UST?:	No			Unregulated AST3:	No	
Program:	RP Lead			Other Tank Type?:	No	
Reg Petrol UST1:	No			Oth Tank Type Desc:		
Excluded UST1:	No			Unknown Tank Type?:	No	
Deferred UST1:	No			County:	Prince William County	
Partial Defer UST1:	No			Region:	NRO	

7	1 of 1	SW	0.16 / 853.30	362.43 / 0	Hunt Complaint 6751 Madison St Haymarket VA 20169	LST

PC No:	19810068			Heat Oil Category:		
CEDS Fac ID:	200000185703			Exmpt1 UST2:	No	
Case Status:	Closed			Exmpt2 Ht Oil UST2:	No	
Case Closed Date:	6/23/1995			Small Ht Oil AST2:	No	
Release Reported:	7/28/1980			Regulated AST3:	No	
Fed Regulated UST?:	No			Unregulated AST3:	No	
Program:	RP Lead			Other Tank Type?:	No	
Reg Petrol UST1:	No			Oth Tank Type Desc:		
Excluded UST1:	No			Unknown Tank Type?:	No	
Deferred UST1:	No			County:	Prince William County	
Partial Defer UST1:	No			Region:	NRO	

8	1 of 1	NNE	0.18 / 926.45	356.80 / -6	Jordan Lane Development LLC Property 14850 Jordan Ln Haymarket VA 20169	LST

PC No:	20133126			Heat Oil Category:	Category 2	
CEDS Fac ID:	200000859048			Exmpt1 UST2:	No	
Case Status:	Closed			Exmpt2 Ht Oil UST2:	No	
Case Closed Date:	10/31/2013			Small Ht Oil AST2:	Yes	
Release Reported:	2/14/2013			Regulated AST3:	No	
Fed Regulated UST?:	No			Unregulated AST3:	No	
Program:	RP Lead			Other Tank Type?:	No	
Reg Petrol UST1:	No			Oth Tank Type Desc:		
Excluded UST1:	No			Unknown Tank Type?:	No	
Deferred UST1:	No			County:	Prince William County	
Partial Defer UST1:	No			Region:	NRO	

9	1 of 3	SE	0.20 / 1,048.91	365.86 / 3	GAINSVILLE ELEM. SITE 14550 JOHN MARSHAL HIGHWAY HAYMARKET VA 22069	CERCLIS

Site ID:	0302633			RNPL Status Code:	N	
Site EPA ID:	VAD100558410			NPL Status:	Not on the NPL	
Site Street Address 2:				RFED Facility Code:	N	
Site County Name:	PRINCE WILLIAM			RFED Facility Desc:	Not a Federal Facility	
Site FIPS Code:	51153			USGS Hydro Unit No.:	02070010	
Region Code:	03			Site Cong. Dist. Code:	07	
Site SMSA No.:	8840			ROT Desc:	Other	
Site Prim. Latitude:	+38.916667			FR NPL Update No.:		
Site Prim. Longitude:	-077.638333			RFRA Code:		
Lat Long Source:						
RNON NPL Status Desc:	NFRAP-Site does not qualify for the NPL based on existing information					

CERCLIS Assess History

OU ID:	00	RALT Short Name:	State (Fund)

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Act Code ID:	001	**Act Start Date:**	
RAT Code:	PA	**Act Complete Date:**	6/4/1987 00:00:00
RAT Short Name:	PA	**AGT Order No.:**	130
RAT Name:	PRELIMINARY ASSESSMENT	**SH OU:**	
RAT Hist. Only Flag:		**SH Code:**	
RAT NSI Indicator:	B	**SH Seq:**	
RAT Level:	1	**SH Start Date:**	
RAT DEF OU:	00	**SH Complete Date:**	
RFBS Code:	P	**SH Lead:**	
SPA Code:	13		

RAT Def: Collection of diverse existing information about the source and nature of the site hazard. It is EPA policy to complete the preliminary assessment within one year of site discovery.

Site Desc:
Site Alias:

CERCLIS Assess History

OU ID:	00	**RALT Short Name:**	EPA Fund
Act Code ID:	001	**Act Start Date:**	8/16/1989 00:00:00
RAT Code:	RS	**Act Complete Date:**	8/16/1989 00:00:00
RAT Short Name:	RV ASSESS	**AGT Order No.:**	30
RAT Name:	REMOVAL ASSESSMENT	**SH OU:**	
RAT Hist. Only Flag:		**SH Code:**	
RAT NSI Indicator:	B	**SH Seq:**	
RAT Level:	1	**SH Start Date:**	
RAT DEF OU:	00	**SH Complete Date:**	
RFBS Code:	V	**SH Lead:**	
SPA Code:	08		

RAT Def: Collecting site characteristics to determine whether or not a removal must be performed.
Site Desc:
Site Alias:

CERCLIS Assess History

OU ID:	00	**RALT Short Name:**	EPA In-House
Act Code ID:	001	**Act Start Date:**	
RAT Code:	VS	**Act Complete Date:**	6/7/1991 00:00:00
RAT Short Name:	ARCH SITE	**AGT Order No.:**	1500
RAT Name:	ARCHIVE SITE	**SH OU:**	
RAT Hist. Only Flag:		**SH Code:**	
RAT NSI Indicator:	B	**SH Seq:**	
RAT Level:	1	**SH Start Date:**	
RAT DEF OU:	00	**SH Complete Date:**	
RFBS Code:		**SH Lead:**	
SPA Code:	13		

RAT Def: The decision is made that no further activity is planned at the site.
Site Desc:
Site Alias:

CERCLIS Assess History

OU ID:	00	**RALT Short Name:**	EPA Fund
Act Code ID:	001	**Act Start Date:**	
RAT Code:	DS	**Act Complete Date:**	11/4/1986 00:00:00
RAT Short Name:	DISCVRY	**AGT Order No.:**	10
RAT Name:	DISCOVERY	**SH OU:**	
RAT Hist. Only Flag:		**SH Code:**	
RAT NSI Indicator:	B	**SH Seq:**	
RAT Level:	1	**SH Start Date:**	
RAT DEF OU:	00	**SH Complete Date:**	
RFBS Code:		**SH Lead:**	
SPA Code:	13		

RAT Def: The process by which a potential hazardous waste site is brought to the attention of the EPA. The process can occur through the use of several mechanisms such as a phone call or referral by another government agency.

Site Desc:
Site Alias:

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

CERCLIS Assess History

OU ID:	00	RALT Short Name:	State (Fund)
Act Code ID:	001	Act Start Date:	10/1/1990 00:00:00
RAT Code:	SI	Act Complete Date:	6/7/1991 00:00:00
RAT Short Name:	SI	AGT Order No.:	160
RAT Name:	SITE INSPECTION	SH OU:	
RAT Hist. Only Flag:		SH Code:	
RAT NSI Indicator:	B	SH Seq:	
RAT Level:	1	SH Start Date:	
RAT DEF OU:	00	SH Complete Date:	
RFBS Code:	P	SH Lead:	
SPA Code:	13		

RAT Def: The process of collecting site data and samples to characterize the severity of the hazard for the hazard ranking score and/or enforcement support.

Site Desc:

Site Alias:

CERCLIS Assess History

OU ID:	00	RALT Short Name:	
Act Code ID:		Act Start Date:	
RAT Code:		Act Complete Date:	
RAT Short Name:		AGT Order No.:	0
RAT Name:		SH OU:	
RAT Hist. Only Flag:		SH Code:	
RAT NSI Indicator:		SH Seq:	
RAT Level:		SH Start Date:	
RAT DEF OU:		SH Complete Date:	
RFBS Code:		SH Lead:	
SPA Code:			

RAT Def:

Site Desc: (VA-404)

Site Alias: No alias data available

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
9	2 of 3	SE	0.20 / 1,048.91	365.86 / 3	GAINSVILLE ELEM. SITE 14550 JOHN MARSHAL HIGHWAY HAYMARKET VA 22069	CERCLIS NFRAP

Site ID:	302633	Site FIPS Code:	51153
Site EPA ID:	VAD100558410	Region Code:	3
Site Parent ID:		Site Cong. Dist. Code:	7
Site County Name:	PRINCE WILLIAM	Federal Facility:	
Parent Site Name:			

CERCLIS-NFRAP Assess History

OU ID:	0	Act Start Date:	10/1/1990
Act Code ID:	1	Act Complete Date:	6/7/1991
RAT Code:	SI	AGT Order No.:	160
RAT Short Name:	SI	SH OU:	
RAT Name:	SITE INSPECTION	SH Code:	
RAT Hist. Only Flag:		SH Seq:	
RAT NSI Indicator:	B	SH Start Date:	
RAT Level:	1	SH Complete Date:	
RAT DEF OU:	00	SH Lead:	
RFBS Code:	P	SH Qual:	
SPA Code:	13	RAQ Act. Qual Short:	NFRAP
RALT Short Name:	State (Fund)	RNPL Status Code:	N

RAT Def: The process of collecting site data and samples to characterize the severity of the hazard for the hazard ranking score and/or enforcement support.

RNON NPL Status Desc: NFRAP-Site does not qualify for the NPL based on existing information

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

CERCLIS-NFRAP Assess History

OU ID:	0	***Act Start Date:***	
Act Code ID:	1	***Act Complete Date:***	6/4/1987
RAT Code:	PA	***AGT Order No.:***	130
RAT Short Name:	PA	***SH OU:***	
RAT Name:	PRELIMINARY ASSESSMENT	***SH Code:***	
RAT Hist. Only Flag:		***SH Seq:***	
RAT NSI Indicator:	B	***SH Start Date:***	
RAT Level:	1	***SH Complete Date:***	
RAT DEF OU:	00	***SH Lead:***	
RFBS Code:	P	***SH Qual:***	
SPA Code:	13	***RAQ Act. Qual Short:***	Low priority
RALT Short Name:	State (Fund)	***RNPL Status Code:***	N

RAT Def: Collection of diverse existing information about the source and nature of the site hazard. It is EPA policy to complete the preliminary assessment within one year of site discovery.

RNON NPL Status Desc: NFRAP-Site does not qualify for the NPL based on existing information

CERCLIS-NFRAP Assess History

OU ID:	0	***Act Start Date:***	
Act Code ID:	1	***Act Complete Date:***	6/7/1991
RAT Code:	VS	***AGT Order No.:***	1500
RAT Short Name:	ARCH SITE	***SH OU:***	
RAT Name:	ARCHIVE SITE	***SH Code:***	
RAT Hist. Only Flag:		***SH Seq:***	
RAT NSI Indicator:	B	***SH Start Date:***	
RAT Level:	1	***SH Complete Date:***	
RAT DEF OU:	00	***SH Lead:***	
RFBS Code:		***SH Qual:***	
SPA Code:	13	***RAQ Act. Qual Short:***	
RALT Short Name:	EPA In-House	***RNPL Status Code:***	N

RAT Def: The decision is made that no further activity is planned at the site.

RNON NPL Status Desc: NFRAP-Site does not qualify for the NPL based on existing information

CERCLIS-NFRAP Assess History

OU ID:	0	***Act Start Date:***	
Act Code ID:	1	***Act Complete Date:***	11/4/1986
RAT Code:	DS	***AGT Order No.:***	10
RAT Short Name:	DISCVRY	***SH OU:***	
RAT Name:	DISCOVERY	***SH Code:***	
RAT Hist. Only Flag:		***SH Seq:***	
RAT NSI Indicator:	B	***SH Start Date:***	
RAT Level:	1	***SH Complete Date:***	
RAT DEF OU:	00	***SH Lead:***	
RFBS Code:		***SH Qual:***	
SPA Code:	13	***RAQ Act. Qual Short:***	
RALT Short Name:	EPA Fund	***RNPL Status Code:***	N

RAT Def: The process by which a potential hazardous waste site is brought to the attention of the EPA. The process can occur through the use of several mechanisms such as a phone call or referral by another government agency.

RNON NPL Status Desc: NFRAP-Site does not qualify for the NPL based on existing information

CERCLIS-NFRAP Assess History

OU ID:	0	***Act Start Date:***	8/16/1989
Act Code ID:	1	***Act Complete Date:***	8/16/1989
RAT Code:	RS	***AGT Order No.:***	30
RAT Short Name:	RV ASSESS	***SH OU:***	
RAT Name:	REMOVAL ASSESSMENT	***SH Code:***	
RAT Hist. Only Flag:		***SH Seq:***	
RAT NSI Indicator:	B	***SH Start Date:***	
RAT Level:	1	***SH Complete Date:***	
RAT DEF OU:	00	***SH Lead:***	

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

RFBS Code: V
SPA Code: 08
RALT Short Name: EPA Fund
RAT Def: Collecting site characteristics to determine whether or not a removal must be performed.
RNON NPL Status Desc: NFRAP-Site does not qualify for the NPL based on existing information
SH Qual:
RAQ Act. Qual Short:
RNPL Status Code: N

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9 | 3 of 3 | SE | 0.20 / 1,048.91 | 365.86 / 3 | **GAINSVILLE ELEM. SITE**
14550 JOHN MARSHAL HIGHWAY
HAYMARKET VA 22069 | SEMS ARCHIVE

Site ID: 0302633
EPA ID: VAD100558410
NPL: Not on the NPL
Federal Facility: No
Non NPL Status: NFRAP-Site does not qualify for the NPL based on existing information
FIPS Code: 51153
Cong District: 07
County: PRINCE WILLIAM
Region: 03

Action Information

Operable Units: 00
Action Code: RS
Action Name: RV ASSESS
SEQ: 1
Start Actual: 08/16/1989
Finish Actual: 08/16/1989
Qual:
Curr Action Lead: EPA Perf

Operable Units: 00
Action Code: VS
Action Name: ARCH SITE
SEQ: 1
Start Actual:
Finish Actual: 06/07/1991
Qual:
Curr Action Lead: EPA Perf In-Hse

Operable Units: 00
Action Code: DS
Action Name: DISCVRY
SEQ: 1
Start Actual: 11/04/1986
Finish Actual: 11/04/1986
Qual:
Curr Action Lead: EPA Perf

Operable Units: 00
Action Code: SI
Action Name: SI
SEQ: 1
Start Actual: 10/01/1990
Finish Actual: 06/07/1991
Qual: N
Curr Action Lead: St Perf

Operable Units: 00
Action Code: PA
Action Name: PA
SEQ: 1
Start Actual:
Finish Actual: 06/04/1987
Qual: L
Curr Action Lead: St Perf

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10 | 1 of 1 | SE | 0.20 / 1,072.68 | 365.52 / 3 | **McAbee Barbara M Property**
14512 John Marshall Hwy
Haymarket VA 20169 | LST

PC No: 20093160
CEDS Fac ID: 200000850982
Case Status: Closed
Case Closed Date: 5/18/2009
Release Reported: 2/24/2009
Fed Regulated UST?: No
Program: RP Lead
Reg Petrol UST1: No
Excluded UST1: No
Deferred UST1: No
Partial Defer UST1: No
Heat Oil Category: Category 1
Exmpt1 UST2: No
Exmpt2 Ht Oil UST2: Yes
Small Ht Oil AST2: No
Regulated AST3: No
Unregulated AST3: No
Other Tank Type?: No
Oth Tank Type Desc:
Unknown Tank Type?: No
County: Prince William County
Region: NRO

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11 | 1 of 3 | SE | 0.23 / 1,210.86 | 363.25 / 1 | **Pace West (Gainesville) Elementary School**
14550 John Marshall Hwy
Gainsville VA 20155 | LST

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

PC No:	19869989	Heat Oil Category:			
CEDS Fac ID:	200000078034	Exmpt1 UST2:	No		
Case Status:	Closed	Exmpt2 Ht Oil UST2:	No		
Case Closed Date:	1/30/1986	Small Ht Oil AST2:	No		
Release Reported:	1/24/1986	Regulated AST3:	No		
Fed Regulated UST?:	No	Unregulated AST3:	No		
Program:	RP Lead	Other Tank Type?:	No		
Reg Petrol UST1:	No	Oth Tank Type Desc:			
Excluded UST1:	No	Unknown Tank Type?:	No		
Deferred UST1:	No	County:	Prince William County		
Partial Defer UST1:	No	Region:	NRO		

11	2 of 3	SE	0.23 / 1,210.86	363.25 / 1	Pace West Gainesville Elementary School 14550 John Marshall Hwy Gainsville VA 20155	LST

PC No:	19954094	Heat Oil Category:	
CEDS Fac ID:	200000078034	Exmpt1 UST2:	No
Case Status:	Closed	Exmpt2 Ht Oil UST2:	No
Case Closed Date:	10/5/1995	Small Ht Oil AST2:	No
Release Reported:	10/20/1994	Regulated AST3:	No
Fed Regulated UST?:	No	Unregulated AST3:	No
Program:	RP Lead	Other Tank Type?:	No
Reg Petrol UST1:	No	Oth Tank Type Desc:	
Excluded UST1:	No	Unknown Tank Type?:	No
Deferred UST1:	No	County:	Prince William County
Partial Defer UST1:	No	Region:	NRO

11	3 of 3	SE	0.23 / 1,210.86	363.25 / 1	PWCS Pace West 14550 John Marshall Hwy Gainsville VA 20155	UST

Facility ID:	3022838	Facility Type:	LOCAL
CEDS Facility ID:	200000078034	Parent Region:	Northern
Facility Active:	No	Region:	NVRO
Federally Regulated:	Yes	County:	Prince William County
Active UST:	0	State:	VA
Inactive UST:	3	Latitude:	38.8093017077
Active AST:	0	Longitude:	-77.6286792207
Inactive AST:	0		
Facility Name:	PWCS Pace West		
Facility Location:	14550 John Marshall Hwy		
Facility Addr 1:	14550 John Marshall Hwy		
Facility Addr 2:			
Facility City:	Gainsville		

Tank Details

Tank Owner ID:	37412	Install Date:	8/3/1975
Tank No:	0006	Date Closed:	12/27/1995
Tank Status:	REM FROM GRD	Capacity:	5000
Tank Type:	UST	Contents:	DIESEL
Fed Regulated Tank:	Yes	Other Contents:	

Tank Materials

Asphalt/Bare Steel:	Yes	Impressed Current:	No
CCP/STI-P3:	No	Polyethyl Jacket:	No
Composite:	No	Concrete:	No
Fiberglass:	No	Excavation Liner:	No
Lined Interior:	No	Secondary Contain:	No
Double Walled:	No	Repaired:	No

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Other:	No	**Unknown:**	No
Other Specify:			
Note:	*Please note this record may appear incomplete as provided by the Department.		

Pipe Materials

Piping Type:	NO VALVE: SUCTION	**Impressed Current:**	
Asphalt/Bare Steel:	No	**Double Walled:**	No
Galvanized Steel:	Yes	**Polyflexible:**	No
Fiberglass:	No	**Unknown:**	No
Copper:	No	**Secondary Contain:**	No
Cathodic Protected:	No	**Other:**	No
Repaired:	No	**Other Specify:**	
Note:	*Please note this record may appear incomplete as provided by the Department.		

Tank/Pipe Release Detection

Manual Gauging:	No	**Overfill Type:**	
Tank RD Tight Test:	No	**Overfill Spec:**	
Inventory Controls:	No	**Pipe RD MTG:**	No
Tank RD ATG:	No	**Pipe RD ATG:**	
Tank RD Vapor Mntr:	No	**Pipe RD GW Monitor:**	No
Tank RD GW Monitor:	No	**Pipe RD Vapor Mntr:**	No
Tnk RD IM Dbl Wall:	No	**Pipe IM Dbl Wall:**	No
Tnk RD IM Sec Cont:	No	**Pipe IM Sec Cont:**	No
Tank RD SIR:	No	**Pipe RD ALLD:**	No
Tank RD Leak Defer:	No	**Pipe RD Tight Test:**	No
Tank RD Other:	No	**Pipe RD SIR:**	No
Tank RD Other Spec:		**Pipe RD Leak Defer:**	
Spl Device Install:	No	**Pipe RD Other:**	No
Overfill Dev Inst:	No	**Pipe RD Other Spec:**	
Note:	*Please note this record may appear incomplete as provided by the Department.		

Tank Details

Tank Owner ID:	37412	**Install Date:**	7/1/1961
Tank No:	0005	**Date Closed:**	7/24/1991
Tank Status:	REM FROM GRD	**Capacity:**	8000
Tank Type:	UST	**Contents:**	HEATING OIL
Fed Regulated Tank:	Yes	**Other Contents:**	

Tank Materials

Asphalt/Bare Steel:	Yes	**Impressed Current:**	No
CCP/STI-P3:	No	**Polyethyl Jacket:**	No
Composite:	No	**Concrete:**	No
Fiberglass:	No	**Excavation Liner:**	No
Lined Interior:	No	**Secondary Contain:**	No
Double Walled:	No	**Repaired:**	No
Other:	No	**Unknown:**	No
Other Specify:			
Note:	*Please note this record may appear incomplete as provided by the Department.		

Pipe Materials

Piping Type:	NO VALVE: SUCTION	**Impressed Current:**	
Asphalt/Bare Steel:	Yes	**Double Walled:**	No
Galvanized Steel:	No	**Polyflexible:**	No
Fiberglass:	No	**Unknown:**	No
Copper:	No	**Secondary Contain:**	No
Cathodic Protected:	No	**Other:**	No
Repaired:	No	**Other Specify:**	
Note:	*Please note this record may appear incomplete as provided by the Department.		

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Tank/Pipe Release Detection

Manual Gauging:	No	***Overfill Type:***	
Tank RD Tight Test:	No	***Overfill Spec:***	
Inventory Controls:	No	***Pipe RD MTG:***	No
Tank RD ATG:	No	***Pipe RD ATG:***	
Tank RD Vapor Mntr:	No	***Pipe RD GW Monitor:***	No
Tank RD GW Monitor:	No	***Pipe RD Vapor Mntr:***	No
Tnk RD IM Dbl Wall:	No	***Pipe IM Dbl Wall:***	No
Tnk RD IM Sec Cont:	No	***Pipe IM Sec Cont:***	No
Tank RD SIR:	No	***Pipe RD ALLD:***	No
Tank RD Leak Defer:	No	***Pipe RD Tight Test:***	No
Tank RD Other:	No	***Pipe RD SIR:***	No
Tank RD Other Spec:		***Pipe RD Leak Defer:***	
Spl Device Install:	No	***Pipe RD Other:***	No
Overfill Dev Inst:	No	***Pipe RD Other Spec:***	

Note: *Please note this record may appear incomplete as provided by the Department.

Tank Details

Tank Owner ID:	37412	***Install Date:***	
Tank No:	0007	***Date Closed:***	12/26/1990
Tank Status:	REM FROM GRD	***Capacity:***	1000
Tank Type:	UST	***Contents:***	GASOLINE
Fed Regulated Tank:	Yes	***Other Contents:***	

Tank Materials

Asphalt/Bare Steel:	Yes	***Impressed Current:***	No
CCP/STI-P3:	No	***Polyethyl Jacket:***	No
Composite:	No	***Concrete:***	No
Fiberglass:	No	***Excavation Liner:***	No
Lined Interior:	No	***Secondary Contain:***	No
Double Walled:	No	***Repaired:***	No
Other:	No	***Unknown:***	Yes
Other Specify:			

Note: *Please note this record may appear incomplete as provided by the Department.

Pipe Materials

Piping Type:	NO VALVE: SUCTION	***Impressed Current:***	
Asphalt/Bare Steel:	No	***Double Walled:***	No
Galvanized Steel:	Yes	***Polyflexible:***	No
Fiberglass:	No	***Unknown:***	Yes
Copper:	No	***Secondary Contain:***	No
Cathodic Protected:	No	***Other:***	No
Repaired:	No	***Other Specify:***	

Note: *Please note this record may appear incomplete as provided by the Department.

Tank/Pipe Release Detection

Manual Gauging:	No	***Overfill Type:***	
Tank RD Tight Test:	No	***Overfill Spec:***	
Inventory Controls:	No	***Pipe RD MTG:***	No
Tank RD ATG:	No	***Pipe RD ATG:***	
Tank RD Vapor Mntr:	No	***Pipe RD GW Monitor:***	No
Tank RD GW Monitor:	No	***Pipe RD Vapor Mntr:***	No
Tnk RD IM Dbl Wall:	No	***Pipe IM Dbl Wall:***	No
Tnk RD IM Sec Cont:	No	***Pipe IM Sec Cont:***	No
Tank RD SIR:	No	***Pipe RD ALLD:***	No
Tank RD Leak Defer:	No	***Pipe RD Tight Test:***	No
Tank RD Other:	No	***Pipe RD SIR:***	No

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Tank RD Other Spec:		Pipe RD Leak Defer:	
Spl Device Install:	No	Pipe RD Other:	No
Overfill Dev Inst:	No	Pipe RD Other Spec:	
Note:	*Please note this record may appear incomplete as provided by the Department.		

Owner

Tank Owner ID:	37412	Owner Name:	Prince William County Schools
No of Active AST:	0	Owner Address 1:	PO Box 389
No of Active UST:	0	Owner Address 2:	
No of Inactive AST:	0	Owner City:	Manassas
No of Inactive UST:	3	Owner State:	VA
Federal Regulated:	Yes	Owner Zip 5:	20108
Region:	NVRO	Owner Zip 4:	
Name:	PWCS Pace West	Owner Type:	LOCAL

12 | 1 of 1 | N | 0.34 / 1,806.02 | 365.17 / 2 | Nosek Valerie Residence, 14985 Walter Robinson Ln, Haymarket VA 20169-2955 | LST

PC No:	20083200	Heat Oil Category:	Category 2
CEDS Fac ID:	200000848501	Exmpt1 UST2:	No
Case Status:	Closed	Exmpt2 Ht Oil UST2:	No
Case Closed Date:	6/2/2008	Small Ht Oil AST2:	Yes
Release Reported:	2/19/2008	Regulated AST3:	No
Fed Regulated UST?:	No	Unregulated AST3:	No
Program:	RP Lead	Other Tank Type?:	No
Reg Petrol UST1:	No	Oth Tank Type Desc:	
Excluded UST1:	No	Unknown Tank Type?:	No
Deferred UST1:	No	County:	Prince William County
Partial Defer UST1:	No	Region:	NRO

13 | 1 of 4 | WNW | 0.44 / 2,321.30 | 369.89 / 7 | Q Stop 616, 15250 Washington St, Haymarket VA 20169 | LST

PC No:	20093130	Heat Oil Category:	
CEDS Fac ID:	200000193814	Exmpt1 UST2:	No
Case Status:	Closed	Exmpt2 Ht Oil UST2:	No
Case Closed Date:	2/25/2009	Small Ht Oil AST2:	No
Release Reported:	2/3/2009	Regulated AST3:	No
Fed Regulated UST?:	Yes	Unregulated AST3:	No
Program:	RP Lead	Other Tank Type?:	No
Reg Petrol UST1:	Yes	Oth Tank Type Desc:	
Excluded UST1:	No	Unknown Tank Type?:	No
Deferred UST1:	No	County:	Prince William County
Partial Defer UST1:	No	Region:	NRO

13 | 2 of 4 | WNW | 0.44 / 2,321.30 | 369.89 / 7 | Holladays Market, 15250 Washington St, Haymarket VA 20169 | LST

PC No:	19891627	Heat Oil Category:	
CEDS Fac ID:	200000193814	Exmpt1 UST2:	No
Case Status:	Closed	Exmpt2 Ht Oil UST2:	No
Case Closed Date:	8/22/1994	Small Ht Oil AST2:	No
Release Reported:	5/31/1989	Regulated AST3:	No
Fed Regulated UST?:	Yes	Unregulated AST3:	No
Program:	RP Lead	Other Tank Type?:	No
Reg Petrol UST1:	Yes	Oth Tank Type Desc:	
Excluded UST1:	No	Unknown Tank Type?:	No
Deferred UST1:	No	County:	Prince William County
Partial Defer UST1:	No	Region:	NRO

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
13	3 of 4	WNW	0.44 / 2,321.30	369.89 / 7	Quarles - Q Stop 616 15250 Washington St Haymarket VA 20169	LST

PC No:	19940455	Heat Oil Category:	
CEDS Fac ID:	200000193814	Exmpt1 UST2:	No
Case Status:	Closed	Exmpt2 Ht Oil UST2:	No
Case Closed Date:	8/8/1994	Small Ht Oil AST2:	No
Release Reported:	9/14/1993	Regulated AST3:	No
Fed Regulated UST?:	Yes	Unregulated AST3:	No
Program:	RP Lead	Other Tank Type?:	No
Reg Petrol UST1:	Yes	Oth Tank Type Desc:	
Excluded UST1:	No	Unknown Tank Type?:	No
Deferred UST1:	No	County:	Prince William County
Partial Defer UST1:	No	Region:	NRO

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
13	4 of 4	WNW	0.44 / 2,321.30	369.89 / 7	Quarles - Q Stop 116 15250 Washington St Haymarket VA 20169	LST

PC No:	19973128	Heat Oil Category:	
CEDS Fac ID:	200000193814	Exmpt1 UST2:	No
Case Status:	Closed	Exmpt2 Ht Oil UST2:	No
Case Closed Date:	4/30/1998	Small Ht Oil AST2:	No
Release Reported:	1/30/1997	Regulated AST3:	No
Fed Regulated UST?:	Yes	Unregulated AST3:	No
Program:	RP Lead	Other Tank Type?:	No
Reg Petrol UST1:	Yes	Oth Tank Type Desc:	
Excluded UST1:	No	Unknown Tank Type?:	No
Deferred UST1:	No	County:	Prince William County
Partial Defer UST1:	No	Region:	NRO

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
14	1 of 2	WNW	0.44 / 2,330.41	370.07 / 7	MIFCO Station 3008861 former 15251 Washington St Haymarket VA 22069	LST

PC No:	19900830	Heat Oil Category:	
CEDS Fac ID:	200000076434	Exmpt1 UST2:	No
Case Status:	Closed	Exmpt2 Ht Oil UST2:	No
Case Closed Date:	5/29/1996	Small Ht Oil AST2:	No
Release Reported:	1/8/1990	Regulated AST3:	No
Fed Regulated UST?:	Yes	Unregulated AST3:	No
Program:	RP Lead	Other Tank Type?:	No
Reg Petrol UST1:	Yes	Oth Tank Type Desc:	
Excluded UST1:	No	Unknown Tank Type?:	No
Deferred UST1:	No	County:	Prince William County
Partial Defer UST1:	No	Region:	NRO

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
14	2 of 2	WNW	0.44 / 2,330.41	370.07 / 7	MIFCO 3008861 former 15251 Washington St Haymarket VA 22069	LST

PC No:	19900398	Heat Oil Category:	
CEDS Fac ID:	200000076434	Exmpt1 UST2:	No
Case Status:	Closed	Exmpt2 Ht Oil UST2:	No
Case Closed Date:	12/28/1994	Small Ht Oil AST2:	No
Release Reported:	10/2/1989	Regulated AST3:	No
Fed Regulated UST?:	Yes	Unregulated AST3:	No
Program:	RP Lead	Other Tank Type?:	No
Reg Petrol UST1:	Yes	Oth Tank Type Desc:	
Excluded UST1:	No	Unknown Tank Type?:	No

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Deferred UST1:	No			County:	Prince William County	
Partial Defer UST1:	No			Region:	NRO	

15	1 of 1	SE	0.45 / 2,363.42	355.69 / -7	Mullen Walter Property 14522 John Marshall Hwy Gainesville VA 20155	LST

PC No:	20093172	Heat Oil Category:	Category 1
CEDS Fac ID:	200000851110	Exmpt1 UST2:	No
Case Status:	Closed	Exmpt2 Ht Oil UST2:	Yes
Case Closed Date:	11/30/2009	Small Ht Oil AST2:	No
Release Reported:	4/9/2009	Regulated AST3:	No
Fed Regulated UST?:	No	Unregulated AST3:	No
Program:	RP Lead	Other Tank Type?:	No
Reg Petrol UST1:	No	Oth Tank Type Desc:	
Excluded UST1:	No	Unknown Tank Type?:	No
Deferred UST1:	No	County:	Prince William County
Partial Defer UST1:	No	Region:	NRO

16	1 of 2	WNW	0.48 / 2,518.77	370.21 / 8	Sheetz 205 15315 Washington St Haymarket VA 20169	LST

PC No:	19954124	Heat Oil Category:	
CEDS Fac ID:	200000074764	Exmpt1 UST2:	No
Case Status:	Closed	Exmpt2 Ht Oil UST2:	No
Case Closed Date:	1/9/1995	Small Ht Oil AST2:	No
Release Reported:	11/29/1994	Regulated AST3:	No
Fed Regulated UST?:	No	Unregulated AST3:	No
Program:	RP Lead	Other Tank Type?:	No
Reg Petrol UST1:	No	Oth Tank Type Desc:	
Excluded UST1:	No	Unknown Tank Type?:	No
Deferred UST1:	No	County:	Prince William County
Partial Defer UST1:	No	Region:	NRO

16	2 of 2	WNW	0.48 / 2,518.77	370.21 / 8	Sheetz 205 15315 Washington St Haymarket VA 20169	LST

PC No:	20183083	Heat Oil Category:	
CEDS Fac ID:	200000074764	Exmpt1 UST2:	No
Case Status:	Closed	Exmpt2 Ht Oil UST2:	No
Case Closed Date:	3/2/2018	Small Ht Oil AST2:	No
Release Reported:	10/23/2017	Regulated AST3:	No
Fed Regulated UST?:	Yes	Unregulated AST3:	No
Program:	RP Lead	Other Tank Type?:	No
Reg Petrol UST1:	Yes	Oth Tank Type Desc:	
Excluded UST1:	No	Unknown Tank Type?:	No
Deferred UST1:	No	County:	Prince William County
Partial Defer UST1:	No	Region:	NRO

Unplottable Summary

Total: 20 Unplottable sites

DB	Company Name/Site Name	Address	City	Zip	ERIS ID
ERNS		ROUTE 66	GAINSVILLE VA		825410224
ERNS		INTERSTATE 66 MILE MARKER 40,EASTBOUND	HAY MARKET VA	16625	806627416
ERNS		ROUTE 55	HAY MARKET VA		806935344
HIST MLTS	LUDLUM MEASUREMENTS INC.	CORNER OF WASHINGTON & JEFFERS	HAYMARKET VA	22069	847189167
HMIRS		Interstate 66 East MM 40	HAYMARKET VA		818416203
SPILLS	Exit 44 on I-66	Exit 44 on I-66	Gainesville VA		812564969
		IR No **|** ***Status*** **|** ***Closure Date:*** 2004-N-0419		2/10/2004	
SPILLS	TTA	I 66 EB at MM 40	Haymarket VA		857822238
		IR No **|** ***Status*** **|** ***Closure Date:*** 2017-N-0269	Closed	10/25/2016	
SPILLS	TTA - Wilkins Trucking Diesel (50 gal)	I-66 EB @ MM 37	VA		867436248
		IR No **|** ***Status*** **|** ***Closure Date:*** 2018-N-2792	Closed	5/2/2018	
SPILLS	I-66 EB @ MM 43	I-66 EB @ MM 43	Gainesville VA		812579638
		IR No **|** ***Status*** **|** ***Closure Date:*** 2008-N-0478		2/13/2008	
SPILLS	Valued Transport TTA	I-66 EB, MM 37.6	Haymarket VA		866630695
		IR No **|** ***Status*** **|** ***Closure Date:*** 2018-N-1877	Closed	3/9/2018	
SPILLS	TTA - Vehicle Fluids	I-66 EB, MM 38	VA		870992021
		IR No **|** ***Status*** **|** ***Closure Date:*** 2019-N-0829	Closed	9/4/2018	

SPILLS	Cloverland Farm Water Withdrawal	Rt. 55 (Off Rt 55 near Broad Run)	VA	812588650
		IR No **|** ***Status*** **|** ***Closure Date:*** 2012-N-0693 | Closed | 4/3/2012		
SPILLS	James Madison Highway	James Madison Highway @ RR Track Crossing	Haymarket VA	812574201
		IR No **|** ***Status*** **|** ***Closure Date:*** 2006-N-0079 | | 7/28/2005		
SPILLS	CLI Transport Accident-Saddle Tank Release	Interstate 66 WB, Mile Marker 40	Haymarket VA	812591722
		IR No **|** ***Status*** **|** ***Closure Date:*** 2010-N-1760 | Closed | 3/8/2010		
SPILLS	Diesel Spill on Hwy	I-66 WB at Mile Marker 47	VA	828916467
		IR No **|** ***Status*** **|** ***Closure Date:*** 2016-N-0278 | Closed | 7/23/2015		
SPILLS	TTA	I-66, near Exit 43	VA	812586808
		IR No **|** ***Status*** **|** ***Closure Date:*** 2013-N-2705 | Closed | 4/12/2013		
SPILLS	I-66	I-66 MM45	Gainesville VA	812562949
		IR No **|** ***Status*** **|** ***Closure Date:*** 2005-N-0089 | | 7/4/2004		
SPILLS	American Disposal MVA	I-66 MM 47	VA	812591179
		IR No **|** ***Status*** **|** ***Closure Date:*** 2013-N-2766 | Closed | 4/26/2013		
SPILLS	MVA - Engine Oil	I-66 EB, MM 47	Gainesville VA	870992176
		IR No **|** ***Status*** **|** ***Closure Date:*** 2019-N-0597 | Closed | 8/14/2018		
SPILLS	Vehicle Fire Diesel Spill	I-66 EB, MM 41	VA	870992579
		IR No **|** ***Status*** **|** ***Closure Date:*** 2019-N-0806 | Closed | 8/31/2018		

Unplottable Report

Site:

ROUTE 66 GAINSVILLE VA ERNS

NRC Report No:	1104638	***Latitude Degrees:***	
Type of Incident:	MOBILE	***Latitude Minutes:***	
Incident Cause:	OTHER	***Latitude Seconds:***	
Incident Date:	12/29/2014 1:00:00 PM	***Longitude Degrees:***	
Incident Location:		***Longitude Minutes:***	
Incident Dtg:	OCCURRED	***Longitude Seconds:***	
Distance from City:		***Lat Quad:***	
Distance Units:		***Long Quad:***	
Potential Flag:	No	***Location Section:***	
Year:	Year 2014 Reports	***Location Township:***	
Direction from City:		***Location Range:***	
Location County:	PRINCE WILLIAM		

Description of Incident: CALLER IS REPORTING AN UNKNOWN AMOUNT OF GEAR OIL WATER MIXTURE THAT WAS DISCHARGED ONTO THE GROUND. CALLER STATED THE COMPANY WAS NOT USING ANY BIO-OILS IN THE HORIZONTAL BORING MACHINE BORING HEAD WHILE BORING UNDERGROUND. CALLER STATED THE COMPANY USED CONVENTUAL GEAR OIL AND WAS TOLD TO HIDE THE GEAR OIL.

Material Spill Information

Chris Code:	OTH	***Unit of Measure:***	UNKNOWN AMOUNT
CAS No:	000000-00-0	***If Reached Water:***	NO
UN No:		***Amount in Water:***	
Name of Material:	OTHER OIL, GEAR OIL	***Unit Reach Water:***	
Amount of Material:	0		

Calls Information

Date Time Received:	12/31/2014 1:44:29 PM	***Responsible City:***	FREDRICSBURG
Date Time Complete:	12/31/2014 2:09:01 PM	***Responsible State:***	VA
Call Type:	INC	***Responsible Zip:***	22406
Resp Company:	STEPHENS CABLE AND CONSTRUCTION	***Source:***	TELEPHONE
Resp Org Type:	PRIVATE ENTERPRISE		

Incident Information

Tank ID:		***Building ID:***	
Tank Regulated:	U	***Location Area ID:***	
Tank Regulated By:		***Location Block ID:***	
Capacity of Tank:		***OCSG No:***	
Capacity Tank Units:		***OCSP No:***	
Description of Tank:		***State Lease No:***	
Actual Amount:		***Pier Dock No:***	
Actual Amount Units:		***Berth Slip No:***	
Tank Above Ground:	ABOVE	***Brake Failure:***	U
NPDES:		***Airbag Deployed:***	U
NPDES Compliance:	U	***Transport Contain:***	U
Init Contin Rel No:		***Location Subdiv:***	
Contin Rel Permit:		***Platform Rig Name:***	
Contin Release Type:		***Platform Letter:***	
Aircraft ID:		***Allision:***	U
Aircraft Runway No:		***Type of Structure:***	
Aircraft Spot No:		***Structure Name:***	
Aircraft Type:		***Structure Oper:***	U
Aircraft Model:		***Transit Bus Flag:***	
Aircraft Fuel Cap:		***Date Time Norm Serv:***	
Aircraft Fuel Cap U:		***Serv Disrupt Time:***	

Aircraft Fuel on Brd:		*Serv Disrupt Units:*	
Aircraft Fuel OB U:		*CR Begin Date:*	
Aircraft Hanger:		*CR End Date:*	
Road Mile Marker:		*CR Change Date:*	
Power Gen Facility:	U	*FBI Contact:*	
Generating Capacity:		*FBI Contact Dt Tm:*	
Type of Fixed Obj:		*Passenger Handling:*	
Type of Fuel:		*Passenger Route:*	XXX
DOT Crossing No:		*Passenger Delay:*	XXX
DOT Regulated:	U	*Sub Part C Test Req:*	XXX
Pipeline Type:		*Conductor Test:*	
Pipeline Abv Ground:	ABOVE	*Engineer Test:*	
Pipeline Covered:	U	*Trainman Test:*	
Exposed Underwater:	N	*Yard Foreman Test:*	
Railroad Hotline:		*RCL Operator Test:*	
Railroad Milepost:		*Brakeman Test:*	
Grade Crossing:	U	*Train Dispat Test:*	
Crossing Device Ty:		*Signalman Test:*	
Ty Vehicle Involved:		*Oth Employee Test:*	
Device Operational:	U	*Unknown Test:*	

Incident Details Information

Release Secured:	U	*State Agen Report No:*	
Release Rate:		*State Agen on Scene:*	
Release Rate Unit:		*State Agen Notified:*	
Release Rate Rate:		*Fed Agency Notified:*	
Est Duration of Rel:		*Oth Agency Notified:*	
Desc Remedial Act:	NONE	*Body of Water:*	
Fire Involved:	N	*Tributary of:*	
Fire Extinguished:	U	*Near River Mile Make:*	
Any Evacuations:	N	*Near River Mile Mark:*	
Number Evacuated:		*Offshore:*	N
Who Evacuated:		*Weather Conditions:*	SUNNY
Radius of Evacu:		*Air Temperature:*	
Any Injuries:	N	*Wind Direction:*	
No. Injured:		*Wind Speed:*	
No. Hospitalized:		*Wind Speed Unit:*	
No. Fatalities:		*Water Supp Contam:*	U
Any Fatalities:	N	*Water Temperature:*	
Any Damages:	N	*Wave Condition:*	
Damage Amount:		*Current Speed:*	
Air Corridor Closed:	N	*Current Direction:*	
Air Corridor Desc:		*Current Speed Unit:*	
Air Closure Time:		*EMPL Fatality:*	
Waterway Closed:	N	*Pass Fatality:*	
Waterway Desc:		*Community Impact:*	
Waterway Close Time:		*Passengers Transfer:*	NO
Road Closed:	N	*Passenger Injuries:*	
Road Desc:		*Employee Injuries:*	
Road Closure Time:		*Occupant Fatality:*	
Road Closure Units:		*Sheen Size:*	
Closure Direction:		*Sheen Size Units:*	
Major Artery:	No	*Sheen Size Length:*	
Track Closed:	N	*Sheen Size Length U:*	
Track Desc:		*Sheen Size Width:*	
Track Closure Time:		*Sheen Size Width U:*	
Track Closure Units:		*Sheen Color:*	
Track Close Dir:		*Dir of Sheen Travel:*	
Media Interest:	UNKNOWN	*Sheen Odor Desc:*	
Medium Desc:	LAND	*Duration Unit:*	
Addl Medium Info:	SOIL	*Additional Info:*	

Site:

INTERSTATE 66 MILE MARKER 40,EASTBOUND HAY MARKET VA 16625 ERNS

NRC Report No:	927448	*Latitude Degrees:*	
Type of Incident:	MOBILE	*Latitude Minutes:*	
Incident Cause:	TRANSPORT ACCIDENT	*Latitude Seconds:*	

Incident Date:	12/31/2009 5:40:00 AM	***Longitude Degrees:***	
Incident Location:		***Longitude Minutes:***	
Incident Dtg:	OCCURRED	***Longitude Seconds:***	
Distance from City:		***Lat Quad:***	
Distance Units:		***Long Quad:***	
Potential Flag:	No	***Location Section:***	
Year:	Year 2009 Reports	***Location Township:***	
Direction from City:		***Location Range:***	
Location County:	WARREN		

Description of Incident: CALLER STATED THERE WAS A SPILL OF MATERIALS FROM THE SADDLE TANK OF A TRACTOR TRAILER TRUCK DUE TO A TRANSPORT ACCIDENT. CALLER STATED THE TRUCK REACTED TO ANOTHER VEHICLE AND STRUCK A GUARD RAIL. THIS RESULTED IN A SPILL OF DIESEL FROM THE SADDLE TANK OF THE TRACTOR TRAILER TRUCK. CALLER STATED THE VEHICLE THE TRUCK REACTED TO HAS LEFT THE AREA.

Material Spill Information

Chris Code:	ODS	***Unit of Measure:***	GALLON(S)
CAS No:	000000-00-0	***If Reached Water:***	NO
UN No:		***Amount in Water:***	
Name of Material:	OIL: DIESEL	***Unit Reach Water:***	
Amount of Material:	50		

Calls Information

Date Time Received:	12/31/2009 8:06:14 AM	***Responsible City:***	CLAYSBURG
Date Time Complete:	12/31/2009 8:15:52 AM	***Responsible State:***	PA
Call Type:	INC	***Responsible Zip:***	16625
Resp Company:	CLI TRANSPORT	***Source:***	TELEPHONE
Resp Org Type:	PRIVATE ENTERPRISE		

Incident Information

Tank ID:		***Building ID:***	
Tank Regulated:	U	***Location Area ID:***	
Tank Regulated By:		***Location Block ID:***	
Capacity of Tank:		***OCSG No:***	
Capacity Tank Units:		***OCSP No:***	
Description of Tank:		***State Lease No:***	
Actual Amount:		***Pier Dock No:***	
Actual Amount Units:		***Berth Slip No:***	
Tank Above Ground:	ABOVE	***Brake Failure:***	U
NPDES:		***Airbag Deployed:***	U
NPDES Compliance:	U	***Transport Contain:***	U
Init Contin Rel No:		***Location Subdiv:***	
Contin Rel Permit:		***Platform Rig Name:***	
Contin Release Type:		***Platform Letter:***	
Aircraft ID:		***Allision:***	U
Aircraft Runway No:		***Type of Structure:***	
Aircraft Spot No:		***Structure Name:***	
Aircraft Type:		***Structure Oper:***	U
Aircraft Model:		***Transit Bus Flag:***	
Aircraft Fuel Cap:		***Date Time Norm Serv:***	
Aircraft Fuel Cap U:		***Serv Disrupt Time:***	
Aircraft Fuel on Brd:		***Serv Disrupt Units:***	
Aircraft Fuel OB U:		***CR Begin Date:***	
Aircraft Hanger:		***CR End Date:***	
Road Mile Marker:	40	***CR Change Date:***	
Power Gen Facility:	U	***FBI Contact:***	
Generating Capacity:		***FBI Contact Dt Tm:***	
Type of Fixed Obj:		***Passenger Handling:***	
Type of Fuel:		***Passenger Route:***	XXX
DOT Crossing No:		***Passenger Delay:***	XXX
DOT Regulated:	U	***Sub Part C Test Req:***	XXX
Pipeline Type:		***Conductor Test:***	
Pipeline Abv Ground:	ABOVE	***Engineer Test:***	
Pipeline Covered:	U	***Trainman Test:***	
Exposed Underwater:	N	***Yard Foreman Test:***	
Railroad Hotline:		***RCL Operator Test:***	

Railroad Milepost:		***Brakeman Test:***	
Grade Crossing:	U	***Train Dispat Test:***	
Crossing Device Ty:		***Signalman Test:***	
Ty Vehicle Involved:		***Oth Employee Test:***	
Device Operational:	U	***Unknown Test:***	

Incident Details Information

Release Secured:	Y	***State Agen Report No:***	NONE
Release Rate:		***State Agen on Scene:***	VA STATE POLICE, FIRE & RESCUE
Release Rate Unit:		***State Agen Notified:***	DEM
Release Rate Rate:		***Fed Agency Notified:***	NONE
Est Duration of Rel:		***Oth Agency Notified:***	
Desc Remedial Act:	CALLER STATED THEY HAVE CALLED MILLER ENVIRONMENTALS. THEY ARE EN ROUTE TO THE SCENE.	***Body of Water:***	
Fire Involved:	N	***Tributary of:***	
Fire Extinguished:	U	***Near River Mile Make:***	
Any Evacuations:	N	***Near River Mile Mark:***	
Number Evacuated:		***Offshore:***	N
Who Evacuated:		***Weather Conditions:***	RAINY
Radius of Evacu:		***Air Temperature:***	31
Any Injuries:	N	***Wind Direction:***	
No. Injured:		***Wind Speed:***	
No. Hospitalized:		***Wind Speed Unit:***	
No. Fatalities:		***Water Supp Contam:***	U
Any Fatalities:	N	***Water Temperature:***	
Any Damages:	N	***Wave Condition:***	
Damage Amount:		***Current Speed:***	
Air Corridor Closed:	N	***Current Direction:***	
Air Corridor Desc:		***Current Speed Unit:***	
Air Closure Time:		***EMPL Fatality:***	
Waterway Closed:	N	***Pass Fatality:***	
Waterway Desc:		***Community Impact:***	
Waterway Close Time:		***Passengers Transfer:***	NO
Road Closed:	N	***Passenger Injuries:***	
Road Desc:		***Employee Injuries:***	
Road Closure Time:		***Occupant Fatality:***	
Road Closure Units:		***Sheen Size:***	
Closure Direction:		***Sheen Size Units:***	
Major Artery:	No	***Sheen Size Length:***	
Track Closed:	N	***Sheen Size Length U:***	
Track Desc:		***Sheen Size Width:***	
Track Closure Time:		***Sheen Size Width U:***	
Track Closure Units:		***Sheen Color:***	
Track Close Dir:		***Dir of Sheen Travel:***	
Media Interest:	NONE	***Sheen Odor Desc:***	
Medium Desc:	LAND	***Duration Unit:***	
Addl Medium Info:	ONTO THE GROUND	***Additional Info:***	CALLER DID NOT HAVE ANY ADDITIONAL INFORMATION.

Site:

ROUTE 55 HAY MARKET VA ERNS

NRC Report No:	973247	***Latitude Degrees:***	
Type of Incident:	PIPELINE	***Latitude Minutes:***	
Incident Cause:	OTHER	***Latitude Seconds:***	
Incident Date:	4/17/2011 8:30:00 PM	***Longitude Degrees:***	
Incident Location:		***Longitude Minutes:***	
Incident Dtg:	OCCURRED	***Longitude Seconds:***	
Distance from City:		***Lat Quad:***	
Distance Units:		***Long Quad:***	
Potential Flag:	No	***Location Section:***	
Year:	Year 2011 Reports	***Location Township:***	
Direction from City:		***Location Range:***	
Location County:	PRINCE WILLIAM		

Description of Incident: CALLER IS REPORTING A RELEASE OF NATURAL GAS. CALLER STATED WHILE GENERAL EXCAVATION INC WAS WORKING ON INSTALLING A PIPELINE ACROSS THE ROADWAY THE COMPANY STRUCK THE GAS LINE CAUSING THE RELEASE.

Material Spill Information

Chris Code:	ONG	***Unit of Measure:***	UNKNOWN AMOUNT
CAS No:	000000-00-0	***If Reached Water:***	NO
UN No:		***Amount in Water:***	
Name of Material:	NATURAL GAS	***Unit Reach Water:***	
Amount of Material:	0		

Calls Information

Date Time Received:	4/18/2011 12:59:31 AM	***Responsible City:***	
Date Time Complete:	4/18/2011 1:13:01 AM	***Responsible State:***	XX
Call Type:	INC	***Responsible Zip:***	
Resp Company:	GENERAL EXCAVATION INC	***Source:***	TELEPHONE
Resp Org Type:	PRIVATE ENTERPRISE		

Incident Information

Tank ID:		***Building ID:***	
Tank Regulated:	U	***Location Area ID:***	
Tank Regulated By:		***Location Block ID:***	
Capacity of Tank:		***OCSG No:***	
Capacity Tank Units:		***OCSP No:***	
Description of Tank:		***State Lease No:***	
Actual Amount:		***Pier Dock No:***	
Actual Amount Units:		***Berth Slip No:***	
Tank Above Ground:	ABOVE	***Brake Failure:***	U
NPDES:		***Airbag Deployed:***	U
NPDES Compliance:	U	***Transport Contain:***	U
Init Contin Rel No:		***Location Subdiv:***	
Contin Rel Permit:		***Platform Rig Name:***	
Contin Release Type:		***Platform Letter:***	
Aircraft ID:		***Allision:***	U
Aircraft Runway No:		***Type of Structure:***	
Aircraft Spot No:		***Structure Name:***	
Aircraft Type:		***Structure Oper:***	U
Aircraft Model:		***Transit Bus Flag:***	
Aircraft Fuel Cap:		***Date Time Norm Serv:***	
Aircraft Fuel Cap U:		***Serv Disrupt Time:***	
Aircraft Fuel on Brd:		***Serv Disrupt Units:***	
Aircraft Fuel OB U:		***CR Begin Date:***	
Aircraft Hanger:		***CR End Date:***	
Road Mile Marker:		***CR Change Date:***	
Power Gen Facility:	U	***FBI Contact:***	
Generating Capacity:		***FBI Contact Dt Tm:***	
Type of Fixed Obj:		***Passenger Handling:***	
Type of Fuel:		***Passenger Route:***	XXX
DOT Crossing No:		***Passenger Delay:***	XXX
DOT Regulated:	Y	***Sub Part C Test Req:***	XXX
Pipeline Type:	DISTRIBUTION	***Conductor Test:***	
Pipeline Abv Ground:	BELOW	***Engineer Test:***	
Pipeline Covered:	U	***Trainman Test:***	
Exposed Underwater:	N	***Yard Foreman Test:***	
Railroad Hotline:		***RCL Operator Test:***	
Railroad Milepost:		***Brakeman Test:***	
Grade Crossing:	U	***Train Dispat Test:***	
Crossing Device Ty:		***Signalman Test:***	
Ty Vehicle Involved:		***Oth Employee Test:***	
Device Operational:	U	***Unknown Test:***	

Incident Details Information

Release Secured:	Y	***State Agen Report No:***	NONE
Release Rate:		***State Agen on Scene:***	NONE
Release Rate Unit:		***State Agen Notified:***	ST CORP COMMISION
Release Rate Rate:		***Fed Agency Notified:***	NONE
Est Duration of Rel:		***Oth Agency Notified:***	

Desc Remedial Act:	MAKING THE REPAIRS TO THE PIPELINE, 70 COSTUMERS WERE WITHOUT NATURAL GAS DUE TO HAVING TO SHUT IN A VALVE TO STOP THE FLOW.	***Body of Water:***	
Fire Involved:	N	***Tributary of:***	
Fire Extinguished:	U	***Near River Mile Make:***	
Any Evacuations:	N	***Near River Mile Mark:***	
Number Evacuated:		***Offshore:***	N
Who Evacuated:		***Weather Conditions:***	CLEAR
Radius of Evacu:		***Air Temperature:***	55
Any Injuries:	N	***Wind Direction:***	
No. Injured:		***Wind Speed:***	
No. Hospitalized:		***Wind Speed Unit:***	
No. Fatalities:		***Water Supp Contam:***	U
Any Fatalities:	N	***Water Temperature:***	
Any Damages:	Y	***Wave Condition:***	
Damage Amount:	50000	***Current Speed:***	
Air Corridor Closed:	N	***Current Direction:***	
Air Corridor Desc:		***Current Speed Unit:***	
Air Closure Time:		***EMPL Fatality:***	
Waterway Closed:	N	***Pass Fatality:***	
Waterway Desc:		***Community Impact:***	
Waterway Close Time:		***Passengers Transfer:***	NO
Road Closed:	N	***Passenger Injuries:***	
Road Desc:		***Employee Injuries:***	
Road Closure Time:		***Occupant Fatality:***	
Road Closure Units:		***Sheen Size:***	
Closure Direction:		***Sheen Size Units:***	
Major Artery:	No	***Sheen Size Length:***	
Track Closed:	N	***Sheen Size Length U:***	
Track Desc:		***Sheen Size Width:***	
Track Closure Time:		***Sheen Size Width U:***	
Track Closure Units:		***Sheen Color:***	
Track Close Dir:		***Dir of Sheen Travel:***	
Media Interest:	NONE	***Sheen Odor Desc:***	
Medium Desc:	AIR	***Duration Unit:***	
Addl Medium Info:	ATMOSPHERE	***Additional Info:***	NO ADDITIONAL INFORMATION.

