

ENVIRONMENTAL ASSESSMENT
FOR THE
LOCOMOTIVE AND RAILCAR MAINTENANCE FACILITY
(TIP Project No. P-2918F)
MECKLENBURG COUNTY, NORTH CAROLINA

APPROVED:

9/26/2013
Date



Marc L. Hamel, Rail Project Development Manager
Rail Division
North Carolina Department of Transportation

9/30/2013
Date



David Valenstein
Chief, Environment and Systems Planning Division
Federal Railroad Administration

The following person may be contacted for information on the Environmental Assessment:

Ryan L. White, P.E.
Rail Project Development Engineer
Rail Division
North Carolina Department of Transportation
1553 Mail Service Center, 1 South Wilmington Street
Raleigh, NC 27699-1553
Phone: 919.707.4717

ENVIRONMENTAL ASSESSMENT
FOR THE
LOCOMOTIVE AND RAILCAR MAINTENANCE FACILITY
(TIP Project No. P-2918F)
MECKLENBURG COUNTY, NORTH CAROLINA

PREPARED BY:

9/26/2013

Date



Ryan L. White, P.E.
Rail Project Development Engineer
North Carolina Department of Transportation Rail Division



9/26/2013

Date



Terry L. Winebrenner, P.E.
Environmental Manager
Gannett Fleming, Inc.



September 2013

**ENVIRONMENTAL ASSESSMENT
FOR THE
LOCOMOTIVE AND RAILCAR MAINTENANCE FACILITY
(TIP Project No. P-2918F)
MECKLENBURG COUNTY, NORTH CAROLINA**

**Green Sheet
Page 1 of 2**

Commitments Developed Through Project Development and Design

NCDOT

The North Carolina Department of Transportation (NCDOT) will take a proactive approach to implementing sediment and erosion control Best Management Practices (BMPs) throughout Project Development and Design. NCDOT will implement all sediment and erosion control BMPs in accordance with North Carolina Department of Environment and Natural Resources (NCDENR) Division of Water Quality's *Design Standards in Sensitive Watersheds*¹ to reduce potential for nutrient runoff into Irwin Creek.

Design plans will incorporate the treatment of stormwater runoff through the use of appropriate BMPs as defined in the most recent version of the NCDENR Division of Water Quality's *Stormwater Best Management Practices* (July 2007).²

In accordance with the Mecklenburg County Board of County Commissioners October 1996 "Creek Use Policy", efforts will be made to avoid, minimize, or mitigate impacts to designated Surface Water Improvement and Management (SWIM) buffers. Where impacts are determined to be unavoidable, coordination with the County will be conducted prior to the start of construction activities. All work to be conducted within a County designated SWIM buffer will be completed in accordance with the *Charlotte-Mecklenburg Land Development Standards Manual*³ for stabilization of disturbed areas to minimize negative water quality impacts.

Where feasible, NCDOT will follow City of Charlotte requirements for berms, landscaping, and setback requirements to minimize the visual impacts to the surrounding neighborhood.

During final design, NCDOT will investigate the feasibility of noise mitigation measures for the two impacted sites within the Wilmore neighborhood.

On March 27, 2012, NCDOT conducted a Citizens Information Workshop (CIW) and, on June 4, 2012, an additional public meeting with the Wilmore neighborhood on prior to publishing the Draft environmental document. As part of the public outreach efforts, NCDOT will notify the public of the right to request a meeting once the Project's environmental document has been published.

¹ 15A NCAC 04B .0124 Design Standards In Sensitive Watersheds,
<http://ncrules.state.nc.us/ncac/title%2015a%20-%20environment%20and%20natural%20resources/chapter%2004%20-%20sedimentation%20control/subchapter%20b/15a%20ncac%2004b%20.0124.pdf>

² <http://portal.ncdenr.org/web/wq/ws/su/bmp-manual>

³ <http://charmeck.org/city/charlotte/epm/Services/LandDevelopment/StandardsManual/Pages/default.aspx>

**ENVIRONMENTAL ASSESSMENT
FOR THE
LOCOMOTIVE AND RAILCAR MAINTENANCE FACILITY
(TIP Project No. P-2918F)
MECKLENBURG COUNTY, NORTH CAROLINA**

**Green Sheet
Page 2 of 2**

Commitments Developed Through Project Development and Design

The Project will impact a vacant lot that is included within the Wilmore Historic District boundary. Due to this impact, prior to construction, NCDOT will obtain a Certificate of Appropriateness (COA) from the Charlotte Mecklenburg Historic Landmarks Commission for this Project.

EXECUTIVE SUMMARY

The North Carolina Department of Transportation (NCDOT) Rail Division, in conjunction with the Federal Railroad Administration (FRA), is studying alternatives for the Piedmont Improvement Program (PIP) Locomotive and Railcar Maintenance Facility (LRMF) Project (Project). The NCDOT State Transportation Improvement Program (TIP) number for this Project is P-2918F. The Project study area is located in the City of Charlotte, Mecklenburg County, North Carolina.

The proposed Project will construct a new locomotive and passenger railcar maintenance facility southwest of Uptown Charlotte (City Center) to replace the current facility adjacent to the Norfolk Southern Railway (NS) Charlotte Yard northeast of Uptown. The new facility will include the following elements:

- Railcar service and storage tracks
- Enclosed facility for major maintenance operations
- Fuel pad and onsite fuel tank
- Additional space for storage of spare parts and equipment
- Enclosed train wash facility
- Train crew base for up to 20 crew members

The purpose of the Project is to construct a new locomotive and passenger railcar maintenance facility southwest of Uptown Charlotte adjacent to a proposed multi-modal transportation center (Charlotte Gateway Station). The new LRMF Project will replace the existing Charlotte maintenance facility located adjacent to the NS Charlotte Yard, and will serve the increasing number and length of intercity passenger trains serving the region, and provide capacity to support the future development of high speed passenger service on the federally designated Southeast High Speed Rail (SEHSR) corridor.

The proposed Charlotte Locomotive and Railcar Maintenance Facility is a component of the PIP, which is an initiative by the NCDOT, NS, and the North Carolina Railroad Company (NCRR) to improve passenger and freight railroad operations along the Piedmont Corridor from Raleigh to Charlotte. The Piedmont Corridor consists of the Greensboro to Charlotte portion of the NS Washington to Atlanta Mainline and the NS/NCRR H-Line that runs from Greensboro to Raleigh. The PIP consists primarily of railroad capacity projects and crossing safety projects that will facilitate the introduction of up to 12 daily (six round trip) passenger trains along the Raleigh to Charlotte corridor. The PIP also includes station and facility projects that will improve service to passengers and improve the maintenance operations for the passenger trains serving the corridor.

The NCDOT Piedmont Corridor is also part of the federally designated SEHSR corridor. This corridor connects the northeastern states and Washington, DC through Richmond, VA to Raleigh and Charlotte, NC to Atlanta, GA. In Atlanta, the SEHSR extends southeast to Savannah, GA and Jacksonville, FL; and the Gulf Coast High Speed Rail (GCHSR) corridor extends across the southwest through New Orleans, LA, Mobile, AL and Houston, TX.

NCDOT, the Virginia Department of Rail and Public Transportation (DRPT), the Federal Highway Administration (FHWA) and the FRA completed in 2002 a Tier I Environmental Impact Statement (EIS) and the FRA issued a Record of Decision (ROD) for the portion of the SEHSR corridor between Charlotte and Washington, DC. This environmental Assessment (EA) for the Locomotive and Railcar Maintenance Facility is one of several Tier II, or project level, studies

being undertaken for the portion of the SEHSR corridor between Charlotte and Richmond. The FRA and the Virginia DRPT will study the portion of the SEHSR between Richmond and Washington, DC in a Tier II EIS. FRA has awarded approximately \$45 million to Virginia to fund the EIS and preliminary engineering. The Tier II EIS process for the Raleigh to Richmond portion is currently in the Final EIS development stage, and a ROD is anticipated in early 2014.

This document summarizes the evaluation of the No-Build Alternative and the Build Alternative. NCDOT has determined that the Build Alternative will meet the Purpose and Need of the Project. This EA has been prepared to provide a level of environmental analysis that is consistent with the expected magnitude of impact associated with the Build Alternative. The following table provides an outline of the anticipated environmental consequences related to implementing the Build Alternative.

Summary of Environmental Consequences for the Build Alternative		
Section of EA	Summary of Impacts	Proposed Mitigation
3.1.1 Air Quality	<p>No Impact. The results of the Applicability Analysis, as part of the General Conformity process, showed the Build Alternative to be below threshold and regionally insignificant.</p> <p>For air quality analysis of the LRMF operations, see 3.7, Public Health.</p>	Not Applicable.
3.1.2 Noise and Vibration	<p>Minor Impact. Existing noise levels at three site receptors in the Wilmore neighborhood are significantly high. These high noise levels are due to existing noise generated from nearby interstates, existing rail traffic, and activity at Charlotte Pipe and Foundry.</p> <p>None of the three receptors will be impacted by the noise generated by the LRMF only. However, two sites will be moderately impacted by the noise from additional trains sounding their horns while crossing West Summit Avenue, when combined with the noise generated by the LRMF. These future noise levels will be 1 to 2 dBA above existing levels, an increase which is not perceived by humans.</p> <p>No Impact. No vibration impacts will result from construction or operation of the LRMF.</p>	During final design, NCDOT will investigate the feasibility of noise mitigation measures for the two impacted sites.

Summary of Environmental Consequences for the Build Alternative		
Section of EA	Summary of Impacts	Proposed Mitigation
3.1.3 Water Quality	No Impact. The Build Alternative will not permanently impact water quality, and will not cause a change in the Class C classification designated by NCDENR DWQ. Temporary impacts associated with construction stormwater and sedimentation may occur as part of construction activities.	NCDOT will undertake BMPs in accordance with NCDENR DWQ's <i>Design Standards in Sensitive Watersheds and Stormwater Best Management Practices</i> .
3.1.4 Water Bodies and Waterways	Minor Impact. Construction of the Build Alternative will involve crossing an unnamed ephemeral railroad drainage ditch. This activity will result in permanent impacts to the Mecklenburg County 30-foot, post-construction SWIM buffer established for this drainage feature. Temporary impacts associated with construction stormwater and sedimentation may occur as part of construction activities.	NCDOT will undertake BMPs in accordance with NCDENR DWQ's <i>Design Standards in Sensitive Watersheds and Stormwater Best Management Practices</i> .
3.1.5 Floodplains	No Impact. The Build Alternative will not permanently impact any FEMA designated 100-year floodplain areas.	Not Applicable.
3.1.6 Wetlands	No Impact. There are no wetlands within the Project area. Therefore, the Project will not have permanent, temporary, secondary or cumulative wetland impacts.	Not Applicable.
3.1.7 Coastal Zones	No Impact. This Project is located in Mecklenburg County, which is not one of North Carolina's 20 coastal zone counties.	Not Applicable.
3.1.8 Farmland	No Impact. The areas adjacent to the Project area are developed and urban in nature. No land exhibiting the criteria of farmland is present within or adjacent to the Project area.	Not Applicable.
3.2.1 Ecologically Sensitive Areas	No Impact. A survey of the Project area found no ecologically sensitive areas, wildlife habitat, or designated critical areas.	Not Applicable.

Summary of Environmental Consequences for the Build Alternative		
Section of EA	Summary of Impacts	Proposed Mitigation
3.2.2 Threatened and Endangered Species	No Impact. Field surveys found no evidence of Federally-listed or State-listed Threatened and Endangered Species within the Project area.	Not Applicable.
3.3.1 Transportation	<p>Minor Impact. The Build Alternative will improve servicing operations for passenger rail.</p> <p>Vehicular, pedestrian, and bicyclist traffic impacts will occur at the West Summit Avenue at-grade crossing by creating two separately operating at-grade railroad crossings. Minor delays to Charlotte Area Transit System (CATS) bus route 2 will likely occur due to increased train traffic crossing West Summit Avenue.</p> <p>The Build Alternative will eliminate existing surface parking on NCDOT-owned property. These surface lots are currently leased to the Carolina Panthers for use during events at the Stadium and are not for public parking. The existing surface parking agreement allows NCDOT to terminate the lease with a 45-day notice. Prior to construction, NCDOT will terminate the surface parking lease per the existing agreement. The removal of this parking will not impact the amount of parking spaces available for use during normal workdays in Uptown Charlotte.</p>	<p>Traffic delays at the West Summit Avenue crossing will be minor (average number of vehicles per day is fewer than 3,300). Other streets in the area will provide alternative routes for traffic when the crossing gates are down.</p>

Summary of Environmental Consequences for the Build Alternative		
Section of EA	Summary of Impacts	Proposed Mitigation
3.3.2 Land Use, Zoning, and Property Acquisition	Minor Impact. The Build Alternative will have a minimal impact on land use or zoning as the future land use and zoning designations associated with the Build Alternative will be consistent with all existing land use plans and local planning documents. The Build Alternative will require acquisition of 10 parcels from 3 separate property owners.	NCDOT will follow applicable Federal and State laws on property acquisition and relocations.
3.3.3 Environmental Justice and Community Disruption	No Impact. No disproportionately high or adverse effects to identified low-income and minority populations are anticipated. The Build Alternative will not result in the disruption or segmentation of existing communities.	Not Applicable.
3.3.4 Hazardous Materials Inventory	Minor Impact. Surveys identified two potential hazardous materials sites within the Project study area.	If soil disturbing activities will impact the potential hazardous material sites, NCDOT will submit a work plan to NC Department of Natural Resources addressing how hazardous materials will be handled and disposed.
3.3.5 Cultural Resources	No Adverse Effect. The Build Alternative will have no adverse effect on historic resources. However, the Build Alternative will impact a vacant lot included in the locally designated Wilmore Historic District boundary.	Prior to construction, NCDOT will apply for a Certificate of Appropriateness (COA) from the Charlotte-Mecklenburg Historic Landmarks Commission for the impacts to the Wilmore Historic District.
3.3.6 Section 4(f) Resources	No Impact. The Build Alternative will have no impacts to Section 4(f) resources.	Not Applicable.
3.3.7 Section 6(f) Resources	No Impact. There are no Section 6(f) resources in the Project study area.	Not Applicable.

