Pre-NEPA Evaluation
Tri-Cities Area Multimodal Station Study

Prepared for:

Virginia Department of Rail & Public Transportation

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Prepared by:

In association with:

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# Pre-NEPA Evaluation

## Tri-Cities Area Multimodal Station Study

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Tri-Cities Area Multimodal Station Study  
August 22, 2012

1. Study Objective

This Pre-NEPA evaluation was prepared for the Virginia Department of Rail and Public Transportation (DRPT) by Moffatt & Nichol in association with Lochner. The objective of the Tri-Cities Area Multimodal Station Study is to present comparative data points for two alternate sites so that local, regional and state officials can understand the advantages and/or disadvantages of each location and assist decision makers in determining a preferred site and advancing the NEPA process. The study purpose was to conduct a high-level Pre-NEPA evaluation of two alternate station sites based on concept-level engineering, operational concerns and existing environmental data. The study sought to identify if any “fatal flaws” existed at either site. The study considered both near-term and long-term regional transportation goals for a multimodal station and potential transit oriented development (TOD), as well as relevant state and federal goals. Recognizing that each federal agency has different NEPA reporting formats, this report was developed to be consistent with general NEPA requirements by the Federal Railroad Administration (FRA), the Federal Transit Administration (FTA) and the Federal Highway Administration (FHWA) with the intent that the sections could be expanded in the future, as needed, based on more detailed studies. Any formal decision would need to be part of a NEPA study.

2. Executive Summary

According to Amtrak’s Great American Station Guidelines, the existing Ettrick Station currently exceeds the minimum ridership required for designation as a “Small Station”. Through the incorporation of multiple new passenger rail services along the corridor, ridership projections indicate that future demand in the Tri-Cities area will require the services and amenities offered by a “Medium Station”. As a result, the Tri-Cities region must prepare to meet this increased demand by developing an Amtrak station that can offer an adequate level of service.

Selection of a site for a multimodal station includes consideration of local and regional needs, as well as interface with state and national transportation goals. Two alternative sites were considered for the Tri-Cities multimodal station study: 1) the Ettrick site, a 9.5 acre site where the existing Petersburg Amtrak Station is located; and 2) the Collier site, a 140 acre greenfield site with minimal development on-site. Based on this Pre-NEPA evaluation, both sites are considered feasible station locations based on environmental data and engineering and operational concerns.

The existing Petersburg Station at Ettrick has capacity to continue to serve passenger rail for the near-term with relatively minor improvements to highway access and on-site circulation.
Regional highway access to the site is constrained due to local city streets which would adversely affect ridership and market “reach” for long-term passenger rail development. The Ettrick site (9.5 acres) has sufficient land available for expansion to meet long term passenger rail needs, but would be constrained because of land availability and access for TOD development.

The Collier site is relatively large (140 acres) and provides an opportunity in the Tri-Cities area for a new multimodal terminal with sufficient space for other types of transit oriented development. The site has good highway access to nearby I-85 and the multimodal station may be developed for “park and ride” rail users with secure parking and connections to the local transit system. The Collier site is adjacent to an area under active consideration by Dinwiddie County for major commercial and industrial development, which could complement a multimodal station and TOD development at the Collier location.

From an environmental perspective, development of a station at either site could potentially impact sensitive resources. The Ettrick site is in a more developed area with a higher probability for increased traffic on local roads due to growth in ridership. Total passenger and freight train movements through Ettrick will increase substantially in the long term. This could result in disruption to the surrounding community of Ettrick either in the form of noise impacts or traffic impacts. Furthermore, the adjacent community includes minority and/or low-income populations which raises Environmental Justice concerns as described in Executive Order 12898. Developing a new station at the Ettrick site to meet long-term requirements could also result in adverse effects to the National Register eligible Ettrick Historic District, although these effects could be mitigated through the Section 106 process. Use of land from the historic district will also require an impact evaluation under Section 4(f) regulations. Finally, an endangered plant species (Michaux’s sumac) could be present on the Ettrick site. If confirmed through field studies, protection of this endangered plant species could pose another regulatory hurdle.

The Collier site is in a relatively undeveloped portion of Petersburg and close to Interstates I-85 and I-95. The likelihood of traffic impacts or disruption to nearby communities is far less. Wetlands on the Collier site appear to be isolated and easily protected. The primary environmental issue of concern is the proximity of the site to several Civil War battlefields. Development of a station at the Collier site could result in adverse effects to the National Register eligible Globe Tavern battlefield. The economic development of major parcels in Dinwiddie County and Petersburg will require consideration of this same concern. In general, potential impacts to battlefields can generate intense interest by a variety of preservation groups and interested parties. In this case, as part of future Section 106 and Section 4(f) efforts, coordination with the National Park Service’s Petersburg National Battlefield office will be critical to determine the viability of the site for development purposes.

Based on this Pre-NEPA evaluation, no engineering or operational fatal flaws could be identified at either site. The Collier site has an advantage over the Ettrick site with respect to accessibility.
and expansion to meet future passenger rail service. However, the Ettrick site has an advantage of providing existing service and meeting near-term demands of increasing ridership.

The results of this analysis indicate that a station at either the Ettrick site or the Collier site could provide adequate near-term passenger rail service for the Tri-Cities area. However, there are several key differentiators that separate the future expandability of the stations for long term service – commuter access, multimodal access, and facility expandability. Additional data such as ridership/revenue, traffic patterns, origin/destination surveys, and comprehensive cost-benefit analysis are necessary for further evaluation. A summary of comparative data for each site is shown below.

An alternative for further consideration is using the existing Petersburg Station at Ettrick for near-term passenger rail service while developing the Collier site for a long-term multimodal station serving the Tri-Cities area. Once the Collier site is completed, passenger rail service could be switched from Ettrick to Collier. Future NEPA studies may consider the following alternatives for near-term and long-term multimodal station development:

- No Build
- Ettrick Site
- Collier Site
- Ettrick Site (near-term) / Collier Site (long-term)

<table>
<thead>
<tr>
<th>Comparative Data</th>
<th>Ettrick Site</th>
<th>Collier Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>9.5 ac</td>
<td>140 ac</td>
</tr>
<tr>
<td>Miles to Interstate</td>
<td>2.9</td>
<td>1.0</td>
</tr>
<tr>
<td>Preliminary cost estimate</td>
<td>$ 4.0 M</td>
<td>$ 8.5 M</td>
</tr>
<tr>
<td>Commuter Access</td>
<td>low</td>
<td>high</td>
</tr>
<tr>
<td>Multimodal Access</td>
<td>high</td>
<td>high</td>
</tr>
<tr>
<td>Future Expandability</td>
<td>medium</td>
<td>high</td>
</tr>
<tr>
<td>TOD compatibility</td>
<td>medium</td>
<td>high</td>
</tr>
<tr>
<td>Potential for local traffic impacts</td>
<td>high</td>
<td>low</td>
</tr>
<tr>
<td>Potential for historic resource impacts</td>
<td>high</td>
<td>high</td>
</tr>
<tr>
<td>Potential for noise impacts</td>
<td>medium</td>
<td>low</td>
</tr>
<tr>
<td>Potential for hazardous materials</td>
<td>low</td>
<td>low</td>
</tr>
<tr>
<td>Use of land from public parks</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>Potential for wetland/stream impacts</td>
<td>low</td>
<td>medium</td>
</tr>
<tr>
<td>Potential for endangered species impacts</td>
<td>medium</td>
<td>low</td>
</tr>
<tr>
<td>Potential for temporary construction impacts</td>
<td>high</td>
<td>low</td>
</tr>
<tr>
<td>Adequacy for incorporating HSR service</td>
<td>low</td>
<td>high</td>
</tr>
</tbody>
</table>
3. Introduction and Background

The Federal Railroad Administration (FRA) completed a Tier II Draft Environmental Impact Statement for Southeast High Speed Rail (SEHSR), Richmond, VA to Raleigh, NC (Tier II DEIS) on May 4, 2010. As part of the alternatives analysis, four options for a potential rail station in the Tri-Cities area of Virginia (encompassing the cities of Petersburg, Hopewell, and Colonial Heights, and portions of the adjoining counties of Chesterfield, Dinwiddie, and Prince George) were identified:

1. Dunlop site
2. Washington Street site
3. Ettrick site (existing Amtrak station location)
4. Collier site

Since completion of the Tier II DEIS, DRPT has indicated that two of these locations (Dunlop and Washington Street sites) were removed from consideration by the respective localities and are no longer viable. The remaining two options are the Ettrick site and the Collier site.

In the Tier II DEIS, potential station locations were evaluated only in terms of roadway access. This study evaluates both remaining sites from a broader high-level perspective using readily available information. The sites are evaluated in terms of the following:

- Ability to support a multimodal station that accommodates existing and future passenger rail service needs within the Tri-Cities region
- Ability to support a multimodal station that accommodates existing and future transit service needs within the Tri-Cities region
- Roadway access issues
- Operational Issues
- Engineering Issues
- Station sizing requirements
- Project costs
- Environmental constraints and opportunities

This study does not include the development of detailed engineering plans or cost estimates, nor does it include the completion of detailed operational analyses or environmental studies. The study is intended to be a high-level preliminary assessment of both sites and does not fully satisfy National Environmental Policy Act (NEPA) requirements.

