

**Board of Supervisors**

Robert "Bob" Thomas, Jr., Chairman
Laura A. Sellers, Vice Chairman
Meg Bohmke
Jack R. Cavalier
Wendy Maurer
Paul V. Milde, III
Gary F. Snellings

Anthony J. Romanello, ICMA-CM
County Administrator

Infrastructure Committee
AGENDA

May 3, 2016 @ 2:00 p.m.
ABC Conference Room, Second Floor

Agenda Item	
	Introduction ❖ Welcome
1.	Pump and Haul Loan Policy
2.	Route 1 & Garrisonville Road Right Turn Lane Update
3.	Belmont-Ferry Farm Trail Phase 6 River Trail Option
4.	Jeff Rouse Swim and Sport Center Punch List Items
5.	Next Meeting - June 7, 2016
	Adjourn

Loans for Septic System Repairs for Pump and Haul Customers

Background

- The pump and haul policy was revised by the Board in June 2015, with a time limit on subsidized Pump and Haul customers that ends on June 2022.
- If a Pump and Haul customer does not meet the financial needs limits at that time, they will be removed from the subsidized list – still on the Pump and Haul program, they will be required to pay the full fare.
- Evaluations are underway for alternative systems – if one is available current customers will have six months to install the system, or be removed from subsidized list – Do not expect many to have an alternative

Loan Policy and Ordinance

- Recommended Terms:
 - Duration of 5 years
 - Interest rate of 5%
 - Maximum loan amount of \$40,000
 - Minimum loan amount of \$5,000
 - Lien will be required on the loan
 - Confession of Judgement will also be required
- Duration and interest rate is recommended to encourage customers to do business with an institution that is set up to provide these types of services – Utilities is a water and sewer provider and this service is a courtesy

Infrastructure Committee

- This issue was brought before the Infrastructure Committee in February and March.
- The Committee was concerned about the actual costs for these systems and if the loan amount was appropriate – consultations with AOSE professionals confirmed the amounts
- The Committee had some concerns about the 5 year/5% loan terms, but asked that we take it to the Utilities Commission for their opinions

Utilities Commission Public Hearing (March 24, 2016)

- Two customers (husband and wife) were concerned about the high cost of the loans (short duration and high interest) suggested long term loans with no interest, also concerned about tax assessment of their homes (suggested the homeowners protest their assessment with the Commissioner of Revenue).
- Commission concerns mirrored the infrastructure concerns regarding the length of the loan and the percentage. The Committee requested we bring additional options for their consideration.

Utilities Commission Meeting (April 12, 2016)

- Additional options were presented to the Commission for both length and Interest percentages.
- The Commission discussed the issue and ultimately settled on a recommendation of 10 years at 1% interest. The options presented are shown below.
- Staff recommendation remains the same

Notes:

Average cost for pump and haul without subsidy is approximately \$425/month, assuming an average 5,000 gallons usage per month. Customers that have been on the system for 15 years have received approximately \$70,000 in subsidies

Loan Options				
Loan Amount	Loan Duration/years	Percent Interest	Monthly Payment	Total Interest Paid
\$40,000	5	1%	\$683.75	\$1,025
\$40,000	5	2%	\$701.11	\$2,067
\$40,000	5	3%	\$718.75	\$3,125
\$40,000	5	4%	\$736.66	\$4,200
\$40,000	5	5%	\$754.85	\$5,291
\$40,000	6	1%	\$572.62	\$1,229
\$40,000	6	2%	\$590.02	\$2,481
\$40,000	6	3%	\$607.75	\$3,758
\$40,000	6	4%	\$625.81	\$5,058
\$40,000	6	5%	\$644.20	\$6,382
\$40,000	7	1%	\$493.25	\$1,433
\$40,000	7	2%	\$510.70	\$2,899
\$40,000	7	3%	\$528.53	\$4,397
\$40,000	7	4%	\$546.75	\$5,927
\$40,000	7	5%	\$565.36	\$7,490
\$40,000	8	1%	\$433.73	\$1,638
\$40,000	8	2%	\$451.23	\$3,319
\$40,000	8	3%	\$469.18	\$5,042
\$40,000	8	4%	\$487.57	\$6,807
\$40,000	8	5%	\$506.40	\$8,614
\$40,000	9	1%	\$387.44	\$1,844
\$40,000	9	2%	\$405.01	\$3,741
\$40,000	9	3%	\$423.08	\$5,692
\$40,000	9	4%	\$441.64	\$7,697
\$40,000	9	5%	\$460.69	\$9,755
\$40,000	10	1%	\$350.42	\$2,050
\$40,000	10	2%	\$368.05	\$4,166
\$40,000	10	3%	\$386.24	\$6,349
\$40,000	10	4%	\$404.98	\$8,598
\$40,000	10	5%	\$424.26	\$10,911

PROPOSED

BOARD OF SUPERVISORS
COUNTY OF STAFFORD
STAFFORD, VIRGINIA

ORDINANCE

At a regular meeting of the Stafford County Board of Supervisors (the Board) held in the Board Chambers, George L. Gordon, Jr., Government Center, Stafford, Virginia, on the _ day of __, 2016:

MEMBERS:

Robert “Bob” Thomas, Jr., Chairman
Laura A. Sellers, Vice Chairman
Meg Bohmke
Jack R. Cavalier
Wendy E. Maurer
Paul V. Milde, III
Gary F. Snellings

VOTE:

On motion of , seconded by , which carried by a vote of , the following was adopted:

AN ORDINANCE TO AUTHORIZE FINANCING THE REPAIR OF
FAILED SEPTIC SYSTEMS WHICH ARE PART OF THE
SUBSIDIZED PUMP AND HAUL PROGRAM

WHEREAS, the Board desires to authorize the County to finance the repair of a failed septic systems which are part of the subsidized pump and haul program; and

WHEREAS, in 2015, the Board adopted Resolution R15-106, which amended the County’s pump and haul policy and provided an opportunity for property owners that are currently part of the grandfathered subsidized pump and haul system to obtain a loan for the construction of an alternative system, if feasible; and

WHEREAS, it is in the best interest of the County for property owners to have well-functioning on-site sewer disposal septic systems; and

WHEREAS, the County desires to reduce the amount of property owners who are dependent on the grandfathered subsidized pump and haul system by offering a failed septic system repair loan; and

WHEREAS, the Virginia Code, 15.2-958.6 (A), requires a local ordinance to provide loans for the repair of septic systems, and

WHEREAS, the Utilities Commission held a public hearing on this Ordinance and recommended _____ by a vote of ____ to ____; and

WHEREAS, the Board carefully considered the recommendations of the Utilities Commission and staff, and the public testimony, if any, at the public hearing; and

WHEREAS, the Board finds that the adoption of this Ordinance secures and promotes the public health, safety, and general welfare of the County and its citizens;

NOW, THEREFORE, BE IT ORDAINED by the Stafford County Board of Supervisors on this the day of, 2016, that the Stafford County Code be and it hereby is amended and reordained as follows, all other portions remaining unchanged:

Financing the repair of failed septic systems which are part of the subsidized pump and haul program.

A grandfathered subsidized pump and haul customer, as defined in the Pump and Haul program, may contract with the Department of Utilities, for a loan in the amount required for the repair of a failed septic or construction of an approved alternative system. The loan program will include the following:

- (a) Loans will be provided for a septic system repair, or an alternative system that will restore on-site sewage disposal. The system must have been designed by an Authorized On-Site Sewer System professional and approved and permitted by the Virginia Department of Health (VDH)
- (b) Property owners must currently own a septic tank for the storage of wastewater on the Property that is part of the Subsidized Utility Pump and Haul program as a “grandfathered” customer, as defined in the Pump and Haul Policy.
- (c) Loans are not available for measures installed before the Promissory Note is signed.
- (d) The loan will be for a term of 5-years with a 5% interest, and no penalty for early payoff. Minimum loan amount is \$5,000; maximum amount is \$40,000
- (e) All payments will be due on the 5th of each month and will incur a ten percent (10%) late payment penalty if not paid on time.
- (f) There will be a one-time administrative fee of one hundred twenty-five (\$125.00) dollars due at the time the agreement is signed.
- (g) Loans will be disbursed as funding is available. If insufficient funds are available for all interested parties, those property owner’s that can demonstrate they are eligible as a Prorated Customer under the Pump and Haul Policy will be given priority, all others will be on a first come first serve basis.

- (h) The County Administrator, or his designee, will be the authorized person to enter into these contracts on behalf of the Board of Supervisors.
- (i) The contract shall specify the following terms and conditions:

DRAFT SEPTIC SYSTEM REPAIR AGREEMENT

IMPORTANT NOTICE

THIS INSTRUMENT CONTAINS A CONFESSION OF JUDGMENT PROVISION WHICH CONSTITUTES A WAIVER OF IMPORTANT RIGHTS YOU MAY HAVE AS A DEBTOR AND ALLOWS THE CREDITOR TO OBTAIN A JUDGMENT AGAINST YOU WITHOUT ANY FURTHER NOTICE.

THIS AGREEMENT for the repair of failed septic systems or purchase and installation of an alternative sewer system to the following property: _____ Stafford, VA 22____ (hereinafter referred to as Property), is entered into this _____ day of 2015, by and between Property Owner 1, current owners of the Property, Tax Map _____ (hereinafter referred to as Purchaser), and STAFFORD COUNTY, VIRGINIA (hereinafter referred to as Seller).

W I T N E S S E T H:

WHEREAS, Purchaser currently owns a septic tank for the storage of wastewater on the Property that is part of the Subsidized Utility Pump and Haul program as a “grandfathered” customer, as defined in the Pump and Haul Policy; and

WHEREAS, the Purchaser owns the Property on which they are seeking to have an alternative sewer system built on the Property named above and desires to obtain a loan from Stafford County Utilities to install said system. Only those systems which have been designed by an Authorized On-Site Sewer System professional and approved and permitted by the Virginia Department of Health are eligible for a loan thru this program; and

WHEREAS, the Board of Supervisors of Stafford County has authorized the lending of said loan to be paid by installments during a sixty (60) month term at an interest rate of 5%.

NOW, THEREFORE, for and in consideration of the sum of one hundred twenty-five (\$125.00) dollars paid herewith by the Purchaser, and in further consideration of the mutual covenants and promises contained herein, the parties agree as follows:

1. Purchaser shall pay the sum of \$ _____ as full payment for the installment of an alternative septic system on the Property, said sum to be paid by making sixty (60) monthly installments of \$ _____ per month. Payments are to be paid by the 5th day of each month beginning with the month of _____, 2016, and continuing each month until paid in full, not later than the month of _____, 2020. Any payment not received by the 5th of the month will incur a ten percent (10%) late payment penalty.
3. Purchaser shall pay monthly loan installments as billed.
4. In the event that the Purchaser or his successors at any time is required or wishes to pay the balance due under this Agreement, he or she may do so without penalty.
5. Upon the execution of this Agreement and the beginning of installment of the alternative septic system to the Property, this Agreement cannot be terminated by the Purchaser except by full payment of all monies due hereunder.
6. Seller will no longer provide Pump and Haul service to the Property upon completion of septic system repair, or installation of an alternative septic system.
7. IN THE EVENT PURCHASER TRANSFERS OWNERSHIP OF THIS PROPERTY BY SALE OR OTHERWISE, ALL REMAINING DEBT UNDER THIS AGREEMENT SHALL BECOME DUE AND PAYABLE ON THE EFFECTIVE DATE OF SUCH TRANSFER. IT IS INTENDED THAT THIS INSTRUMENT BE RECORDED IN THE CIRCUIT COURT CLERK'S OFFICE OF STAFFORD COUNTY.
8. IN THE EVENT THAT PURCHASER FAILS TO MAKE ANY MONTHLY INSTALLMENTS UNDER THIS AGREEMENT, THE ENTIRE REMAINING DEBT UNDER THIS AGREEMENT SHALL BECOME IMMEDIATELY DUE AND PAYABLE, AND THE PURCHASER CONFESSES JUDGMENT AGAINST HIM IN THE SUM REMAINING UNDER THE AGREEMENT, IN CASE OF LAWSUIT TO COLLECT UPON THIS FEE. The attached Confession of Judgement is an integral part of the alternative septic system agreement, and will be applied only if and when the purchaser shall default on the terms of this agreement.
9. This agreement shall be governed by and construed in accordance with the laws of Virginia.
10. This agreement is further subject to such rules, regulations, and laws as may be applicable to similar agreements in this state and the Purchaser will obtain any such permits, verifications, or the like, as may be required to comply therewith.