Summary of Environmental Consequences for the Build Alternative		
Section of EA	Summary of Impacts	Proposed Mitigation
3.4.1 Construction Transportation Impacts	Minor Impacts. Construction activities will result in some delays for pedestrians, cyclists, motor vehicles and buses traveling West Summit Avenue. During construction West Summit Avenue will be closed for extended periods, requiring signed detours.	NCDOT will coordinate with the City of Charlotte on detour routes.
3.4.2 Solid Waste Disposal	No Impact. Accumulated solid waste will be disposed of in accordance with State and local requirements throughout the duration of construction.	Not Applicable.
3.4.3 Use of Energy Resources	Minor Impact. During construction, there will be an increase in energy usage due to construction related activities. The facility will provide more services than the existing facility in NS' Charlotte Yard. As such, the proposed facility will result in more energy consumption than the existing locomotive servicing facility. However, the Project will assist in implementing NCDOT's plan to improve passenger rail service, which should result in fewer automobile trips, and thus lower overall energy usage.	Not Applicable.
3.4.4 Use of Other Natural Resources	No Impact. The use of other natural resources is anticipated to be minimal during construction of the selected preferred alternative. NCDOT will use BMPs during construction to minimize adverse impacts to natural resources both onsite and adjacent to the construction boundary.	Not Applicable.

Summary of Environmental Consequences for the Build Alternative		
Section of EA	Summary of Impacts	Proposed Mitigation
3.5 Aesthetic and Design Quality Impacts	<p>Minor Impact. All of the parcels to be acquired are zoned for commercial or industrial use. The Project area is adjacent to the Wilmore neighborhood, and will create changes in the visual landscape.</p> <p>Temporary visual impacts attributed to construction activities will be greatest for those directly adjacent to the construction site. Views of heavy equipment and material stockpiles will be commonplace throughout the duration of construction.</p>	<p>Where feasible, NCDOT will follow City of Charlotte requirements for berms, landscaping, and setback requirements to minimize the visual impacts to the surrounding neighborhood.</p> <p>Prior to construction, NCDOT will apply for a Certificate of Appropriateness (COA) from the Charlotte-Mecklenburg Historic Landmarks Commission for the impacts to the Wilmore Historic District.</p>
3.6 Possible Barriers to Elderly and Handicapped	<p>No Impact. Construction of the Build Alternative is not anticipated to result in barriers to the elderly and handicapped populations.</p>	Not Applicable.
3.7 Public Health	<p>No Impact. No impacts to public health are anticipated during construction of the Build Alternative. Air quality assessments performed showed the impacts from project construction to be below air quality thresholds and thus considered regionally insignificant.</p> <p>NCDOT does not anticipate impacts to public health from LRMF operations. All existing NCDOT locomotives comply with current EPA emission requirements, and all new locomotives to be serviced at the facility will be Tier 0+ and Tier II compliant with the Clean Air Act. Given the fairly moderate year-round temperatures, trains will not be idling overnight or for extended periods during the day. NCDOT will locate wayside power on-site to provide electricity to the passenger cars and locomotives during servicing, and therefore no head-</p>	Not Applicable.

Summary of Environmental Consequences for the Build Alternative		
Section of EA	Summary of Impacts	Proposed Mitigation
	<p>end power engines will be required to run for extended periods of time between train arrivals and departures at the maintenance facility. Existing area noise levels are already significantly high due to the noise generated by the existing NS rail line, nearby freeways, and the operations of Charlotte Pipe and Foundry. Maintenance operations will be in an enclosed facility, and future noise levels in the project area are projected to be 1 to 2 dBA above existing levels, an increase which is not perceived by humans.</p> <p>The Project is not expected to have impacts to hazardous material sites, wetlands, area streams, or waterways.</p>	
3.8 Public Safety	<p>Positive Impact. Given the nature of the operations of the proposed Project (train movements, etc.), NCDOT will give particular attention to safety in the Project design. The NCDOT will construct a more secure facility than existing, which will result in a higher degree of public safety.</p> <p>The Project will include typical hazards associated with a construction site, and NCDOT will give particular attention to the maintenance of public safety for the duration of construction.</p>	<p>The Build Alternative will address public safety in the facility's permanent design through appropriate fencing, gates, video surveillance cameras, and other safety and security measures. NCDOT will add protection (gates, flashers) to the new at-grade crossing at West Summit Avenue.</p> <p>Public access to the construction site should be limited to the greatest extent possible. This can be accomplished through the use of temporary fencing, warning signs, or other safety precautions.</p>
3.9 Recreational Opportunities	<p>No Impact. Construction of the Build Alternative is not anticipated to impact recreational opportunities in and around the Project study area. The Build Alternative will not permanently alter access to local recreational resources.</p>	Not Applicable.

Summary of Environmental Consequences for the Build Alternative		
Section of EA	Summary of Impacts	Proposed Mitigation
3.10 Secondary and Cumulative Impacts	<p>Positive Impacts. The Build Alternative will remove passenger rail maintenance activity from the NS Charlotte Yard, which will improve both passenger and freight rail operations in the Charlotte area by separating passenger and freight operations. The Build Alternative will also locate maintenance activities closer to the proposed Charlotte Gateway Station, which will result in more efficient train movements and operations.</p> <p>The Build Alternative will also help NCDOT implement the Piedmont Improvement Program (PIP), which is a larger effort to increase capacity and speeds in the Piedmont Corridor.</p> <p>NCDOT does not anticipate secondary impacts from construction and operation of the LRMF, such as growth-inducing changes in nearby land uses.</p>	Not Applicable.

This page left intentionally blank.

TABLE OF CONTENTS

CHAPTER 1.0 - PURPOSE AND NEED 1

1.1 INTRODUCTION..... 1

1.2 DECISION TO BE MADE 2

1.3 PROJECT HISTORY 2

1.4 PROJECT AREA 3

1.5 PURPOSE STATEMENT 4

 1.5.1 *Purpose of the NCDOT Piedmont Improvement Program*..... 4

 1.5.2 *Purpose of the Locomotive and Railcar Maintenance Facility* 4

1.6 PROJECT NEED ELEMENTS 4

1.7 LOGICAL TERMINI/PROJECT LIMITS 5

1.8 INDEPENDENT UTILITY 5

CHAPTER 2.0 - ALTERNATIVES 7

2.1 EXISTING CONDITIONS 7

 2.1.1 *Existing Charlotte Maintenance Facility* 7

 2.1.2 *Proposed LRMF Site* 8

2.2 NO-BUILD ALTERNATIVE..... 10

2.3 IDENTIFICATION OF THE BUILD ALTERNATIVE 10

 2.3.1 *2002 NCDOT Feasibility Study* 10

 2.3.2 *Post-2002 Feasibility Study Concept Development*..... 11

 2.3.3 *LRMF Relationship with Other Rail Projects* 11

2.4 DESCRIPTION OF THE BUILD ALTERNATIVE 12

CHAPTER 3.0 - AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES ..17

3.1 PHYSICAL ENVIRONMENT 17

 3.1.1 *Air Quality*..... 17

 3.1.2 *Noise and Vibration* 18

 3.1.3 *Water Quality*..... 19

 3.1.4 *Water Bodies and Waterways*..... 20

 3.1.5 *Floodplains* 21

 3.1.6 *Wetlands* 21

 3.1.7 *Coastal Zones* 21

 3.1.8 *Farmland* 22

3.2 BIOLOGICAL ENVIRONMENT 22

 3.2.1 *Ecologically Sensitive Areas* 22

 3.2.2 *Threatened and Endangered Species*..... 23

3.3 HUMAN ENVIRONMENT 24

 3.3.1 *Transportation* 24

 3.3.2 *Land Use, Zoning, and Property Acquisition* 25

 3.3.3 *Environmental Justice and Community Disruption* 26

 3.3.4 *Hazardous Materials Inventory* 28

 3.3.5 *Cultural Resources* 31

 3.3.6 *Section 4(f) Resources* 32

 3.3.7 *Section 6(f) Resources* 32

3.4 CONSTRUCTION IMPACTS 32

 3.4.1 *Transportation Impacts*..... 32

 3.4.2 *Solid Waste Disposal*..... 32

 3.4.3 *Use of Energy Resources*..... 33

 3.4.4 *Use of Other Natural Resources*..... 33

3.5 AESTHETIC AND DESIGN QUALITY IMPACTS33
3.6 POSSIBLE BARRIERS TO THE ELDERLY AND HANDICAPPED.....33
3.7 PUBLIC HEALTH33
3.8 PUBLIC SAFETY.....34
3.9 RECREATIONAL OPPORTUNITIES.....34
3.10 SECONDARY AND CUMULATIVE IMPACTS.....34
3.11 SUMMARY OF ENVIRONMENTAL CONSEQUENCES.....37

CHAPTER 4.0 - COORDINATION AND CONSULTATION45
4.1 AGENCY COORDINATION.....45
4.2 PUBLIC INVOLVEMENT45

CHAPTER 5.0 - LIST OF PREPARERS47

CHAPTER 6.0 – REFERENCES49

LIST OF APPENDICES

- APPENDIX A - Project Mapping
- APPENDIX B - Conceptual Plan Sheets
- APPENDIX C - Air Quality
- APPENDIX D - Noise and Vibration
- APPENDIX E - Threatened and Endangered Species
- APPENDIX F - Hazardous Materials
- APPENDIX G - Cultural Resources
- APPENDIX H - Agency Coordination
- APPENDIX I - Public Outreach

CHAPTER 1.0 - PURPOSE AND NEED

1.1 INTRODUCTION

The North Carolina Department of Transportation (NCDOT) Rail Division, in conjunction with the Federal Railroad Administration (FRA), is studying alternatives for the Piedmont Improvement Program (PIP) Locomotive and Railcar Maintenance Facility (LRMF) Project (Project). The NCDOT State Transportation Improvement Program (TIP) number for this Project is P-2918F.⁴ The Project study area is located in the City of Charlotte, Mecklenburg County, North Carolina.

The proposed Project will construct a new locomotive and passenger railcar maintenance facility southwest of Uptown Charlotte (City Center) to replace the current Charlotte maintenance facility located adjacent to the Norfolk Southern (NS) Charlotte Yard northeast of Uptown. The new facility will include the following elements:

- Railcar service and storage tracks
- Enclosed facility for major maintenance operations
- Fuel pad and onsite fuel tank
- Additional space for the storage of spare parts and equipment
- Enclosed train wash facility
- Train crew base for up to 20 crew members

The proposed Charlotte Locomotive and Railcar Maintenance Facility is a component of the PIP, which is an initiative by the NCDOT, NS, and the North Carolina Railroad Company (NCR) to improve passenger and freight railroad operations along the Piedmont Corridor from Raleigh to Charlotte. The Piedmont Corridor consists of the Greensboro to Charlotte portion of the NS Washington to Atlanta Mainline and the NS/NCR H-Line, which runs from Greensboro to Raleigh. The PIP consists primarily of railroad capacity projects and crossing safety projects that will facilitate the introduction of up to six daily round trip (12 daily) passenger trains along the Raleigh to Charlotte corridor. The PIP also includes station and facility projects that will improve service to passengers and improve the maintenance operations for the passenger trains serving the corridor.

The NCDOT Piedmont Corridor is also part of the federally designated SEHSR corridor. This corridor connects the northeastern states and Washington, DC through Richmond, VA to Raleigh and Charlotte, NC to Atlanta, GA. In Atlanta, the SEHSR extends southeast to Savannah, GA and Jacksonville, FL; and the Gulf Coast High Speed Rail (GCHSR) corridor extends across the southwest through New Orleans, LA, Mobile, AL and Houston, TX.