One goal of this Pre-NEPA study is to identify any potential “fatal flaws”, particularly from an environmental, rail operational or engineering standpoint, which would render either site not feasible for a multimodal station. If and when federal funds are secured for development of a station in the Tri-Cities area, the project will need to comply with NEPA in accordance with the lead federal agency’s policies and procedures. Towards that end, another purpose of this study
is to recommend whether one or both sites should be advanced into the NEPA process for further study based on a variety of environmental and design considerations.

4. Project Purpose and Need

4.1 Project Purpose

The purpose of this study is to outline station amenities needed to accommodate future demand in passenger rail service in the Tri-Cities area and conduct a comparative analysis of two station locations, Ettrick and Collier. The comparative analysis includes a pre-NEPA level environmental review and a conceptual station design, which includes a conceptual station layout, engineering and operational analysis, and preliminary cost estimates.

Existing passenger rail through this area is Amtrak’s Silver Service/Palmetto service between New York and Florida, and Carolinian service between Charlotte, NC and New York. Four southbound and four northbound Amtrak trains stop at the Amtrak Petersburg Station each day. Plans are also underway for the following new passenger rail service through the region:

- Proposed Southeast High Speed Rail (SEHSR) service between Charlotte, NC and Washington, D.C, and
- Proposed Richmond to Hampton Roads Passenger Rail service from Richmond, VA to Norfolk, VA.

Both of these new services have plans to stop in the Tri-Cities area at a station location yet to be determined.

4.2 Station Needs

The service model for Amtrak-served stations accommodates seven of ten service contacts with customers\(^1\). These include:

- Starting – getting to the station
- Entering – arriving at the station
- Ticketing – purchasing and issuing transactions
- Waiting – conventional waiting, lounges, and retail
- Boarding – moving to the platform and entering the train
- Arriving – leaving the train and entering the station
- Continuing – from the station to beyond

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\(^1\) Amtrak Station Program & Planning – Standards and Guidelines, pg. 1
4.2.1 Passenger Rail Service

Ridership at Petersburg’s Ettrick station for the past 10 years is shown in Table 1 based on Amtrak passenger data. Ridership has generally increased since 2003 and was approximately 22,000 passengers in 2011.

Table 1 - Petersburg Amtrak Ridership

<table>
<thead>
<tr>
<th>Year</th>
<th>Ridership</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>16,618</td>
</tr>
<tr>
<td>2003</td>
<td>16,318</td>
</tr>
<tr>
<td>2004</td>
<td>16,571</td>
</tr>
<tr>
<td>2005</td>
<td>17,729</td>
</tr>
<tr>
<td>2006</td>
<td>18,059</td>
</tr>
<tr>
<td>2007</td>
<td>19,355</td>
</tr>
<tr>
<td>2008</td>
<td>21,190</td>
</tr>
<tr>
<td>2009</td>
<td>21,101</td>
</tr>
<tr>
<td>2010</td>
<td>22,243</td>
</tr>
<tr>
<td>2011</td>
<td>21,997</td>
</tr>
</tbody>
</table>

For the purposes of this Pre-NEPA study, available passenger rail ridership information and forecasts for the Tri-Cities area were used to determine the approximate station size for site evaluation. As shown in Table 2, existing ridership would increase by 40,000 rail passengers per year due to the addition of 3 round trip trains between the North East Corridor (NEC) and Charlotte, NC on the SEHSR to be added by 2025. Ridership would increase by an additional 14,000 rail passengers per year due to the addition of 3 round trip trains from the new rail service from Norfolk to the NEC to be added by 2022 (initial service starts in 2012 with 1 round trip per day); and by an additional 22,000 rail passengers per year for 3 round trip high speed rail (HSR) trains from Norfolk to the NEC to be added by 2025. The estimated total annual Tri-Cities ridership is approximately 98,000 passengers per year by 2025.
Table 2 - Summary of Available Ridership Forecasts for Tri-Cities Station Market

<table>
<thead>
<tr>
<th>Passenger Train Service Scenario¹</th>
<th>Daily Round Trips between the Northeast Corridor (NEC) and:</th>
<th>Total Year</th>
<th>Annual Tri-Cities Ridership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Service</td>
<td>Norfolk, VA, Charlotte, NC, GA / FL²</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEHSR &quot;S-line&quot; without Norfolk Service³</td>
<td>0, 1, 3</td>
<td>4</td>
<td>2011, 22,000</td>
</tr>
<tr>
<td>SEHSR &quot;S-line&quot; with Norfolk Rail Service³</td>
<td>3, 4, 3</td>
<td>7</td>
<td>2025, 62,000³</td>
</tr>
<tr>
<td>SEHSR &quot;S-line&quot; with Norfolk HSR Service</td>
<td>6, 4, 3</td>
<td>10</td>
<td>2022, 76,000⁴</td>
</tr>
</tbody>
</table>

Notes:
2. Long distance passenger trains.
3. Includes higher speed rail service to Hampton Roads which provides improved connectivity thru Richmond to Petersburg and southern markets.
4. Includes estimate for Petersburg and southern markets (SC, GA and FL) not included in the Richmond Hampton Roads DEIS forecasts.

Based on the historical ridership data and the provided ridership forecasts, this study used the Amtrak “small station” guidelines for the near-term rail and station requirements, and the “medium station” guidelines for the long-term rail and station requirements.

Using Amtrak’s Great American Station Guidelines, the current number of passengers per year using the Ettrick Station (2011) exceeds the minimum ridership (10,000 passengers per year) required for designation as a “Small Station” and in the future would exceed the minimum ridership (50,000 passengers per year) for a “Medium Station” based on ridership forecasts. A small station generally has no staff but is served by a caretaker, custodian or community stakeholders. A medium station generally has a one-person staff with waiting areas, restrooms, and vending.

4.2.2 Future Passenger Rail Service

Two future passenger rail services are currently being planned to serve the Tri-Cities area. These include the Richmond to Hampton Roads (R2HR) service planned to begin by December 31, 2012, and the Southeast High Speed Rail (SEHSR) service currently in the NEPA Tier II phase of study. Within each of these two new services there will be initial start-up train service that will be followed by service expansion as ridership grows. Actual ridership will depend on interconnectivity to other Amtrak and passenger rail services that may be planned for the station.
R2HR will use existing Norfolk Southern tracks from Norfolk to Collier. At Collier, a new connector track is being constructed to interchange the passenger trains from Norfolk Southern to CSX. From Collier, the passenger trains will use existing CSX tracks to proceed to Richmond and stations further north. Initial service to Norfolk will be one round-trip per day. As ridership increases and demand warrants, this service is planned to expand to three round-trips per day. A station in the Tri-Cities area should be located to provide interconnectivity between the R2HR service and the Carolinian/Palmetto/Silver Star/Silver Meteor routes served by Amtrak.

SEHSR will use proposed tracks constructed parallel to the CSX tracks from south of Collier to Richmond and stations north of Richmond. A station in the Tri-Cities area should accommodate these additional tracks and any station/platform modifications required for these future passenger rail routes.
### 4.2.3 Station Criteria

Criteria for small and medium stations are contained in Amtrak’s Great American Station guidelines. The criteria include services and capacities that are to be provided at each station are shown below:

<table>
<thead>
<tr>
<th>Station Standards</th>
<th>Small Station</th>
<th>Medium Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADA/FRA Requirements</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Signage</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Paved Parking</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Pick-up/Drop-off Lanes</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Bicycle Racks</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Paved Platform with Canopy</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Lighting</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Janitorial Services (Dedicated)</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Janitorial Services (Occasional)</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Waiting Room</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Restrooms</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Ticket Office</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Quik-Trak</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Passenger Assistance</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Baggage Handling</td>
<td>△</td>
<td></td>
</tr>
<tr>
<td>Passenger Information Systems</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Public Address System</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Pay Telephones</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Security on call</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Call Box</td>
<td>■</td>
<td></td>
</tr>
<tr>
<td>Retail Services</td>
<td>△</td>
<td></td>
</tr>
<tr>
<td>Vending Machines</td>
<td>■</td>
<td></td>
</tr>
<tr>
<td>Rental Cars</td>
<td>△</td>
<td></td>
</tr>
<tr>
<td>Passengers per peak hour</td>
<td>25-50</td>
<td>50-150</td>
</tr>
<tr>
<td>Ticket Agents</td>
<td>1</td>
<td>2-3</td>
</tr>
<tr>
<td>Platforms</td>
<td>500’ – 1200’</td>
<td>500’ – 1200’</td>
</tr>
<tr>
<td>Parking Area</td>
<td>0.6 acre</td>
<td>1.8 acres</td>
</tr>
<tr>
<td>Waiting Area</td>
<td>300± sf</td>
<td>700± sf</td>
</tr>
<tr>
<td>Building Area</td>
<td>1,800± sf</td>
<td>5,500± sf</td>
</tr>
</tbody>
</table>

■ – Should be included  
△ – Should be evaluated for inclusion
4.2.4 Highway Interface

Public access to passenger rail stations has a significant impact to ridership. Remote or difficult to reach stations due to poor circulation patterns or highway infrastructure are less attractive to rail passengers than stations that are easy to reach from major thoroughfares.

The Tri-Cities area is a juncture between two major north/south interstates, I-85 and I-95. These two interstates merge in Petersburg with only I-95 continuing north of Petersburg. US 460 is another major east/west artery for central Virginia. See Figure 1 for a general overview of the highway/railroad corridors in the Tri-Cities area.