11. The obligations of this Agreement shall also become a lien against the real estate served pursuant to this Agreement.
12. Purchaser hereby agrees to use any availability fees and/or connection fees refunded from the Department of Utilities for the payment of the installation of the system.
13. Purchaser hereby expressly waives the benefit of any homestead exemption as to this debt and waives demand, protest, notice of presentment, notice of protest, and notice of non-payment and dishonor of this note.
14. Purchaser expressly agrees to submit to personal jurisdiction in Virginia and agrees that the forum for any litigation pursuant to this Agreement or any other contract between Seller and Debtor, whether suit is brought by Seller or Debtor, shall be the General District or Circuit Court of Stafford County, Virginia.
15. Purchaser hereby constitutes and appoints [name who will be taking this to the Clerk for Utilities], his true and lawful attorney-in-fact, with full power and authority hereby given him to appear and present this note before the Clerk of the Circuit Court of Stafford County, Virginia, at any time after maturity or default on any of the installments hereof and to waive the issuance and service of process and to confess judgment against him in favor of the payee or holder hereof for the amount of money due plus interest and costs, plus attorney's fees in an amount equal to 33% of the amount of money due, less credit for payments made.

AJR:MTS:cdg



STAFFORD COUNTY Pump and Haul Loan Policy

Draft

February 2, 2016



PUMP AND HAUL SEWER SERVICE POLICY

I. Purpose:

Stafford County Utilities (the Utilities) currently provides subsidized and non-subsidized Pump and Haul services to homes with failing or failed septic system. The subsidy portion of the service is ending. Aware that some homeowners are unable to afford the program without subsidy, the Board of Supervisors requested a solution. As such, the Utilities will provide loans to homeowners who are unable to obtain private funding to cover the costs of installing alternative septic systems.

II. Eligibility:

A homeowner that is currently a grandfathered subsidized pump and haul customer where an alternative system has been identified is eligible to seek this loan. No new subsidies will be offered for the Pump and Haul program. Proof of ownership is required in the form of a recorded deed for the property.

III. Process:

An eligible homeowner may request a loan from the Stafford County Department of Utilities by following the steps outlined in Appendix A of this document.

Staff will review the application to ensure it is complete in accordance with Appendix B.

IV. Loan Terms and Policies

1. Loans are not available for measures installed before the Promissory Note is signed.
2. Current terms:
 - a. 5-year term
 - b. 5% interest
 - c. No penalty for early payoff
3. Minimum loan amount \$5,000; maximum amount \$40,000
4. A Virginia Department of Health (VDH) permit for installation of an Alternative Sewage Disposal System is required prior to loan processing
5. The customer chooses his or her installing contractor. The County does not recommend, endorse or certify contractors, or warrant or otherwise guarantee their work.
6. Loan payments are billed monthly.
7. The minimum monthly loan payment is \$25/ month.
8. The loan is recorded and secured with a property lien.
9. Applicant must provide a copy of the recorded Deed showing real property ownership.
10. All owners named on the Deed must be on (or added to) the Account, and all owners must sign both the loan Application and the Loan Promissory Note.

Pump and Haul Loan Policy

11. All past due amounts on all of the Applicants' account(s) must be paid before loan approval.
12. No income eligibility requirements.
13. Loan applications will be approved or disapproved on the basis of established program criteria, and availability of funds.
14. Loans are not approved for Applicants with bankruptcy declaration, bankruptcy discharge, or foreclosure proceedings, within the past 7 years.
15. Loan payments are billed to the property owner's home address.
16. Loan is due upon sale of the property or account name change.
17. Loans are not transferable. Likewise, liens are not transferable.
18. Loans are approved for specific dollar amounts, for alternative sewage disposal systems in order to remove customer from the County's subsidized pump and haul list.
19. The County will be held harmless from any liability in connection with its approval or disapproval of any loan application or the manufacture, supply or installation of any alternative system.
20. If the customer defaults on loan repayments and the County is required to take any action to enforce the terms of the note, the customer shall pay all costs incurred by the County for such enforcement, including reasonable attorney's fees, including the costs and attorney's fees incurred as a result of any appellate proceedings.
21. The County reserves the right to revise these policies and to approve or disapprove loans in the best interest of the County.
22. The County's loan checks are made out to installing contractors and mailed to contractors on completion of work and a passed VDH and County final inspections, unless the customer requests a different check release procedure that is satisfactory to his or her contractor as well as the County.

V. Fee Structure:

All applicable fees include:

Administrative/Application fee (includes recording, filing and release.....\$125.00

VI. Required Documents:

1. Alternative Septic System Installation Program Application
2. Current copy of Property Deed
3. Confession of Judgment
4. Proposal bid(s) from contractor(s)

Appendix A

Steps for Eligible Customers to Obtain a Loan:

1. Once an Alternative Sewage Disposal system has been identified, and the homeowner has obtained a permit from the Virginia Department of Health, the homeowner may call Stafford County Utilities Customer Service 540-658-8616 to begin the process. Utilities staff will schedule an appointment to begin a loan file. Information to have ready:
 - i. Name on utility account, and your account number
 - ii. Phone and fax numbers, and email address
2. The loan officer will send the customer a preliminary Loan Terms- and-Policies document to be signed and returned.
3. The homeowner is responsible to obtain contractor proposals for alternative system installations. Competing bids are not required; however, it is advised, but not a loan program requirement.
4. Send copies of the following documents to the Loan officer.
 - i. Current property deed (A copy of you deed can be obtained from the office of the Stafford County Clerk of the Courts)
 - a. Additional documentation such as a Marriage License to document a name change, or a Divorce Decree; or a Death Certificate for deceased persons named on your current Deed may also be required.
 - ii. Installing contractor's proposal(s) or any vendor price proposals.
5. Submission Alternatives
 - i. Fax number: 540-658-4082 (Attention: Pump and Haul Loan Officer)
 - ii. Email address: Utilcustervice@staffordcountyva.gov
 - iii. Mailing address (this is not the physical location of our office):
Stafford County Utilities
Attn: P&H Loan Officer
P.O. Box 339
Stafford VA., 22555-0339
5. Our loan officer is available to assist in preparing the loan application if needed.
6. Next, our loan officer prepares your Loan Promissory Note and contacts you when it's ready for notarized signing.
7. To sign and notarize the final loan documents including the Loan Promissory Note, the customer will be required to visit the Utilities Customer Service office at 2128 Jefferson Davis Hwy, Suite 203; Stafford, Virginia 22555-0339. Please be sure to bring a government issued photo identification card to the signing (ex. Driver's License Card).
8. Once the note is signed, the loan officer will fax, email or mail a Loan Approval confirmation to the customer .
9. Before installation may begin, the homeowner, or their contractor will be required to obtain the appropriate installation permits through the Virginia Department of Health

Pump and Haul Loan Policy

(VDH) and the Stafford County Department of Public Works. VDH and the County will inspect the completed work.

10. Upon completion of the work and proof of acceptance by VDH and the County inspectors, a check will be sent to the approved vendor for the installation.

Appendix B

Application Review Process:

1. All persons listed on the recorded deed of the property must complete the Alternative Septic System Installation Program application form.
2. A current copy of the recorded deed must accompany the application.
3. Determine whether all payments are received including the application fee and administrative fee.
4. The Confession of Judgment must be signed and attached.
5. Examination of the application is to ascertain whether the persons listed on the deed and application match. Financial capability of the applicant is not required. All required signatures must appear on the application.
6. Review bid(s) from contractors to determine loan amount.
7. Notary stamp is required for filing.
8. Approval signatures required from the Utility Financial Analyst and Director once review is complete.
9. Update customer account information in Utilities customer account system.
10. Send request to Finance for check issuance.

Route 1/Route 610 Right Turn Lane Project

- This project constructs a second right turn lane from southbound Route 1 (Jefferson Davis Hwy) onto westbound Route 610 (Garrisonville Road) per the attached graphic
- Project also includes conversion of a right turn only onto northbound I-95 north of the intersection into a through/right turn to increase stacking capacity, along with signal improvements being completed by VDOT
- When completed, our traffic analysis indicated the intersection performance will be improved from a level of service “F” to an “E”, with a 30% reduction in overall intersection delays, and 75% reduction in right turn delays
- VDOT has begun installing the new signals, and expect to be completed by June 1st
- The County has offered the project for public bids, with the bids due at 3PM on Tuesday May 3rd.
- Following review of the bids by VDOT, we expect to ask the Board to consider award of the contract at the May 17 meeting, and issue a Notice to Proceed around June 1st.
- The contractor will have 90 calendar days to complete the project once a Notice to Proceed has been issued, allowing for a September 1st completion.
- Due to the heavy traffic at this intersection, the contractor will only be allowed to implement lane closures between the hours of 10PM-7AM, Monday thru Friday, and 10PM-9AM on the weekends.
- Much of the work will be performed outside the roadway without lane closures.
- This improvement is a very successful cooperative effort between the County and VDOT, with the signal work being conducted by VDOT contractors and saving the County around \$250,000 in signal replacement improvements in exchange for the County funding \$19,300 in signal design costs.



- PARCEL BOUNDARY
- WATER WAY
- LIMITED ACCESS FENCE
- PROPOSED TURN LANE

US RTE. 1/RTE. 610 INTERSECTION IMPROVEMENT STAFFORD COUNTY, VIRGINIA

RICHMOND OFFICE:
3951 WESTERRE PARKWAY, SUITE 150, RICHMOND, VA 23233, PHONE: 804.616.3240

SCALE: NTS
DATE: 6-18-2013

Bowman
CONSULTING

3 Belmont-Ferry Farm Trail Phase 6

- Staff provided the Infrastructure Committee with a briefing (attached) on the alignment alternatives for Phase 6 of the Belmont Ferry Farm Trail at the April 5th meeting.
- Staff was requested to study a trail alignment that followed the Rappahannock River.
- We prepared an alternative alignment (attached) that follows the river for just over .5 miles before passing under the CSX railroad bridge, and then leaving the river to eventually follow a path near Route 3.
- This route offers a number of advantages over other studied alternatives as noted below.

ADVANTAGES

- | | |
|--|--|
| * River Alignment is more scenic | * Longer trail offers additional user experience |
| * Avoids vehicle conflicts (safety & aesthetics) | * Reduces utility conflicts |
| * Provides route avoiding CSX tunnel | * Offers access to nearby neighborhoods |

DISADVANTAGES

- | | |
|---|---|
| * Floodplain location increases maintenance | * Floodplain restrictions for fill activities |
| * Two long bridges necessary | * Will cross multiple private parcels |
| * Requires clearing forested areas | * Wetland impacts |
| * Steep grades require switchbacks | * Historical resource concerns |
| * Higher cost | * Much of the route is remote & wooded |
| * CSX must grant an easement | |
- The estimated cost for this option is slightly over \$2.2 million, or about twice the cost of other viable options.
 - The river option will be more challenging to permit, with impacts to wetlands, riparian areas, and the filling in the floodplain.
 - Maintenance and security concerns
 - We anticipate some resistance to the trail from property owners along the way, and we will have to obtain an easement from CSX under their bridge.
 - The study is advanced far enough for the next step, which could include public outreach.

4 Belmont-Ferry Farm Trail Phase 6

April 5, 2016

- Staff is currently working on an alignment alternatives study to identify possible alignments between the east end of Phase 4 at the Chatham Bridge and Ferry Farm.
- We have been awarded \$1,000,451 in TAP allocations from FY15 and FY16 for the Belmont-Ferry Farm Trail Phase 6. The total project cost is estimated to be \$1,250,000. The County's share of the expenses equates to \$250,000 (20%). We expect this amount to be full funding, although the project is still in the early stages of development.
- Four possible alignments have been identified and conceptual studies have been performed. The trail graphics are included.
- One of the 4, which parallels Route 3, appears to not be viable due to the high cost of constructing the trail on steep topography and the need to cross over the railroad tracks with possibly a new, trail-specific bridge. Initial estimates place the cost of this option at just over \$3.4 million, well over the \$1.25 million in available funding.
- The other 3 alignments follow the same route parallel to Route 3 from Ferry Farm to the tunnels under the railroad tracks on Naomi Road. The three options have an overall length of approximately 0.8 miles, but follow different routes from the railroad underpass to the terminus with the Phase 4 trail.
- One option follows Naomi Road, with the other two following Dairy Lane before separating for the last 1,500' of the route.
- Each route has its own challenges of stream crossings, wetlands, topography, private property acquisition, the impacts of which are still being evaluated.
- Preliminary construction cost estimates for the 3 feasible alignments range from \$1.0 M and \$1.1 Million. Project costs will be refined once the preferred route is selected and more detailed survey and design work is completed.
- Staff expects to have a recommendation on the preferred alignment this month. This will allow initiation of detailed design efforts on Phase 6 of the Belmont-Ferry Farm Trail.
- The Belmont-Ferry Farm Trail is considered part of the Potomac Heritage Trail. Federal Earmark Funds for the Potomac Heritage Trail could be used on Phase 6 to help cover a possible funding gap.