In 2002, NCDOT, the Virginia Department of Rail and Public Transportation (DRPT), the Federal Highway Administration (FHWA), and the FRA completed a Tier I Environmental Impact Statement (EIS) and the FRA issued a Record of Decision (ROD) for the portion of the SEHSR corridor between Charlotte and Washington, DC. This Environmental Assessment (EA) for the Locomotive and Railcar Maintenance Facility is one of several Tier II, or project level, studies being undertaken for the portion of the SEHSR corridor between Charlotte and Richmond, VA. The FRA and the Virginia DRPT will study the portion of the SEHSR between Richmond and Washington, DC in a Tier II EIS. FRA awarded approximately \$45 million to Virginia to fund the

⁴ Before 2009, the LRMF was included in the NS Mainline Track Improvements Project (TIP No. P-3800). Before 2011 the LRMF TIP Number was P-2918, and is noted as such in some supporting documentation.

EIS and preliminary engineering. The Tier II EIS process for the Raleigh to Richmond portion is currently in the Final EIS development phase, and a ROD is anticipated in 2014.

1.2 DECISION TO BE MADE

As proponents of an action supported by federal funds, the NCDOT Rail Division and the FRA must comply with the National Environmental Policy Act of 1969 (NEPA). NEPA requires federal agencies to consider the impacts of their actions on the natural, social, economic, and cultural environment and to disclose those considerations in a public document. The NEPA process is intended to help public officials make decisions based on an understanding of the environmental consequences and take actions that protect, restore, and enhance the environment.⁵

The purpose of this EA is to provide the FRA and the public with a full accounting of the environmental impacts of the alternatives developed to meet the purpose and need for the Project. This EA serves as the primary document to facilitate review of the Project by federal, state, and local agencies and the public.

The EA process concludes with either a Finding of No Significant Impact (FONSI) or a determination to proceed to the preparation of an EIS. The FONSI is a document that presents the reasons why the federal agency has concluded that there are no significant environmental impacts associated with the completion of the Project and identifies any necessary mitigation measures to ensure that there will be no significant impacts to protected environmental resources.

The FRA is the lead agency for the environmental review for the proposed Project under NEPA and the NCDOT is the lead State agency. The FRA and NCDOT are responsible for the preparation of this EA.

1.3 PROJECT HISTORY

Charlotte has a long history of rail service for both passenger and freight. The Charlotte region embraced the popularity of passenger rail in 1990 when the NCDOT began funding daily round trip service between Charlotte and New York on Amtrak's Carolinian. In the next 20 years (1990-2010) passenger rail boardings in Charlotte grew by 430 percent, placing a strain on Charlotte's existing passenger rail system.

In 2002 the NCDOT Rail Division completed the Feasibility Study for the Charlotte Multi-Modal Station and Area Track Improvements (referred to as the 2002 Feasibility Study).⁶ The purpose of the study was to investigate the options for developing a multi-modal transportation system for the Charlotte region that will have a positive and lasting impact on the State of North Carolina. The 2002 Feasibility Study is a "master plan" for rail improvements in the region, which partially focused on area track improvements. The 2002 Feasibility Study recommended a new multi-modal station at West Trade Street in Center City Charlotte (now known as the Charlotte Gateway Station), track improvements, grade separations and at-grade crossing closures, and a new passenger rail maintenance facility to support the new Station. The plan outlined in the 2002 Feasibility Study has since been expanded to a 10 mile corridor along the

⁵ 40 CFR 1500.1

⁶ Feasibility Study for the Charlotte Multi-Modal Station and Area Track Improvements. North Carolina Department of Transportation, Rail Division, May 2002.

NS mainline now known as the Charlotte Railroad Improvement and Safety Program (CRISP). This expansion of the plan ensures that the Project is compatible with regional rail transit plans, long-term intercity high speed rail plans, NCDOT's near-term plans for increases in passenger rail service, expected growth of CSX and NS freight and intermodal traffic, and other local land use and transportation plans.

Figure 1 (Appendix A) identifies the various multi-modal projects being considered throughout the greater Charlotte area. The LRMF Project is one of the projects included in CRISP, and is also part of the proposed federally designated SEHSR corridor. The CRISP projects that interface with the LRMF Project are described in the table below:

Table 1

Project Name	Short Description	Project Responsibility
CSXT/NS Mainline Grade Separation (NCDOT TIP Project No. P-5002)	Grade separation of the NS and CSXT mainline railroads in Center City Charlotte	NCDOT
NS Mainline North End and South End Track Improvements (P-3800)	<p>North End Improvements: Addition of a third mainline track along the NS mainline north of the CSXT crossing.</p> <p>South End Improvements:</p> <ul style="list-style-type: none"> ▪ Alternative 1: proposed third track on NS right of way, providing access to the Charlotte Gateway Station and the Charlotte LRMF. Includes a new wye at Charlotte Junction. ▪ Alternative 2: proposed third track on NCDOT right of way, providing access to the Charlotte Gateway Station and the Charlotte LRMF. Includes a separate loop track. 	NCDOT
Charlotte Gateway Station, Greyhound Terminal and Gateway Station Parking Structure	New Amtrak and multi-modal station at West Trade Street in Center City Charlotte (includes CATS bus and commuter rail services and intercity bus)	NCDOT/CATS

1.4 PROJECT AREA

The Project is located in the City of Charlotte, Mecklenburg County, North Carolina. The Project study area is southwest of Uptown Charlotte near the intersection of Interstate 77 (I-77) and Interstate 277 (I-277). The area can generally be characterized as an industrial area adjacent to an urbanized railroad corridor. Land use in the Project study area consists of industrial, commercial, and vacant lots. The site is currently zoned for industrial uses (City of Charlotte zoning I-1 and I-2). Charlotte Pipe and Foundry occupies a portion of the site for industrial storage purposes. The foundry's main facility is on the north side of the NS right-of-way from the Project location. Ferguson Enterprises (plumbing supply business) also occupies a portion of the site. The remainder of the site consists of vacant lots, a portion of which are used for event parking by Stadium Food and Beverage, Inc. A Project location map (Figure 2) and a Project study area map (Figure 3) are included in Appendix A.

1.5 PURPOSE STATEMENT

1.5.1 Purpose of the NCDOT Piedmont Improvement Program

The purpose of NCDOT's PIP is to improve intercity passenger train service schedule reliability, reduce congestion, increase overall corridor capacity, and enhance the safety and efficiency of railroad operations along the Piedmont Corridor between Raleigh and Charlotte. The PIP will facilitate the introduction of up to twelve daily (six round trip) passenger trains along the Raleigh to Charlotte Piedmont Corridor. This includes future SEHSR corridor trains that will travel between Charlotte and Washington, DC. Eventually the SEHSR corridor will extend beyond Charlotte to Atlanta and points south. The PIP also includes improvements to passenger train stations to enhance services to passengers and improved facilities to maintain and service the passenger trains traversing the corridor.

Increased usage of North Carolina's highway system has led to congestion and increased motor vehicle emissions. All seven of North Carolina's regions that are designated as "non-attainment" or "maintenance" for air quality lie along the PIP corridor.⁷ To address congestion and air quality concerns, the NCDOT Rail Division is improving passenger rail service (as well as freight) by upgrading the existing rail infrastructure. Ultimately, these improvements will also benefit the infrastructure for high speed and traditional passenger rail service in North Carolina.

1.5.2 Purpose of the Locomotive and Railcar Maintenance Facility

The purpose of the Project is to construct a new locomotive and passenger rail maintenance facility southwest of Uptown Charlotte adjacent to a proposed multi-modal transportation center (Charlotte Gateway Station). The new LRMF Project will replace the existing Charlotte maintenance facility located adjacent to the NS Charlotte Yard, and will serve the increasing number and length of intercity passenger trains serving the region. The Project will provide capacity to support the future development of high speed passenger service on the federally designated SEHSR corridor.

The Project will make capacity and safety improvements to the passenger rail infrastructure in Charlotte, North Carolina. The Project will address the following needs:

1. Improve the efficiency of the maintenance and service operations for existing and future intercity passenger trains in the Charlotte area; and
2. Assist in the implementation of the SEHSR by providing a facility that can service future high speed train sets.

1.6 PROJECT NEED ELEMENTS

1. Improve the efficiency of the maintenance and service operations for existing and future intercity passenger trains in the Charlotte area - Currently, eight Amtrak passenger trains (*Crescent* trains #19 and #20, *Carolinian* trains #79 and #89, and *Piedmont* trains #73, #74, #75 and #76) serve the existing Amtrak station located at 1914 North Tryon Street and enter the NS Charlotte Yard on a daily basis. The *Piedmont* and *Carolinian* trains are all serviced at the existing Charlotte maintenance facility located adjacent to the existing Amtrak station and within the NS Charlotte Yard. The current facility cannot service additional train sets,

⁷ North Carolina Division of Air Quality - <http://daq.state.nc.us/motor/trans/>

due to limits in space for train sets, parts, equipment and train crews, nor does the facility have the ability to wash trains or allow major servicing of passenger trains. The new LRMF will also have proximity to the proposed Charlotte Gateway Station in Center City Charlotte to maximize the efficiency of the passenger rail operations once the new station is completed.

A new maintenance facility will also provide better security and environmental protection than current passenger rail maintenance operations in Charlotte. The proposed service facility will be more secure with better safety systems, such as fences, which are not provided at the existing site. The new facility will also have storm water retention, train water wash recycling and other environmental protection features not present at the current maintenance facility in the NS Charlotte Yard.

2. Assist in the implementation of the SEHSR by providing a facility that can service the future high speed train sets - In addition to improving the operational efficiency and safety for the existing passenger rail services to Charlotte, the Build Alternative will have enough capacity to serve the foreseen future high speed rail services. The Build Alternative will be large enough to accommodate the longer fixed consist train sets anticipated with future high speed rail, will have the proper space for the storage of equipment and spare parts, an enclosed facility to complete maintenance and repairs of the high speed trains, space for additional train crews, and a train wash facility.

1.7 LOGICAL TERMINI/PROJECT LIMITS

Construction of the LRMF will require north and south track connections to the existing NS Mainline track No. 1, and will require grade and profile changes to West Summit Avenue east of the NS Mainline track. Taking into account the area required to construct the Project and assess environmental impacts, NCDOT has defined the logical termini as:

1. Southern terminus - MP 379, north of the NS bridge over I-77,
2. Northern terminus - MP 378.23, south of the NS bridge over West Morehead Street,
3. Western terminus - at-grade roadway/rail crossing at West Summit Avenue, and
4. Eastern terminus - South Graham Street and Merriman Avenue.

1.8 INDEPENDENT UTILITY

The NCDOT Rail Division identified and studied the LRMF Project as part of the Rail Division's 2002 *Feasibility Study for the Charlotte Multi-Modal Station and Area Track Improvements*⁸ and subsequent planning efforts. In those studies, NCDOT investigated the options for developing a multi-modal transportation system for the Charlotte region that will have a positive and lasting impact on the State of North Carolina. One of the outcomes of the 2002 study was the creation of the Charlotte Railroad Improvement and Safety Program (CRISP - see Figure 1 in Appendix A). The LRMF Project is one of the projects included in CRISP, and is also part of the proposed federally designated SEHSR.

Initially the LRMF Project was included as a part of the overall NS Mainline Track Improvements Project (NCDOT TIP number P-3800), which will construct the necessary tracks to support the Charlotte Gateway Station and additional passenger train services. As the scope and footprint of the LRMF Project expanded, NCDOT considered whether it had independent utility from

⁸ See above at 4.

other rail improvements. In 2010 the NCDOT was awarded funds from the American Recovery and Reinvestment Act (ARRA) to construct the LRMF Project. As such, the NCDOT decided to separate the LRMF Project from the other passenger rail infrastructure improvements. Therefore, the NCDOT and FRA no longer considered the LRMF Project as part of the NS Mainline Track Improvements Project, and NCDOT decided that the LRMF Project would be covered under a separate EA.

Even though the Project is part of PIP, CRISP and SEHSR, it does not depend on any other project (current or future) to meet the established Project purpose and need. While Project construction may be phased, the Project will not be divided into interdependent parts. Therefore, FRA and NCDOT determined that the LRMF Project has independent utility.

CHAPTER 2.0 - ALTERNATIVES

Based on the 2002 Feasibility Study, the NCDOT Rail Division continued evaluation of alternatives that could potentially meet the Project's purpose and need. This evaluation resulted in the definition of a No-Build Alternative (a requirement of the NEPA) that provides a baseline for comparison with other alternatives, plus a Build Alternative. To better understand the differences between the No-Build Alternative and the Build Alternative, this EA includes a description of the existing passenger rail maintenance requirements in Charlotte.