Site: ***LUDLUM MEASUREMENTS INC.***
CORNER OF WASHINGTON & JEFFERS HAYMARKET VA 22069 HIST MLTS

Docket: 3010462
License No: 45-16128-01

Site:
Interstate 66 East MM 40 HAYMARKET VA HMIRS

Incident County: PRINCE WILLIAM

HMIR Incident Reports

Report No:	E-2010010315	***Fed DOT Agency Nm:***	
Report Type:	A specification cargo tank 1 000 gallons or greater containing any hazardous materials that (1) received structural damage to the lading retention system or damage that requires repair to a system int	***Fed DOT Report No:***	
Date of Incident:	12/30/2009	***Report Submit Src:***	Web
Time of Incident:	0540	***Inc Multiple Rows:***	No
Haz Class Code:	3	***Inc Non US State:***	
Hazardous Class:	FLAMMABLE - COMBUSTIBLE LIQUID	***Mode Transport:***	Highway
Commodity Short Nm:	GASOHOL GASOLINE MIXED W	***Transport Phase:***	IN TRANSIT
Commodity Long Nm:	GASOHOL GASOLINE MIXED WITH ETHYL ALCOHOL WITH NOT MORE THAN 10% ALCOHOL	***Incident Occrrnce:***	
Trade Name:	Gasohol	***Mat Ship Approval?:***	No
ID No:	NA1203	***Mat Ship Approv No:***	
Haz Waste Ind:	No	***Undecl Hazmat Ship?:***	No

Haz Waste EPA No:	
HMIS Tox Inhalation?:	No
TIH Hazard Zone:	
Qty Released:	0
Unit of Measure:	
What Failed:	
What Failed Desc:	
How Failed Code:	
How Failed Desc:	
Failure Cause Code:	
Failure Cause Desc:	
Ident. Markings:	DOT 406 (Highway)
Cont1 Pkging Type:	
Cont1 Const Mat:	
Cont1 Head Type:	
Cont1 Pkg Capacity:	9200
C1 Capacity UOM:	LGA
Cont1 Pkg Amt:	0
C1 Pkg Amt UOM:	
Cont1 Pkg Number:	1
C1 Pkg NO Failed:	1
Cont1 Pkg Mnfctr:	Heil Trailer International
Cont1 Pkg Mnfct Dt:	3/9/2006 12:00:00 AM
Cont1 Pkg Serial NO:	5HTAB442267H6963
C1 Pkg Last Test Dt:	2/25/2009 12:00:00 AM
C1 Test Const Mat:	Aluminium
C1 Pkg Dsign Pres.:	3
C1 Dsign Press UOM:	PSI
C1 Pkg Shell Thick:	0.1820
C1 Shell Thick UOM:	INCH
C1 Head Thickness:	0.2040
C1 Head Thick UOM:	INCH
C1 Pkg Srvc Pres.:	
C1 Srvc Press UOM:	
C1 Valve/Device Fail?:	No
C1 Device Type:	
C1 Device Mnfctr:	
C1 Device Model:	
NRC No:	927448

Packaging Type:	Cargo Tank Motor Vehicle (CTMV)
Packing Group:	II
Carrier Reporter:	CLI TRANSPORT LP
CR Street Name:	242 SHEETZ WAY
CR City:	CLAYSBURG
CR State:	PA
CR Postal Code:	16625-8345
CR Non US State:	
CR Fed DOT ID:	811465
CR Hazmat Reg ID:	060209552084R
CR Country:	US
Shipper Name:	SUNOCO
Shipper Street Name:	10315 BALLS FORD RD
Shipper City:	MANASSAS
Shipper State:	VA
Shipper Postal:	20109-2603
Shipper Non US St:	
Shipper Country:	US
Shipper Waybill:	0223083
Ship Hazmat Reg ID:	
Origin City:	MANASSAS
Origin State:	VIRGINIA
Origin Postal:	20109
Origin Non US St:	
Origin Country:	US
Destination City:	WINCHESTER
Destination State:	VIRGINIA
Destination Postal:	22602
Destination Non US:	
Destination Country:	US
Cont2 Package Type:	
Cont2 Const Mat:	
Cont2 Pkg Capacity:	
Cont2 Capacity UOM:	
Cont2 Pkg Amount:	
Cont2 Pkg Amt UOM:	
Cont2 Pkg No:	
Cont2 Pkg No Failed:	

RAM Pkg Category:	
RAM Pkg Cert.:	FALSE
RAM Pkg Cert. NBR:	
RAM Nuclide S:	
RAM Transport Index:	
RAM UOM:	
RAM Activity Rpted:	
RAM UOM Rpted:	
RAM Activity:	0
RAM Activity UOM:	
RAM Mat Safety:	
Spillage Result:	Yes
Fire Result:	No
Explosion Result:	No
Water Sewer Result:	No
Gas Dispersion:	No
Environment Damage:	No
No Release Result:	No
Fire EMS Report:	No
Fire EMS EMS Report:	
Police Report:	Yes
Police Report No:	DIV709161243
In House Cleanup:	No
Other Cleanup:	Yes
Damage > 500:	Yes
Material Loss:	125
Carrier Damage:	30000
Property Damage:	5000
Response Cost:	15000
Remediation Cost:	10000
Damage Old Form:	0

Haz NonHosp Public:	0
Haz NonHosp Old:	0
Tot Haz Non Hosp Inj:	0
Total Hazmat Injuries:	0
Evacuation Indicator:	No
Public Evacuated:	0
Employees Evac:	0
Total Evacuated:	0
Total Evacuation Hrs:	0
Major Artery Closed:	Yes
Mjr Artery Hrs Closed:	2
Material Involved:	Yes
Estimated Speed:	55
Weather Conditions:	icy
Vehicle Overturn:	No
Vehicle Left Roadway:	Yes
Passenger Aircraft:	No
Cargo Baggage:	
Ship Non Transport:	No
Ship Air First Flight:	No
Ship Air Subflight:	No
Ship Init Transport:	No
Ship Phase Transfer:	No
Contact Name:	JOHN TIPPERY
Contact Title:	DIRECTOR OF SAFETY
Contact Business:	CLI Transport LP
Contact Street:	242 Sheetz Way
Contact City:	CLAYSBURG
Contact State:	PA
Contact Postal:	16625
Contact Non US St:	

Total Damages Amt:	60125	***Contact Country:***	US
Hazmat Fatality:	No	***Inc. Report Prepared:***	Carrier
Haz Fatal Employees:	0	***HMIS Serious Incidnt:***	Yes
Haz Fatal Respndrs:	0	***HMIS Serious Fatality:***	No
Haz Fatal Gen Public:	0	***HMIS Serious Injury:***	No
Tot Hazmat Fatalities:	0	***HMIS Flight Plan:***	No
Non Hazmat Fatality:	No	***HMIS Serious Evacs:***	No
Non Hazmat Fatals:	0	***HMIS Major Artery:***	Yes
Hazmat Injury:	No	***HMIS Bulk Release:***	No
Haz Hospital Empl:	0	***HMIS Marine Pollutnt:***	No
Haz Hospital Resp:	0	***HMIS Radioactive:***	No
Haz Hosp Gen Public:	0	***HMIS Gen Pkg Type:***	OHMIR.Ref_Container.descr_txt
Haz Hosp Old Form:	0	***HMIS Container Code:***	DOT 406
Total Haz Hosp Inj:	0	***HMIS Container Desc:***	cargo tanks
Haz Non Hosp Empl:	0	***HMIS Bulk Incident:***	Yes
Haz Non Hosp Resp:	0	***Undeclared Shipment:***	No

Description of Events: Unit 1 (Cargo Tank) reacted to Unit 2 (unknown car) that had spun out of control in front of Unit 1; in icy road conditions. As a result of trying to avoid a collision unit 1 ended up in a jack-knife. Unit 2 recovered and continued on without stopping at the scene. Unit 1 and Unit 2 never made contact. Witnesses confirmed that unit 2 did spin out of control in front of unit 1. In any event the Cargo tank was empty returning from a delivery. During the jack-knife the saddle tank on the tractor punctured and leaked its approximate 50 gallons of diesel fuel onto the ground. The Cargo tank did not leak any HM. The road was closed for two hours while the truck and tanker were removed from the guardrail. The tanker sustained a small dent in the #1 compartment from the jack-knife requiring it to be repaired.

Recommend Actions Taken: Unit 1 should have had better control of his unit. As such speed control played an issue. While unit 1 did not start the chain of events however he needed to react to them. Possibly at a slower speed unit one would have had better control and not ended in a jack-knife.

Site: ***Exit 44 on I-66***
Exit 44 on I-66 Gainesville VA

SPILLS

IR No:	2004-N-0419	***Impacts:***	
Reference ID:		***Other Impacts:***	
Status:		***Steps Taken:***	
Incident Type:	Air	***System Comp:***	
Incident Subtype:	Air	***Other System Comp:***	
Effect to Receptor:		***Weather Status:***	
Associated IR:		***Precipitation Wet:***	
Incident Dte Time:	11/3/2003	***Discharge Type:***	
Call Recvd Dte Time:	11/4/2003	***Discharge Vol:***	
Closure Date:	2/10/2004	***Unkwn Discharge?:***	NO
Agencies Notified?:	NO	***Permitted?:***	NO
Other Agencies:		***Facility Name:***	
Threat to:		***Property Owner:***	
Terrorism?:	NO	***Property Company:***	
Characterize Incident:		***Duration of Event Hrs:***	
Quantity Units:		***Water Body:***	
Other Receptors:		***Region:***	Northern
RP Company:		***FIPS City County:***	Prince William County
RP Name:			
Low Quantity to Water:			
High Quantity to Water:			
Incident Ongoing at time of Call:			
Call Reprtd by Name:			
Call Reptd by Company Name:	Mr Jim Tans		
Call RP Company Name:			
Call RP Name:			
Call Prpty Owner Co:			
Call Prpty Owner Name:			
Steps taken Desc:			
Materials:			
Corrective Action Taken:			
Site Summary:			

Original Call Incident Desc: Strong Chemical odor in the area. 2100 hours at his home in Virginia Oaks subdivision, odor of burning hay. 2200 hrs. same location, strong chemical/pesticides odor causing eye and respiratory irritation

Originial Call Loc Desc: Exit 44 on I-66-Exit 44 on I-66-Gainesville-VA--Prince William County

Cause of Event:

Closure Comments: See Site Summary for details

Original Call Material Desc: (Qty=0)

Site: *TTA*
I 66 EB at MM 40 Haymarket VA

SPILLS

IR No:	2017-N-0269	***Impacts:***	
Reference ID:	68256	***Other Impacts:***	
Status:	Closed	***Steps Taken:***	
Incident Type:	Petroleum	***System Comp:***	
Incident Subtype:	Petroleum * Surface Spill	***Other System Comp:***	
Effect to Receptor:		***Weather Status:***	N/A
Associated IR:		***Precipitation Wet:***	0
Incident Dte Time:	7/18/2016	***Discharge Type:***	N/A
Call Recvd Dte Time:	7/22/2016	***Discharge Vol:***	0
Closure Date:	10/25/2016	***Unkwn Discharge?:***	No
Agencies Notified?:	Yes	***Permitted?:***	No
Other Agencies:		***Facility Name:***	
Threat to:		***Property Owner:***	
Terrorism?:	No	***Property Company:***	
Characterize Incident:	Accidental	***Duration of Event Hrs:***	0
Quantity Units:		***Water Body:***	
Other Receptors:		***Region:***	Northern
RP Company:		***FIPS City County:***	Prince William County
RP Name:			
Low Quantity to Water:			
High Quantity to Water:			
Incident Ongoing at time of Call:	No		
Call Reprtd by Name:			
Call Reptd by Company Name:	Prince William Dispatch		
Call RP Company Name:			
Call RP Name:			
Call Prpty Owner Co:			
Call Prpty Owner Name:			
Steps taken Desc:			
Materials:	Diesel (200-200 Gallons)		
Corrective Action Taken:			
Site Summary:			
Original Call Incident Desc:	VEOC RECEIVED A CALL FROM PRINCE WILLIAM 911, REPORTING A DIESEL SPILL OF 200 GALS. FROM A TRACTOR TRAILER FIRE ON I- 66 EB AT MILE MARKER 40. ATLAS ENVIRONMENTAL CONDUCTING CLEAN UP. NO WATERWAYS IMPACTED AND NO ADDITIONAL ASSISTANCE NEEDED FROM STATE.		
Original Call Loc Desc:	I 66 EB AND MM 40		
Cause of Event:			
Closure Comments:	NFA. Spill was remediated.		
Original Call Material Desc:	diesel		

Site: *TTA - Wilkins Trucking Diesel (50 gal)*
I-66 EB @ MM 37 VA

SPILLS

IR No:	2018-N-2792	***Impacts:***	
Reference ID:	132953	***Other Impacts:***	
Status:	Closed	***Steps Taken:***	
Incident Type:	Petroleum	***System Comp:***	
Incident Subtype:	Petroleum * Surface Spill	***Other System Comp:***	
Effect to Receptor:		***Weather Status:***	N/A
Associated IR:		***Precipitation Wet:***	0
Incident Dte Time:	5/1/2018	***Discharge Type:***	N/A
Call Recvd Dte Time:	5/2/2018	***Discharge Vol:***	0
Closure Date:	5/2/2018	***Unkwn Discharge?:***	No
Agencies Notified?:	Yes	***Permitted?:***	No
Other Agencies:	Prince William Co Fire; VDEM (HMVA-30406 RHMO-Higginbotham)	***Facility Name:***	
Threat to:		***Property Owner:***	
Terrorism?:	No	***Property Company:***	
Characterize Incident:	Accidental	***Duration of Event Hrs:***	0
Quantity Units:		***Water Body:***	
Other Receptors:	no surface water impacts - land only	***Region:***	Northern
RP Company:		***FIPS City County:***	Prince William County

RP Name:	
Low Quantity to Water:	
High Quantity to Water:	
Incident Ongoing at time of Call:	No
Call Reprtd by Name:	
Call Reptd by Company Name:	VSP
Call RP Company Name:	Wilkins Trucking
Call RP Name:	
Call Prpty Owner Co:	
Call Prpty Owner Name:	
Steps taken Desc:	
Materials:	Diesel (0-50 Gallons)
Corrective Action Taken:	
Site Summary:	
Original Call Incident Desc:	0024 - TELETYPE RCVD WITH THE FOLLOWING INFO: TRACTOR TRAILER STRUCK TIRE DEBRIS AT EASTBOUND 66 AT MILE MARKER 37. DUE TO STRICKING THE TIRE DEBRIS THE TRACTOR TRAILER LEAKED APPROXIMATELY 50 GALLONS OF FUEL. LEAK WAS PLUGGED BY PRINCE WILLIAM COUNTY FIRE DEPARTMENT WHO ADVISED THE LEAK DID NOT IMPACT ANY WATER SOURCES. ALL LANES WERE SHUT DOWN AT 2237 HOURS TO CLEAN UP THE SPILL. TELETYPE WILL FOLLOW WHEN ALL LANES ARE REOPENED. Products Involved:FUEL Quantity Lost:50 - Gallons
Originial Call Loc Desc:	I-66 EB @ MM 37
Cause of Event:	
Closure Comments:	Case ClosedAtlas Environmental completed spill cleanupNo surface water impacts
Original Call Material Desc:	diesel fuel

Site: ***I-66 EB @ MM 43***
I-66 EB @ MM 43 Gainesville VA

SPILLS

IR No:	2008-N-0478	***Impacts:***	
Reference ID:		***Other Impacts:***	
Status:		***Steps Taken:***	
Incident Type:	Petroleum	***System Comp:***	
Incident Subtype:	Petroleum	***Other System Comp:***	
Effect to Receptor:		***Weather Status:***	
Associated IR:		***Precipitation Wet:***	
Incident Dte Time:		***Discharge Type:***	
Call Recvd Dte Time:	2/10/2008	***Discharge Vol:***	
Closure Date:	2/13/2008	***Unkwn Discharge?:***	NO
Agencies Notified?:	NO	***Permitted?:***	NO
Other Agencies:		***Facility Name:***	
Threat to:		***Property Owner:***	
Terrorism?:	NO	***Property Company:***	
Characterize Incident:		***Duration of Event Hrs:***	
Quantity Units:		***Water Body:***	
Other Receptors:		***Region:***	Northern
RP Company:		***FIPS City County:***	Prince William County
RP Name:			
Low Quantity to Water:			
High Quantity to Water:			
Incident Ongoing at time of Call:			
Call Reprtd by Name:			
Call Reptd by Company Name:	EOC Email		
Call RP Company Name:			
Call RP Name:			
Call Prpty Owner Co:			
Call Prpty Owner Name:			
Steps taken Desc:			
Materials:	Oil (Fuel-Diesel)(70 - 70 Gallons)		
Corrective Action Taken:			
Site Summary:			
Original Call Incident Desc:	Diesel spill from tractor trailer accident. Spill cleaned up.		
Originial Call Loc Desc:	I-66 EB @ MM43-I-66 EB @ MM43-Gainesville-VA--Prince William County		
Cause of Event:			
Closure Comments:	See Site Summary for details		
Original Call Material Desc:	diesel (Qty=70)		

Site: ***Valued Transport TTA***
I-66 EB, MM 37.6 Haymarket VA

SPILLS

IR No:	2018-N-1877	***Impacts:***	
Reference ID:	123891	***Other Impacts:***	
Status:	Closed	***Steps Taken:***	
Incident Type:	Waste	***System Comp:***	
Incident Subtype:	Solid Waste * Waste	***Other System Comp:***	
Effect to Receptor:		***Weather Status:***	N/A
Associated IR:		***Precipitation Wet:***	0
Incident Dte Time:	2/15/2018	***Discharge Type:***	N/A
Call Recvd Dte Time:	2/15/2018	***Discharge Vol:***	0
Closure Date:	3/9/2018	***Unkwn Discharge?:***	No
Agencies Notified?:	Yes	***Permitted?:***	No
Other Agencies:	Prince William Co Fire; VSP; VDOT; VDEM (HMVA-29259 RHMO-Higginbotham)	***Facility Name:***	
Threat to:		***Property Owner:***	
Terrorism?:	No	***Property Company:***	
Characterize Incident:	Accidental	***Duration of Event Hrs:***	0
Quantity Units:		***Water Body:***	
Other Receptors:	no water impacts - no land impacts reported	***Region:***	Northern
RP Company:		***FIPS City County:***	Prince William County
RP Name:			
Low Quantity to Water:			
High Quantity to Water:			

Incident Ongoing at time of Call:	Yes
Call Reprtd by Name:	John Higginbotham
Call Reptd by Company Name:	VDEM
Call RP Company Name:	VALUED TRANSPORT, LLC
Call RP Name:	
Call Prpty Owner Co:	VDOT
Call Prpty Owner Name:	
Steps taken Desc:	
Materials:	Isocyanate (0-0 Unknown)
Corrective Action Taken:	
Site Summary:	
Original Call Incident Desc:	SAU Officer:Bryan Geoffrion State Mission Number:HMVA- 29259Date/Time:02/15/2018 10:06:01 Hazard Class:Class 9 - Miscellaneous Mode Facility:01 Highway Jurisdiction:Prince William Co Facility Name/Incident Location:I-66 EB / MM 37.6 Incident Address:I-66 EB / MM 37.6 Origin:State Agency Incident Lat/Long: / Callback Number:804 339 3135 Hazard Area: OIC On Scene: Caller Name:RHMO HIGGINBOTHAM Incident Date:2/15/18 Contact Name:RHMO HIGGINBOTHAM Incident Time:0603 Content HeaderDetails:RCVD CALL FROM RHMO HIGGINBOTHAM ADVISING HE WOULD BE RESPONDING EMERGENCY MODE TO I-66 EB AT MILE MARKER 37.6 FOR AN OVERTURNED TRACTOR TRAILER THAT WAS HAULING A DIISOCYANATE COMPOUND. Products Involved:DIISOCYANATE COMPOUND Quantity Lost:42000 - Pounds UN #:N/A EHS:N/A Water Affected:No Which Water?UNK Fish Kill:No DEQ Notified?:Yes DEQ Office/Email:NRO DEQ On Scene:No Incident InformationContainer Type:Unknown Other (Specify): Evacuation?:No Distance:N/A Injuries:Yes How Many?:1 RHMO 1: Actions:RHMO On-scene Response RHMO 2: Actions: Time Out:HIGGINBOTHAM 0655 In Service:0952 Time On Scene:0708 Team(s) Responding: Time Notified: Team(s) Responding: Time Notified: NotificationsTime PagedTime NotifiedHazmat Officer 1: HIGGINBOTHAM / SELF-INITIATED Hazmat Officer 2: Hazmat Field Manager:Tom Jordan 0649 0650 Operations Duty Officer:Cox 0649 0650 DEQ Duty Officer:DEQ NRO 0701 0702
Originial Call Loc Desc:	I-66 EB, MM 37.6
Cause of Event:	
Closure Comments:	Case ClosedNo environmental impacts - no dischargeHEPACO contracted for remediation, if performed
Original Call Material Desc:	DIISOCYANATE COMPOUND

Site: ***TTA - Vehicle Fluids***
I-66 EB, MM 38 VA

SPILLS

IR No:	2019-N-0829	***Impacts:***	
Reference ID:	151674	***Other Impacts:***	
Status:	Closed	***Steps Taken:***	
Incident Type:	Petroleum	***System Comp:***	
Incident Subtype:	Petroleum * Surface Spill	***Other System Comp:***	
Effect to Receptor:		***Weather Status:***	N/A
Associated IR:		***Precipitation Wet:***	0
Incident Dte Time:	9/2/2018	***Discharge Type:***	N/A
Call Recvd Dte Time:	9/4/2018	***Discharge Vol:***	0

Closure Date:	9/4/2018	***Unkwn Discharge?:***	No
Agencies Notified?:	Yes	***Permitted?:***	No
Other Agencies:	Prince William Co Fire; VDEM (HMVA-32422 RHMO-Strawderman)	***Facility Name:***	
Threat to:		***Property Owner:***	
Terrorism?:	No	***Property Company:***	
Characterize Incident:	Unknown	***Duration of Event Hrs:***	0
Quantity Units:		***Water Body:***	
Other Receptors:		***Region:***	Northern
RP Company:		***FIPS City County:***	Prince William County
RP Name:			
Low Quantity to Water:			
High Quantity to Water:			
Incident Ongoing at time of Call:	No		
Call Reprtd by Name:	Mark Schwab		
Call Reptd by Company Name:	Prince William Co Fire Dept		
Call RP Company Name:			
Call RP Name:			
Call Prpty Owner Co:			
Call Prpty Owner Name:			
Steps taken Desc:			
Materials:	Automotive Fluids (0-0 Unknown)		
Corrective Action Taken:			
Site Summary:			
Original Call Incident Desc:	Initial Date/Time:09/03/2018 00:35:17 Last Updated:09/03/2018 00:39:01 SAU Officer:Olivia Cassada State Mission Number:HMVA- 32422Hazard Class:Class 3 - Flammable Liquid Mode Facility:01 Highway Jurisdiction:Prince William Co Facility Name/Incident Location:RT 66 EB 38 MM Incident Address:RT 66 EB 38 MM Origin:Local Jurisdiction Incident Lat/Long: / Callback Number:703-791-5400 VDEM Region:7 OIC On Scene: (old hazard area): Caller Name:MARK SCHWAB/PRINCE WILLIAM FIRE AND RESCUE Incident Date:9/2/2018 Contact Name:MARK SCHWAB/PRINCE WILLIAM FIRE AND RESCUE Incident Time:2345 Content HeaderDetails:TRACTOR TRAILER OVERTURNED SPILLING A SMALL AMOUNT OF ENGINE FLUID. ABSORBANT WAS USED TO CLEAN UP THE SPILL. NO WATERWAYS AFFECTED. NO VDEM ASSISTANCE REQUESTED Products Involved:ENGINE FLUIDS Quantity Lost:SMALL AMOUNT - UN #: EHS: Water Affected:No Which Water?N/A Fish Kill:No DEQ Notified?:No DEQ Office/Email:NRO DEQ On Scene:No Incident InformationContainer Type:Vehicle Fluids Other (Specify): Evacuation?:No Distance: Injuries:No How Many?: RHMO 1:Strawderman Actions:Notification Only		
Originial Call Loc Desc:	I-66 EB, MM 38		
Cause of Event:			
Closure Comments:	Case ClosedVery small vehicle fluid spillSpill cleanup completed by Prince William Co Fire DeptNo surface water impacts		
Original Call Material Desc:	vehicle fluids		

Site: ***Cloverland Farm Water Withdrawal***
Rt. 55 (Off Rt 55 near Broad Run) VA

SPILLS

IR No:	2012-N-0693	***Impacts:***	
Reference ID:	10977	***Other Impacts:***	
Status:	Closed	***Steps Taken:***	
Incident Type:	Wetlands/VWP	***System Comp:***	
Incident Subtype:	Wetlands/VWP	***Other System Comp:***	
Effect to Receptor:		***Weather Status:***	N/A
Associated IR:		***Precipitation Wet:***	0
Incident Dte Time:	8/22/2011	***Discharge Type:***	N/A
Call Recvd Dte Time:	8/29/2011	***Discharge Vol:***	0
Closure Date:	4/3/2012	***Unkwn Discharge?:***	No
Agencies Notified?:	No	***Permitted?:***	No
Other Agencies:		***Facility Name:***	
Threat to:		***Property Owner:***	
Terrorism?:	No	***Property Company:***	
Characterize Incident:	Unknown	***Duration of Event Hrs:***	0
Quantity Units:		***Water Body:***	
Other Receptors:		***Region:***	Northern
RP Company:		***FIPS City County:***	Prince William County
RP Name:			
Low Quantity to Water:			
High Quantity to Water:			
Incident Ongoing at time of Call:	Yes		
Call Reprtd by Name:	ANONYMOUS ANONYMOUS		

Call Reptd by Company Name:	
Call RP Company Name:	
Call RP Name:	
Call Prpty Owner Co:	
Call Prpty Owner Name:	
Steps taken Desc:	
Materials:	
Corrective Action Taken:	
Site Summary:	
Original Call Incident Desc:	water withdrawal complaint- turf farm
Originial Call Loc Desc:	Cloverland Farm off Rt. 55 near Broad Run, VA
Cause of Event:	
Closure Comments:	permit in process
Original Call Material Desc:	

Site: ***James Madison Highway***
James Madison Highway @ RR Track Crossing Haymarket VA SPILLS

IR No:	2006-N-0079	***Impacts:***	
Reference ID:		***Other Impacts:***	
Status:		***Steps Taken:***	
Incident Type:	Petroleum	***System Comp:***	
Incident Subtype:	Petroleum	***Other System Comp:***	
Effect to Receptor:		***Weather Status:***	
Associated IR:		***Precipitation Wet:***	
Incident Dte Time:	7/25/2005	***Discharge Type:***	
Call Recvd Dte Time:	7/28/2005	***Discharge Vol:***	
Closure Date:	7/28/2005	***Unkwn Discharge?:***	NO
Agencies Notified?:	NO	***Permitted?:***	NO
Other Agencies:		***Facility Name:***	
Threat to:		***Property Owner:***	
Terrorism?:	NO	***Property Company:***	
Characterize Incident:		***Duration of Event Hrs:***	
Quantity Units:		***Water Body:***	
Other Receptors:	North Fork	***Region:***	Northern
RP Company:		***FIPS City County:***	Prince William County
RP Name:			
Low Quantity to Water:			
High Quantity to Water:			
Incident Ongoing at time of Call:			
Call Reprtd by Name:			
Call Reptd by Company Name:	Gary Gesling		
Call RP Company Name:			
Call RP Name:			
Call Prpty Owner Co:			
Call Prpty Owner Name:			
Steps taken Desc:			
Materials:	Oil (Motor)(1 - 1 Gallons)		
Corrective Action Taken:			
Site Summary:			
Original Call Incident Desc:	Truck blew a motor, est. < 1 gal. into North Fork of trib of Lake Manassas, Atlas did the clean up		
Originial Call Loc Desc:	James Madison Highway-James Madison Highway @ RR Track Crossing-Haymarket-VA--Prince William County		
Cause of Event:			
Closure Comments:	See Site Summary for details		
Original Call Material Desc:	motor oil (Qty=1)		

Site: ***CLI Transport Accident-Saddle Tank Release***
Interstate 66 WB, Mile Marker 40 Haymarket VA SPILLS

IR No:	2010-N-1760	***Impacts:***	
Reference ID:	1752	***Other Impacts:***	
Status:	Closed	***Steps Taken:***	
Incident Type:	Petroleum	***System Comp:***	
Incident Subtype:	Art. 11 Excepted * Petroleum * Surface Spill	***Other System Comp:***	
Effect to Receptor:		***Weather Status:***	N/A
Associated IR:		***Precipitation Wet:***	0

Incident Dte Time:	12/31/2009	***Discharge Type:***	N/A
Call Recvd Dte Time:	1/5/2010	***Discharge Vol:***	0
Closure Date:	3/8/2010	***Unkwn Discharge?:***	No
Agencies Notified?:	No	***Permitted?:***	No
Other Agencies:		***Facility Name:***	
Threat to:		***Property Owner:***	
Terrorism?:	No	***Property Company:***	
Characterize Incident:	Accidental	***Duration of Event Hrs:***	0
Quantity Units:		***Water Body:***	
Other Receptors:		***Region:***	Northern
RP Company:		***FIPS City County:***	Prince William County
RP Name:			
Low Quantity to Water:			
High Quantity to Water:			
Incident Ongoing at time of Call:	No		
Call Reprtd by Name:			
Call Reptd by Company Name:	VDEM-EOC		
Call RP Company Name:			
Call RP Name:			
Call Prpty Owner Co:			
Call Prpty Owner Name:			
Steps taken Desc:			
Materials:	Diesel (15-20 Gallons)		
Corrective Action Taken:			
Site Summary:	VCIN REC FROM VSP FAIRFAX STATES TRACTOR TRAILER RELEASED 15-20 GAL OF DIESEL ON EASTBOUND I-66, MM 40 (RT 15) IN PRINCE WILLIAM CO...FIRE DEPARTMENT AND VDOT HAVE BEEN ADVISED...NO WATER SOURCES NEAR SPILL. 08:00 RECD PHONE CALL FROM JOHN TIPPERY OF CLI TRANSPORT REF THIS ACCIDENT. THEY WERE ESTIMATING UNDER 50 GALLONS TOTAL. THEY HAVE HIRED MILLER ENVIRONMENTAL FOR CLEANUP. Spiller also called NRC. Following contact info provided. JOHN TIPPERY Organization: CLI TRANSPORT Address: RR #1 BOX 587 CLAYSBURG, PA 16625 PRIMARY Phone: (814)2391477		
Original Call Incident Desc:	VCIN REC FROM VSP FAIRFAX STATES TRACTOR TRAILER RELEASED 15-20 GAL OF DIESEL ON EASTBOUND I-66, MM 40 (RT 15) IN PRINCE WILLIAM CO...FIRE DEPARTMENT AND VDOT HAVE BEEN ADVISED...NO WATER SOURCES NEAR SPILL. 08:00 RECD PHONE CALL FROM JOHN TIPPERY OF CLI TRANSPORT REF THIS ACCIDENT. THEY WERE ESTIMATING UNDER 50 GALLONS TOTAL. THEY HAVE HIRED MILLER ENVIRONMENTAL FOR CLEANUP		
Originial Call Loc Desc:	Interstate 66 WB, Mile Marker 40		
Cause of Event:			
Closure Comments:	Total fuel tank capaity on TT 140 gal. NFA		
Original Call Material Desc:	diesel		

Site: ***Diesel Spill on Hwy I-66 WB at Mile Marker 47 VA***

SPILLS

IR No:	2016-N-0278	***Impacts:***	
Reference ID:	41481	***Other Impacts:***	
Status:	Closed	***Steps Taken:***	
Incident Type:	Petroleum	***System Comp:***	
Incident Subtype:	Petroleum * Surface Spill	***Other System Comp:***	
Effect to Receptor:		***Weather Status:***	N/A
Associated IR:		***Precipitation Wet:***	0
Incident Dte Time:	7/16/2015	***Discharge Type:***	N/A
Call Recvd Dte Time:	7/23/2015	***Discharge Vol:***	0
Closure Date:	7/23/2015	***Unkwn Discharge?:***	No
Agencies Notified?:	Yes	***Permitted?:***	No
Other Agencies:	VEOC/VDEM; RHMO Buckley (HMVA-13265)	***Facility Name:***	
Threat to:		***Property Owner:***	
Terrorism?:	No	***Property Company:***	
Characterize Incident:	Unknown	***Duration of Event Hrs:***	0
Quantity Units:		***Water Body:***	
Other Receptors:		***Region:***	Northern
RP Company:		***FIPS City County:***	Prince William County
RP Name:			
Low Quantity to Water:			
High Quantity to Water:			
Incident Ongoing at time of Call:	No		
Call Reprtd by Name:			

Call Reptd by Company Name:	PR WM CO FD
Call RP Company Name:	
Call RP Name:	
Call Prpty Owner Co:	
Call Prpty Owner Name:	
Steps taken Desc:	
Materials:	
Corrective Action Taken:	
Site Summary:	VDOT placed absorbents.
Original Call Incident Desc:	A SMALL SHEEN CONTAINING A SMALL AMOUNT OF DIESEL WAS FOUND IN THE ROADWAY AT THIS LOCATION. SHEEN WENT DOWN THE ROAD ABOUT 200 FT. THE SOURCE OF THE SPILL WAS UNKNOWN. NO WATERWAYS WERE AFFECTED. NO STATE ASSISTANCE WAS REQUESTED. VDOT WAS COMING TO SCENE TO APPLY ABSORBENTS.
Originial Call Loc Desc:	Highway I-66 WB at MM 47
Cause of Event:	
Closure Comments:	
Original Call Material Desc:	Diesel

Site: ***TTA***
I-66, near Exit 43 VA

SPILLS

IR No:	2013-N-2705	***Impacts:***	
Reference ID:	18873	***Other Impacts:***	
Status:	Closed	***Steps Taken:***	
Incident Type:	Petroleum	***System Comp:***	
Incident Subtype:	Petroleum * Surface Spill	***Other System Comp:***	
Effect to Receptor:		***Weather Status:***	
Associated IR:		***Precipitation Wet:***	0
Incident Dte Time:	4/4/2013	***Discharge Type:***	
Call Recvd Dte Time:	4/12/2013	***Discharge Vol:***	0
Closure Date:	4/12/2013	***Unkwn Discharge?:***	No
Agencies Notified?:		***Permitted?:***	No
Other Agencies:		***Facility Name:***	
Threat to:		***Property Owner:***	
Terrorism?:	No	***Property Company:***	
Characterize Incident:	Accidental	***Duration of Event Hrs:***	0
Quantity Units:		***Water Body:***	
Other Receptors:		***Region:***	Northern
RP Company:		***FIPS City County:***	Prince William County
RP Name:			
Low Quantity to Water:			
High Quantity to Water:			
Incident Ongoing at time of Call:			
Call Reprtd by Name:			
Call Reptd by Company Name:	Preium Environmental		
Call RP Company Name:			
Call RP Name:			
Call Prpty Owner Co:			
Call Prpty Owner Name:			
Steps taken Desc:			
Materials:	Diesel (20-20 Gallons)		
Corrective Action Taken:			
Site Summary:			
Original Call Incident Desc:	CALLER REPORTING ON BEHALF OF JB HUNT TRUCKING...APPROX 20 GAL DIESEL FROM SADDLE TANK RELEASED TO ROAD ON I-66 NEAR EXIT 43. NO WATERWAYS AFFECTED. CLEANUP CONTRACTOR ENROUTE.		
Originial Call Loc Desc:	I-66, near Exit 43		
Cause of Event:			
Closure Comments:	NFA. Spill was remediated.		
Original Call Material Desc:	diesel		

Site: ***I-66***
I-66 MM45 Gainesville VA

SPILLS

IR No:	2005-N-0089	***Impacts:***	
Reference ID:		***Other Impacts:***	

Status:		***Steps Taken:***	
Incident Type:	Petroleum	***System Comp:***	
Incident Subtype:	Petroleum	***Other System Comp:***	
Effect to Receptor:		***Weather Status:***	
Associated IR:		***Precipitation Wet:***	
Incident Dte Time:	7/30/2004	***Discharge Type:***	
Call Recvd Dte Time:	7/30/2004	***Discharge Vol:***	
Closure Date:	7/4/2004	***Unkwn Discharge?:***	NO
Agencies Notified?:	NO	***Permitted?:***	NO
Other Agencies:		***Facility Name:***	
Threat to:		***Property Owner:***	
Terrorism?:	NO	***Property Company:***	
Characterize Incident:		***Duration of Event Hrs:***	
Quantity Units:		***Water Body:***	
Other Receptors:	Land	***Region:***	Northern
RP Company:	Giant Food	***FIPS City County:***	Prince William County
RP Name:			
Low Quantity to Water:			
High Quantity to Water:			
Incident Ongoing at time of Call:			
Call Reprtd by Name:			
Call Reptd by Company Name:	Capt Gesling		
Call RP Company Name:			
Call RP Name:			
Call Prpty Owner Co:			
Call Prpty Owner Name:			
Steps taken Desc:			
Materials:	Oil (Fuel-Diesel)(50 - 50 Gallons)		
Corrective Action Taken:			
Site Summary:	15:58 Phil Atkins, APEX Envi 703-396-6730 Hit ground surface 30 gal tops. Recovered 50-60 out of tank. Dug up-spread sorbants-Atlas did clean up. 4-5 tons of soil excavated. 8/3/04 call back.		
Original Call Incident Desc:	Saddletank-punchtured by debris.		
Originial Call Loc Desc:	I-66-I-66 MM45-Gainesville-VA--Prince William County		
Cause of Event:			
Closure Comments:	See Site Summary for details		
Original Call Material Desc:	Diesel (Qty=50)		

Site: ***American Disposal MVA***
I-66 MM 47 VA

SPILLS

IR No:	2013-N-2766	***Impacts:***	
Reference ID:	18962	***Other Impacts:***	
Status:	Closed	***Steps Taken:***	
Incident Type:	Petroleum	***System Comp:***	
Incident Subtype:	Petroleum * Surface Spill	***Other System Comp:***	
Effect to Receptor:		***Weather Status:***	
Associated IR:		***Precipitation Wet:***	0
Incident Dte Time:	4/10/2013	***Discharge Type:***	
Call Recvd Dte Time:	4/18/2013	***Discharge Vol:***	0
Closure Date:	4/26/2013	***Unkwn Discharge?:***	No
Agencies Notified?:	No	***Permitted?:***	No
Other Agencies:		***Facility Name:***	
Threat to:		***Property Owner:***	
Terrorism?:	No	***Property Company:***	
Characterize Incident:	Accidental	***Duration of Event Hrs:***	0
Quantity Units:		***Water Body:***	
Other Receptors:		***Region:***	Northern
RP Company:		***FIPS City County:***	Prince William County
RP Name:			
Low Quantity to Water:			
High Quantity to Water:			
Incident Ongoing at time of Call:	No		
Call Reprtd by Name:			
Call Reptd by Company Name:	Prince William Co Fire Dept		
Call RP Company Name:			
Call RP Name:			
Call Prpty Owner Co:			

Call Prpty Owner Name:	
Steps taken Desc:	
Materials:	Hydraulic fluid (20-25 Gallons)
Corrective Action Taken:	
Site Summary:	
Original Call Incident Desc:	THE CALLER REPORTED THAT AN AMERICAN DISPOSAL TRASH TRUCK LEAKED 20 - 25 GALS OF HYDRAULIC FLUID BETWEEN MM 47 & MM 48.2....AMERICAN DISPOSAL TOOK CARE OF THE CLEAN UP
Originial Call Loc Desc:	I-66 MM 47, PRINCE WILLIAM
Cause of Event:	
Closure Comments:	NFA. Spill was remediated.
Original Call Material Desc:	HYDRAULIC FLUID

Site: ***MVA - Engine Oil***
I-66 EB, MM 47 Gainesville VA SPILLS

IR No:	2019-N-0597	***Impacts:***	
Reference ID:	146594	***Other Impacts:***	
Status:	Closed	***Steps Taken:***	
Incident Type:	Petroleum	***System Comp:***	
Incident Subtype:	Petroleum * Surface Spill	***Other System Comp:***	
Effect to Receptor:		***Weather Status:***	N/A
Associated IR:		***Precipitation Wet:***	0
Incident Dte Time:	8/13/2018	***Discharge Type:***	N/A
Call Recvd Dte Time:	8/14/2018	***Discharge Vol:***	0
Closure Date:	8/14/2018	***Unkwn Discharge?:***	No
Agencies Notified?:	Yes	***Permitted?:***	No
Other Agencies:	Prince William Co Fire Dept; VDEM (HMVA-32121 RHMO-Higginbotham)	***Facility Name:***	
Threat to:		***Property Owner:***	
Terrorism?:	No	***Property Company:***	
Characterize Incident:	Unknown	***Duration of Event Hrs:***	0
Quantity Units:		***Water Body:***	
Other Receptors:		***Region:***	Northern
RP Company:		***FIPS City County:***	Prince William County
RP Name:			
Low Quantity to Water:			
High Quantity to Water:			

Incident Ongoing at time of Call:	No
Call Reprtd by Name:	Matthew Hall
Call Reptd by Company Name:	Prince William Co Fire Dept
Call RP Company Name:	
Call RP Name:	
Call Prpty Owner Co:	
Call Prpty Owner Name:	
Steps taken Desc:	
Materials:	Engine Oil (0-3 Gallons)
Corrective Action Taken:	
Site Summary:	
Original Call Incident Desc:	Initial Date/Time:08/13/2018 09:54:01 Last Updated:08/13/2018 09:59:27 SAU Officer:Stacy McKinley State Mission Number:HMVA- 32121Hazard Class:Class 3 - Flammable Liquid Mode Facility:01 Highway Jurisdiction:Prince William Co Facility Name/Incident Location:I-66 EASTBOUND AT MILE MARKER 47 Incident Address:I-66 EASTBOUND AT MILE MARKER 47 Origin:Local Jurisdiction Incident Lat/Long: / Callback Number:703-792-3900 VDEM Region:7 OIC On Scene: (old hazard area): Caller Name:MATTHEW HALL W/PRINCE WILLIAM FIRE DEPT Incident Date:08/13/2018 Contact Name:MATTHEW HALL W/PRINCE WILLIAM FIRE DEPT Incident Time:0615HRS Content HeaderDetails:PER CALLER, MVA-3 VEHICLES INVOLVED, CAUSING 30 GALLONS OF OIL TO LEAK...OIL CONTAINED TO STREET AND ATLAS CONDUCTED CLEAN UP...NO WATERWAYS AFFECTED, NO VDEM ASSISTANCE REQUESTED. Products Involved:OIL Quantity Lost:30 - Gallons UN #: EHS: Water Affected:No Which Water? Fish Kill: DEQ Notified?:No DEQ Office/Email:PRO DEQ On Scene:No Incident InformationContainer Type:Vehicle Fluids Other (Specify): Evacuation?: Distance: Injuries: How Many?: RHMO 1:Strawderman Actions:Notification Only
Originial Call Loc Desc:	I-66 EB, MM 47
Cause of Event:	
Closure Comments:	Case ClosedSpill cleanup performed by Atlas Environmental
Original Call Material Desc:	engine oil

Site: ***Vehicle Fire Diesel Spill***
I-66 EB, MM 41 VA SPILLS

IR No:	2019-N-0806	***Impacts:***	
Reference ID:	148576	***Other Impacts:***	
Status:	Closed	***Steps Taken:***	
Incident Type:	Petroleum	***System Comp:***	
Incident Subtype:	Petroleum * Surface Spill	***Other System Comp:***	
Effect to Receptor:		***Weather Status:***	N/A
Associated IR:		***Precipitation Wet:***	0
Incident Dte Time:	8/30/2018	***Discharge Type:***	N/A
Call Recvd Dte Time:	8/31/2018	***Discharge Vol:***	0
Closure Date:	8/31/2018	***Unkwn Discharge?:***	No
Agencies Notified?:	Yes	***Permitted?:***	No
Other Agencies:	Prince William Co Fire; VDEM (HMVA-32376 RHMO-Higginbotham)	***Facility Name:***	
Threat to:		***Property Owner:***	
Terrorism?:	No	***Property Company:***	
Characterize Incident:	Accidental	***Duration of Event Hrs:***	0
Quantity Units:		***Water Body:***	
Other Receptors:	no surface water impacts	***Region:***	Northern
RP Company:		***FIPS City County:***	Prince William County
RP Name:			
Low Quantity to Water:			
High Quantity to Water:			

Incident Ongoing at time of Call:	No
Call Reprtd by Name:	
Call Reptd by Company Name:	Prince William Co Fire Station #6
Call RP Company Name:	
Call RP Name:	
Call Prpty Owner Co:	
Call Prpty Owner Name:	
Steps taken Desc:	
Materials:	Diesel (3-4 Gallons)
Corrective Action Taken:	
Site Summary:	
Original Call Incident Desc:	Initial Date/Time:08/30/2018 20:05:17 Last Updated:08/30/2018 20:15:35 SAU Officer:Kari Magner-Harper State Mission Number:HMVA- 32376Hazard Class:Class 3 - Flammable Liquid Mode Facility:01 Highway Jurisdiction:Prince William Co Facility Name/Incident Location:I-66 EB @ MM 41 Incident Address:I-66 EB @ MM 41, PRINCE WILLIAM, VA Origin:Local Jurisdiction Incident Lat/Long: / Callback Number:703-792-5006 VDEM Region:7 OIC On Scene:LT CAMPBELL (old hazard area): Caller Name:LT CAMPBELL / STATION 6 Incident Date:08/30/2018 Contact Name:LT CAMPBELL / STATION 6 Incident Time:1926 Content HeaderDetails:2003 - 3-4 GALS OF DIESEL RELEASED FROM RUPTURED FUEL LINE OF A BOB CAT TRACTOR THAT CAUGHT FIRE. NO WATERWAY IMPACTS. NO INJ. NO STATE/VDEM ASSISTANCE NEEDED. SPILL CONTAINED. TOW COMPANY (UNK NAME AT THIS TIME) WILL HANDLE CLEAN UP. Products Involved:DIESEL FUEL Quantity Lost:4 - Gallons UN #:N/A EHS:N/A Water Affected:No Which Water?N/A Fish Kill:No DEQ Notified?:No DEQ Office/Email:NRO DEQ On Scene:No Incident InformationContainer Type:Fuel Line Other (Specify):N/A Evacuation?:No Distance:N/A Injuries:No How Many?:N/A RHMO 1:Higginbotham Actions:Notification Only
Originial Call Loc Desc:	I-66 EB at MM 41
Cause of Event:	
Closure Comments:	Case ClosedSmall petroleum spill - cleanup completed by towing companyNo surface water impacts
Original Call Material Desc:	diesel fuel

Appendix: Database Descriptions

Environmental Risk Information Services (ERIS) can search the following databases. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of update. ERIS updates databases as set out in ASTM Standard E1527-13, Section 8.1.8 Sources of Standard Source Information:

"Government information from nongovernmental sources may be considered current if the source updates the information at least every 90 days, or, for information that is updated less frequently than quarterly by the government agency, within 90 days of the date the government agency makes the information available to the public."

Standard Environmental Record Sources

Federal

National Priority List: NPL

National Priorities List (Superfund)-NPL: EPA's (United States Environmental Protection Agency) list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under the Superfund program. The NPL, which EPA is required to update at least once a year, is based primarily on the score a site receives from EPA's Hazard Ranking System. A site must be on the NPL to receive money from the Superfund Trust Fund for remedial action.

Government Publication Date: Oct 10, 2018

National Priority List - Proposed: PROPOSED NPL

Includes sites proposed (by the EPA, the state, or concerned citizens) for addition to the NPL due to contamination by hazardous waste and identified by the Environmental Protection Agency (EPA) as a candidate for cleanup because it poses a risk to human health and/or the environment.

Government Publication Date: Oct 10, 2018

Deleted NPL: DELETED NPL

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Government Publication Date: Oct 10, 2018

SEMS List 8R Active Site Inventory: SEMS

The Superfund Program has deployed the Superfund Enterprise Management System (SEMS), which integrates multiple legacy systems into a comprehensive tracking and reporting tool. This inventory contains active sites evaluated by the Superfund program that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The Active Site Inventory Report displays site and location information at active SEMS sites. An active site is one at which site assessment, removal, remedial, enforcement, cost recovery, or oversight activities are being planned or conducted.

Government Publication Date: Aug 13, 2018

Inventory of Open Dumps, June 1985: ODI

The Resource Conservation and Recovery Act (RCRA) provides for publication of an inventory of open dumps. The Act defines "open dumps" as facilities which do not comply with EPA's "Criteria for Classification of Solid Waste Disposal Facilities and Practices" (40 CFR 257).

Government Publication Date: Jun 1985

SEMS List 8R Archive Sites: SEMS ARCHIVE

The Superfund Enterprise Management System (SEMS) Archived Site Inventory displays site and location information at sites archived from SEMS. An archived site is one at which EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program at this time.

Government Publication Date: Aug 13, 2018

Comprehensive Environmental Response, Compensation and Liability Information System - CERCLIS: CERCLIS

Superfund is a program administered by the United States Environmental Protection Agency (EPA) to locate, investigate, and clean up the worst hazardous waste sites throughout the United States. CERCLIS is a database of potential and confirmed hazardous waste sites at which the EPA Superfund program has some involvement. It contains sites that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The EPA administers the Superfund program in cooperation with individual states and tribal governments; this database is made available by the EPA.

Government Publication Date: Oct 25, 2013

EPA Report on the Status of Open Dumps on Indian Lands: IODI

Public Law 103-399, The Indian Lands Open Dump Cleanup Act of 1994, enacted October 22, 1994, identified congressional concerns that solid waste open dump sites located on American Indian or Alaska Native (AI/AN) lands threaten the health and safety of residents of those lands and contiguous areas. The purpose of the Act is to identify the location of open dumps on Indian lands, assess the relative health and environment hazards posed by those sites, and provide financial and technical assistance to Indian tribal governments to close such dumps in compliance with Federal standards and regulations or standards promulgated by Indian Tribal governments or Alaska Native entities.

Government Publication Date: Dec 31, 1998

CERCLIS - No Further Remedial Action Planned: CERCLIS NFRAP

An archived site is one at which EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program at this time. The Archive designation means that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL). This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Government Publication Date: Oct 25, 2013

CERCLIS Liens: CERCLIS LIENS

A Federal Superfund lien exists at any property where EPA has incurred Superfund costs to address contamination ("Superfund site") and has provided notice of liability to the property owner. A Federal CERCLA ("Superfund") lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. This database is made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: Jan 30, 2014

RCRA CORRACTS-Corrective Action: RCRA CORRACTS

RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. At these sites, the Corrective Action Program ensures that cleanups occur. EPA and state regulators work with facilities and communities to design remedies based on the contamination, geology, and anticipated use unique to each site.

Government Publication Date: Aug 2, 2018

RCRA non-CORRACTS TSD Facilities: RCRA TSD

RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. This database includes Non-Corrective Action sites listed as treatment, storage and/or disposal facilities of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA).

Government Publication Date: Aug 2, 2018

RCRA Generator List: RCRA LQG

RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Large Quantity Generators (LQGs) generate 1,000 kilograms per month or more of hazardous waste or more than one kilogram per month of acutely hazardous waste.

Government Publication Date: Aug 2, 2018

RCRA Small Quantity Generators List: RCRA SQG

RCRA Info is the EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Small Quantity Generators (SQGs) generate more than 100 kilograms, but less than 1,000 kilograms, of hazardous waste per month.

Government Publication Date: Aug 2, 2018

RCRA Conditionally Exempt Small Quantity Generators List: RCRA CESQG

RCRA Info is the EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Conditionally Exempt Small Quantity Generators (CESQG) generate 100 kilograms or less per month of hazardous waste or one kilogram or less per month of acutely hazardous waste.

Government Publication Date: Aug 2, 2018

RCRA Non-Generators: RCRA NON GEN

RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Non-Generators do not presently generate hazardous waste.

Government Publication Date: Aug 2, 2018

Federal Engineering Controls-ECs: FED ENG

Engineering controls (ECs) encompass a variety of engineered and constructed physical barriers (e.g., soil capping, sub-surface venting systems, mitigation barriers, fences) to contain and/or prevent exposure to contamination on a property. This database is made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: Jan 20, 2016

Federal Institutional Controls- ICs: FED INST

Institutional controls are non-engineered instruments, such as administrative and legal controls, that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy. Although it is EPA's (United States Environmental Protection Agency) expectation that treatment or engineering controls will be used to address principal threat wastes and that groundwater will be returned to its beneficial use whenever practicable, ICs play an important role in site remedies because they reduce exposure to contamination by limiting land or resource use and guide human behavior at a site.

Government Publication Date: Jan 20, 2016

Emergency Response Notification System: ERNS 1982 TO 1986

Database of oil and hazardous substances spill reports controlled by the National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.

Government Publication Date: 1982-1986

Emergency Response Notification System: ERNS 1987 TO 1989

Database of oil and hazardous substances spill reports controlled by the National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.

Government Publication Date: 1987-1989

Emergency Response Notification System: ERNS

Database of oil and hazardous substances spill reports controlled by the National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories. This database is made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: Sep 24, 2018

The Assessment, Cleanup and Redevelopment Exchange System (ACRES) Brownfield Database: FED BROWNFIELDS

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties protects the environment, reduces blight, and takes development pressures off greenspaces and working lands. This database is made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: Feb 20, 2018

FEMA Underground Storage Tank Listing: FEMA UST

The Federal Emergency Management Agency (FEMA) of the Department of Homeland Security maintains a list of FEMA owned underground storage tanks.

Government Publication Date: Dec 31, 2017

LIEN on Property: SEMS LIEN

The EPA Superfund Enterprise Management System (SEMS) provides LIEN information on properties under the EPA Superfund Program.

Government Publication Date: Nov 14, 2018

Superfund Decision Documents: SUPERFUND ROD

This database contains a listing of decision documents for Superfund sites. Decision documents serve to provide the reasoning for the choice of (or) changes to a Superfund Site cleanup plan. The decision documents include Records of Decision (ROD), ROD Amendments, Explanations of Significant Differences (ESD), along with other associated memos and files. This information is maintained and made available by the US EPA (Environmental Protection Agency).

Government Publication Date: Nov 14, 2018

State

Solid Waste Landfills: SWF/LF

The solid waste program in the Department of Environmental Quality (DEQ) is designed to encourage the reuse and recycling of solid waste and to regulate the disposal and treatment of solid waste, including regulated medical waste, and to ensure that hazardous waste is properly managed. Standards are designed to protect human health and the environment and driven by regulatory requirements.

Government Publication Date: Sep 21, 2018

Leaking Petroleum Storage Tanks: LST

When a release occurs from an aboveground or underground storage tank, the owner and/or operator of the tank is required to report the release to the Department of Environmental Quality (DEQ). This database contains a listing of releases from tanks both above and underground.