Stafford County, Virginia

Department of Parks, Recreation and
Community Facilities

Belmont-Ferry Farm Trail Phase 6

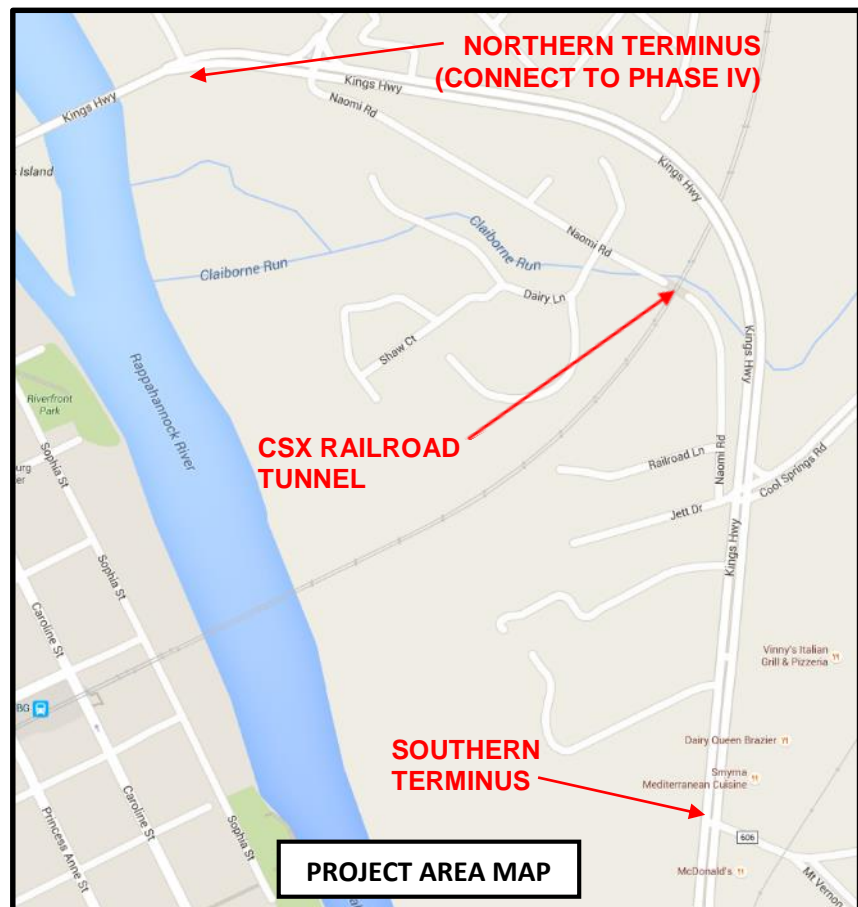
ALIGNMENT STUDY Trail Option Alternatives

APRIL 19, 2016

A. Morton Thomas and Associates
100 Gateway Center Parkway
Suite # 200
Richmond, Virginia 23235

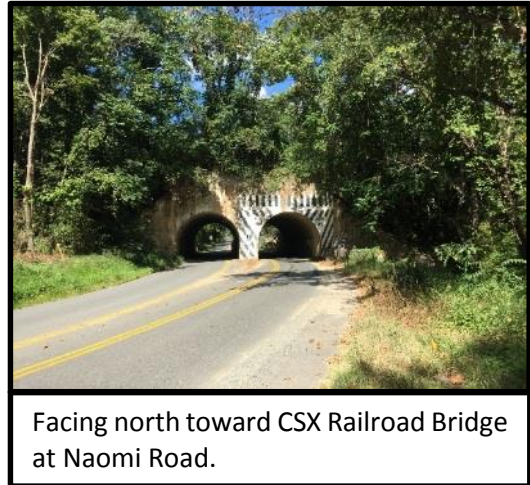
PROJECT AREA

A. Morton Thomas and Associates (AMT) was contracted by the Stafford County Department of Parks, Recreation and Community Facilities in 2015 to review alternative routes for Phase of the Belmont Ferry Farm Trail. The trail location is within the Falmouth Magisterial District of the county, parallel to the Rappahannock River. The project area is bordered to the west by the river, with Kings Highway (Route 3) forming the eastern project area boundary. The connection to Phase 4 of the trail system, and the northern terminus of the study area is at the Chatham Bridge, which carries traffic across the Rappahannock River to the downtown area of the City of Fredericksburg. For the purposes of this study, the southern terminus of the project area will be a location at the perimeter of the Ferry Farm Foundation along King's Highway.



CONSTRAINTS

Property ownership (acquiring easements or rights-of-way), topographic and land use constraints limits trail options to each of the four routes, (three routes share a large portion of their southern alignment). For differentiation purposes, Phase 6 alternative routes have been indicated in and organized by color. The primary physical and



Facing north toward CSX Railroad Bridge at Naomi Road.

topographic constraint to the Phase 6 trail development is the CSX Railroad and associated embankment. This is also the most significant constraint to trail development between the Ferry Farm Foundation and the terminus of Phase IV portion of the trail system.

An elevation difference of over 40 vertical feet in places creates potential impediments to to ADA compliant grades for trail options. Several other locations

ADA ACCESSIBLE TRAIL GUIDELINES

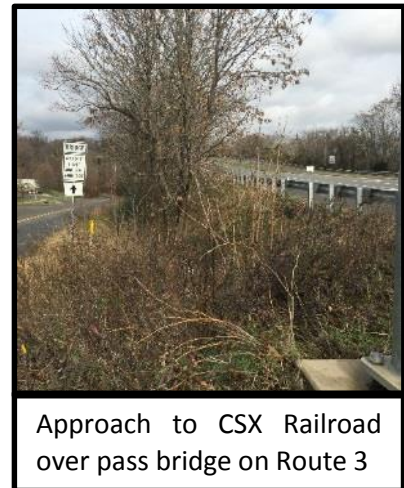
- An accessible trail would meet these minimum technical provisions:
- Clear tread width: 36" minimum
- Tread Obstacles: 2" high max. (3" high when running & cross slopes are 5% or less)
- Cross Slope: 5% max.
- Running slope (trail grade) meets one or more of the following:
 - 5% or less for any distance.
 - up to 8.33% for 200' max. Resting intervals no more than 200' apart.
 - up to 10% for 30' max. Resting intervals 30'.
 - up to 12.5% for 10' max. Resting intervals 10'.
- No more than 30% of the total trail length may exceed a running slope of 8.33%.
- Passing Space: provided at least every 1000' where trail width is less than 60"
- Signs: shall be provided indicating the length of the accessible trail segment.



Island with utilities along Kings High at Tom's Body Shop

present ADA access impediments, (at curbs, street crossings and areas where special grading is required to achieve compliant slopes). The current vehicular options to cross this impediment is a tunnel structure at Dairy Lane and an overpass bridge at Kings Highway. Along most of the western perimeter of the study area, an approximately 30' high natural ridge parallels the Rappahannock River,

creating a challenge to the trail grade compliance requirements of VDOT and the Federal Highway Administration (FHWA). The graded side slope approaches to the Kings Highway Bridge over the CSX Railway at the eastern edge of the study area also creates a constraint to trail development options.



Approach to CSX Railroad over pass bridge on Route 3

Claiborne Run, a perennial stream that traverses the north portion of the project area, also creates an impediment to foot and bicycle travel throughout the study area. The Rappahannock River and Claiborne Run floodplains, are active and dynamic, and also pose challenges to trail development. Per VDOT standards, new development projects cannot create a rise in peak flood stages. Fill associated with trail development within the floodplain along with bridges and culverts, can create floodplain impacts unacceptable to regulatory agencies. Wetlands fringing Claiborne Run and associated with the Rappahannock River are present within portions of the study area. Palustrine Forested Wetlands (PFO) are located adjacent to the Rappahanock River and fringing Claiborne Run, particularly in the northern

portion of the project area and west of the old Dairy Road alignment. Typically wetlands often exhibit poor soil conditions which may require special consideration and increased construction costs. Wetland impacts as well as stream impacts require mitigation efforts in order to comply with United States Army Corps of Engineers (USACoE) requirements. The PFO mitigation ratio is 2:1. Stream credits within the watershed are available but are expensive.



Lane House (DHR #089-0043)
on bluff above the Red Trail
option (cultural resource)

The study area encompasses some of the most culturally significant ground in Stafford County and the country. When properly conserved these archaeological and architectural areas and structures provides an opportunity for tourism. Several areas have been



Claiborne Run at Naomi Road

identified on the Red, Green and Orange Trail options for Interpretive areas, detailing both natural and cultural features. Conversely, when the goal is the development of a trail network, cultural resources, particularly archaeological resources, can be an impediment to trail development. Several cultural resource areas have been identified by the Virginia Department of Historic Resources, and are indicated in the accompanying map exhibits.



Exposed natural gas line at Old Dairy Lane Bridge abutment at Clairborne Run

Utilities, particularly underground utilities are numerous throughout the study area. In addition to buried electric, petroleum, and natural gas lines, sanitary sewer, water and communication lines are also found under portions of all route alternatives explored. Utility and traffic control poles and cabinets are expensive to relocate and adjust and are found throughout the project area. Underground

utilities can often remain in place throughout trail construction, but careful location and methods are needed to avoid costly impacts and breaks in service.

The availability and suitability of right-of-way is another potential constraint to the ultimate development of Phase 6 of the Belmont – Ferry Farm Trail.

Whenever possible, trail alignment options are planned to be within existing VDOT right-of-way or county owned property. For all alternatives, the trail connection to the Ferry Farm Foundation property will require an easement from the organization for trail construction. Regarding the Red, Orange and Green Trail options, an easement will be required from the Ferry Farm Foundation trail connection to the approximate location of Tom's Body Shop, near the Jett Drive intersection. The Red and Green Trail options also require the acquisition of right-of-way from various private land owners, as both routes continue north and cross from Dairy Lane and the end of state maintenance.



Existing sanitary sewer manhole along red / Orange / Green Trail option prior to CSX RR overpass structure



Resource Protection Area and un-named stream within wetland area along the Green Trail option route

Existing infrastructure (road alignments) within the study area were not originally designed or developed to accommodate a 10' wide multi-modal trail. As a result it is not possible to place the type of trail proposed entirely within public right-of-way.

Unwilling and or unresponsive land owners can create a situation that is not conducive to trail development.

Several locations within the area may require

obtaining easements from cooperative land owners

due to limited right-of-way. Resource Protection Areas (RPA's) are 100' buffers on either side of a perennial stream. Both the Rappahannock River and Claiborne Run are perennial and have RPA buffers associated with them. Trail building with impervious surfaces (asphalt or concrete) are allowed within an RPA, per the Chesapeake Bay Preservation Act guidance. Therefore, RPA's are not considered an impediment or a constraint to trail construction.

** Due to the CSX Railroad grade, options are limited to two trail crossing locations; at the Dairy Lane tunnel and the Kings highway overpass. With the exception of the Blue Trail option, all other trail alignment options will include portions of other trail alignments in their respective routes. The portion of the trail that is shared by three trail options (Red, Orange and Green), extends from the southern terminus to the northern side of the CSX Railroad tunnel.**

Each Trail Option is described in it's entirety and includes the shared trail portions.

RED TRAIL

Image facing north of potential Red / Orange / Green Trail option alignment along Route 3 on Ferry Farm Foundation property

This trail option commences at the approximate future Ferry Farm Foundation entrance, across from (Route 606) Ferry Road, on parcel (54 93A), on property. The Red Trail alternative heads north, roughly paralleling Kings Highway. The first portion of this route is situated on gently rolling terrain as it traverses through open pasture and mixed woodland and is located entirely on property owned by the Ferry Farm Foundation. This

portion of the trail alignment would require cooperation and a easement from the foundation. Within this initial section of 10' wide multi-use trail, two private driveway crossings are required. Utilities in this area consist of buried fiber optic lines, located parallel to Kings Highway



Private drive on Ferry Farm Foundation Property. (All trail options pass this area)



Existing conditions within Ferry Farm Foundation property and potential route of the Red / Orange / Green Trail options

and crossed by this proposed trail option as it leaves the property of the Ferry Farm Foundation. As the trail progresses north the character drastically changes from a generally pastoral setting to a commercial area anchored by "Tom's Body Shop". Special grading is required to accommodate a trail and entrance prior to the property line due to an 8' elevation change. The "Tom's Body Shop" parking/storage/drive area

consists of two grass covered curbed islands (communications equipment

cabinets and buried communications lines are located within), with two flanking drive aisles and corresponding grassed curbed bulb outs. Regarding the buried utilities in this area, careful planning and construction methods will be required in order to avoid possible damage. Relocation of the existing utilities is a potential project expense, but unlikely due to the assumed depth of the buried lines. A sub-surface utility investigation would be required in this area. These areas are used to store and or display boats and other vehicles and appear to be within VDOT Right-of-Way. This front lot area of Tom's Body Shop is heavily used.