2.1 EXISTING CONDITIONS

2.1.1 Existing Charlotte Maintenance Facility

The current Charlotte maintenance facility is located at the Charlotte Amtrak Station, at 1914 North Tryon Street. The existing facility consists of a single siding west of the station platform, with modular buildings for storage of parts, equipment and for a crew base. Refueling also occurs at the site via fuel trucks. Currently the *Carolinian* (trains #79 and #80) and the *Piedmont* (trains #73, #74, #75 and #76) are serviced at the existing facility. Currently, two NCDOT owned *Piedmont* trains are serviced by a NCDOT contractor during the day after terminating their southbound trips in Charlotte and before making the northbound trip back to Raleigh. The Amtrak owned *Carolinian* train is serviced by an Amtrak contractor at the facility overnight after terminating the southbound trip in Charlotte and before making the northbound trip to New York City the following morning. Additionally, Charlotte is the mid-route fueling location for Amtrak's *Crescent* train (operating between New York City and New Orleans). The two *Crescent* trains (#19 and #20) refuel at the facility during a temporary layover between 1 a.m. and 3 a.m. in each direction. The site has no automatic wash facility, no pit for train maintenance, no environmental containment, and no train shed to keep the maintenance activities protected from inclement weather. The existing Charlotte maintenance facility has insufficient space and operating functionality to efficiently support the colocation of multiple maintenance activities by multiple service contracts. Photo 1, below, shows the existing Charlotte maintenance facility.

The existing Charlotte maintenance facility is located on the north side of the busy NS mainline in a section of the NS Charlotte Yard (NS milepost 376.0), which results in mingling of passenger and freight trains. This operational conflict between passenger and freight trains within the yard is one of the main factors in creating the need for the proposed construction of a new maintenance facility in an alternative location. Currently NS has between 26 and 34 daily freight trains that pass through the yard, and several other freight train movements within the yard. Freight train operations and movements at the yard occur 24 hours a day, 365 days a year. While the passenger trains are segregated to the north side of the yard, the heavy freight traffic on the



Photo 1 - Existing Charlotte maintenance facility

the heavy freight traffic on the

mainline and in the NS Charlotte Yard impede the switching and staging of the passenger trains between the current maintenance facility and the current Amtrak station.

By contrast, in Raleigh, the NCDOT performs major equipment maintenance and service activities at a dedicated passenger train heavy maintenance facility at Capital Yard. NCDOT completes major repairs, refueling, washing and cleaning of the *Piedmont* trains at this location before the trains make their morning southbound trips to Charlotte. This site consists of yard tracks and exterior service platforms, modular buildings for a crew base, an outside wash facility, and a train shed with a pit for repairs. NCDOT recently completed Phase 1 improvements to the Raleigh Capital Yard to facilitate improved maintenance operations and increase yard capacity. These improvements were funded by the American Reinvestment and Recovery Act of 2009 (ARRA). The construction of the proposed LRMF will enable NCDOT to perform similar equipment maintenance and service activities in Charlotte free from any conflicts with freight trains. The limited capacity at the existing Charlotte maintenance facility restricts NCDOT's ability to service and store more and longer train sets in Charlotte, thereby inhibiting NCDOT's ability to achieve the maximum utility of the operating capacity being constructed on the Piedmont Corridor through the PIP.

2.1.2 Proposed LRMF Site

The site for the proposed Project is near the West Summit Avenue grade crossing (NS MP 378.4) and includes parcels on the north and south side of West Summit Avenue. The site consists of light industrial uses with some vacant parcels. Currently Charlotte Pipe and Foundry occupies a portion of the site for industrial storage purposes. The foundry's main facility is located on the north side of the NS right-of-way. Ferguson Enterprises (plumbing supply business) also occupies a portion of the site, The remainder of the site consists of vacant lots, a portion of which are used for event parking by Stadium Food and Beverage, Inc.. The entire site is currently zoned for industrial use (City of Charlotte zoning designations I-1 and I-2). The Wilmore neighborhood is located adjacent to the site on the south side of West Summit Avenue. Photos 2 and 3 show existing conditions at the proposed West Summit Avenue site.



Photo 2- Existing conditions at proposed site of LRMF Project - Looking south near Penman Street



Photo 3 - Existing conditions at proposed site of LRMF Project - Looking east at W. Summit Avenue with project site on the left and right sides of photo.

2.2 NO-BUILD ALTERNATIVE

Under the No-Build Alternative, NCDOT and Amtrak would continue to service and refuel the *Carolinian* and *Piedmont* and refuel the *Crescent* at the existing Charlotte Amtrak Station at 1914 North Tryon Street, which is also located within NS's Charlotte Yard. The No-Build alternative would not provide any capacity, operational, environmental, or safety improvements to support additional passenger rail services. Specifically, the No-Build alternative would not meet any of the following Project needs:

1. Improve the efficiency of the maintenance and service operations for existing and future intercity passenger trains in the Charlotte area, and
2. Assist in the implementation of the SEHSR corridor by providing a facility that can service the future high speed train sets.

The existing facility in the NS Charlotte Yard cannot accommodate additional or expanded trainsets, due to limits in space for train sets, parts, equipment and train crews, nor does the facility have the ability to automatically wash trains or allow major servicing of passenger train equipment. The current facility does not have safety systems such as fencing. The current facility also does not have storm water retention, train water wash recycling and other environmental protection features. The current facility cannot facilitate larger fixed consist high speed train sets due to the lack of an enclosed facility for repairs, limited space for equipment and parts storage and train crews, and limited track storage space. The existing facility also is not adjacent to the proposed Charlotte Gateway Station. Under the No-Build Alternative, southbound passenger trains would pass through the NS Charlotte Yard, unload passengers at the future Charlotte Gateway Station, then reverse and travel north, enter the NS Charlotte Yard a second time to be serviced, travel southbound out of the NS Charlotte Yard to pick up passengers at the Station, and then pass through the NS Charlotte Yard again on their northbound trip. Such an operation would create multiple operating conflicts with NS freight operations for each passenger train. Thus, NCDOT determined that the No-Build would not meet the Project purpose and need, and eliminated it from further consideration.

2.3 IDENTIFICATION OF THE BUILD ALTERNATIVE

2.3.1 2002 NCDOT Feasibility Study

NCDOT Rail Division's 2002 Feasibility Study for the Charlotte Multi-Modal Station and Area Track Improvements⁹ (2002 Feasibility Study) identified a location in Uptown Charlotte for a new multi-modal transit station (Charlotte Gateway Station) on West Trade Street to serve passenger rail and other transit options, plus additional track improvements. The study also identified a site south of Uptown Charlotte near West Summit Avenue for a new passenger rail maintenance facility. Over 80 public and stakeholder meetings were held during the 2 year planning study, including extensive coordination with NS, CSX, the City of Charlotte, Greyhound, CATS, FRA, Amtrak, and the Friends of Fourth Ward (a neighborhood association).

While developing the 2002 Feasibility Study and subsequent studies NCDOT considered three locations for a new locomotive and railcar maintenance facility. The first location considered was between West 6th and 9th Streets immediately north of the proposed Charlotte Gateway Station and east of the NS mainline tracks. NCDOT rejected this site for several reasons. First, a majority of the site was immediately adjacent to the Fourth Ward historic district, which is

⁹ See above at 4.

mostly residential. Second, the area is mostly zoned for residential and mixed-use, which is not compatible with the rail activities for the proposed facility.

The second site considered was at the old Southern Railway freight yard near Parkwood Avenue, east of the existing NS Charlotte freight yard. This site was zoned for industrial use and adjacent to an active rail freight yard. However, CATS and the City of Charlotte had plans to develop the area for a future CATS Light Rail vehicle maintenance facility, and/or future high density mixed-use development to support a light rail station. Moreover, the NCCR and NS had plans to possibly renovate the old yard for expanded freight services. Due to these conflicting plans, this site was dropped from further consideration.

The third site considered was south of the proposed Charlotte Gateway Station near West Summit Avenue. This site was in an area zoned for industrial use, and adjacent to the I-277 freeway and the Charlotte Pipe and Foundry factory. This West Summit Avenue location then became the site shown in the 2002 Feasibility Study, and ultimately became the Build Alternative considered for the new Charlotte LRMF in this EA.

2.3.2 Post-2002 Feasibility Study Concept Development

After completion of the 2002 Feasibility Study, NCDOT determined that a larger facility was needed for the proposed site for the following reasons:

- To accommodate larger train sets (for high speed rail operations), additional train set storage/layover, and additional maintenance functions.
- To relocate the passenger train crew base from the existing NS Charlotte Yard to the new service facility.
- To allow trains access to the facility from both the north and the south, minimizing potential interference with the passenger station operations and NS freight operations.

Building upon the 2002 Feasibility Study, NCDOT continued to develop the plan for the location near West Summit Avenue due to its adequate size and functionality with relation to railroad operations.

2.3.3 LRMF Relationship with Other Rail Projects

The plan outlined in the 2002 Feasibility Study has since been expanded to a 10 mile corridor along the NS mainline. CRISP consists of several transportation projects in Charlotte that are within, or intersect with, the NS mainline corridor and SEHSR, including the proposed LRMF Project. Figure 1 (Appendix A) identifies the various multi-modal CRISP projects being considered throughout the greater Charlotte area. This expansion of the plan ensures that the CRISP projects are compatible with regional rail transit plans, long-term intercity high speed rail plans, NCDOT's near-term plans for increases in passenger rail service, expected growth of CSXT and NS freight and intermodal traffic, and other local land use and transportation plans.

Since 2002, CRISP has generated various separate projects now included in the State Transportation Improvement Program (STIP) and in Charlotte's Long Range Transportation Plan (LRTP). Figure 1 (Appendix A) identifies the various multi-modal CRISP projects being considered throughout the greater Charlotte area. The LRMF Project is one of the projects included in CRISP, and is also part of the proposed federally designated SEHSR. The CRISP projects that interface with the LRMF Project are described in the table below.

Table 2

Project Name	Short Description	Project Responsibility
CSXT/NS Mainline Grade Separation (STIP Project No. P-5002)	Grade separation of the NS and CSXT mainline railroads in Center City Charlotte	NCDOT
NS Mainline South End Track Improvements and NS Mainline North End Track Improvements (STIP Project No. P-3800)	<p>North End Improvements: Addition of a third mainline track along the NS mainline north of the CSXT crossing.</p> <p>South End Improvements:</p> <ul style="list-style-type: none"> ▪ Alternative 1: proposed third track on NS right of way, providing access to the Charlotte Gateway Station and the Charlotte LRMF. Includes a new wye at Charlotte Junction. ▪ Alternative 2: proposed third track on NCDOT right of way, providing access to the Charlotte Gateway Station and the Charlotte LRMF. Includes a separate loop track. 	NCDOT (NS Mainline Track Improvements); NS (Wye at Charlotte Junction)
Charlotte Gateway Station, Greyhound Terminal and Gateway Station Parking Structure	New Amtrak and multi-modal station at West Trade Street in Center City Charlotte (includes CATS bus and commuter rail services and intercity bus)	NCDOT/CATS

In 2011, the NCDOT and City of Charlotte began a study of the railroad/roadway at-grade crossings in west Charlotte, known as the West Charlotte Traffic Separation Study (TSS), TIP Project No. P-3309K. The TSS included an evaluation of the West Summit Avenue at-grade crossing, and recommended keeping the West Summit Avenue crossings open, with a further evaluation of the crossing once the full facility is constructed.

2.4 DESCRIPTION OF THE BUILD ALTERNATIVE

Project Full Build: The LRMF Project includes two service and inspection tracks that will pass through a service building to allow for maintenance, cleaning, and servicing of passenger trains, as well as other open-air tracks for repair, storage and refueling of trains. The LRMF will provide mid-day layover as well as overnight service of state-sponsored *Carolinian* and *Piedmont* trains. The LRMF will also be the primary maintenance and service location for the future SEHSR train sets.

The LRMF Project includes the construction of a total of eight tracks, including: four open-air tracks on the western half of the parcel (one lead track, two storage tracks and one car wash track), and four tracks on the eastern half of the parcel serving the enclosed maintenance facility. The lead track and car wash track as well as two of the maintenance facility tracks will extend across West Summit Avenue at a consolidated four-track at-grade crossing.

The lead track will connect to the eastern NS mainline track at the north and south end of the LRMF Project. From the north connection, and heading south under the I-277 overpass, the lead track will run west of the maintenance building, and will branch into two open-air storage

tracks west of the lead track terminating north of the West Summit Avenue grade crossing. Prior to crossing West Summit Avenue, the lead track will have a second branch to the east also crossing West Summit Avenue that will serve the train wash shed. Both the lead and train wash tracks will cross West Summit Avenue.

Also, at the north end near the junction with the two open-air storage tracks, the lead track will branch into four maintenance tracks to the east of the lead track. These four tracks will serve the enclosed maintenance building with two tracks terminating at the maintenance building and the other two tracks extending through the building to the south end of the yard across West Summit Avenue. Both of the maintenance tracks will cross West Summit Avenue.

In total, four maintenance facility tracks will cross West Summit Avenue at a consolidated four track crossing that is separate from the existing NS mainline crossing (Crossing No. 716 172N, NS milepost 378.4).