Once highway traffic leaves either of these interstates, it uses local connectors subject to congestion and stoplights. Projecting travel times along these connectors is subject to the variations related to train schedules, local activities, and routine traffic patterns. Modeled travel times must consider time of day, level of service along each route, and average daily traffic using each segment of the route. This level of detailed study exceeds the scope of this Pre-NEPA evaluation.

4.2.5 Transit Interface

It is envisioned that passenger rail service in the Tri-Cities area will also be integrated with local and regional transit service in order to provide a variety of transportation options and maximize ridership.

Two transit providers currently operate bus service within the Tri-Cities area, the GRTC Transit System (GRTC) and Petersburg Area Transit (PAT). The GRTC serves the Cities of Richmond and Petersburg, Henrico County, and a small portion of Chesterfield County. One route provides weekday bus service within the Tri-Cities area, the Richmond/Petersburg Express (Route 95x). Monday through Friday, buses run 6 northbound trips and 6 southbound trips daily between downtown Richmond and the Petersburg Transit Center in downtown Petersburg. PAT provides extensive service throughout Petersburg and Hopewell along twelve routes. One of PAT’s routes (Unit 35-Track 12) travels between the Petersburg Transit Center, the VSU campus, and town of Ettrick in Southern Chesterfield County. The existing bus route does not provide a direct bus stop at the Amtrak Rail Station.
5. Alternatives Under Consideration

Previous studies for passenger rail service between Norfolk and Richmond, and the Southeast High Speed Rail (SEHSR) Tier II DEIS have been completed considering passenger rail corridors through the Tri-Cities area. However, these studies evaluated rail routes and left determination of a station location in the Tri-Cities Region to localities and stakeholders in consultation with DRPT. The remaining two sites originally identified in the SEHSR Tier II DEIS were investigated as part of this study - the existing station at the Ettrick site and a new station at the Collier site.

Engineering and operational analysis of these two sites considered commuter access, multimodal access and future expandability as the key differentiating factors. Quantitative measures were assessed as follows:

- Location and Setting
- Existing Site Conditions
- Conceptual Station Layout – Small Station
- Conceptual Station Layout – Medium Station
- Preliminary Cost Estimate
- Engineering and Operational Analysis

Qualitative measures such as human behavior and future public involvement also were considered. Additional data such as ridership/revenue, traffic patterns, origin/destination surveys, and comprehensive cost-benefit analysis are necessary for further detailed evaluation. This data was unavailable for the purposes of this study. Current ridership/revenue models are insufficiently refined to enable differentiation between the Ettrick site and the Collier site (these numerical models are scaled for analysis at the metropolitan area level).

5.1 Location and Setting

5.1.1 Ettrick Site

The existing station at Ettrick is located approximately 25 miles due south of Richmond, Virginia. The site is located in southern Chesterfield County within the village of Ettrick. The eastern limits of Ettrick abut the City of Colonial Heights while the Appomattox River forms the southern boundary. The City of Petersburg lies approximately 2 miles to the southeast, on the south side of the Appomattox River. Also in Ettrick, the 236-acre Virginia State University (VSU) campus is within ½- mile of the site. Located in a relatively densely populated area and surrounded by a mix of homes, commercial establishments, and university facilities, the setting is best described as urban/suburban with mixed use.
5.1.2 Collier Site

The Collier site is located 29 miles south of Richmond. The approximately 140-acre site is in the southwestern part of the City of Petersburg and south of Interstate 85. While Petersburg is densely populated north of I-85 and along US Route 1/I-95 to the east, the southwestern part of the City is relatively undeveloped and has a rural setting with scattered industrial developments. The site lies at the intersection of an east/west Norfolk Southern rail line and a north/south CSX rail line on which Amtrak currently operates. The Norfolk Southern rail line connects Norfolk, Virginia to the midwest and is known as the Heartland Corridor.
5.2 Existing Site Conditions

5.2.1 Ettrick Site

The site currently serves as Amtrak’s Petersburg Station. Structures on the site include the active station building, the railroad platform, warehouse, utility poles, and the abandoned Atlantic Coastline Railroad depot. Portions of the site are paved with asphalt while much of the site is either mowed grass or overgrown with vegetation.

Photo 3 – Amtrak Station at Ettrick: CSX Mainline on left, Passenger Canopy, and Station Building.

5.2.2 Collier Site

The site is predominantly undeveloped and forested, with smaller areas cleared for agricultural purposes. Aerial photography shows several small farm homes scattered on the site which have been either abandoned or demolished as part of the construction of the new NS/CSX connecting track. As of May 2012, construction of the new NS connector track in the southwest corner of the site was completed from the NS east-west mainline to the right-of-way of the north-south CSX mainline. The remaining construction by CSX to extend the connector track to their mainline is scheduled for the near future as part of the new R2HR passenger rail service between Norfolk and Richmond.
5.3 Conceptual Station Layout – Small Station

5.3.1 Ettrick Site

The existing Petersburg Station at Ettrick is adjacent to the Ettrick Historic District and Ettrick Park (see in Figure 2). Immediately south and east of the site is a well-established medium density residential area with Virginia State University east of that. This limits development of the Ettrick site to the saw-tooth configured property which the existing station occupies.

The square footage of the existing Petersburg Station building exceeds the square footage needed for the current ridership levels as outlined in Section 4.2.1. There is room for expansion of the existing parking area both north and south of the existing station (see Figure 3). The Ettrick site has sufficient passenger service areas, platforms, and parking to meet/exceed the requirements of a small station. However, improvements to traffic circulation to/from the site as well as on-site are needed to enhance commuter and multimodal access.
Photo 5 – Amtrak Station at Ettrick: Station Building (Residences in background).

5.3.2 Collier Site

The proposed Collier site is within a portion of the Weldon Railroad/Globe Tavern Battlefield Study Area and potential National Registry Boundary, but north of the Battlefield Core Area (see Figure 5). Immediately surrounding the site are woodlands and fields. The nearest residential area is a low-density development approximately 0.5 mile east of the site. Industrial developments are located to the west across the CSX tracks and approximately 0.5 mile southeast of the site and south of the Norfolk Southern tracks. Surrounding land use should allow zoning of the area surrounding the Collier site for transit-oriented development, higher-density residential development, light industrial employment centers, or other uses that provide greater densities of residential and/or employment development.
Potential ridership at the proposed Collier site is unknown at this time. Based on previous ridership studies and the current industry-standard mathematical models, the ridership at a specific station site within the Tri-Cities area is not expected to vary based on its location. Ridership at the Collier site should be planned using existing ridership numbers similar to Petersburg Station with projections from a future ridership study.

This report considered three potential sites for a station at the Collier site. Using Amtrak’s station standards, a small station layout was developed for meeting the near-term passenger rail needs and a medium station layout was developed for meeting the long-term passenger rail needs.

Site #1 (Figure 6) is the northernmost site which clears the Norfolk Southern/CSX connecting track and provides a single platform serving both existing Amtrak routes and R2HR passenger routes. However, the station is located at the south end of the platform requiring passengers to walk 1000 feet to reach the far end of the platform. Access to this site requires construction of approximately 0.5 mile of roadway and a grade-separation bridge. See Figure 9 for the access road and Figure 10 for the required grade separation from Halifax Road over the connector track to the Collier site.
Site #2 (Figure 7) is the central of the three site alternatives. This location requires two platforms – one on the CSX tracks for existing Amtrak passenger services and one on the connecting track for future R2HR passenger service to/from Norfolk. The construction of two platforms adds costs to this alternative above those for Site #1. Also, the R2HR platform on the connecting track is limited in length due to the curved sections of track at both ends. Access to this site requires construction of approximately 0.3 mile of roadway and a grade-separation bridge. See Figure 10 for the access road and the grade separation for this site.

Site #3 (Figure 8) is the southernmost site. This location requires two platforms similar to Site #2. The platform serving the Amtrak routes is partially located in a curve while the entire length of the platform on the connecting track is curved. This is the least desirable platform configuration. However, the site is centrally located eliminating the need for a grade-separation structure across the connecting track. Access to this site improves the existing gravel service road within the potential National Register boundary for the Weldon Railroad/Globe Tavern Battlefield. This may require additional NEPA-related clearances and coordination.

Photo 7 – Collier Site: Looking South from Site - New NS Connector on Left (under construction) and CSX mainline on Right.
5.4 Conceptual Station Layout – Medium Station

5.4.1 Ettrick Site

Future implementation of high speed rail passenger service will increase the number of passengers using the Petersburg Station. The future high speed rail tracks will be located approximately 30 feet east of the existing CSX mainline (between the existing station and platform) and would leave an area insufficient for a platform between the existing station and future tracks. The increase in passengers combined with the proposed high speed rail track locations will require a new station to be constructed north of the existing station (see Figure 4). Construction of the high speed rail tracks will temporarily impede passenger rail service from the existing station. The platform and station will need to be relocated prior to construction of the high speed rail with either temporary tracks constructed to serve the new platform or a temporary platform access constructed to provide passenger access to the existing platform. The former station area and parking can be used for long-term and employee parking with new parking provided for short-term service. This will allow Petersburg Station to meet/exceed the requirements of a medium station with areas for expansion as ridership continues to increase.

Photo 8 – Amtrak Station at Ettrick: Interior of Existing Station Building.
5.4.2  Collier Site

Future implementation of high speed rail passenger service will require expansion of the small stations previously indicated in Figures 6, 7 and 8. Figures 11, 12 and 13 show the improvements required at Sites #1, 2 and 3, respectively, to accommodate the future high speed rail service.