Striping and bold wording may be required to keep the area free of parked vehicles and to indicate it as the trail route. This area may be an encroachment onto VDOT right-of-way. A field survey will be needed to confirm all possible right of way encroachments. As this option continues north, it takes an approximately 45 degree turn (avoiding traffic control equipment



Facing South from Tom's Body Shop toward slope, drainage feature and private property along proposed trail alignment

and structures) to the northwest and crosses Jett

Drive. Stop signs and curb ramps are needed here.

Relocation of a mailbox and small tree removal will also be required. The Red Trail option continues north, paralleling Dairy Lane and crossing the Railroad Lane entrance to Dairy Lane. The "Tom's Mini Warehouses" property and associated 4' wide concrete sidewalk offer the best location to continue the trail north. The steep grade of the Kings Highway



Image of Red cedars, screening Route 3 from potential Red / Orange / Green Trail option

embankment on the opposite shoulder prohibits trail development. Buried utilities in the area include fiber optic lines, sanitary sewer, water and electric. The existing sidewalk running the length of the mini warehouse property will require removal. The alignment continues north, with minor tree and brush removal required until the trail reaches the Stafford County Department of Public Utilities, Cedar Bluff Communications Tower/Pump facility. This location when expanded and developed, offers a suitable location for staging and cueing of trail users to cross Dairy Lane and travel through the 1904 CSX Railroad Tunnel



Previously constructed 4' wide sidewalk along Naomi Road. The Red / Orange / Green Trail options follow this route

structure. The width of each lane of the tunnel is 20 feet, and not wide enough to safely accommodate vehicular and bicycles/pedestrians simultaneously, therefore traffic control is needed. A button actuated "Walk – Don't Walk" signals connected to stop lights are required for this area, as are painted crosswalks and lights within the tunnel. Coordination with CSX and VDOT is required

to facilitate this. A traffic study and detailed safety analysis will be required by VDOT to ensure proper signal timing placement of lights and poles. North of the tunnel and to the west is a residual triangular shaped parcel associated with Dairy Lane that provides another staging area opportunity for trail users

headed south and is the connection to the Orange Trail option. Additionally, this area provides a logical trail connection to Dairy Lane and the Chatham Landing



Cedar Bluff pump / tower facility along Naomi Road prior to the CSX Railroad tunnel structure



View of eastbound lane of CSX Railroad tunnel structure

neighborhood via Shaw Court. In this area of the Red Trail option, right-of-way is limited, traffic volumes and posted speeds are low enough to allow for a shared use alignment for approximately 100 yards. Striping and signage is needed in this area to identify the trail route and to keep the area free of parked vehicles. These improvements are necessary to provide a level of safety between vehicles and trail

users. The trail option takes on a much more natural setting as it exits the existing paved area heading north on the old asphalt road bed of Dairy Lane. Claiborne Run and associated forested wetlands provides an interesting aesthetically pleasing backdrop for the trail along this section. A 4" ductile iron Columbia Gas Line parallels the trail along this



View of Utility easement and clearing on VDOT outparcel connecting Naomi Road to Dairy Lane

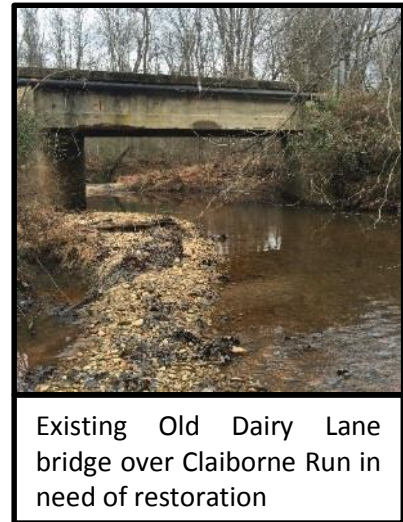


Image facing north from Dairy Lane and Shaw Court of abandoned road bed and potential trail alignment

portion of the alignment and is visible due to erosion at the upcoming bridge structure. After approximately 100 yards, the old Dairy Lane Bridge provides a crossing option of Claiborne Run. Hydrologic and hydraulic studies are needed to determine the specific structure and elevations that are required to span Claiborne Run without adversely affecting the floodplain.

Restoration work to the structure and approaches is required for the existing structure to be used as a multi-use trail crossing. If

restoring the still useable structure is not feasible, a new structure can be used. A prefabricated bridge, such as a Conspan, is a cost effective alternative. The Red Trail alignment continues along the old road grade, gradually increasing in elevation. Two drainage features, which require culverts are located further along the trail option. The existing impervious surface of the old road bed provides benefits when storm



Existing Old Dairy Lane bridge over Claiborne Run in need of restoration

water management for quantity and quality are considered. Steep slopes and



Approach to the Red Trail option terminous on Old Dairy Lane roadbed.

vertical rock faces to the north and east of the proposed trail and forested wetlands to the south and west provide interest to the trail user. A short section of steep grade area (8.75%) lies ahead prior to the Red Trail terminus with the Phase 4 of the Belmont-Ferry Farm Trail. The total length of this trail option is 4,187' or 0.8 miles.

RED TRAIL PROS

- Varied and interesting setting
- Existing stream crossing
- Few environmental impacts
- Less impervious surface
- Easy neighborhood access

RED TRAIL CONS

- Ten road/Drive Crossings
- Tunnel/dismount area
- Numerous buried utilities
- Right-of-way needed
- Tom's Body Shop area
- Stream studies & restoration

Engineer's Estimate of Probable Construction Cost					
Belmont Ferry Farm Trail - Phase 6 - RED OPTION - 4,187'					
#	Item	Unit	Qty	Price	Cost
1	Design / Studies / Construction Administration	ls	1	\$ 115,000.00	\$ 115,000.00
2	Construction Surveying	ls	1	\$ 15,000.00	\$ 15,000.00
3	Mobilization	ls	1	\$ 10,000.00	\$ 10,000.00
4	Traffic Control Measures - Temporary	ls	1	\$ 5,000.00	\$ 5,000.00
5	Erosion and Sediment Control	ls	1	\$ 7,500.00	\$ 7,500.00
6	Saw Cut & Remove Curb & Gutter	lf	75	\$ 12.00	\$ 900.00
7	Wetland Mitigation Credits	cr	0.066	\$ 25,000.00	\$ 1,650.00
8	Stream Mitigation Credits	lf	30	\$ 300.00	\$ 9,000.00
9	Remove Curb Ramp	sy	7	\$ 24.00	\$ 168.00
10	Remove 4' Wide Concrete Sidewalk	sy	166	\$ 24.00	\$ 3,984.00
11	Class I Riprap	sy	33	\$ 60.00	\$ 1,980.00
12	Rehab or Replace Pedestrian Bridge	ls	1	\$ 150,000.00	\$ 150,000.00
13	Tree / Vegetation Removal / Clearing	ls	1	\$ 5,000.00	\$ 5,000.00
14	Fine Grading and Stabilization w/ Topsoil & Mulch	ac	0.25	\$ 30,000.00	\$ 7,500.00
15	(Upland) 10' Wide Asphalt Trail (includes grading, base stone, fabric)	lf	3,050	\$ 105.00	\$ 320,250.00
16	(Floodplain) 10' Wide Asphalt Trail (includes grading, base stone, fabric)	lf	630	\$ 130.00	\$ 81,900.00
17	Traffic Control (CSX Tunnel)	ls	2	\$ 15,000.00	\$ 30,000.00
18	CSX Railroad Tunnel Lighting	ls	1	\$ 10,000.00	\$ 10,000.00
19	Pavement Line Marking	ls	1	\$ 6,000.00	\$ 6,000.00
20	Steel Bollard	ea	11	\$ 550.00	\$ 6,050.00
21	CG-12 Detectable Warning Surface - Curb Ramp, Type B	ea	17	\$ 1,500.00	\$ 25,500.00
22	Utility Relocation / Adjustments	ls	1	\$ 20,000.00	\$ 20,000.00
23	RCP Drainage Culverts	ea	2	\$ 1,500.00	\$ 3,000.00
24	New Signage	ls	1	\$ 2,500.00	\$ 2,500.00
25	Stormwater Management	ls	1	\$ 50,000.00	\$ 50,000.00
26	Trees 2.5" caliper, 8' min. height	ea	20	\$ 200.00	\$ 4,000.00
27	Amenities (benches, bike racks, interpretive signage, fixit stations)	ls	1	\$ 10,000.00	\$ 10,000.00
28	Landscaping at CSX Tunnel (groundcover, plants, topsoil and mulch)	ls	2	\$ 2,000.00	\$ 4,000.00
29	Property Acquisition (easements, ROW, etc.)	ls	1	\$ 50,000.00	\$ 50,000.00
30	Subtotal =				\$ 840,882.00
31	20% Contingency				\$ 168,176.40
32	Construction Inspection, Administration and VDOT Oversight (20% of Construction)				\$ 155,176.40
33					
34					
35	Total =				\$ 1,164,234.80

4/1/2016

A. Morton Thomas and Associates, Inc.

BELMONT-FERRY FARM TRAIL - PHASE 6

ALTERNATIVES ANALYSIS

RED TRAIL OPTION

FACTOR	RATING										TOTAL
	1	2	3	4	5	6	7	8	9	10	
(1) USER EXPERIENCE											9
(2) RIGHT OF WAY											4
(3) SAFETY											9
(4) AESTHETICS											8
(5) GRADE / SLOPE											8
(6) IMPACT ON ENVIRONMENT											9
(7) STREAM CROSSING											4
(8) UTILITIES											7
(9) TIME TO BUILD											5
(10) COST											8
TOTAL											71

ORANGE TRAIL

This trail option commences at the approximate future Ferry Farm Foundation



Road conditions facing north along Naomi Road toward the intersection with Route 3

entrance, across from (Route 606) Ferry Road, on parcel (54 93A), on property. The Red Trail alternative heads north, roughly paralleling Kings Highway. The first portion of this route is situated on gently rolling terrain as it traverses through open pasture and mixed woodland and is located entirely on property owned by the Ferry Farm Foundation. Within this initial section of 10' wide multi-use trail, two private

driveway crossings are required. Utilities in this area consist of buried fiber optic lines, located parallel to Kings Highway and crossed by this proposed trail option as it leaves the property of the Ferry Farm Foundation. As the trail progresses north the character drastically changes from a generally pastoral setting to a commercial area anchored by "Tom's Body Shop". Special grading is required to accommodate a trail and entrance prior to the property line due to an 8' elevation change. The "Tom's Body Shop" parking/storage/drive area consists of two grass covered curbed islands (communications equipment cabinets and buried communications lines are located within), with two flanking drive aisles and corresponding grassed curbed bulb outs. These areas are used to store and or display boats and other vehicles and appear to be



Shoulder along Naomi Road facing north illustrating the need for additional graded trail area

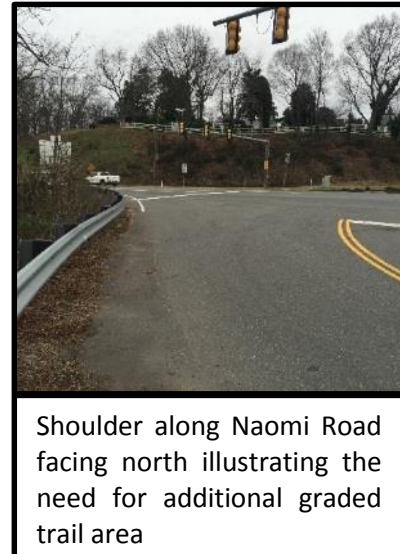
within VDOT Right-of-Way. This front lot area is heavily used. Striping and bold wording is required to keep the area free of parked vehicles and to indicate it as the trail route. This area may be an encroachment onto VDOT right-of-way. A field survey may be needed to confirm. As this option continues north, it takes an approximately 45 degree turn (avoiding traffic control equipment and structures) to the northwest and crosses Jett Dr. Stop signs and curb ramps are needed here. Relocation of a mailbox and small tree removal are required. The Red Trail option continues north, paralleling Dairy Lane and crossing the Railroad Lane entrance to Dairy Lane. The “Tom’s Mini Warehouses” property and associated 4’ wide concrete sidewalk offer the best location to continue the trail north. The steep grade of the Kings Highway embankment on the opposite shoulder prohibits trail development. Buried utilities in the area include fiber optic lines, sanitary sewer, water and electric. The existing sidewalk running the length of the mini warehouse property will require removal. The alignment