Government Publication Date: Nov 2, 2018

Delisted Leaking Petroleum Storage Tanks: DELISTED LST

Facilities which have been removed from the list of leaking petroleum storage tanks made available by the Virginia Department of Environmental Quality (DEQ). Facilities may be removed from the lists of leaking petroleum tanks when it is determined that the release reported is not an actual release, or the released substance is not petroleum - these sites may still have endured non-petroleum hazardous substance releases.

Government Publication Date: Nov 2, 2018

Underground Storage Tanks: UST

A listing of registered underground storage tanks. This list is maintained by The Department of Environmental Quality (DEQ).

Government Publication Date: Nov 2, 2018

Aboveground Storage Tanks: AST

A listing of registered aboveground storage tanks. This list is maintained by The Department of Environmental Quality (DEQ).

Government Publication Date: Nov 2, 2018

Delisted Tanks: DELISTED TANK

Facilities which have been removed from the list of registered aboveground and/or underground storage tanks made available by the Virginia Department of Environmental Quality (DEQ). Facilities may be removed from the lists of registered tanks when it is determined that the tank does not require registration, for example, due to capacity or contents.

Government Publication Date: Nov 2, 2018

Institutional Controls: INST

Institutional controls are legal or contractual restrictions on property use that remain effective after remediation is completed and are used to satisfy remediation levels. This list is maintained by the Department of Environmental Quality (DEQ).

Government Publication Date: Oct 17, 2018

Voluntary Remediation Program: VRP

The Voluntary Remediation Program is to encourage hazardous substance cleanups that might not otherwise take place. The program is a streamlined mechanism for site owners or operators to voluntarily address contamination at sites with concurrence from the Department of Environmental Quality (DEQ).

Government Publication Date: Oct 17, 2018

Brownfields Site Specific Assessments: BROWNFIELDS

Brownfields are idled, underutilized, or abandoned industrial or commercial properties where expansion or redevelopment is complicated by real or perceived environmental contamination. Examples include factories, railyards, landfills, dry cleaners, etc. This list is maintained by the Department of Environmental Quality (DEQ).

Government Publication Date: Feb 27, 2018

Tribal

Leaking Underground Storage Tanks (LUSTs) on Tribal/Indian Lands: INDIAN LUST

Leaking Underground Storage Tanks (LUSTs) on Tribal/Indian Lands in EPA Region 3, which includes Virginia. There are no LUST records in Virginia at this time.

Government Publication Date: May 4, 2018

Underground Storage Tanks (USTs) on Indian Lands: INDIAN UST

Listing of Underground Storage Tanks (USTs) on Tribal/Indian Lands in EPA Region 3, which includes Virginia. There are no UST records in Virginia at this time.

Government Publication Date: May 4, 2018

Delisted Tribal Leaking Storage Tanks: DELISTED ILST

Leaking Underground Storage Tank facilities which have been removed from the Regional Tribal LUST lists made available by the EPA.

Government Publication Date: Oct 14, 2017

Delisted Tribal Underground Storage Tanks: DELISTED IUST

Underground Storage Tank facilities which have been removed from the Regional Tribal UST lists made available by the EPA.

Government Publication Date: Oct 14, 2017

County

No County standard environmental record sources available for this State.

Additional Environmental Record Sources

Federal

Facility Registry Service/Facility Index: FINDS/FRS

The US Environmental Protection Agency (EPA)'s Facility Registry System (FRS) is a centrally managed database that identifies facilities, sites or places subject to environmental regulations or of environmental interest. FRS creates high-quality, accurate, and authoritative facility identification records through rigorous verification and management procedures that incorporate information from program national systems, state master facility records, data collected from EPA's Central Data Exchange registrations and data management personnel.

Government Publication Date: Oct 17, 2018

Toxics Release Inventory (TRI) Program: TRIS

The EPA's Toxics Release Inventory (TRI) is a database containing data on disposal or other releases of over 650 toxic chemicals from thousands of U.S. facilities and information about how facilities manage those chemicals through recycling, energy recovery, and treatment. One of TRI's primary purposes is to inform communities about toxic chemical releases to the environment.

Government Publication Date: Dec 31, 2017

Hazardous Materials Information Reporting System: HMIRS

US DOT - Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) Incidents Reports Database taken from Hazmat Intelligence Portal, U.S. Department of Transportation.

Government Publication Date: May 23, 2018

National Clandestine Drug Labs: NCDL

The U.S. Department of Justice ("the Department") provides this data as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy.
Government Publication Date: Jul 18, 2018

Toxic Substances Control Act: TSCA
The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule.
The CDR enables EPA to collect and publish information on the manufacturing, processing, and use of commercial chemical substances and mixtures (referred to hereafter as chemical substances) on the TSCA Chemical Substance Inventory (TSCA Inventory). This includes current information on chemical substance production volumes, manufacturing sites, and how the chemical substances are used. This information helps the Agency determine whether people or the environment are potentially exposed to reported chemical substances. EPA publishes submitted CDR data that is not Confidential Business Information (CBI).
Government Publication Date: Jun 30, 2017

Hist TSCA: HIST TSCA
The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule.
The 2006 IUR data summary report includes information about chemicals manufactured or imported in quantities of 25,000 pounds or more at a single site during calendar year 2005. In addition to the basic manufacturing information collected in previous reporting cycles, the 2006 cycle is the first time EPA collected information to characterize exposure during manufacturing, processing and use of organic chemicals. The 2006 cycle also is the first time manufacturers of inorganic chemicals were required to report basic manufacturing information.
Government Publication Date: Dec 31, 2006

FTTS Administrative Case Listing: FTTS ADMIN
An administrative case listing from the Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA) and Toxic Substances Control Act (TSCA), together known as FTTS. This database was obtained from the Environmental Protection Agency's (EPA) National Compliance Database (NCDB). The FTTS and NCDB was shut down in 2006.
Government Publication Date: Jan 19, 2007

FTTS Inspection Case Listing: FTTS INSP
An inspection case listing from the Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA) and Toxic Substances Control Act (TSCA), together known as FTTS. This database was obtained from the Environmental Protection Agency's (EPA) National Compliance Database (NCDB). The FTTS and NCDB was shut down in 2006.
Government Publication Date: Jan 19, 2007

Potentially Responsible Parties List: PRP
Early in the cleanup process, the Environmental Protection Agency (EPA) conducts a search to find the potentially responsible parties (PRPs). EPA looks for evidence to determine liability by matching wastes found at the site with parties that may have contributed wastes to the site.
Government Publication Date: Aug 13, 2018

State Coalition for Remediation of Drycleaners Listing: SCRD DRYCLEANER
The State Coalition for Remediation of Drycleaners (SCRD) was established in 1998, with support from the U.S. Environmental Protection Agency (EPA) Office of Superfund Remediation and Technology Innovation. Coalition members are states with mandated programs and funding for drycleaner site remediation. Current members are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.
Government Publication Date: Nov 08, 2017

Integrated Compliance Information System (ICIS): ICIS
The Integrated Compliance Information System (ICIS) is a system that provides information for the Federal Enforcement and Compliance (FE&C) and the National Pollutant Discharge Elimination System (NPDES) programs. The FE&C component supports the Environmental Protection Agency's (EPA) Civil Enforcement and Compliance program activities. These activities include Compliance Assistance, Compliance Monitoring and Enforcement. The NPDES program supports tracking of NPDES permits, limits, discharge monitoring data and other program reports.
Government Publication Date: Nov 18, 2016

Drycleaner Facilities: FED DRYCLEANERS
A list of drycleaner facilities from the Integrated Compliance Information System (ICIS). The Environmental Protection Agency (EPA) tracks facilities that possess NAIC and SIC codes that classify businesses as drycleaner establishments.
Government Publication Date: May 29, 2018

Delisted Drycleaner Facilities: DELISTED FED DRY

List of sites removed from the list of Drycleaner Facilities (sites in the EPA's Integrated Compliance Information System (ICIS) with NAIC or SIC codes identifying the business as a drycleaner establishment).

Government Publication Date: May 29, 2018

Formerly Used Defense Sites: FUDS

Formerly Used Defense Sites (FUDS) are properties that were formerly owned by, leased to, or otherwise possessed by and under the jurisdiction of the Secretary of Defense prior to October 1986, where the Department of Defense (DoD) is responsible for an environmental restoration. This list is published by the U.S. Army Corps of Engineers.

Government Publication Date: Oct 23, 2018

Material Licensing Tracking System (MLTS): MLTS

A list of sites that store radioactive material subject to the Nuclear Regulatory Commission (NRC) licensing requirements. This list is maintained by the NRC. As of September 2016, the NRC no longer releases location information for sites. Site locations were last received in July 2016.

Government Publication Date: Nov 1, 2018

Historic Material Licensing Tracking System (MLTS) sites: HIST MLTS

A historic list of sites that have inactive licenses and/or removed from the Material Licensing Tracking System (MLTS). In some cases, a site is removed from the MLTS when the state becomes an "Agreement State". An Agreement State is a State that has signed an agreement with the Nuclear Regulatory Commission (NRC) authorizing the State to regulate certain uses of radioactive materials within the State.

Government Publication Date: Jan 31, 2010

Mines Master Index File: MINES

The Master Index File (MIF) contains mine identification numbers issued by the Department of Labor Mine Safety and Health Administration (MSHA) for mines active or opened since 1971. Note that addresses may or may not correspond with the physical location of the mine itself.

Government Publication Date: Jan 30, 2018

Alternative Fueling Stations: ALT FUELS

List of alternative fueling stations made available by the US Department of Energy's Office of Energy Efficiency & Renewable Energy. Includes Biodiesel stations, Ethanol (E85) stations, Liquefied Petroleum Gas (Propane) stations, Ethanol (E85) stations, Natural Gas stations, Hydrogen stations, and Electric Vehicle Supply Equipment (EVSE). The National Renewable Energy Laboratory (NREL) obtains information about new stations from trade media, Clean Cities coordinators, a Submit New Station form on the Station Locator website, and through collaborating with infrastructure equipment and fuel providers, original equipment manufacturers (OEMs), and industry groups.

Government Publication Date: Oct 16, 2018

Registered Pesticide Establishments: SSTS

List of active EPA-registered foreign and domestic pesticide-producing and device-producing establishments based on data from the Section Seven Tracking System (SSTS). The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Section 7 requires that facilities producing pesticides, active ingredients, or devices be registered. The list of establishments is made available by the EPA.

Government Publication Date: Mar 1, 2018

Polychlorinated Biphenyl (PCB) Notifiers: PCB

Facilities included in the national list of facilities that have notified the United States Environmental Protection Agency (EPA) of Polychlorinated Biphenyl (PCB) activities. Any company or person storing, transporting or disposing of PCBs or conducting PCB research and development must notify the EPA and receive an identification number.

Government Publication Date: Sep 14, 2018

State

Spills: SPILLS

The Department of Environmental Quality (DEQ) Pollution Response Program (PREP), provides for responses to air, water and waste pollution incidents in order to protect human health and the environment. PREP staff often work to assist local emergency responders, other state agencies, federal agencies, and responsible parties, as may be needed, to manage pollution incidents. Oil spills, fish kills, and hazardous materials spills are examples of incidents that may involve the DEQ's PREP Program.

Government Publication Date: Oct 22, 2018

Pollution Complaint: PC SPILLS

The database contains a listing of Pollution Complaints from 1986 to 1994 that include petroleum releases and other releases on state land and waters. This list is maintained by the Department of Environmental Quality (DEQ).

Government Publication Date: 1986-1994

Drycleaners List: DRYCLEANERS

A listing of registered drycleaners maintained by the Department of Environmental Quality.

Government Publication Date: Dec 7, 2018

Tribal

No Tribal additional environmental record sources available for this State.

County

No County additional environmental record sources available for this State.

Definitions

Database Descriptions: This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

Detail Report: This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

Distance: The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries. All values are an approximation.

Direction: The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

Elevation: The elevation value is taken from the location at which the records for the site address have been plotted. All values are an approximation. Source: Google Elevation API.

Executive Summary: This portion of the report is divided into 3 sections:

'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.

'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

Map Key: The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for that property.

The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

Unplottables: These are records that could not be mapped due to various reasons, including limited geographic information. These records may or may not be in your study area, and are included as reference.

Appendix E

Environmental Professional Qualifications

William E. Berger
Environmental Professional

Environmental Consultants + Contractors Inc.

Mr. Berger is one of ECC's Environmental Professionals, and is responsible for preparing Phase I and Phase II Environmental Site Assessments, Environmental Transaction Screens, Site Characterization Reports, and other environmental investigations. Mr. Berger conducts all levels of investigation required to identify *recognized environmental conditions*, including site reconnaissances, historical research, and review of regulatory records. Mr. Berger is also responsible for field activities, including environmental drilling oversight, groundwater and soil sampling, site reconnaissance activities, and oversight of underground storage tank closures and impacted soil removals.

Mr. Berger has performed environmental investigations on a range of properties, including residential and commercial facilities, industrial sites, and former military installations. Mr. Berger's current projects include Phase I/Phase II Environmental Site Assessments, Environmental Transaction Screens, remediation projects, and mold, asbestos, and lead inspections conducted in the Washington Metropolitan area.

Notable Project

WMATA Chiller Site, Washington D.C. Status: Complete
ECC performed a Phase I Environmental Site Assessment as part of a due diligence investigation for a chiller plant in southeast Washington, D.C. Based on the findings of the Phase I, Mr. Berger developed recommendations for additional environmental investigation on the property. Mr. Berger developed a workplan and obtained permits for a Limited Subsurface Investigation of the property which included soil and groundwater sampling, and prepared a report of the results of the investigation.

Key Project Roles:
- Environmental Professional
- Project Manager

Years Experience:
- Current Firm: 5

Education:
B.S. / Civil & Environmental Engineering/ Pennsylvania State University / 2011

Professional Certifications:

- *Hazardous Waste Operations & Emergency Response* 24-hour course & annual recertification courses (in compliance with OSHA HAZWOPER Regulations, Title 29 CFR 1910.12)

RECEIVED APR 24 201

Smith-Haymarket

Town of Haymarket, Virginia

WSSI #30508.02

Phase I Cultural Resources Investigation

February 2019

Prepared for:
Van Metre Homes
43045 Van Metre Drive, Suite 200
Broadlands, VA 20148

Prepared by:
Daniel Baicy, M.A., RPA

Thunderbird Archeology
A Division of Wetland Studies and Solutions, Inc.
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www.wetlandstudies.com

ABSTRACT

A Phase I cultural resources investigation was conducted of the ±7.1-acre Smith-Haymarket property located approximately 3,000 feet southeast of the intersection of Washington Street (Route 55) and James Madison Highway (Route 15) in Haymarket, Virginia in Prince William County. Thunderbird Archeology, a division of Wetland Studies and Solutions, Inc., of Gainesville, Virginia, conducted the study described in this report for Van Metre Homes of Broadlands, Virginia. The fieldwork was carried out in February of 2019 and resulted in the expansion of the limits of Site 44PW2017, which was previously recorded within the project area.

Based on the artifacts recovered during this investigation, Site 44PW2017 includes three components: a prehistoric component dating to an unknown prehistoric period or periods, a late 18th-/19th century component, and a 19th-/20th-century component. In our opinion, the site lacks research potential and is not eligible for listing in the National Register of Historic Places under Criterion D. No further work is recommended in association with the site.

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INTRODUCTION

This report presents the results of a Phase I cultural resources investigation of the ±7.1-acre Smith-Haymarket property located approximately 3,000 feet southeast of the intersection of Washington Street (Route 55) and James Madison Highway (Route 15) in Haymarket, Virginia in Prince William County (Exhibit 1). Thunderbird Archeology, a division of Wetland Studies and Solutions, Inc., of Gainesville, Virginia, conducted the study described in this report for Van Metre Homes of Broadlands, Virginia. The fieldwork was carried out in February of 2019.

Boyd Sipe M.A., RPA served as Principal Investigator on this project. The fieldwork was conducted by Associate Archeologist Tom Cuthbertson M.A., RPA with the assistance of Caleb Jeck and Catherine Herring. Elizabeth Waters Johnson, M.A. served as Laboratory Supervisor and conducted the artifact analysis with the assistance of Amber Nubgaard, M.A. All artifacts, research data, and field data resulting from this project are currently on repository at the Thunderbird offices in Gainesville, Virginia.

The Phase I investigation was conducted as a feasibility study prior to Van Metre Homes' acquisition of the project area. Fieldwork and report contents conformed to the guidelines set forth by the Virginia Department of Historic Resources (DHR) for a Phase I identification level survey as outlined in their 2017 *Guidelines for Conducting Historic Resources Survey in Virginia* (DHR 2017); excepting that a Phase I Military Sites Survey, which the DHR requires for project areas located within previously recorded battlefields, was not completed during this survey. The Phase I also conformed to the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (DOI 1983). In general, at the time of the survey all aspects of the investigation were in compliance with Section 106 of the National Historic Preservation Act of 1966 (Public Law 89-665) (as amended).

The purpose of the survey was to locate any cultural resources within the impact area and to provide a preliminary assessment of their potential significance in terms of eligibility for inclusion on the National Register of Historic Places. If a particular resource was felt to possess the potential to contribute to the knowledge of local, regional, or national prehistory or history, then Phase II work would be recommended.

ENVIRONMENTAL SETTING

Prince William County encompasses portions of the Coastal Plain Province and the Outer Piedmont Plateau, the Piedmont Triassic Lowland, and Inner Piedmont sub-provinces (Fenneman 1938; Bailey 1999). The Piedmont is underlain by igneous and metamorphic rocks of various origins that were folded during the Paleozoic as the North American and African plates converged. Later, in the Mesozoic, rifting occurred as Pangea broke apart and the Atlantic Ocean formed. The Piedmont ranges from 200 feet above mean sea level (a.m.s.l.) at the Fall Line to circa 1,000 feet a.m.s.l. in the western portion at the Blue Ridge. Because of the intensive weathering of the underlying rocks in the Piedmont's humid climate, bedrock is generally buried under a thick, 6- to 60-foot blanket of saprolite.

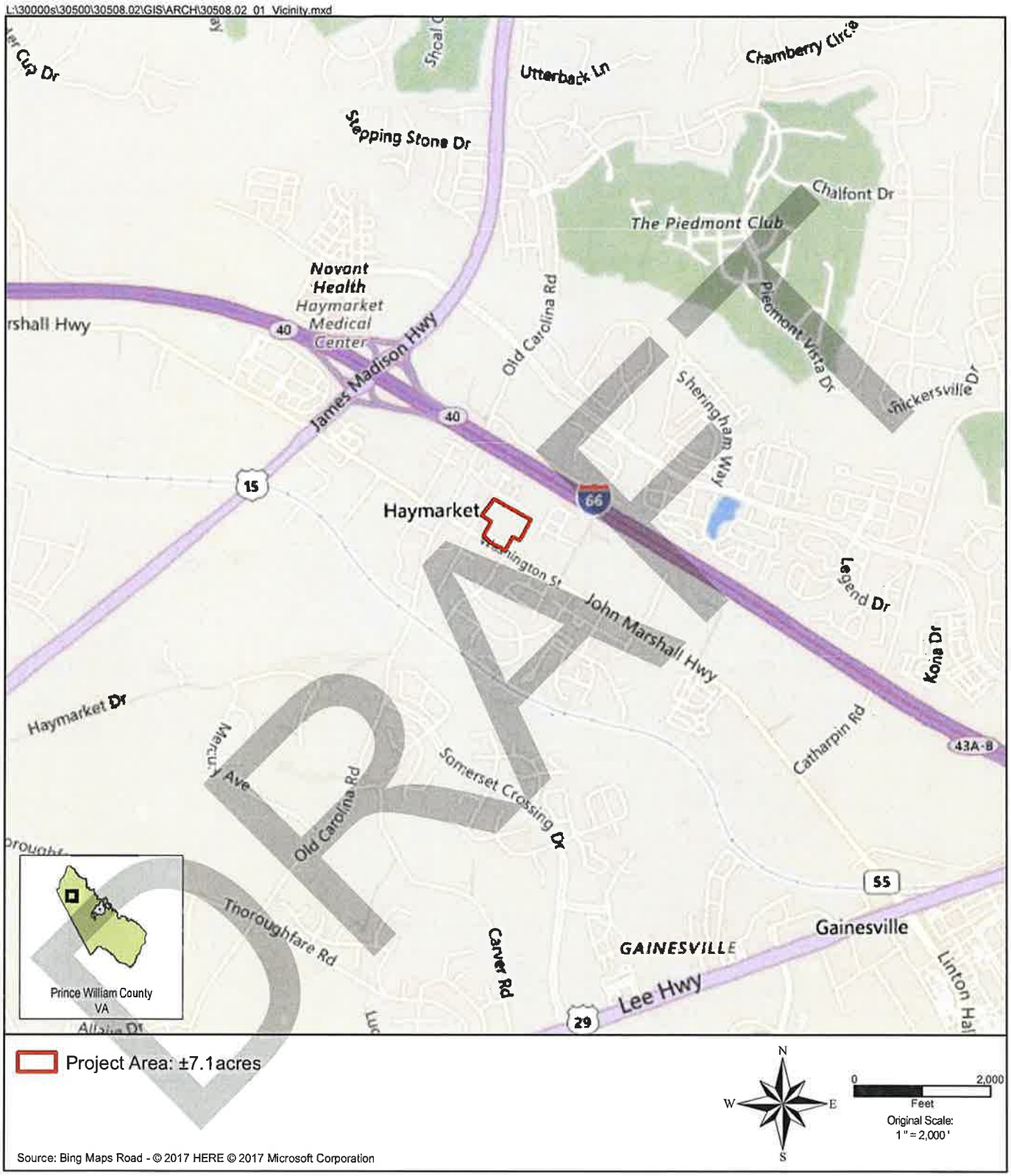


Exhibit 1
Vicinity Map

The Piedmont Province has been sub-divided into three sub-provinces: the Outer Piedmont Plateau, the Triassic Lowlands, and the Inner Piedmont Plateau. The project area lies in the Triassic Basin, or Triassic Lowlands. These are long, narrow rift valleys, or basins, formed during the Triassic period. These valleys, underlain by Mesozoic sedimentary and igneous rocks, have filled with sandstones and basalts. Elevations range from 200 to 400 feet a.m.s.l.

The topography within the project area is generally flat with small swales, intermittent streams, and inundated low-lying areas (Exhibit 2). Elevations range from 355 feet a.m.s.l. in the northeast corner to 370 feet a.m.s.l in the southern edge along Washington Street. The project area is a partially wooded lot of mixed deciduous and evergreens in between residential lots (Exhibit 3). The understory consisted of small scrubby bushes, greenbrier, and reedy plants in the low-lying areas. The project area is drained by an intermittent stream in the northeast corner that flows under I-66 and into Little Bull Run, which is located about 3,500 feet to the north.

PALEOENVIRONMENTAL BACKGROUND

The basic environmental history of the area has been provided by Carbone (1976) (see also Gardner 1985, 1987; Johnson 1986). The following will present highlights from this history, focusing on those aspects pertinent to the project area.

At the time of the arrival of humans into the region, about 11,000 years ago, the area was beginning to recover rapidly from the effects of the last Wisconsin glacial maximum of circa 18,000 years ago. Vegetation was in transition from northern dominated species and included a mixture of conifers and hardwoods. The primary trend was toward a reduction in the openness which was characteristic of the parkland of 14-12,000 years ago. Animals were undergoing a rapid increase in numbers as deer, elk and, possibly, moose expanded into the niches and habitats made available as the result of wholesale extinctions of the various kinds of fauna that had occupied the area during the previous millennia. The current cycle of ponding and stream drowning began 18-16,000 years ago at the beginning of the final retreat of the last Wisconsin glaciation (Gardner 1985); sea level rise has been steady since then.

These trends continued to accelerate over the subsequent millennia of the Holocene. One important highlight was the appearance of marked seasonality circa 7000 BCE. This was accompanied by the spread of deciduous forests dominated by oaks and hickories. The modern forest characteristic of the area, the mixed oak-hickory-pine climax forest, prevailed after 3000-2500 BCE. Continued forest closure led to the reduction and greater territorial dispersal of the larger mammalian forms such as deer. Sea level continued to rise, resulting in the inundation of interior streams. This was quite rapid until circa 3000-2500 BCE, at which time the rise slowed, continuing at a rate estimated to be ten inches per century (Darmody and Foss 1978). This rate of rise continues to the present. Based on archeology (see Gardner and Rappleye 1979), it would appear that the mid-Atlantic migratory bird flyway was established circa 6500 BCE. Oysters had migrated to at least the Northern Neck by 1200 BCE (Potter 1982) and to their maximum upriver limits along the Potomac near Popes Creek, Maryland, by circa 750 BCE (Gardner and McNett 1971), with anadromous fish arriving in the Inner Coastal Plain in considerable numbers circa 1800 BCE (Gardner 1982).

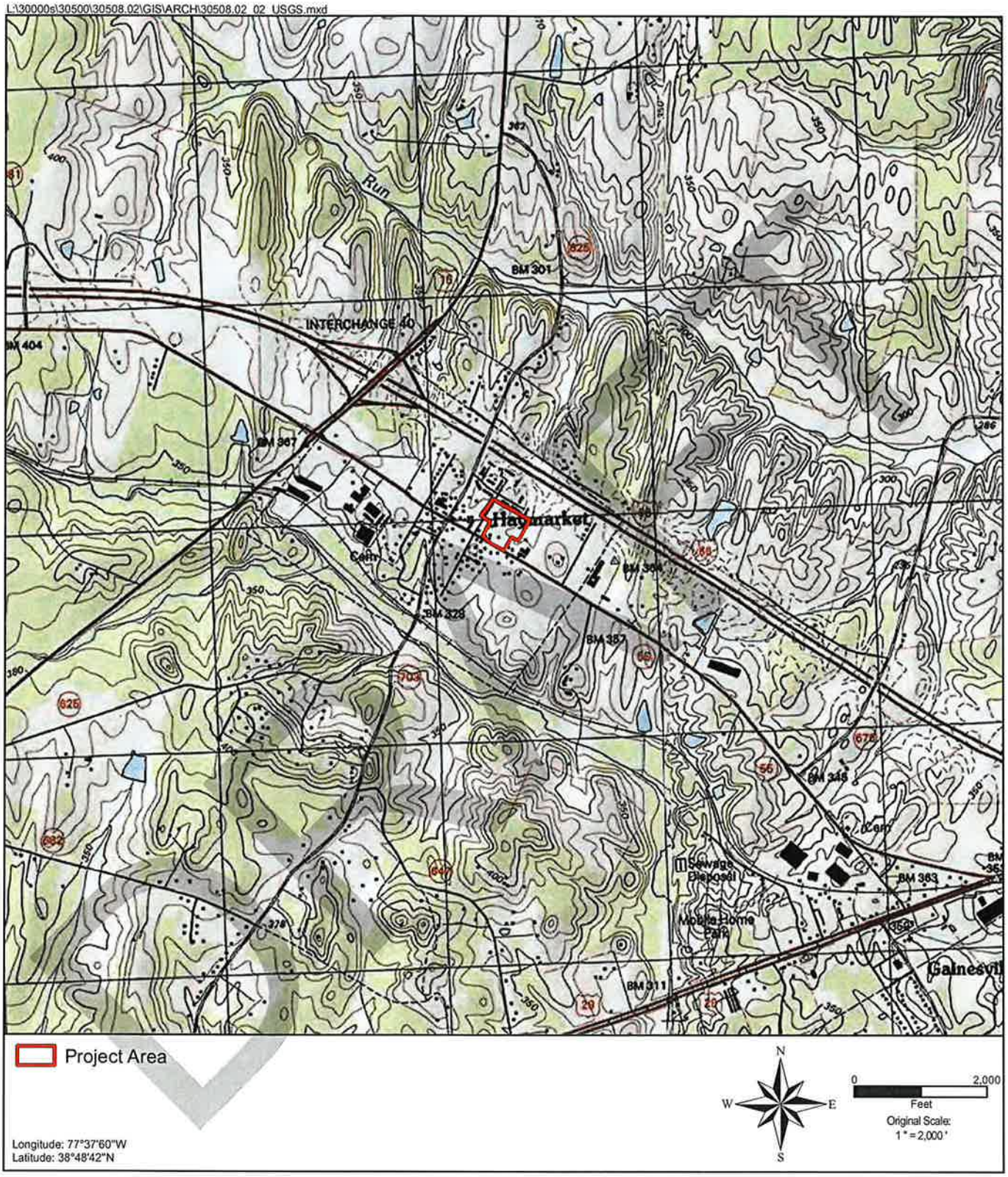


Exhibit 2
1998 USGS Quadrangle, Thoroughfare Gap, VA

Exhibit 3
Spring 2017 Natural Color Imagery

During the historic period, circa 1700 CE, cultural landscape alteration becomes a new environmental factor (Walker and Gardner 1989). Around this time, Euro-American settlement extended into the Piedmont/Coastal Plain interface. With these settlers came land clearing and deforestation for cultivation, as well as the harvesting of wood for use in a number of different products. At this time the stream tributaries to the Potomac, were broad expanses of open waters from their mouths well up their valleys to, at, or near their "falls" where they leave the Piedmont and enter the Coastal Plain. These streams were conducive to the establishment of ports and harbors, elements necessary to commerce and contact with the outside world and the seats of colonial power. Most of these early ports were eventually abandoned or reduced in importance, for the erosional cycle set up by the land clearing resulted in tons of silt being washed into the streams, ultimately impeding navigation.

The historic vegetation would have consisted of a mixed oak-hickory-pine forest. Associated with this forest were deer and smaller mammals and turkey. The nearby open water environments would have provided habitats for waterfowl year-round as well as seasonally for migratory species.

CULTURAL HISTORICAL BACKGROUND

Prehistoric Overview

The following section provides a brief overview and context of the general prehistory of the region. A number of summaries of the archeology of the general area have been written (see Gardner 1987; Johnson 1986; Walker 1981); Gardner, Walker, and Johnson present essentially the same picture, with the major differences lying in the terminology utilized for the prehistoric time periods. The dates provided below for the three general prehistoric periods, and associated sub-periods, follow those outlined by the Virginia Department of Historic Resources (DHR 2017:107-108).

Paleoindian Period (15,000-8000 BCE)

The Paleoindian period corresponds to the end of the Late Pleistocene and beginning of the Early Holocene of the Late Glacial period, which was characterized by cooler and drier conditions with significantly less seasonal variation than is evident in the region today. The cooler conditions resulted in decreased evaporation and, in areas where drainage was restricted by topography, could have resulted in the development of wetlands in the Triassic Lowlands (Walker 1981; Johnson 1986:P1-8). Generally speaking, the nature of the vegetation was marked by open forests composed of a mix of coniferous and deciduous elements. The individual character of local floral communities would have depended on drainage, soils, and elevation, among other factors. The structure of the open environment would have been favorable for deer, bear, moose, and, to a lesser degree, elk, which would have expanded rapidly into the environmental niches left available by the extinction and extirpation of the large herd animals and megafauna characteristic of the Late Pleistocene.

The fluted projectile point is considered the hallmark of the Paleoindian lithic toolkit. Based on his work at the Flint Run Complex, Gardner identified three distinct sub-phases within the larger fluted point phase (Gardner 1974). The oldest of the Paleoindian sub-phases is identified by the now classic Clovis point, a large, bifacially flaked tool with a channel or flute removed from both sides of its base. Regionally, the widely accepted beginning date for Clovis type points is circa 9500 BCE; however, some data has suggested a pre-11,000 BCE beginning date for Clovis points (McAvoy and McAvoy 1997; Johnson 1997). The Clovis sub-phase is followed in time by the Middle Paleo sub-phase, defined by smaller fluted points. The Dalton-Hardaway sub-phase is the final one of the period, and is characterized by the minimally fluted Dalton and Hardaway projectile points. This three-period subdivision is well supported by stratigraphy. Associated with these projectile points are various other tools that usually cannot be taken by themselves as diagnostic Paleoindian indicators. Examples of such stone tools include end or side scrapers, bifaces, blades, and spokeshaves, which are all associated with the hunting and processing of game animals.

Possible evidence for pre-Clovis colonization of the Americas has been found at the Cactus Hill site (44SX0202) in Virginia, where an ephemeral component dating from 15,000 to 13,000 BCE included prismatic blades manufactured from quartzite cores and metavolcanic or chert pentagonal bifaces (Haynes 2002: 43-44; Johnson 1997; McAvoy 1997; McAvoy and McAvoy 1997). Generally, lanceolate projectile points, prismatic blades, pentagonal bifaces, polyhedral blade cores, microflakes and microlithic tools comprise possible pre-Clovis assemblages and a preference for cryptocrystalline lithic material such as chert and jasper is noted (Goodyear 2005). Cactus Hill and other reportedly pre-Clovis sites, including SV-2 (44SM0037) in Saltville, Virginia (McDonald 2000; McDonald and Kay 1999) and the Meadowcroft Rock Shelter in western Pennsylvania (Adovasio et al. 1990; Adovasio et al. 1998), have been the subject of much controversy and no undisputed pre-Clovis sites or sites representing substantial pre-Clovis occupations have been identified in the region.

Paleoindian archeological assemblages rarely contain stone tools specifically designed for processing plant material such as manos, metates, or grinders. This general absence or rarity of such tool categories does not mean that use of plant resources was unimportant; rather, it may suggest that a far greater emphasis was placed on hunting versus gathering, at least when viewed from the perspective of an assemblage of stone tools. For instance, carbonized plant materials have been found in Paleoindian contexts and plant remains have been recovered from some Paleoindian sites. The remains of acalypha, blackberry, hackberry, hawthorn plum, and grape were recovered from a hearth in the Paleoindian portion of the Shawnee-Minisink Site in eastern Pennsylvania (Dent 1991). Although hard evidence is lacking for the immediate study area, the subsistence settlement base of Paleoindian groups in the immediate region likely focused on general foraging, drawing a comparison with the Shawnee-Minisink data, and certainly focused on hunting (Gardner 1989 and various).

The settlement pattern of Paleoindian peoples has been described as being quarry-centered, with larger base camps being situated in close proximity to localized sources of high quality cryptocrystalline lithic raw materials, such as chert, jasper, and chalcedony. Smaller exploitative or hunting and/or gathering sites are found at varying distance from these quarry-centered base camps (Gardner 1980). This model, developed from Gardner's work at the Thunderbird site complex in the Shenandoah River Valley, has wide applicability throughout both the Middle Atlantic region and greater Eastern United States. The extreme curation (or conservation) and reworking of the blade element exhibited by many stray point finds recovered throughout the Middle Atlantic region, especially specimens from Coastal Plain localities, is a strong argument supporting the quarry-base camp settlement model. Gardner has argued that once a tool kit has been curated to its usable limit, a return to the quarry-tied base camp would be made in order to replenish raw materials (Gardner 1974).

Sporadic Paleoindian finds are reported in the Potomac Valley, but, overall, these distinctive projectile points are not too common in the local area (Gardner 1985; Brown 1979). Paleoindian fluted points have been found as isolated finds in the county; however, at the time of this writing no intact sites have yet been documented.

Early Archaic Period (8000-6000 BCE)

The Early Archaic period coincides with the early Holocene climatic period. The warming trend, which began during the terminal Late Pleistocene and Paleoindian period, continued during the Early Archaic period. Precipitation increased and seasonality became more marked, at least by 7500 BCE. This period encompasses the decline of the open grasslands of the previous era and the rise of closed boreal forests throughout the Middle Atlantic region; this change to arboreal vegetation was initially dominated by conifers, but soon gave way to a deciduous domination. Arguably, the reduction of these open grasslands led to the decline and extinction of the last of the Pleistocene megafauna, as evidence suggests that the last of these creatures (e.g., mastodons) would have been gone from the area around the beginning of the Early Archaic period. Sea level throughout the region rose with the retreat of glacial ice, a process that led to an increase in the number of poorly drained and swampy biomes; these water-rich areas became the gathering places of large modern mammals.

Similar to the Paleoindian period, the subsistence settlement strategy of Early Archaic peoples was one focused on seasonal migration and hunting and gathering. Early Archaic humans were drawn to the wet biomes resulting from sea level rise because the abundant concentration of game animal, such as white-tailed deer, elk, and bear, made for excellent hunting. As the arboreal vegetation became more abundant and deciduous forests spread, the exploitation of newly available and abundant plant resources, such as fruits, nuts, and acorns increased among Early Archaic populations (Egloff and Woodward 1992:13-14).

Although the manufacturing techniques of projectile points and the favored use of cryptocrystalline raw materials of the Paleoindian period remained unchanged throughout the Early Archaic period, stylistic changes in the lithic toolkit of Early Archaic peoples

are evident. The switch from the fluting of projectile points to notching is generally considered to mark the end of the Paleoindian and the beginning of the Archaic period; examples of Early Archaic point types include Amos Corner Notched, Kirk and Palmer Corner Notched, Warren Side Notched and Kirk Stemmed varieties. Gardner has demonstrated that while corner notched and side notched points show a stylistic change from the earlier fluted varieties, they all occurred within a single cultural tradition (Gardner 1974). The transition from fluting to notching is not a radical change, but the gradual replacement of one attribute at a time. The fluting, which was nearly absent during the Dalton-Hardaway sub-phase, is replaced by corner notching, which is then gradually replaced by side notching in the Archaic sequence. The initial reason for the change in hafting and related modifications of the basal elements of Early Archaic points is likely related to the introduction of the atlatl or spear-thrower, which increased the accuracy and force with which spears could be thrown; the fluted forms may have been utilized mainly as thrusting tools, while the earlier notched forms may have been mounted onto a smaller lance with a detachable shaft and powered by the atlatl. As in the earlier Paleoindian period, stone tools designed for the processing of plant materials are rare in Early Archaic assemblages.

Towards the close of the Early Archaic period, trends away from a settlement model comparable to the earlier Paleoindian quarry-focused pattern are evident. A major shift is one to a reliance on a greater range of lithic raw materials for manufacture of stone tools rather than a narrow focus on high quality cryptocrystalline materials. Lithic use was a matter of propinquity; stone available was stone used. However, extensive curation of projectile points is still evident up until the bifurcate phases of the subsequent Middle Archaic period. It may be that while a reliance on high quality lithic materials continued, other kinds of raw material were used as needed.

This pattern is not readily documented during the earlier Paleoindian period. Johnson argues that the shift to a wider range of materials occurs in the gradual shift from the Palmer/Kirk Corner Notched phases of the Early Archaic to the later Kirk Side Notched/Stemmed or closing phases of the period (Johnson 1983; 1986:P2-6). Changes in lithic raw material selection are likely related to movement into a wider range of habitats coincident with the expansion of deciduous forest elements. Early Archaic period sites begin to show up in areas previously not occupied to any great extent if at all. Additionally, the greater number of sites can be taken as a rough indicator of a gradual population increase through time.

Middle Archaic (6000-2500 BCE)

The chronological period known as the Middle Archaic coincides with the appearance of full Holocene environments. Climatic trends in the Holocene at this time are marked by the further growth of deciduous forests, the continuing rise of sea levels, and warm and moist conditions. This change led to the spread of modern temperate floral assemblages (such as mesic hemlock and oak forests), modern faunal assemblages, and seasonal continental climates. The advent of such climates and related vegetation patterns allowed

for the development of seasonally available subsistence resources, which led to base camps no longer being situated near specific lithic sources, but closer to these seasonal resources. This shift also led to an increase in the number of exploited environmental zones. The moist conditions favored the spread of swamps and bogs throughout poorly drained areas like floodplains, bays, or basins. Rising sea level and overall moist conditions helped form these swamps and basins; sea level had risen too rapidly to allow the growth of large, stable concentrations of shellfish. Estuarine resources were scarce and the inhabitants relied on varied animal resources for sustenance. Essentially modern faunal species were spread throughout the various biomes, but their distributions would have been somewhat different than that known for today. The prevalent species included deer, turkey, and smaller mammals.

The initial technological shift in lithic projectile points between the Early and Middle Archaic periods is generally considered to be marked by the introduction of bifurcate base projectile points, such as St. Albans, LeCroy, and Kanawha types (Broyles 1971; Chapman 1975; Gardner 1982). Other researchers place the bifurcate phase within the Early Archaic period. The bifurcate points do not occur throughout the entire Middle Archaic period; however, they appear to be constrained to the earlier portion of the period and disappeared sometime before 5000 BCE (Chapman 1975, Dent 1995; Bergman et al. 1994). Several other marked changes occurred along with the onset of the bifurcate points. Ground stone tools, such as axes, gouges, grinding stones, and plant processing tools, were introduced along with bifurcate points (Chapman 1975, Walker 1981). These new tools are evidence for the implementation of a new technology designed to exploit vegetable/plant resources. Also, a shift to the use of locally available lithic raw material, which began during the closing phases of the Early Archaic, is manifest by the advent of the bifurcate phases.

The major stemmed varieties of projectile point that follow the earlier bifurcate forms and typify the middle portion of the Middle Archaic period include the Stanly, Morrow Mountain I and Morrow Mountain II varieties. Coe (1964) documented a Stanly-Morrow Mountain sequence at the Doerschuk Site in the North Carolina Piedmont, and similar results were recorded at the Neville Site in New Hampshire (Dincauze 1976) and the Slade Site in Virginia (Dent 1995). The projectile points marking the latter portion of the Middle Archaic period are the lanceolate shaped Guilford type and various side notched varieties (Coe 1964; Dent 1995). Vernon points, common at the Accokeek Creek Site in Prince George's County, Maryland, are considered to be local variants of Halifax points (McNett and Gardner 1975:9). This data seems to indicate that a similar Middle Archaic projectile point chronology exists in the Virginia-Maryland area.

It is during the Middle Archaic period that prehistoric human presence becomes relatively widespread in a wide range of environmental settings (Gardner 1985, 1987; Johnson 1986; Weiss-Bromberg 1987). As far as the inhabitants of the Middle Archaic period are concerned, there is an increase in population, which can be seen in the sheer number of sites (as represented by the temporally diagnostic point types) throughout the Middle Atlantic region. Temporally diagnostic artifacts from upland surveys along and near the

Potomac show a significant jump during the terminal Middle Archaic and beginning Late Archaic; Johnson noted in his overview of Fairfax County archeology a major increase in the number of sites (as measured by temporally diagnostic point types) during the bifurcate phase and the later phases of the Middle Archaic period (Johnson 1986:P2-14). With the increasing diversity in natural resources came a subsistence pattern that was predicated on the seasonal harvest of various nut species and other plant resources that characterized deciduous forest environments. Base camps were located in high biomass habitats or areas where a great variety of food resources could be found (Walker 1981). These base camp locations varied according to the season and were located on floodplains, interior fluvial swamp settings, and in some cases, within interior upland swamp settings. The size and duration of the base camps appear to have depended on the size, abundance, and diversity of the immediately local and nearby resource zones.

Late Archaic (2500-1200 BCE)

The rise in sea level continued during the Late Archaic period, eventually pushing the salinity cline further upstream and creating tidal environments; a corresponding movement of various riverine and estuarine species took place with the development of tidal conditions in the embayed section of the Potomac and its main tributary streams. Freshwater spawning fish had to travel farther upstream to spawn, fostering extensive seasonal fish runs. The development of brackish water estuaries as a result of an increase in sea level in the Hudson, Delaware, and Chesapeake Bay regions led to the spread of various shell species, such as oysters and crabs (Gardner 1976; Gardner 1982). In general, climatic events approached those of modern times during the Late Archaic period.

Throughout the Eastern United States, distinctive patterns of the Native-American landscape become evident by about 3000/2500 BCE, marking a significant shift with earlier Middle Archaic components. The Late Archaic period is characterized by an increase in population over that documented for the Early and Middle Archaic periods, based on an increase in both the number of identified sites dating to this period and in their size and widespread distribution. An increasingly sedentary lifestyle evolved, with a reduction in seasonal settlement shifts (Walker 1981; Johnson 1986:5-1). Food processing and food storage technologies were becoming more efficient, and trade networks began to be established.

In parts of the Middle Atlantic region, the development of an adaptation based on the exploitation of riverine and estuarine resources is apparent. Settlement during the Late Archaic period shifted from the interior stream settings favored during earlier periods to the newly embayed stream mouths and similar settings (Gardner 1976). Although Late Archaic populations continued a foraging pattern linked to dense forests and their seasonally available plant resources, interior sites became minimally exploited, though not abandoned, sustaining smaller hunting camps and specialized exploitative stations; sites in these areas exhibit varying emphasis on procurement of locally available cobble or tabular lithic sources, such as chert, quartz, and quartzite, as well as a variety of plant

species. In settlement-subsistence models presented by Gardner, this shift is linked with the development of large seasonal runs of anadromous fish. These sites tend to be concentrated along the shorelines near accessible fishing areas. The adjacent interior and upland zones become rather extensively utilized as adjuncts to these fishing base camps.

The Late Archaic technological assemblage continued an emphasis on ground stone tools first noted in the Middle Archaic period. Steatite net weights and carved steatite bowls with lug handles, which would not break when heated during cooking, first appeared during this period and are common throughout the Eastern United States from Maine to Florida. The use of steatite bowls is often seen as an indicator of increased sedentism among Late Archaic populations, as the vessels would have been heavy and difficult to transport (Egloff and Woodward 1992:26). In Virginia, outcrops of steatite have been identified in the eastern foothills of the Blue Ridge Mountains, though in limited numbers, from Fairfax County to Carroll County in southern Virginia. Archeologically, fragments of steatite bowls have been recovered in Late Archaic contexts in varying physiographic settings in the Middle Atlantic, often at great distances from steatite outcrops and quarry sites, which many have interpreted as evidence of widespread trading between Late Archaic peoples across the region. Kavanagh's (1982) study of the Monocacy River watershed in Maryland suggests that dug-out canoes were being produced during the Late Archaic period, based on the greater occurrences of gouges and adzes recovered from Late Archaic contexts (Kavanagh 1982: 97); canoes would have allowed for increased mobility and facilitated trading among Late Archaic groups via the various rivers and streams in the region.

The most easily recognizable temporally diagnostic projectile point in the Middle Atlantic region is the parallel stemmed, broad-bladed Savannah River point, which has a number of related cognate types and descendant forms, such as the notched broadspears, Perkiomen and Susquehanna, Dry Brook and Orient, and more narrow bladed, stemmed forms such as Holmes. Defined by Coe based on work in the Carolina Piedmont (Coe 1964), the Savannah River point represents what could be, arguably, a typological horizon throughout the Eastern United States east of the Appalachians, dating from about 2600 to perhaps as late as 1500 BCE. Gardner (1987) separates the Late Archaic into two phases: Late Archaic I (2500-1800 BCE) and Late Archaic II (1800-1000 BCE). The Late Archaic I corresponds to the spread and proliferation of Savannah River populations, while the Late Archaic II is defined by Holmes and Susquehanna points. The distribution of these two, Gardner (1982; 1987) suggests, shows the development of stylistic or territorial zones. The Susquehanna style was restricted to the Potomac above the Fall Line and through the Shenandoah Valley, while the Holmes and kindred points were restricted to the Tidewater and south of the Potomac through the Piedmont. Another aspect of the differences between the two groups is in their raw material preferences: Susquehanna and descendant forms such as Dry Brook and, less so, Orient Fishtail, tended to be made from rhyolite, while Holmes spear points were generally made of quartzite.

Early Woodland (1200-500 BCE)

The Early Woodland period corresponds generally to the Sub-Atlantic episode, when relatively stable, milder, and moister conditions prevailed; although short-term climatic perturbations were present. By this point in time, generally, the climate had evolved to its present conditions (Walker 1981).

The major artifact hallmark and innovation of the Early Woodland period is the appearance of pottery (Dent 1995; Gardner and McNett 1971). Archeologists believe that ceramic technology was introduced to Virginia from people living on the coasts of Georgia and South Carolina, where pottery had been made by prehistoric populations since approximately 2500 BCE (Egloff and Woodward 1992:26). It is important to note that pottery underscores the sedentary nature of the local resident populations, as clay ceramics of the period would have been fragile and cumbersome to transport. Further evidence of this sedentism has been identified in the region in the form of subsurface storage pits (likely for foodstuffs), platform hearths, midden deposits, and evidence of substantial pole-constructed structures. This is not to imply that Early Woodland populations did not utilize the inner-riverine or inner-estuarine areas, but rather that this seems to have been done on a seasonal basis by people moving out from established bases; this settlement pattern is essentially a continuation of Late Archaic lifeways with an increasing orientation toward seed harvesting in floodplain locations (Walker 1981). Small group base camps would have been located along Fall Line streams during the spring and early summer in order to take advantage of the anadromous fish runs. Satellite sites such as hunting camps or exploitive foray camps would have operated out of these base camps.

In the middle to lower Potomac River Valley, as well as most of the surrounding Middle Atlantic region, the earliest known ceramics begin with a ware known as Marcey Creek. In chronological terms, Marcey Creek likely falls within the first 200 years of the final millennium BCE, or roughly 1000 to 800 BCE. This ware is a flat-bottomed vessel tempered with crushed steatite or, in the Eastern Shore region, other kinds of crushed rock temper (Manson 1948). Based on vessel shape, this distinctive ware is interpreted as a direct evolution or development from the flat-bottomed stone bowls of the Late Archaic period. Vessels of this ware frequently exhibit the same lugs on the side walls as seen on Late Archaic steatite bowls. As a ceramic ware group, Marcey Creek is short lived in terms of its position in the chronological record. The earliest dates for Marcey Creek are 1200 BCE in the Northern Neck (Waselkov 1982) and 950 BCE at the Monocacy site in the Potomac Piedmont (Gardner and McNett 1971).

Shortly after about 800 BCE, conoidal and somewhat barrel shaped vessels with cord marked surfaces enter the record in the Middle Atlantic region and greater Northeast; whether these evolved from the flat bottomed Marcey Creek vessels or simply replaced them is unknown. Locally, such a ware has been designated Accokeek Cord Marked, first described from the Accokeek Creek Site in Prince George's County, Maryland (Stephenson et al. 1963). Radiocarbon dates for Accokeek place it between

approximately 750 BCE and 300/400 BCE, when it is superseded by net impressed varieties, including Popes Creek and related wares (Gardner and McNett 1971; Mouer et al. 1981; Mounier and Cresson 1988). Accokeek ware was tempered with both sand and crushed quartz, although any suitable stone may have been used for the grit source, including steatite. In many cases, temper selected for use by Accokeek potters appears to have been based on propinquity to specific resources. In the Coastal Plain settings of the Maryland and Virginia, Accokeek typically has a "sandier" paste and could be said to have sand as a tempering agent. However, when large enough sherds are analyzed, crushed quartz tempering is invariably found in this ware. Whether or not the paste of the vessel is sandy or more clayey in texture (or "feel") depends on the clay source, either Piedmont or Coastal Plain. Clay sources from Coastal Plain settings usually contain greater amounts of sand.

Some chronological frameworks for the Middle Atlantic region, particularly in Maryland, suggest a transitional ware, such as Selden Island (Slattery 1946), between Marcey Creek and Accokeek and its cognate wares. While this concept of a transitional ware has logical merit, it cannot be demonstrated conclusively with the evidence currently available. In many cases, the excavated sites show depositional contexts from this period with little vertical separation between Late Archaic and Early Woodland deposits. A more refined chronology that clarifies such issues of ceramic change still needs to be developed.

Generally, temporally diagnostic projectile points from the Early Woodland period include smaller side notched and stemmed variants such as Vernon and Calvert, and diagnostic spear points such as Rossville/Piscataway points. The lobate based Piscataway point has been associated archeologically with Accokeek pottery at a number of sites in the Middle Atlantic region; locally these points have been termed "Teardrop" points by Mounier and other investigators (Mounier and Cresson 1988). This point type has been found in association with Accokeek pottery at sites in New Jersey (Mounier and Cresson 1988; Barse 1991), in Maryland (Barse 1978), and in Virginia (Mouer et al. 1981; McClearen 1991). These points continue into the early phases of the Middle Woodland period and have been found in contexts containing Popes Creek, Albemarle, and early variants of Mockley ceramics along the Potomac River (Barse 2002).

Middle Woodland (500 BCE-900 CE)

The Middle Woodland period is characterized by an increase in population size and increased sedentism. With the emergence of Middle Woodland societies, an apparent settlement shift occurred compared to those seen in the intensive hunter-gatherer-fisher groups of the Late Archaic and Early Woodland periods. In brief, it appears that a selection to broader floodplain localities and the development of larger storage facilities at base camp localities dominated settlement patterns at this time (Cross 1956). Some degree of seasonal occupation and migration centered on natural food resources still occurred; potentially the year was split between more permanent settlements located in the inner Coastal Plain region and the Piedmont uplands. In general, from 200 CE to approximately 900 CE, settlement in the Potomac Piedmont was sparse. Smaller

exploitative sites are also known and found as small shell middens in estuarine settings and interior or inter-riverine hunting stations along the drainage divides between the Delaware River and its tributaries. Essentially all available food resources were now utilized, including fresh and saltwater aquatic species (i.e., oysters, fish, crab, etc.), deer, turkey, and migratory waterfowl. People also began to intensively harvest and store a variety of locally available plants, seeds, and nuts, such as amaranth seeds, chenopod seeds, wild rice, hickory nuts, acorns, and walnuts.

The Middle Woodland period is best interpreted as a gradual development from the Early Woodland and, despite clear continuity, is marked by innovations in the ceramic realm. One notable addition to ceramic technology, and one clearly widespread throughout the Middle Atlantic region, is the inception of vessels exhibiting net impressed surface treatments. A wider range of vessel forms and sizes also can be documented compared to earlier vessel assemblages. The net impressed surfaces and greater variation in vessel size and shape represent a significant change used for defining the Middle Woodland period in the Middle Atlantic region from areas south of the James River through the Chesapeake region and into the lower Susquehanna and Delaware River drainages. Accokeek and related wares of the Early Woodland period gradually developed into what has become known as the Albemarle ware group, commonly found in the Piedmont of Virginia and, perhaps, Pennsylvania and Maryland; it does not appear to be present in the Delaware Valley area.

Based on work in the lower Potomac River Valley and the upper Delaware River Valley, net impressed ceramics enter the chronological record around 500 BCE (Gardner and McNett 1971). More recently, AMS dating on carbon taken from a sherd of Popes Creek recovered in Charles County, Maryland returned a slightly younger date of 2235 ±100 B.P., or 285 ±100 BCE (Curry and Kavanagh 1994). In the upper Delaware River area, Broadhead net impressed ceramics, which have been considered as a northern Popes Creek cognate, have been dated to 480 ±80 BCE in New Jersey (Kinsey 1972:456). Other similar wares include the net impressed varieties of Wolf Neck and Colbourn ceramics from the Eastern Shore of Maryland and Delaware. Comparisons could also be extended to the Prince George Net Impressed ceramics from southern Virginia and the Culpepper ware in the Triassic Lowlands of the Piedmont; Culpepper ware is a sandstone tempered ceramic occasionally found in the Piedmont and is recognized by some archeologists working in Fairfax County, but has not been clearly defined in the literature. These wares or ware groups are circum-Chesapeake Bay in their geographic distribution, pointing to close interrelationships between the societies making these wares. All of these groups were undoubtedly participating in a growing Middle Woodland interaction sphere widespread throughout the James, Potomac, lower Susquehanna, Delaware, and even lower Hudson River Valleys.

Popes Creek ceramics developed into the shell tempered Mockley ceramics, a ware that has both net impressed and cord marked surfaces. Many, if not most, radiocarbon dates associated with Mockley ceramics bracket the ware between about 250/300 CE to approximately 800 CE, after which it develops into the Late Woodland Townsend Ware.

Why the shift from sand to shell tempering occurred is unknown, although it was widespread in the Middle Atlantic region. In the lower Potomac Valley, Mockley may have been tied to the intensive exploitation of oyster beds, a phenomenon first manifested in the earlier Popes Creek phase of the Middle Woodland period. Mockley ware exhibits relationships with the earlier Popes Creek ceramics and its cognate wares in basic attributes such as rim form, vessel shapes, and the range of vessel sizes (Barse 1990).