The LRMF will be segregated into two primary functions north and south of West Summit Avenue, with the service building, and other structures, located on the north side of West Summit Avenue, and train wash facility located on the south side of West Summit Avenue. The LRMF will include a service building with a crew base to accommodate train crews and train parts storage; refueling and train wash equipment; and parking for crew and employees. It should be noted that while the LRMF track lead track will be connected to the existing NS mainline, the LRMF trackage will be designed at an adequate off-set to accommodate the construction of a future third mainline track east of the existing NS mainline. This future third mainline will be part of other track improvements to be constructed by NCDOT or NS under a separate project, the NS Mainline Track Improvements project (unfunded at this time).

Construction of the LRMF could also modify how southbound passenger trains turn around for the northbound trip. Currently, southbound *Piedmont* and *Carolinian* trains use the Atando wye north of the NS Charlotte Yard to turn around for the northbound trip. When the LRMF is constructed, passenger trains terminating in Charlotte will continue to stop at the existing Amtrak station (1914 North Tryon Street), then proceed south past the LRMF, complete a turn-around as described below, then enter the new LRMF before heading back to the Amtrak station to begin their northbound run. There are three possible operating scenarios to have southbound trains turn around to access the LRMF:

1. Use the Atando wye north of the LRMF and north of the NS Charlotte Yard, as the *Piedmont* and *Carolinian* trains operate today.
2. Use the wye at Arrowood south of the LRMF on the NS "R" Line. This wye is approximately 13 miles south of the proposed maintenance facility and is the route previously used by the *Carolinian* passenger train before construction of the Atando wye.
3. Use the proposed wye or loop track south of the LRMF, to be constructed as part STIP Project Number P-3800, the NS Mainline Track Improvements (see Table 2 for description).

A fourth operating scenario would be to have future passenger trains use push-pull equipment, where the train has locomotives or operating cabs on each end of the consist, thereby eliminating the need for turning the train.

If southbound trains are required to turn around for their northbound trip, NCDOT's preferred operating scenario will be to use the wye or loop track proposed to be constructed separately

from the LRMF as part of the NS Mainline Track Improvements project (STIP No. P-3800). The loop or wye will minimize the distance the passenger trains will need to travel to and from the LRMF and will minimize possible operating conflicts with the NS freight operations. However, the decision will be dependent upon the type of passenger equipment used (traditional consist or push-pull), and on whether the loop or wye is constructed before completion of the LRMF. Furthermore, the decision whether to use Arrowood wye or Atando wye will be dictated by NS (the operating railroad), and may change depending on their particular operations.

Proposed Project Phasing: The Build Alternative includes the Full Build of the LRMF Project; however, certain components of the Project are designed to complement the incremental growth of intercity passenger rail and development of SEHSR service in North Carolina. Considering the undetermined plausibility of the proposed future services, NCDOT may decide to construct the LRMF in phases. An initial phase will include acquisition of right-of-way for the LRMF Project, construction of the lead track, two open-air storage tracks, the proposed Amtrak and contractor staff building near West Palmer and Graham Streets, and an emergency access driveway from West Summit Avenue. Later phases will construct the four maintenance facility tracks, maintenance building, and train wash facility, as described above.

The proposed LRMF will not only replace the current Charlotte maintenance facility, but will also complement the existing Capital Yard maintenance facility in Raleigh. Ultimately, the proposed LRMF will service half of NCDOT's sponsored trains. Trains that layover in Raleigh will continue to be serviced at Capital Yard.

Table 3 describes the train schedule of the new maintenance facility, assuming six round-trip trains between Raleigh and Charlotte and Amtrak's *Crescent*.

Table 4 describes the services and activities that occur at the existing and proposed maintenance facilities. A conceptual layout plan for the proposed LRMF can be found in Appendix B.

Table 3 - Proposed Train Operations for Charlotte Locomotive and Railcar Maintenance Facility

Train No.	Direction	Enters Charlotte LRMF	Overnight in...	Train becomes	Train No.	Direction	Leaves Charlotte LRMF
#79	Southbound	10:40 PM	Charlotte	=>	#80	Northbound	6:40 AM
New 5 th Piedmont	Southbound	8:20 AM	Raleigh	=>	#74	Northbound	1:40 PM
#71	Southbound	11:20 AM	Raleigh	=>	#76	Northbound	4:50 PM
#73	Southbound	2:25 PM	Raleigh	=>	New 5 th Piedmont	Northbound	7:20 PM
#75	Southbound	5:05 PM	Charlotte	=>	New 6 th Piedmont	Northbound	4:50 AM
New 6 th Piedmont	Southbound	8:22 PM	Charlotte	=>	#72	Northbound	9:40 AM
#19	Southbound	1:30 AM	Layover in Charlotte for Refuel Only		#19	Southbound	1:45 AM
#20	Northbound	2:30 AM	Layover in Charlotte for Refuel Only		#20	Northbound	2:45 AM

Note: Trains #19 and #20 (Amtrak's *Crescent*) only refuel at the facility.
Source: NCDOT Rail Division

Table 4 - Comparison of North Carolina Existing and Proposed Passenger Rail Maintenance Facilities

Activity	Current Charlotte Maintenance Facility (N. Tryon St.)	Proposed Charlotte LRMF (W. Summit Ave.)	Existing Raleigh Facility (Capital Yard)
Interior Cleaning	2 person contract cleaning crew cleans both <i>Piedmont</i> trains. Amtrak contracts 2 person crew to interior clean <i>Carolinian</i> train.	Same as current Charlotte facility.	3 person crew cleans <i>Piedmont</i> trains.
Refueling	Amtrak refuels <i>Carolinian</i> and <i>Crescent</i> trains at Charlotte station via truck. No refueling of <i>Piedmont</i> trains at current Charlotte station.	Fuel pad for Amtrak to refuel <i>Carolinian</i> and <i>Crescent</i> trains via contractor. On-site tank to refuel NCDOT sponsored trains.	Fuel <i>Piedmont</i> trains via 10,000 gallon tank.
Minor Servicing	Replace brake shoes, etc.	Same as current Charlotte facility.	Similar to current Charlotte and Raleigh facilities.
Major Repair	None - no capacity.	Will be similar to Raleigh - facility will include a shop with two tracks and one pit.	Major repairs for <i>Piedmont</i> trains occur here via shop and pit.
Train Parts Storage	Minimal - little storage space.	Expanded with part storage building area, similar to Raleigh.	Have parts storage, similar to proposed Charlotte facility.
Exterior Train Washing	None - no capacity.	Inside wash shed and automated.	Outside (hand wash only).
Crew Base	Modular building with space for <i>Carolinian</i> , <i>Piedmont</i> , and <i>Crescent</i> crew members; plus expansion for 6 to 8 additional crew members as additional frequencies added.	Building with space for 20 <i>Crescent</i> , <i>Piedmont</i> , and <i>Carolinian</i> crew members.	Modular unit with space for 15 <i>Piedmont</i> crew members. Will increase to 20 or 22 crew members with additional frequency.
Future Passenger and High Speed Services	No room to accommodate additional passenger rail trains, nor high speed train sets.	Capacity to expand passenger rail services, and site will become the main facility to service future fixed consist high speed rail trains.	Some expansion capacity, but not space to accommodate future high speed train sets.

Source: NCDOT Rail Division

The right-of-way required for the full LRMF Project consists of nine parcels totaling 33.2 acres, at a projected cost of \$24,274,250.¹⁰ Figure 7 (Appendix A) shows the parcels to be acquired.

The Project cost for the first construction phase of the LRMF is \$12,646,264, which include construction of the lead track, two open-air storage tracks, the proposed Amtrak and contractor staff building near West Palmer and Graham Streets, and an emergency access driveway from West Summit Avenue. The Project cost for the full build-out of the proposed Build Alternative, based upon conceptual plans, is \$33,068,563 (This full build-out cost includes all of the components of the first construction phase.) More detailed construction costs and concept plans for both phases of the LRMF are in Appendix B.

¹⁰ NCDOT Division 10 Right-of-Way Office, October 2, 2012.

CHAPTER 3.0 - AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 PHYSICAL ENVIRONMENT

3.1.1 Air Quality

The No-Build Alternative would have no impact on regional air quality. However, the proposed Build Alternative is not exempt from General Conformity review based on the list of exempt actions in 40 CFR 93.153(c) and (d). Therefore, an Applicability Analysis, as part of the General Conformity requirements was completed for the LRMF Project.

The Project is located in Mecklenburg County, North Carolina, which the Environmental Protection Agency (EPA) has designated as an 8-hour nonattainment area for ozone (moderate classification). The area is also designated as a maintenance area for Carbon Monoxide (CO). The Project will result in the emission of ozone precursors, Volatile Organic Compounds (VOC) and Nitrous Oxide (NOx), as well as CO, which are all regulated due to the nonattainment or maintenance status of the region. An action is regionally significant if the total direct and indirect emissions of an individual pollutant amount to 10% or more of a nonattainment or maintenance area's emissions of that pollutant. Following coordination with North Carolina Department of Environment and Natural Resources (NCDENR) personnel, NCDENR determined that any project in the Charlotte area that is below threshold (less than 100 tons per year) will also be less than the 10% significance level.

The General Air Conformity requirements included in the Code of Federal Regulations, 40 CFR 51 Subpart W and 40 CFR 93 Subpart B, apply to all "Federal actions," except Federal Highway and Transit actions to which the transportation conformity requirements apply. Projects funded by Federal Highway Administration (FHWA)/Federal Transit Authority (FTA) need to follow 40 CFR 51 Subpart T. The project is primarily funded by the Federal Railroad Administration (FRA), thus it falls under the General Conformity rules.

To determine the impacts of the Build Alternative on regional air quality, estimates of VOC, NOx, and CO emissions from the Project construction were completed using equipment and vehicle emission rate spreadsheets based on NONROAD (non-road equipment) and MOVES (Motor Vehicle Emission Simulator) emission models provided by the EPA and NCDENR. The results of the Applicability Analysis showed the expected emissions for the Build Alternative to be below the 100 tons per year applicability threshold and thus also regionally insignificant for each pollutant evaluated. A copy of the Record for Non-Applicability (RONA) developed for the Project was forwarded to NCDENR on November 7, 2011 for review.

Following a review of the RONA, NCDENR concluded that the direct and indirect emissions increase due to the Project are less than the threshold of 100 tons per year of carbon monoxide, nitrogen oxides, or volatile organic compounds as specified in 40 CFR 93.153(b) and NCAC 2D.1609(a). Therefore, the Project is not considered to be significant for the purposes of conformity and the Project complies with the Federal and State general conformity rules. A copy of NCDENR's February 24, 2012 RONA approval letter is included in Appendix C.

For an analysis of the air quality impacts from the LRMF operations, see Section 3.7, Public Health.

3.1.2 Noise and Vibration

Noise – After a review of Project aerial mapping and a Project site visit, NCDOT determined noise sensitive areas and/or receivers of interest were present. A Screening and General Noise Assessment was conducted in accordance with methodologies contained in the Federal Transit Administration's (FTA) *Transit Noise and Vibration Impact Assessment Manual*, dated May 2006 (FTA, 2006). The FRA relies upon the FTA noise and vibration impact assessment procedures. Therefore, the Screening and General Noise Assessment utilized the methodology, procedures and guidelines outlined in the FTA manual.

The No-Build Alternative would have no impact on noise within the Project study area.

The results of the Screening and General Noise Assessment showed that the existing sound levels at three site receptors (two residential and one institutional) in the Wilmore neighborhood near the LRMF site are significantly high. These high noise levels are due to the existing noise generated by nearby interstates, existing passenger and freight rail traffic, and from activities at Charlotte Pipe and Foundry.

Under the Build Alternative, future noise levels from the LRMF activities will not impact nearby receptors. Two sites will be moderately impacted by the combined noise generated by trains accessing the LRMF and the LRMF activities. However, the future noise levels are projected to be 1 to 2 dBA above existing noise levels, an increase which is not perceived by humans. Hence, the sound levels from the passenger train activity will not have perceptible impacts on the residences in the area. Section 3.7 Public Health includes additional information regarding noise from LRMF.

During final design, NCDOT will investigate the feasibility of noise mitigation measures for the two impacted sites.

A copy of the Screening and General Noise Assessment Report is included in Appendix D, which includes maps of the sites.

Vibration – A Screening and General Vibration Assessment was completed for the proposed LRMF Project. This assessment was conducted in accordance with methodologies contained in the FTA Transit Noise and Vibration Impact Assessment Manual, dated May 2006 (FTA, 2006). The FRA relies upon the FTA noise and vibration impact assessment procedures. Therefore, the Screening and General Noise Assessment utilized the methodology, procedures and guidelines outlined in the FTA manual.

The No-Build Alternative would have no impact on noise within the Project study area.