View of guard rail for steep slope along Naomi Road looking toward the Route 3 intersection

continues north, with minor tree and brush removal required until the trail reaches the Stafford County Department of Public Utilities, Cedar Bluff Communications Tower/Pump Station facility. This location when expanded and developed, offers a suitable location for staging and cueing of trail users to cross Dairy Lane and travel through the 1904 CSX Railroad Tunnel structure. The width of each lane of the tunnel is 20 feet, and not wide enough to safely accommodate vehicular and bicycles/pedestrians simultaneously, therefore traffic control is needed. A button actuated “Walk – Don’t Walk” signals connected to stop lights

are proposed for this area, as are painted crosswalks and lights within the tunnel. Coordination with CSX and VDOT permit will be required to facilitate this. North of the tunnel and to the west is a residual triangular shaped parcel associated with Dairy Lane that provides another staging area opportunity for trail users headed south and is the connection to the Orange Trail option. Additionally, this area provides a logical trail connection to Dairy Lane and the Chatham Landing neighborhood via Shaw Court. The Orange Trail separates from the Red Trail route and continues north on the south side of Naomi Road for 240' before arriving at the intersection with Dairy Lane as it crosses Claiborne Run. The existing vehicular bridge in this location will require the removal of a concrete guard wall and a width expansion of 10' in order to achieve required 3' clear zones at the trail edges. Buried electric, sanitary sewer and water are located in this area. As this route continues north the graded shoulder area within right-of-way narrows and the width available for a 10' wide multi-use trail is reduced. A slope with an elevation difference of 5'-6' in places with PFO wetlands associated with the Claiborne Run floodplain form the southern border of this alignment alternative.





Terminus of Orange Trail
option at Chatham Bridge

Impacts to wetlands and associated mitigation for wetland loss would be required in this area if a 10' trail width is to be achieved, due to the need to place fill material within the wetlands. A retaining wall or side slopes greater than 3:1 would help to reduce impacts, but not eliminate them entirely. As the route progresses north, the grade of a proposed trail increases to over 5%. The embankment for Naomi

Road becomes much steeper and bike railing is required. After approximately 480' the topography levels off and accommodates a small cluster of residential buildings. The side slopes of the Naomi Road embankment again becomes severe as the route traverses an additional 270'. Protective railing is again needed as the route approaches the intersection with Kings Highway. An approximately 50' section of retaining wall is needed in addition to railing as this segment reaches the Kings Highway shoulder. The Orange Trail option follows the shoulder for approximately 470' before terminating at the Chatham Bridge and the Phase IV Trail segment. The total length of the Orange Trail segment is 4,246' or 0.80 miles.

ORANGE TRAIL PROS

- Relatively low speed traffic
- Easy neighborhood access
- Limited environmental impacts

ORANGE TRAIL CONS

- Limited graded shoulder
- Lack of total traffic separation
- Retaining walls or special grading needed for 10' wide trail
- Right-of-way needed
- Tom's Body Shop area
- Tunnel/dismount area
- Bridge width expansion needed
- Buried utilities
- Nine Driveway crossings
- Three road crossings

Engineer's Estimate of Probable Construction Cost					
Belmont Ferry Farm Trail - Phase 6 - ORANGE OPTION - 4,246'					
#	Item	Unit	Qty	Price	Cost
1	Design / Studies / Construction Administration	ls	1	\$ 115,000.00	\$ 115,000.00
2	Construction Surveying	ls	1	\$ 15,000.00	\$ 15,000.00
3	Mobilization	ls	1	\$ 10,000.00	\$ 10,000.00
4	Traffic Control Measures - Temporary	ls	1	\$ 5,000.00	\$ 5,000.00
5	Erosion and Sediment Control	ls	1	\$ 10,000.00	\$ 10,000.00
6	Saw Cut & Remove Curb & Gutter	lf	75	\$ 12.00	\$ 900.00
7	Wetland Mitigation Credits	cr	0.11	\$ 25,000.00	\$ 2,750.00
8	Remove Curb Ramp	sy	7	\$ 24.00	\$ 168.00
9	Remove 4' Wide Concrete Sidewalk	sy	166	\$ 24.00	\$ 3,984.00
10	Widen Existing Vehicular Bridge	ls	1	\$ 75,000.00	\$ 75,000.00
11	Tree / Vegetation Removal / Clearing	ls	1	\$ 10,000.00	\$ 10,000.00
12	Fine Grading and Stabilization w/ Topsoil & Mulch	ac	0.35	\$ 30,000.00	\$ 10,500.00
13	Retaining Wall	sf	3,000	\$ 40.00	\$ 120,000.00
14	(Upland) 10' Wide Asphalt Trail (includes grading, base stone, fabric)	lf	3,246	\$ 110.00	\$ 357,060.00
15	(Floodplain) 10' Wide Asphalt Trail (includes grading, base stone, fabric)	lf	800	\$ 150.00	\$ 120,000.00
16	Traffic Control (CSX Tunnel)	ls	1	\$ 15,000.00	\$ 15,000.00
17	CSX Railroad Lighting	ls	1	\$ 10,000.00	\$ 10,000.00
18	Pavement Line Marking	ls	1	\$ 12,000.00	\$ 12,000.00
19	Steel Bollard	ea	11	\$ 550.00	\$ 6,050.00
20	CG-12 Detectable Warning Surface - Curb Ramp, Type B	ea	17	\$ 1,500.00	\$ 25,500.00
21	Utility Relocation / Adjustments	ls	1	\$ 20,000.00	\$ 20,000.00
22	New Signage	ls	1	\$ 2,500.00	\$ 2,500.00
23	Stormwater Management	ls	1	\$ 50,000.00	\$ 50,000.00
24	Trees 2.5" caliper, 8' min. height	ea	20	\$ 200.00	\$ 4,000.00
25	Amenities (benches, bike racks, interpretive signage, fixit stations)	ls	1	\$ 10,000.00	\$ 10,000.00
26	Improvements at CSX Tunnel (groundcover, plants, topsoil and mulch)	ls	2	\$ 2,000.00	\$ 4,000.00
27	Galvanized Steel Bicycle "Rub Rail"	lf	570	\$ 100.00	\$ 57,000.00
28	Property Acquisition (easements, ROW, etc.)	ls	1	\$ 35,000.00	\$ 35,000.00
29	Subtotal =				\$ 991,412.00
30	20% Contingency				\$ 198,282.40
31	Construction Inspection, Administration and VDOT Oversight (20% of Construction)				\$ 188,282.40
32					
33	Total =				\$ 1,377,976.80

A. Morton Thomas and Associates, Inc.

4/4/2016

BELMONT-FERRY FARM TRAIL - PHASE 6

ALTERNATIVES ANALYSIS

ORANGE TRAIL OPTION

FACTOR	RATING										TOTAL
	1	2	3	4	5	6	7	8	9	10	
(1) USER EXPERIENCE											6
(2) RIGHT OF WAY											7
(3) SAFETY											4
(4) AESTHETICS											6
(5) GRADE / SLOPE											4
(6) IMPACT ON ENVIRONMENT											6
(7) STREAM CROSSING											5
(8) UTILITIES											5
(9) TIME TO BUILD											4
(10) COST											2

TOTAL	49
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GREEN TRAIL

This trail option commences at the approximate future Ferry Farm Foundation entrance, across from (Route 606) Ferry Road, on parcel (54 93A), on property. The Green Trail alternative heads north, roughly paralleling Kings Highway. The first portion of this route is situated on gently rolling terrain as it traverses through open pasture and mixed woodland and is located entirely on property owned by the



Claiborne Run at Old Dairy Lane Bridge

Ferry Farm Foundation. Within this initial section of 10' wide multi-use trail, two private driveway crossings are required. Utilities in this area consist of buried fiber optic lines, located parallel to Kings Highway and crossed by this proposed trail option as it leaves the property of the Ferry Farm Foundation. As the trail progresses north the character drastically changes from a generally pastoral setting to a commercial area anchored by "Tom's Body Shop". Special grading is



Forested wetlands and utility lines within RPA along the Green Trail option

required to accommodate a trail and entrance prior to the property line due to an 8' elevation change. The "Tom's Body Shop" parking/storage/drive area consists of two grass covered curbed islands (communications equipment cabinets and buried communications lines are located within), with two flanking drive aisles and corresponding grassed curbed bulb outs. These areas are used to store and or

display boats and other vehicles and appear to be within VDOT Right-of-Way.



Green Trail option through forested wetlands (utility poles visible at left)

This front lot area is heavily used. Striping and bold wording is required to keep the area free of parked vehicles and to indicate it as the trail route. This area may be an encroachment onto VDOT right-of-way. A field survey may be needed to confirm. As this option continues north, it takes an approximately 45 degree turn (avoiding traffic control equipment and structures) to the northwest and crosses Jett Dr. Stop signs and curb ramps are needed here. Relocation of a mailbox and small tree removal are required. The Red Trail option continues north, paralleling Dairy Lane and crossing the Railroad Lane entrance to Dairy Lane. The “Tom’s Mini Warehouses” property and associated 4’ wide concrete sidewalk offer the best location to continue the trail north. The steep grade of the Kings Highway embankment on the opposite shoulder prohibits trail development. Buried utilities in the area include fiber optic lines, sanitary sewer, water and electric. The existing sidewalk running the length of the mini warehouse property will require removal. The alignment continues north, with minor tree and brush removal required until the trail reaches the Stafford County Department of Public Utilities, Cedar Bluff Communications Tower facility. This location when expanded and developed, offers a suitable location for staging and cueing of trail users to cross Dairy Lane and travel through the 1904 CSX Railroad Tunnel structure. The width of each lane of the tunnel is 20 feet, and not wide enough to safely



Image facing north toward the Chatham Bridge of the Green Trail option alignment

accommodate vehicular and bicycles/pedestrians simultaneously, therefore traffic control is needed.

A button actuated “Walk – Don’t Walk” signals connected to stop lights are required for this area, as are painted crosswalks and lights within the tunnel.

Coordination with CSX and VDOT is required to facilitate this. North of the tunnel and to the west is a residual triangular shaped parcel associated



Un-named drainage feature within forested wetlands along the Green Trail option

with Dairy Lane that provides another staging area opportunity for trail users headed south and is the connection to the Orange Trail option. Additionally, this area provides a logical trail connection to Dairy Lane and the Chatham Landing neighborhood via Shaw Court. The Green Trail separates from the Red Trail option past the Old Dairy Lane bridge. This portion of the Green Trail option is an off road segment of 10' wide multi-use path that is located almost entirely within the forested wetlands associated with the Rappahannock River and Claiborne Run, and is entirely owned by Leah Watson and Gashi Bajram. This proposed



Previously cleared and graded route through forested wetlands along the Green Trail option (utility poles are visible to the right)

option roughly follows the route of a Rappahannock Electrical Cooperative overhead electrical pole line.

The wetlands within the utility line area have previously been impacted. Depending on how the U.S. Army Corps of Engineers treats this area will determine the wetland mitigation requirements.

Wetland vegetation has been removed in much of the area beneath the pole line easement and has not fully returned. The loss of soils, hydrology or vegetation

will result in delisting of wetland classification. This situation may therefore require less wetland mitigation, saving construction resources for other needs. It is not certain if this line is still in use. The pole route and the cleared and graded area beneath provides an alternative to other portions of routes which partially or entirely rely on vehicle rights-of-way for trail development. A 20' reinforced concrete culvert is an economical



Transient community under Claiborne Bridge at terminous of Green Trail option and beginning of Phase 4 Trail segment

option to cross an un-named drainage channel after approximately 710' from the Red Trail option connection. Another 300' of trail heading north from the un-named channel, takes the trail user out of the lands owned by Leah Watson and Gashi Bajram (Parcel 54 89). From the property line, an additional 100' of trail is required to connect to the Phase 4 section of the trail system. The natural environment and aesthetics of this trail section are excellent and create an experience unlike other trail segment options. The interpretive potential for this trail segment is also unique when compared to other options. An elevated boardwalk with wildlife observation platforms are also features to explore in further detail. The total length of the Green Trail option is 4,350 or 0.80 mile.