To expand from a small station to a medium station, Site #1 (Figure 11) requires constructing a new platform south of the previously constructed platform. Construction phasing and coordination of track and platform construction will be critical to avoid disruption of passenger service. Potential conflicts with two CSX signal houses also will be resolved during design. Parking is easily expanded to accommodate the increased numbers of passengers. No changes to the access road or grade separation will be required by the expansion. This site is located at the north end of the property near a residential area and the passenger platform would not be centrally located to the station building. Because of these disadvantages, Site #1 is not recommended for future consideration.

Medium station expansion on Site #2 (Figure 12) requires extending the existing R2HR platform on the connecting track to the north. Once service is provided to the extended platform, the south (curved) section of the platform will be demolished as will the platform on CSX tracks. Construction phasing and coordination of track and platform construction will be critical to avoid disruption of passenger service. Parking is easily expanded to accommodate the increased numbers of passengers. No changes to the access road or grade separation will be required by the expansion. Site #2 is centrally located within the property and development of this alternative is the most advantageous of the small and medium station concepts for the Collier site and is recommended for future NEPA consideration.

Site #3 (Figure 13) requires more construction to expand to a medium station. Constructing the high speed rail tracks as well as a new platform east of the tracks requires extending the existing Halifax Road Bridge to the east. Construction phasing and coordination of track and platform construction will be critical to avoid disruption of passenger service. Parking is easily expanded to accommodate the increased numbers of passengers. No changes to the connecting track platform will be required by the expansion. Site #3 is located at the south end of the property, is constrained by its’ location between the NS and CSX tracks and would be located on rail curves. Site #3 would also not provide access to a large portion of the property for potential TOD development. Because of these disadvantages, Site #3 is not recommended for future consideration.
5.5 Preliminary Cost Estimate

5.5.1 Ettrick Site

The passenger areas of the existing Petersburg Station at Ettrick have been recently renovated and the facilities are in good condition; therefore, station improvements are not required for near-term rail service needs. However, access to the site could be improved with improvements to the signage on the interstate and local highway system that directs vehicles to the rail station location. On-site improvements to traffic circulation and parking will enhance the safety and service at the station. Probable construction costs for these improvements are $0.5 million in 2012 dollars.

Improving the Ettrick site to a medium station for high speed rail service will require constructing a new station, expanding the parking area, providing bus circulation and pick-up/drop-off lanes, and construction of a new platform. Probable construction costs to relocate and expand the station are $3.2 million in 2012 dollars.

5.5.2 Collier Site

Probable construction costs were developed for each of the Collier alternatives (Table 3). The costs are concept level for greenfield development of each of the potential sites and exclude right-of-way costs from either CSX or NS. Ettrick site station relocation/expansion costs have been added for comparison purposes. Costs are shown in millions of 2012 dollars and exclude land acquisition and off-site improvements.

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<th>Station</th>
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<th>Collier #2</th>
<th>Collier #3</th>
<th>Ettrick</th>
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5.6 Engineering and Operational Analysis

5.6.1 Ettrick Site

Analysis of engineering features must include the benefits/impacts of both modal access and station access. Existing modal access to the Ettrick site is constricted for most highway users while providing easier access for pedestrians and bicyclists. Within 1.2 miles of the station, highway access is limited to two-lane streets with numerous intersecting streets. The remaining 1.7 miles to I-95 has no fewer than 7 signalized intersections depending on the direction of travel along I-95. Similar travel constrictions face rail passengers attempting to access downtown Petersburg located 2.2 miles from the station. Existing transit routes circulate within 0.5 mile of the station. Pedestrian paths from these routes consist of sidewalks to within 600 feet of the station. There are no current facilities for rental cars, taxis or buses. Since the future station is on the same site, its modal access is estimated to be the same if no improvements are made.

Paved pathways provide open access between the building, platform and unsecured parking area. Parking spaces and circulation patterns are unmarked and create risks for pedestrians and bicyclists arriving at or leaving from the station. Pathways into the station and between the station and platform appear to be ADA accessible.

Future station access will be designed and constructed to meet all applicable standards at the time. This will eliminate the station access concerns listed above once motorists, pedestrians, and cyclists enter the station property. However, the ridership growth, and therefore the success, of the Ettrick site relies on factors outside the station property. Improved modal access requires improving the roadway network from local connectors and signalized thoroughfares to throughways with limited impediments. The impacts of these roadway improvements will bear greatest upon the property owners adjacent to the improved roads with temporary inconveniences to motorists.

5.6.2 Collier Site

Analysis of engineering features and operations for greenfield development is less stringent than for previously developed properties. Conflicts between engineering features as indicated above, i.e. track connections, signal houses, curved platforms, are resolved or mitigated during the design of the station. Operational constraints are identified prior to design and resolved or mitigated during design.

Modal access to the Collier site uses an existing two-lane thoroughfare for approximately 0.8 miles and a four-lane divided thoroughfare for approximately 0.2 miles to access I-85 north and south. From there, access to Petersburg and I-95
north and south is less than 3 miles away. Modifications to existing transit routes will provide interconnection with trains at the Collier site. However, pedestrian and bicycle access currently is limited with no sidewalks or bicycle lanes within a mile of the site.

Future station access will require improvements to the roadways and construction of pedestrian/bicycle facilities. Planning of the improvements and pedestrian/bicycle facilities should include connectivity to existing and planned networks throughout the Tri-Cities area. Due to the low-density and rural nature of the area surrounding the Collier site, the impacts of these roadway improvements and facilities will bear greatest upon fewer property owners adjacent to the improved roads with temporary inconveniences to motorists who regularly use the roads. Figure 14 shows a comparison of the roadway networks around both the Ettrick and Collier sites.

6. Environmental Effects

The topic areas discussed below generally correspond with the Federal Transit Administration’s Documented Categorical Exclusion (DCE) format for similar types of projects. In general, these same topic areas would also be addressed in both FHWA and FRA NEPA documents. Ultimately, the source of federal funding to be used for engineering/construction will dictate the format and level of NEPA documentation required in the future if the project advances.

For each topic below, existing conditions for both station alternatives are discussed, followed by a qualitative assessment of potential impacts and a comparison of regulatory constraints for each site. For all topic areas, a summary is also provided of technical studies, analyses, and coordination efforts that may need to occur in the future as part of subsequent NEPA compliance efforts. This format and information should serve as a framework for subsequent expansion into a fully compliant NEPA evaluation.

6.1 Air Quality

Metropolitan Planning and Air Quality Conformity

After being in non-attainment for the 8-hour ozone air quality standard, the Richmond Area (including Petersburg) was re-designated to attainment status in June 2007. However, since the re-designated area was made subject to a concurrently approved air quality maintenance plan, federal conformity requirements still apply.

A transportation conformity analysis is required by federal law to evaluate mobile source air emissions generated by the implementation of transportation improvement projects identified in a current Long Range Transportation Plan (LRTP) and Transportation Improvement Program (TIP) in order to demonstrate conformity with the State Air Quality Implementation Plan. Pursuant to 23 CFR, Part 450 and 40 CFR Part 51, the Tri-Cities Area Metropolitan Planning Organization (MPO) has developed a draft
Transportation Conformity Analysis of the 2035 Long Range Transportation Plan and the FY12 – FY15 Transportation Improvement Program. The conformity analysis is currently open for public review. The draft Conformity Analysis recommends a finding of conformity for both the TIP and the LRTP.

A new multimodal station in the Tri-Cities area, regardless of location, is not currently included in the TIP or Long Range Transportation Plan. As such, it has not been included in the regional air quality conformity analysis for the Richmond area.

**Carbon Monoxide (CO) Hot Spots**
Localized areas with high levels of carbon monoxide are referred to as CO hotspots. Excessive carbon monoxide emissions are created by large volumes of slow-moving traffic, as is often seen at heavily congested intersections. The air quality analyses completed for the SEHSR (Richmond to Raleigh) Tier II EIS looked at the 1-hour and 8-hour CO concentrations at the two worst intersections along the rail corridor (including one in Chesterfield County) based on levels of service. Predicted CO levels at these intersections were well below the National Ambient Air Quality Standards. Both sites are also within an attainment area for carbon monoxide (CO). Completion of a CO hot spot analysis for development of a station at either location would not likely be necessary unless the attainment status changes.

**Impacts and Regulatory Constraints**
Development of a station at either location is not likely to substantially increase air pollutant emissions and should, therefore, not negatively affect future regional air quality conformity analyses. Regardless of which site is advanced, it will need to be included in a conforming TIP and Long Range Transportation Plan prior to advancing the project.

**Additional Studies/Coordination Needed**
- Coordination between the Commonwealth and the MPO will be necessary in order to get the project in the constrained TIP and Long Range Transportation Plan.
- The MPO is responsible for completing the air quality conformity analysis for the region as necessary.
- Coordinate with lead federal agency regarding need for CO hotspot analysis as part of future NEPA efforts.
- Complete CO hotspot analysis if necessary.
6.2 Land Use and Zoning

Land use and zoning information was obtained from the Ettrick Village Plan (2004), The Plan for Chesterfield 2035 (currently in draft form) and the City of Petersburg, Virginia - Comprehensive Plan 2011 (currently in draft form). Both Chesterfield County and the City of Petersburg have a zoning ordinance which correlates with their respective Land Use Plans.