The results of the Screening and General Vibration Assessment completed for the proposed Build Alternative showed that no vibration impacts will result. There are no residential buildings within 50 feet that could receive damage impacts if vibration levels exceed 100 VdB for the maintenance facility.

A copy of the Screening and General Vibration Assessment Report is included in Appendix D.

3.1.3 Water Quality

All surface waters in North Carolina are assigned a primary classification by the NCDENR Division of Water Quality (DWQ). According to NCDENR DWQ, all waters, at a minimum, must meet the standards for Class C (fishable / swimmable) waters. Class C waters are protected for uses such as secondary recreation, fishing, wildlife, fish consumption, aquatic life including propagation, survival and maintenance of biological integrity, and agriculture. Secondary recreation includes wading, boating, and other uses involving human body contact with water where such activities take place in an infrequent, unorganized, or incidental manner. The other primary classifications provide additional levels of protection for primary water contact recreation (Class B) and drinking water (Water Supply Classes I through V) (NCDENR, 2009).

In October 1996, the Mecklenburg County Board of County Commissioners adopted the County's first "Creek Use Policy" which called for all Mecklenburg County surface waters to be "suitable for prolonged human contact and recreational opportunities and supportive of varied species of aquatic life."¹¹ This initiative aimed at protecting cleaner creeks and restoring those waterways with poorer water quality. Working with City and County officials, the Board developed a comprehensive strategy and approach for achieving the goals outlined in the policy. Entitled *Surface Water Improvement and Management (SWIM)*, this program focuses on addressing water quality concerns through the prioritization of creek basins, improving or restoring water quality in special interest watersheds, and applying watershed-based management tools to the remaining waters throughout the County. A key component of the SWIM program, was the establishment of vegetative stream buffers through the adoption of ordinances that limit development and activity within riparian corridors (Mecklenburg County, 1996).

In 1996, the Mecklenburg County Board of County Commissioners implemented the Surface Water Improvement and Management program to protect and restore surface water resources throughout Mecklenburg County.

The No-Build Alternative would not cause a change in the Class C classification designated by NCDENR DWQ. No impacts to Mecklenburg County SWIM buffers will occur. However, under the No-Build Alternative, the current Charlotte maintenance facility would continue to be used. This current facility has no spill or stormwater containment system, or other modern environmental protection features.

The Build Alternative will result in direct impacts to an unnamed ephemeral railroad ditch located directly adjacent to the NS railway (see Photo 4 below). The subject ditch conveys stormwater runoff towards Irwin Creek during high runoff events. As depicted in Figure 4 (Appendix A), Mecklenburg County has established 30-foot a post-construction SWIM buffer for this drainage feature. Due to the nature of this conveyance, the Build Alternative will not permanently impact water quality and will not cause a change in the Class C stream classification designated by NCDENR DWQ.

Temporary impacts associated with construction stormwater and sedimentation may occur as part of construction activities. These impacts will cease soon after construction is complete.

¹¹ Mecklenburg County Surface Water Improvement and Management program, <http://www.charmeck.org/stormwater/regulations/Documents/SWIM%20Ordinance%20Documents/CountySWIMInitiative.pdf>

To mitigate impacts to waterways, NCDOT will undertake sediment and erosion control Best Management Practices (BMPs) in accordance with *Design Standards in Sensitive Watersheds*¹² to reduce the potential for nutrient runoff. Furthermore, NCDOT will incorporate the treatment of the stormwater runoff through the use of appropriate BMPs as defined in the most recent version of the NCDENR DWQ's *Stormwater Best Management Practices*.¹³ All activity will be conducted in compliance with the *Charlotte-Mecklenburg Land Development Standards Manual*¹⁴ for stabilization of disturbed areas to minimize negative water quality impacts.

3.1.4 Water Bodies and Waterways

The Project is located within the Irwin Creek sub-basin of the Catawba River Watershed. A secondary literature search and field visit identified one ephemeral railroad drainage ditch within the Project study area. This unnamed ditch conveys drainage towards Irwin Creek during high runoff events. The location of this ditch is depicted in Figure 4 (Appendix A). No additional water bodies or waterways are located within the Project Study Area.

The No-Build Alternative would not impact water bodies and waterways.

Construction of the Build Alternative will involve crossing an unnamed ephemeral railroad drainage ditch (see Photo 4). This activity will result in permanent impacts to the Mecklenburg County 30-foot, post-construction SWIM buffer established for this drainage feature. The location of this drainage feature and its associated SWIM buffer are depicted in Figure 4 (Appendix A). All work in this area will be conducted in accordance with the *Charlotte-Mecklenburg Land Development Standards Manual*¹⁵ for stabilization of disturbed areas to minimize negative water quality impacts.



Photo 4 - Existing drainage ditch south of West Summit Avenue crossing

Temporary impacts associated with construction stormwater and sedimentation may occur as part of construction activities. These impacts will cease soon after construction is complete.

To mitigate impacts to waterways, NCDOT will undertake sediment and erosion control BMPs in accordance with *Design Standards in Sensitive Watersheds*¹⁶ to reduce the potential for nutrient runoff. Furthermore, NCDOT will incorporate the treatment of the stormwater runoff through the use of

¹² 15A NCAC 04B .0124 Design Standards In Sensitive Watersheds, <http://ncrules.state.nc.us/ncac/title%2015a%20-%20environment%20and%20natural%20resources/chapter%2004%20-%20sedimentation%20control/subchapter%20b/15a%20ncac%2004b%20.0124.pdf>

¹³ See above at 1.

¹⁴ <http://charmeck.org/city/charlotte/epm/Services/LandDevelopment/StandardsManual/Pages/default.aspx>

¹⁵

<http://charmeck.org/city/charlotte/epm/Services/LandDevelopment/StandardsManual/Pages/default.aspx>

¹⁶ See above at 12.

appropriate BMPs as defined in the most recent version of the NCDENR DWQ's *Stormwater Best Management Practices*.¹⁷ All activity will be conducted in compliance with the *Charlotte-Mecklenburg Land Development Standards Manual* for stabilization of disturbed areas to minimize negative water quality impacts.

NCDOT will be required to obtain permits or approvals from the United States Army Corps of Engineers (USACE) and NCDENR DWQ. Coordination with the Mecklenburg County Board of County Commissioners will also be necessary if impacts to SWIM buffers are determined to be unavoidable.

3.1.5 Floodplains

A cursory review of the Federal Emergency Management Agency (FEMA) floodplain mapping was completed to determine if the project is located within a FEMA designated 100-year floodplain. The cursory review showed the Project study area to be outside of a FEMA designated floodplain. Figure 4 (Appendix A), shows the limits of FEMA designated 100-year floodplains within proximity to the Project study area.

Federal protection of floodplains is outlined in Executive Order 11988, "Floodplain Management" and by the implementation of federal regulations under 44 CFR 9.00. Under these regulations, Federal agencies are directed to avoid impacts to floodplain areas by structures build in flood-prone areas. FEMA has primary responsibility for identifying flood-prone areas.

The No-Build Alternative would not impact FEMA designated 100-year floodplains.

The Build Alternative will not permanently impact FEMA designated 100-year floodplains. All construction activity will be completed outside or above FEMA designated floodplain limits.

3.1.6 Wetlands

A secondary literature search using National Wetland Inventory (NWI) mapping was completed for this Project. The NWI map review provided no evidence of wetlands within the Project study area. The absence of wetland habitat was confirmed during a Project area site visits conducted by qualified field personnel in July 2011. Therefore, neither the No-Build Alternative nor the Build Alternative will impact wetlands.

Executive Order 11990, "Protection of Wetlands," requires federal agencies to avoid, to the extent practicable, short and long-term impacts associated with the destruction or modification of wetlands. It directs federal agencies to avoid new construction in wetlands unless there is no practical alternative. Where impacts to wetlands are determined to be unavoidable, impacts to wetlands must be minimized to the greatest extent possible. Section 404 of the Clean Water Act (CWA) provides protection to Waters of the United States and wetlands. North Carolina's Section 404 program is administered and enforced by the USACE.

3.1.7 Coastal Zones

The State of North Carolina participates in the National Coastal Zone Management Program. North Carolina's coastal zone includes the 20 counties that in whole or in part are adjacent to, adjoining, intersected by or bounded by the Atlantic Ocean or a coastal sound(s).¹⁸ This Project

¹⁷ See above at 1.

¹⁸ United States Department of Commerce, National Oceanographic and Atmospheric Administration, Ocean and Coastal Management in North Carolina, <http://coastalmanagement.noaa.gov/mystate/nc.html>.

is located in Mecklenburg County, which is not one of North Carolina's 20 coastal zone counties. Therefore, neither the No-Build Alternative nor the Build Alternative will impact coastal zones, and the Project is not required to comply with North Carolina's coastal zone management plan.

3.1.8 Farmland

As part of the Agriculture and Food Act of 1981,¹⁹ the Farmland Protection Policy Act (FPPA)²⁰ was introduced to "minimize the impact Federal programs have on the unnecessary and irreversible conversion of farmland to non-agricultural uses." The FPPA assures that Federal programs are administered in concert with state, local governmental, and private programs aimed at protecting farmland.

Farmland, as defined by the FPPA, includes areas designated as prime farmland, unique farmland, and land of statewide or local importance (7 U.S.C. § 4201(c)(1)).

This Project is located in the city of Charlotte, North Carolina. The areas adjacent to the Project area are developed and urban in nature. No land exhibiting the criteria of farmland, as defined by the FPPA, is present within or adjacent to the Project area. Therefore, neither the Build Alternative nor the No-Build Alternative will impact farmland.

3.2 BIOLOGICAL ENVIRONMENT

3.2.1 Ecologically Sensitive Areas

Coordination with the North Carolina Natural Heritage Program (NCNHP) was completed for the Project. Site visits completed in July 2009 and July 2011 confirmed the lack of significant "natural areas" at the Project site. A significant natural area is a site (terrestrial or aquatic) of special biodiversity significance. Therefore, neither the Build Alternative nor the No-Build Alternative will impact ecologically sensitive areas, wildlife habitat, or designated critical habitat areas.

The Federal Endangered Species Act (ESA) of 1973, as amended, is the federal regulatory tool that serves to administer permits, implement recovery plans, and monitor listed threatened and endangered species. The ESA is administered by the USFWS and the National Marine Fisheries Service. The State of North Carolina monitors and protects local and regional rare species and federally listed species under two individual laws. Animals are currently protected by the North Carolina Endangered Species Act which is administered by the NCWRC. Plant species are protected through the North Carolina Plant Protection and Conservation Act, which is administered by the North Carolina Department of Agriculture's Plant Conservation Program (N.C. Gen. Stat. § 106-202.12 (1979)).

¹⁹ Pub.L. 97-98

²⁰ 7 U.S.C. § 4201, et seq.

3.2.2 Threatened and Endangered Species

According to the NCNHP, there are no known records of significant natural communities, significant natural heritage areas, or conservation management areas within one mile of the Project study area.

According to United States Fish and Wildlife Service (USFWS), records for Mecklenburg County indicate occurrences of the federally endangered Schweinitz's sunflower (*Helianthus schweinitzii*), smooth coneflower (*Echinacea laevigata*), and Michaux's sumac (*Rhus michauxii*), and the candidate for federal listing Georgia aster (*Symphotrichum georgianum*). All of these species grow in open areas that are often disturbed; areas similar to the railroad corridors located within the Project study area. With this in mind, the presence or absence of these species was addressed by conducting habitat assessments and completing a survey of any suitable habitat within the Project study area.

The NCNHP, which is part of the NCDENR Office of Natural Resource Planning and Conservation, is responsible for inventorying, cataloging, and supporting conservation efforts throughout the State of North Carolina. The NCNHP works in conjunction with experts from the USFWS, the North Carolina Department of Agriculture and Consumer Services, and the North Carolina Wildlife Resources Commission (NCWRC) to document the status and location of the State's rarest plants, animals, and natural communities (<http://www.ncnhp.org>).

The Project study area was surveyed for the presence of the above mentioned endangered and candidate species. Biologists visited the Project study area on July 14, 2011 and on October 10, 2011. Systematic surveys were completed within all areas of suitable habitat for the federally protected plant species listed by USFWS. The field investigations concluded that no federally protected plant species occur within the Project study area.

A copy of the threatened and endangered species survey was submitted to the U.S. Fish and Wildlife Service's Asheville, North Carolina Field Office on October 27, 2011. A copy of the October 27, 2011 submittal letter is included in Appendix E. The letter also notes that as of May 20, 2011, the USFWS lists one species protected by the Bald and Golden Eagle Protection Act (BGEPA) for Mecklenburg County, bald eagle (*Haliaeetus leucocephalus*). Suitable habitat for bald eagle does not exist within the study area. A review of NCNHP records, accessed July 13, 2011, indicates no known bald eagle occurrences within 2.0 miles of the study area.

The No-Build Alternative would not have any further impact on federal or state-listed threatened and endangered species.