GREEN TRAIL PROS

- Includes beautiful natural area
- Large section of land has
Little Commercial Value
- Interpretive opportunities
- Fewer properties to cross
- Trail may help with squatters and
Illegal dumping
- Existing bridge potential
- Least vehicle interaction
- Meets all program goals

GREEN TRAIL CONS





































































































- Potential wetland impacts
- Potential portion of trail flooding
- Minor clearing needed
- Construction challenges
- Tunnel/dismount Area
- Right-of-way needed
- Tom's Body Shop area
- Six driveway crossings
- Three road crossings
- Private property impacts
- Buried utilities
- Stream studies/restoration
- Significant length of trail on
private property

Engineer's Estimate of Probable Construction Cost					
Belmont Ferry Farm Trail - Phase 6 - GREEN OPTION - 4,346'					
#	Item	Unit	Qty	Price	Cost
1	Design / Studies / Construction Administration	ls	1	\$ 115,000.00	\$ 115,000.00
2	Construction Surveying	ls	1	\$ 15,000.00	\$ 15,000.00
3	Mobilization	ls	1	\$ 10,000.00	\$ 10,000.00
4	Traffic Control Measures - Temporary	ls	1	\$ 3,500.00	\$ 3,500.00
5	Erosion and Sediment Control	ls	1	\$ 10,000.00	\$ 10,000.00
6	Saw Cut & Remove Curb & Gutter	lf	75	\$ 12.00	\$ 900.00
7	Wetland Mitigation Credits	cr	0.45	\$ 25,000.00	\$ 11,250.00
8	Stream Mitigation Credits	lf	30	\$ 300.00	\$ 9,000.00
9	Remove Curb Ramp	sy	7	\$ 24.00	\$ 168.00
10	Remove 4' Wide Concrete Sidewalk	sy	166	\$ 24.00	\$ 3,984.00
11	Class I Riprap	sy	33	\$ 60.00	\$ 1,980.00
12	Rehab or Replace Pedestrian Bridge	ls	1	\$ 150,000.00	\$ 150,000.00
13	Tree / Vegetation Removal / Clearing	ls	2	\$ 5,000.00	\$ 10,000.00
14	Fine Grading and Stabilization w/ Topsoil & Mulch	ac	0.35	\$ 30,000.00	\$ 10,500.00
15	(Upland) 10' Wide Asphalt Trail (includes grading, base stone, fabric)	lf	2,673	\$ 105.00	\$ 280,665.00
16	(Floodplain) 10' Wide Asphalt Trail (includes grading, base stone, fabric)	lf	1,463	\$ 130.00	\$ 190,190.00
17	Traffic Control (CSX Tunnel)	ls	2	\$ 15,000.00	\$ 30,000.00
18	CSX Railroad Tunnel Lighting	ls	1	\$ 10,000.00	\$ 10,000.00
19	Pavement Line Marking	ls	1	\$ 6,000.00	\$ 6,000.00
20	Steel Bollard	ea	11	\$ 550.00	\$ 6,050.00
21	CG-12 Detectable Warning Surface - Curb Ramp, Type B	ea	17	\$ 1,500.00	\$ 25,500.00
22	Utility Relocation / Adjustments	ls	1	\$ 20,000.00	\$ 20,000.00
23	RCP Drainage Culverts	ea	1	\$ 1,500.00	\$ 1,500.00
24	New Signage	ls	1	\$ 3,000.00	\$ 3,000.00
25	Stormwater Management	ls	1	\$ 25,000.00	\$ 25,000.00
26	Trees 2.5" caliper, 8' min. height	ea	20	\$ 200.00	\$ 4,000.00
27	Amenities (benches, bike racks, interpretive signage, fixit stations)	ls	1	\$ 10,000.00	\$ 10,000.00
28	Improvements at CSX Tunnel (groundcover, plants, topsoil and mulch)	ls	2	\$ 2,000.00	\$ 4,000.00
29	Property Acquisition (easements, ROW, etc.)	ls	1	\$ 20,000.00	\$ 20,000.00
30	Subtotal =				\$ 872,187.00
31	10% Contingency				\$ 87,218.70
32	5% Inspection and Testing				\$ 43,609.35
33	VDOT CN Oversight				\$ 20,000.00
34					
35	Total =				\$ 1,023,015.05

BELMONT-FERRY FARM TRAIL - PHASE 6

ALTERNATIVES ANALYSIS

GREEN TRAIL OPTION

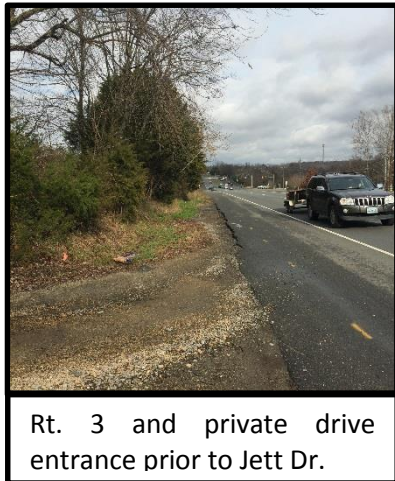
FACTOR	RATING										TOTAL
	1	2	3	4	5	6	7	8	9	10	
(1) USER EXPERIENCE											10
(2) RIGHT OF WAY											8
(3) SAFETY											9
(4) AESTHETICS											10
(5) GRADE / SLOPE											10
(6) IMPACT ON ENVIRONMENT											4
(7) STREAM CROSSING											4
(8) UTILITIES											8
(9) TIME TO BUILD											8
(10) COST											7
TOTAL											78

BLUE TRAIL

The Blue Trail option is a 10' wide multi-use trail route. The alignment is planned to parallel Route 3 from a location near the proposed new entrance to the Ferry Farm Foundation Property and proceed north along the southbound shoulder of Kings Highway (Route 3). The Blue Trail terminates at the Phase 4 Trail segment at the concrete sidewalk of the Chatham Bridge over the Rappahanock River. This



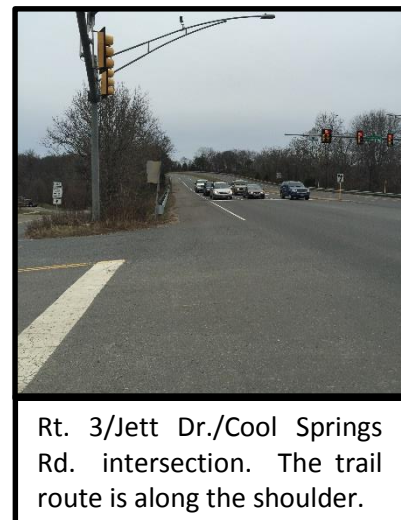
Approximate location of trail connection to Ferry Farm.



Rt. 3 and private drive entrance prior to Jett Dr.

potential alignment as proposed is a separated, standalone trail option which meets or exceeds VDOT and FHWA standards. From the trail head location at the Ferry Farm Foundation property, the Blue Trail option angles to the east and passes over buried fiber optic, sanitary sewer, water and natural gas lines, which are located along the shoulder of Kings

Highway. These utilities appear to be within the VDOT right-of-way, thus no additional easements appear needed. Care must be taken not to disturb all utilities during construction. The Blue Trail alignment progresses north for 1,075', crossing three private drive entrances along the way to the intersection with Jett Drive. As Kings Highway and the proposed Blue Trail increase in grade, they



Rt. 3/Jett Dr./Cool Springs Rd. intersection. The trail route is along the shoulder.



Rt. 3 shoulder condition and proximity of travel lanes.

become super elevated and further physical safety considerations are needed, in addition to a travel way width increase. The existing condition of the Kings Highway shoulder section in this area is currently not conducive to 10' wide multi-use trail development. Significant and costly improvements are needed to the roadway typical section and existing bridge over the CSX Railroad line

inorder to construct this option. The existing available width of shoulder varies between 10' wide to less than 8' in width at the CSX Railroad overpass bridge. The existing graded shoulder area is also less than the minimum width necessary for a 10' wide multi-use trail and required 3' wide clear zone. For this trail option, the proposed



View of Rt. 3 embankment from Naomi Rd.

width increase of the shoulder area and CSX overpass bridge is recommended to be an additional 10' onto existing width. A 2,235' driven sheet piling and



Facing north on Rt. 3 at the CSX RR overpass. The shoulder width is less than 8'.

retaining wall installation is required to expand the roadway/trailway into the 1.5:1 -2:1 sloped embankment of the Rt. 3 CSX overpass bridge. (Slope stability and structural limitations to existing infrastructure may prohibit a width expansion of the existing bridge and roadway. Detailed geotechnical and structural engineering studies are needed.) A "Safety Rail" is required for vertical drops or of 30" or



Shoulder condition prior to Rte. 3 and Naomi Rd. intersection. Potential storm water management location is at the far left.

more or slopes approaching 2:1. Approximately 2,065' (1,025' to the south of the CSX bridge and 1,040 to the north) of safety railing is proposed along the embankment, with an additional 210' of overpass barrier needed as Kings Highway crosses the CSX Railroad tracks. As the route proceeds north, shortly after crossing the Naomi Road intersection, an additional 165' of roadway widening and safety rail are needed to comply with

minimum safety standards. The Blue Trail route continues in a northwesterly direction for approximately 300' before terminating at the Phase 4 segment of the trail system. The posted speed for this portion of Kings Highway is 45 miles per hour, with vehicles routinely exceeding 65 m.p.h. Vehicular speeds and volumes, constricted right-of-way width, and heavy expected use are conditions that require additional safety considerations such as flexible posts and or grooved pavement and imbedded reflectors. This option is most suitable for confident, experienced and physically fit cyclists and individuals comfortable with biking and walking within very close proximity to rapidly moving vehicular traffic. Novice cyclists and younger or inexperienced trail users may be apprehensive or uncomfortable when using the Blue Trail option, as no solid physical barrier between pedestrians/cyclists and vehicular traffic is proposed. The previously mentioned safety rail is designed to protect against falls down 30" or greater drops and steep slopes. This alternative, as presented meets the program



Terminus of Blue Trail option at Chatham Bridge.

requirements of a 10' wide multi-use paved trail, but provides the lowest level of safety and greatest development cost of all options considered. A concrete or HDPE "Jersey" type barrier wall is a potential option for increased safety between cyclist/pedestrians and on-coming traffic, but is costly, would require additional widening and greatly detracts from the user experience. The complete length of this trail option as described is 4,530' or 0.85 miles.

BLUE TRAIL PROS

- **Limited R-O-W required**
- **No conflict with RR crossing**
- **No cultural or wetland impacts**

BLUE TRAIL CONS

- **Safety concerns (least safe option)**
- **Poor user experience**
- **Long continuous grades**
- **Few options for rest**
- **Limited interpretive area potential**
- **Least pedestrian friendly**
- **Expensive to design and build**
- **Width expansion may be problematic**

Engineer's Estimate of Probable Construction Cost					
Belmont Ferry Farm Trail - Phase 6 - BLUE OPTION - 4,530'					
#	Item	Unit	Qty	Price	Cost
1	Engineering and Surveying	ls	1	\$ 350,000.00	\$ 350,000.00
2	Construction Surveying	ls	1	\$ 25,000.00	\$ 25,000.00
3	Mobilization	ls	1	\$ 30,000.00	\$ 30,000.00
4	Traffic Control Measures - Temporary	ls	1	\$ 50,000.00	\$ 50,000.00
5	Erosion and Sediment Control	ls	1	\$ 25,000.00	\$ 25,000.00
6	Rt. 3 Bridge Widening	sf	1,680	\$ 250.00	\$ 420,000.00
7	Roadway Widening	lf	2,235	\$ 200.00	\$ 447,000.00
8	Retaining Walls	ls	1	\$ 30,000.00	\$ 30,000.00
9	Tree / Vegetation Removal / Clearing	ls	1	\$ 15,000.00	\$ 15,000.00
10	Fine Grading and Stabilization w/ Topsoil & Mulch	ac	0.50	\$ 30,000.00	\$ 15,000.00
11	(Upland) 10' Wide Asphalt Trail (includes grading, base stone, fabric)	lf	4,350	\$ 105.00	\$ 456,750.00
12	Pavement Line Marking	ls	1	\$ 15,000.00	\$ 15,000.00
13	Steel Bollard	ea	2	\$ 600.00	\$ 1,200.00
14	CG-12 Detectable Warning Surface - Curb Ramp, Type B	ea	8	\$ 1,500.00	\$ 12,000.00
15	New Signage	ls	1	\$ 2,500.00	\$ 2,500.00
16	Stormwater Management	ls	1	\$ 40,000.00	\$ 40,000.00
17	Amenities (benches, bike racks, interpretive signage, fixit stations)	ls	1	\$ 10,000.00	\$ 10,000.00
18	8' Tall Protective Vinyl Clad Overpass Fencing	lf	210	\$ 150.00	\$ 31,500.00
19	Galvanized Steel Bicycle "Rub Rail"	lf	2275	\$ 100.00	\$ 227,500.00
20	Flexible Bike Lane Indicator Posts	lf	4,405	\$ 6.00	\$ 26,430.00
21	Utility Relocations / Adjustments	ls	1	\$ 250,000.00	\$ 250,000.00
22	Property Acquisition (easements, ROW, etc.)	ls	1	\$ 50,000.00	\$ 50,000.00
23	Subtotal =				\$ 2,529,880.00
24	20% Contingency				\$ 505,976.00
25	Construction Inspection, Administration and VDOT Oversight (20% of Construction)				\$ 375,976.00
	Total =				\$ 3,411,832.00