Thurman has termed the developmental trajectory of Mockley to Townsend the "Mockley continuum", a time span that saw gradual population growth and increasing village size leading up to the Late Woodland period (Thurman 1985). For the earlier end of this continuum, Potter (1993) has reported dates in the last 200 years of the final millennium BCE for Mockley ceramics in the lower Potomac Valley in Virginia. The emergence of Mockley ware from Popes Creek was likely a gradual process, not a single historical event. It is also likely that, during this transition, both wares coexisted (as recognized archeologically), perhaps unevenly across the region. Both wares would have been contemporaneous at some point in this transition, as evidenced by their association in the large refuse pits excavated at the Fletchers Boathouse Site in Washington, D.C. (Barse 2002). At some point in the developmental trajectory, however, Mockley ware superseded the heavy, coarse, sand tempered Popes Creek ceramics and dominated the Middle Atlantic region.

Popes Creek and Mockley ware ceramics are not as common in Piedmont settings as they are in Coastal Plain settings where they are prevalent. Albemarle ceramics, bearing mostly cord marked exterior surfaces that show continuity with the earlier Accokeek ware, are commonly found in Middle Woodland contexts in the Potomac Piedmont. This ware was found associated with Mockley ceramics at the Fletchers Boathouse site in pit contexts (Barse 2002) along with small quantities of Mockley and Popes Creek ceramics. Radiocarbon dates from several of the large pits at this site fall between 100 BCE and 100 CE, suggesting that Popes Creek was in the process of being replaced by the shell tempered Mockley ceramics. Albemarle is considered to be contemporary with both, though more commonly found in the Piedmont; as a ware it continued up to and perhaps into the Late Woodland period. Gardner and Walker (1993:4) suggested that fabric impressed wares become more common towards the end of the Middle Woodland period. This surface treatment is restricted to Albemarle wares though, and does not really occur on Mockley ceramics. Fabric impressing on shell tempered ceramics by default is identified as Townsend ware.

Lithic artifacts associated with Middle Woodland occupations frequently include side notched and parallel stemmed points manufactured from rhyolite, argillite, and Pennsylvania jasper. Such points are known as Fox Creek in the Delaware Valley and Selby Bay in the Chesapeake region. The Middle Woodland people also manufactured and used a stone axe called a celt, used for woodworking. The celt differed from the earlier axes because it was not grooved; rather, it was hafted into a socketed wooded handle.

Late Woodland (900 CE to 1600 CE/European Contact)

The Late Woodland period begins around 1000 CE, the result of a culmination in trends concerning subsistence practices, settlement patterns, and ceramic technology. A trend toward sedentism, evident in earlier periods, and a subsistence system emphasizing horticulture eventually led to a settlement pattern of floodplain village communities and dispersed hamlets reliant on an economy of both hunting and the planting of native cultigens.

In the early part of the Late Woodland, the temporally diagnostic ceramics in the Northern Virginia Piedmont region include Potomac Creek, Shepard, and, in the upper Coastal Plain, Townsend ware ceramics; as noted above, Townsend ware is a shell tempered ware that developed from Mockley. Shepard ceramics are likely an outgrowth of the Albemarle wares, given similar attributes of paste and surface treatment. The surfaces of the above noted wares are almost exclusively cord marked, with the exception of the fabric impressed Townsend series specimens. In most cases, the cord marked surfaces were smoothed prior to firing the vessel, in some cases nearly obliterating the surface treatment. This is a trend that seems to become more popular through the Late Woodland period.

In the Potomac Piedmont, the crushed rock wares are replaced by a shell tempered ware that spread out of the Shenandoah Valley to at least the mouth of the Monocacy River at about 1350-1400 CE. Shell tempered Keyser ceramics, a downstream variant of the Late Woodland Monongahela ware common in the Upper Ohio River Valley, extend nearly to the Fall Line, although they are not found in Coastal Plain settings. Triangular projectile points indicating the use of the bow and arrow are often considered diagnostic of this period as well. However, triangular projectile points have also been recovered from well-defined and earlier contexts at regional sites such as the Abbot Farm site in central New Jersey, the Higgins site on the Inner Coastal Plain on Maryland's Western Shore, and the Pig Point site in Anne Arundel County, Maryland (Stewart 1998; Ebright 1992; Luckenbach et al. 2010). Additionally, triangular points have been found in context with Savanah River points in Fairfax County, although the context appears to have been mixed (Christopher Sperling, personal communication 2015).

The Late Woodland period is also marked by a marked increase in ceramic decoration. Most of the motifs are triangular in shape and applied by incising with a blunt-tipped stylus. The marked increase of ceramic decoration and the various design motifs on Late Woodland pottery compared to earlier periods likely reflect the need to define ethnic boundaries and possibly smaller kin sets. Neighboring groups that may have been in low level competition for arable riverine floodplains may have used varied embellishments of basic design elements to set themselves apart from one another. Additionally, in a noncompetitive setting, ceramic designs simply may have served to distinguish between individual social groups, as the region now sustained the highest population level of the

prehistoric sequence. As such, ceramic design elements functioned as a symbolic means of communication among groups, serving as badges of ethnic identity or, perhaps, smaller intra-group symbols of identity.

As noted above, Late Woodland societies were largely sedentary with an economy relying on the growth of a variety of native cultigens. Late Woodland settlement choice reflects this horticultural focus in the selection of broad floodplain areas for settlement. This pattern was characteristic of the Piedmont as well as the Coastal Plain to the east and the Shenandoah Valley to the west (Gardner 1982; Kavanagh 1983). The uplands and other areas were also utilized, for it was here that wild resources would have been gathered. Smaller, non-ceramic yielding sites are found away from the major rivers (Hantman and Klein 1992; Stevens 1989).

Most of the functional categories of Late Woodland period sites away from major drainages are small base camps, transient, limited purpose camps, and quarries. Site frequency and size vary according to a number of factors, e.g., proximity to major rivers or streams, distribution of readily available surface water, and the presence of lithic raw material (Gardner 1987). Villages, hamlets, or any of the other more permanent categories of sites are rare to absent in the Piedmont inter-riverine uplands.

Perhaps after 1400 CE, with the effects of the Little Ice Age, an increased emphasis on hunting and gathering and either a decreased emphasis on horticulture or the need for additional arable land required a larger territory per group, and population pressures resulted in a greater occupation of the Outer Piedmont and Fall Line regions (Gardner 1991; Fiedel 1999; Miller and Walker n.d.). The 15th and 16th centuries were a time of population movement and disruption from the Ridge and Valley to the Piedmont and Coastal Plain. There appear to have been shifting socio-economic alliances over competition for resources and places in local exchange networks. Factors leading to competition for resources may have led to the development of more centralized forms of social organization characterized by incipiently ranked societies. Small chiefdoms appeared along major rivers at the Fall Line and in the Inner Coastal Plain at about this time. A Fall Line location was especially advantageous for controlling access to critical seasonal resources as well as being points of topographic constriction that facilitated controlling trade arteries (Potter 1993; Jirikowic 1999; Miller and Walker n.d.).

Although European exploration of the Chesapeake Bay area began in the late 1500s, there is minimal evidence for contact between Europeans and the native populations in the Chesapeake before the 17th century. French or Spanish explorers likely observed the Chesapeake Bay earlier in the 16th century; circa 1527 the Chesapeake was marked on the official Spanish *Padrón General* maps as the *Bahia de Santa Maria* (Potter 1993:161). French, Spanish, Portuguese, and Italian ships sailed the lower Chesapeake throughout the remainder of the 16th century but none appear to have ventured as far north as Maryland. These ships were probably involved in slave hunting, missionary work, and mapping (Potter 1993: 162). During this period, Spanish colonialism focused on *La Florida*, where several mission settlements were established by 1570.

In the early 1600s, Captain John Smith made contact with local populations in the Upper Potomac Coastal Plain and Henry Fleet lived among and traded with the Native Americans on the Chesapeake. Based on their comments, the upper Potomac may have served as a gateway location where Native Americans from diverse regions came to trade (see Potter 1993). Native Americans along the Potomac appear to have adopted a range of social strategies during this period based on varying archeological evidence for European trade goods in aboriginal household assemblages and interpretations of how such goods were incorporated into traditional practices and social relations (Gallivan 2010).

Following his voyage up the Potomac in 1608, Captain John Smith described several substantial aboriginal occupations along the banks of the Potomac and Anacostia Rivers. Smith mapped several Native American settlements along the Potomac River in northern Virginia. These include four hamlets or villages associated with the Tauxenent, Taux, or Dogue Indians, including Pamacocack, on Quantico Creek; Namassingakent on the north bank of Dogue Run; Assaomeck, on the south side of Hunting Creek, and the village of Tauxenent, near lands that would become George Washington's Mount Vernon plantation on Dogue Run.

This area lay at the northern fringe of the Powhatan Confederacy, a large polity centralized in Tidewater Virginia (Rountree 1989). The most numerous Native Americans along the Potomac at the time of the initial reported contact were part of a chiefdom called the Conoy by their Iroquoian adversaries (Potter 1993:19) and the Piscataway, descendants, evidently, of the prehistoric Potomac Creek populations was the most numerous of the Conoy (Potter 1993:19). They dominated the eastern bank of the Potomac River and are generally believed to have been comprised of Coastal Algonquian linguistic group peoples (Humphrey and Chambers 1977, 1985; Potter 1993). Relatively little is known of the Tauxenent or Dogue people; they were possibly Algonquian speakers allied with the Piscataway (Mayre 1935; Cissna 1986). Potter (1993:197) states that around 1650, the Dogue were still living in what is now Mason Neck and by 1654 some may have moved to lands along the Rappahannock River. The Indian groups of this region effectively disappeared from the historic record in the beginning of the 18th century, although small groups of Native Americans likely remained after that time (Cissna 1986).

Historic Overview

Early English explorations to the American continent began in 1584 when Sir Walter Raleigh obtained a license from Queen Elizabeth of England to search for "remote heathen lands" in the New World, but all of his efforts to establish a colony failed. In 1606, King James I of England granted to Sir Thomas Gates and others of "The Virginia Company of London" the right to establish two colonies or plantations in the Chesapeake Bay region of North America in order to search "…. For all manner of mines of gold, silver, and copper" (Hening 1823, Vol. I:57-75).

It was in the spring of 1607 that three English ships--the *Susan Constant,* the *Godspeed*, and the *Discovery*, under the command of Captains Newport, Gosnole, and John Smith--anchored at Cape Henry in the lower Chesapeake Bay. After receiving a hostile reception from native inhabitants, exploring parties were sent out to sail north of Cape Henry. Following explorations in the lower Chesapeake, an island 60 miles up the James River was selected for settlement (Kelso 1995:6-7) and the colonists began building a palisaded fort which came to be called Jamestown. In 1608, Captain Smith surveyed and mapped the Potomac River, locating the various native villages on both sides of the Potomac River. Captain Smith's "Map of Virginia" supplies the first recorded names of the numerous native villages along both sides of the Potomac River. The extensive village network along the Potomac was described as the "trading place of the natives (Gutheim 1986:22-23, 28). After 1620, Indian trade with the lower Coastal Plain English became increasingly intense. Either in response to the increased trade, or to earlier Indian-Indian hostilities, confederations of former disparate aboriginal groups took place.

Reaffirmed by an "Ancient Charter" dated May 23, 1609, King James outlined the boundaries of the charter of "The Virginia Company":

> ...in that part of America called Virginia, from the point of land, called Cape or Point Comfort, all along the sea coast, to the northward two hundred miles, and from the said point of Cape Comfort, all along the sea coast to the southward two hundred miles, and all that space and circuit of land, lying from the sea coast of the precinct aforesaid, up into the land, throughout from sea to sea, west and northwest; and also all the islands, lying within one hundred miles, along the coast of both seas... (Hening 1823, Vol. II:88)

In 1611, John Rolfe (who later married Pocahontas in 1614) began experimenting with the planting of "sweet scented" tobacco at his Bermuda Hundred plantation, located at the confluence of the James and Appomattox Rivers. Rolfe's experiments with tobacco altered the economic future of the Virginia colony by establishing tobacco as the primary crop of the colony; this situation lasted until the Revolutionary War (O'Dell 1983:1; Lutz 1954:27). Tobacco was used as a stable medium of exchange; promissory notes, used as money, were issued for the quantity and quality of tobacco received (Bradshaw 1955:80-81). Landed Virginia estates, bound to the tobacco economy, became independent, self-sufficient plantations, and few towns of any size were established in Virginia prior to the industrialization in the south following the Civil War.

A number of early English entrepreneurs were trading along the Potomac River in the early 1600s for provisions and furs. By 1621, the numbers of fur trappers had increased to the point that their fur trade activities became regulated. Henry Fleet, among the better known of the early Potomac River traders, was trading in 1625 along the Potomac River as far north as the Falls, with English colonies in New England, settlements in the West Indies; and across the Atlantic to London (Gutheim 1986:28-29, 35, 39).

The first Virginia Assembly, convened by Sir (Governor) George Yeardley at James City in June of 1619, increased the number of corporations or boroughs in the colony from seven to eleven. In 1623, the first laws were made by the Virginia Assembly establishing the Church of England in the colony. These regulated the colonial settlements in relationship to Church rule, established land rights, provided some directions on tobacco and corn planting, and included other miscellaneous items such as the provision "…That every dwelling house shall be pallizaded in for defence against the Indians" (Hening 1823, Vol. I:119-129).

In 1617, four parishes--James City, Charles City, Henrico and Kikotan--were established in the Virginia colony. By 1630, the colony had expanded, now comprised of a population of about 5,000 persons; this necessitated the creation of new shires, or counties, to compensate for the courts which had become inadequate (Hiden 1980:3, 6). In 1634, that part of Virginia located south of the Rappahannock River was divided into eight shires called James City, Henrico, Charles City, Elizabeth Citty [sic], Warwick River, Warrosquyoake, Charles River, and Accawmack, all to be "…governed as the shires in England" (Hening 1823, Vol. I:224). Ten years later, in 1645, Northumberland County, located on the north side of the Rappahannock River, was established "…for the reduceing of the inhabitants of Chickcouan [district] and other parts of the neck of land between Rappahanock River and Potomack River," thus enabling European settlement north of the Rappahannock River and Northern Virginia (Hening 1823, Vol. I:352-353).

Early settlers who had seated plantations in Northern Virginia along the Potomac River shipped their tobacco crops by means of trading ships; these were able to find convenient anchorages at the mouths of the creeks and rivers. In order to control tobacco shipping and trade and to afford protection for the early settlers, the first Acts of the Virginia Assembly for Northern Virginia and the Potomac River were to establish forts "within command of which forts all ships trading to these respective places may conveniently, and in all probability securely ride and load." (Hening 1823, Vol. II:256). The first fort in Prince William County was ordered to be built in 1667 on the Potomac River near the mouth of Yehocomico (Neabsco Creek), "ten foote high and towards the [Potomac] river or shipping tenn foote thick at least." (Hening 1823, Vol. II:257). The second Act establishing a fort at this location was passed on April 2, 1679:

> And because there is noe neighbouring Indians on Virginia side resideing near the garrison on Potomack river, the commander in cheife of that garrison is hereby impowered and requested to hyre fowre of the Matteoman Indians in Maryland for the service of that garrison (Hening 1823, Vol. II:438).

Prior to 1692, most lands in the Virginia Colony were issued by the Governor of the colony as Virginia Land Grants. In 1618, a provision of 100 acres of land had been made for "Ancient Planters," or those adventurers and planters who had established themselves as permanent settlers prior to 1618. Thereafter, Virginia Land Grants were issued by the

"headright" system by which "any person who paid his own way to Virginia should be assigned 50 acres of land...and if he transported at his owne cost one or more persons he should...be awarded 50 acres of land" for each (Nugent 1983:XXIV).

King Charles I was beheaded in January 1648/9 during the mid-17th century Civil Wars in England. His son, Prince Charles II, was crowned King of England by seven loyal supporters, including two Culpeper brothers, during his exile near France in September 1649. For their support, King Charles granted his loyal followers "The Northern Neck," or all that land lying between the Rappahannock and Potomac Rivers in the Virginia colony; the grant was to expire in 1690. King Charles II was subsequently restored to the English throne in 1660.

In 1677, Thomas, Second Lord Culpeper became successor to Governor Berkley in Virginia, and by 1681, he had purchased the six Northern Neck interests of the other proprietors. The Northern Neck grant (due to expire in 1690) was reaffirmed by England in perpetuity to Lord Culpeper in 1688. Lord Culpeper died in 1689, and four-fifths of the Northern Neck interest passed in 1690 to his daughter, Katherine Culpeper, who married Thomas, the fifth Lord Fairfax. The Northern Neck became vested and was affirmed to Thomas, Lord Fairfax, in 1692 (Kilmer and Sweig 1975:5-9). In 1702, Lord Fairfax appointed an agent, Robert Carter of Lancaster County, Virginia, to rent the Northern Neck lands for nominal quit rents, usually two shillings sterling per acre (Hening 1820, Vol. IV:514-523; Kilmer and Sweig 1975:1-2, 7, 9).

The extent and boundaries of the Northern Neck were not established until two separate surveys of the Northern Neck were conducted. These were begun in 1736, and a final agreement was reached between 1745 and 1747 (Kilmer and Sweig 1975:13-14).

In 1730/31, Prince William County was established from the northern part of Stafford County (Hening 1820, Vol. IV:303) and was named for William Augusta, Duke of Cumberland, the second son of King George II of England. Parent counties of Prince William County were Northumberland (1645-1651), Lancaster (1651-1653), Westmoreland (1653-1664), and Stafford (1664-1730/31). In 1742, the county was divided in half, and all of the northern part of Prince William County above the Occoquan River and Bull Run became the county of Fairfax (Hening 1819, Vol. V:207-208). In 1759, Fauquier County was established from the western part of Prince William County (Hening 1820, Vol. VII:311-312).

Dumfries, the oldest town in Prince William County, began with the establishment of Richard Gibson's mill site at the mouth of Quantico Creek in about 1690. By 1713, merchants from Glasgow, Scotland, had moved into the area then known as the settlement town of Quantico and began a flourishing tobacco trade on the Potomac River. To prevent the exportation of bad quality "trash" tobacco from being shipped from Virginia to England, the Virginia Assembly passed an Act in 1730 establishing houses for the inspection and grading of tobacco prior to its shipment. A tobacco warehouse was

established at Quantico (Dumfries) on Robert Brent's land in 1730/31. Until 1763, Dumfries was the second leading port for tobacco shipping in Colonial America (Martin 1836:274).

U.S. Route 1, running through the town of Dumfries, was originally known as the "Potomac Path." Throughout the 1700s and 1800s the Potomac Path had various names including "King's Highway," the "Dumfries and Occoquan Road, and "the Richmond-Washington Highway;" today it is known as the "Jefferson Davis Highway." The first Prince William County courthouse was located on the Potomac Path, near the south side of the Occoquan River, a short distance above the town of Colchester (Harrison 1987:311-312, 315).

At a Council held at the Capitol at Williamsburg on October 22, 1742, a second Prince William County courthouse was proposed:

> It was referred to Col Henry Fitzhugh Col Will.m. Fairfax and Col John Colvil to view the several places proposed for fixing the Courthouse of Prince William County...In obedience to which Order they met at the Iron Mines at Niapsco [sic; Neabsco Creek] and having heard all Parties & Evidences are of the opinion that Philemon Water's Plantacon [sic] is the most Convenient place to fix the Courthouse for the sd. County And have accordingly given the same under their hands dated 23d Nov.r. 1742...It is Ordered That the Courthouse of the County of Prince William Be Erected at the Plantation of Philemon Waters accordingly (Hall 1945:109).

The location of the second courthouse is thought to have been located at the forks of the Dumfries Road on Water's plantation named *Ashmore* (Harrison 1987:316).

Poll lists of inhabitants in Prince William County in 1749 enumerated 2,222 white males of the age of 18 or older. In 1755, the poll lists show 1,384 white males age 18 or older and 1,414 slaves (Greene 1932:151). In 1762, 215 "land holders" paid land taxes in Prince William County. A total of 16 large "land holders", or lease holders on this list, held between 1,000 and 10,000 acres of land. The remainder of the Prince William County land holders at this time held an individual average of between 100 and 300 acres of land (Huntington Library 1762).

The Prince William County militia during the French and Indian Wars was made up of 17 officers, 39 troopers and 21 foot soldiers. Wages and claims for military supplies needed for the protection of the colony's frontiers were generally paid in tobacco from an optional tax of one shilling in cash, or 10 pounds of tobacco from each tithable, collected in the respective counties (Hening 1820, Vol. VII:11, 24-25); a tithable was a free person aged 16 years and over.

The 18th century witnessed a change from the planting of tobacco crops in the Piedmont counties to the cultivation of wheat and the introduction of plows:

> …some years before the outbreak of the [Revolutionary] war the cultivation of this grain [wheat] had already been undertaken with more enthusiasm in this region [Prince William County]: that is after the profit from their tobacco had been greatly lessened by the heavy duties imposed in England; and besides, their lands, even then exhausted, not producing such large crops of tobacco, the profitable culture of wheat gave the land a new and greater value (Harrison 1987:403).

Private claims to fishing shores in Virginia became a contentious issue with the Colony of Maryland along the Potomac River. Maryland's claims on the Potomac included all the fishing and shipping rights from Maryland to the Virginia shoreline (Smith 1980:16). In 1785, representatives from Maryland and Virginia met at George Washington's Mount Vernon estate to mediate, among other issues, fishing regulations and toll fares across the Potomac River. Negotiations reached a compromise, allowing Virginians to fish the Potomac River in exchange for the free entry of Maryland ships thorough the Virginia capes (Wharton 1957:65).

Among the various species of fish in the Potomac River, and the Potomac River tributaries during the eighteenth century, identified by their common names, were: sturgeon, bass, carp, perch, rock fish, and the spring runs of herring and shad. Shad was also identified during the colonial period as "white fish" (Neitzey 1991:48; Wharton 1957:64). Colonial fish preservation depended on curing by salting and packing in barrels either to be sold to local planters for their slaves or to be shipped abroad (Wharton 1957:66; Jackson and Twohig 1976, Vol. II:218).

During the first half of the 18th century, siltation of the harbor at Dumfries, a result of upland soils washing down Quantico Creek, had caused increasing economic and shipping problems:

> For that portion of the 18th century that Dumfries was a major tobacco part, the land that is now Prince William Forest Park was extensively farmed in tobacco. As the land was denuded for this purpose, serious erosion took place. Tons of silt washed down the water shed of the North and South Branches of Quantico Creek and ruined the harbor at Dumfries (Curtis 1988:40).

During the Revolutionary War, the Virginia General Assembly passed Acts to draft men from each county in Virginia for military service. Colonel Henry Lee of Leesylvania, commander of the Prince William County militia, submitted a final summary on the annual drafts from the county dating from 1776 through 1780, listing 269 men who had been drafted. By a further Act requiring an additional draft in 1780, 48 men were drafted: "2 of whom cut off their fingers after the draft, 1 was discharged as being a Lunatick, 9 deserted, & 1 remains in the County armed" (McIlwaine 1930:163).

British subjects who held land and property in the Virginia colony were deemed to be enemy aliens and their lands and personal property in Virginia, including slaves, were ordered by the Virginia Legislature to be seized as Commonwealth property in 1777 (Hening 1822, Vol. X:66-71). Heirs to the Fairfax family holding the Northern Neck were considered enemy aliens and subject to losing their land. "American citizens" in possession of leased Northern Neck lands at the time the Fairfax lands escheated obtained fee simple titles to the property by obtaining a certificate from the Governor of the Commonwealth, completing a Northern Neck Survey of the leased lands and paying a small fee.

Impacts to Prince William County during the Revolutionary War occurred late in the conflict and included the plundering of plantations along the Potomac River by privateers. On the first of April, 1781, a tender to the privateer *Trimer* went up the Potomac River, robbing the plantations as far as Alexandria in Fairfax County, where they were discovered attempting to capture a vessel. Henry Lee had, in the meantime, called out the militia to protect the warehouses on Quantico Creek near Dumfries. Prisoners of the privateer later revealed that they had intended to burn George Washington's houses at Mount Vernon, were planning to plunder Colonel Mason at Gunston Hall and Henry Lee at Leesylvania, and had also planned to take Henry Lee as a prisoner (Palmer 1881:21-22).

In September 1781, the final battle of the Revolutionary War at Yorktown, Virginia, was preceded by the movement of Washington's Continental Army, combined with Rochambeau's French Army, from Mount Vernon in Fairfax County through Prince William County via the town of Dumfries.

In 1787 a new town called Newport, located at the mouth of Quantico Creek on the Potomac, was authorized by the Virginia Assembly to be established on 30 acres of the property of Cuthbert Bullitt (Hening 1823, Vol. XII:603-604). In 1788, the Virginia Assembly authorized the town of Carrborough to established on 50 acres of Willoughby Tebbs' property on the south side of Quantico Creek (Hening 1823, Vol. XII:684; Harrison 1987:664). Unfortunately, neither the town of Newport nor the town of Carrborough was ever fully developed because of the increasing siltation, and the Scottish merchants moved to more favorable places (WPA 1941:91). On December 7, an Act was passed by the Virginia Assembly to discontinue the inspection of tobacco at Dumfries warehouse. Jesse Ewell, proprietor of the warehouse, stated in a petition that the warehouse was no longer necessary for the reception and inspection of tobacco (Shepherd 1970:264).

John Wood's map of Prince William County in 1820 shows the town of Haymarket and Hunter's Mill within in the vicinity of the project area (Exhibit 4). No other buildings or cultural features are depicted on the map.

Exhibit 4
1820 John Wood Map, Prince William County, VA

Martin's *Gazetteer of Virginia,* published in 1836, lists seven towns, or post offices, in existence in the county: Buckland, Dumfries, Hay Market, Liberia, Occoquan, Thoroughfare, and Brentsville, the county seat at that time. Data from the 1830 U.S. Census Records indicates that the county had been showing a population decrease for the past 20 years, going from 11,311 people in 1810 to 9,320 in 1830 – almost an 18% decrease in the population (Martin 1836:273-275).

Major agricultural shipping and transportation impacts to Prince William County began in the early 1850s when the Orange and Alexandria Railroad was incorporated by an Act of the Virginia Assembly on March 27, 1848 (Commonwealth of Virginia 1850:190-193). Construction of this railroad began in 1850 in Alexandria and reached Tudor Hall (Manassas Junction) in October of 1851 (Harrison 1987:340). The Manassas Gap Railroad, routed through Thoroughfare Gap in northern Prince William County, was incorporated by an Act of the Virginia Assembly on March 9, 1850 (Commonwealth of Virginia 1851:73-74).

The plan for the two railroad systems was to extend the railroad lines from a junction of the two railroads at Tudor Hall (Manassas) through Manassas Gap to Strasburg in Shenandoah County, then to run south to Harrisonburg in Rockingham County, Virginia. The Warrenton branch of the Orange and Alexandria Railroad, with a connection to the Manassas Gap Railroad, was surveyed in 1850 (Salmon 1996:49). After the Civil War, the Manassas Gap Railroad merged with the Orange and Alexandria Railroad; in 1898, the Orange and Alexandria Railroad system became the Southern Railroad line (McCarty 1974:109).

On the night of December 26, 1860, Major Robert Anderson moved his troops from Fort Moultrie to Fort Sumter in the harbor of Charleston, South Carolina. Subsequently, on April 15, 1861, President Lincoln sent a reinforcement fleet of war vessels from New York to Fort Sumter to suppress the rebellion in the southern states. Two days later, the Commonwealth of Virginia seceded from the Union, adopting the Virginia Ordinance of Secession on April 17, 1861, and forming a provisional Confederate government (Gallagher 1989:29; Boatner 1991:729; Church and Reese 1965:134). The State formally seceded from the Union on May 23, 1861, by a vote of 97,000 to 32,000 (Bowman 1985:51, 55).

In Virginia, Confederate regiments formed by Prince William County residents included the "Bull Run Rangers", the "Prince William Cavalry", the "Prince William Rifles", the Quantico Guards" and the "Prince William Rangers" (WPA 1941:49).

From April 19, 1861, until March of 1862, the Potomac River was blockaded by the U.S. Navy under order of President Lincoln. In return, Confederate army batteries were established at critical points on the Virginia side of the Potomac River. One of the first Confederate batteries was established at Aquia Creek, where the Confederates destroyed the buoys and channel markers on the river, making navigation difficult for those unfamiliar with the channel (Wills 1978:22). Other batteries established in the area that at

Evansport, at Shipping Point at the mouth of Quantico Creek, at Possum Point, at Cockpit Point south of Cherry Hill, and at Stoney Point on the Leesylvania Plantation at the mouth of Neabsco Creek. Confederate Brigadier General W. H. C. Whiting's Brigade, which was camped in and around Dumfries, helped man the batteries and guard the Potomac and Occoquan Rivers against a Union Attack (Wills 1978).

The First Battle of Manassas, occurring along Bull Run from July 18th through July 21, 1861, was the first engagement of the Civil War. It took place north of the town of Manassas, in Prince William County. The second Battle of Manassas, August 29-30, 1862, began at the railroad station at Manassas Junction and extended to the town of Haymarket in Prince William County. Both battles were decisive victories for the Confederate army (Boatner 1991:507; Bowman 1985:111).

On March 8, 1862, the Confederate Army of the Potomac was withdrawn from northern Virginia and moved south to defend Richmond against an easterly advance by the Union Army under General McClellan, coming from Fort Monroe at the mouth of the James River. A Union reconnaissance of northern Virginia on March 15, 1862 found part of the Confederate Army in force at Warrenton Station in Fauquier County, Virginia, as well as two regiments of cavalry with three companies of infantry posted on Cedar Run south of Manassas in Prince William County (OR 1881:1.5:550).

During the winter of 1861/1862, concurrent with the Potomac River blockade, the right flank of the Confederate army commanded by General Johnston was kept on alert in the Occoquan and Dumfries sector to counter a possible attack from either the Occoquan or the Potomac front (Hanson 1951:41). On December 12, 1862, a raid was made on the Confederate telegraph station in Dumfries. Colonel Anson Stager, superintendent of the U. S. Military Telegraph, reported:

> Hampton, with 800 cavalry, made a raid on Dumfries at 5 o'clock this a.m.; cut telegraph and captured two operators and one repairer; also several officers, orderlies, &c. They left Dumfries about 8 o'clock, taking [the] road toward Bristoe. They stated that they were only a detachment of the force that had crossed with them, saying they expected, and came to meet, a large force of our cavalry. General Steinwehr's division marched into Dumfries at 10 this a. m. We have heard firing near Dumfries and to westward of it, which shows he has met the rebels and engaged them. The rebels paroled the officers, but retained the telegraphers (OR 1888:689).

McDowell's 1862 map shows the project area vicinity as agricultural fields along the north side of an unnamed road following the general alignment of Washington Street (Exhibit 5). No buildings or cultural features are recorded within the immediate project area vicinity, with the closest buildings being shown approximately 3,000 feet to the west. The Manassas Gap Railroad is also shown to the south of the project area.

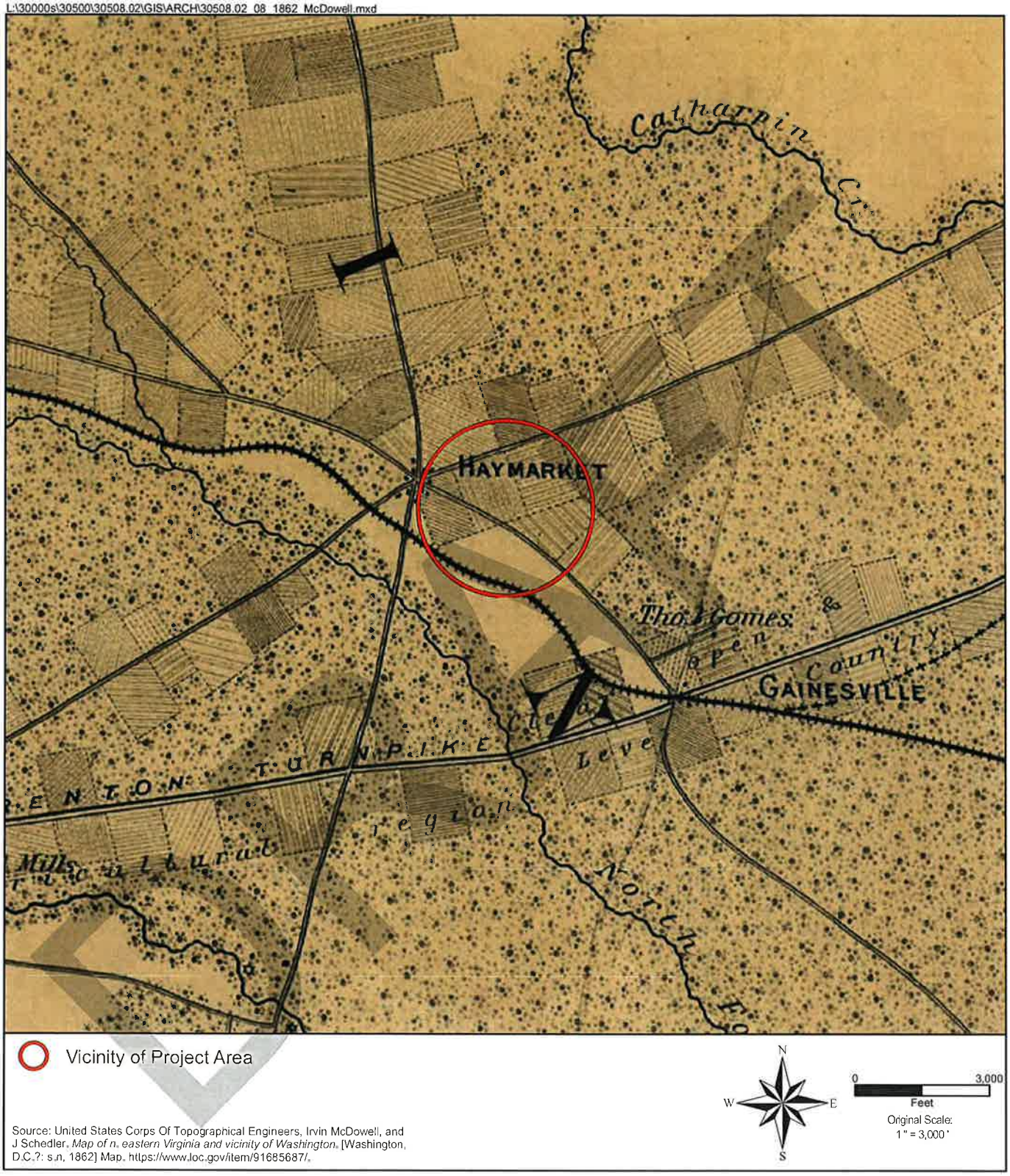


Exhibit 5
1862 McDowell Map, Northeast Virginia and Washington DC

Until the late summer and early fall of 1863 the war effort in Prince William County remained relatively quiet. On October 9, 1863, in a maneuver to flank Union General Meade's Army of the Potomac, C.S.A. General Lee moved his army from the Rapidan River to the west and north, towards Mead's army who were occupying Culpeper Court-House in Culpeper County. (General Meade relieved General Joseph Hooker as commander of the Army of the Potomac in June 1863). Pushing Meade's army towards Washington, C.S.A. General A.P. Hill's Third Corps attacked the Union army near Bristoe Station, south of Manassas, on October 14, 1863. However inconclusive, both armies suffered severe casualties during the short battle and the Confederates did manage to force Meade back towards Washington. Lee's armies remained in the Prince William county area until October 17, 1863, when they retreated south to the Rappahannock River (Bowman 1985:168-172).

During the period of post-Civil War reconstruction, the Underwood Convention held in Richmond from December 1867 through April 1868 led to the new Virginia Constitution of 1869. The Virginia Constitution, ratified on July 6, 1869, provided for the division of each county into townships (later magisterial districts) and for the development of a revolutionary educational system. In 1871-1872 the Virginia Public Free School system was adopted. The Virginia Constitution also disenfranchised all southerners who had served in a civil capacity or in the military and required an oath by anyone seeking public office (Church and Reese 1965:134; Woods 1901:24, 25, 119).

The first railroad in the southeastern part of Prince William County was the Richmond, Fredericksburg and Potomac Railroad, constructed from Richmond to Fredericksburg in Spotsylvania County prior to January of 1837. The railroad line reached Aquia Creek in Stafford County in November of 1842, when the extension of the railroad was abandoned. In 1869/1870, the Alexandria and Fredericksburg Railroad began purchasing rights-of-way through Prince William County (Prince William County Deeds 28:118) and the railroad was extended to Quantico Creek by 1872 (Curtis 1988:65).

The town of Manassas, established in 1854 as the Manassas Gap Railroad station, was incorporated by an Act of the Virginia Assembly on April 2, 1873. On March 12, 1873, an Act to allow the citizens of Prince William County to vote on the question of the removal of the court house from Brentsville to Manassas was authorized by the Virginia Assembly (Commonwealth of Virginia 1884:699-700; 1888:370-372). Prince William County residents approved the courthouse move, and the Prince William County seat was moved to Manassas in 1892.

Having been bypassed as a suburban area of Washington, D.C., the interior of Prince William County was considered rural at the turn of the century, with dairying one of the major sources of incomes. Along the Potomac River however, the economic sources changed to commercial fishing and lumbering. Prince William County's population at the turn of the turn of the century was approximately 11,000, showing little or no growth since the Revolutionary War (Prince William County Population Census 1900).

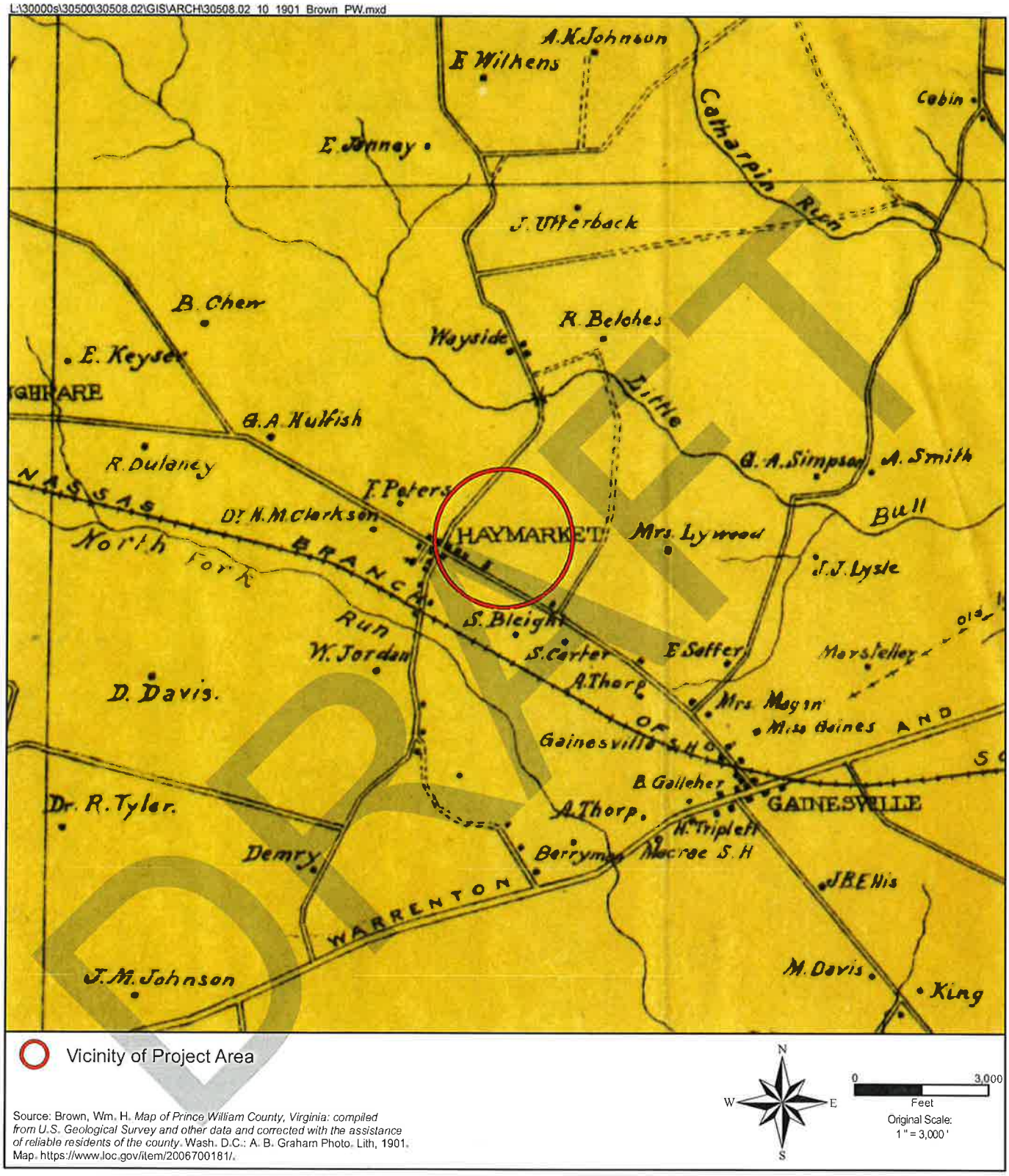
The 1901 Brown map shows several buildings, including a church, along Washington Street within the vicinity of the project area (Exhibit 6). The church shown in 1901 may be the same building that is located immediately east of the project area and currently occupied by the Haymarket Baptist Church; if so, the gap between the church and the buildings to the west on the 1901 map represents the general location of the current project area. An additional building is shown immediately adjacent to and west of the church on the 1904 Burr map, which may have been located within the current project area (Exhibit 7).

In 1917, the U. S. Government leased two tracts of land in southeastern Prince William County which included 4,885.096 acres of hard land, 467.06 acres of marsh land, and 3.58 acres of submerged land, for a total of 5,355.736 acres of land collectively known as the "Hutchison Tract" and the "Quantico Company Tract." The Hutchison Tract (3,160.28 acres) was subsequently purchased from Hugh B. Hutchison in 1918, and the Quantico Company Tract (2,102.6 acres) was purchased in 1919. The two purchases were the beginning of the current Quantico Marine Base to which other purchases of land in Stafford County and Fauquier County, as well as in Prince William County, have been added throughout the 20th century (Department of the Navy Bureau of Yards and Docks 1937:371-372). The Quantico Marine Base currently occupies properties adjoining the south side of the Prince William Forest Park.

The Prince William Forest Park was established during the early years of the Great Depression of the 1930s. In 1933, the United States Government declared approximately 15,000 acres of the Quantico Creek watershed in Prince William County as "sub marginal," or "severely depressed farm area" lands in order to develop a "new project called Chopawamsic Demonstration Area" to form the Emergency Conservation Work Program (Civilian Conservation Corps). The Civilian Conservation Corps operated from 1933 until the beginning of World War II as a government agency to provide work for low income young men. Approximately 150 farms were condemned and the families were relocated. In 1940, the property was transferred to the jurisdiction of the U.S. National Park system (Curtis 1988:41; Evans 1989:104, 118; VDHR Site Forms 76-299, 76-135).

The introduction in the 1920s of the automobiles and trucks after World War I and the subsequent development and improvement of roadways throughout the county prior to World War II in the 1940s led to the decline of the railroad system in northern Virginia. Although railroading as a form of transportation and shipping saw a revival during World War I, the revival was only temporary.

What appears to be at least two buildings are shown within the project area along Washington Street on a 1937 aerial photograph, one in the southcentral project area and one in the southwestern corner (Exhibit 8); the southcentral building may be the same building that is likely within the project area on the 1904 Burr map (see Exhibit 7). No buildings are recorded within the project area on the 1944 United States Geological Survey (USGS) Thoroughfare Gap quadrangle, suggesting the buildings shown on



Source: Brown, Wm. H. *Map of Prince William County, Virginia: compiled from U.S. Geological Survey and other data and corrected with the assistance of reliable residents of the county*. Wash. D.C.: A. B. Graham Photo. Lith, 1901. Map. https://www.loc.gov/item/2006700181/.

Exhibit 6
1901 Brown Map, Prince William County, VA

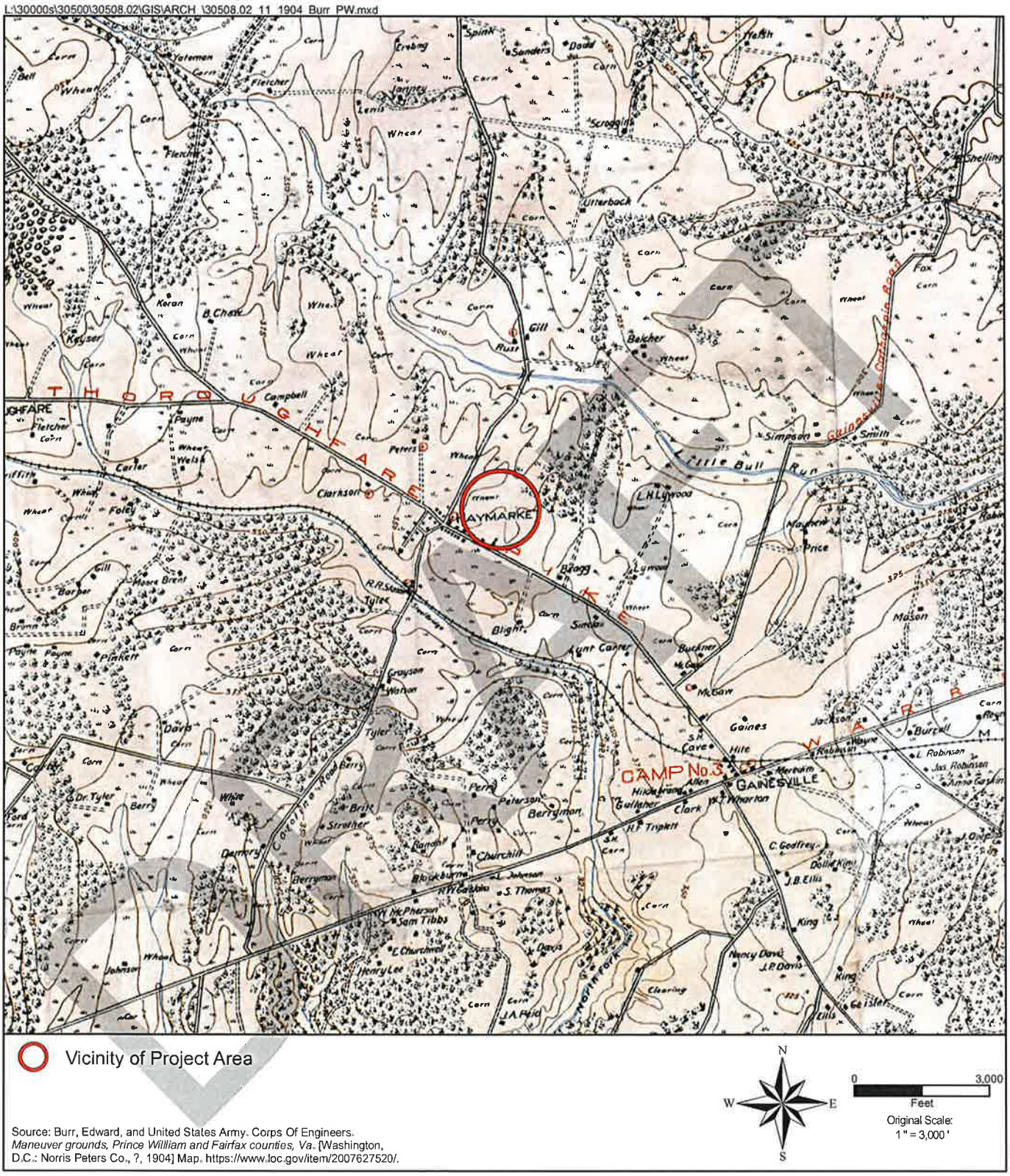


Exhibit 7
1904 Burr Map, Prince William & Fairfax Counties, VA

Exhibit 8
Spring 1937 Black and White Imagery

Exhibits 7 and 8 may no longer be extant by that time (Exhibit 9); however, this may also be an omission on the USGS map rather than an indicator the buildings have been demolished, as aerial photography from 1952 records similar looking buildings in the same locations as the ones shown in 1937 (see Exhibit 8). The church building continues to be shown to the east of the project area, and a second building is recorded immediately to the west.

Following World War II the population of Prince William County doubled from approximately 11,000 individuals enumerated in the 1900 census, to 21,000 people residing in the county in 1950. Within 40 years, more than 2.5 million new residents moved into the Washington metropolitan region (Evans 1989:130).

In 1956, the U.S. Congress passed legislation creating the Highway Trust Fund; this was the beginning of the development of the Interstate Highway System. Construction of I-95 was begun in 1958. Interstate I-95 was extended south from the Leesburg Pike (Route 7) to a junction with U.S. 1 in Woodbridge in Prince William County, allowing the eastern portion of the county to spread. Condemnations for the route of Interstate 66 across northern Virginia began in circa 1962 (Evans 1989:130; Netherton et al. 1992:596). Three buildings are recorded within the project area along Washington Street on the 1972 USGS Thoroughfare, VA quadrangle; two other buildings are shown immediately adjacent to the southeastern and southwestern project area boundary (Exhibit 10). A review of other historic aerial photography indicates that only one building is extant within the southeastern portion of the project area by 1981; this building is no longer extant on aerial photography between 2011 and 2012.

PREVIOUS ARCHEOLOGICAL RESEARCH

The following inventory of previously recorded cultural resources within and near the project area was established by using the Virginia Department of Historic Resources' (DHRs) online Virginia Cultural Resource Information System (V-CRIS), as well as examining cultural resource files and reports at the Thunderbird Archeology office in Gainesville, Virginia.

One archeological site has been previously recorded within the project area and three architectural resources have been recorded extending into and/or encompassing the current project area. Site 44PW2017 was recorded within the project area as a 20th-century domestic site that included a single surface feature consisting of an intact concrete pad speculated to be a cistern; the site has not been evaluated for listing in the National Register of Historic Places (NRHP). The project area also falls within the boundaries of three architectural resources (076-5036, 076-5190, and 030-5152), all of which represent Civil War Battlefields. DHR Resource 076-5036 represents an avenue of approach for the Manassas Station Operations Battlefield. This resource is considered potentially eligible for inclusion in the NRHP. DHR Resource 076-5190 encompasses the project area and represents an avenue of approach for the Second Battle of Manassas. This resource is considered potentially eligible for inclusion in the NRHP. DHR Resource 030-5152 encompasses all of the project area and represents the location of the Battle of Buckland Mills, which is eligible for inclusion in the NRHP.

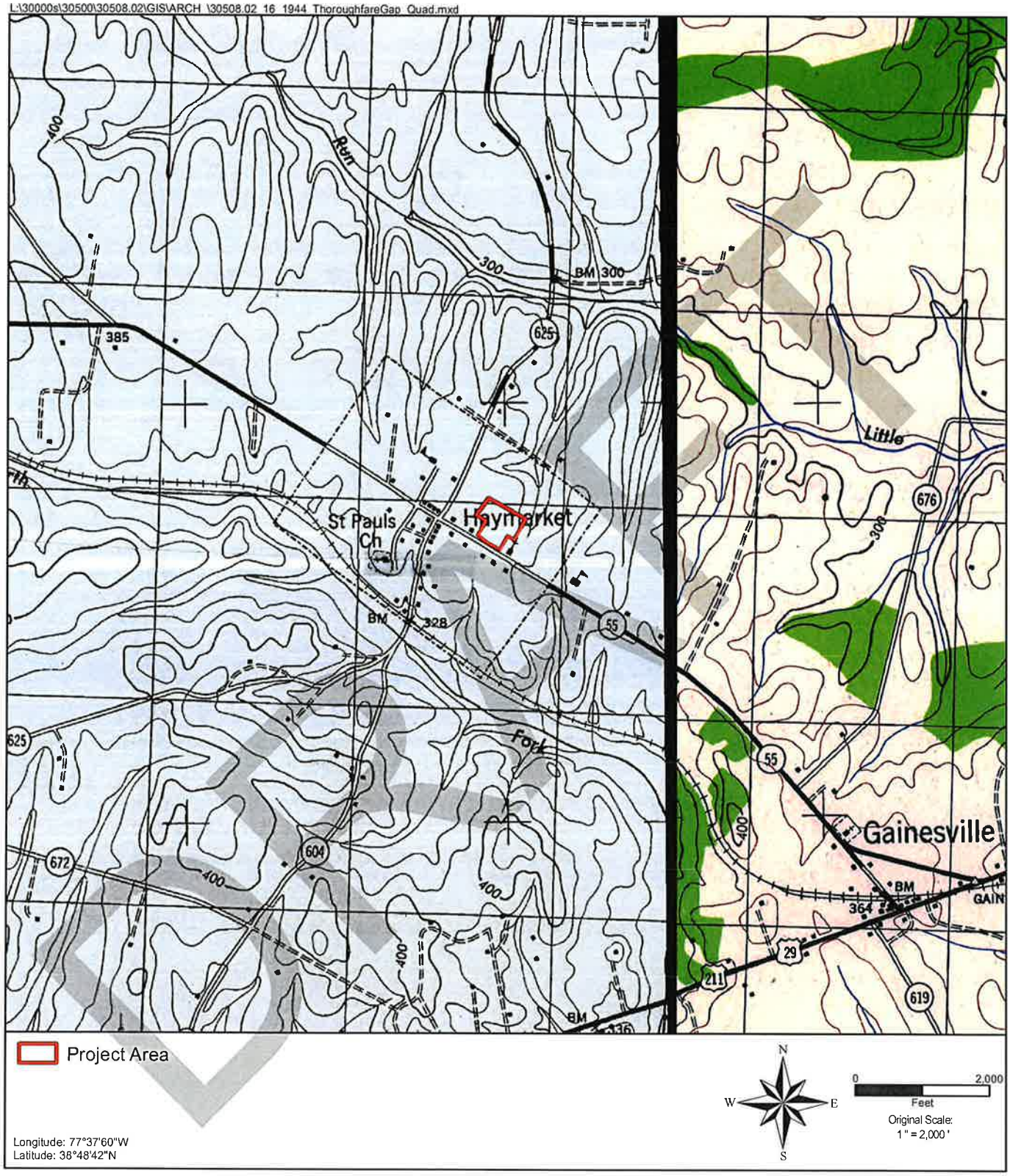


Exhibit 16: 1944 USGS Quadrangle, Thoroughfare Gap, VA

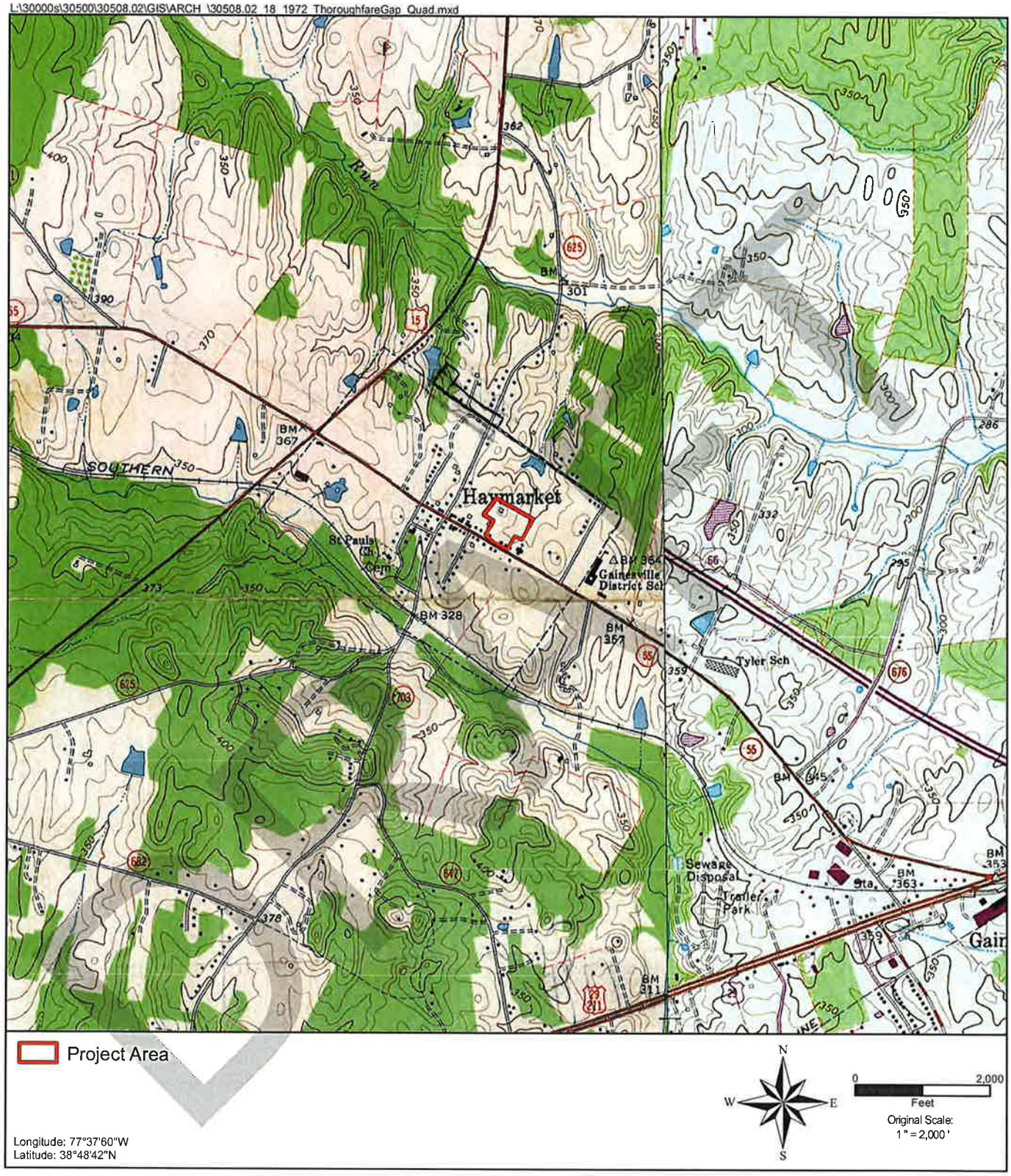


Exhibit 10
1972 USGS Quadrangle, Thoroughfare Gap, VA 1968
USGS Quadrangle, Gainesville, VA

Additionally, these three battlefields, among numerous others, were included within the 2005 study by the American Battlefield Protection Program (ABPP) of the National Park Service as part of a broader study requested by Congress aimed at updating the 1993 Civil War Sites Advisory Commission Report on the Nation's Civil War Battlefields. The purpose of the study was to identify preservation opportunities and to reassess changes in conditions and threats for the battlefields listed in the 1993 report. The 2005 ABPP survey re-delineated the "Boundary" (then referred to as the battlefield "Study Area") and "Core Area" portions of battlefields; according to the *Battlefield Survey Manual* prepared by the ABPP, the Battlefield Boundary can be generally defined as the larger arena in which all activities related to a battle occurred, e.g. troop movements to and from the battle, etc., while the Core Area is generally defined as the geographical limits of where the major military actions associated with a battle occurred, i.e., "where opposing forces engaged and incurred casualties" (Lowe 2016: 23-24). The 2005 survey also defined those portions of battlefields which the ABPP felt had retained integrity, i.e., the Potential National Register Boundary of the resource; generally, according to the *Guidelines for Identifying, Evaluating, and Registering America's Historic Battlefields*, "the most important aspects of a battlefield's integrity are location, setting, feeling, and association" (Andrus 1999: 10).