Ettrick Site
The 2004 Ettrick Village Plan shows land use for the Ettrick site as being Light Industrial. More recently, Chesterfield County’s 2010 Land Use Pattern map (in draft form) shows land use on the Ettrick site property as being “commercial/office”, with “single family residential use” being designated to the east in the village of Ettrick. Ettrick Park is located due west of the site on the other side of the CSX railroad tracks.

The future Land Use Plan map being considered as part of The Plan for Chesterfield 2035 shows the station site and the surrounding neighborhood as being combined into one larger area designated as “community mixed use” that corresponds to the County’s new C-3 Mixed Use category for zoning purposes. This land use is described as an integrated mixture of concentrated commercial development, higher density residential uses, and public spaces. While not specifically stated in the County’s comprehensive plan, this type of mix-use development is generally consistent with TOD style development.

Collier Site
The City’s Existing Land Use map shows land use on the Collier site as being “vacant”. Adjacent land uses include residential development to the north and east and industrial to the west where International Paper has a facility.

According to the City of Petersburg’s Draft 2011 Comprehensive Plan (the Plan), a specific area of interest has developed as a result of proposed high speed rail service through Petersburg. To capitalize on expanded passenger rail service, the Plan recommends that the City position itself as a “transit ready City” by adopting policies (i.e. a TOD overlay zoning ordinance) to encourage transit oriented development near pending high speed rail stations. The area specifically identified for transit oriented development includes the Collier site. The Plan’s Future Land Use map shows both mixed-use high density commercial development and medium to high density residential development in and around the Collier site in anticipation of a rail station.

Impacts and Regulatory Constraints
A station at either site would be consistent with draft future land use plans for both localities. Furthermore, the City of Petersburg is recommending that transit oriented development be specifically encouraged around the Collier site in anticipation of future
rail service. Greenfield sites, such as the open land area at Collier, are particularly conducive to accommodating transit oriented design principles. Following best practices of transit oriented development can lead to thriving mixed use communities such as the rendering shown in Figure 15 by the Natural Resources Defense Council. Transit oriented, mixed use communities can reduce automobile trips and provide residents multiple travel options such as rail, bus, biking and walking.

![Figure 15 – Transit Oriented Development.](image)

**Additional Studies/Coordination Needed**

- Coordinate with both local planning departments to incorporate the most recent land use plans for each locality into future NEPA documents.

### 6.3 Traffic Impacts

This qualitative comparison of potential local traffic impacts is based on a review of the surrounding land use and transportation network.

**Ettrick Site**

Primary access to/from the existing Amtrak Station is via East River Road, a principal arterial providing a key east/west connection between Colonial Heights and Chesterfield County. From Route 1 (Boulevard) to the east, traffic headed for the Ettrick site via Dupuy Avenue pass through densely residential areas in Colonial Heights, the Virginia State University (VSU) campus, as well as the village of Ettrick itself. Traveling from the east, East River Road is a 2-lane roadway; from the west, it is River Road, a 4-lane divided highway for less than 0.5 mile before returning to a 2-lane roadway proceeding...
west. Several local residential streets can also be taken to reach the station. None of the intersections in close proximity to the site are signalized, with the exception of the Chesterfield Avenue/Granger Street intersection. This intersection has an AADT of 7200 based on VDOT’s 2010 Traffic Volume Estimates.

Collier Site
The primary access route to/from the Collier site is Wells Road, a 2-lane roadway with direct access to/from I-85 through a sparsely developed portion of Petersburg. The International Paper facility is also located off of Wells Road, between I-85 and the Collier site. Wells Road has an AADT of 3200 based on VDOT’s 2010 Traffic Volume Estimates.

Impacts and Regulatory Constraints
Since the Ettrick site is located in a more heavily developed area than the Collier site, increased traffic associated with a multimodal station in Ettrick is more likely to result in impacts to local traffic and travel patterns. Depending on projected traffic volumes created by a new station, increased congestion on local roads may potentially create traffic impacts to local residents and/or businesses along the way. Potential mitigation measures could include the addition of turn lanes or the installation of traffic signals near the Ettrick site depending on projected traffic volumes.

In comparison, traffic headed to the Collier site from I-85 are very close to the station and pass through a largely undeveloped section of Petersburg. Traffic impacts are expected to be minimal.

Additional Studies/Coordination Needed
- Coordinate with Chesterfield County, the City of Petersburg, and/or VDOT to determine need for a traffic impact assessment near the two potential station locations.
- Conduct traffic impact assessments, if necessary, as part of future NEPA efforts.

6.4 Historic Resources
Information on historic resources near both sites was obtained by reviewing the SEHSR (Richmond to Raleigh) Tier II EIS, and by conducting an archival search and file review at the Virginia Department of Historic Resources (VDHR) on June 12, 2012. For battlefields, the most recent Civil War Sites Advisory Commission Report on the Nation’s Civil War Battlefields was also consulted.

Ettrick Site
- Ettrick Historic District/Contributing Resources
  Based on the archival search and file review at VDHR, the southern tip of the Ettrick site is within the proposed Ettrick Historic District (VDHR #020-5002)
shown in Figure 2. In June 2009, the VDHR National Register Evaluation Committee recommended that the district be considered potentially eligible for listing on the National Register of Historic Places (NRHP). In general, the district includes approximately 200 individual resources, predominantly residences constructed between 1890 and the early 1940’s.

One of the few non-residential structures within the boundaries of the Ettrick Historic District is the Atlantic Coastline Railroad Depot (VDHR #020-5242/020-5002-0143) adjacent to the current Petersburg Amtrak Station. Built in 1942, the building has been abandoned and is in a state of disrepair. In 2007, VDHR concurred that the structure is not individually eligible for the NRHP due to its deteriorated condition and short period of usage (13 years). Following additional investigations, VDHR later concurred that the depot is, however, a contributing resource to both the Ettrick Historic District and the Atlantic Coastline Railroad discussed below.

- **Atlantic Coast Line Railroad Corridor**
  The SEHSR Tier II EIS also identified the existing rail line adjacent to the site as a historic resource eligible for listing on the NRHP – the Atlantic Coastline Railroad Corridor (VDHR #127-6251). Since this rail line historically included an additional track, VHDR concurred that adding a track for high speed rail service constituted a No Adverse Effect to that resource. It is important to note that this effect determination, completed as part of the SEHSR Tier II EIS, did not specifically address the effects of a new station on the historic railroad corridor.

**Collier Site**

- **Structures**
  Two architectural resources are within the Collier site boundaries: Michael Kelly House (VDHR #123-5008) and Mikuska House which was previously referred to as R. Collier House (VHDR #123-5015). Both were found not eligible for listing on the National Register of Historic Places in 1999. Nearly 10 years later, DHR again concurred in 2008 that #123-5015 is not eligible.

- **Battlefields**
  Based on studies completed for the SEHSR Draft Tier I EIS, the Collier site lies within the National Register eligible boundaries of two battlefields: 1) Petersburg Battlefield III (VDHR #123-5026), and 2) Weldon Railroad/Globe Tavern (VDHR #123-5022). Both battlefields have been found eligible for listing on the National Register of Historic Places. In correspondence dated March 20, 2007, the Virginia Department of Historic Resources noted that the National
Park Service also designated Petersburg Battlefield III as National Historic Landmark, its highest recognition.

In their Report on the Nation’s Civil War Battlefields, the Civil War Sites Advisory Commission delineates three different boundary types for battlefields:

1. Battlefield Study Area – represents the historic extent of the battle on the landscape
2. Battlefield Core Area – areas of direct combat
3. Potential National Register Boundary – acres of land that retain historic character and may be eligible for listing in the National Register

Based on their most recent report, the Collier site lies within the “Battlefield Study Area” of three battlefields: 1) Petersburg Battlefield III (VDHR #123-5026), 2) Jerusalem Plank Road Battlefield (VDHR #123-5023) and, 3) Weldon Railroad/Globe Tavern Battlefield (VDHR #123-5022). In addition, a portion of the Collier site is also within the potential National Register boundary for the Weldon Railroad/Globe Tavern Battlefield (see Figure 5).

Impacts and Regulatory Constraints
There are two regulatory frameworks pertaining to impacts to historic properties that are either listed or eligible for listing in the National Register of Historic Places:

1) Section 106 of the National Historic Preservation Act, and
2) Section 4(f) of the Department of Transportation Act.

Section 106 requires that project sponsors consider the “effects” of a project on historic resources while Section 4(f) requires that project sponsors demonstrate that there are no prudent or feasible alternatives to “using” a historic site.

Section 106
From a Section 106 standpoint, development of a multimodal station at the Ettrick site could potentially impact the Ettrick Historic District both directly and indirectly. Direct impacts would occur as a result of demolishing the Atlantic Coastline Railroad Depot. Although this would constitute an adverse effect for purposes of Section 106, this should not pose a substantial constraint to development on the site given the structure’s lack of integrity. Prior to demolition, a Memorandum of Agreement (MOA) would need to be executed between the lead federal agency, DRPT, VDHR, and other parties as needed. This MOA would stipulate the mitigation measures to be performed and would enable the project sponsor to proceed with improvements on the site.
Indirect impacts could potentially occur if a new station results in visual impacts to the neighboring historic district. Given the fact that an Amtrak station already operates on this site, it is not likely that a new or renovated facility would adversely affect the adjoining district visually unless the new facility was much grander in scale. Even if the proposed improvements result in an indirect adverse effect to the district, these impacts could be minimized through changes in design. It is also reasonable to assume in this case that, during development of an MOA, suitable mitigation measures can be identified that would be agreeable to VDHR.