A. Morton Thomas and Associates, Inc.

4/1/2016

BELMONT-FERRY FARM TRAIL - PHASE 6

ALTERNATIVES ANALYSIS

BLUE TRAIL OPTION

FACTOR	RATING										TOTAL
	1	2	3	4	5	6	7	8	9	10	
(1) USER EXPERIENCE	■	■									2
(2) RIGHT OF WAY	■	■	■	■	■	■	■	■			8
(3) SAFETY	■										1
(4) AESTHETICS	■										1
(5) GRADE	■										1
(6) IMPACT ON ENVIRONMENT	■	■	■	■	■	■	■				7
(7) STREAM CROSSING	■	■	■	■	■	■	■	■	■	■	10
(8) UTILITIES	■	■	■	■	■						5
(9) TIME TO BUILD	■										1
(10) COST	■										1
TOTAL											37

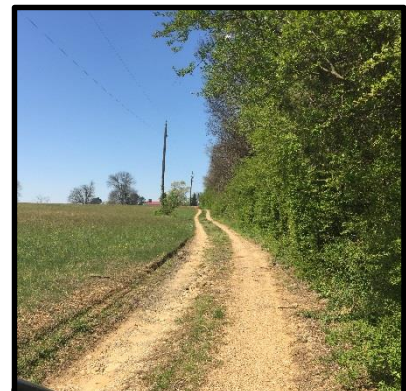
PURPLE TRAIL



The trail will cross this private access to residence.

This trail option commences at the approximate future Ferry Farm Foundation entrance, across from (Route 606) Ferry Road, on parcel (54 93A), on property. The Purple Trail alternative heads north, roughly paralleling Kings Highway. The first portion of this route is situated on gently rolling terrain as it traverses through open pasture and mixed woodland and is located entirely on property owned by the Ferry Farm Foundation. Within this initial section of 10' wide multi-use trail, a single private driveway crossing is required on parcel # 54-92, which serves

the private residence on parcel # 54-92A. A 110' radius curve to the east takes the trail on a parallel 400' long alignment with the private drive serving parcel # 54-91. Aerial utilities are located on a pole line on the southern side of the drive that can be avoided through careful trail design. The trail takes a 36' radius turn to the north and makes a perpendicular crossing of the private drive. After another approximately 400', the trail passes between a roughly one acre cultural resource area and a residence. It is not currently known if the home is currently occupied. An aesthetic treatment to consider is a native evergreen hedge planted between the dwelling and the trail to screen the structure from the trail users and provide an increased level of privacy. The trail proceeds past these areas and



Private access to residence.
The trail alignment is at left.



Private residence at # 54-91.
The trail route is to the right.

makes a turn to the northeast. At this point of the Purple Trail option, a very steep slope is encountered. Special consideration must be made to address this trail constraint and provide an ADA accessible route down the escarpment. Trail design guidelines recommend a maximum slope of 4% with a design speed of 12 miles per hour and a minimum trail radius of 36'. Other options to traverse the slope exist, but will require a higher design speed and a minimum radius of 225'. The option presented, while expensive



Base of escarpment where trail turns to CSX Bridge.

provides the trail user with a safe and easily managed grade at a speed that is conducive to trail users of all skill levels and abilities. As the Purple Trail option winds down the forested slope, a small wetland area is encountered. Earth work required to build the trail will result in impacts of approximately 7,000 square feet to this feature. Mitigation at a 2:1 ratio will be required for impacts to forested wetlands. At the base of the slope, a buried petroleum pipeline is crossed by the proposed trail. As with all buried utilities,

care must be taken when performing earthwork activities in the vicinity. A 100' radius turn toward the Rappahannock River is planned to bring the trail perpendicular to the CSX Railroad Bridge. The Purple Trail crosses beneath the cast concrete bridge, providing trail users with an interesting perspective of the unique structure. The trail follows a relatively straight alignment, crossing a small drainage swale, and running parallel to the river.



Trail location as it passes under the CSX Bridge.

This portion of the trail follows higher ground as it crosses through approximately 670' of forested bottomland. Wetland areas are encountered primarily to the west of the proposed trail in this area and provide an interesting and aesthetically pleasing environment for trail users. A cleared and graded Common Area with large specimen trees is located to the north of the forested area and is owned and maintained by the Chatham Landing Homeowners Association. A trail



CSX Bridge from below, as presented to the trail user.

connection in this area provides an excellent opportunity for recreation and safe non-motorized transportation options for the adjacent neighborhood and the Woodmont Center located to the west. After the approximately 360' length of cleared alignment, the trail enters back into the forested floodplain area flanking Clairborne Run. An approximately 70' long bridge is needed to span the banks of the stream (Clairborne Run). A bridge in this location provides excellent opportunities to observe wildlife and enjoy views of the river, stream and surrounding riparian

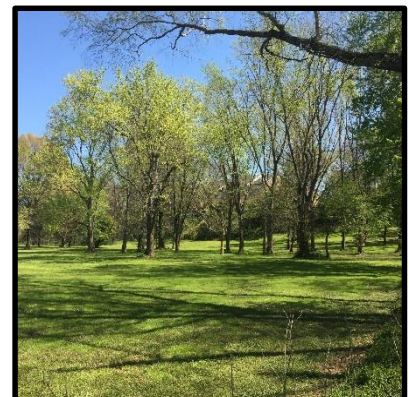
forest. Another 400'+/- of trail through the forested lowlands adjacent to the Rappahannock River is traversed before an approximately 80' span of multi-use bridge is required to span an un-named tributary stream to the Rappahannock River. This jurisdictional feature is heavily influenced by the river and provides a unique opportunity to view tidal influences on a small freshwater stream. Here, as with the Claiborne Run crossing, wildlife viewing opportunities are numerous. After this bridged crossing, the trail user will travel an additional 300' through bottomland hardwood forest before the connection with the Phase 4 Trail is encountered approximately 50' prior to the Chatham Bridge. The total length of the Purple Trail option is 5, 725'.



Forested wetlands along trail alignment.



Claiborne Run at River and approximate crossing area.



Open conditions at Chatham Landing common area.

PURPLE TRAIL PROS

- Trail follows Rapp. River
- Safest option
- No vehicle conflicts w/in ROW
- Avoids CSX tunnel
- Beautiful natural setting
- Excellent neighborhood access
- Few potential utility conflicts
- Longest trail option

BLUE TRAIL CONS

- Switchbacks needed to traverse steep slope
- More expensive than other options
- Two bridges required
- Multiple private property owners
- Unavoidable wetland impacts
- Forest clearing needed

Engineer's Estimate of Probable Construction Cost					
Belmont Ferry Farm Trail - Phase 6 - PURPLE OPTION - 5,725					
#	Item	Unit	Qty	Price	Cost
1	Design / Studies / Construction Administration	ls	1	\$ 115,000.00	\$ 115,000.00
2	Construction Surveying	ls	1	\$ 15,000.00	\$ 15,000.00
3	Mobilization	ls	1	\$ 10,000.00	\$ 10,000.00
4	Traffic Control Measures - Temporary	ls	1	\$ 5,000.00	\$ 5,000.00
5	Erosion and Sediment Control	ls	1	\$ 35,000.00	\$ 35,000.00
6	Wetland Mitigation Credits	cr	0.750	\$ 25,000.00	\$ 18,750.00
7	Stream Mitigation Credits	lf	80	\$ 300.00	\$ 24,000.00
8	Class I Riprap	sy	60	\$ 60.00	\$ 3,600.00
9	16' Wide Bridge (150 In. ft. total)	ls	2	\$ 125,000.00	\$ 250,000.00
10	Tree / Vegetation Removal / Clearing	ls	1	\$ 50,000.00	\$ 50,000.00
11	Fine Grading and Stabilization w/ Topsoil & Mulch	ac	2.50	\$ 30,000.00	\$ 75,000.00
12	(Upland) 10' Wide Asphalt Trail (includes grading, base stone, fabric)	lf	3,120	\$ 105.00	\$ 327,600.00
13	(Floodplain) 10' Wide Asphalt Trail (includes grading, base stone, fabric)	lf	2,455	\$ 130.00	\$ 319,150.00
14	Pavement Line Marking	ls	1	\$ 10,000.00	\$ 10,000.00
15	Steel Bollard	ea	4	\$ 550.00	\$ 2,200.00
16	CG-12 Detectable Warning Surface - Curb Ramp, Type B	ea	4	\$ 1,500.00	\$ 6,000.00
17	Utility Relocation / Adjustments	ls	1	\$ 20,000.00	\$ 20,000.00
18	RCP Drainage Culverts	ea	3	\$ 1,500.00	\$ 4,500.00
19	New Signage	ls	1	\$ 3,500.00	\$ 3,500.00
20	Stormwater Management	ls	1	\$ 50,000.00	\$ 50,000.00
21	Landscaping (Trees, Shrubs & Groundcover)	ea	50	\$ 200.00	\$ 10,000.00
22	Amenities (benches, bike racks, interpretive signage, fixit stations)	ls	1	\$ 15,000.00	\$ 15,000.00
23	Hand rail / Bike rail	lf	2,500	\$ 100.00	\$ 250,000.00
24	Property Acquisition (easements, ROW, etc.)	ls	1	\$ 100,000.00	\$ 100,000.00
25	Subtotal =				\$ 1,604,300.00
26	20% Contingency				\$ 320,860.00
27	Construction Inspection, Administration and VDOT Oversight (20% of Construction)				\$ 297,860.00
28					
29					
30	Total =				\$ 2,223,020.00