The Smith-Haymarket project area falls within the Battlefield Boundary portions of the Manassas Station Operations battlefield (076-5036) and the Second Battle of Manassas battlefield (076-5190), but outside the Core Areas for both battlefields (Exhibits 11 and 12). The entirety of the project area is located within the Battlefield Boundary for the Battle of Buckland Mills (030-5152); approximately half of the project area also falls within the Core Area for the battle (Exhibit 13). The project area is not located within the Potential or Existing National Register Boundary portions of the three battlefields.

Forty-six archeological sites and 91 architectural resources have been identified within a one-mile radius of the project area (Tables 1 and 2). None of the archeological sites in the project area vicinity have been evaluated for inclusion in the NRHP. Nine of the architectural resources have been determined eligible, are considered potentially eligible for listing, or are listed in the NRHP. The battlefields that overlap with the project area have already been discussed. The remaining eligible or potentially eligible architectural resources within a one-mile of the project area include the three Civil War battlefields discussed above, Currie Farm (076-0122) located about 4,500 feet to the southwest of the project area, the Gainesville District School (076-5381) located approximately 850 feet to the east, St. Paul's Episcopal Church (233-0002) located 1,300 feet to the southwest, Haymarket Post Office (233-0005) located about 750 feet to the west-northwest, Haymarket Museum (233-0006) located approximately 760 feet to the west, and the Masonic Temple (233-5015) located 550 feet to the west. St. Paul's Episcopal Church and Haymarket Museum are also listed in the Virginia Landmarks Register (VLR).

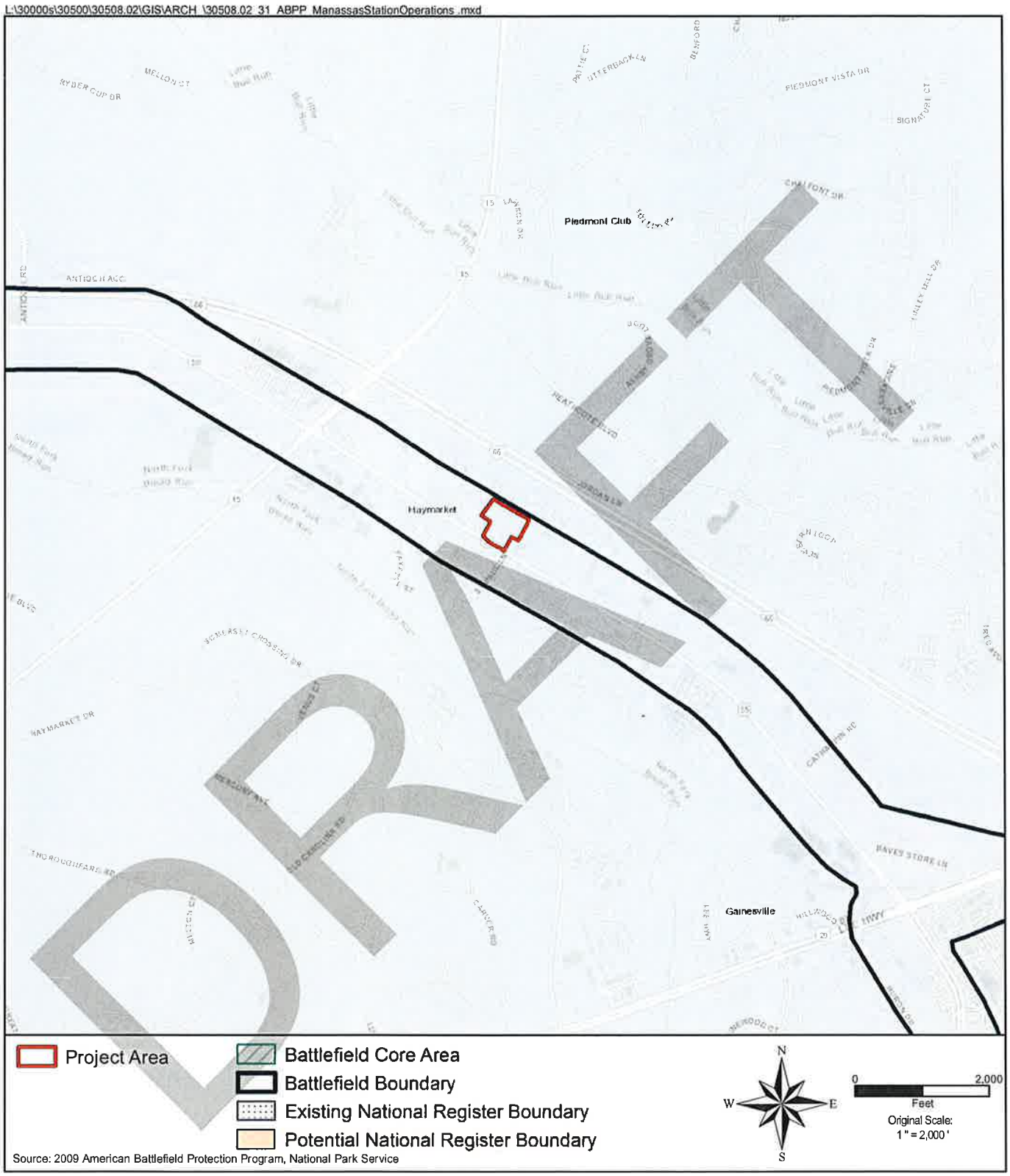


Exhibit 11
ABPP Map - Manassas Station Operations

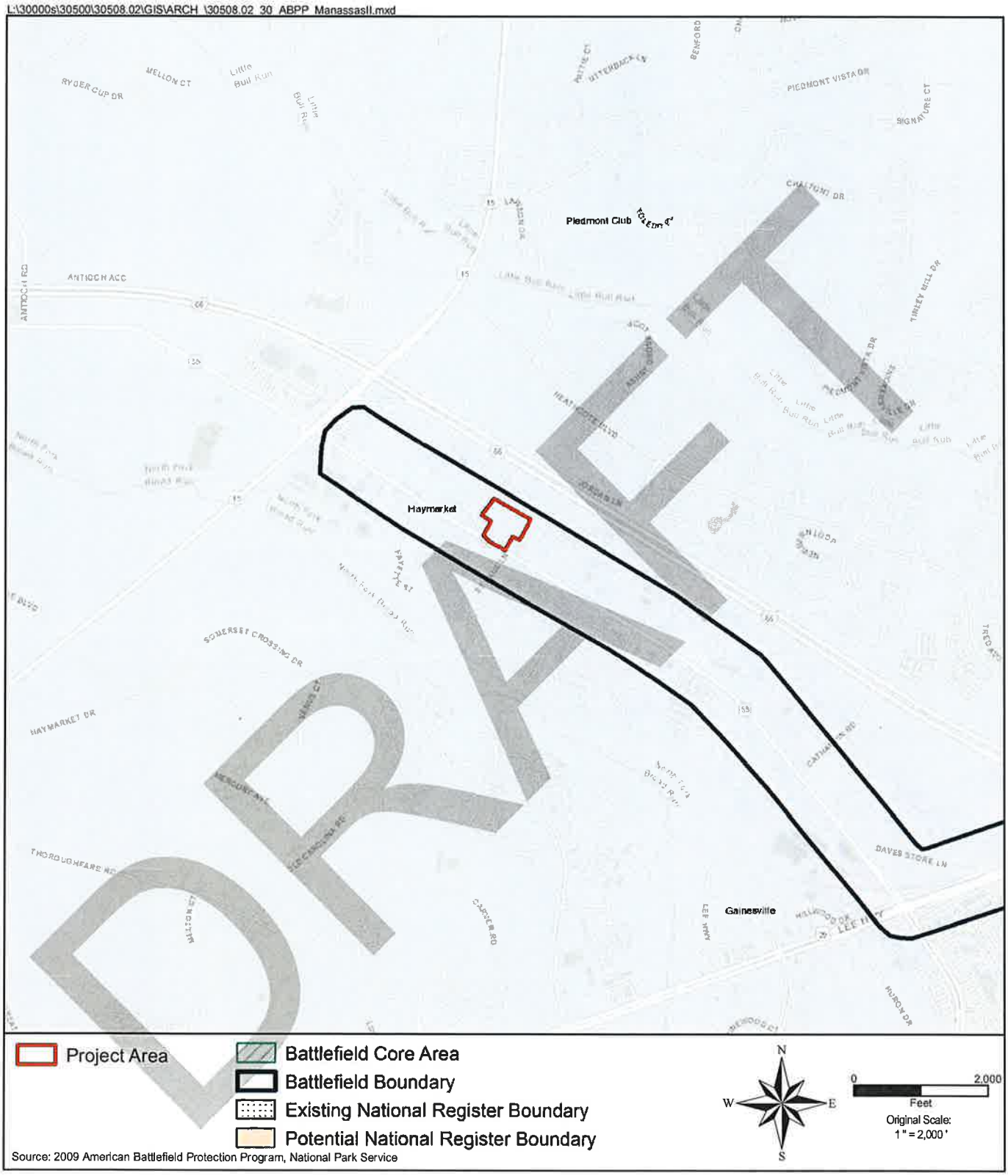


Exhibit 12
ABPP Map - Manassas II

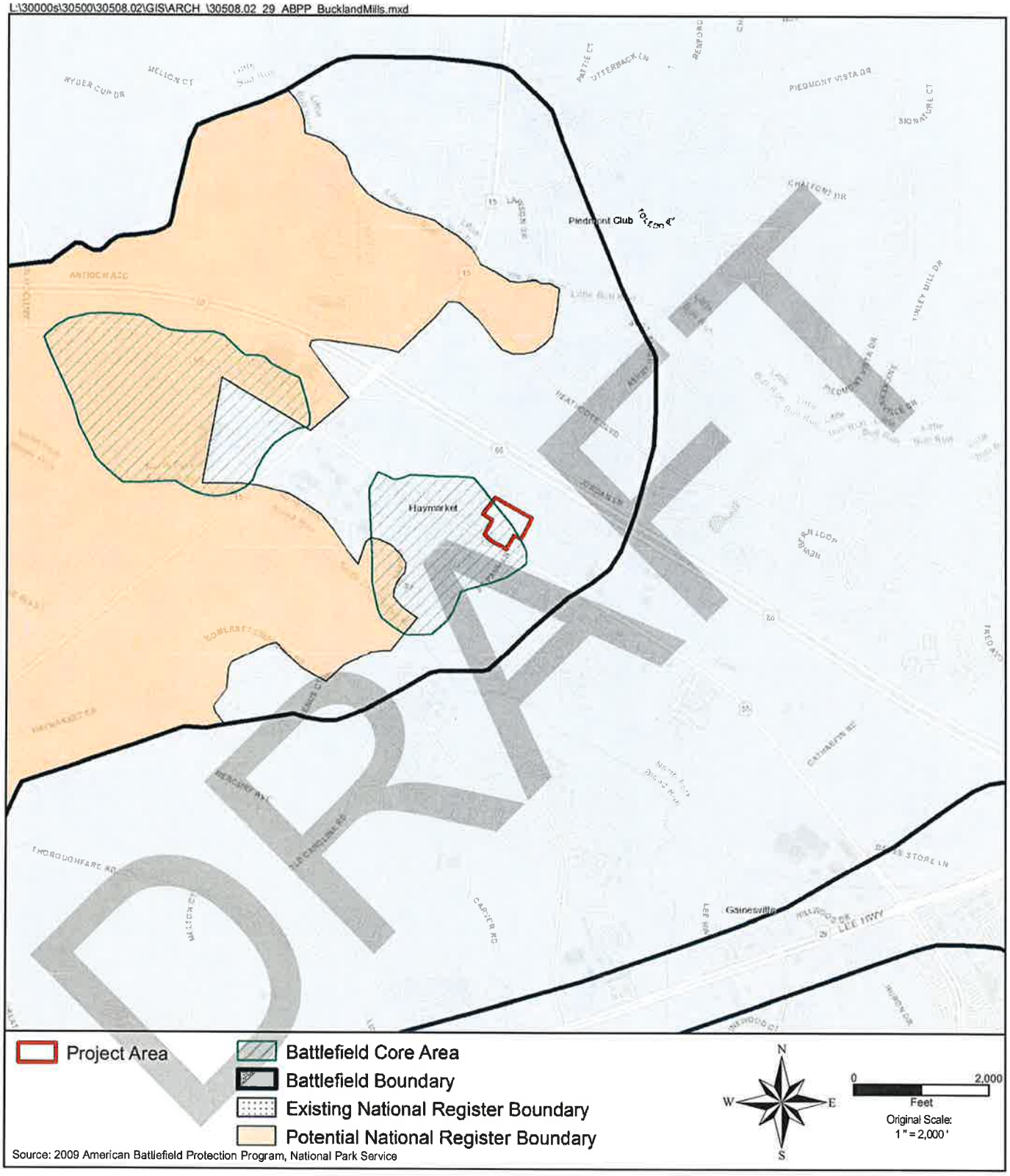


Exhibit 13
ABPP Map - Buckland Mills

Table 1: Previously Recorded Archeological Sites within a One-Mile Radius of the Project Area

DHR SITE NUMBER	SITE TYPE	TEMPORAL AFFILIATION	NRHP ELIGIBILITY
44PW0678	Lithic Scatter	Prehistoric/Unknown	Not Eligible
44PW0680	Lithic workshop	Prehistoric/Unknown	Not Eligible
44PW0731	Dwelling, single	19th Century, 20th Century	Not Evaluated
44PW0826	Lithic Scatter	Prehistoric/Unknown	Not Evaluated
44PW0827	Camp	Prehistoric/Unknown	Not Evaluated
44PW0828	Camp	Woodland	Not Evaluated
44PW0829	Artifact Scatter	Prehistoric/Unknown, Historic/Unknown	Not Evaluated
44PW0830	Lithic Scatter	Prehistoric/Unknown	Not Evaluated
44PW0831	Artifact Scatter	Prehistoric/Unknown, 20th Century	Not Evaluated
44PW0832	Camp	Prehistoric/Unknown	Not Evaluated
44PW0833	Camp	Prehistoric/Unknown	Not Evaluated
44PW0834	Other	Prehistoric/Unknown	Not Evaluated
44PW0835	Other	Prehistoric/Unknown	Not Evaluated
44PW0836	Camp	Prehistoric/Unknown	Not Evaluated
44PW0837	Dwelling, multiple, Outbuilding	20th Century: 1st quarter	Not Evaluated
44PW0838	Other	Prehistoric/Unknown	Not Evaluated
44PW0865	Lithic workshop	Prehistoric/Unknown	Not Evaluated
44PW0888	Dwelling, single	19th Century: 4th quarter, 20th Century: 1st quarter	Not Evaluated
44PW0890	Camp	Prehistoric/Unknown	Not Evaluated
44PW0891	Camp	Prehistoric/Unknown	Not Evaluated
44PW0892	Camp	Prehistoric/Unknown	Not Evaluated
44PW0893	Camp	Prehistoric/Unknown	Not Evaluated
44PW0894	Camp, Other	Prehistoric/Unknown, 20th Century: 1st quarter	Not Evaluated
44PW0896	Trash scatter	19th/20th Century	Not Evaluated
44PW0897	Trash scatter	19th Century: 4th quarter, 20th Century: 1st quarter	Not Evaluated
44PW0898	Dwelling, single	19th Century, 20th Century	Not Evaluated
44PW0965	Dwelling, single	20th Century: 1st quarter	Not Evaluated
44PW0982	Camp, temporary	Prehistoric/Unknown	Not Evaluated
44PW0986	Dwelling, single	19th Century, 20th Century	Not Eligible
44PW1000	Camp, temporary	Prehistoric/Unknown	Not Evaluated
44PW1121	Dwelling, single	Historic/Unknown	Not Evaluated
44PW1122	Trash scatter	19th Century, 20th Century	Not Evaluated
44PW1123	Farmstead, Trash scatter	Prehistoric/Unknown, 20th Century	Not Evaluated
44PW1124	Trash scatter	19th Century, 20th Century	Not Evaluated
44PW1125	Trash scatter	Prehistoric/Unknown	Not Evaluated
44PW1126	Trash scatter	Prehistoric/Unknown	Not Evaluated
44PW1257	Dwelling, single, Farmstead	19th Century: 4th quarter, 20th Century	Not Eligible
44PW1270	Farmstead	20th Century	Not Evaluated
44PW1636	Dwelling, single	20th Century	Not Eligible
44PW1637	Dwelling, single	19th Century: 1st half	Not Eligible

Table 1 (continued)

DHR SITE NUMBER	SITE TYPE	TEMPORAL AFFILIATION	NRHP ELIGIBILITY
44PW1852	Camp	19th Century: 2nd/3rd quarter	Not Evaluated
44PW1853	Trash scatter	Historic/Unknown	Not Evaluated
44PW1854	Camp, Trash scatter	Historic/Unknown, Prehistoric/Unknown	Not Evaluated
44PW1901	Outbuilding	19th Century, 20th Century	Not Eligible
44PW2017	**Dwelling, single**	**20th Century**	**Not Evaluated**
44PW2030	Farmstead	20th Century	Not Evaluated

Resource in bold located within project area

Table 2: Previously Recorded Architectural Resources within a One-Mile Radius of the Project Area

DHR RESOURCE NUMBER	RESOURCE NAME	TYPE	TEMPORAL AFFILIATION	NRHP ELIGIBILITY
030-5152	**Buckland Mills Battlefield**	**Battlefield**	**19th Century**	**Eligible**
030-5610	Battle of Thoroughfare Gap	Battlefield	19th Century	Not Evaluated
076-0122	Currie Farm, Woodlawn	Dwelling	Ca 1825	Eligible
076-0150	Bridge #6013	Transportation	Ca 1920	Not Extant
076-0333	House, 7150 Catharpin Road	Dwelling	Ca 1890	Not Eligible
076-0440	Green Hill Farm	Dwelling	Ca 1895	Not Evaluated
076-0500	House, Route 55	Dwelling	Ca 1910	Not Evaluated
076-5033	House, 14997 Walter Robinson Lane	Dwelling	Ca 1910	Not Eligible
076-5036	**Manassas Station Operations Battlefield**	**Battlefield**	**19th Century**	**Potentially Eligible**
076-5190	**Second Battle of Manassas**	**Battlefield**	**19th Century**	**Potentially Eligible**
076-5357	House, 14975 Walter Robinson Lane	Dwelling	1950	Not Eligible
076-5358	House, 14985 Walter Robinson Lane	Dwelling	1950	Not Eligible
076-5359	House, 14984 Walter Robinson Lane	Dwelling	1950	Not Eligible
076-5360	House, 6520 Old Carolina Road	Dwelling	1950	Not Eligible
076-5361	House, 6514 Old Carolina Road	Dwelling	1940	Not Eligible
076-5362	House, 6504 Old Carolina Road	Dwelling	1940	Not Eligible; Not Extant
076-5363	House, 6505 Old Carolina Road	Dwelling	Ca 1910	Not Eligible
076-5364	House, 6513 Old Carolina Road	Dwelling	1960	Not Eligible
076-5365	House, 6519 Old Carolina Road	Dwelling	1923	Not Eligible
076-5366	House, 6431 James Madison Hwy	Dwelling	1952	Not Eligible
076-5367	House, 6430 James Madison Highway	Dwelling	1954	Not Eligible
076-5368	House, 14750 Jordan Lane	Dwelling	1960	Not Eligible
076-5374	House, 14504 John Marshall Highway	Dwelling	Ca 1950	Not Eligible
076-5375	House, 14508 John Marshall Highway	Dwelling	Ca 1950	Not Eligible
076-5376	House, 14514 John Marshall Highway	Dwelling	Ca 1945	Not Eligible
076-5377	House, 14522 John Marshall Highway	Dwelling	1934	Not Eligible

Table 2 (continued)

DHR RESOURCE NUMBER	RESOURCE NAME	TYPE	TEMPORAL AFFILIATION	NRHP ELIGIBILITY
076-5378	House, 14530 John Marshall Highway	Dwelling	Ca 1945	Not Eligible
076-5379	House, 14534 John Marshall Highway	Dwelling	1950	Not Eligible
076-5380	House, 14810 Jordan Lane	Dwelling	1927	Not Eligible
076-5381	Gainesville District School	School	1935	Potentially Eligible
076-5383	House, 6522 Old Carolina Road	Dwelling	1960	Not Eligible
076-5417	House, 14512 John Marshall Highway	Dwelling	Ca 1969	Not Evaluated
076-5418	House, 14532 John Marshall Highway	Dwelling	Ca 1979	Not Evaluated
076-5419	Commercial building, 14540 John Marshall Highway	Dwelling	Ca 1968	Not Evaluated
076-5870	Gilliss Farm	Dwelling	Ca 1905	Not Evaluated
076-5898	Watson Cemetery	Cemetery	Ca 1870	Not Evaluated
233-0002	St. Paul's Episcopal Church	Church/Chapel	1801	NRHP Listing, VLR Listing
233-0004	Barnett House	Dwelling	Pre 1821	Not Evaluated
233-0005	Haymarket Post Office	Post Office	Ca 1900	Eligible
233-0006	Haymarket Museum	City/Town Hall	Ca 1883	NRHP Listing, VLR Listing
233-0007	House, 6707 Fayette Street	Dwelling	Ca 1870	Not Eligible
233-0008	Dr. Payne's House, 15101 Washington Street	Dwelling	Ca 1880	Not Eligible
233-0009	House, 6750 Fayette Street	Dwelling	Ca 1910	Not Evaluated
233-0010	Gossom's Store	Dwelling	Ca 1880	Not Eligible/ Not Extant
233-0011	Mason Pickett House, 15030 Washington Street	Dwelling	Post 1850	Not Eligible
233-0013	Bernard Building	Dwelling	Ca 1875	Not Eligible
233-0017	House, 15241 Washington Street)	Dwelling	Ca 1900	Not Eligible/ Not Extant
233-0018	House, 15120 Washington Street	Dwelling	Ca 1900	Not Eligible/ Not Extant
233-0020	House, 6680 Fayette Street	Dwelling	Ca 1920	Not Eligible/ Not Extant
233-0021	House, 6670 Fayette Street	Dwelling	Ca 1920	Not Eligible
233-0024	House, 15001 Washington Street	Dwelling	Ca 1870	Not Eligible
233-0025	Commercial Building, 15003 Washington Street	Commercial	Ca 1935	Not Eligible
233-0026	First Virginia Bank, 14951 Washington Street	Commercial	Ca 1920	Not Eligible
233-0027	George Hulfish House, 15000 Washington Street	Dwelling	Ca 1872	Not Eligible
233-0029	House, 6707 Jefferson Street	Dwelling	Ca 1920	Not Eligible
233-0030	House, 6706 Jefferson Street	Dwelling	Ca 1895	Not Eligible
233-0031	House, 14801 Washington Street	Dwelling	Ca 1920	Not Eligible
233-0032	House, Jefferson Street	Dwelling	Ca 1910	Not Evaluated
233-0033	House, Jefferson Street	Dwelling	Ca 1900	Not Evaluated

Table 2 (continued)

DHR RESOURCE NUMBER	RESOURCE NAME	TYPE	TEMPORAL AFFILIATION	NRHP ELIGIBILITY
233-0034	House, Jefferson Street	Dwelling	Ca 1920	Not Evaluated
233-0035	House, 14841 Washington Street	Dwelling	Ca 1900	Not Eligible
233-0036	House, Jefferson Street	Dwelling	Ca 1900	Not Evaluated
233-0037	House, Jefferson Street	Dwelling	Ca 1900	Not Evaluated
233-0038	House, Jefferson Street	Dwelling	Ca 1920	Not Evaluated
233-0039	House, 6740 Fayette Street	Dwelling	Ca 1890	Not Evaluated
233-5002	Haymarket Historic District	Historic District	Post 1799	Not Eligible
233-5003	House, 14710 Washington Avenue	Dwelling	Ca 1924	Not Eligible
233-5004	House, 14740 Washington Avenue	Dwelling	Ca 1924	Not Evaluated
233-5005	Haymarket Baptist Church	Church/Chapel	Ca 1894	Not Eligible
233-5006	House, 6434 James Madison Highway	Dwelling	1954	Not Eligible
233-5007	House, 6432 James Madison Highway	Dwelling	1954	Not Eligible
233-5008	House, 6590 Jefferson Street	Dwelling	1889	Not Eligible
233-5009	House, 6660 Fayette Street	Dwelling	Ca 1940	Not Eligible
233-5010	House, 6640 Fayette Street	Dwelling	1955	Not Eligible
233-5011	House, 6700 Bleight Drive	Dwelling	1959	Not Eligible
233-5012	House, 6710 Bleight Drive	Dwelling	1959	Not Eligible
233-5013	House, 14881 Washington Street	Dwelling	1920	Not Eligible
233-5014	House, 14891 Washington Street	Dwelling	Ca 1900	Not Eligible
233-5015	Masonic Temple, 6713 Jefferson Street	Lodge	1910	Potentially Eligible
233-5016	House, 6611 Jefferson Street	Dwelling	1948	Not Eligible
233-5017	St. Paul's School	School	Ca 1901	Not Eligible
233-5018	House, 15010 Payne Lane	Dwelling	1960	Not Eligible
233-5019	House, 6712 Jefferson Street	Dwelling	1940	Not Eligible
233-5020	Commercial Building, 15011 Washington Street	Commercial	1930	Not Eligible
233-5021	Commercial Building, 14920 Washington Street	Commercial	1922	Not Eligible
233-5022	Gainesville Haymarket Fire Station,	Fire Station	1946	Not Eligible
233-5023	House, 14871 Washington Street	Dwelling	1954	Not Eligible
233-5024	House, 14845 Washington Street	Dwelling	1954	Not Eligible
233-5025	Commercial Building, 14840 Washington Street	Commercial	1962	Not Eligible
233-5026	Restaurant, 6606 James Madison Highway	Restaurant	1961	Not Eligible
233-5027	House, 6720 Bleight Drive	Dwelling	Ca 1959	Not Eligible

Resources in bold located within project area

RESEARCH DESIGN

Research Objectives

The purpose of the survey was to locate and record any cultural resources within the impact area and to provide a preliminary assessment of their potential significance in terms of eligibility for inclusion on the NRHP. As codified in *36 CFR 60.4*, the four criteria applied in the evaluation of significant cultural resources to the NRHP are:

A. Association with events that have made a significant contribution to the broad patterns of our history; or
B. Association with the lives of significant persons in or past; or
C. Representative of a type, period, or method of construction, or that represent the work of a master; or
D. Have yielded or may be likely to yield information important in history or prehistory.

Any architectural resources recorded as result of this investigation were subjected to a Phase I reconnaissance-level architectural survey only, unless otherwise indicated; this includes preliminary assessments of the resource's eligibility for the NRHP and of the potential direct and indirect adverse effects on the resource that may be caused by the proposed undertaking. Typically, architectural resources recorded at the Phase I reconnaissance-level are evaluated using Criterion C only. For the purposes of this discourse, the NRHP eligibility recommendations for any relevant architectural resource will be considered using only Criterion C; evaluation under Criteria A, B, and/or D will be considered if necessitated by specific site conditions, characteristics, and/or contexts.

Archeological sites are typically evaluated using only Criterion D, and must show enough integrity to be able to yield significant information and answer research hypotheses in history and/or prehistory. While the evaluation of archeological sites under Criteria A, B, and C will be considered if necessitated by specific site conditions, characteristics, and/or contexts, NRHP eligibility recommendations for sites in this report will be considered using Criterion D, unless otherwise indicated in the following text.

Cemeteries and individual graves, if identified, will be recorded as both archeological sites and architectural resources with the DHR. Cemeteries and individual graves are not ordinarily considered eligible for inclusion in the NRHP unless special considerations of the National Register Criteria for Evaluation are met; to qualify for listing under Criteria A, B, or C a cemetery or grave must meet not only the basic criteria, but also the special requirements of Criteria Considerations C or D, relating to graves and cemeteries. Burial places evaluated under Criterion D for the importance of the information they may impart do not need to meet the requirements for the Criteria Considerations but should have the potential to yield significant information through archeological excavation and analysis of the human remains (Potter and Boland 1992).

Phase I Cultural Resources Investigation Methodology

Archeological Fieldwork Methodology

The Phase I field methodology included both the use of surface reconnaissance and shovel testing to locate and define boundaries of archeological sites. The surface reconnaissance consisted of walking over the area and examining all exposed areas for the presence of artifacts. Exposed areas included cut banks, tree falls, machinery cuts, soils exposed by erosion, etc. The surface reconnaissance was also used to examine the topography of specific areas in order to determine the probability that they contain archeological sites. All high and moderate probability areas, i.e., areas that were well drained and possessed low relief, were tested at 50-foot intervals. High probability areas also included historic structure areas identified through surface reconnaissance or through archival review of historic maps. In accordance with DHR guidelines for conducting a Phase I identification level survey, an approximately 10% sample of areas considered low probability for the presence of archeological sites were also subjected to shovel testing at 50-foot intervals (DHR 2017:45); in general, the low probability areas were those that were significantly sloped, poorly drained, or that have been disturbed. Additional shovel tests were excavated at 25-foot intervals in a cruciform pattern around positive shovel tests, as necessary, to delineate artifact concentrations and to define archeological site boundaries.

Shovel test pits measured at least 15 inches in diameter and were excavated in natural or cultural soil horizons, depending upon the specific field conditions. Excavations ceased when gleyed soils, gravel, water, or well-developed B horizons too old for human occupation were reached. All excavated soils were screened through 1/4-inch mesh hardware cloth screens and were classified and recorded according to standard pedological designations (A, Ap, B, C, etc.); excepting the terms Fill and Fill horizon, which are used to describe culturally modified, disturbed, or transported sediments and soils. The use of these terms is consistent with use in standard geomorphological studies and recordation of geo-boring profiles in environmental studies. Soil colors were described using Munsell Soil Color Chart designations and soil textures were described using the United States Department of Agriculture soil texture triangle. Artifacts recovered during Phase I shovel testing were bagged and labeled by unit number and soil horizon.

The location of each shovel test pit was mapped; unless otherwise noted, the graphic representation of the test pits and other features depicted in this report are not to scale and their field location is approximate.

Architectural Reconnaissance Methodology

In accordance with DHR guidelines for conducting a Phase I reconnaissance-level architectural survey, any previously unrecorded architectural resources 50 years of age or older that were identified within the study property were recorded with the DHR and fully documented; documentation will include:

- the location and limits of the resource.
- a full description of the resource, including the historic and/or current name of the property, a classification of the resource's type, exterior description of the primary resource, date or period of construction, alterations and dates or periods of alterations, physical condition; possible threats to the resource, etc.
- photographs of the resource, including exterior photographs of the front, rear, and side elevations and oblique views of the resource, close-up photographs of architectural and/or construction details, etc.
- and a preliminary summary statement of significance for the resource, including recommendations for additional work at the intensive level and recommendations concerning the resource's potential NRHP eligibility.

Laboratory Methodology

All recovered artifacts were cleaned, inventoried, and curated. Historic artifacts were separated into four basic categories: glass, metal, ceramics, and miscellaneous. The ceramics were identified as to ware type, method of decoration, and separated into established types, following South (1977), Miller (1992) and Magid (1990). All glass was examined for color, method of manufacture, function, etc., and dated primarily on the basis of method of manufacture when the method could be determined (Hurst 1990). Metal and miscellaneous artifacts were generally described; the determination of a beginning date is sometimes possible, as in the case of nails.

Any recovered prehistoric artifacts were classified by cultural historical and functional types and lithic material. In addition, the debitage was studied for the presence of striking platforms and cortex, wholeness, quantity of flaking scars, signs of thermal alteration, size, and presence or absence of use. Chunks are fragments of lithic debitage which, although they appear to be culturally modified, do not exhibit clear flake or core morphology.

Any artifacts were entered into a Structured Query Language (SQL) Server database in order to record all aspects of an artifact description. For each artifact, up to 48 different attributes are measured and recorded in the database. Several pre-existing report templates are available, or users can create custom queries and reports for complex and unique analyses. The use of a relational database system to store artifact data permits a huge variety of options when storing and analyzing data. A complete inventory of all the artifacts recovered can be found in Appendix I of this report.

Research Expectations

The following presents an assessment of the probability that archeological sites will occur within the project area based on topography, drainage, the presence of roads and historic map projection.

The probability for locating prehistoric sites generally depends on the variables of topography, proximity to water, and internal drainage. Sites are more likely on well-drained landforms of low relief in close proximity to water. The presence of several prehistoric sites recorded in the vicinity and the presence of low-relief topography and an unnamed intermittent stream within the project area indicate that the Smith-Haymarket property may have attracted prehistoric peoples, likely groups involved in seasonal resource exploitation. Therefore, the project area is considered to have at least a moderate probability of containing prehistoric cultural resources.

The probability for the occurrence of historic period sites largely depends upon the historic map search, the history of settlement in the area, the topography and the proximity of a particular property to historic roads. However, the absence of structures on historic maps does not eliminate the possibility of an archeological site being present within the property as it was common for tenant, slave, and African-American properties to be excluded from these maps. Considering several structures are depicted within or adjacent to the project area on 19th-century and 20th-century maps and the study area's proximity to the historic town of Haymarket, there is a high probability for locating historic cultural resources within the project area. Furthermore, as the study property falls within the Battlefield Boundary for three Civil War battlefields and the Core Area for one, as defined by the ABPP, there is at least a moderate probability of locating Civil War-era military cultural resources within the project area.

RESULTS OF FIELD INVESTIGATIONS

The project area is a large wooded lot bounded on the south by Washington Street, on the west by Hunting Path Road, on the north by private residences along Rising Sun Lane, and the Haymarket Baptist Church on the east. The topography within the project area consists of a low, flat ridge drained by an intermittent stream in the northeast corner of the property (Plate 1). The vegetation consists of deciduous trees with small stands of pine and cedar (Plate 2). The understory consists of small shrubs, brush, and greenbrier (Plate 3). There are two open areas along Washington Street that consist primarily of short grasses (Plate 4). Field conditions at the time of survey were extremely cold and wet.

No extant structures were recorded during the survey, but an architectural feature (Feature 1) was recorded. Feature 1 is a subsurface concrete cesspool or septic system, which was recorded during the survey (Plate 5). No other structural elements were found in association with Feature 1. This feature is discussed below under the Site 44PW2017 heading.

Disturbances within the project area were minimal and included subsurface utilities along Washington Street and push piles along the northern project area boundary, behind the homes along Rising Sun Lane (Plate 6). No subsurface testing was conducted in these areas or in the low-lying inundated portions of the project.

A total of 104 shovel test pits (STPs) were excavated within the project area at 50-foot intervals (Exhibit 14). An additional 36 radial STPs were excavated at 25-foot intervals at locations that yielded historic cultural materials. The majority of the STPs exhibited a stratigraphic profile consisting of a plowed stratum (Ap) underlain by well-developed subsoil (Bt horizon), similar to the profile of STP 28 (Exhibit 15). This soil profile is within the range of characteristics for Arcola Series soils, which are mapped within the project area by the Natural Resource Conservation Service (NRCS) of the United States Department of Agriculture (NRCS 2019). Some STPs exhibited a soil profile that contained no plowed Ap stratum; rather, several STPs exhibited a layer of disturbed fill soils overlying a B horizon, as seen in the profile of STP 46 (see Exhibit 15). Finally, the low-lying portions of the project area consisted of a plowed Ap stratum underlain by a Bt horizon, as seen in the profile of STP 51 (see Exhibit 14). This soil profile is within the range of characteristics for Manassas Series soils, which are also mapped within the project area (NRCS 2019).

STP 28

Ap: 0-0.9 feet below surface - [7.5YR 4/3] brown silt loam
Bt horizon: 0.9-1.2 feet below surface - [5YR 5/6] yellowish red silty clay loam mixed with 40% saprolite

STP 46

Fill: 0-0.9 feet below surface - [10YR 3/3] dark brown silt loam mixed with 20% gravel
B horizon: 0.9-1.2 feet below surface - [10YR 5/8] yellowish brown silty clay loam

STP 51

Ap: 0-0.7 feet below surface - [7.5YR 4/4] brown silt loam
Bt horizon: 0.7-1.0 feet below surface - [5YR 4/4] reddish brown silty clay loam

A total of 200 artifacts were recovered as result of the Phase I investigation of the project area (see Appendix I). Two concentrations of artifacts were identified, one in the southern portion of the project area surrounding the previously recorded limits of Site 44PW2017 and one in the northwestern portion of the project area. The limits of Site 44PW2017 were expanded as result of this investigation to include the southern concentration of artifacts; the site is discussed below under separate heading. The concentration of artifacts in the northwestern portion of the project area includes 11 STPs (STPs 70, 70a, 70d, 74, 74a, 74b, 76, 80, 80b, and 80c) excavated just south of the push piles identified along the northern property boundary, surrounding two large piles of dumped refuse (see Exhibit 14; Plate 7). Based on the recovery of these artifacts adjacent to dumped refuse, they were interpreted as having been secondarily deposited to the find location. Thus, these artifacts do not constitute an archeological site location, based on DHR guidelines; no further work is recommended in association with the artifacts interpreted as secondary deposition.

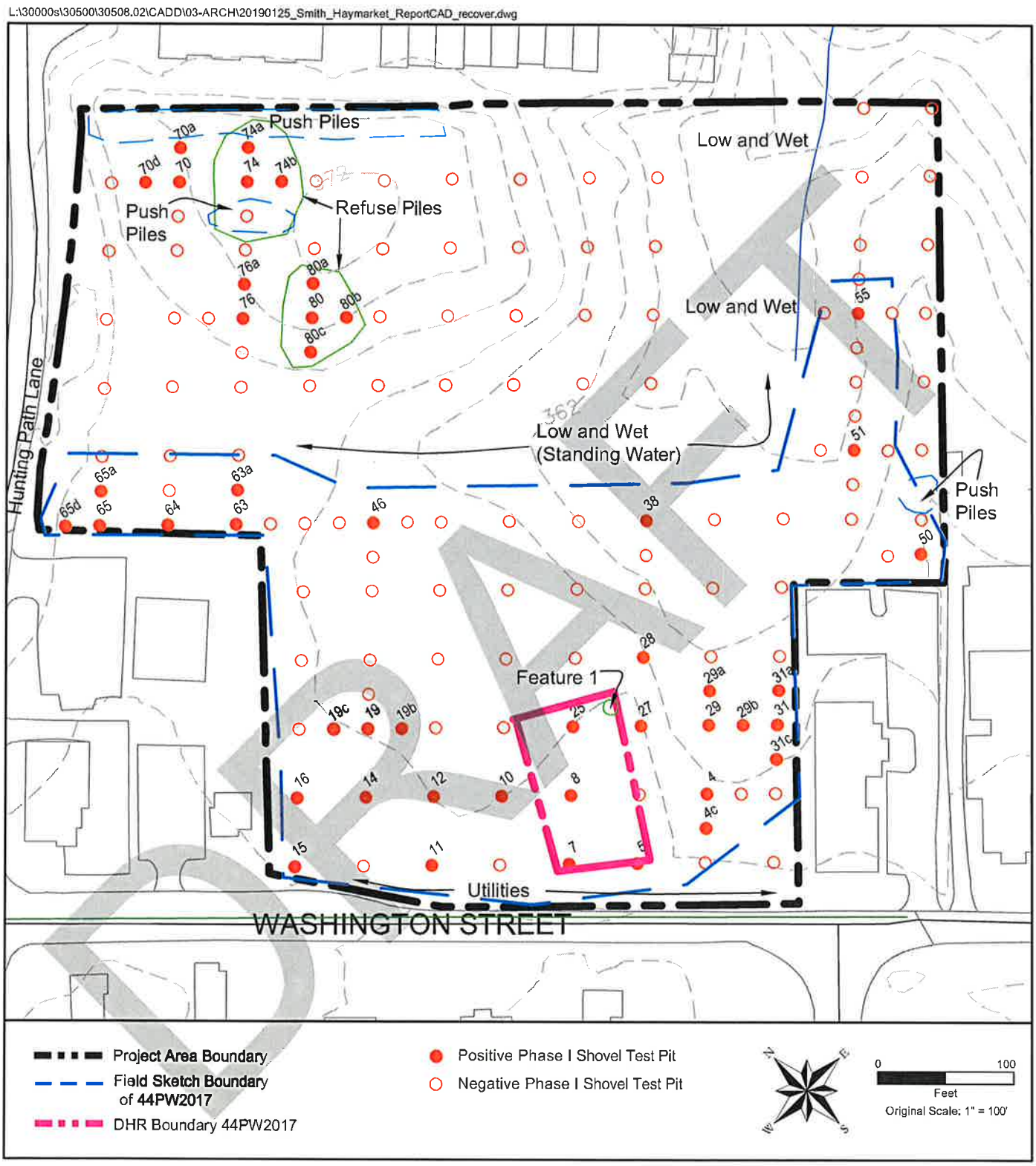


Exhibit 14
Overview of Phase I Testing

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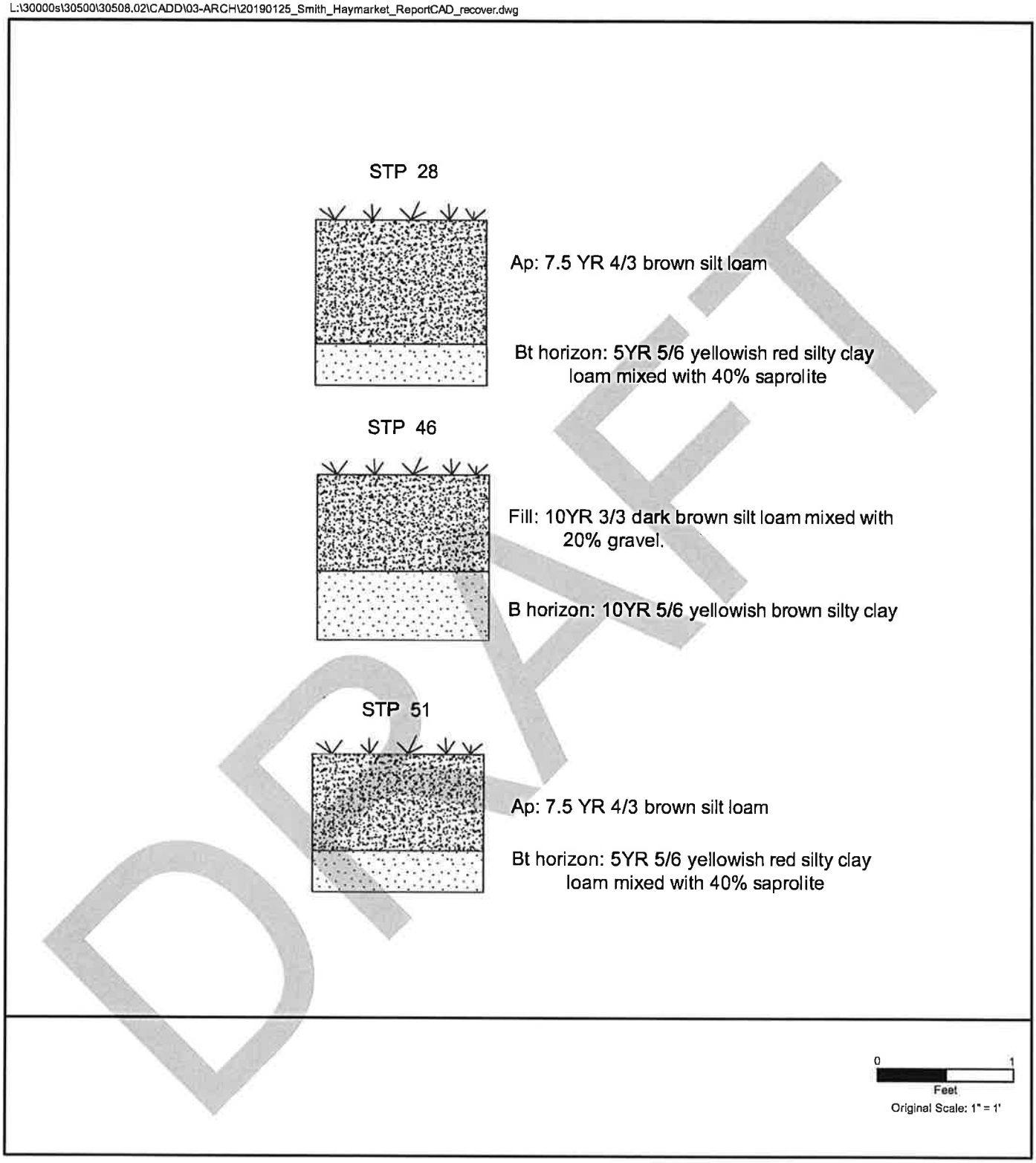

Exhibit 15
Representative Shovel Test Profiles

Site 44PW2017

Site 44PW2017 is located on a low, flat terrace along Washington Street and expands northeast 247 feet into the property (see Exhibit 14); the site limits in the exhibit are approximate. The site is drained by several small swales on the north end, which drain into a low, inundated portion of the property. The property is eventually drained by an intermittent stream in the northeastern corner of the project area (see Plate 1). The vegetation in the site consists primarily of open grassy field along Washington Street, with occasional stands of hardwood trees (see Plate 4). There are small stands of cedars along the western edge of the site and the northeastern portion of the site exhibits dense undergrowth (see Plate 3).

One surface/subsurface feature (Feature 1) is located within the site (see Exhibit 14). Feature 1 consists of concrete-lined vault interpreted as a cistern or cesspool (see Plate 5) most likely related to the no longer extant 20th-century dwelling formerly located within the site. The broken fragments of what appears to be the concrete lid of the feature were strewn about its immediate vicinity; the lid was intact when the site was first recorded in 2016.

A total of 87 shovel tests were excavated at 25- to 50-foot intervals within the expanded limits of the site. The typical shovel test profiles within the site were the same as the representative profiles for the project area in general (see Exhibit 15). The central portion of the site is characterized by significant disturbance from the use and eventual removal of the 20th century building(s) depicted on historic maps and aerial photographs; a review of historic aerial photography indicates that only one building is extant within the southeastern portion of the project area by 1981 and that all buildings were demolished by 2012.

A total of 181 of artifacts were recovered within the border of Site 44PW2017 (Table 3; see Appendix I). Over 50% of the artifacts were recovered from disturbed fill contexts, most of which were fragments of 20th-century automatic bottle machine glass (38%, n=35), recorded along Washington Street and surrounding the former location the early 20th-century dwelling that was removed by 2012; the remaining 89 artifacts were recovered from plowed Ap contexts. As seen in Table 3, the recovered assemblage included both prehistoric and historic artifacts; the three prehistoric artifacts consisted of one quartz primary reduction flake from the Ap stratum and one chert primary reduction flake and one quartz biface thinning flake from the disturbed fill soils, while the remaining historic artifacts consisted of ceramics, glass, nails, and other artifacts dating to the 18th/19th century and to the 19th/20th century. The temporally diagnostic artifacts dating from the 18th/19th century included creamware (1792-1820), pearlware (1780-1830), soda windowpane (pre-1864), and cut nails (post 1790). The 19th/20th century materials included whiteware (1820-1900+), automatic bottle machine glass (post-1907), clear manganese glass (1880-1915), and wire nails (pos-1890).

Table 3: Artifacts Recovered from Site 44PW2017

Artifact Description	Ap	Fill
Ceramics		
hard paste porcelain tile		6
creamware (1762-1820)	9	
pearlware (1780-1830)	13	2
whiteware (1820-1900+)	9	4
refined white earthenware		2
redware	1	
terra cotta flower pot		2
Glass		
bottle, bottle/jar	4	
bottle, bottle/jar, (ABM)* (post-1907)	16	35
bottle/jar, clear manganese (1880-1915)	3	
unidentified glass	4	4
windowpane, soda (pre-1864)	1	
Metal		
ferrous metal horseshoe		1
nail, wrought	3	1
nail, cut (post-1790)	4	1
nail, wire (post-1890)		6
nail, unidentified	1	
screw		1
unidentified ferrous metal	1	3
wire		2
Miscellaneous		
asbestos**		1
brick**		6
coal**	3	
concreate**	2	2
oyster shell**	3	1
plastic**	11	8
slag**		1
woven shoe lace**		1
Prehistoric		
chert primary reduction flake		1
quartz primary reduction flake	1	
quartz biface thinning flake		1
Total Site 44PW2017	**89**	**92**

*automatic bottle machine (ABM)
**discarded

Based on the recovered assemblage, Site 44PW2017 is characterized by three components: a prehistoric component dating to an unknown prehistoric period or periods, a late 18th-/19th century component, and a 19th-/20th-century component. The prehistoric component contains only three artifacts, all of which were recovered on the eastern edge of the site in two STPs (31 and 31b) and is interpreted as a low-density lithic reduction station or workshop. The low density of finds and disturbances to the site through historic plowing and the demolition of the buildings within the project area suggest a low probability for the presence of intact prehistoric contexts or cultural features associated with the prehistoric occupation of the site. For these reasons, in our opinion, the prehistoric component of the site lacks research potential and is not eligible for listing in the NRHP under Criterion D. No further work is recommended for the prehistoric component of the site.

The late 18th-/19th-century component includes 47 artifacts, 43 of which were recovered from the Ap stratum and four were recovered from disturbed fill contexts. Most of the pearlware and cut nails were recovered from the west side of the site, while the creamware fragments were concentrated along the eastern property border. Kitchen group artifacts represent the largest functional group of artifacts within the assemblage. The only other functional group represented in the component is Architecture, which consists of cut iron nails, wrought iron nails, and one fragment of soda windowpane glass. No personal artifacts like pipe stems, toys, clothing (buttons, buckles, etc.), brushes, or arms (bullets, gun parts, etc.) were recovered. The low density of architecture elements and the lack of functional diversity in the assemblage suggests that the late 18th-/19th-century component of the site represents a field scatter of refuse associated with an occupation located outside and adjacent to the project area to the west or east; however, historic maps from the early 19th century in this area are not accurate or at a scale sufficient for predicting or determining to which structure the artifacts may be attributed. It also cannot be discounted that an earlier dwelling was once located within the site, possibly at the same location of the former 20th-century house, though this is speculative. The deeply plowed stratum within the site and the disturbances related to the construction, occupation, and demolition of the 20th-century buildings formerly located within the project area suggest a low probability for the presence of intact subsurface features associated with the earlier artifacts recovered within the project area. Therefore, it is our opinion that the late 18th-/19th-century component lacks research potential and does not contain the density or functional diversity to provide additional significant information on the past lifeways in Prince William County during that period. The late 18th-century/19th-century component of Site 44PW2017 is not recommended for inclusion in the NRHP under Criterion D and no further work is recommended.

The 19th-/20th-century component contains 70 temporally diagnostic artifacts, 25 of which were recovered from the Ap stratum and 45 artifacts were recovered from disturbed fill contexts. This component represents a refuse scatter most likely related to the 20th-century occupation(s) of the no longer extant buildings that were depicted in the project area on 20th-century maps and aerial photographs and demolished by 1981 and 2012. Considering the disturbances related to the construction, occupation, and demolition of

the 20th-century buildings formerly located within the project area and that better examples of sites of this type and temporal affiliation are extant within Prince William County, in our opinion the later component of Site 44PW2017 lacks research potential and is not eligible for listing in the NRHP under Criterion D. No further work is recommended.

SUMMARY AND RECOMMENDATIONS

A Phase I cultural resources investigation was conducted of the ±7.1-acre Smith-Haymarket property located approximately 3,000 feet southeast of the intersection of Washington Street (Route 55) and James Madison Highway (Route 15) in Haymarket, Virginia in Prince William County. Thunderbird Archeology, a division of Wetland Studies and Solutions, Inc., of Gainesville, Virginia, conducted the study described in this report for Van Metre Homes of Broadlands, Virginia. The fieldwork was carried out in February of 2019. The cultural resources investigation resulted in the expansion of the limits of Site 44PW2017, which was previously recorded within the project area (Exhibit 16). Based on the artifacts recovered during this investigation, Site 44PW2017 includes three components: a prehistoric component dating to an unknown prehistoric period or periods, a late 18th-/19th century component, and a 19th-/20th-century component.

The prehistoric component contains only three artifacts, all of which were recovered on the eastern edge of the site from two STPs (31 and 31b), and was interpreted as a low-density lithic reduction station or workshop. The low density of finds and disturbances to the site through historic plowing and the demolition of the former buildings within the project area suggest a low probability for the presence of intact prehistoric contexts or cultural features associated with the prehistoric occupation of the site. For these reasons, in our opinion, the prehistoric component of the site lacks research potential and is not eligible for listing in the NRHP under Criterion D. No further work is recommended for the prehistoric component of the site.