Based on the information available at this time, the Collier site may pose more of a Section 106 regulatory challenge than the Ettrick site because of the particular sensitivity of battlefield resources. For the Ettrick site, the primary agency driving the Section 106 process will be VDHR. For the Collier site, in addition to VDHR, a variety of entities may express interest in the project and desire to be a consulting party due to the concentration of Civil War activity in and around Petersburg. These entities may include the National Park Service, the Civil War Preservation Trust, the Central Virginia Battlefields Trust, and others. In addition to possible direct impacts to battlefield resources, a multimodal station on the Collier site could potentially be viewed by preservation groups as having the potential to induce future transit oriented development (or other development) in the area, thus resulting in cumulative effects to several battlefields in the Petersburg area. As a result, clearing this site through the Section 106 process could be more complex than clearing the Ettrick site depending on the input received from Section 106 consulting parties during future NEPA efforts.

Section 4(f)

Development of a multimodal station on either site will trigger 4(f) requirements, meaning that avoidance and minimization measures will need to be developed and analyzed as part of the process. Based on current information, the proposed National Register boundary for the Ettrick Historic District intersects only a minor portion of the Ettrick site. Similarly, the proposed National Register boundary as shown on current mapping for the Globe Tavern (aka Weldon Railroad) Battlefield extends into a minor portion the southwest corner of the Collier site. If these boundaries remain accurate after additional investigations and/or agency coordination conducted during NEPA, then measures to avoid and/or minimize use of those resources should be relatively easy to identify and evaluate.

As part of the SEHSR Tier II EIS, the FRA determined that proposed track improvements would result in a de minimis impact to the Atlantic Coast Line Railroad Corridor. It is possible that a lead federal agency would also consider station development on the Ettrick site to be a de minimis impact thus simplifying the Section 4(f) process for that historic property.
**Additional Studies/Coordination Needed**

Regardless of which site(s) advances, Section 106 consultation with the Virginia Department of Historic Resources should be initiated early in the NEPA process in order to:

- Identify the Area of Potential Effect (APE), and
- Identify need for additional site investigations (for both architectural and archaeological resources).

Additional field studies that are likely to be requested by VDHR include the following:

- A Phase I archaeological survey for the Collier site.
- A Phase I architectural survey for the Collier site (depending on the APE).
- Limited archaeological survey at the Ettrick site.

Since the Ettrick Historic District has already been surveyed, an architectural survey will most likely not be required for the Ettrick site.

For the Collier site, it will be particularly important to refine the National Register boundaries for the Globe Tavern Battlefield based on additional field studies. This will allow VDRPT to more accurately determine what the effects to these resources would be as a result of developing a multimodal station. Coordination with the National Park Service and other consulting parties will be vital in terms of working through historic resource concerns pertaining to the battlefields.

The input from VDHR during the Section 106 consultation process will also feed into the Section 4(f) Evaluation prepared for the project as part of any upcoming NEPA efforts.

### 6.5 Noise and Vibration

Potential noise and vibration impacts associated with passenger and freight train service are addressed in the SEHSR (Richmond to Raleigh) Tier II EIS. This study only considers the potential noise and/or vibration impacts associated with increased vehicular traffic and transit service that may operate from a new station. For purposes of this assessment, it is assumed that transit service only involves vehicles with rubber tires such as buses, commuter van pools, etc. This qualitative assessment is based solely on the proximity of sensitive receptors to each site.

**Ettrick Site**

The Ettrick site is in relatively close proximity (50 to <400 feet) to a number of noise sensitive receptors including residential homes, Ettrick Park, and the Macedonia Tabernacle Ministries facility. One potential vibration sensitive receptor, the historic
Atlantic Coastline Railroad depot structure, is less than 20 feet from the existing track on the site.

**Collier Site**
The closest structure to the station at the Collier site is the International Paper facility directly across the railroad tracks to the west. It is not known at this time whether the buildings at this facility operate vibration-sensitive equipment. The nearest residences to the Collier site are a group of single family homes east of the site, off of Vesonder Road, Ramblewood Road, Bogese Drive, and Brierwood Road. These homes are all over 1,000 feet from either the station itself or parking areas.

**Impacts and Regulatory Constraints**

**Vibration**
If either the historic depot at Ettrick or the International Paper facility near Collier are vibration-sensitive receptors, they would much more likely be impacted by existing rail service than by any future transit service at either site. Both are in very close proximity to the tracks.

Generally, transit projects that involve rubber-tire vehicles do not generate a vibration impact unless the traveled roadways have surface irregularities, the surrounding buildings operate vibration-sensitive equipment, or the project includes operation of vehicles underneath vibration-sensitive buildings. Transit operations at a new station at either location are not expected to generate vibration impacts since transit vehicles would be operating at low speeds and the sites would be constructed with a smooth asphalt surface.

**Noise**
In terms of noise impacts, since an Amtrak Station already exists at the Ettrick location, it will be important to establish existing sound levels and compare them to projected future sound levels at sensitive noise receptor sites in Ettrick to determine whether there are adverse noise impacts associated with vehicular traffic/transit operations. Overall, the Ettrick site has a greater potential to result in noise impacts than the Collier site because of its proximity to noise receptors.

At the Collier site, given the distance between station and residences, adverse noise impacts to these homes from normal station operations are not anticipated. Since vehicular traffic to/from the site does not pass any homes, noise impacts from either cars, trucks or transit vehicles are not expected. Generally, parking lots are very quiet because they have neither higher-speed tire/pavement interaction nor accelerating vehicles. Also, dense tree cover between the site and these homes, if maintained to any degree, would help attenuate any increase in noise levels.
**6.6 Acquisitions and Relocations Required**

Acquisitions are anticipated at some point in time at both sites. However, there are no indications that relocations will be required at this level of study.

**Ettrick Site**
At the existing 9.5 acre site, CSX owns the land and current station which Amtrak leases. Long-term use of the existing station as well as opportunity for expansion to serve future ridership will require either acquiring the land from CSX or negotiating a long-term lease for the land and the station with CSX.

**Collier Site**
Norfolk Southern owns the 140 acre land surrounding the potential station location. Acquisition of the land from Norfolk Southern would provide land sufficient for both near-term and long-term station and TOD development.

**6.7 Hazardous Materials**

Information on potential hazardous materials concerns was obtained from EDR, Inc. who conducted a radius search of available local, state and federal records for both sites.

**Ettrick Site**
No Superfund (National Priority List) sites, CERCLIS sites or RCRA Corrective Action sites were identified within a 1-mile radius of the Site. Several sites with potential hazardous waste concerns are located within a ½-mile radius of the station site. They include two residences and three businesses, each of which have a record of leaking underground storage tanks (LUST) and leaking petroleum tanks (LTANK). In all cases, the status of the record is “closed” indicating that they have been investigated and appropriately handled. At one site, Irv’s Mobile Auto Repair at 20801 Chesterfield Plaza, five underground storage tanks for gasoline were removed.

**Collier Site**
No Superfund (National Priority List) sites or other CERCLIS sites are within a 1-mile radius of the site. Two sites of potential hazardous waste concern within a ½-mile radius are: 1) a record of a leaking underground storage tank (LUST) and leaking petroleum tank (LTANK) at 2637 Halifax Road, a residence west of the site, and 2) a hazardous material spill incident reported at 3500 Halifax Road/Collier Yard.
At the residence, the status for the LUST and TANK records is “closed” indicating that they have been investigated and appropriately handled. No further information is available for the spill incident.

**Impacts and Regulatory Constraints**

Properties that have been contaminated with hazardous waste pose a risk for prospective buyers because whoever assumes ownership of a contaminated site also assumes the liability and cost to clean it up. Based on the limited information obtained for this study, it does not appear that either site poses a substantial environmental risk. However, additional studies should be completed prior to acquisition of any property (see below).

**Additional Studies/Coordination Needed**

- Conduct a thorough site review to visually inspect each site for potential hazardous materials concerns during upcoming NEPA efforts.
- Prior to property acquisition, it is recommended that a full Phase I Environmental Site Assessment (ESA) be performed in accordance with ASTM standards. If warranted, the ESA would recommend additional site investigations (either surface or subsurface testing) to confirm the presence and/or extent of any suspected contamination from leaking tanks or other sources.

6.8 **Community Disruption and Environmental Justice**

United States Census data was to assess potential impacts to community resources and minority and/or low-income populations at both sites.

**Ettrick Site**

Census block data indicates that the community around the Ettrick site is predominantly African American (40 - 100%). As a whole, Chesterfield County has a much lower percentage of minorities. The block group for the site indicates that 0% – 10% of homes are below poverty. Census data shows the adjoining block group south of East River Road, in close proximity to the station site, as having a very high percentage of homes the below poverty the poverty level (40 – 100%).

**Collier Site**

Census data shows a 20% to 30% minority population for the Block that includes the Collier site, and 0% - 10% of residences living below poverty. The City of Petersburg as a whole is predominantly African American (>79%) with approximately 16% of residents over the age of 18 living below the poverty level.
Impacts and Regulatory Constraints
For projects of similar scope, disruptions to a community can potentially occur in several forms including noise impacts, increased traffic congestion, or changes to access. Developing a station at either site is not expected to cause substantial disruption to the surrounding communities and is not expected to cause disproportionate impacts to minority and/or low-income populations.