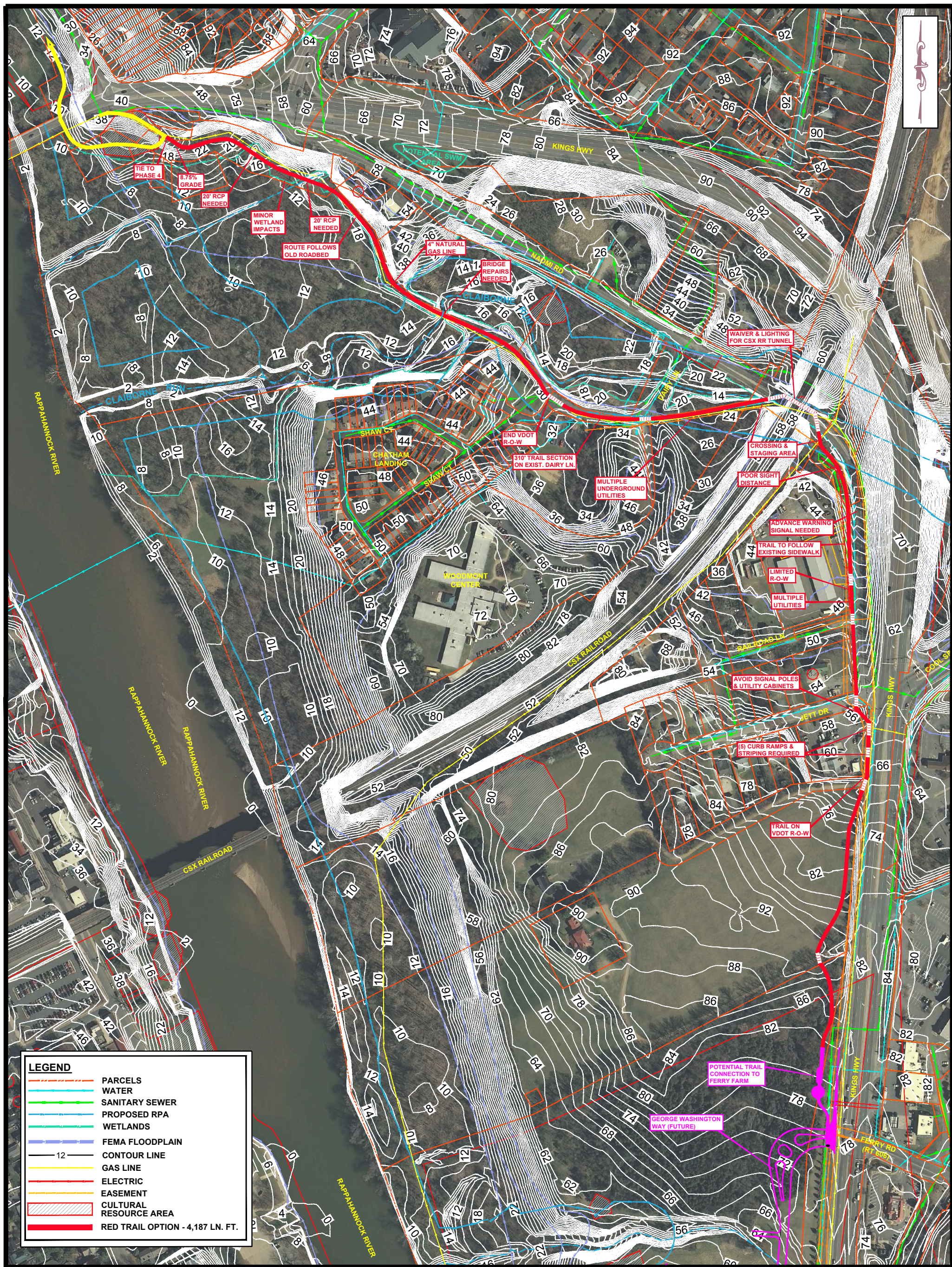
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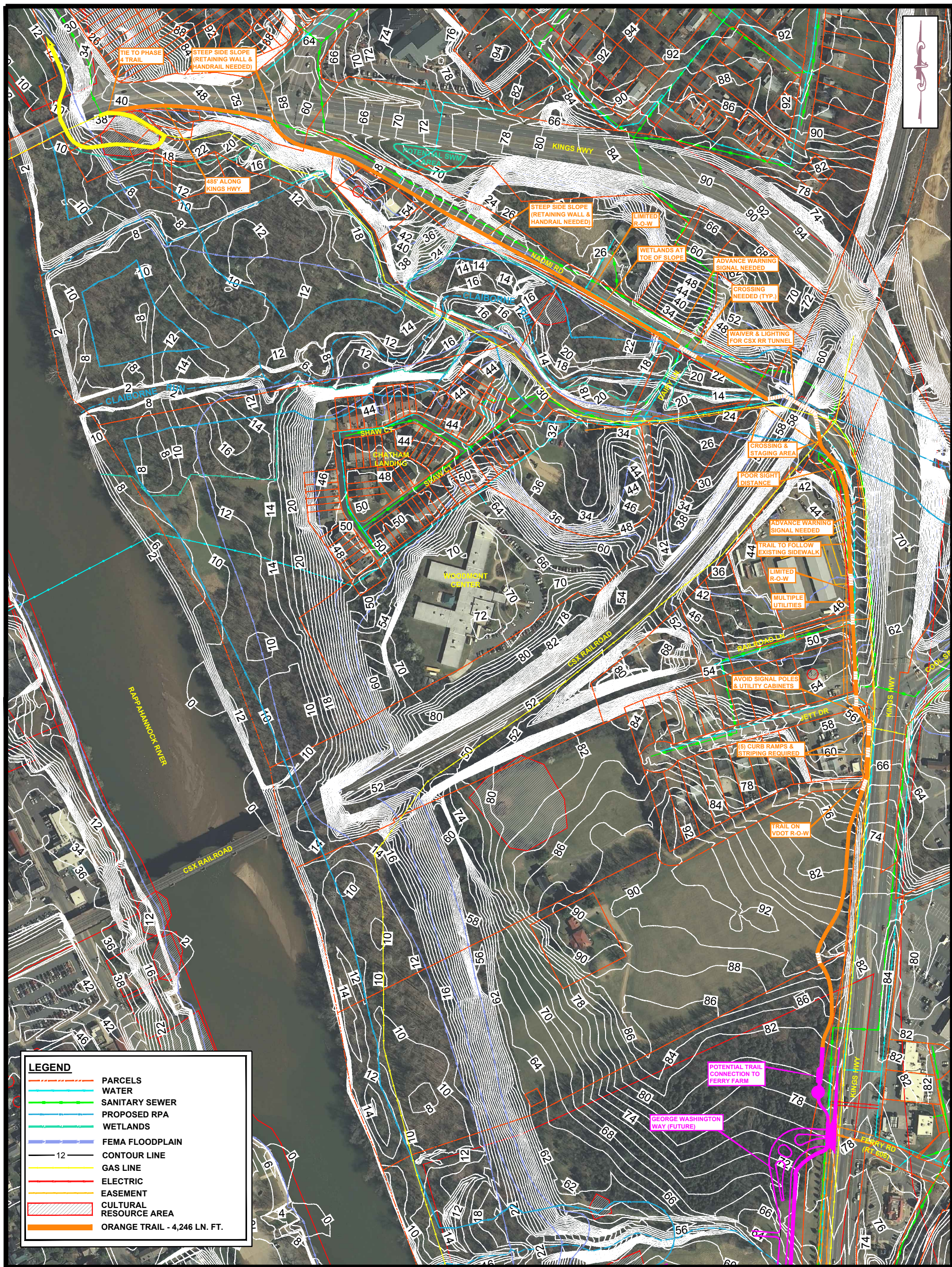
BELMONT-FERRY FARM TRAIL - PHASE 6

ALTERNATIVES ANALYSIS

PURPLE TRAIL OPTION

FACTOR	RATING										TOTAL
	1	2	3	4	5	6	7	8	9	10	
(1) USER EXPERIENCE											10
(2) RIGHT OF WAY											8
(3) SAFETY											10
(4) AESTHETICS											10
(5) GRADE											6
(6) IMPACT ON ENVIRONMENT											5
(7) STREAM CROSSING											5
(8) UTILITIES											9
(9) TIME TO BUILD											5
(10) COST											7
TOTAL											75

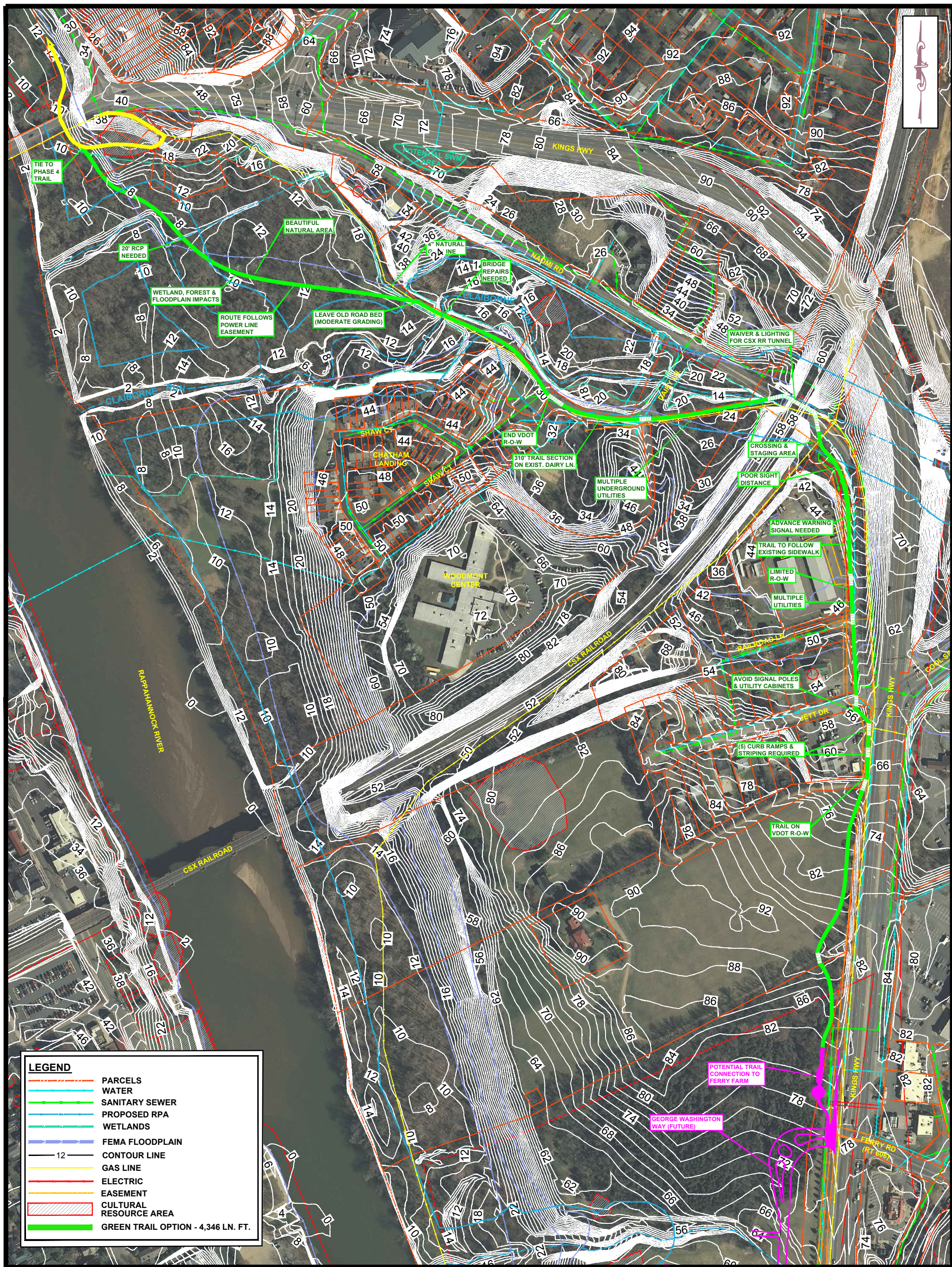


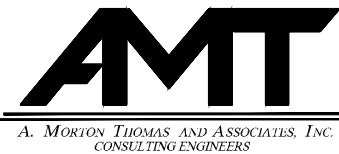


FEBRUARY 26, 2016

**BELMONT FERRY FARM TRAIL
PHASE 6
STAFFORD COUNTY, VIRGINIA
ORANGE OPTION**







APRIL 1, 2016

**BELMONT FERRY FARM TRAIL
PHASE 6
STAFFORD COUNTY, VIRGINIA
BLUE OPTION**



4 Jeff Rouse Swim and Sport Center Punch List

- The new Jeff Rouse Swim and Sport Center (JRSSC) is scheduled to hold a soft opening of the athletic portion of the facility on May 2nd, with the entire facility expected to be open to the public in mid-May.
- Staff was advised of a list of concerns expressed by a representative of the private operator about the new Jeff Rouse Swim and Sport Center (JRSSC).
- County staff met with representatives from Eastern Sports Management to discuss each issue, and possible solutions to rectify. These are discussed below.

Issue

Action(s)

Aerobics Room

Lack of window in door panel

County staff will contact door supplier to either have a glass panel inserted into the door identical to other doors, or to replace the door panels.

Ceiling fans are too low

County staff will investigate whether the fans can be modified to a close-mount arrangement and if not, they will be removed from the room. Classes can be held with the fans off for now.

Water cooler in the Aerobics Room would be more useful in hallway

County staff will contract to place a water cooler in the hallway outside the Aerobics Room in an alcove to be constructed. Water coolers will remain as placed for now, with a mat underneath. When the windows are installed in the doors as noted above, class interruption will be less of an issue.

Exercise/Weight Room

Lights too low and/or too bright

After discussion, it was determined that the problem is that the room is too well lit. The most practical solution is to install dimmer switches on the lighting to see if that solves the problem with glare on the equipment displays. If that adjustment is not successful, other solutions will be considered.

Locker Rooms

Excessive lockers/Lack of locker room benches

Locker seating was not included with the general contract for the JRSSC. ESM has seating on order and will be installing them in advance of the opening. County staff and ESM discussed options for removal of some of the rows of lockers, but it was agreed to defer that effort until after opening of the facility.

- ESM and County staff agreed that it was imperative that no additional work be directed to the General Contractor to allow timely completion and opening of the facility for public use.
- These issues, and others that come up, will be addressed after opening in a manner, and on a schedule, worked out between the partners.