The late 18th-/19th-century component was interpreted as a historic artifact scatter. The low density of architecture elements and lack of functional diversity in the assemblage suggested that the component represents a field scatter associated with an occupation located either outside the project area to the west or east or at the same location of the former 20th-century house that once stood within the site. The deeply plowed stratum within the site and the disturbances related to the construction, occupation, and demolition of the 20th-century buildings formerly located within the project area suggest a low probability for the presence of intact subsurface features associated with the earlier artifacts recovered within the project area. Therefore, it is our opinion that the late 18th-/19th-century component lacks research potential and does not contain the density or functional diversity to provide additional significant information on the past lifeways in Prince William County during that period. The late 18th-century/19th-century component of Site 44PW2017 is not recommended for inclusion in the NRHP under Criterion D and no further work is recommended.

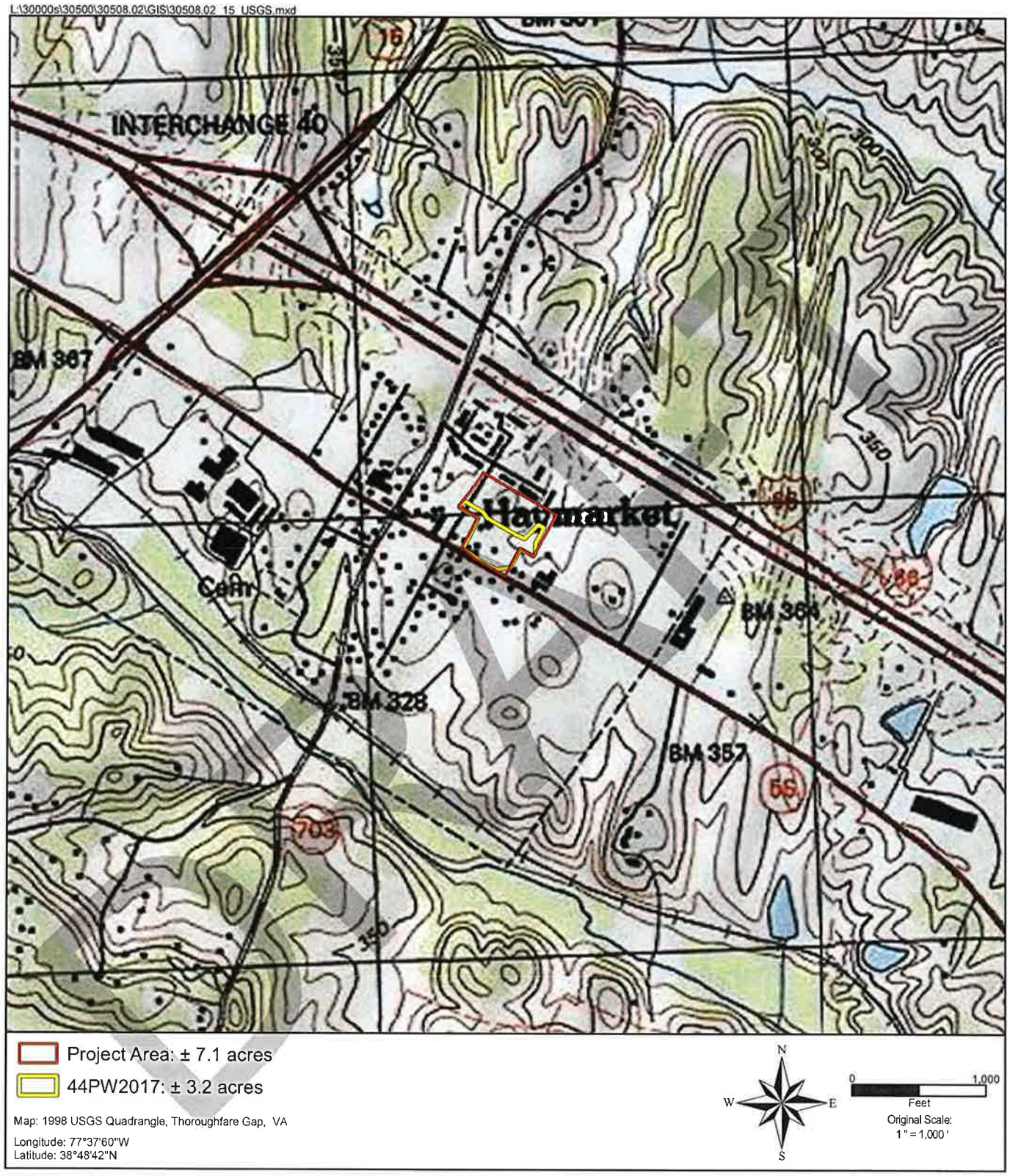

Exhibit 16
Location of Site 44PW2017

The 19th-/20th-century component represents a refuse scatter most likely related to the 20th-century occupation(s) of the no longer extant buildings that were depicted in the project area on 20th-century maps and aerial photographs and demolished by 1981 and 2012. Considering the disturbances related to the construction, occupation, and demolition of the 20th-century buildings formerly located within the project area and that better examples of sites of this type and temporal affiliation are extant within Prince William County, in our opinion the later component of Site 44PW2017 lacks research potential and is not eligible for listing in the NRHP under Criterion D. No further work is recommended.

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PLATES

Plate 1: Intermittent Drainage in Northeast Corner
View to South

Plate 2: Overview of Vegetation
View to North

Plate 3: Overview of Vegetation, Low-lying Areas
View to North

Plate 4: Open Area Along Washington Street
View to Southeast

Plate 5: Feature 1 at Site 44PW2017
View to North

Plate 6: Push Piles Near Rising Sun Lane
View to North

Plate 7: Dumped Refuse Piles Near Rising Sun Lane
View to North

APPENDIX I
Artifact Inventory

SMITH-HAYMARKET PHASE I
ARTIFACT INVENTORY

Isolated Finds

STP 70, Ap

Glass

1 olive green cylindrical bottle sherd, patinated

STP 70a, Fill

Glass

1 clear cylindrical tableware sherd, patinated

Miscellaneous

1 slag fragment (discarded in lab), 0.8 grams

STP 70d, Ap

Ceramics

1 whiteware sherd, undecorated, indeterminate vessel shape (1820-1900+, South 1977; Miller 1992)

STP 74, Ap

Metal

2 unidentified ferrous metal fragments, flat, thin

STP 74a, Fill

Miscellaneous

1 plastic fragment, curved, white, heat melted (discarded in lab)

STP 74b, Ap

Ceramics

1 pearlware sherd, undecorated, indeterminate vessel shape, stained (1780-1830, South 1977; Miller 1992)

Metal

1 unidentified ferrous metal fragment, flat, rectangular, hole each side

1 wire nail fragment, pulled (1890-present)

STP 76, Ap

Miscellaneous

1 brick fragment (discarded in lab), 79.8 grams

STP 76a, Ap

Non-Cultural

non-cultural material (NCM)

STP 80, Ap

Glass

1 clear square/rectangular bottle sherd

STP 80a, Ap

Miscellaneous

3 plastic fragments, curved, black (discarded in lab)

STP 80b, Ap

Glass

1 clear manganese cylindrical bottle/jar sherd, patinated (1880-1915)

1 unidentified very pale aqua spall

STP 80c, Ap

Glass

1 amber cylindrical bottle sherd, duraglas stippling, automatic bottle machine (1940-present)

1 unidentified very pale aqua spall

Site 44PW2017

STP 04, Ap

Ceramics

1 pearlware sherd, undecorated, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)

Glass

1 clear cylindrical bottle/jar sherd, automatic bottle machine (1910-present)

STP 04c, Ap

Ceramics

3 creamware sherds, undecorated, indeterminate vessel shapes (1762-1820, South 1977; Miller 1992)

1 pearlware sherd, undecorated, indeterminate vessel shape, stained (1780-1830, South 1977; Miller 1992)

Glass

3 pale aqua cylindrical bottle/jar sherds

Miscellaneous

3 plastic fragments (discarded in lab)

STP 05, Fill

Ceramics

1 terra cotta flower pot fragment, base fragment, 3 inch base diameter

1 terra cotta flower pot fragment, green paint exterior

STP 07, Fill

Metal

1 cut nail fragment, unidentified head (post-1790)

1 wire fragment

STP 08, Fill

Ceramics

2 hard paste porcelain tile fragments (modern)

Glass

3 green cylindrical bottle sherds, automatic bottle machine (1907-present)

Miscellaneous

1 asbestos tile fragment (discarded in lab)

4 brick fragments (discarded in lab), 117.4 grams

1 plastic fragment (discarded in lab)

1 woven shoe lace fragment (discarded in lab)

STP 10, Fill

Ceramics

3 hard paste porcelain tile fragments (modern)

Miscellaneous

2 concreate fragments (discarded in lab), 7.2 grams

STP 11, Fill

Metal

1 wire nail fragment, pulled (1890-present)

STP 12, Fill

Ceramics

1 hard paste porcelain tile fragment (modern)

1 refined white earthenware sherd, unidentified blue decoration, indeterminate vessel shape

Metal

1 wrought nail fragment, unidentified head, pulled

Miscellaneous

1 brick fragment (discarded in lab), 0.3 grams

STP 12a, Ap

Metal

1 unidentified ferrous metal fragment, curved

Miscellaneous

2 concreate fragments (discarded in lab), 12.8 grams

STP 14, Fill

Ceramics

1 pearlware sherd, neoclassically-inspired symmetrical scalloped rim fragment, flat vessel, indeterminate rim diameter (1780-1830, South 1977; Miller 1992; 1800-1830s, MACL 2017)

1 pearlware sherd, undecorated, indeterminate vessel shape, burned (1780-1830, South 1977; Miller 1992)

1 whiteware sherd, unidentified pink decoration, rim fragment, indeterminate vessel shape and rim diameter, burned (1820-1900+, South 1977; Miller 1992)

2 whiteware sherds, undecorated, indeterminate vessel shapes, burned (1820-1900+, South 1977; Miller 1992)

Glass

1 green cylindrical bottle sherd, automatic bottle machine (1907-present)

Metal

1 unidentified ferrous metal fragment, slightly curved, rectangular, rounded ends

Miscellaneous

1 oyster shell fragment (discarded in lab), 0.4 grams

STP 15, Fill

Glass

3 unidentified light aqua sherds, flat

Metal

1 ferrous metal horseshoe fragment, right branch, calkin, thin, small

1 ferrous metal screw fragment
1 unidentified ferrous metal fragment, hollow tube, tapered flattened ends with hole

Miscellaneous
1 plastic fragment, curved, black (discarded in lab)

STP 16, Ap

Ceramics
1 pearlware sherd, blue transfer printed decoration exterior, hollow vessel (1795-1840, South 1977; 1787-1830, Miller 1992)
1 pearlware sherd, undecorated, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)
2 pearlware sherds, undecorated, hollow vessels, stained (1780-1830, South 1977; Miller 1992)
1 redware sherd, dark brown glazed interior and exterior, hollow vessel
1 whiteware sherd, blue transfer printed decoration interior, indeterminate vessel shape (1820-1900+, South 1977; 1830-1865+, Miller 1992)
1 whiteware sherd, green hand painted floral decoration exterior, indeterminate vessel shape, stained (1820-1900+, South; 1825-1860+, Miller 1992)
1 whiteware sherd, green hand painted floral decoration interior, hollow vessel (1820-1900+, South; 1825-1860+, Miller 1992)
1 whiteware sherd, undecorated, hollow vessel (1820-1900+, South 1977; Miller 1992)

Glass
2 amber cylindrical bottle sherds, automatic bottle machine (1907-present)
1 clear cylindrical bottle sherd, external thread lip finish fragment, automatic bottle machine (1910-present)
8 clear cylindrical bottle/jar sherds, automatic bottle machine (1910-present)

Miscellaneous
2 oyster shell fragments (discarded in lab), 14.3 grams
3 plastic fragments, curved, black (discarded in lab)
5 plastic fragments, multi-sided, gray (discarded in lab)

STP 19, Fill

Ceramics
1 whiteware sherd, unidentified blue decoration, indeterminate vessel shape (1820-1900+, South 1977; Miller 1992)

Miscellaneous
2 plastic fragments, curved, white (discarded in lab)

STP 19b, Fill

Metal
1 unidentified ferrous metal fragment, flat, rectangular

STP 19d, Ap

Ceramics

1 pearlware sherd, green shell edge decoration, scalloped rim fragment, flat vessel, indeterminate rim diameter (1780-1830, South 1977; 1800-1830, Miller 1992)
1 pearlware sherd, undecorated, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)
1 whiteware sherd, blue transfer printed decoration, indeterminate vessel shape (1820-1900+, South 1977; 1830-1865+, Miller 1992)
2 whiteware sherds, undecorated, indeterminate vessel shapes, burned (1820-1900+, South 1977; Miller 1992)

Glass

3 clear manganese cylindrical bottle/jar sherds (1880-1915)
1 greenish-aqua cylindrical bottle sherd, thin, patinated
1 unidentified clear spall
1 unidentified very pale aqua sherd, flat

Metal

1 unidentified nail fragment, clinched
1 wrought nail fragment, pulled

Miscellaneous

2 coal fragments (discarded in lab), 2.5 grams
1 oyster shell fragment (discarded in lab), 8.6 grams

STP 25, Fill

Glass

29 amber cylindrical bottle sherds, automatic bottle machine (1907-present)
1 clear cylindrical bottle/jar sherd, automatic bottle machine (1910-present)

Metal

1 wire 4 1/2d nail (1890-present)
1 wire nail fragment (1890-present)

Miscellaneous

4 plastic fragments (discarded in lab)

STP 27, Fill

Ceramics

1 refined white earthenware sherd, undecorated, indeterminate vessel shape

Glass

1 very pale aqua multi-sided bottle sherd, automatic bottle machine (1907-present)

Metal

1 wire fragment
1 wire nail fragment (1890-present)
1 wire nail fragment, pulled (1890-present)

Miscellaneous

1 brick fragment (discarded in lab), 3.5 grams
1 slag fragment (discarded in lab), 43.6 grams

STP 28, Ap

Ceramics

1 whiteware sherd, undecorated, indeterminate vessel shape (1820-1900+, South 1977; Miller 1992)

Glass

2 unidentified very pale green sherds, flat

Metal

1 wrought nail fragment, unidentified head, spatulate tip

STP 29, Fill

Glass

1 unidentified light aqua sherd, flat

STP 29a, Ap

Ceramics

1 creamware sherd, undecorated, indeterminate vessel shape, stained (1762-1820, South 1977; Miller 1992)

STP 29b, Ap

Ceramics

3 creamware sherds, undecorated, indeterminate vessel shape (1762-1820, South 1977; Miller 1992)

STP 31, Ap

Prehistoric

1 quartz primary reduction flake, whole, 23.1 mm x 15.4 mm

STP 31a, Fill

Prehistoric

1 chert primary reduction flake, proximal, heat treated tip
1 quartz biface thinning flake, medial

STP 31c, Ap

Ceramics

1 pearlware sherd, undecorated, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)

STP 38, Ap

Ceramics

1 creamware sherd, undecorated, rim fragment, indeterminate vessel shape and rim diameter, stained (1762-1820, South 1977; Miller 1992)

STP 46, Fill

Metal

1 wire nail fragment, pulled (1890-present)

STP 46b, Ap

Glass

2 clear cylindrical bottle/jar sherds, automatic bottle machine (1910-present)

STP 50, Ap

Metal

1 wrought nail fragment, rosehead

STP 51, Ap

Ceramics

1 creamware sherd, undecorated, indeterminate vessel shape, burned (1762-1820, South 1977; Miller 1992)

STP 55, Ap

Ceramics

1 whiteware sherd, undecorated, indeterminate vessel shape (1820-1900+, South 1977; Miller 1992)

Glass

1 windowpane sherd, soda (pre-1864)

Miscellaneous

1 coal fragment (discarded in lab), 2.2 grams

STP 63, Ap

Metal

2 cut nail fragments (post-1790)

STP 63a, Ap

Ceramics

1 pearlware sherd, undecorated, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)

STP 64, Ap

Metal

2 cut nail fragments (post-1790)

STP 65, Ap

Glass

2 pale aqua cylindrical bottle/jar sherds, textured pattern, automatic bottle machine (1907-present)

STP 65a, Ap

Ceramics

2 pearlware sherds (mend), undecorated, base fragment, hollow vessel, indeterminate base diameter (1780-1830, South 1977; Miller 1992)

STP 65d, Ap

Ceramics

1 pearlware sherd, undecorated, rim fragment, indeterminate vessel shape and rim diameter (1780-1830, South 1977; Miller 1992)

APPENDIX II
Staff Qualifications

Boyd Sipe, M.A., RPA

Manager-Archeology

Firm Association
Wetland Studies and Solutions, Inc. (WSSI)

Direct Phone Line
(703) 679-5623

Project Assignment
Project Manager

Years of Experience
With this firm: 13
With other firms: 5

Education
M.A./Archaeology and Heritage/The University of Leicester

Registrations & Certifications
2016/Register of Professional Archaeologists

HAZWOPER Hazardous Materials Technician Training

2015/HAZWOPER 8-Hour Review

Associations
Society for Historical Archaeology

Council of Virginia Archaeologists

Middle Atlantic Archaeological Conference

Arlington National Cemetery Stream Restoration Millennium Project Arlington, Virginia
Mr. Sipe served as Project Manager for the cultural landscape documentation related to the expansion of Arlington National Cemetery (known as the Millennium Project) and the future restoration of 1,700 lf of badly degraded stream channel that flows through the site. As part of the environmental and preservation compliance process, pursuant to compliance with Section 106 of the National Historic Preservation Act of 1966 and regulations in 36 CFR Part 800, documentation of the cultural landscape of the Millennium Site has been included in a Memorandum of Agreement (MOA) between ANC, the National Park Service (NPS), and the Virginia State Historic Preservation Officer to mitigate adverse effects.

James Bland Development Property, City of Alexandria, VA.
Mr. Sipe conducted archival research and authored the documentary study for this five city block project and conducted oral history interviews from several long-time residents of the area. Based on his research, a Phase I archeological survey was recommended and a research design was developed. Mr. Sipe supervised the Phase I archeological work which resulted in the identification of two archeological sites that warranted further investigation.

Architectural Reconnaissance Survey & Preliminary Information Form (PIF) Preparation - Highland Springs, Henrico County, Virginia

Serving as the Project Manager on a survey of 240 representative historic properties. The survey area contains homes, churches, civic buildings, and 40-to-50 commercial properties in this early streetcar suburb of Richmond. Historic maps geo-referenced by GIS staff assisted in identifying which properties to survey. Oversaw all survey efforts and preparation of a Preliminary Information Form (PIF) to evaluate the proposed Highland Springs Historic District potential for listing on the National Register of Historic Places.

Contrabands and Freedmen's Cemetery Memorial, City of Alexandria, VA.
Under the supervision of Alexandria Archaeology, investigations were conducted between May and December of 2007 at the Contrabands and Freedman's Cemetery (44AX179). Thunderbird Archeology was also contracted to assist with public interpretation for the memorial. Mr. Sipe assembled a team to design the City's official website and historical brochure for the site. He authored all text for the web site and assisted in the brochure design and layout. Finally, Mr. Sipe managed additional excavations and supervised archeological monitoring during construction of the Memorial.

Lyndam Hill II Property (44FX0223), Fairfax County, VA.
Mr. Sipe served as Principal Investigator during the Phase II site evaluation and Phase III data recovery of site 44FX0223, a circa 1720 to 1769 outlying farm quarter site in Fairfax County, Virginia, and served as primary author for the Phase II and co-author for the Phase III reports describing the results of the investigations. Intact historic features and artifact deposits indicated the discrete locations of an overseer's house and a dwelling for enslaved laborers, a unique and rarely identified site type in Virginia. Major research issues in the archeology of regional slavery including the lifeways and material culture of the enslaved and overseers, ethnicity, agency, and plantation provisioning were re-considered in view of findings at the site.

Daniel Baicy, M.A., RPA

Associate Archeologist

Firm Association#
Wetland Studies and Solutions, Inc. (WSSI)

Direct Phone Line:
(703) 679-5693

Project Assignment
Project Archeologist

Years of Experience:
With this firm: 4
With other firms: 12

Education:
2003/M.A. in Anthropology, East Carolina University

Registrations & Certifications
2018/Register of Professional Archaeologists

2017/HAZWOPER Hazardous Materials Technician Training

Mr. Daniel Baicy has over 15 years of professional experience in archeological research and fieldwork in the Middle Atlantic, Southeast, Deep South, and Midwest regions of the U.S. with a specialization in cultural resource management. He has participated in archeological research on diverse prehistoric and historic period archeological sites, including lithic quarries and reduction stations, Archaic camps, Woodland Period villages, Civil War battlefields and campsites, historic cemeteries, and numerous late 18th through 20th century domestic sites, an 18th century ship, an intact 18th century warehouse and a nearly intact 19th century city block in Alexandria, Virginia. He is proficient in field and laboratory techniques, technical report writing, and AutoCAD mapping. Mr. Baicy's current responsibilities as an Associate Archeologist include client and agency interaction, the supervision of archeological field crews conducting Phase I, II, and III investigations, and the preparation of technical reports.

Hotel Indigo (220 South Union) – City of Alexandria, Virginia

Under the direction of Mr. Baicy, the archeological work resulted in the discovery of the oldest structural remains found to date in Alexandria: the 1755 public warehouse on Point Lumley. Four privies dating to the late 18th to early 19th century, a brick-lined well and late 19th and 20th century factory, warehouse foundation and the remnant of a colonial-era ship were also evaluated and documented. Mr. Baicy worked closely with the site developer, the City Archaeologist, maritime archeologists from the United States Navy, and the Maryland Archaeological Conservation Lab to prepare the ship and warehouse timbers for specialized analysis and conservation, and to complete the field investigations.

4009 Enterprise Road Cemetery (18PR1096) Delineation – Prince George's County, Maryland

Mr. Baicy served as field director and principal author for this project. The archeological cemetery delineation was conducted around the Enterprise Road Cemetery (18PR1096), which is situated within an ±0.19 acre out-parcel located adjacent to the north side of Route 50, approximately 830 feet southeast from the intersection with Enterprise Road (Route 556) in Prince George's County, Maryland. No graves were located outside the limits of the out-parcel.

Alternative 13th High School, Phase II, Site 44PW1599 – Prince William County, Virginia

Mr. Baicy served as field director for a Phase II evaluation of Site 44PW1599, a multi-component site. The project involved site relocation, close-interval shovel testing, and several 1 x1 m test units. The site contained the potential for subsurface features related to an early 19th century occupation and was recommended for Phase III mitigation. The project was conducted for Prince William County, Schools.

Reston Eastgate Phase II, Site 44FX1569.

Mr. Baicy served as field director and primary author for a Phase II evaluation of Site 44FX1569, a prehistoric quartz quarry and lithic workshop in Reston, Virginia. The project involved close interval shovel testing and several 1 x 1 m test units. The site contained intact subsurface soil horizons and was recommended for Phase III mitigation. The project was conducted for Boston Properties of Washington, D.C.

Thomas Cuthbertson, M.A., RPA

Firm Association
Wetland Studies and Solutions, Inc. (WSSI)

Direct Phone Line:
(703) 679-5616

Project Assignment
Project Archeologist

Years of Experience
With this firm: 1.5
With other firms: 4.5

Education:
2016/M.A. in Anthropology, College of William and Mary

Registrations & Certifications
2018/Register of Professional Archaeologists

2018/HAZWOPER Hazardous Materials Technician Training

Senior Archeologist

Mr. Thomas Cuthbertson has seven years of professional experience in archeological research in the Middle Atlantic region of the U.S. with a specialization in cultural resource management. He has participated in the excavation of diverse types of archaeological sites, including historic cemeteries, various 18th to 19th century farmsteads, homes, and plantations, Civil War battlefields and forts, lithic quarries and woodland camps. Most recently he participated in, and helped supervise, the excavation of 18th and 19th century industrial and domestic features along the Alexandria, Virginia waterfront. He is proficient in field and laboratory techniques, technical report writing and AutoCAD mapping. Mr. Cuthbertson's current responsibilities as a Senior Archeologist include archaeological and documentary research, the supervision of archeological field crews conducting pedestrian surveys, Phase I, II, and III investigations, and the preparation of technical reports and resource management plans.

9520 Gunston Cove Road Phase I Cultural Resources Investigation
Mr. Cuthbertson conducted a Phase I, archaeological reconnaissance survey of a ±5.1-acre parcel in Fairfax County, Virginia with a small crew. The survey included subsurface testing as well as the documentation of soil disturbances in the area that would reduce the probability of locating cultural resources. Mr. Cuthbertson composed the resulting report, including cursory historic research, and registered the archaeological resources that were discovered.

Alternative 13th High School – Phase II Evaluation of Site 44PW1599
Under the direction of Mr. Daniel Baicy, M.A., RPA, Mr. Cuthbertson, functioning as a crew chief, assisted with the evaluation of a 19th century domestic site located in Prince William County, Virginia. The evaluation included close interval shovel testing and the excavation of several test units in areas with high concentrations of artifacts, and the documentation of features located during excavation.

LCPS ES-31 Phase I Cultural Resources Investigation
Mr. Cuthbertson conducted a Phase I, archaeological reconnaissance survey of a ±32.5-acre parcel in Loudoun County, Virginia with a small crew. The survey included subsurface testing as well as the documentation of soil disturbances in the area that would reduce the probability of locating cultural resources. Mr. Cuthbertson composed the resulting report, including cursory historic research, and registered the archaeological resources that were discovered.

Oronoco Dredging and Capping Project Archeological Monitoring
Mr. Cuthbertson served as archeological monitoring during offshore dredging operations in the Potomac River shallows at Oronoco Bay in the City of Alexandria, Virginia. The archeological monitoring followed a scope of work approved by the Virginia Department of Historic Resources and Alexandria Archaeology. Mr. Cuthbertson also authored the resulting report.

Pennsylvania Ave – Minnesota Ave SE Intersection Improvement Phase I Archeological Investigation
Mr. Cuthbertson conducted a Phase I, archaeological reconnaissance survey of and urban greenspace parcel in Anacostia, Washington, D.C. with a small crew. The survey included subsurface testing through multiple strata of modern and potentially historic fills. Mr. Cuthbertson composed the resulting report, including cursory historic research, and created the CAD illustrations used within.

Elizabeth Waters Johnson, M.A.

Laboratory Supervisor/Associate Archeologist

Firm Association
Wetland Studies and Solutions, Inc. (WSSI)

Project Assignment
Laboratory Supervisor

Years of Experience
With this firm: 12
With other firms: 3

Education:
M.A./Anthropology concentration in Museum Training/The George Washington University

B.A./Anthropology/ concentration in Archaeology/ Fort Lewis College/

Registrations & Certifications
2017/HAZWOPER 8-Hour Review

2016/HAZWOPER 8-Hour Review

2014/HAZWOPER 24 Hour Class

2016/American Red Cross Standard First Aid

2016/American Red Cross Adult CPR/AED

2015/Introduction to MS Access

Associations
Society for American Archaeology

Society for Historical Archaeology

Council of Virginia Archaeologists

Elizabeth Waters Johnson has over twelve years of professional experience in Middle Atlantic archeology, as well as three years of experience with Southwest archeology. She has participated in numerous Phase I, II, and III investigations from both prehistoric and historic time periods. Ms. Johnson currently manages the archeological laboratory. She performs artifact analysis, cataloging, and research of prehistoric and historic artifacts. She is responsible for maintaining collections as well as artifact database systems including Excel, Access and Microsoft SQL Server and provides data, tables, research and artifact photographs for technical reports. Ms. Johnson also manages crew and interns assigned to various laboratory tasks. Her work as an archeologist has also enabled her to gain experience writing technical reports and has allowed her to further her knowledge of soil analysis, geology, geomorphology, tree identification, and faunal analysis.

Ms. Johnson has a Master of Arts degree in Anthropology with a concentration in Museum Training from The George Washington University, Washington, D.C. Her primary graduate research focus was curation and collections management. She was a collections management intern in the Anthropology Department of the Smithsonian Institute National Museum of Natural History, Washington, D.C. During this time, she learned collections management procedures, curation, artifact photography, Native consultation and collaboration, and archival documentation of collections.

Ms. Johnson's relevant experience includes:

Indigo Hotel (220 South Union Street) - City of Alexandria, Virginia
Laboratory supervisor and conducted the artifact analysis and inventory during the Archaeological Evaluation of the Hotel Indigo site. Numerous 18th and 19th-century industries, warehouses, businesses, and residences were located on this property. The archeological excavations uncovered the remains of Alexandria's first public warehouse, constructed by John Carlyle around 1755 and the remnants of a colonial-era vessel that had been used for landfill. Additionally, house foundations, a brick-lined well, and four privies (outhouses) dating to the late 18th to early 19th century, and factory and warehouse foundations from the late 19th and 20th centuries were located.

Lyndam Hill II Property (44FX0223), Fairfax County, Virginia
Conducted the artifact analysis during the Phase II site evaluation and Phase III data recovery of site 44FX0223, a circa 1720 to 1769 outlying farm quarter site in Fairfax County, Virginia. She assisted in the analysis and cataloguing of the artifact assemblage, in addition to analyzing and cross-mending the large colonoware assemblage. The site consisted of intact historic features and artifact deposits, and indicated the discrete locations of an overseer's house and a dwelling for enslaved laborers, a unique and rarely identified site type in Virginia. Major research issues in the archeology of regional slavery including the lifeways and material culture of the enslaved and overseers, ethnicity, agency, and plantation provisioning were re-considered in view of findings at the site. Ms. Johnson has presented the results of the research at several professional conferences.

12th High School Property - Prince William County, Virginia
Laboratory Supervisor and conducted the artifact analysis and inventory for the cemetery investigations at Site 44PW1947, which involved the archeological excavation of eleven individuals. Based on the archeological evidence (artifact and coffin hardware analysis), the burials located within the cemetery date to the period post-1850 to post-1880. Although the individuals may never be positively identified, several may be associated with the family of William and Cordelia Lynn, who owned the land containing the cemetery during this time period, and/or possibly with the tenants that leased the property when the Lynn family moved to Washington DC. The remains were later reinterred in a nearby location.

Phase I Archeological Investigation Of The I-95/395 Hov/Bus/Hot Lanes Project - Arlington, Fairfax, Prince William, Stafford, Spotsylvania Counties And The Cities Of Alexandria and Fredericksburg, Virginia
Served as field archeologist and conducted a portion of the artifact analysis for a Phase I Archeological Investigation of the circa 55.5-mile long I-95/I-395 HOV/BUS/HOT Lanes Project. Twenty-six previously recorded sites, one historic district, and two historic resources were either wholly or partially located within the APE for this project; fifteen of the previously recorded archeological sites had been destroyed. Thirty-six new archeological sites were recorded during this survey. Of these sites, seven were recommended for avoidance or Phase II evaluation.

Middle Atlantic Archeological Conference

Sites 44FX1808 and 44FX1904 In Support of BRAC Infrastructure on Fort Belvoir Property - Fairfax County, Virginia
Conducted the artifact analysis and inventory for the Phase II work. The Phase II evaluations of sites 44FX1808 and 44FX1904 indicated that the sites represent short term occupations for the procurement and processing of lithic materials with Early to Middle Woodland and Late Archaic temporal components. It was determined that the sites had been plowed and thus any stratified cultural deposits had been destroyed. No further archeological work was recommended.

The Thomas Brawner Gaines Farmstead (Site 44PW1662) - Prince William County, Virginia
Conducted the artifact analysis and inventory for the Phase III data recovery. The Phase III data recovery resulted in the recovery of a large assemblage of artifacts representing the mid-19th century domestic, farmstead, military, and military/medical components of the site. Forty-eight cultural features, many of which were likely associated with the mid-19th century occupations of the site were identified. Key historic features included the foundation of the mid-19th century Gaines house, a stove pit possibly associated with the farmstead's meat house and a refuse pit associated with both the mid-19th century domestic and Civil War era military use of the site. Data recovery at the site contributed to our knowledge of the locally significant Gaines family and to the local history of the Town of Gainesville, its establishment in the mid-19th century and its role in the Civil War.

SR 24 Mount Joy Road and Bay Farm Road – Sussex County, Delaware

Laboratory Supervisor and conducted the artifact analysis and inventory for the Phase I archeological survey conducted on two proposed stormwater pond locations, part of the planned improvements to a 2.25-mile section of State Road 24 (SR 24) in Indian River Hundred, Sussex County, Delaware. The work was completed for the Delaware Department of Transportation. Three new archeological sites were recorded during the Phase I archeological survey of the project area, two within the actual stormwater pond locations (7S-G-202 and 7S-G-204) and one in the agricultural field surrounding the southern stormwater pond location (7S-G-203). Avoidance or Phase II archeological site evaluation was recommended for site 7S-G-202 as well as an archeological cemetery delineation to define the limits of interments within the cemetery. Site 7S-G-204 was also recommended for avoidance or Phase II archeological site evaluation, while 7S-G-203 was recommended for no additional archeological work.

APPENDIX III
Cultural Resource Forms

Virginia Department of Historic Resources
Archaeological Site Record

DHR ID: 44PW2017

Snapshot

Date Generated: February 15, 2019

Site Name:	Haymarket 1
Site Classification:	Terrestrial, open air
Year(s):	No Data
Site Type(s):	Artifact scatter, Dwelling, single, Lithic scatter
Other DHR ID:	No Data
Temporary Designation:	Haymarket 1

Site Evaluation Status

Not Evaluated

Locational Information

USGS Quad:	THOROUGHFARE GAP
County/Independent City:	Prince William (County)
Physiographic Province:	Piedmont
Elevation:	No Data
Aspect:	Flat
Drainage:	Potomac
Slope:	0 - 2
Acreage:	3.170
Landform:	Other
Ownership Status:	Private
Government Entity Name:	No Data

Site Components

Component 1

Category:	Domestic
Site Type:	Dwelling, single
Cultural Affiliation:	Euro-American
DHR Time Period:	The New Dominion, World War I to World War II
Start Year:	No Data
End Year:	No Data
Comments:	Site is depicted as a residence on the 1966 USGS Thoroughfare Gap Quad indicating that it has been an archaeological site for less than 50 years. --- August 2016

Component 2

Category:	Domestic
Site Type:	Artifact scatter
Cultural Affiliation:	African American, Euro-American
DHR Time Period:	Colony to Nation, Early National Period
Start Year:	No Data
End Year:	No Data
Comments:	Small artifact scatter including creamware, pearlware, wrought nails, and cut nails in a plowed context

Component 3

Category:	Industry/Processing/Extraction
Site Type:	Lithic scatter
Cultural Affiliation:	Native American
DHR Time Period:	Pre-Contact
Start Year:	No Data
End Year:	No Data

Comments: Three flakes

Bibliographic Information

Bibliography:

No Data

Informant Data:

--2016--
This site was recognized from the road right-of-way as a domestic site by the slightly elevated topographic contours and copse of trees. There is an intact square concrete feature on the eastern portion of the site that may be a cistern.

--2019--

The site was recorded during a Phase I Cultural Investigation by Thunderbird Archeology. Site boundaries were amended based on the findings of this investigation.

CRM Events

Event Type: Survey:Phase I

Project Staff/Notes:

Field Director - Tom Culbertson, M.A., RPA
Principal Investigator - Boyd Sipe, M.A. RPA

Project Review File Number: No Data

Sponsoring Organization: No Data

Organization/Company: Thunderbird Archeology, a division of Wetland Studies and Solutions, Inc.

Investigator: Dan Baicy

Survey Date: 2/1/2019

Survey Description:

Phase I Cultural Resources Survey of 7.1 acres near Haymarket, VA

Current Land Use	Date of Use	Comments
Forest	2/1/2019 12:00:00 AM	Abadoned Lot, mostly forested

Threats to Resource: Development

Site Conditions: 25-49% of Site Destroyed

Survey Strategies: Observation, Subsurface Testing

Specimens Collected: Yes

Specimens Observed, Not Collected: No

Artifacts Summary and Diagnostics:

Ceramics
6 hard paste porcelain tile
9 creamware (1762-1820)
15 pearlware (1780-1830)
13 whiteware (1820-1900+)
2 refined white earthenware
1 redware
2 terra cotta flower pot

Glass
4 bottle, bottle/jar
51 bottle, bottle/jar, (ABM)* (post-1907)
3 bottle/jar, clear manganese (1880-1915)
8 unidentified glass
1 windowpane, soda (pre-1864)

Metal
1 ferrous metal horseshoe
4 nail, wrought
5 nail, cut (post-1790)
6 nail, wire (post-1890)
1 nail, unidentified
1 screw
4 unidentified ferrous metal
2 wire

Miscellaneous
1 asbestos (discarded)
6 brick (discarded)
3 coal (discarded)
4 concreate (discarded)
4 oyster shell (discarded)
19 plastic (discarded)
1 slag (discarded)
1 woven shoe lace (discarded)

Prehistoric
1 chert primary reduction flake
1 quartz primary reduction flake
1 quartz biface thinning flake

Summary of Specimens Observed, Not Collected:

No Data

Current Curation Repository: Thunderbird, Gainesville

Permanent Curation Repository: DHR

Field Notes: Yes
Field Notes Repository: Thunderbird, Gainesville
Photographic Media: Digital
Survey Reports: Yes
Survey Report Information:

Smith-Haymarket Phase I Cultural Resources Investigation, Prince William County, Virginia by Daniel Baicy M.A. RPA and Tom Cuthbertson M.A., RPA

Survey Report Repository: Prince William County
DHR Library Reference Number: No Data
Significance Statement:

The prehistoric component contains only three artifacts, all of which were recovered on the eastern edge of the site in two shovel test pits. The component is interpreted as a limited use procurement camp or limited lithic reduction site. This site is a low-density resource in a deeply plowed stratum, which indicates low probability for the presence of intact subsurface features. As such, it is our opinion, that the prehistoric component at Site 44PW2017 does not contain the potential for yielding substantial information on prehistoric lifeways in Prince William County and is therefore not recommended for inclusion on the National Register of Historic Places (NRHP) under Criterion D. No further work is recommended on this component.

The late 18th century and early 19th century component is an historic artifact scatter of primarily ceramics. The low density of architectural elements and the lack of functional diversity in the assemblage suggests that the artifacts represent a field scatter or the edge of an occupation either centered where the 20th century house was previously located or off the property to the west or east. The deeply plowed stratum and the disturbances related to the extant 20th century dwelling suggest a low probability for the presence of intact subsurface features. Therefore, it is our opinion that the late 18th and early 19th century component lacks research potential and does not contain the density nor the functional diversity to provide additional information on past lifeways in Prince William County. Site 44PW2017 is not recommended for inclusion on the NRHP under Criterion D and no further work is recommended.

The late 19th century and early 20th century component is a historic artifact scatter. This component is related to the no longer extant structure that is depicted in the 1937 aerial. According to aerial photography and USGS maps, the structure is removed by 1980 and the lot remains empty. A single feature, a concrete cistern or cesspool, is visible on the surface. The dwelling has been completely removed from the landscape. The resultant disturbance to any potential subsurface features, excluding Feature 1, is significant and contributes to the low potential for encountering said subsurface features. Late 19th century artifact scatters are a common site type in Prince William County and this component at Site 44PW2017 is likely to yield similar information. Therefore, it is our opinion that the late 19th century and 20th century component at Site 44PW2017 lacks research potential and is not eligible for listing in the NRHP under Criterion D. No further work is recommended for the site.

Surveyor's Eligibility Recommendations: Recommended Not Eligible
Surveyor's NR Criteria Recommendations, : No Data
Surveyor's NR Criteria Considerations: No Data

Event Type: Survey:Phase I

Project Staff/Notes:

No Data

Project Review File Number: No Data
Sponsoring Organization: No Data
Organization/Company: DHR
Investigator: Bob Jolley
Survey Date: 8/10/2016
Survey Description:

Pedestrian survey.

Current Land Use	Date of Use	Comments
Pasture	8/10/2016 12:00:00 AM	*No Data*

Threats to Resource: Development, Transportation Expansion
Site Conditions: Surface Deposits
Survey Strategies: Observation
Specimens Collected: No
Specimens Observed, Not Collected: Yes

Artifacts Summary and Diagnostics:

No Data

Summary of Specimens Observed, Not Collected:

Machine made brick, bottle glass (clear and aqua colored), polychrome whiteware ceramics and miscellaneous iron artifacts.

Current Curation Repository:	No Data
Permanent Curation Repository:	No Data
Field Notes:	No
Field Notes Repository:	No Data
Photographic Media:	Digital
Survey Reports:	No

Survey Report Information:

No Data

Survey Report Repository:	No Data
DHR Library Reference Number:	No Data
Significance Statement:	No Data
Surveyor's Eligibility Recommendations:	No Data
Surveyor's NR Criteria Recommendations, :	No Data
Surveyor's NR Criteria Considerations:	No Data

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Geotechnical

Solutions, Inc.

PRELIMINARY SUBSURFACE INVESTIGATION AND GEOTECHNICAL ENGINEERING REPORT

Smith - Haymarket
Prince William County, Virginia

Prepared for

VAN METRE COMMUNITIES, INC.
43045 Van Metre Drive, Suite 200
Broadlands, VA 20148

GSI Project No. GP-182504

January 22, 2019

Geotechnical

Solutions, Inc.

Geotechnical Engineering
Environmental Consulting • Construction Materials

January 22, 2019

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VAN METRE COMMUNITIES, INC.
43045 Van Metre Drive, Suite 200
Broadlands, VA 20148

GSI Project No. GP-182504

Reference: Subsurface Exploration and Preliminary Geotechnical Engineering Report
Smith - Haymarket
Prince William County, Virginia

Dear Mr. DiDonato,

Geotechnical Solutions, Inc. (GSI) has completed the authorized preliminary subsurface investigation and the geotechnical report for the above referenced project site. A preliminary geotechnical report, including the results of our field exploration, laboratory testing program, engineering analysis, and our preliminary recommendations for the proposed development is enclosed with this report. The preliminary recommendations presented in this report are intended for use by your office and for the use of other design professionals involved with the design and implementation for the specific project described herein.

Eight (8) soil test borings, designated as B-1 through B-8, were performed for the proposed development. Based on our subsurface exploration, it is our professional opinion that the site is suitable for the proposed development. The most significant factor which may impact development on this site include depth to weathered rock. While this factor do not prevent development of the site as proposed, it should be recognized that higher costs will be incurred for development of this site than for sites without this problem.

We thank you for your confidence in our services. We will remain available for future consultation during the design and construction phases of the project. Should you have any questions regarding the content of this report, please do not hesitate to call us at (703) 657-0014.

Respectfully submitted,
GEOTECHNICAL SOLUTIONS, INC.

Saeed Fallah P.E.
Senior Project Manager

Abdallah Adas, P.E.
Principal Engineer

Attachment: GSI Preliminary Geotechnical Report No. GP-182504

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1.0 INTRODUCTION

Geotechnical Solutions, Inc. (GSI) has completed a preliminary subsurface investigation and a geotechnical study for a residential development in Prince William County, Virginia and referenced herein as "Smith – Haymarket".

The scope of our services was performed in accordance with GSI Proposal/Agreement No. GP-182504, dated January 2, 2019. Mr. Derek DiDonato, Engineering/Entitlements Land Manager – Mid Atlantic Division, at Van Metre Communities, Inc. authorized this work as a preliminary assessment of the subsurface conditions across the site to aid in the development of the property.

1.1 Purpose and Scope of Work

The objectives of this study are to determine the physical and geotechnical properties of the subsurface soil, groundwater conditions at the site, and provide preliminary assessment of those conditions with respect to the proposed plans for development of the property. More specifically, the objectives of this study are summarized as follows:

- Identify and evaluate the types of overburden soil at the boring locations. This identification includes soil classification, index properties and gradation.

- Preliminary evaluation of the on-site soil characteristics encountered in the soil borings. Specifically, we will discuss the suitability of the on-site materials for reuse as engineered fill to support the floor slab. We will also include compaction requirements and suitable material guidelines.

- Provide preliminary assessment of the presence of groundwater, both as perched condition above or within restrictive layers, or as permanent water table within the substrata.

- Provide preliminary general construction guidelines for site grading and earthwork activities including the suitability and engineering applications of the on-site borrow materials, temporary control of groundwater, and placement of compacted fill and backfill for building, pavement areas and site utilities.

- Preliminary recommendations for allowable bearing pressure for the most feasible foundations and estimates of predicted foundation settlement.

- Provide preliminary recommendations for permanent dewatering system for the foundation. Temporary excavation and temporary protection, such as temporary dewatering systems.

- Preliminary recommendations for seismic design parameters as determined in accordance with IBC 2012 Table 1613.5.2.

- Discuss relevant geotechnical concerns encountered or noted during our presence on site that may impact the proposed development.

- Provide preliminary assessment of the suitability and engineering application of soils encountered at the boring locations for use during the construction phase of the project.

The scope of our work includes a review of the field and laboratory results obtained during the subsurface investigation; a site reconnaissance by our engineering staff; an analysis of the data obtained; and the preparation of this preliminary geotechnical report based on the preliminary layout plan/ Sketch Study, titled "Smith - Haymarket", prepared by Dewberry dated July 16, 2015. This report summarizes the findings of our field and laboratory test results and presents our preliminary recommendations for the proposed development of the property.

1.2 Site Location and Description

The proposed site is an assemblage of three undeveloped lands located at 6701 Hunting Path Road, 14860 Washington Street, and 15850 Washington Street in Haymarket, Virginia with GPIN Numbers 7298-90-7006, 7297-99-8684, and 7397-09-0978 respectively, based on Prince William County (PWC) Mapper. The combined land has a total area of 7.1± acres and is bordered by existing residential communities to the north and east, Washington Street (VA Route 55) to the south, and Hunting Path Road along with a commercial property to the west and southwest of the overall site.

This site mostly consists of moderately to heavily wooded area on the northern and middle portion of the site and open field areas with mature trees on the southern part of the property. Based on the PWC topographic map, the property is characterized by relatively flat to moderately sloping downward topography from the west and south toward the northeast with an uphill slope at the north of the site. The general ground surface elevations at the site vary

from a high of approximately EL. 374± feet, Mean Sea Level (MSL) at northwest corner of the site to a low of approximately EL. 352± feet, MSL, at the northeast corner of the property, for a total relief of approximately 22± feet.

The approximate location of the site is shown on the Site Vicinity Map presented in the Appendix of this report.

1.3 Project Description

A preliminary sketch plan prepared by Dewberry dated July 16, 2015 was provided to us. Based on this study plan we understand that the project planned for thirty-seven (37) townhouses with garages and associated site utilities, roadways, and parking area on the northern half of the site. Also, a storm water management facility is planned in the northeast portion of the overall site as part of the development. In the south half of the site, a Primrose School with through access road and parking area will be placed on approximately 1.2± acres of land. A lot with approximate size of 1± acre will remain vacant at southwest of the property for future development.

We anticipate the planned townhouses will be constructed as wood-framed, multi-story structures with brick veneer skin and slabs-on-grade. The future school may comprise of structural steel and cold form framing. Footings, slabs, and foundation walls for the structures will be cast-in-place concrete. The perimeter wall footings and the interior column footings are expected to have loads on the order of 2 to 5 kips per linear foot and up to 40 to 80 kips, respectively. The anticipated total tolerable settlements of up to 1.0 inch and differential settlements of up to 0.75 inch will be considered in the foundation design in accordance with generally accepted engineering design practices. GSI should be advised if the actual loads exceed the estimated values so the recommendations outlined in this report can be updated.

No additional information was provided at the time this report was prepared.

2.0 EXPLORATION PROCEDURES

2.1 Subsurface Exploration

The subsurface exploration included eight (8) soil test borings, designated as Borings B-1 through B-8, that were proposed to be advanced to a maximum depth of 15 feet from the grade

level. All borings were planned to be drilled to the proposed depth or to auger/spoon refusal, which ever occurred first. The boring locations were selected by GSI based on the provided preliminary layouts for the proposed development. Also, the borings were field located by GSI utilizing the GPS method. The ground surface elevations at the boring locations were interpolated from Prince William County Topographic map. The boring locations and elevations should be deemed accurate with regard to the methods used. The approximate locations of the borings are shown on the Boring Location Plan (BLP) in the Appendix of this report.

The soil borings were performed with a CME 550 ATV-mounted drilling rig, which utilized continuous flight, hollow stem augers to advance the boreholes. The specific drilling methods are noted on the individual boring logs.

Representative soil samples were obtained by means of the split-barrel sampling procedure in accordance with ASTM Specification D-1586. In this procedure, a 2-inch O.D., split-barrel sampler is driven into the soil 18 inches by a manual or an automatic 140-pound hammer falling 30 inches. The number of blows required to drive the sampler through a 12-inch interval is termed the Standard Penetration Test (SPT) N-value and is indicated for each sample on the boring logs. This value can be used as a qualitative indication of the in-place relative density of cohesionless soils. In a less reliable way, it also indicates the consistency of cohesive soils. This indication is qualitative, since many factors can significantly affect the standard penetration resistance value and prevent a direct correlation between drill crews, drill rigs, drilling procedures, and hammer-rod-sampler assemblies.

Upon completion, the boreholes were backfilled with the auger spoils generated during drilling operations. A field log of the soils encountered in the borings was maintained by the drill crew. The soil samples were placed in sealed jars and transported to our materials laboratory in Chantilly, Virginia for visual evaluation, classification and material testing.

Materials encountered during the field investigation were visually classified by a GSI's geotechnical engineer in accordance with ASTM Standard D-2488, "Description and Identification of Soils - Visual-Manual Method" and the Unified Soil Classification System (USCS). The field observations include the description of each soil stratum encountered, the estimated depth and thickness of each layer, and groundwater observations. These field observations are recorded on the individual boring log sheets that are presented in the Appendix of this report.

Groundwater observations were made during the drilling of the test borings by a visual examination of recovered samples from the standard penetration tests, auger cuttings, and water marks on the split-barrel sampler and drill rods. Further, groundwater readings were taken after completion of each boring prior to backfilling.

2.2 Laboratory Testing

Representative soil samples were collected from the test borings and transported to our office in Chantilly, Virginia for laboratory testing. Selected samples were classified in accordance with ASTM Standard D-2487 "Classification of Soils for Engineering Purposes" by performing specific laboratory tests. The laboratory tests included the following test methods.

ASTM D-2216	Determination of Moisture Content of Soils
ASTM D-6913	Particle Size Analysis of Soils
ASTM D-4318	Atterberg Limits (LL, PL & PI)

These tests were performed to determine the physical characteristics and soil classification of the various soils encountered during the subsurface investigation. The laboratory test results are presented on the individual data sheets that can be found in the Appendix of this report.

The soil samples will be retained in our laboratory for a period of 60 days, after which, they will be discarded unless other instructions are received as to their disposition.

3.0 RESULTS

3.1 Site Geology

A review of the published geological information indicates that the site is geologically located in the Culpeper Basin of Virginia within the Piedmont Physiographic province. The basin extends from the Rapidan River near Madison Mills, Virginia Northeastward toward the Potomac River and terminates just west of Fredrick, Maryland.

The Culpeper Basin was formed by rifting (the separation of tectonic plates), which occurred following the formation of the ancestral Blue Ridge Mountains. The rift basin created a large playa sea, which was subsequently filled by erosional deposits from the ancestral Blue Ridge

Mountains. Because of the discontinuities in the earth's crust, these sedimentary deposits were subsequently intruded by igneous materials penetrating the earth's crust. The subsequent intrusion by igneous materials creates a much more variable geologic profile than would be expected had this area remained sedimentary deposits only. As such, the Culpeper Basin now includes several primary rock types. These materials range from sedimentary siltstone and sandstone to metamorphic hornfels to igneous basalt and diabase rock.

At this site, our geologic overlay indicates that the site should be expected to consist of Catharpin Creek Formation of Jurassic and/or Triassic age. The Catharpin Creek Formation is composed of interlayered sandstone, siltstone, shale, and conglomerate. Siltstone rocks typically weather to low plasticity silt and clay soils. The sandstone rocks typically weather to low to medium plasticity silty sand and clayey sand soils.

Residual soils are characterized as highly structured sands, silts, and clays that transition abruptly to broken and weathered rock and finally fresh competent rock. The major limitation to development is depth to rock. Many areas of the Culpeper Basin are noted for seasonal high groundwater due to the shallow depth to bedrock and low permeability soils.

3.2 Prince William County Soil Mapping

Based on our review of the soil survey of Prince William County, published by the National Cooperative Soil Survey, the soils at the site are predominantly within the Arcola-Panorama-Nestoria group. The soil units within the site are the following:

Table 1 – Prince William County Soils

Soil Name	Soil Number	Soil Class.	Soil Name	Soil Number	Soil Class.
Arcola silt loam	4B	II	Manassas silt loam	35B	III
Arcola-Nestoria complex	5C	II			

These soils are classified by Prince William County as Category II and III soil, indicating that they are considered as "Potential Problem Soils" for general land development and may pose some difficulties during earthwork activities which may require engineering solutions.

Slope runoff and seasonal high-water tables in the spring and winter are the main limitations for building site development. Some of these limitations can be overcome by using subsurface

drainage and by diverting the surface water. Additionally, limitations for vehicular traffic support are anticipated within these soil types but can be overcome by strengthening or replacing the base material.

A Soil Type Map is included in the Appendix of this report.

3.3 Subsurface Observations

Based on the results of our field investigation, the subsurface conditions and stratification as observed in the borings were generally found to be consistent with the published geologic data. Attempts have been made to group the soils into distinctive strata. The variations identified as discontinuities within the individual strata should be anticipated across the site. Therefore, it is important to note that the stratifications of the soil profiles in the boring logs represent the approximate boundaries between the different layers. In-situ transitions within strata may be more gradual rather than distinct. Surface materials at the eight (8) borings consisted of approximately 4 to 8 inches of topsoil.

Stratum I: Cohesive Soils

This stratum was encountered in the eight (8) borings. These soils were encountered beneath the surficial topsoil and extended to the top of Stratum II at depths ranging between 3 and 10.5 feet below existing grades. The material consists of Sandy Lean CLAY (CL), Sandy SILT (ML), and Fat CLAY (CH) with varying amounts of rock fragments. Stratum I soils were typically very soft to hard (cohesive soils) based on SPT N-values ranging between 4 and 50 blows per foot (bpf). The higher SPT N-values are likely due to the rock fragments in the stratum.

Stratum II: Weathered Rock (Siltstone)

Stratum II was encountered in the eight (8) borings. This stratum consists of Weathered Rock (Siltstone) encountered at depths ranging between 3 and 10.5 feet below existing grade. This stratum consists mainly of fragmented rock particles and cemented but discontinuous rock layers that have been subjected to alteration by chemical and/or mechanical factors.

This material retains the properties of the parent rock. The depth of this stratum is generally indicative of the last rippable material before difficult excavation techniques, such as chipping, pneumatic hammering and rock saw excavation or blasting for deep utilities, would typically be required during site development.

Beneath this stratum, the transition into a more competent rock can be expected. The borings were extended through Stratum II and terminated at depths ranging between 6.5 and 14.3 feet below existing grades.

3.4 Depth to Weathered Rock

Severely weathered and decomposed rock has been defined as residual rock material with standard penetration test N-value of 60 bpf or higher. Non-rippable rock depth is identified on the boring logs as the depth where the SPT blow count is 50 blows required for one-tenth of a foot or less.

Auger refusal and spoon refusal typically indicates depth to non-rippable rock. The auger refusal was encountered in Boring B-4. At this site, the auger advanced to the depths ranging between 6.5 and 14.3 feet below existing ground level.

3.5 Groundwater Conditions

Observations for groundwater are typically made during sampling and upon completion of drilling. In auger drilling water is not introduced into the test locations and groundwater position can often be determined by observing water flowing into or out of the open borehole. Furthermore, visual observation of soil samples retrieved during testing operations can often be used in evaluating groundwater conditions.