Based upon the results of the NCNHP coordination and the abovementioned surveys, the Build Alternative will not impact federal or state-listed threatened and endangered species.

A copy of the letter-type report that summarizes the threatened and endangered species survey's procedures and findings is included in Appendix E.

3.3 HUMAN ENVIRONMENT

3.3.1 Transportation

Rail Transportation - The purpose of the Project is to have a passenger rail maintenance facility in Charlotte to serve the increasing number of intercity passenger trains and to support the development of the federally designated SEHSR corridor by having the capacity to service longer fixed-consist high speed passenger trains, and by reducing the operational conflicts between NS freight and SEHSR passenger trains. At full build-out, the new locomotive and railcar maintenance facility will have the capacity to store four trains and have a fifth pass through. The existing facility only has the capacity to service and store one train.

The No-Build Alternative would negatively impact passenger rail transportation by not creating a facility that will meet the growing number of passenger trains or serve future high speed rail train sets.

The Build Alternative also includes tracks that will eventually directly connect to new tracks that will serve the platforms of the planned Charlotte Gateway Station; thus, passenger trains will also be able to run between the new facility and the future Charlotte Gateway Station without using the existing or future NS freight mainlines and with minimal impacts to NS freight operations.

The Build Alternative will reduce conflicts between NS Charlotte Yard switching operations and passenger services by moving the maintenance operations to a new facility away from the NS Charlotte Yard.

However, passenger trains accessing the new LRMF will require additional moves along the NS mainline, possibly creating conflicts between the NS freight and passenger rail traffic on the mainline. Upon the completion of the proposed P-3800 Mainline Track Improvements Projects, the conflicts between passenger and freight trains will be significantly reduced.

Local Vehicular Transportation - Vehicular transportation impacts will occur at the West Summit Avenue at-grade crossing. The No-Build Alternative would have no changes to this crossing. Under the Build Alternative, West Summit Avenue (approximately 3,300 vehicles per day) will have four tracks serving the proposed LRMF. This will create a second separately operating at-grade crossing within 100 feet of the existing NS mainline crossing. Southbound *Carolinian* and *Piedmont* passenger trains will cross West Summit Avenue using the mainline-track after serving the Charlotte Amtrak station, turn around for the northbound trip, and then cross West Summit Avenue again on one of four facility tracks when entering the main portion of the Facility. *Crescent* trains will cross West Summit Avenue only on the through-track; these trains will only refuel at the Facility. The passenger trains using the facility tracks crossing West Summit Avenue will travel at slower speeds, resulting in delays for vehicles. However, the Build Alternative will result in a daily maximum of 12 passenger trains crossing the at-grade crossing. These passenger trains are shorter than freight train consists, which will result in less time passing while the gates are down when compared to freight trains.

Given that existing traffic volumes along West Summit Avenue are approximately 3,300 vehicles per day, NCDOT anticipates only minor traffic delays from trains crossing West Summit Avenue. Other streets in the area will provide alternative routes for traffic when the crossing gates are down.

NCDOT does not anticipate that the Project will result in increased vehicular traffic in the area, during peak or off-peak periods. According to the Phase I Programming and Advance Planning Report for the facility, there will be 47 Amtrak employees based at the new facility and 6 to 11 maintenance personnel (depending on the shift). The vehicular traffic generated by the new facility will be offset by the reduction of vehicular traffic currently generated by existing uses on site, including Charlotte Pipe and Foundry and Ferguson Enterprises.

Parking - The Build Alternative will impact some surface parking on existing NCDOT-owned property. This surface parking is leased for use by media/satellite trucks that cover events at Bank of America Stadium, under an agreement between the NCDOT and the Carolina Panthers (owners of the Stadium); these surface lots are not available for public parking. The Build Alternative will eliminate this parking on NCDOT-owned property. The current parking agreement allows NCDOT to terminate the lease upon 45 days written notice. Prior to construction, NCDOT will terminate the surface parking lease per the existing agreement.

Pedestrian/Bicycle - The impacts for pedestrians and cyclists at West Summit Avenue will be identical to those described above for vehicular transportation. In addition, the Charlotte Cycling Guide (city bicycle map) shows West Summit Avenue as an unmarked bicycle route in Charlotte. Under the Build Alternative, West Summit Avenue will remain as an at-grade crossing with additional tracks.

Transit - CATS bus route 2 travels along West Summit Avenue and will experience additional minor wait times at the grade crossing due to increased train traffic. No other bus routes will be directly impacted by the Build Alternative.

3.3.2 Land Use, Zoning, and Property Acquisition

Land Use and Zoning - The Project is located in the city of Charlotte, Mecklenburg County, North Carolina. Land use within or directly adjacent to the Project area is comprised of a mixture of land uses including industrial, commercial, and single-family. According to 2009 zoning data provided by Mecklenburg County, zoning within or directly adjacent to Project area can be categorized as heavy industrial and light industrial. Future land use data is graphically depicted in Figure 5 (Appendix A). The 2009 zoning data is graphically depicted in Figure 6 (Appendix A).

The No-Build Alternative would not impact land use or be inconsistent with zoning.

The Build Alternative will have a minimal impact on land use and zoning as the future land use and zoning designations associated with the Build Alternative will be consistent with all existing land use plans and local planning documents.

Property Acquisition - The No-Build Alternative would not require the acquisition of any property.

The Build Alternative will require acquisition of the following parcels.

1. Parcel ID 11910318 - 601 West Summit Avenue - Vacant parcel owned by White Consolidated Industries.
2. Parcel ID 11910399 - Spruce Street - Vacant parcel owned by White Consolidated Industries. NCDOT may acquire part of this or the entire parcel.
3. Parcel ID 11910397 - Merriman Avenue - Vacant parcel owned by White Consolidated Industries.

4. Parcel ID 11910395 - Merriman Avenue - Vacant parcel owned by White Consolidated Industries.
 5. Parcel ID 11910396 - Merriman Avenue - Vacant parcel owned by White Consolidated Industries.
 6. Parcel ID 11910398 - 621 West Summit Avenue - Vacant parcel owned by White Consolidated Industries.
 7. Parcel ID 07326201 - 632 West Summit Avenue -
 8. Parcel ID 07326203 - 624 West Summit Avenue -
 9. Parcel ID 07326207 - 606 West Summit Avenue -
 10. Parcel ID 07326215 - 1336 South Graham Street -
 11. Parcel ID 07326216 - 1320 South Graham Street - This parcel houses Ferguson Enterprises, Inc.
 12. Parcel ID 07326804 - 1128 South Graham Street -
- The above parcels 7 through 11 are owned by Charlotte Pipe and Foundry and are used for storage and have some small ancillary buildings.

Figure 7 (Appendix A) identifies the areas where either total acquisition or partial acquisition may be required as a result of the Build Alternative.

3.3.3 Environmental Justice and Community Disruption

As a means of analyzing the population characteristics of the surrounding community, a Demographic Analysis Area (DAA) was identified. The DAA for the Project includes the following 2010 U.S. Census Bureau Census Tracts and the following 2005-2009 American Community Survey Census Tracts, which lie directly adjacent to the Project area:

- Census Tract 4; and,
- Census Tract 36.

Figure 8 (Appendix A) depicts the proximity of each 2010 US Census Bureau Census Tract to the LRMF Project area.

A review of 2010 U.S. Census data and the 2005-2009 American Community Survey 5-Year Estimates data was completed for the DAA to assess the potential for low-income or minority populations within or directly adjacent to the Project study area. Field observations were also completed to visually verify the results of the data review effort. As indicated in Table 5, the DAA exhibits a higher percentage of minority population when compared to the State of North Carolina, Mecklenburg County, and the City of Charlotte. The most prominent minority class is Black or African American, which constitutes 62.0% of the DAA's population. The percentage of Black or African American residents within the DAA is considerably higher than that of the State of North Carolina (21.5%), Mecklenburg County (30.8%), and the City of Charlotte (35.0%). All told, residents within the DAA identifying themselves as minorities represent 66.8% of the DAA's total population (US Census Bureau, 2010).

Table 5 - Population by Race (2010 Census)

Race	North Carolina		Mecklenburg County		City of Charlotte		Demographic Analysis Area (DAA)	
	Pop.	%	Pop.	%	Pop.	%	Pop.	%
White	6,528,950	68.5%	508,946	55.3%	365,384	50.0%	1,590	33.3%
Black or African American	2,048,628	21.5%	282,804	30.8%	256,241	35.0%	2,959	62.0%
American Indian or Alaska Native	122,110	1.3%	4,261	0.5%	3,483	0.5%	17	0.4%
Asian	208,962	2.2%	42,352	4.6%	36,403	5.0%	94	2.0%
Native Hawaiian	6,604	0.1%	668	0.1%	581	0.1%	0	0%
Some other race	414,030	4.3%	57,113	6.2%	49,928	6.8%	25	0.5%
Two or more races	206,199	2.2%	23,484	2.6%	19,404	2.7%	90	1.9%
Percent Minority		31.6%		44.8%		50.1%		66.8%

Source: U.S. Census Bureau (2010)

As shown in Table 6, the 2005-2009 American Community Survey data indicates that the median household income within the DAA was \$36,419. This figure is considerably lower than the State of North Carolina (\$45,069), Mecklenburg County (\$55,587), and the City of Charlotte (\$52,242).

Table 6 - Median household income (2005-2009 American Community Survey)

	North Carolina	Mecklenburg County	City of Charlotte	Demographic Analysis Area (DAA)
Median household income	\$45,069	\$55,587	\$52,364	\$36,419

Source: 2005-2009 American Community Survey 5-Year Estimates

The 2005-2009 American Community Survey data shows that 25.4% of the DAA population was living below the poverty level in 2009, which was considerably higher than the State of North Carolina (11.1%), Mecklenburg County (8.3%), and the City of Charlotte (9.4%) for the same period. Table 7 lists the percentage of population below the poverty level according to the 2005-2009 American Community Survey 5-Year Estimates data.

Table 7 - Population below poverty level (2005-2009 American Community Survey)

	North Carolina	Mecklenburg County	City of Charlotte	Demographic Analysis Area (DAA)
Income in 2009 below poverty level	11.1%	8.3%	9.4%	25.4%

Source: 2005-2009 American Community Survey 5-Year Estimates

Environmental Justice - As noted in the tables above, the community within and surrounding the Project area (defined as the DAA), does have a higher than average percentage of minority and low-income populations when compared to the averages for the State of North Carolina, Mecklenburg County, and the City of Charlotte. However, all of the properties impacted by the Build Alternative are commercial. No residential homes, community housing projects, or community centers will be directly impacted by the Build Alternative. The Build Alternative will result in the relocation of Charlotte Pipe and Foundry storage operations and the relocation of one business, Ferguson Enterprises. In addition, the impacts to the West Summit Avenue roadway/rail at-grade crossing will not result in the disruption or segmentation of existing communities. Therefore, the Build Alternative will not have a disproportionately high or adverse effect on minority and/or low-income populations.

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations (EO 12898), issued in 1994, directs that each federal agency shall make achieving environmental justice part of its mission. EO 12898 mandates that Federal agencies take appropriate and necessary steps to identify and address disproportionately high and adverse effects of Federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law.

Community Disruption - Aside from the temporary and short-term impacts typical of railway construction projects (i.e. minor traffic delays on adjacent roadways, temporary detours, etc.), NCDOT anticipates no impacts to the communities adjacent to the Project area. The LRMF Project, as currently proposed, will be constructed almost entirely within existing NCDOT owned property or private property to be acquired by NCDOT prior to construction. Construction of the Build Alternative will not result in the displacement of community resources or segmentation of existing communities.

Construction of the Build Alternative will include additional tracks crossing West Summit Avenue at the existing West Summit Avenue at-grade crossing. The location of the existing Summit Avenue at-grade crossing is depicted in Figure 9 (Appendix A). Construction activities will result in greater delays for pedestrians, cyclists, private vehicles and CATS buses traveling West Summit Avenue. However, the Build Alternative will result in only 12 total passenger trains crossing the at-grade crossing per day. These passenger trains are shorter than freight trains, which will result in less time occurring while the gates are down when compared to freight trains. The new at-grade crossing for the facility tracks will likely operate separately from the existing at-grade crossing of the NS tracks.

3.3.4 Hazardous Materials Inventory

NCDOT completed a hazardous materials inventory for the Project to identify potential sources of hazardous material contamination and properties known to be involved in the use, storage, transport, or disposal of such materials. The inventory included a database search of appropriate state, local, and federal regulatory agencies and a field reconnaissance survey. The database search was completed in June 2009 and field reconnaissance surveys were conducted in February 2010 and July 2011. A photographic log from the field reconnaissance surveys is included in Appendix F.

Two properties were identified within the Project study area where there is a higher than average potential for encountering hazardous materials during completion of the Build

Alternative. Both of these properties have the potential to be directly impacted (i.e. new or temporary right-of-way required) by the Build Alternative. The location of these two properties is illustrated on Figure 10 in Appendix A.