In comparing the two sites, the Ettrick site has a greater potential to result in noise impacts to low-income and minority populations near the site, and traffic impacts on local streets. At this time, however, without doing a noise analysis, it is difficult to predict. If there are noise or traffic related impacts, an argument could be made that they are not disproportionately high relative to the overall population in Ettrick and Petersburg. It is also important to point out that a new station in Ettrick could also have benefits to the surrounding community including economic benefits and improved access to transit.

No measurable degree of community disruption or disproportionate impacts to low-income and/or minority populations are anticipated at the Collier site.

Additional Studies/Coordination Needed
- Conduct community outreach at both sites during the NEPA process in order to more accurately define the community demographics and potential impacts and/or benefits. Outreach to the community will also help identify potential mitigation measures to offset community impacts that may result from a new station at either site.

6.9 Use of Public Parks and Recreation Areas
Information on publicly owned parks and recreation was obtained from a windshield survey conducted on May 29, 2012 and from available mapping and information on the Chesterfield County and City of Petersburg web sites.

Ettrick Site
Immediately adjacent to the site, west of the railroad tracks, is Ettrick Park. Owned and operated by Chesterfield County, Ettrick Park is 28 acres in size. Park amenities include multiple athletic fields, tennis/basketball courts, picnic shelters, playgrounds, trails and the Mayes-Colbert Ettrick Community Building. A paved walking trail was observed in relatively close proximity to the railroad tracks.
**Collier Site**
No publicly owned parks or recreation areas are within or adjacent to the Collier site.

**Impacts and Regulatory Constraints**
Like historic sites, publicly owned parks and recreation areas are also protected by Section 4(f) of the Department of Transportation Act. Impacts can occur in two ways: 1) in the form of a direct use of land (i.e. right-of-way take) from a park, or 2) in the form of a “constructive use” whereby the protected activities, features, or attributes of the park/recreation area are substantially impaired.

Development of a new station on the Ettrick site would not require the use of land from Ettrick Park. Furthermore, a new station on this site is not expected to substantially impair any of the activities, features or attributes of the park since a new station will not substantially alter the conditions that currently exist at the Petersburg Amtrak Station.

**Additional Studies/Coordination Needed**
- Coordinate with Chesterfield County, owner of Ettrick Park, to confirm that a new station in Ettrick will not result in a constructive use of the park resource and that there are no plans to expand the park near the site.

**6.10 Natural Resources**
Natural resources include, but are not necessarily limited to: streams, floodplains, wetlands, water quality, ecologically sensitive areas and endangered species. Information on natural resources was obtained from U.S. Fish and Wildlife’s (USFWS) National Wetland Inventory mapping, USFWS Information, Planning and Conservation System (IPaC), EPA’s NEPAssist database, the Virginia Department of Game and Inland Fisheries’ Fish and Wildlife Information Service (VaFWIS), the Virginia Department of Conservation and Recreation’s Natural Heritage Division, and U.S. Geological Survey mapping.

**Ettrick Site**
The Ettrick site is in an urban area and already developed. It includes the Amtrak Station, a parking lot, a train platform, and a mowed area. No wetlands, streams, or floodplains occur on this site.

According to USFWS’s IPaC system, one federally listed endangered species may occur on the site – Michaux’s sumac. This small deciduous shrub grows in open wooded areas and old clearing. It depends on some form of disturbance to maintain the openness of habitat it prefers. Even artificial disturbances, such as maintenance along railroad corridors, have been known to provide habitat for this shrub.
In addition, DCR’s Natural Heritage Division noted the presence of the state threatened Green floater (a rare freshwater mussel) downstream of the site in the Appomattox River.

**Collier Site**
The Collier site is primarily undeveloped with much of the site being wooded. Near the center of the site, National Wetland Inventory mapping shows a 4.16 acre forested wetland/0.16 acre emergent wetland system. Although several rivers and lakes are nearby, no other streams, floodplains, lakes or other water features are on the site itself. No endangered species are known to occur on the site.

**Impacts and Regulatory Constraints**
Based on readily available information, each station site has a potential regulatory constraint pertaining to natural resources. The Ettrick site may contain an endangered plant species and it appears that the Collier site has an area of jurisdictional wetlands. The presence of endangered species or wetlands on a site pose a regulatory constraint to development.

For wetlands, Section 404 (b) (1) guidelines of the Clean Water Act state that wetlands cannot be filled if there is a less damaging practicable alternative. In other words, every measure should be taken during planning and design to avoid and minimize impacts to the wetlands on the Collier site. None of the preliminary station designs on the Collier site encroach on the National Wetland Inventory defined wetland. It is important to remember that impacts can be permanent or temporary in nature and they must both be quantified. Temporary impacts often occur during construction as a result of construction staging areas, access roads or other temporary construction features. If wetland impacts are unavoidable, prior to construction, those impacts must be permitted in accordance with state and federal permitting requirements and include mitigation measures as appropriate.

If the endangered Michaux’s sumac is actually found on the Ettrick site, this would likely be a bigger regulatory challenge depending on the location and size of the population. The Endangered Species Act is aimed at not only protecting endangered species but also critical habitat that supports those species.

**Additional Studies/Coordination Needed**
During the NEPA process, coordination with a variety of state and federal natural resource agencies will be necessary. These agencies include the COE, the U.S. Fish and Wildlife Service, the Environmental Protection Agency, the Virginia Department of Game and Inland Fisheries, and the Virginia Department of Environmental Quality.
National Wetland Inventory mapping, while appropriate to use for early project planning purposes, is not a substitute for field delineated wetland boundaries.

- Delineate and flag jurisdictional wetland limits in the field in order to more accurately assess potential project related impacts.
- These limits should also be confirmed in the field by the U.S. Army Corps of Engineers (COE).
- Determine potential impacts, including temporary construction impacts.

For the Ettrick site, coordination with the U.S Fish and Wildlife Service early in the NEPA process will determine whether or not a field survey is needed for Michaux’s sumac. Typically, these surveys are best done during the growing season so timing can become critical.

- Conduct endangered species survey if necessary.
- If a survey is required and the endangered sumac is found, consultation with the FWS would proceed in accordance with Section 7 of the Endangered Species Act to either work through project issues or possibly eliminate the site from further consideration.

Also for the Ettrick site, coordination with the Virginia Department of Game and Inland Fisheries is warranted to ensure the incorporation of strict erosion and sediment control measures into future design efforts in order to minimize adverse impacts to the aquatic ecosystem that supports the Green floater.

6.11 Impacts on Safety and Security

Issues related to safety and security includes the ability to control access to/from the site and the need for lighting, physical barriers/fencing, or other security measures. For purposes of this study, it is assumed that appropriate measures can be implemented during the design process to provide for the safe and secure operation of a station at either location. These measures would be described in more specific terms as part of any upcoming NEPA efforts.

6.12 Construction Impacts

Construction related impacts at either site could include potential noise impacts to surrounding residences as well as dust and erosion. Construction related impacts are typically temporary in nature. For the Collier site, the construction impacts are considered relatively minor.

For the Ettrick site, the construction impacts would be more severe because of the close proximity to adjacent residential neighborhoods. An additional concern at the Ettrick
site is the potential for temporary disruption of rail passenger service during construction on the future high-speed rail line (which will be located 25-feet east of the existing CSX mainline). The existing Ettrick site facilities will need to be demolished and a new station/platform constructed nearby onsite. Maintaining passenger access to existing train service during construction of the SEHSR will require creative solutions to protect passengers while crossing the construction area to board the trains. Staging of the new construction will be developed to minimize disruptions, but some temporary disruptions will probably occur.

Best management practices for the control of dust, erosion and sedimentation will be followed during construction on either site. More specific construction related impacts and measures to mitigate those impacts will be described in greater detail as part of any upcoming NEPA efforts.

7. Coordination

Pre-NEPA analysis of the Ettrick and Collier sites was based on a compilation of existing environmental and project information. It is recognized that stakeholder preferences and public input are key components of the NEPA process which will follow this analysis. For purposes of this Pre-NEPA evaluation, coordination with stakeholders was excluded from this analysis.

8. Advantages / Disadvantages

Based on the available information and without stakeholder input, neither site can be readily dismissed from further consideration at this time. Both sites should be advanced for analysis under NEPA. In the future, as additional environmental technical studies are completed and stakeholder input is received, critical issues may emerge that will help inform decision makers. A summary of comparative data for each site is shown below.
<table>
<thead>
<tr>
<th>Comparative Data</th>
<th>Ettrick Site</th>
<th>Collier Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>9.5 ac</td>
<td>140 ac</td>
</tr>
<tr>
<td>Miles to Interstate</td>
<td>2.9</td>
<td>1.0</td>
</tr>
<tr>
<td>Preliminary cost estimate</td>
<td>$ 4.0 M</td>
<td>$ 8.5 M</td>
</tr>
<tr>
<td>Commuter Access</td>
<td>low</td>
<td>high</td>
</tr>
<tr>
<td>Multimodal Access</td>
<td>high</td>
<td>high</td>
</tr>
<tr>
<td>Future Expandability</td>
<td>medium</td>
<td>high</td>
</tr>
<tr>
<td>TOD compatibility</td>
<td>medium</td>
<td>high</td>
</tr>
<tr>
<td>Potential for local traffic impacts</td>
<td>high</td>
<td>low</td>
</tr>
<tr>
<td>Potential for historic resource impacts</td>
<td>high</td>
<td>high</td>
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<tr>
<td>Potential for noise impacts</td>
<td>medium</td>
<td>low</td>
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<tr>
<td>Potential for hazardous materials</td>
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<td>Use of land from public parks</td>
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<td>Potential for wetland/stream impacts</td>
<td>low</td>
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<tr>
<td>Potential for endangered species impacts</td>
<td>medium</td>
<td>low</td>
</tr>
<tr>
<td>Potential for temporary construction impacts</td>
<td>high</td>
<td>low</td>
</tr>
<tr>
<td>Adequacy for incorporating HSR service</td>
<td>low</td>
<td>high</td>
</tr>
</tbody>
</table>

The results of this analysis indicate that a station at either the Ettrick site or the Collier site could provide adequate near-term passenger rail service for the Tri-Cities area. However, there are several key differentiators that separate the future expandability of the stations for the long-term – commuter access, multimodal access, facility expandability, and ability to accommodate higher speed rail service. While data such as ridership/revenue, traffic patterns, origin/destination surveys, and comprehensive cost-benefit analysis are necessary for further evaluation. It is clear that in order to accommodate the planned high speed rail service and provide the expected additional passengers with an acceptable level of service; the Tri-Cities area will either need to develop the Collier site or relocate the existing Ettrick Station on site.