Groundwater was not encountered in the eight (8) borings and they were observed to be dry at completion of drilling operations; however, perched water tables commonly encountered in this area. The borings were backfilled with auger cuttings on completion for safety concerns; therefore, 24-hour water observations were not made. The perched water is typically related to rainfall entering the site, either directly or by overland flow from adjacent properties, and percolating down through the slightly to moderately permeable surficial soils until it reaches the soil rock interface. Once the water reaches the nearly unweathered, virtually impermeable, siltstone, it begins to flow along the intersection of the unweathered rock and the soil. This groundwater flow continues downhill, occasionally surfacing to form

as wet springs and intermittent streams. Usually a persistent water table occurs only in low-lying areas and adjacent to creeks; otherwise, it is related to rainfall and thus only transient in occurrence. Impervious layers, highly permeable fracture zones and utility beds can distort seepage patterns; consequently, only the lower limits of the saprolite remain saturated for extended periods.

The soil test borings caved at depths ranging between 1.5 and 3.5 feet. Groundwater seepage should be anticipated below the cave-in depths recorded during drilling due to hydrostatic conditions that caused water-softened sidewall soils to collapse into the open borehole.

3.6 Laboratory Test Results

Soil classification, moisture content, liquid limit, and grain size were performed on representative samples recovered from the borings. The laboratory soil testing was performed per ASTM D-2487. The data obtained from the laboratory tests are included on the respective boring logs or on separate sheets in the Appendix at the end of this report.

The summary of the laboratory test results is shown in Table 2 below:

Table 2 – Laboratory Test Results Summary

Sample Location	USCS Classification	Percent Fines (-#200 Sieve)	Liquid Limit (LL)	Plasticity Index (PI)	Natural Moisture (%)
B-5 (S-3 @ 5.0'-6.5')	CL	89.3	42	19	19.5
B-7(S-2 @ 2.5'-4.0')	CL	96.0	40	16	19.2

4.0 PRELIMINARY GEOTECHNICAL RECOMMENDATIONS

The following information is based upon the findings of this geotechnical study and a review of a preliminary sketch layout plan prepared by Dewberry dated July 16, 2015 and provided to us by Van Metre Communities, Inc.

We believe that the project site is generally suitable for the construction of the proposed detached and attached single family residences with the associated site. However, the development cost of this property may be influenced by the depth to weathered rock at this site. Relevant preliminary geotechnical concerns related to the construction and development of this site have been addressed in the following sections of this report.

The following sections provide preliminary general construction guidelines for earthwork activities which include excavations for underground site utilities and the preparation of subgrades for access roads and drive ways. Preliminary Geotechnical recommendations are also provided for the support of building foundations and possible below grade foundation walls.

4.1 Suitability of On-site Materials

The on-site Sandy Lean CLAY (CL) and Sandy SILT (ML) with varying amounts of rock fragments soils of Stratum I are generally considered suitable for use as structural fill. However, materials having liquid limit values greater than 40 and plasticity index values equal to or greater than 15, such as Fat CLAY (CH) and Elastic SILT (MH) soils, are generally not suitable for use as compacted structural fill to support foundations or pavements. These soils are subject to high shrink-swell potential with variations in soil moisture.

Expansive soils including natural and/or man-placed fill, such as Fat CLAY, if encountered are not considered suitable for building pads, foundation backfill, and backfill around structures. Expansive soil is defined by the International Building Code as: "Soils meeting all four of the following provisions. They shall be considered expansive, except that tests to show compliance with Items 1, 2 and 3 shall not be required if the test prescribed in Item 4 is conducted:

1. Plasticity Index (PI) of 15 or greater determined in accordance with ASTM D 4318.

2. More than 10 percent of the soil particles pass a No. 200 sieve (75 μm), determined in accordance with ASTM D 422.

3. More than 10 percent of the soil particles are less than 5 micrometers in size, determined in accordance with ASTM D 422.

4. Expansion Index greater than 20, determined in accordance with ASTM D 4829."

Therefore, all borrow materials, including the fine-grained fraction of SC and SM type soils, should be tested for classification and shrink/swell characteristics prior to their use as structural fill or backfill material.

4.1.1 High Plasticity Soils

High shrink swell type soil (CH/MH) was encountered in Boring B-5. These soils are common in this geology. If these soils (CH/MH) are encountered at or near footing subgrade during construction, the material shall be removed and replaced with properly compacted structural fill. As an alternative method, the foundation subgrade shall be extended to a depth of at least 4 feet below finished exterior grade, or through the (CH/MH) materials if less than 4 feet below finished exterior grade. The deeper embedment depth will extend the footings below the typical depth of seasonal moisture fluctuation in the high plasticity/elastic soils. At the 4-foot minimum embedment depth, the footing may bear on high plasticity/elastic (CH/MH) type soils or on non-expansive soils. Also, if footings placed at a normal embedment depth of 2.5 feet extend below the thickness of the high plasticity/elastic soils, then the footings can be structured at nominal depth.

4.1.2 Sedimentary Siltstone Rock

Sedimentary siltstone was encountered in the eight (8) soil test borings, at the site. Fresh, unweathered siltstone will typically excavate in large platy pieces that are difficult to compact for suitable long-term performance. Once exposed to moisture and weather conditions, these materials rapidly degrade due to weathering. Therefore, larger rock fragments must be compacted with sufficient energy to substantially break them down into soil size particles during construction.

As noted, the siltstone onsite is expected to be non-durable and will likely break down after weathering over a short duration. Durability is the term used to describe the ability of a rock or rock-like material to withstand long term chemical or mechanical weathering without size degradation. Therefore, the use of this material should be carefully controlled to prevent settlement or consolidation of fill below roadways and structures. Selection of proper equipment and aggressive working of these materials will be necessary to reduce the rock to sufficient size and generate adequate fines to fill voids. In this regard, loose lift thickness in controlled fills should be maintained at 6 inches or less to ensure adequate crushing and blending of the rock with soil and rock fines. Maximum rock particle size should be kept within 3 to 4 inches with 2-inch thick plates within the upper 5 feet of fill beneath structures and the upper 2 feet of fill below pavement. The samples should have at least 20% passing the #200 sieve and 50% passing the #40 sieve. The maximum rock particle size in deeper fill should be maintained at 10 inches or less. Normally, a vibratory sheepsfoot roller with a minimum dynamic force of 15 to 25 tons is required to accomplish this size reduction.

Proctor compaction tests should be performed with at least three cycles to model compaction of the rock, each cycle demonstrating increasing mechanical breakdown of the rock. The Geotechnical Engineer should select the most appropriate "Proctor Curve" for earthwork compaction.

We expect that periodic wetting of the fill will also be necessary to bring it to an acceptable moisture level. Careful monitoring of this process of crushing, watering and blending is necessary to ensure a uniformly compacted fills mass. Therefore, full time observation and testing by a qualified representative of the geotechnical engineer is recommended during all controlled fill operations.

4.1.3 Rock Excavation/Blasting Operations

Grading and utility installation at depths greater than 2 to 3 feet below auger refusal or spoon refusal grades are anticipated to involve rock excavation/blasting. Siltstone can generally be excavated an additional 1 to 2 feet below the refusal depths noted utilizing single tooth rippers or hoe rams operating in open excavations or borrow pits. Below this depth, blasting is normally required.

The specification should include a definition of rock excavation to account for authorized changes to the scope of work. The following is a definition of rock excavation you may wish to consider: For trenches and footings, rock is defined as any material, which cannot be

dislodged by a CAT-325 hydraulic backhoe or equivalent without the use of drilling, blasting, or use of a hoe ram. For mass excavation during site grading, rock is defined as material that cannot be dislodged by a D-8 Caterpillar tractor, or equivalent, equipped with a hydraulically operated single-tooth power ripper. This classification does not include material such as loose rock, concrete, or other material that cannot be removed by conventional methods but, for reasons of economy in excavating, the contractor chooses to remove by drilling, blasting or hoe ramming.

Blasting for installation of utilities or mass excavation is a common practice in this area. Of paramount concern, and a problem of significant potential cost, is that of "overshooting" the rock, especially within laminated siltstone. Overshooting is more problematic in laminated materials where seismic forces generated by blasting are transmitted downward and outward beyond the shot point. Massive formations typically adsorb most of the shot force resulting in only localized breakage. Siltstone, however, is blast sensitive and will delaminate or fracture well beyond the desired shot zone. When the rock delaminates, the release of overburden pressure causes the underlying rock to expand vertically along bedding planes below the desired depth of excavation. This can result in settlement if the fractures later consolidate under the load of a foundation or embankment. Footings placed to bear over the zone delaminated by blasting can experience settlement as the rock either decomposes or reseats under load to a more consolidated state.

Weathering can exacerbate settlement after it is disturbed. Therefore, charge patterns and depths should be carefully selected. If over-blasting occurs, the disturbed materials must be removed and replaced, often at significant cost. The geotechnical engineer should meet with the grading contractor and blasting crews to review shot patterns and blasting procedures to minimize difficulties associated with over-blasting, if necessary.

4.2 Existing Structures/Fills

No man-placed fills or existing structures were found during our site visit and preliminary subsurface investigation; however, all existing on-site structures, if encountered, including utilities (wells, septic pumps, drain fields, etc.), and existing man-placed fill material at the site shall be removed in their entirety and properly abandoned within the offset stakeout of the proposed building locations and pavement areas. All existing wells shall be abandoned in accordance with County Health Department criteria and requirements.

4.3 Excavation of On-site Materials

We anticipate that conventional earth-moving equipment, equivalent to a CAT 963 front-end loader and CAT 325 backhoe, will be suitable for the excavation of the on-site Stratum I soils. Heavy earth-moving equipment, i.e., dozers with ripper attachments is recommended for mass excavation and grading into severely weathered and decomposed rock layers of Stratum II as mentioned earlier in **Section 4.1.2** of this report.

Based on the findings of the borings, however, rock excavation/blasting measures may be necessary for the installation of deep site utilities having invert elevations below spoon refusal as defined on the boring log sheets. We recommend the boring logs should be reviewed carefully to identify the location, depth and thickness of non-rippable rock layers. We further recommend that all site contractors should be prepared to test drill the location of all deep utilities to accurately determine rock excavation quantities during bidding.

Depending on the season and precipitation, groundwater seepage may be encountered during excavations, particularly at the soil/rock interface. Therefore, temporary dewatering measures, i.e. sump pits and continuous pumping, may be required during the excavation for site utilities or below-grade foundations.

4.4 General Site Grading

4.4.1 Earthwork Operations

We recommend that the earthwork clearing operations be extended at least 10 feet beyond the building and pavement limits as shown on the approved final plans. Stripping limits should be extended an additional 1 foot for each foot of fill required at the building's exterior edge. The proper execution of earthwork operations will be a key factor in the development of the project site. Specifically, preparations of the subgrade, field identification of high plasticity soils, (CH/MH) soils, and existing fill materials encountered in the boring log locations and other areas on site. This must be performed throughout the proposed structural areas along with the use of acceptable fill materials placed with adequate compaction effort. The following sections outline the earthwork requirements.

4.4.2 Existing Fill Material

Existing fill was not encountered during this preliminary subsurface investigation. However, if undocumented man-placed fill is encountered during construction, the existing fill shall be removed in its entirety and replaced with suitable on-site materials and compacted back to proposed design grades. This material should be replaced with structural fill material that meets the criteria outlined in **Section 4.4.5** of this report.

4.4.3 Stripping of Topsoil

All areas proposed for cut or fill should be cleared, grubbed and stripped of all topsoil to the proposed limits of construction as shown on the approved plans for this project. The depth of the topsoil encountered at the test boring locations was approximately 4 to 8 inches. However, this depth can increase in Swales, low-lying areas, near existing structures, and if stripping occurs during the winter months. As a result, we recommend stripping depths between 10 and 12 inches to remove the topsoil and deeper organic root material. In wooded areas of the site, root balls from the trees must be excavated deeper to remove the major roots, thus increasing the volume to be excavated and trucked off site; therefore, we recommend that the depth of stripping be determined in the field. Topsoil may be stockpiled for later use in landscape areas.

4.4.4 Proofrolling

All areas delineated and surveyed in the field to receive structural fill should be proofrolled with a fully loaded rubber-tired dump truck, having an axle weight of at least 10 tons to identify all soft or unstable areas to be undercut. Due to the presence of softer, near surface natural deposits, localized soft and/or unsuitable deposits requiring removal and replacement should be expected during proofrolling operations, especially in low lying areas. The geotechnical engineer or his assigned representative shall decide on the depth of undercut to avoid the removal of suitable or otherwise firm soils.

4.4.5 Borrow Material

All borrow material, whether on-site or imported from an off-site source, shall be tested for suitability and quality prior to its use as fill or backfill. The material shall be tested to determine particle gradation, plasticity, maximum dry density, and optimum moisture content.

The following standard tests shall be performed to determine the above properties of all imported fill material:

Particle Size Analysis of Soils	ASTM D-6913
Atterberg Limits	ASTM D-4318
Standard Proctor	VTM-1, ASTM D-698

Structural fill material shall consist of quality, free of organic, low plasticity soil that classify as GW, GP, GM, GC, SW, SP, SC, CL, ML or SM in accordance with ASTM D-2487 and shall have a maximum of 30% retained on a standard ¾-inch sieve. Structural fill that classifies as SC and SM shall be tested to ensure that the material has a liquid limit less than 40 and plasticity index less than 15. Fine-grained material from on or off site borrow sources that classifies as CL and ML should be tested to ensure that the material has a liquid limit of less than 40 and plasticity index less than 15, and a maximum of 70% passing a U.S. Standard No. 200 sieve. All fill material should be free of ice, snow, organic material, construction debris, rock sizes greater than 4 inches, marine clay soils, or other deleterious material.

4.4.6 Fill Placement and Testing

In- place density tests should be performed with at least one test per 2,500 square foot of fill area for each lift of fill placed.

Fill material placed in pavement areas should be placed in no greater than 8-inch thick loose lifts and compacted to at least 95% of the maximum dry density as determined per VTM-1 method (ASTM D698). However, the final one (1) foot of fill should be compacted to 100% of the maximum dry density of the same standard. The moisture content of the fill being placed should be within a 2 percent deviation of the optimum moisture content of the material. The controlled fill should extend at least 2 feet laterally outside the curb line plus one (1) foot for every foot of fill above the subgrade. All VDOT roadways and frontage improvements should be constructed in accordance with VDOT Road and Bridge Specifications.

Fill materials in building areas should be placed in no greater than 8-inch thick loose lifts and compacted to at least 95% of the maximum available dry density as determined in accordance with the Standard Proctor (ASTM D698). Deep fill is not anticipated in this site, however, where fill depths in excess of 10 feet are required, if applicable, we recommend that the compaction criteria be increased to 98% of the maximum dry density obtained in accordance

with ASTM D698 the Standard Proctor Method for the full depth of fill. The moisture content of the fill being placed should be within a 2 percent deviation of the optimum moisture content of the material. The controlled fill for the building pads shall extend at least 5 feet laterally outside the building pad plus 1 foot for each foot of fill above the existing subgrade.

Granular soils (Unified Soil Classification System SM or better) should be compacted with a smooth drum vibratory roller or rubber-tired compactor. Cohesive soils should be compacted with a sheepsfoot roller, preferably a Cat 815.

Fill material should not be placed on frozen soils. All frozen soils should be removed prior to continuation of fill operations. Borrow fill materials should not contain frozen materials at the time of placement. All frost-heaved soils should be removed prior to placement of fill, stone, concrete, or asphalt.

All new fill materials should be properly benched into the existing slopes to prevent the formation of shear planes at the interface of the fill mass and the existing natural soils. The width and height of the bench will depend upon the slope of the existing hillside.

To ensure proper compaction efforts, field density determinations should be performed in accordance with specifications set forth in ASTM D-6938 (nuclear method) or D-1556 (sand cone method). We recommend that density tests be performed on every lift of compacted structural fill placed in building areas.

All earthworks should be monitored on a full-time basis by a qualified inspector, acting under the guidance of a Professional Engineer registered in the Commonwealth of Virginia.

4.4.7 Groundwater Control

Groundwater conditions encountered at the site are strongly influenced by surface water flow and infiltration. Specifically, water that enters the site migrates downward to the interface of the soil and the deeper dense soils. Depending on the time of year construction occurs, perched groundwater may be encountered during excavations. Dewatering measures, including sump pits and continuous pumping efforts, are expected to be necessary, if perched water is encountered.

4.5 Preliminary Foundation Support Recommendations

Depending on the final grading and lower slab elevations, the proposed building can be supported on conventional shallow foundations consisting of continuous wall or column spread footings. The footings may be supported on approved low plasticity natural soils, weathered rock, or newly placed compacted structural fill.

Footings supported on natural undisturbed soils or newly placed compacted structural fill with an SPT-N value of at least 8 blows per foot (bpf) may be designed for a net allowable soil bearing pressure of 2,500 psf. The net allowable soil bearing pressure refers to that pressure which may be transmitted to the foundation bearing soils in excess of the final minimum surrounding overburden pressure. The use of the above-specified uniform allowable bearing capacity will minimize the total settlement to 1 inch with a differential settlement of 0.75-inch.

This allowable bearing pressure assumes that the bottom of the proposed footings will bear approximately 24 inches below the proposed finished floor elevation. Most of the soils at the foundation bearing elevation at the vicinity of the soil test borings are anticipated to be suitable for support of the proposed development on a shallow foundation system. Soft, unsuitable, and/or existing fill soils when observed at the footing bearing elevations should be undercut, removed, and replaced with an approved engineered fill.

Under no circumstances shall footings that are supported on near surface soft soils or new-engineered fill be designed for a bearing pressure greater than 2,500 psf without a written approval of the geotechnical engineer.

Footing lines to be located along a transition zone from natural soils to recently placed compacted structural fill, shall be reinforced with a minimum of two (2) #5 bars, which extend at least 60 inches horizontally in each direction from the transition plane to lessen the detrimental effects of differential settlement along the transition plane. The removal of existing fill or unsuitable materials, and replacement with compacted structural fill for footing support shall extend horizontally one foot beyond the edges of the footing for every 2 feet of vertical undercut.

If footing excavations encounter isolated areas of relatively hard rock at or above the planned footing elevations, we recommend that the rock should be over-excavated to a depth of approximately one foot below the foundation bearing elevation and backfilled with structural

fill as described in **Section 4.4.6** of this report. The footings will then bear on more similar materials to limit stress concentrations and associated cracking.

If the visual inspection of the subgrade material and/or hand auger recovered material reveals the presence of fine-grain soils, i.e. clays or silts, we recommend that a sample of the soil subgrade be tested to ensure that high plasticity soils, having liquid limit values greater than 40 and plasticity index values equal to or greater than 15, are not present at the footing subgrade. Highly elastic or plastic soils, when encountered, should be undercut to at least 4 feet below the footing subgrade or to the depth of high plasticity soil, whichever comes first, and replaced with properly compacted structural fill. As an alternative, the footings may be lowered 4 feet below finished exterior grade or through the high plasticity soils, whichever comes first. This minimum depth for the foundation placement is recommended to prevent differential movement of the footing because of variable moisture changes in high plasticity soils.

The use of the above-specified uniform allowable bearing capacity will limit the total settlement to 1 inch with a differential settlement of ½ inch in accordance with standard engineering practices.

Due to the natural weathering of the residual soils, "stepping down" of footings 1 to 2 feet below designed grade to meet the required bearing capacity should be anticipated during construction.

Suitable natural subgrade elevations between boring locations may be estimated by interpolation. Final subgrades should be verified in the field by the Geotechnical Engineer or his designated representative.

As a minimum, wall footings should not be less than 18 inches in width and column footings should not be less than 30 inches in size for punching shear consideration only. Adequate frost cover protection for all exterior footings shall be provided at 2.5 feet below exterior grade along the footing lines.

Proper construction procedures should be followed to maintain the quality of the footing excavations. Footing subgrades should be protected from precipitation, seepage, surface run-off and frost. We recommend that footings be cast the same day of excavation. If that was not possible, then the footing subgrade shall be protected by pouring a 2-inch thick mud mat

of lean concrete in the footing trenches. The thickness of the mud mat may not count as part of the footing thickness.

Finally, it should be noted that footings placed to bear on rock layers that have experienced delamination and possibly heaving due to blasting can experience settlement as the rock consolidates and reseats under the concentrated loads of the building. Therefore, the delaminated and/or heaved rock should be removed below the foundations.

4.6 Ground-Supported Slabs

Lower floor slab-on-grade subgrades shall be supported on low plasticity natural soils or on approved compacted structural fill. A subgrade reaction modulus of 125 pci may be used for the design of floor slabs-on-grade supported on low plasticity natural soils or approved compacted structural fill.

If the visual inspection of the subgrade material and/or hand auger recovered material reveals the presence of fine-grain soils, i.e. clays or silts, we recommend that a sample of the soil subgrade be tested to ensure that high plasticity/elastic soils, having liquid limit values greater than 40 and plasticity index values equal to or greater than 15, are not present at the slab subgrade. Highly elastic or plastic soils, when encountered, should be undercut to at least 2 feet below the slab subgrade and replaced with suitable properly compacted structural fill.

We recommend that all grade slabs be designed to be discontinuous at walls and pier footings so that differential settlement will not induce shear stresses in the floor slab. Furthermore, we recommend mesh reinforcement be included in the design of the floor slab to reduce shrinkage crack that may develop near the surface of the slab. The slab should rest upon a minimum of 4 inches of free draining granular base. A 6-mil polyethylene liner or similar vapor barrier should be provided between the underside of the slab and the granular base to limit moisture migration.

Where foundation below grade walls are considered (if applicable) we recommend that lateral and perimeter drains be installed below slabs-on-grade as discussed in **Section 4.8, "Waterproofing and Foundation Drains"**, of this report. Slab-on-grade subgrades shall be inspected by the Geotechnical Engineer for suitability and firmness prior to placement of the stone layer.

4.7 Below-grade Foundation Walls

Below-grade basement walls, if applicable, can be designed for an equivalent fluid pressure of 60 psf per foot of wall depth. The equivalent fluid pressure recommended assumes that on-site silty sand (SM) and/or sandy silt (ML) will be used as backfill against below grade walls. Soils having liquid limit values greater than 40 and plasticity index values equal to or greater than 15 shall not be allowed as backfill against the foundation walls. Backfill material shall not contain rock sizes greater than 4 inches in diameter. The backfill material shall be compacted to 95% of the maximum dry density in accordance with ASTM D698 Standard Proctor. Lighter compaction equipment should be used close to the below grade walls.

The lateral pressures recommended above also assume that adequate drainage behind the wall will be provided to prevent accumulation of free water. The recommendations do not include the effects of surcharge loading which shall be included in the wall design as additional lateral pressure acting uniformly against the wall.

For calculation of lateral pressure from surcharge loads, a Typical Lateral Earth Pressure Diagram is presented at the Appendix of this report. This will provide active and at-rest earth pressure coefficients for the wall design.

4.8 Waterproofing and Foundation Drains

We anticipate that seasonal perched groundwater levels may rise near proposed below grade foundations. Therefore, interior and exterior foundation drains are required where below grade walls are planned. The drain systems should be exterior to the wall and should include either granular backfill or man-made drainage materials to remove water from behind the walls.

The one-foot annular space between the outside of the walls and the excavation should be backfilled with a granular fill extending to a level of approximately 2 feet below the final outside grade. The remaining 2 feet should consist of clayey material (CL, CH/MH) to limit the amount of surface water infiltration into the granular material, and thus, reduce the excess water to be handled by the drainage system. The ground surface adjacent to the below grade walls should be kept properly graded to prevent ponding of water adjacent to the below grade walls.

The exterior drain shall consist of a 4-inch perforated flexible tube embedded in 12 inches of VDOT No. 57 stone or washed bank run gravel. The stone shall be wrapped with filter fabric to avoid clogging with fines.

The interior drain shall be installed under the slab and shall tie into the exterior drain via weep holes through the footings. The weep holes, 1.5-inch diameter PVC pipes, shall be spaced at no more than 8 feet on center. The interior drain shall also consist of a 12-inch layer of VDOT No. 57 stone wrapped with filter fabric. A properly installed permanent drain system will help reduce dampness in the lowest levels as a result of water that may become trapped in the soil adjacent to any below grade excavations.

The invert of the interior drain should be higher than the exterior drain to allow the flow of groundwater through the weep holes and safely discharge away from the structure if the structure is daylighted. The outlet pipe from the exterior drain shall be tied to the storm sewer or discharge to a point of daylight. The invert of interior drain should be lower than the exterior drain to allow the flow of groundwater through the weep holes and safely discharge away from the structure if the structure drains to a sump pit as directed by the Civil Engineer.

4.9 Stormwater Management (SWM) Facility

Based on the provided sketch plan the project will include the construction of a pond located northeast of the site. The SWM pond is planned to be placed in 1.3± acres east of residential area. We anticipate that the pond will be mostly in cut area and some man-placed fill may be required to achieve final dam elevations based on the site topographic map and provided layout.

Soil test boring B-5 was performed in the vicinity of the SWM ponds at the proposed pond basin and as indicated in Boring B-5, high plastic soil (CH) was encountered to the depth of 2 feet below ground level. In this boring depth to the weathered rock is approximately 10.5 feet below the surface level.

Man-placed fill was not encountered in Borings B-5 in vicinity of proposed SWM pond and it is not anticipated to be found in this area; however, if the undocumented man-placed fill encountered, it shall be removed in their entirety and replaced with structural fill material that meets the criterial outlined in **Sections 4.4.5** of this report.

The structural fill, if requires to be placed at the embankment or basin of this pond, shall consist of approved borrowed material that meets the requirements presented in Section 4.4.5 of this geotechnical report. Soils meeting the requirements in Section 4.4.5 are expected on-site. No additional information was provided for the pond; however, depending on whether this pond is a dry pond or a wet pond, a clay core, cut-off trench, and/or pond liner may be necessary across the basin to limit seepage through the dam embankment.

4.10 Underground Site Utilities

We anticipate that conventional earth-moving equipment will be suitable for the excavation of the on-site soils to the depths indicated in the test pits. Perched groundwater may be encountered during trench excavations, particularly in low-lying areas of the site.

Fill placement is expected in existing natural swales, intermittent streams, and permanent streams. Based on our experience with previous projects, surface water and groundwater will tend to flow along its natural path through the swales and streams. We recommend a French Drain system, or alternative pipe drainage system be constructed at the bottom of the existing natural swales and intermittent and permanent streams. The actual location and extent of the drainage system should be determined at the time of construction.

4.11 Seismic Design Considerations

The project site is located within a locality that employs the International Building Code (IBC), 2012 edition. As part of this code, the design of structures must consider dynamic forces resulting from seismic events. These forces are dependent upon the magnitude of the earthquake event as well as the properties of the soils that underlie the site.

Part of the IBC code procedure to evaluate seismic forces requires the evaluation of the Seismic Site Class, which categorizes the site based upon the characteristics of the subsurface profile within the upper 100 feet of the ground surface.

To define the Seismic Site Class for this project, and in accordance with your requested level of assessment, we have interpreted the results of the soil test borings drilled within the project site per Section 1613.5 of the code. The estimated soil properties are based upon data available in published geologic reports as well as our experience with subsurface conditions in the general site area.

Based upon our assessment, it is our opinion that the subsurface conditions within the areas of the site planned for building construction are consistent with the characteristics of Site Class "C" as defined in Table 1613.5.2 of the building code.

4.12 Pavement

1. Pavement

For the design and construction of the exterior pavement, we recommend that all topsoil and any soft or unsuitable materials be removed from the paved areas. The subgrade for paved areas within the right-of-way of roadways and parking areas, including curbs and sidewalks are anticipated to consist of onsite natural soil or newly placed and compacted structural fill. These soils are generally considered adequate for pavement support. However, final subgrades should be proof-rolled under the observation of the Geotechnical Engineer or his designated representative to determine whether soft or highly organic areas exist that will require removal and replacement with compacted structural fill. Soils placed and compacted in accordance with the requirements outlined in **Section 4.4.6, "Fill Placement and Testing"** of this report are considered adequate for pavement support.

If fine-grained soils having liquid limit and plasticity index values greater than 40 and 15, respectively, are encountered at proposed subgrades, these materials should be undercut to a depth of at least 2 feet below the pavement subgrade and replaced with properly compacted structural fill.

Prior to placement of subbase stone, we recommend that the subgrade be proof-rolled with a loaded dump truck to detect any soft, yielding or high plasticity soils. Unstable areas should be undercut and replaced with controlled-compacted fill. The fill should be compacted per requirements outlined in **Section 4.4.6, "Fill Placement and Testing"**, of this report.

An important consideration in the design and construction of pavements is surface and subsurface drainage. Where standing water develops, either on the pavement surface or within the base course layer, softening of the subgrade and other problems related to the deterioration of the pavement can be expected. Furthermore, good drainage should minimize the possibility of the subgrade materials becoming saturated over a long period of time.

If perched groundwater is encountered at or near pavement subgrade levels during construction, the Geotechnical Engineer may recommend the use of pavement underdrains (Standard VDOT UD-4) as necessary. All pavement materials and construction methods should comply with the current VDOT specifications. We would be pleased to be of further assistance to you in the design of the project pavements by providing additional recommendations during construction of the project.

2. Sidewalks

Although the performance of sidewalk installations at this site is not a structural component, we recommend that all sidewalk construction be underlain by at least 4 inches of granular material having a maximum aggregate size of 1.5 inches and no more than 2% passing the #200 sieve. This granular layer will reduce frost heaving of the exterior sidewalk slabs. In addition, positive drainage should, through the use of perforated or porous drain pipes, be provided under these sidewalks, and drainage should be routed to a suitable outlet.

3. Roof Drains

To limit the potential for creating wet yards surrounding the buildings and to minimize water infiltration below pavements, we recommend that the roof drain lines be piped to the nearest storm sewer inlets. In addition, where a wall is being proposed behind building and slopes directing runoff towards the top of wall, a drainage swale should be constructed above the

4.13 Excavated and Graded Slopes

For temporary cuts or excavations, side slopes as steep as 1.5H:1.0V are possible in the natural soils observed at this site. For long-term stability, side slopes should be no steeper than 3H:1V in either natural soils or fill soils. All temporary and permanent slopes should be aggressively protected, such as by seeding and mulching as soon as possible after placement, to prevent from sloughing and erosion.

5.0 CLOSING REMARKS

5.1 Construction Considerations

Major difficulties during construction of this project are not anticipated, provided some precautionary measures are taken during the removal and replacement of the exiting fill and to ensure that preparation of the subgrade is accomplished by the recommended procedures. Therefore, we recommend that all excavations be properly dewatered, as necessary, using conventional sump pit and pumping operations. The site should be graded such that surface water runoff is directed away from the excavations.

The surficial soils contain fines which are considered moderately erodible. The Contractor should provide and maintain good site drainage during earthwork operations to help maintain the integrity of the surface soils. The surface of the site should be kept properly graded to enhance drainage of the surface water away from the proposed construction areas during the earthwork phase. We recommend that surface drainage be diverted around the proposed building area without significantly interrupting its pattern. Other practices would involve sealing the exposed soils daily with a smooth drum roller to reduce the potential for infiltration of surface water in the exposed soils. All erosion and sedimentation shall be controlled in accordance with sound engineering practice and current County requirements.

5.2 Qualifications

In providing this exploration and professional preliminary recommendations our services were performed in accordance with generally accepted engineering principles and practices. No warranty, either expressed or implied, is made to the professional advice included in this report.

This preliminary report has been prepared for the exclusive use of the Client to assist them and their engineers during the design and construction phases of the proposed development. The analysis and conclusions in this report were based on the results of subsurface investigations performed throughout the development history of this property.

Once final grading plans have been prepared by the Civil Engineer, GSI should be contacted to review the updated plans and provide a final geotechnical report for County submittal and construction purposes.

Please be advised that although the test borings were logged by experienced engineers, it is sometimes difficult to record changes in subsoil stratigraphy within narrow limits; therefore, some deviation in the materials reported on the field logs and the materials encountered in the field should be anticipated. Any change in soil type observed during construction or change in proposed location of the structure or grades should be provided to us so that we may modify portions of this text if necessary. Any conclusions or recommendations that are based on data contained in this report that are made by others are the responsibility of others.

Should any builders and/or future developer(s), elect to retain the services of another engineering firm for the development of this project, such action constitutes a legal released of our firm from all liabilities and responsibilities arising out any and all deviations, modifications, and alterations to the requirements of this report.

It is probable, due to borehole spacing requirements and the passage of time, variations in reported soil and groundwater conditions may be found during construction. We strongly recommend that such variations be immediately brought to our attention to determine their effect on foundation design.

This report does not address any environmental issues or impact, if any, on the project.

APPENDIX

Site Vicinity Map

Prince William County Soil Map

Unified Soil Classification System

Reference Notes for Boring Logs

GSI Test Boring Logs (B-1 through B-8)

Generalized Soil Profile

Laboratory Test Results

Lateral Earth Pressure Diagram

Residential Below Ground Drainage Detail

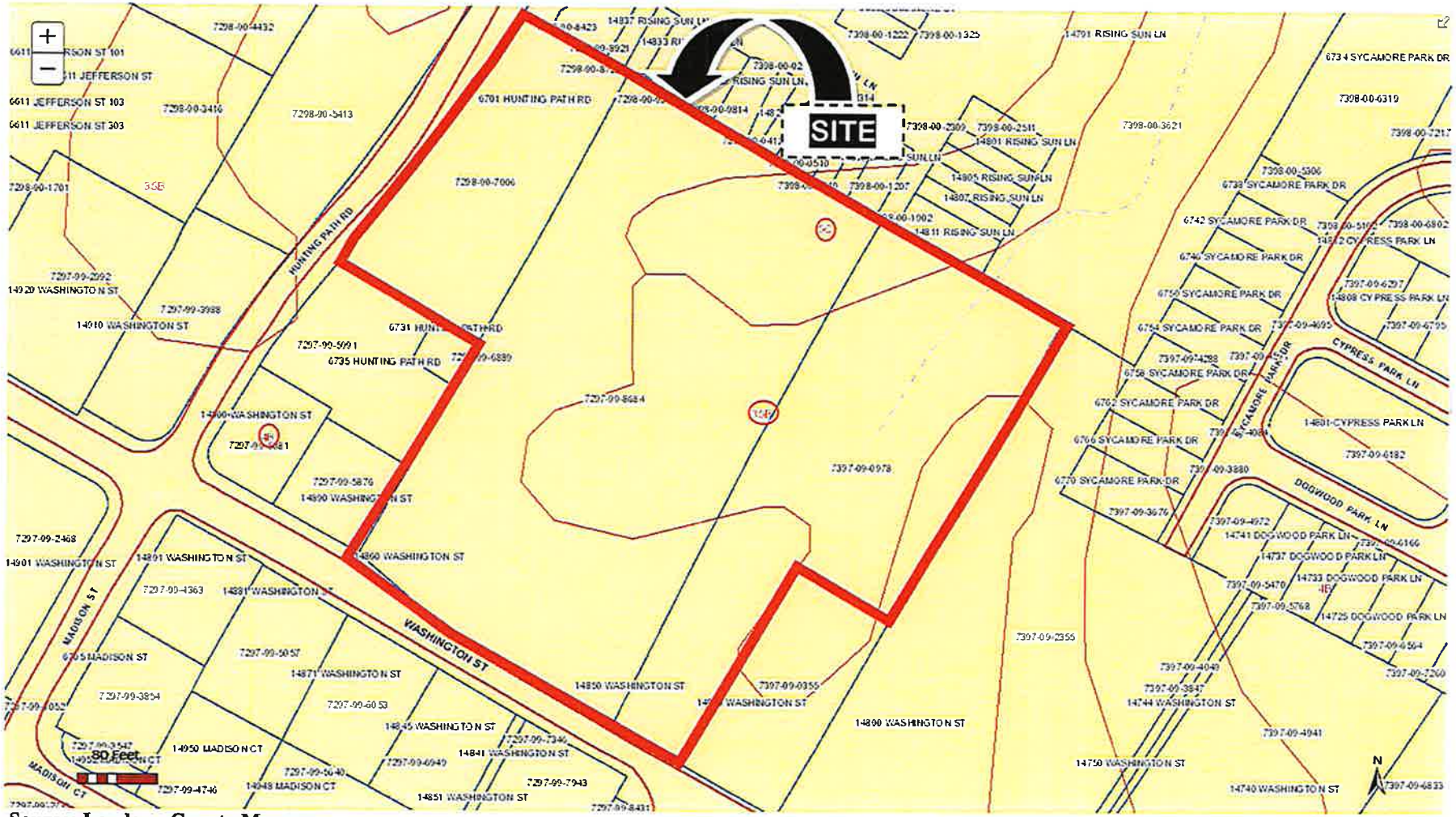
NRCS - Custom Soil Resource Report for Prince William County

GSI Boring Location Plan (BLP)

Source: Google Earth

Scale: As shown

Geotechnical Solutions, Inc.	SMITH – HAYMARKET PRINCE WILLIAM COUNTY, VA	GSI Project No. GP-182504 January 2019
	Geotechnical Solutions, Inc. 3859 Centerview Drive, Suite 160 Chantilly, VA 20151	SITE VICINITY MAP



Source: Loudoun County Mapper

Scale: As Shown

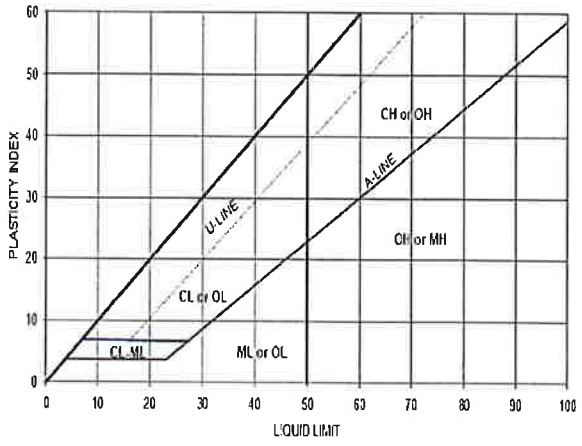
Geotechnical Solutions, Inc.	SMITH – HAYMARKET PRINCE WILLIAM COUNTY, VA	GSI Project No. GP-182504 January 2019
Geotechnical Solutions, Inc. 3859 Centerview Drive, Suite 160 Chantilly, VA 20151		SITE SOIL MAP

UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D 2487)

Major Divisions			Group Symbols		Typical Names	Laboratory Classification Criteria	
Coarse-grained soils (More than half of material is larger than No. 200 Sieve size)	Gravels (More than half of coarse fraction is larger than No. 4 sieve size)	Clean gravels (Little or no fines)	GW		Well-graded gravels, gravel-sand mixtures, little or no fines	$C_u=D_{60}/D_{10}$ greater than 4 $C_c=(D_{30})^2/(D_{10}xD_{60})$ between 1 and 3	
			GP		Poorly graded gravels, gravel-sand mixtures, little or no fines	Not meeting all gradation requirements for GW	
		Gravels with fines (Appreciable amount of fines)	GM[a]	d	Silty gravels, gravel-sand mixtures	Atterberg limits below "A" line or P.I. less than 4	Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols
				u		Atterberg limits below "A" line or P.I. less than 7	
			GC		Clayey gravels, gravel-sand mixtures		
	Sands (More than half of coarse fraction is smaller than No. 4 sieve size)	Clean sands (Little or no fines)	SW		Well-graded sands, gravelly sands, little or no fines	$C_u=D_{60}/D_{10}$ greater than 6 $C_c=(D_{30})^2/(D_{10}xD_{60})$ between 1 and 3	
			SP		Poorly graded sands, gravelly sands, little or no fines	Not meeting all gradation requirements for SW	
		Sands with fines (Appreciable amount of fines)	SM[a]	d	Silty sands, sand-silt mixtures	Atterberg limits above "A" line or P.I. less than 4	Limits plotting in CL-ML zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols
				u		Atterberg limits above "A" line or P.I. less than 7	
			SC		Clayey sands, sand-clay mixtures		
Fine-grained soils (More than half material is smaller than No. 200 sieve size)	Silts and clays (Liquid limit less than 50)		ML		Inorganic silts and very fine sands, rock flour, silty or clayey fine sands, or clayey silts with slight plasticity		
			CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays		
			OL		Organic silts and organic silty clays of low plasticity		
	Silts and clays (Liquid limit greater than 50)		MH		Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts		
			CH		Inorganic clays of high plasticity, fat clays		
			OH		Organic clays of medium to high plasticity, organic silts		
	Highly organic soils		Pt		Peat and other highly organic soils		

Determine percentage of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows:
Less than 5 percent GW, GP, SW, SP
More than 12 percent GM, GC, SM, SC
5 to 12 percent Borderline cases requiring dual symbols[b]

PLASTICITY CHART



[a] Division of GM and SM groups into subdivision of d and u are for roads and airfields only. Subdivision is based on Atterberg limits; suffix d used when L.L. is 28 or less and the P.I. is 6 or less; the suffix u used when L.L. is greater than 28.
[b] Borderline classifications, used for soils possessing characteristics of two groups, are designated by combinations of group symbols. For example: GW-GC, well-graded gravel-sand mixture with clay binder. From Table 2.16 – Winterkorn and Fang, 1975)

REFERENCE NOTES FOR BORING LOGS

I. Drilling Sampling Symbols

SS	Split Spoon Sampler	ST	Shelby Tube Sampler
RC	Rock Core, NX, NQ, BX, BQ, PX, PQ	PM	Pressure Meter
DC	Dutch Cone Penetrometer	RD	Rock Bit (tri-cone) Drilling
BS	Bulk Sample of Cuttings	AP	Auger Probe
HSA	Hollow Stem Auger	WS	Wash Sample

II. Correlation of Penetration Resistance to Soil Properties

Standard Penetration (blows/foot) refers to the blows per foot of a 140 lb. hammer falling 30 inches on a 2-inch OD split spoon sampler, as specified in ASTM D-1586. The blow count is commonly referred to as the SPT N-value.

A. Non-Cohesive Soils (Silt, Sand, Gravel and Combinations)

Blows/ft.	*Density*	*Relative Properties*	
Under 3 blows/ft.	Very Loose	Adjective Form	36% to 49%
4 to 6 blows/ft.	Loose	With	21% to 35%
7 to 10 blows/ft.	Firm	Some	11% to 20%
11 to 30 blows/ft.	Medium Dense	Trace	1% to 10%
31 to 50 blows/ft.	Dense		
51 to 80 blows/ft.	Very Dense		
Over 80 blows/ft.	Extremely Dense		

Particle Size Identification

Boulders		8 inches or larger
Cobbles		3 to 8 inches
Gravel	Coarse	1 to 3 inches
	Medium	½ to 1 inch
	Fine	¼ to ½ inch
Sand	Coarse	2.00 mm to ¼ inch (dia. Of lead pencil)
	Medium	0.42 to 2.00 mm (dia. Of broom straw)
	Fine	0.074 to 0.42 mm (dia. Of human hair)
Silt and Clay		0.0 to 0.74 mm (particles cannot be seen)

B. Cohesive Soils (Clay, Silt, and Combinations)

Blows/ft.	*Consistency*	*Unconfined Compressive Strength, Qp (tsf)*	*Degree of Plasticity*	*Plasticity Index*
Under 4	Very Soft	Under 0.25	None to Slight	0-4
4 to 5	Soft	0.25-0.49	Slight	5-7
6 to 10	Medium Stiff	0.50-0.99	Medium	8-22
11 to 15	Stiff	1.00-1.99	High to Very High	Over 22
16 to 30	Very Stiff	2.00-3.99		
31 to 50	Hard	4.00-8.00		
Over 51	Very Hard	Over 8.00		

III. Water Level Measurement Symbols

 At Completion  After 24 Hours Boring Cave-in

The water levels are those water levels actually measures in the borehole at the times indicated by the symbol. The measurements are relatively reliable when augering, without adding fluids, in a granular soil. In clay and plastic silts, the accurate determination of water levels may require several day for the water level to stabilize. In such cases, additional methods of measurement are generally applied.

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PROJECT: Smith - Haymarket **PROJECT NO.:** GP-182504
CLIENT: VAN METRE COMMUNITIES, INC. **BORING NO.:** B-1
PROJECT LOCATION: Prince William County, VA
LOCATION: As Shown on the Boring Location Plan **ELEVATION:** 366±ft MSL
DRILLER: Recon Drilling, Inc. (W. Rodas) **LOGGED BY:** S. Fallah
DRILLING METHOD: 2.25" I.D. HSA w/Autohammer (CME 550 ATV Rig) **DATE:** 1/9/2019
DEPTH TO WATER> INITIAL: ▽ Dry **AFTER 24 HOURS:** ▽ NA **CAVING>** ℄ 3.0 ft

Depth/Elevation (feet)	Graphic	Description	USCS Class.	Sample No.	Blow Counts	Recovery (in.)	Moisture Content (%)	Liquid Limit	Plasticity Index	%<#200
0 / 365		Topsoil [6-Inch]								
0.5		Dark Brown Sandy SILT, trace Mica, Moist, Medium Stiff to Very Hard	ML	S-1	3 4 4	15				
2.5 / 362.5				S-2	15 20 30	18	13.0			
4.5		Dark Brown Weathered Rock, Moist to Dry, Very Dense to Extremely Dense	WR	S-3	38 50/5"	11				
7.5 / 357.5				S-4	40 50/3"	9				
12.5 / 352.5				S-5	40 50/2"	6				
14.2 / 350		Boring Terminated @ 14.2 feet								

PI — LL
Water Content - ⊘
Penetration - ●
10 20 30 40 50
8
50
50/5"
50/3"
50/2"

Boring was back filled upon completion.
The elevation is based on Google Earth.

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

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PROJECT: Smith - Haymarket **PROJECT NO.:** GP-182504
CLIENT: VAN METRE COMMUNITIES, INC. **BORING NO.:** B-2
PROJECT LOCATION: Prince William County, VA
LOCATION: As Shown on the Boring Location Plan **ELEVATION:** 364±ft MSL
DRILLER: Recon Drilling, Inc. (W. Rodas) **LOGGED BY:** S. Fallah
DRILLING METHOD: 2.25" I.D. HSA w/Autohammer (CME 550 ATV Rig) **DATE:** 1/9/2019
DEPTH TO WATER> INITIAL: ▽ Dry **AFTER 24 HOURS:** ▽ NA **CAVING>** ∠ 3.0 ft

Depth/Elevation (feet)	Graphic	Description	USCS Class.	Sample No.	Blow Counts	Recovery (in.)	Moisture Content (%)	Liquid Limit	Plasticity Index	%<#200	PI — LL; Water Content - ; Penetration - (10 20 30 40 50)
0 / 362.5		Topsoil [5-Inch]									
0.4		Dark Brown Sandy Lean CLAY, trace Rock Fragments and Roots, Moist, Medium Stiff	CL	S-1	3 4 6	18	21.8				10
2.0 / 360		Dull Brown Sandy SILT, with Rock Fragments, trace Mica, Moist, Very Hard	ML	S-2	30 38 50/5"	17					88
3.0 / 357.5		Dark Brown Weathered Rock, Moist to Dry, Very Dense to Extremely Dense	WR	S-3	50/5"	5					50/5"
7.5 / 355				S-4	38 50/4"	10					50/4"
12.5 / 352.5				S-5	40 50/4"	10					50/4"
14.3 / 350		Boring Terminated @ 14.3 feet									
15 / 347.5											

Boring was back filled upon completion.
The elevation is based on Google Earth.

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

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PROJECT: Smith - Haymarket | PROJECT NO.: GP-182504
CLIENT: VAN METRE COMMUNITIES, INC. | BORING NO.: B-3
PROJECT LOCATION: Prince William County, VA
LOCATION: As Shown on the Boring Location Plan | ELEVATION: 364±ft MSL
DRILLER: Recon Drilling, Inc. (W. Rodas) | LOGGED BY: S. Fallah
DRILLING METHOD: 2.25" I.D. HSA w/Autohammer (CME 550 ATV Rig) | DATE: 1/9/2019
DEPTH TO WATER> INITIAL: ▽ Dry | AFTER 24 HOURS: ▽ NA | CAVING> ℄ 3.5 ft

Depth/Elevation (feet)	Description	USCS Class.	Sample No.	Blow Counts	Recovery (in.)	Moisture Content (%)	Liquid Limit	Plasticity Index	%<#200
0 / 362.5	Topsoil [4-Inch] (0.3)	CL	S-1	2 3 1	18				
	Dark Brown Sandy Lean CLAY, trace Roots, Moist, Soft								
2.5 / 360	(2.0) Dull Reddish Brown Sandy SILT, with Rock Fragments, trace Mica, Moist, Very Hard	ML	S-2	20 31 40	18	12.1			
	(3.0) Dark Reddish Brown Weathered Rock, Moist to Dry, Very Dense to Extremely Dense	WR	S-3	50/4"	4				
7.5 / 355			S-4	50/3"	3				
12.5 / 350	Boring Terminated @ 13.6 feet		S-5	50/1"	1				

PI — LL
Water Content - ⊘
Penetration - ●
10 20 30 40 50
4
71
50/4"
50/3"
50/1"

Boring was back filled upon completion.
The elevation is based on Google Earth.

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

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PROJECT: Smith - Haymarket | PROJECT NO.: GP-182504
CLIENT: VAN METRE COMMUNITIES, INC. | BORING NO.: B-4
PROJECT LOCATION: Prince William County, VA
LOCATION: As Shown on the Boring Location Plan | ELEVATION: 362±ft MSL
DRILLER: Recon Drilling, Inc. (W. Rodas) | LOGGED BY: S. Fallah
DRILLING METHOD: 2.25" I.D. HSA w/Autohammer (CME 550 ATV Rig) | DATE: 1/9/2019
DEPTH TO WATER> INITIAL: ▽ Dry | AFTER 24 HOURS: ▽ NA | CAVING> ℄ 1.5 ft

Depth/Elevation (feet)	Description	USCS Class.	Sample No.	Blow Counts	Recovery (in.)	Moisture Content (%)	Liquid Limit	Plasticity Index	%<#200
0 / 360	Topsoil [7-Inch]								
0.6	Dark Brown Sandy Lean CLAY, trace Roots and Rock Fragments, Moist, Stiff	CL	S-1	4 6 6	18	16.0			
1.5 / 2.5 / 357.5	Dark Reddish Brown Sandy SILT, with Rock Fragments, Moist, Very Hard	ML	S-2	30 50/4"	10				
3 / 5 / 355	Dull Reddish Brown Weathered Rock, Moist to Dry, Very Dense to Extremely Dense	WR	S-3	50/4"	4				
6.5 / 7.5 / 352.5	Auger and Spoon Refusal @ 6.5 feet		S-4	50/0"	0				
10 / 350									
12.5 / 347.5									
15 / 345									

PI — LL
Water Content - ⊗
Penetration - ●
10 20 30 40 50
12
50/4"
50/4"
50/0"

Boring was back filled upon completion.
The elevation is based on Google Earth.

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

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PROJECT: Smith - Haymarket | PROJECT NO.: GP-182504
CLIENT: VAN METRE COMMUNITIES, INC. | BORING NO.: B-5
PROJECT LOCATION: Prince William County, VA
LOCATION: As Shown on the Boring Location Plan | ELEVATION: 356±ft MSL
DRILLER: Recon Drilling, Inc. (W. Rodas) | LOGGED BY: S. Fallah
DRILLING METHOD: 2.25" I.D. HSA w/Autohammer (CME 550 ATV Rig) | DATE: 1/9/2019
DEPTH TO WATER> INITIAL: ▽ Dry | AFTER 24 HOURS: ▽ NA | CAVING> ℄ 3.5 ft

Depth/Elevation (feet)	Description	USCS Class.	Sample No.	Blow Counts	Recovery (in.)	Moisture Content (%)	Liquid Limit	Plasticity Index	%<#200
0 / 355	Topsoil [5-Inch]								
0.4 / 355	Dark Brown Fat CLAY, with Sand, trace Roots, Moist, Soft	CH	S-1	2 2 2	18				
2 / 352.5	Dark Brown Sandy Lean CLAY, trace Roots, Moist, Stiff	CL	S-2	4 6 6	18				
5 / 350	Dark brown lean CLAY		S-3	6 7 7	18	19.5	42	19	89.3
8.0 / 347.5	Dark Reddish Brown Sandy SILT, with Rock Fragments, Moist, Hard	ML	S-4	14 18 25	18	26.7			
10.5 / 345	Dark Brown Weathered Rock, Moist to Dry, Very Dense to Extremely Dense	WR							
12.5 / 342.5	Boring Terminated @ 13.6 feet		S-5	50/1"	1				
15 / 340									

PI — LL
Water Content - ⊗
Penetration - ●
10 20 30 40 50
4
12
14
43
50/1"

Boring was back filled upon completion.
The elevation is based on Google Earth.

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PROJECT: Smith - Haymarket **PROJECT NO.:** GP-182504
CLIENT: VAN METRE COMMUNITIES, INC. **BORING NO.:** B-6
PROJECT LOCATION: Prince William County, VA
LOCATION: As Shown on the Boring Location Plan **ELEVATION:** 361±ft MSL
DRILLER: Recon Drilling, Inc. (W. Rodas) **LOGGED BY:** S. Fallah
DRILLING METHOD: 2.25" I.D. HSA w/Autohammer (CME 550 ATV Rig) **DATE:** 1/9/2019
DEPTH TO WATER> INITIAL: ▽ Dry **AFTER 24 HOURS:** ▽ NA **CAVING>** ⊂ 3.0 ft

Depth/Elevation (feet)	Description	USCS Class.	Sample No.	Blow Counts	Recovery (in.)	Moisture Content (%)	Liquid Limit	Plasticity Index	%<#200
0 / 360	Topsoil [8-Inch]								
0.7	Dull Brown Sandy Lean CLAY, trace Roots, Moist, Soft	CL	S-1	WOH 2 2	18	25.8			
1.5	Dark Reddish Brown Sandy SILT, with Mica and Rock Fragments, Moist, Very Hard	ML	S-2	40 50/4"	10				
2.5 / 357.5	Dull Reddish Brown Weathered Rock, Moist to Dry, Very Dense to Extremely Dense	WR	S-3	50/3"	3				
5 / 355									
7.5 / 352.5			S-4	50/1"	1				
10 / 350									
12.5 / 347.5			S-5	50/1"	1				
13.6	Boring Terminated @ 13.6 feet								
15 / 345									

PI — LL
Water Content - ⊗
Penetration - ●
10 20 30 40 50
4
50/4"
50/3"
50/1"
50/1"

Boring was back filled upon completion.
The elevation is based on Google Earth.

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

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PROJECT: Smith - Haymarket **PROJECT NO.:** GP-182504
CLIENT: VAN METRE COMMUNITIES, INC. **BORING NO.:** B-7
PROJECT LOCATION: Prince William County, VA
LOCATION: As Shown on the Boring Location Plan **ELEVATION:** 373±ft MSL
DRILLER: Recon Drilling, Inc. (W. Rodas) **LOGGED BY:** S. Fallah
DRILLING METHOD: 2.25" I.D. HSA w/Autohammer (CME 550 ATV Rig) **DATE:** 1/9/2019
DEPTH TO WATER> INITIAL: ▽ Dry **AFTER 24 HOURS:** ▽ NA **CAVING>** ℄ 3.5 ft

Depth/Elevation (feet)	Graphic	Description	USCS Class.	Sample No.	Blow Counts	Recovery (in.)	Moisture Content (%)	Liquid Limit	Plasticity Index	%<#200
0 / 372.5		Topsoil [6-Inch]								
		Dark Reddish Brown Sandy Lean CLAY, trace Roots, Moist, Medium Stiff to Hard	CL	S-1	2 2 4	18	24.1			
2.5 / 370				S-2	14 17 20	18	19.2	40	16	96.0
4.5 / 367.5		Reddish Brown Sandy SILT, with Rock Fragments, Moist, Very Hard	ML	S-3	23 25 50/5"	17				
6.0		Reddish Brown Weathered Rock, Moist to Dry, Very Dense to Extremely Dense	WR	S-4	50/2"	2				
12.5 / 360				S-5	50/5"	5				
13.9 / 359.1		Boring Terminated @ 13.9 feet								

PI — LL
Water Content - ⊗
Penetration - ●
10 20 30 40 50
6
37
75/11"
50/2"
50/5"

Boring was back filled upon completion.
The elevation is based on Google Earth.

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

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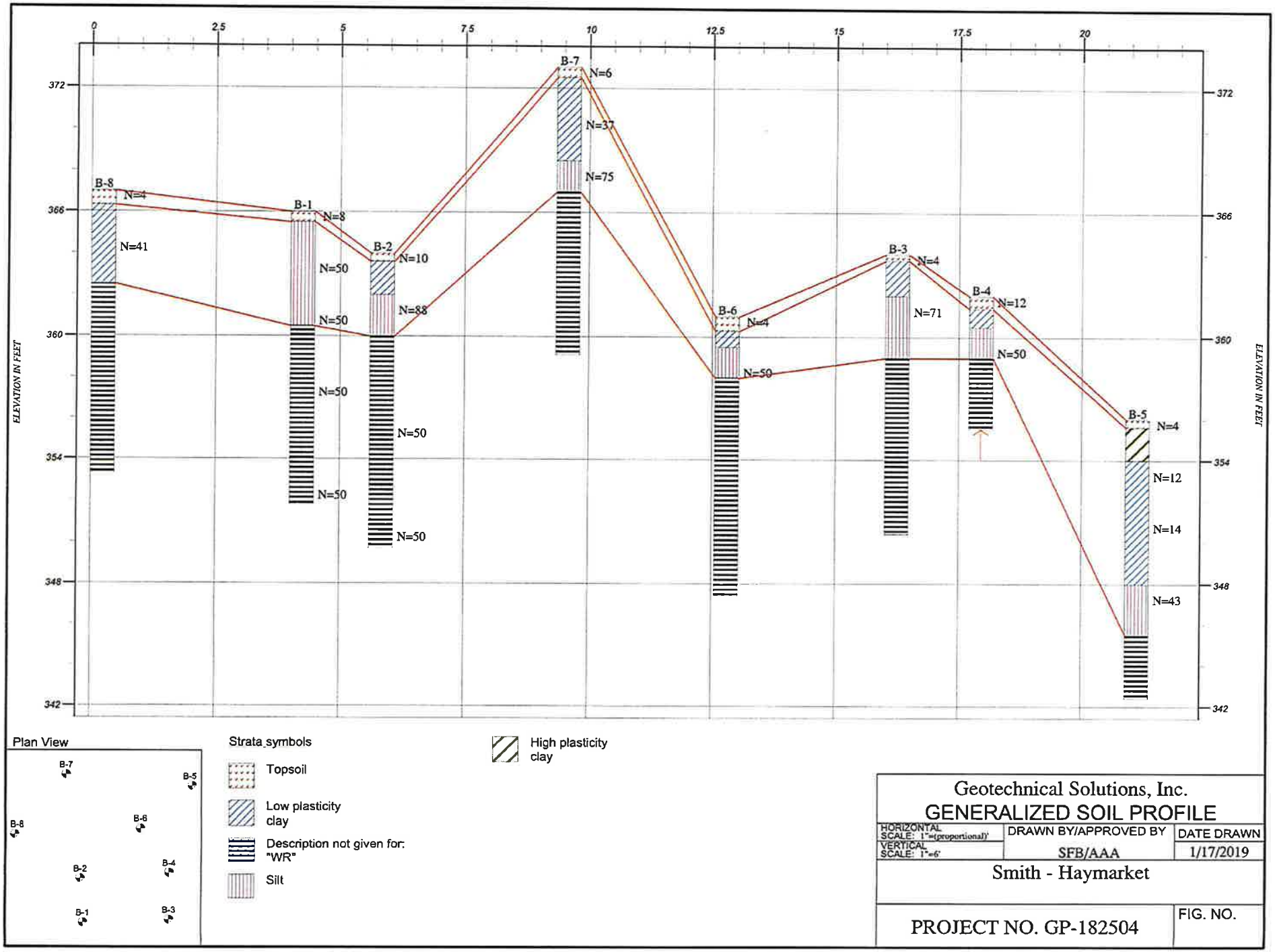
PROJECT: Smith - Haymarket | PROJECT NO.: GP-182504
CLIENT: VAN METRE COMMUNITIES, INC. | BORING NO.: B-8
PROJECT LOCATION: Prince William County, VA
LOCATION: As Shown on the Boring Location Plan | ELEVATION: 367±ft MSL
DRILLER: Recon Drilling, Inc. (W. Rodas) | LOGGED BY: S. Fallah
DRILLING METHOD: 2.25" I.D. HSA w/Autohammer (CME 550 ATV Rig) | DATE: 1/9/2019
DEPTH TO WATER> INITIAL: ▽ Dry | AFTER 24 HOURS: ▽ NA | CAVING> ℄ 2.5 ft

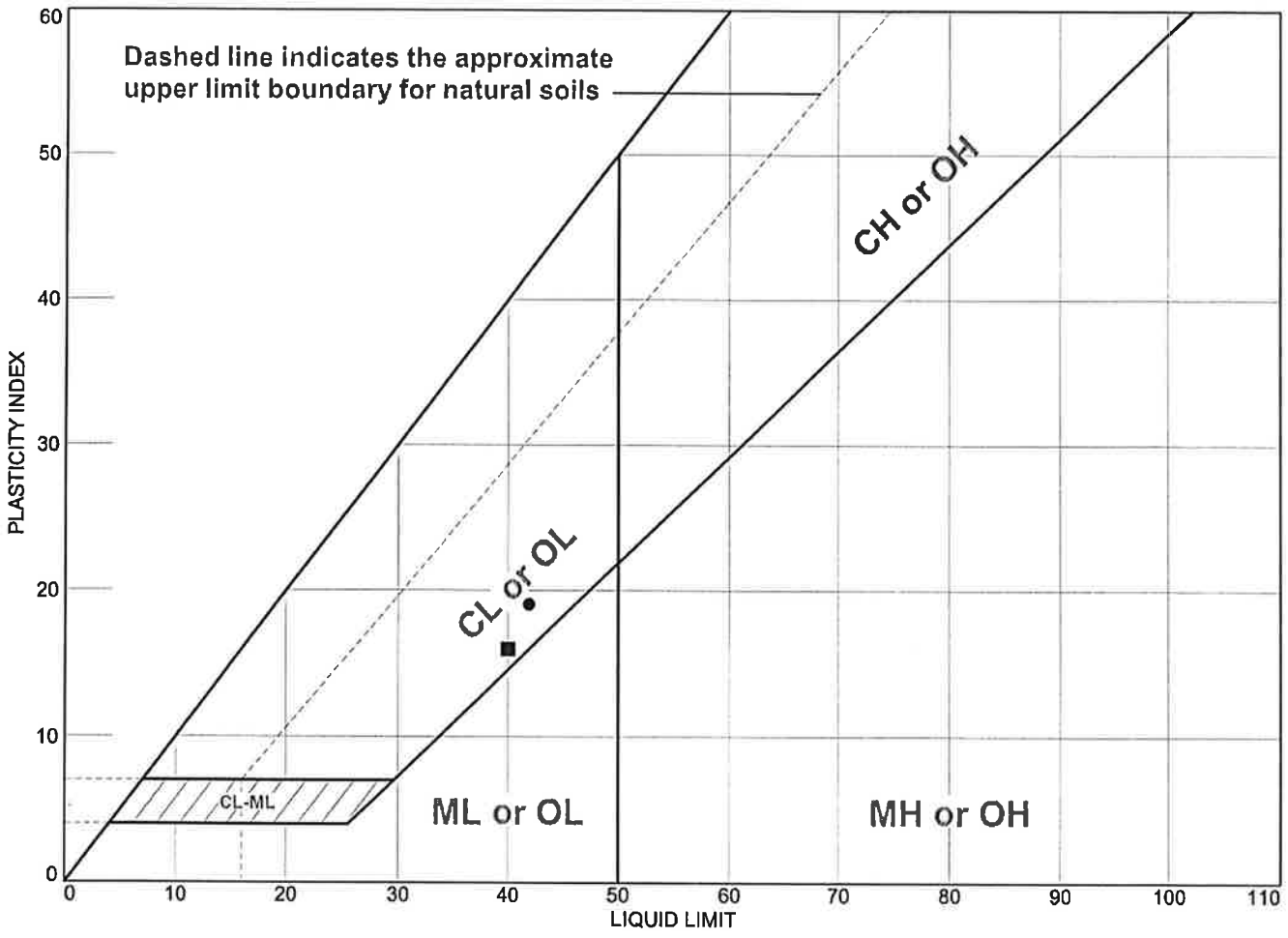
Depth/Elevation (feet)	Graphic	Description	USCS Class.	Sample No.	Blow Counts	Recovery (in.)	Moisture Content (%)	Liquid Limit	Plasticity Index	%<#200
0 / 367		Topsoil [8-Inch]								
0.7 / 366.3		Dark Brown Sandy Lean CLAY, trace Roots and Rock Fragments, Moist, Soft to Hard	CL	S-1	WOH 2 2	18				
2.5 / 365				S-2	14 19 22	18	15.2			
4.5 / 362.5		Brown Weathered Rock, Moist to Dry, Very Dense to Extremely Dense	WR	S-3	50/5"	5				
				S-4	50/4"	3				
13.7 / 353.3		Boring Terminated @ 13.7 feet		S-5	50/2"	2				

PI — LL
Water Content - ⊗
Penetration - ●
10 20 30 40 50
4
41
50/5"
50/4"
50/2"

Boring was back filled upon completion.
The elevation is based on Google Earth.


0
2.5
5
7.5
10
12.5
15
17.5
20
372
366
360
354
348
342
ELEVATION IN FEET
B-8
N=4
N=41
B-1
N=8
N=50
N=50
N=50
B-2
N=10
N=88
N=50
N=50
B-7
N=6
N=37
N=75
B-6
N=4
N=50
B-3
N=4
N=71
B-4
N=12
N=50
B-5
N=4
N=12
N=14
N=43
Plan View
B-7
B-5
B-8
B-6
B-2
B-4
B-1
B-3
Strata symbols
Topsoil
Low plasticity clay
Description not given for: "WR"
Silt
High plasticity clay
Geotechnical Solutions, Inc.
GENERALIZED SOIL PROFILE
HORIZONTAL SCALE: 1"=(proportional)'
VERTICAL SCALE: 1"=6'
DRAWN BY/APPROVED BY
SFB/AAA
DATE DRAWN
1/17/2019
Smith - Haymarket
PROJECT NO. GP-182504
FIG. NO.

LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Dark Brown Lean CLAY	42	23	19	93.4	89.3	CL
■	Reddish brown lean CLAY	40	24	16	98.0	96.0	CL

Project No. GP-182504 **Client:** VAN METRE COMMUNITIES, INC.

Project: Smith - Haymarket

●**Source of Sample:** B-5 **Depth:** 5.0 **Sample Number:** S-3

■**Source of Sample:** B-7 **Depth:** 2.5 **Sample Number:** S-2

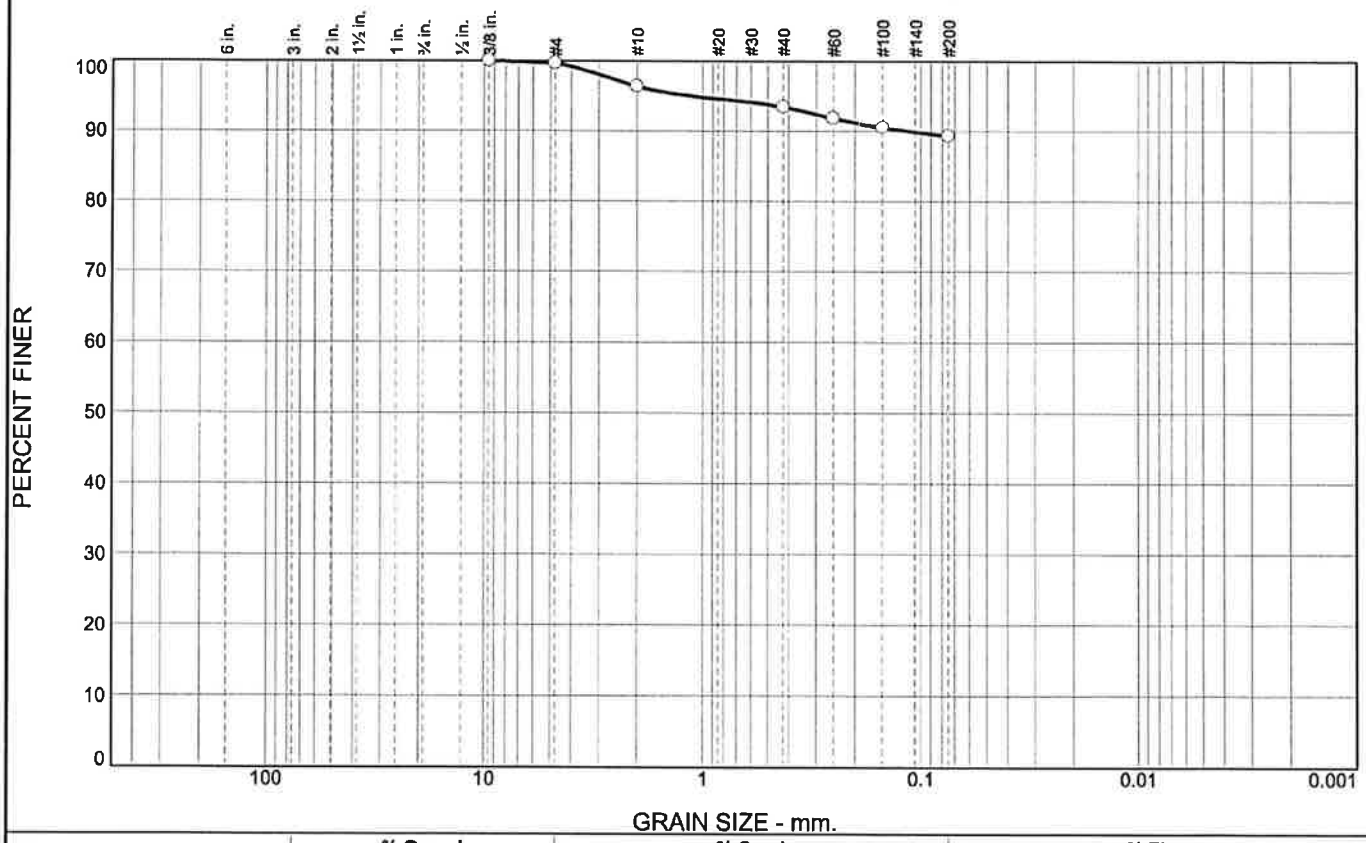
Remarks:

Geotechnical Solutions, Inc.

Chantilly, Virginia

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	3.2	3.0	4.1	89.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
0.375	100.0		
#4	99.6		
#10	96.4		
#40	93.4		
#60	91.9		
#100	90.6		
#200	89.3		

* (no specification provided)

Material Description

Dark Brown Lean CLAY

Atterberg Limits

PL= 23 LL= 42 PI= 19

Coefficients

D_{90}= 0.1125 D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO= A-7-6(18)

Remarks

Natural moisture content 19.5%

Source of Sample: B-5 **Depth:** 5.0
Sample Number: S-3

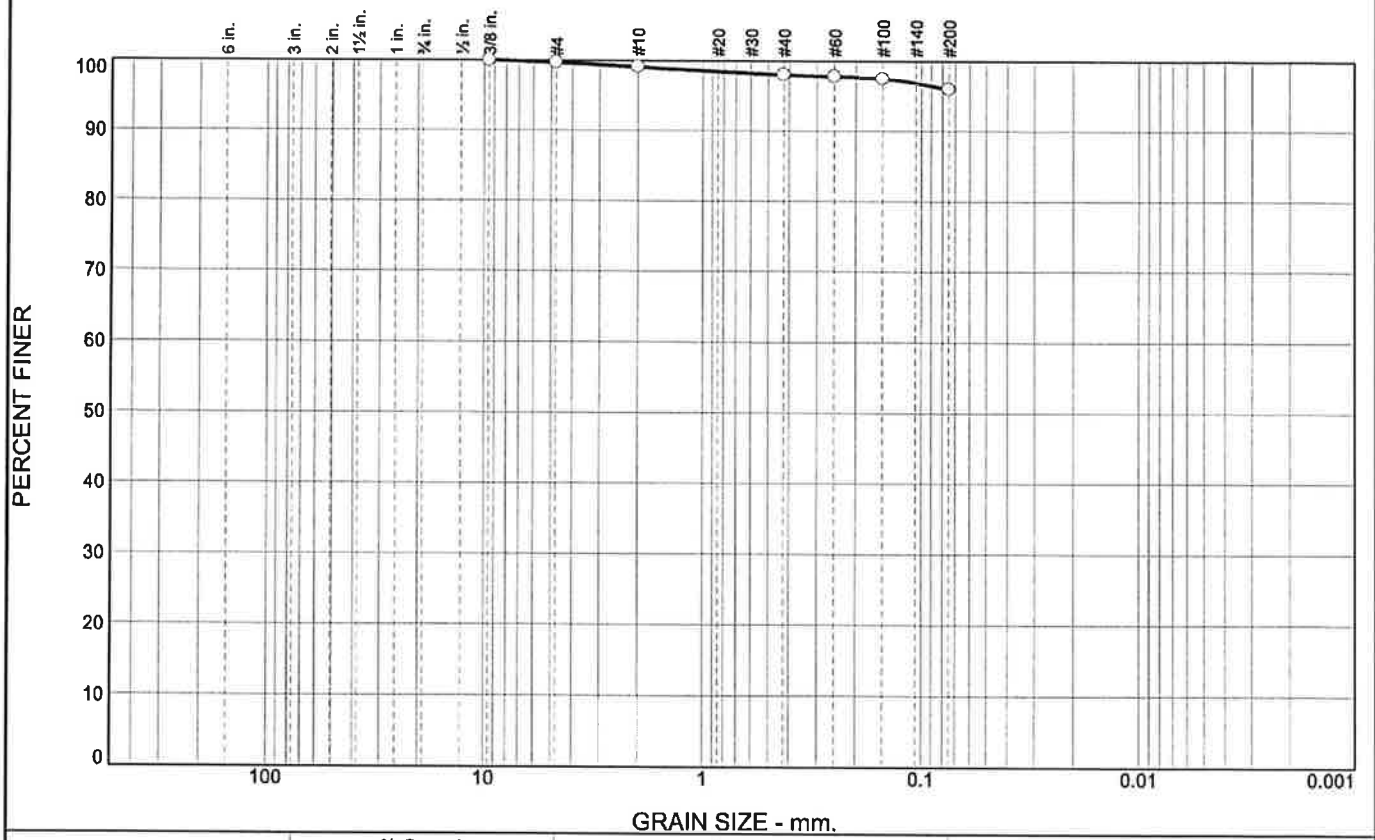
Date: 1-16-19

Geotechnical Solutions, Inc.
Chantilly, Virginia

Client: VAN METRE COMMUNITIES, INC.
Project: Smith - Haymarket

Project No: GP-182504 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.6	1.1	2.0	96.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
0.375	100.0		
#4	99.7		
#10	99.1		
#40	98.0		
#60	97.8		
#100	97.5		
#200	96.0		

* (no specification provided)

Material Description

Reddish Brown Lean CLAY

Atterberg Limits

PL= 24 LL= 40 PI= 16

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO= A-6(17)

Remarks

Natural moisture content 19.2%

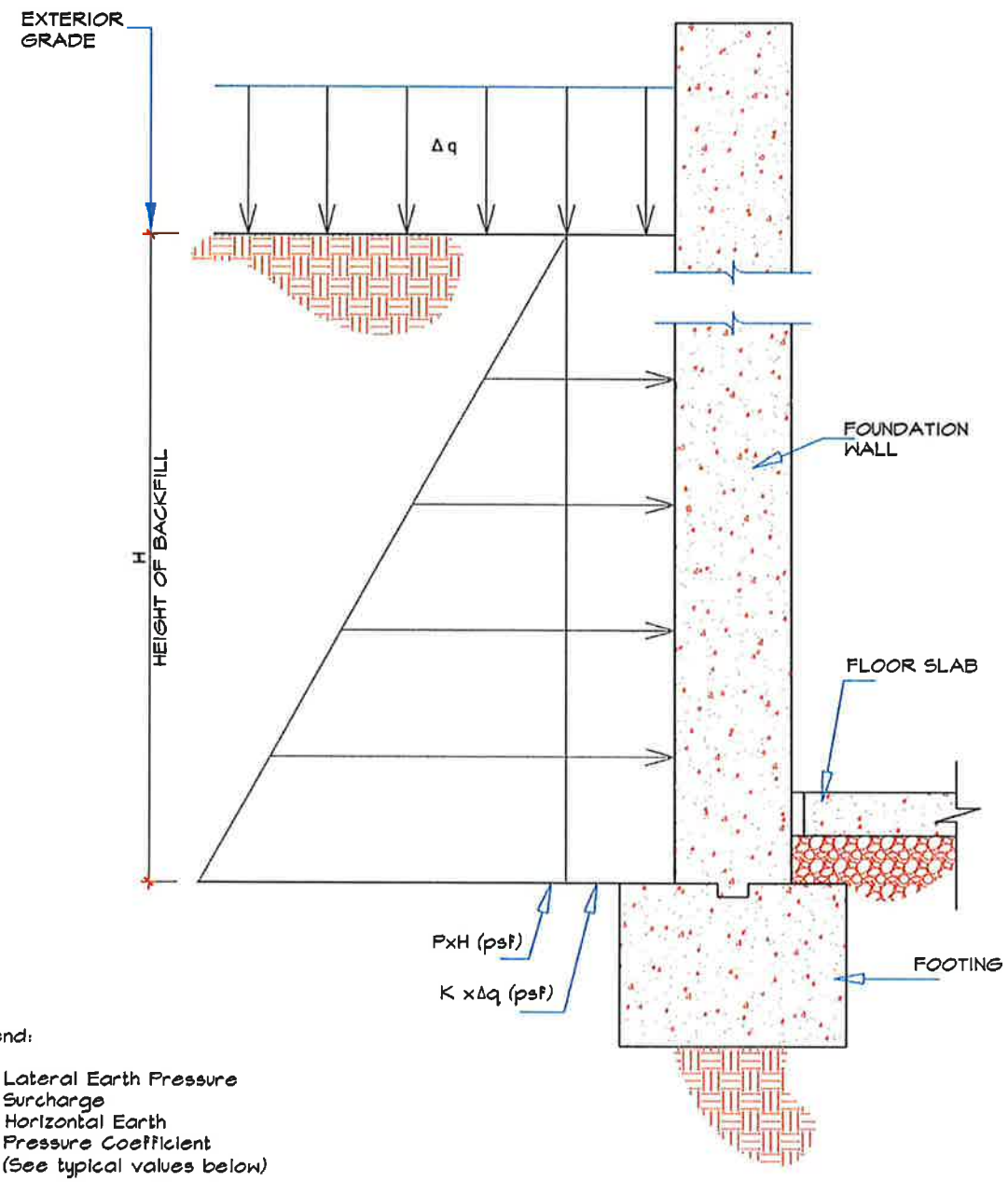
Source of Sample: B-7 **Depth:** 2.5
Sample Number: S-2

Date: 1-16-19

Geotechnical Solutions, Inc.
Chantilly, Virginia

Client: VAN METRE COMMUNITIES, INC.
Project: Smith - Haymarket

Project No: GP-182504 **Figure**



Legend:

P = Lateral Earth Pressure
Δq = Surcharge
K = Horizontal Earth Pressure Coefficient (See typical values below)

SOIL	ACTIVE	AT REST
SILT (ML)	0.36	0.53
GRANULAR (SP)	0.33	0.50

N.T.S.

Geotechnical Solutions, Inc.
3859 Centerview Drive, Suite 160
Chantilly, VA 20151
TEL: (703) 657-0014
FAX: (703) 657-0666
www.geotechnical-solutions.com

LATERAL EARTH PRESSURE BASEMENT OR BELOW GRADE WALL WITH SURCHARGE

Note:

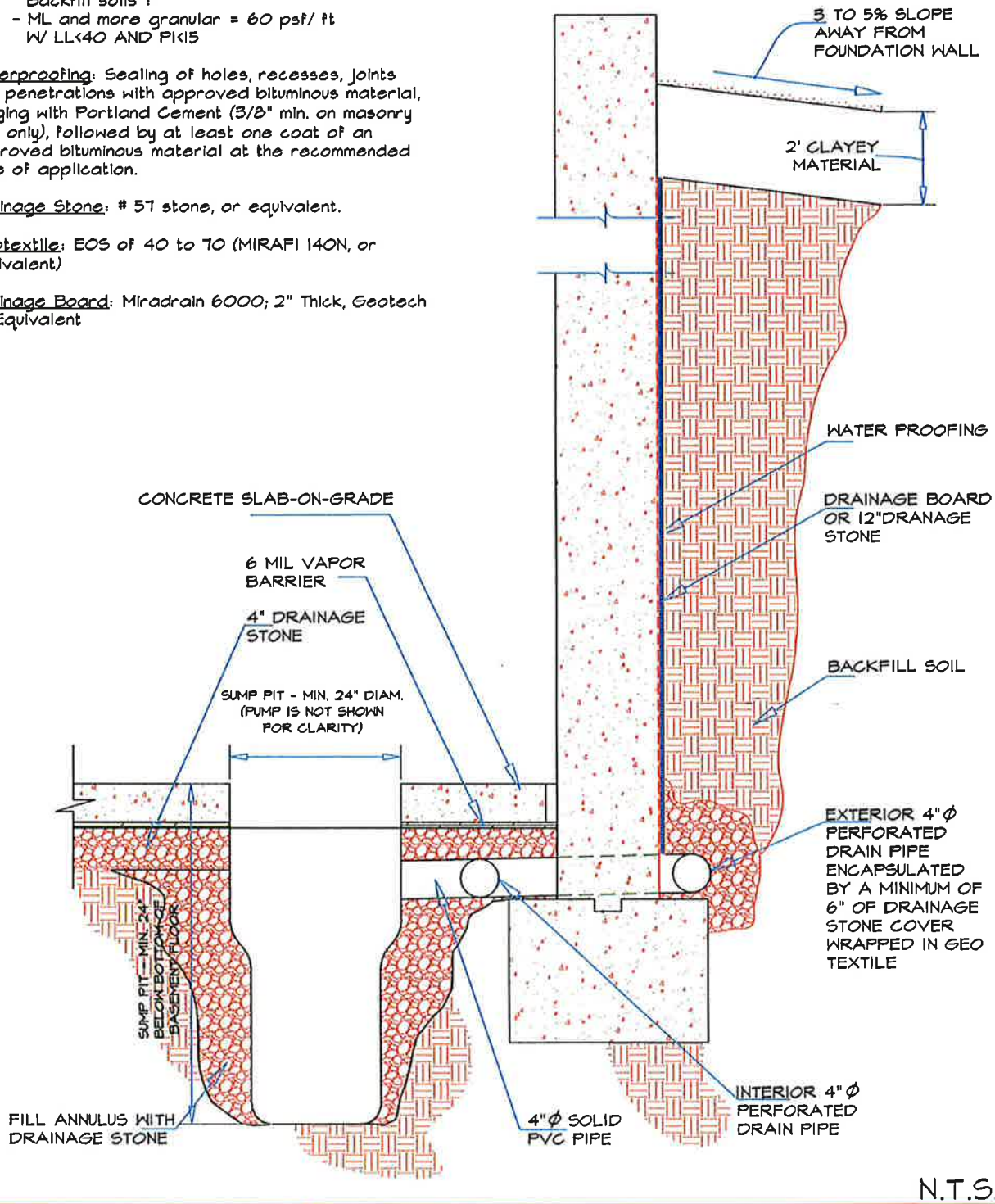
a.) Below grade at rest lateral earth pressure design requirements:
(excluding surcharge loads):
Backfill soils :
- ML and more granular = 60 psf/ ft
W/ LL<40 AND PI<15

Waterproofing: Sealing of holes, recesses, joints and penetrations with approved bituminous material, purging with Portland Cement (3/8" min. on masonry wall only), followed by at least one coat of an approved bituminous material at the recommended rate of application.

Drainage Stone: # 57 stone, or equivalent.

Geotextile: EOS of 40 to 70 (MIRAFI 140N, or equivalent)

Drainage Board: Miradrain 6000; 2" Thick, Geotech or Equivalent



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RESIDENTIAL BELOW GROUND DRAINAGE DETAIL (high ground water condition)

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Prince William County, Virginia

January 17, 2019

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

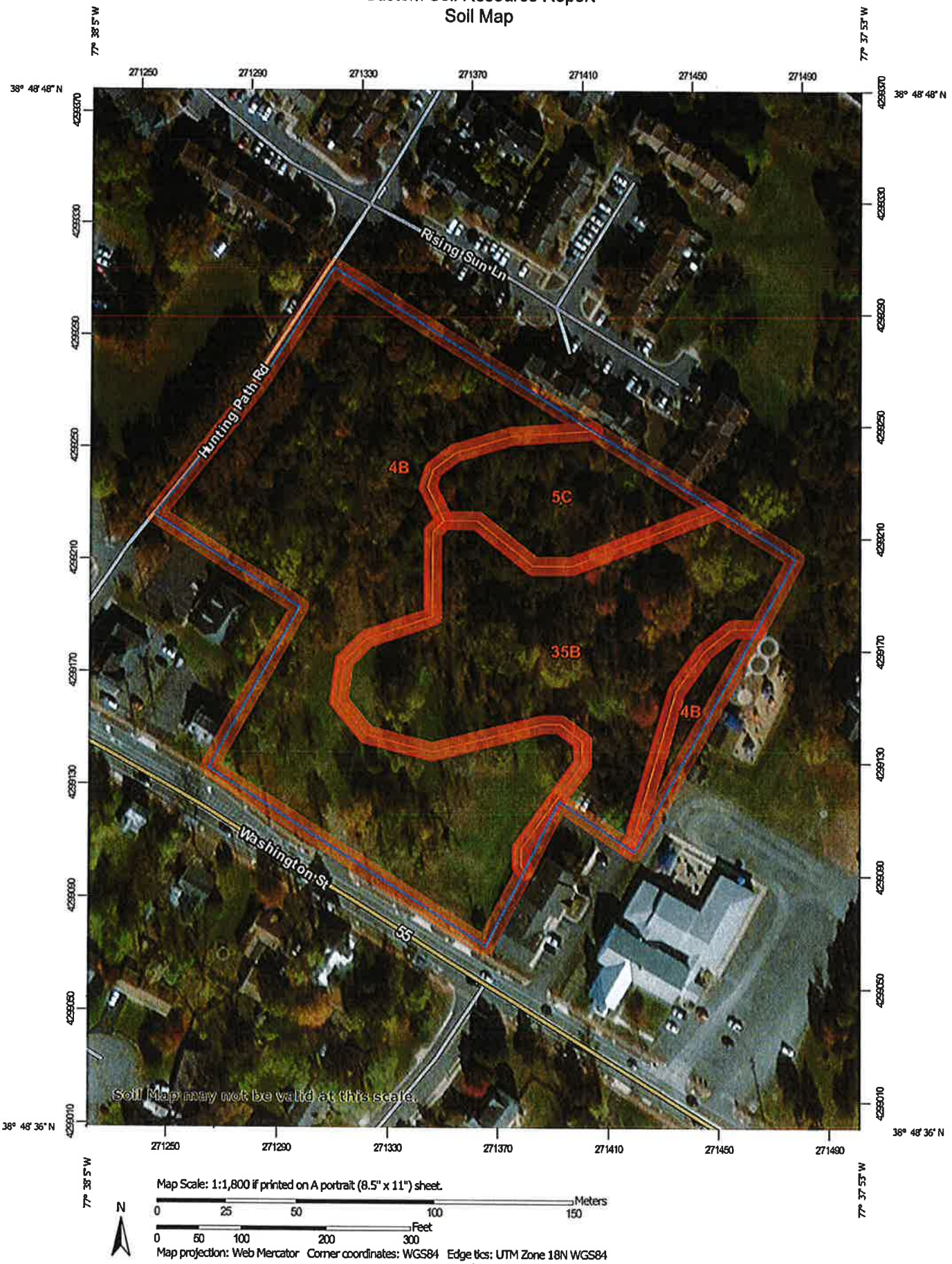
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:1,800 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 25 50 100 150

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Prince William County, Virginia
Survey Area Data: Version 15, Aug 28, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 25, 2014—Mar 10, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
4B	Arcola silt loam, 2 to 7 percent slopes	4.3	57.2%
5C	Arcola-Nestoria complex, 7 to 15 percent slopes	0.8	10.5%
35B	Manassas silt loam, 2 to 7 percent slopes	2.4	32.4%
Totals for Area of Interest		**7.5**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or

landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Prince William County, Virginia

4B—Arcola silt loam, 2 to 7 percent slopes

Map Unit Setting

National map unit symbol: khcb
Elevation: 300 to 800 feet
Mean annual precipitation: 19 to 50 inches
Mean annual air temperature: 46 to 69 degrees F
Frost-free period: 168 to 211 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Arcola and similar soils: 80 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Arcola

Setting

Landform: Hillslopes
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Triassic residuum

Typical profile

H1 - 0 to 9 inches: silt loam
H2 - 9 to 22 inches: gravelly silt loam
H3 - 22 to 28 inches: very gravelly silt loam
H4 - 28 to 48 inches: bedrock
H5 - 48 to 58 inches: bedrock

Properties and qualities

Slope: 2 to 7 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock; 40 to 60 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Albano

Percent of map unit: 5 percent

Landform: Depressions
Landform position (three-dimensional): Head slope
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes

5C—Arcola-Nestoria complex, 7 to 15 percent slopes

Map Unit Setting

National map unit symbol: khcr
Elevation: 300 to 800 feet
Mean annual precipitation: 19 to 50 inches
Mean annual air temperature: 46 to 69 degrees F
Frost-free period: 168 to 211 days
Farmland classification: Not prime farmland

Map Unit Composition

Arcola and similar soils: 50 percent
Nestoria and similar soils: 30 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Arcola

Setting

Landform: Hillslopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Triassic residuum

Typical profile

H1 - 0 to 9 inches: silt loam
H2 - 9 to 22 inches: gravelly silt loam
H3 - 22 to 28 inches: very gravelly silt loam
H4 - 28 to 48 inches: bedrock
H5 - 48 to 58 inches: bedrock

Properties and qualities

Slope: 7 to 15 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock; 40 to 60 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Nestoria

Setting

Landform: Hillslopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Triassic residuum

Typical profile

H1 - 0 to 8 inches: channery silt loam
H2 - 8 to 14 inches: very channery silt loam
H3 - 14 to 18 inches: very channery silt loam
H4 - 18 to 30 inches: bedrock
H5 - 30 to 34 inches: bedrock

Properties and qualities

Slope: 7 to 15 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Albano

Percent of map unit: 5 percent
Landform: Depressions
Landform position (three-dimensional): Head slope
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes

35B—Manassas silt loam, 2 to 7 percent slopes

Map Unit Setting

National map unit symbol: khbj
Elevation: 400 to 800 feet
Mean annual precipitation: 19 to 50 inches
Mean annual air temperature: 46 to 69 degrees F
Frost-free period: 168 to 211 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Manassas and similar soils: 85 percent
Minor components: 3 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Manassas

Setting

Landform: Hillslopes
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Triassic residuum

Typical profile

H1 - 0 to 10 inches: silt loam
H2 - 10 to 43 inches: silt loam
H3 - 43 to 49 inches: channery sandy loam
H4 - 49 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 7 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Natural drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 24 to 36 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Albano

Percent of map unit: 3 percent
Landform: Depressions
Landform position (three-dimensional): Head slope
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes

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Approximate Boring Location

Geotechnical Solutions, Inc.	Geotechnical Solutions, Inc. 3859 Centerview Drive, Suite 160 Chantilly, VA 20151	SMITH – HAYMARKET PRINCE WILLIAM COUNTY, VA	Base Map Provided by: Dewberry
			Drawn by: SF/ Approved by: AAA
		BORING LOCATIONS PLAN	Scale: NTS
			Date: January 2019 / GSI Job No. GP-182504

Geotechnical

Solutions, Inc.

Geotechnical Solutions, Inc.

- Geotechnical Engineering
- Environmental Consulting
- Construction Services

Conditions of Approval

SUP#2019-XXXX

April 23, 2019

1. LANDUSE

1.1 Development shall be in substantial accord with the Generalized Development and Special Use Permit Plan entitled "Smith Property at Haymarket" prepared by The Engineering Groupe and dated April 2, 2019 (4 sheets) (the "GDP") with the size, construction details and locations of buildings, roadways and other features being approximate subject to final engineering at site plan and with the color, construction materials and appearance of structures being subject to the issuance of certificates of appropriateness by the Town of Haymarket ("Town") Architectural Review Board (ARB) at advertised public meetings.

1.2 Residential Development on the Property shall not exceed 38 townhouse units in the location generally shown on the GDP.

1.3 Townhouse dwellings shall be either 20' or 24'-wide units.

1.4 Development of the Property shall be in substantial conformity with the GDP. Precise locations of roads, lot lines, lot widths and depths, utility lines, and other features generally depicted on the GDP will be determined at the time of site or subdivision plan approval.

1.5 The Property shall be developed as a single-unified development to include a common architectural theme as specifically approved through certificates of appropriateness by the ARB and integrated vehicular and pedestrian access ways as depicted on the GDP and finalized through site plan approval.

2. ARCHITECTURAL DESIGN, SIGNAGE AND LANDSCAPING

2.1 The Applicant will use best efforts to ensure that the height of Townhouse units will not exceed 40-feet as measured from the finished grade. To the extent final grading results in height, as measured from the finished grade over 40 feet, then the applicable side yard setback shall be increased by .5 feet for every foot over 40 feet. Architectural details of the townhouse units will be determined through the issuance of certificates of appropriateness issued by the ARB.

3. STORMWATER MANAGEMENT

3.1 Storm water management for the Property shall employ best management practices ("BMP").

3.2 Storm water retention shall be provided at site plan as approved by the Town.

3.3 Storm water management facilities shall be maintained by the appropriate owners' associations provided below.

4. CREATION OF HOMEOWNERS' ASSOCIATION

4.1 The Property shall be made subject a homeowners' association that shall be created and be made responsible for the maintenance and repair of common areas, including common open space that may be established in accordance with the requirements of the Town zoning ordinance. The HOA shall be granted such other responsibilities, duties and powers as a customary for such associations, or as may be required to affect the purposes for which the HOA is created. Such HOA shall also be granted sufficient powers that may be necessary, by regular dues, special dues or assessments, to raise revenue sufficient to perform the duties assigned hereby, or by the documents creating the association.

4.2 The HOA documents shall prohibit the use or conversion of garages for living space, or for the primary purpose of storage of anything other than parked vehicles.

4.3 The covenants, conditions and restrictions of the HOA shall be subject to review and approval of the Zoning Administrator prior to recordation thereof, to ensure conformance of the requirements of these proffers.

5. PARKS AND RECREATION

5.1 The Applicant shall make a contribution for park purposes in the amount of $3,792 per residential townhouse unit, payable upon the issuance of an occupancy permit for each such unit.

5.2 The Applicant shall reserve the open space or areas shown on the GDP as "Play Area" or "Tot Lot" for play areas or tot lots.

6. PUBLIC SAFETY

6.1 The Applicant shall make a contribution for public safety purposes in the amount of $280.00 per residential townhouse unit payable upon the issuance of a building permit for each such unit.

7. TRANSPORTATION

7.1 The Applicant will construct a 5-foot wide concrete sidewalk along the western edge of the property, on the east side of Hunting Path Road.

7.2 The Applicant shall make a contribution for transportation purposes in the amount of $3,799 per townhouse unit, payable upon issuance of an occupancy permit for each such townhouse unit.

8. FIRE AND RESCUE

8.1 The Applicant shall make a contribution for fire and rescue purposes in the amount of $974 per townhouse unit, payable upon the issuance of a building permit for each such unit.

9. TOWN ADMINISTRATION

9.1 The Applicant shall make a contribution for Town administration in the amount of $171 per townhouse unit, payable upon the issuance of a building permit for each such unit.

10. SCHOOLS

10.1 The Applicant shall make a contribution for schools in the amount of $10,300 per residential townhouse unit, payable upon the issuance of an occupancy permit for each such unit.

SIGNATURES ON FOLLOWING PAGES

APPLICANT:

Van Metre Communities, L.L.C.

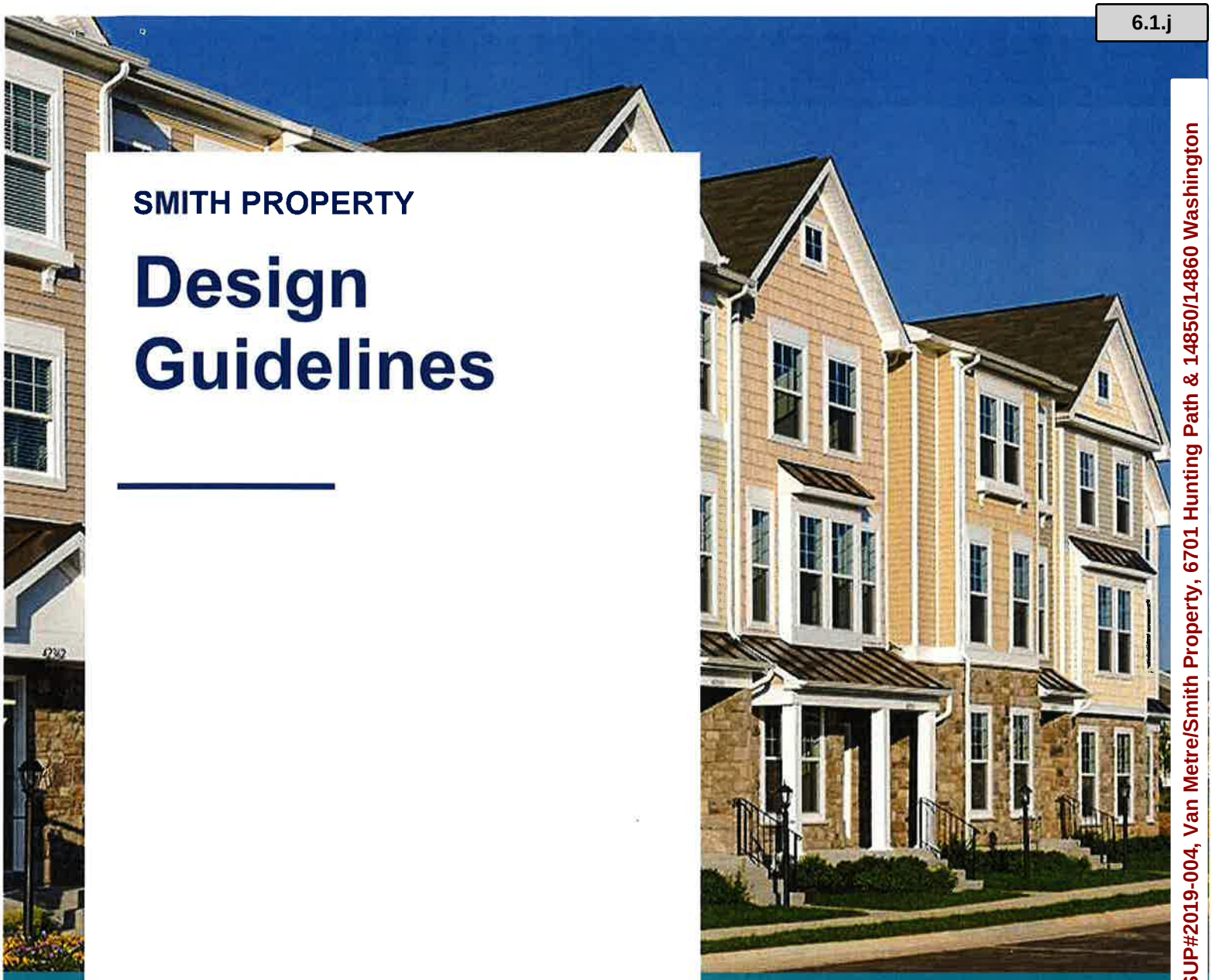
a Virginia Limited Liability Company

By: Van Metre Homes, Inc., its manager

By: _____

Name: _____

Title: _____



SMITH PROPERTY

Design Guidelines

Van Metre Companies
April 11, 2019

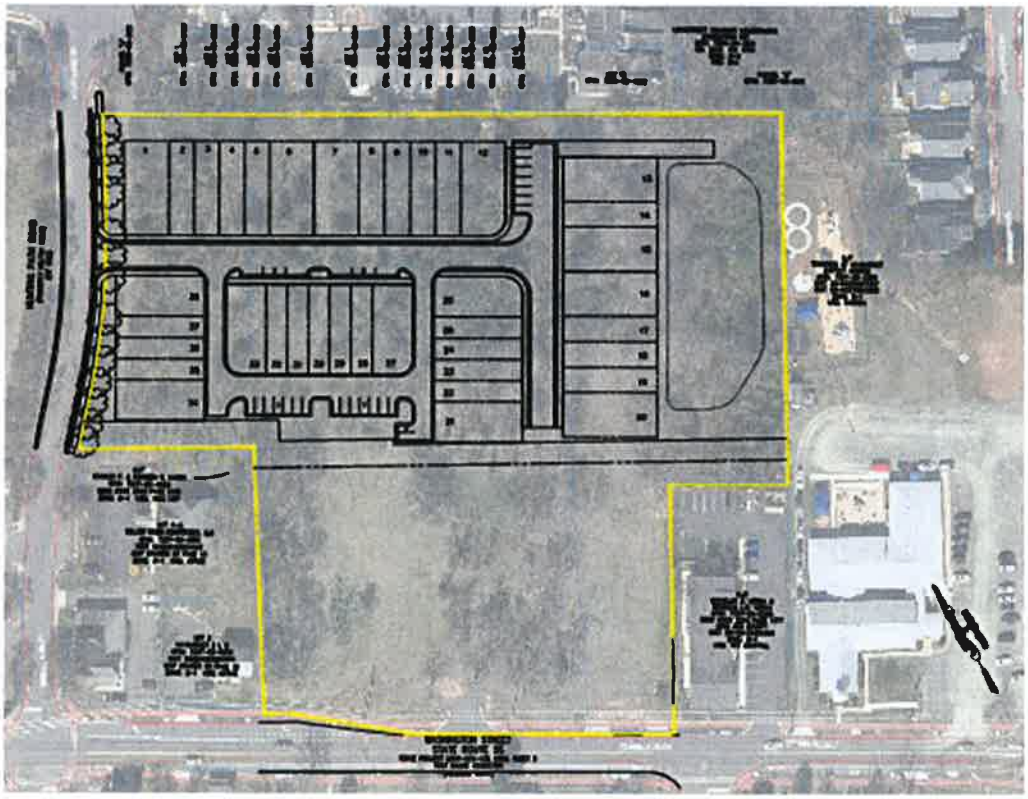
Van Metre

INTRODUCTION

The Smith Property Design Guidelines are intended to be a framework for development to be used by developers, stakeholders, and municipalities, during the design process. They should be utilized as guiding principles for the vision of the community and to aid in the implementation of that design.

DESIGN GOALS

- A development that creates a sense of enhanced community and neighborhood for its residents, through a plan that is pedestrian friendly and provides useable amenity spaces
- Ensure community longevity through the design of neighborhoods that will endure over time
- Creating visual interest throughout the development, by thoughtful architectural design, plantings, and public spaces.



SITE LOCATION

The Smith Property is located in the Town of Haymarket along Washington Street (Route 55) bordered by Hunting Path Road to the west and Rising Sun Lane to the North. This site has been designed to be a residential townhome community. In addition to housing, the site has been designed to provide an integrated pedestrian network and amenity areas that may include a tot lot / park.

PEDESTRIAN CONNECTIVITY

The development should strive to create a community with a safe and comfortable walking environment. On the interior of the site, sidewalks should connect residents to amenity areas, as well as providing access between parking and homes. The interior sidewalks should connect to existing pedestrian network along Hunting Path Road. This

sidewalk will provide connections to the larger community outside the development, namely the Town of Haymarket. Accessible routes should be implemented throughout the community to provide access for people of variable abilities.

OPEN SPACE / LANDSCAPE

OPEN SPACE

Adjacent to the eastern site boundary, an approximate 0.7 acre open space area will be utilized for stormwater management (SWM) and amenities. This area will be carefully landscaped to create a useable passive recreation area for the residents to enjoy.

LANDSCAPE OVERVIEW

Landscaping in The Smith Property should assist in the definition of space and community identity, soften the vertical space, and provide a comfortable pedestrian experience. Benefits of a well-designed landscape include helping to manage stormwater, reduce heat island effects, provide shade and protection of non-vehicular travelers, buffer parking areas from traffic, and dramatically approve the aesthetics of the space.

Large canopy trees and understory trees should be located along parking areas and in and buffers. Buffers are areas that are planted in a naturalized manner and provide an edge to the community. These areas can include large canopy trees and understory to create a dense, layered effect. On the other hand, street plantings are laid out in an organized manner. A bio-diverse selection of tree species should be planted in groups or an alternating pattern along streets to help improve the long-term health and stability of the tree canopy. Obstructive plant materials may not be placed within the pedestrian zone.

Buffer and parking lot plantings must be provided in accordance with the Town of Haymarket Zoning and Subdivision Ordinance, Article XVII. Where Town standards do not apply, measures should be taken to utilize landscaping to provide sufficient visual and noise buffers from roadways, service areas, service drives, and any mechanical equipment needed to assist in building function (such as air conditioning units).

PLANTING STANDARDS

The following are recommended for placement of street trees (large and medium shade trees) in the parking and open space areas.

Lateral Spacing: Trees should be spaced regularly throughout the available planting area or within defined groupings. Street trees should be spaced at the Town recommended spacing, or, where Town standards do not apply, trees should be spaced at a minimum of 25 feet and maximum of 40 feet on center.

Quantities required for buffer plantings and parking lot plantings/planting areas shall be provided as per Town requirements and in these design guidelines. Plant material and plant types should utilize plantings listed in the Town approved plant list as shown in the Zoning Ordinance, Article XVII.

Plant size is an important consideration in creating a safe and secure street environment. When considering the location and size of pant materials, vehicular sight triangles should be maintained according to appropriate engineering standards. At crosswalks, the maximum height of shrub plant material should be no more than 30 inches from the top of the adjacent roadway. Similarly, plants more than 30 inches in height should not be located within the sight triangle of driveways as measured from the adjacent roadway.

MAINTENANCE

No landscape will be successful without adequate maintenance, and certain plants require more attention than others. For understory plantings, plants that are both hardy to urban conditions and native to the area should be used. Amenity areas will require a higher level of maintenance due to the kind of plants selected and a more manicured appearance. The buffer areas should maintain a naturalized appearance as they are intended to create a dense barrier that screens views. Street trees and shrub plantings need to be trimmed to maintain the appropriate sight distance.

SUPPLEMENTAL PLANTINGS

In addition to trees within planting areas, the installation of shrubs and groundcover should be considered and are recommended plantings. The placements of these materials contribute to the quality of the streetscape by helping create a cohesive design. Caution should be taken when placing understory plant material so as to not negatively affect vehicular sight lines, pedestrian and bicycle clearances, and safety and security. Shrubs and groundcover should be of sufficient hardiness to withstand conditions within the planted environment.

LANDSCAPE AREAS

1. Parking Streetscape

A consistent tree canopy throughout the streetscape will create the appearance of the street corridor. Streetscape plantings primarily consist of large canopy trees that are limbed up as required by county standard to provide a safe environment. Street trees buffer homes and businesses from traffic, which creates a comfortable experience for both motorists and pedestrians. Additionally, they create an identity for the community and have an aesthetically please effect.

Surface parking lot areas should have sufficient interior (to the lot) and perimeter (between the lot and adjacent property or public right-of-way) landscaping to visually break up their appearance and reduce their visual impact. All surface parking areas should meet the minimum requirements of the Zoning Ordinance for interior landscaping.

2. Buffers

Buffers are areas of land set aside as a place to provide vegetation (and possibly include a man-made barrier) that will create a visual screen between two differing land uses. Composed of a variety of trees and shrubs, these buffers create a dense barrier that screens views, provides visual interest, and creates a habitat for wildlife. The width of the buffer is adjusted according to Zoning Ordinance standards to provide the appropriate amount of screening required for the adjoining uses.

3. Parks / Amenity Areas

Throughout the passive open space areas there will be amenities such as seating zones and tot lots which will reinforce the feeling of community and the development's identity. These spaces will be located in areas that are well-utilized and convenient to access. Plantings should include ornamental trees, shrubs, and accent perennials designed to create an aesthetically pleasing and comfortable environment for the community.

STREETSCAPE ELEMENTS

STREET FURNITURE

Street furniture supports pedestrian life along streets and elevates the quality of the streetscape by providing places for people to sit or gather, deposit trash, and store bicycles. Street furniture of similar style and quality will unify the streetscape and amenity areas within the development. The following images show general characteristics and examples of the family of street furniture for the Smith Property development.

LIGHTING

All lighting should conform to the national lighting minimum standards. Pedestrian level lighting, building mounted lighting, and sign lighting may be used to complement roadway and streetscape lighting and to emphasize areas of importance (such as a pocket park, gathering area). Light poles also offer the opportunity to mount banners or flags for special events, announcements, or community identity. All fixtures should be full cut-off luminaries to minimize light trespass, meet dark sky requirements, and will conform to standards put forth in the Zoning Ordinance.

The illustrations show examples of the quality and style of street lights to be used within the Smith Property development. Lighting of a similar style and quality should be used to create a cohesive streetscape within the community.

SIGNAGE

One way of creating an identity for the development and community development is through signage and way-finding. Signage will maintain a consistent design throughout the development and support the overall character of the Smith Property. Materials utilized in signage will be used on building facades and vice versa. Signage size should be relative in scale to the audience that the sign is intended for. Signage to direct pedestrians should be of a smaller pedestrian scale; signage to direct vehicles should be of a larger, vehicular scale. Consideration will be made for colors that provide reflectivity and are visible at all hours of the day/night.

Shown are some examples of community signage and way-finding that are appropriate in scale and character for the Smith Property.

ARCHITECTURE

GENERAL GUIDELINES

In order to have a cohesive overall character for the development, a consistent design concept should be implemented in the building architecture, through a like palette of materials, colors, and architectural styles. To create visually engaging buildings, slight variations within the buildings should be worked into the design. These can include, but are not limited to, variation in wall planes, roof lines, detailing, and addition of architectural elements such as balconies, canopies, gables, dormers, and awnings. Building materials should include, but are not limited to vinyl siding and trim, brick, and stone. All paint colors used must be complementary to one another and to the other building materials.

BUILDING DESIGN

Building design should consider the pedestrian experience, and provide a proportional relationship between the buildings, landscape, and street to create a pleasant user experience. Buildings should also provide interest at pedestrian eyelevel, such as accent brick, decorative trim, and overhangs. All units should have an individual entrance to provide identity to the unit.

UNIT TYPES

Two types of housing will be located within the residential neighborhood: front-load garage townhomes, located along northern and eastern sides of the parcel, and rear-load garage townhomes, located along southern and western sides of the parcel. The rear-load garage townhomes are grouped to orient the primary front elevation towards Hunting Path Road and the main internal entrance road.

Front-Load Townhome

Rear-Load Townhome

SPECIAL END AND REAR CONDITIONS

The residential buildings closest to Hunting Path Road and most visible from internal streets should incorporate special end or rear conditions that will provide an enhanced façade for the portion of the building that will be more exposed. This can include additional brick features, siding, and decorative trim. These elements should provide an aesthetic appearance to vehicles traveling along the adjacent roadways, as well as those entering the community.

CONCLUSION

These Design Guidelines are intended to establish guidelines to ensure that a high quality, attractive neighborhood is created at the Smith Property. The Design Guidelines are, as the name states, guidelines. They are meant to be flexible to accommodate new ideas that may arise during the many years that this project will be under development.