Other than nearby VSU and adjacent neighborhoods, commuter access to the Petersburg Station at Ettrick requires travel along three distinctly different highway corridors over almost 3 miles to/from I-95. Constrained access to Ettrick and possible delays on local city streets discourage potential commuters from using the Petersburg Station at Ettrick. The lack of secure parking at Ettrick also discourages commuters from using the Petersburg Station at Ettrick. This disadvantage would likely translate into lower ridership and diminished market “reach” for long-term passenger rail ridership.

Commuter access to a station at the Collier site would require travel along a single highway corridor for approximately 1 mile to/from I-85 in Petersburg. Because of sufficient land, the Collier site would be developed for secure long-term parking and could also accommodate other transit oriented development (bus facilities, park and
ride commuter facilities, etc.). Direct access to I-85 is an advantage for commuter access. Based on commuter access, the Collier site has an advantage over the Ettrick site.

Multimodal access to the Petersburg Station at the Ettrick site does not currently exist, although bus routes do pass within a short walking distance. Pedestrian and bicycle access also end near the Petersburg Station at Ettrick. Modifications to extend all three of these modes to the station are possible. Multimodal access to a new station at the Collier site would be provided as part of a new station development and would accommodate potential bus, bikeways and pedestrian facilities. Additionally, the undeveloped areas immediately surrounding the Collier site have the potential for high-density residential and/or employment development. Based on multimodal access, neither site has an advantage over the other.

The ability to expand Petersburg Station at Ettrick is dependent on the 9.5 acre site currently owned by CSX. Both the platform and the station building would need to be relocated to accommodate future rail operations. Future expansion of facilities at the Collier site would need to be included in the initial station design and should not cause any adverse disruption of passenger rail service. Based on future expansion and development potential, the Collier site has an advantage over the Ettrick site.

Successful transit oriented development (TOD) is based on a variety of factors, including transportation connectivity, land use policies, economic development climate, and local financing strategies. TOD development is possible at both the Ettrick and Collier sites. However, the Collier Site has an advantage in meeting long-term regional and national passenger rail goals and potential for transit oriented development because of easier site access, minimal adverse impacts on residential neighborhoods due to future station growth and passenger rail service expansion, and available land for future TOD development.

While the Collier site has advantages in commuter access and future expandability, the Ettrick site has the advantage of an existing operational passenger rail station. An alternative for further consideration is using the existing Petersburg Station at Ettrick for near-term passenger rail service while developing the Collier site for a long-term multimodal station serving the Tri-Cities area. Once the Collier site is completed, passenger rail service could be switched from Ettrick to Collier.
TRI-CITIES STATION STUDY

AREA MAP

JULY 27, 2012
SITE NOTES

1. EXISTING DOUBLE TRACKS
2. FUTURE HIGH SPEED RAIL (HSR) TRACK
3. EXISTING PASSENGER PLATFORM
4. EXISTING STATION
5. EXISTING PARKING
6. FORMER ACL STATION

EXISTING STATION  3,400 SF (+/-), EXCLUDES STORAGE AND GARAGE
EXISTING PARKING  16,000 SF (+/-)
EXISTING STATION PROPERTY  9.5 AC (+/-)
SITE NOTES

1. EXISTING TRACKS
2. FUTURE HIGH SPEED RAIL (HSR) TRACK
3. RECONSTRUCT 1000' LONG, 20' WIDE PASSENGER PLATFORM FOR HSR
4. FORMER STATION
5. EXISTING PARKING
6. FORMER ACL STATION
7. MEDIUM STATION
8. PARKING EXPANSION

FUTURE STATION 5,500 SF (+/-)
FUTURE PARKING 50,000 SF (+/-)
FUTURE STATION PROPERTY 9.5 AC (+/-)
FOR INFORMATION
NOT TO BE USED FOR CONSTRUCTION

SITE NOTES

1. EXISTING TRACKS
2. FUTURE HIGH SPEED RAIL (HSR) TRACK
3. PROPOSED 1000' LONG, 20' WIDE PASSENGER PLATFORM
4. SMALL STATION
5. ACCESS ROAD AND PARKING

SMALL STATION:
3,400 SF (+/-)
MATCH EXISTING STATION

SMALL STATION ROADWAY AND PARKING:
99,500 SF (+/-)

NEW GRADE SEPARATION STRUCTURE
(SEE FIGURE 10):
6,800 SF (+/-)

EXTEND EXISTING GRADE SEPARATION STRUCTURE
(SEE FIGURE 10):
5,000 SF (+/-)

FOR ACCESS ROAD, SEE FIGURE 9
1. **EXISTING TRACKS**
2. **FUTURE HIGH SPEED RAIL (HSR) TRACK**
3. **PROPOSED 1000’ LONG, 20’ WIDE ISLAND PASSENGER PLATFORM**
4. **PROPOSED 500’ LONG, 20’ WIDE PASSENGER PLATFORM**
5. **SMALL STATION**
6. **ACCESS ROAD AND PARKING**

**SMALL STATION:**
- 3,400 SF (+/-)
- MATCH EXISTING STATION

**SMALL STATION ROADWAY AND PARKING:**
- 80,000 SF (+/-)

**NEW GRADE SEPARATION STRUCTURE:**
(SEE FIGURE 10):
- 6,800 SF (+/-)

**EXTEND EXISTING GRADE SEPARATION STRUCTURE:**
(SEE FIGURE 10):
- 5,000 SF (+/-)
Small Station 3,400 SF (+/-), Match Existing Station
Small Station Parking 45,000 SF (+/-)
Small Station Property 4.3 AC (+/-)

FOR INFORMATION
NOT TO BE USED FOR CONSTRUCTION

SITE NOTES
1. Existing Tracks
2. Future High Speed Rail (HSR) Track
3. Proposed 1,000' Long, 20' Wide Passenger Platforms
4. Small Station
5. Access Road and Parking

TRI-CITIES STATION STUDY
COLLIER SITE #3 - SMALL STATION
JULY 27, 2012
FIGURE 8
FOR STATION, SEE FIGURE 6

SITE NOTES
1. EXISTING TRACKS
2. FUTURE HIGH SPEED RAIL (HSR) TRACK
3. STATION ACCESS ROAD

FOR GRADE SEPARATION, SEE FIGURE 10

FOR INFORMATION
NOT TO BE USED FOR CONSTRUCTION
SITE NOTES

1. EXISTING TRACKS
2. HIGH SPEED RAIL (HSR) TRACK
3. STATION ACCESS ROAD
4. NEW GRADE SEPARATED CROSSING
5. EXTEND EXISTING HALIFAX RD GRADE SEPARATION STRUCTURE

FOR INFORMATION
NOT TO BE USED FOR CONSTRUCTION
EXISTING TRACK

HIGH SPEED RAIL (HSR) TRACK

RECONSTRUCT 1000' LONG, 20' WIDE PASSENGER PLATFORM FOR HSR

EXISTING SMALL STATION

MEDIUM STATION EXPANSION

EXISTING ACCESS ROAD AND PARKING

PARKING EXPANSION

MEDIUM STATION:
5,500 SF (+/-)

MEDIUM STATION PARKING EXPANSION:
12,500 SF (+/-)
SITE NOTES

1. EXISTING TRACKS
2. FUTURE HIGH SPEED RAIL (HSR) TRACK
3. PROPOSED 1000' LONG, 20' WIDE PASSENGER PLATFORM
4. EXISTING SMALL STATION
5. MEDIUM STATION EXPANSION
6. ACCESS ROAD AND PARKING
7. PARKING EXPANSION

MEDIUM STATION:
5,500 SF (+/-)

MEDIUM STATION PARKING EXPANSION:
12,500 SF (+/-)

FOR ACCESS ROAD, SEE FIGURE 9

Moffatt & Nichol
1100 Boulder Parkway, Suite 350
Richmond, VA 23225
(804) 330-1900 Voice (804) 563-1099 Fax

Tri-Cities Station Study
Collier Site #2 - Medium Station
July 31, 2012
Figure 12

FOR INFORMATION
Not to be used for construction

Scale
0 100 200 100
MEDIUM STATION
5,500 SF (+/-)
MEDIUM STATION PARKING
55,000 SF (+/-)
MEDIUM STATION PROPERTY
4.3 AC (+/-)
TABLE

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<thead>
<tr>
<th>STATION</th>
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