Please note that properties that have already been acquired by NCDOT in preparation for this, or other, projects have not been included in this hazardous materials inventory. NCDOT real estate personnel completed the appropriate environmental investigation and remediation activities prior to acquisition of these properties.

A regulatory database search was completed by Environmental Data Resources, Inc. (EDR) in June 2009. The EDR search included the following databases:

- Underground Storage Tank sites (UST)
- Leaking Underground Storage Tank sites (LUST)
- Interim Materials District sites (IMD)
- Resource Conservation and Recovery Act sites (RCRA)
- State Hazardous Waste Sites, aka "Superfund" sites (SHWS)
- Voluntary Cleanup Program sites (VCP)

Of the sites listed in the EDR regulatory database search, there were two properties that have the potential to be directly impacted by the Build Alternative. The following is a summary of the database information that was available for these two properties:

White Consolidated Industries, Inc. - 601 W. Summit Avenue (Parcel ID 11910318): This property is listed as "Copes-Vulcan of Charlotte" in the UST, LUST, IMD, RCRA, SHWS, and VCP databases.

According to the UST database, there were two USTs located on the property. The status of both USTs is listed as "Permanent Closed".

Tank ID 1 - 250-gallon motor oil UST that was installed on 6/23/1979 and removed on 7/8/1992.

Tank ID 2 - 500-gallon oil (new/old/mixture) UST that was installed on 6/23/1990 and removed on 7/8/1992.

According to the LUST and IMD databases, "high levels of contamination" were discovered in both soil and groundwater during the removal of a UST on 7/8/1992. This incident is listed as being closed out on 9/26/2002.

According to the RCRA database (RCRA ID # NCD095466082), this property is listed as a Non-Generator (does not presently generate hazardous waste) with no reported violations. The site is listed as being "inactive".

According to the SHWS and VCP databases, the property's Facility ID is NONCD0001097 and the Facility Type is listed as "Inactive Hazardous Sites and Pollutant-Only Sites". No additional information was available from this database.

At the time of the first field reconnaissance (February 2010), the only structure present on the property appeared to be a former building foundation. The property was only viewed from public right-of-way. See photo 1 in the hazardous materials inventory photographic log (Appendix F).

At the time of the second field reconnaissance (July 2011), the building foundation had been removed and grass had been planted. In addition, construction equipment was visible at the far west end of the property and some type of site work was in progress at the time of the field reconnaissance. See photos 2 through 5 in the hazardous materials inventory photographic log (Appendix F).

Charlotte Pipe and Foundry - 624 W. Summit Avenue (Parcel ID 07326203), 800 W. Summit Avenue (Parcel ID 07326230, 07326801), 632 W. Summit Avenue (07326201), 1335 S. Clarkson Street (07326102) and 1336 S. Graham Street (07326215): This property is listed in the UST, LUST, IMD, and RCRA databases.

According to the UST database, there were six USTs located in this property. All six USTs are listed as "Permanent Closed".

Tank ID 1 - 1,000-gallon gasoline UST that was installed on 4/28/1984 and removed on 5/5/1994.

Tank ID 2 - 2,000-gallon gasoline UST that was installed on 1/5/1973 and removed on 5/5/1994.

Tank ID 3 - 4,000-gallon gasoline UST that was installed on 1/5/1973 and removed on 5/5/1994.

Tank ID 4 - 6,000-gallon fuel oil UST that was installed on 2/1/1973 and removed on 4/5/1995.

Tank ID 5 - 6,000-gallon heating oil UST that was installed on 2/1/1973 and removed on 3/31/1992.

Tank ID 6 - 2,000-gallon kerosene UST that was installed in 1950 and removed on 1/3/1996.

According to the LUST and IMD databases, this property has four reported incidents:

LUST Incident 1 - Soil and groundwater contamination were found during the removal of a UST on 5/5/1994. No close out date is listed for this incident.

LUST Incident 2 - Minor soil contamination was discovered during the removal of a 6,000-gallon fuel oil UST on 4/5/1995. This incident is listed as being closed out on 8/31/1995.

LUST Incident 3 - Groundwater contamination was discovered during the removal of a 2,000-gallon kerosene UST on 6/20/1996. This incident is listed as being closed out on 11/29/2007.

LUST Incident 4 - Soil contamination was discovered during the removal of two 500-gallon non-regulated heating oil USTs on 4/17/2008. This incident is listed as being closed out on 8/19/2008.

According to the RCRA database, this property is currently listed as a Conditionally Exempt Small Quantity Generator (CESQG) with no reported violations. However, the database also indicates that this property was formally listed as a Small Quantity Generator (SQG) in 1992 and a Large Quantity Generator (LQG) in 1990.

A field reconnaissance of this property was conducted in February 2010. The property was only viewed from public and railroad right-of-way. See photos 6 through 10 in the hazardous materials inventory photographic log (Appendix F).

NCDOT will undertake a more detailed study of the potential hazardous material sites identified in the inventory, prior to any acquisition of new right-of-way and/or construction. If soil disturbing activities will impact the potential hazardous material sites, NCDOT will submit a work plan to NC Department of Natural Resources addressing how hazardous materials will be handled and disposed.

3.3.5 Cultural Resources

A Phase II architectural resources survey²¹ was completed in accordance with the Department of Transportation Act of 1966, Section 106 of the National Historic Preservation Act of 1966, as amended (Section 106), the regulations implementing Section 106 (found at 36 CFR 800), and the FHWA Technical Advisory T 6640.8A. In order to comply with these federal regulations, the Phase II architectural resources survey followed guidelines set forth in NCDOT's Section 106 Procedures and Guidelines (October

The National Historic Preservation Act (NHPA) of 1969, as amended (16 U.S.C. § 470 et. seq.), established a national program to preserve the country's historical and cultural resources. Section 106 of the NHPA requires federal agencies to consider the effects of their actions on historic properties and provide the President's Advisory Council on Historic Preservation an opportunity to comment on the Project.

2003). The survey was conducted as a means of determining the area of potential effects (APE), to identify all resources at least 50 years of age within the APE, and evaluate the resources according to National Register of Historic Places (NRHP) criteria. The field survey was completed between January 2009 and January 2011. On September 6, 2011, NCDOT submitted to the North Carolina State Historic Preservation Office (SHPO) a copy of the Phase II architectural resources survey. This Phase II survey covered both the NS Mainline Track Improvements project P-3800 and LRMF Project P-2918F. In a letter dated November 8, 2011, SHPO concurred with the findings in the Phase II architectural resources survey. A copy of the SHPO concurrence letter is included in Appendix G.

On December 8, 2011, representatives from the FRA, SHPO and NCDOT met to discuss the effects of the Project on historic resources. NCDOT determined and SHPO and FRA concurred that the Project will have "No Effect" on either resource identified in the study area (the Textile Mill Supply Company Building and the Wilmore Historic District). However, the Build Alternative does impact a vacant lot within the Wilmore Historic District Boundary. Due to this impact, a Certificate of Appropriateness (COA) will be required from the Charlotte Mecklenburg Historic Landmarks Commission prior to construction. A copy of the concurrence form signed by FRA, NCDOT and SHPO is included in Appendix G.

²¹ Historic Architectural Resources Survey Report: Charlotte Railroad Improvement and Safety Program (CRISP) Norfolk Southern (NS) Mainline Track Improvements. Mattson, Alexander and Associates, Inc. August 24, 2011.

3.3.6 Section 4(f) Resources

On December 8, 2011, representatives from the FRA, SHPO and NCDOT met to discuss the effects of the Project on historic resources. The Project was found to have "No Effect" on either resource identified in the study area (the Textile Mill Supply Company Building and the Wilmore Historic District). No other Section 4(f) properties (public owned parks, recreation areas, wildlife refuges or historic sites) will be affected by the Project.

Section 4(f) of the U.S. Department of Transportation Act of 1966 grants special protection to publicly owned parks, recreational areas, and wildlife refuges, as well as historic sites that are listed on or eligible for the NRHP. Section 4(f) states that publicly owned parks recreational lands, wildlife and waterfowl refuge area, or historic sites of national, state, or local significance may not be used for USDOT-funded projects unless there is no feasible and prudent alternative to the use of such land, and such projects must include all possible planning to minimize harm to these lands.

3.3.7 Section 6(f) Resources

Following a review of the Project area and a review of the U.S. Department of the Interior's Land and Water Conservation Fund County database, NCDOT determined that no Section 6(f) resources are located within or adjacent to the Project area.

Section 6(f) of the Land and Water Conservation Act requires that the conversion of lands or facilities acquired with Land and Conservation Act funds be coordinated with the Department of the Interior.

3.4 CONSTRUCTION IMPACTS

Construction activities can cause impacts, resulting solely from and limited to the construction period. These impacts are temporary in nature, and diminish as work concludes on the Project.

The No-Build Alternative would have no construction impacts.

The Build Alternative will have construction impacts, which are detailed in the sections below.

3.4.1 Transportation Impacts

Construction activities will result in greater delays for pedestrians, cyclists, private vehicles and CATS buses traveling West Summit Avenue. During construction, West Summit Avenue will be closed for extended periods, requiring signed detours for vehicles, pedestrians, cyclists and CATS transit service for bus route 2.

3.4.2 Solid Waste Disposal

Demolition and construction activities will likely result in the accumulation of solid waste at the construction site. Solid waste will be disposed of in accordance with State and local requirements throughout the duration of construction.²²

²² NC Division of Waste Management solid waste guidelines, <http://portal.ncdenr.org/web/wm/sw>
Mecklenburg County Solid Waste Department guidelines,
<http://charmec.org/mecklenburg/county/SolidWaste/ConstructionRecycling/Pages/default.aspx>

3.4.3 Use of Energy Resources

During construction, there will be an increase in energy usage due to construction related activities. The facility will provide more services than the existing facility in NS' Charlotte Yard. As such, the proposed facility will result in more energy consumption than the existing locomotive servicing facility. However, the Project will assist in implementing NCDOT's plan to improve passenger rail service, which should result in fewer automobile trips, and thus lower overall energy usage.

3.4.4 Use of Other Natural Resources

The use of other natural resources, for example water, minerals, and timber, is anticipated to be minimal during construction of the Build Alternative. During construction, NCDOT will use Best Management Practices (BMPs) to minimize adverse impacts to natural resources both onsite and adjacent to the construction boundary.

3.5 AESTHETIC AND DESIGN QUALITY IMPACTS

The No-Build Alternative will not create any changes to the view of the Project area nor have any other aesthetic or design quality impacts.

The Project is located within an urbanized area, with all of the parcels to be acquired zoned for commercial or industrial use. However, the Project area is adjacent to the Wilmore neighborhood and Wilmore Historic District, and will create changes in the visual landscape both during and after construction. Prior to construction, NCDOT will apply for a Certificate of Appropriateness (COA) from the Charlotte-Mecklenburg Historic Landmarks Commission for the impacts to the Wilmore Historic District.

Where feasible, NCDOT will follow City of Charlotte requirements for berms, landscaping, and setback requirements to minimize the visual impacts to the surrounding neighborhood.

The Build Alternative will also create temporary visual impacts attributed to construction activities that will be greater for those residents, patrons, and employees directly adjacent to the construction site. Views of heavy equipment and material stockpiles will be commonplace throughout the duration of construction.

3.6 POSSIBLE BARRIERS TO THE ELDERLY AND HANDICAPPED

The No-Build Alternative would not impact the elderly or handicapped populations.

NCDOT does not anticipate that construction of the Build Alternative will result in barriers to the elderly and handicapped populations. Access to area resources will be maintained at all times during and following construction. Pedestrian access to Center City Charlotte will be maintained at all times.

3.7 PUBLIC HEALTH

The No-Build Alternative would increase the possibility of negative impacts on public health. The existing Charlotte maintenance facility has no spill or stormwater containment system, or other modern protection features. Thus, the longer the existing facility is in use, the greater the likelihood of a spill of hazardous materials not being contained.

NCDOT does not anticipate that there will be impacts to public health during construction of the Build Alternative. Air quality assessments performed showed the Project to be below air quality thresholds and thus considered regionally insignificant. The Project is not expected to result in major impacts to wetlands, or area streams and waterways. NCDOT will follow BMPs to minimize impacts. If soil disturbing activities will impact the potential hazardous material sites, NCDOT will submit a work plan to NC Department of Natural Resources addressing how hazardous materials will be handled and disposed of.

NCDOT does not anticipate impacts to public health from LRMF operations. All existing NCDOT locomotives comply with current EPA emission requirements, and all new locomotives to be serviced at the facility will be Tier 0+ and Tier II compliant with the Clean Air Act. Trains will not be idling overnight or for extended periods during the day. NCDOT will locate wayside power on-site to provide electricity to the passenger cars and locomotives during servicing, and therefore no head-end power engines will be required to run for extended periods of time between train arrivals and departures at the maintenance facility. Existing area noise levels are already significantly high due to the noise generated by the existing NS rail line, nearby freeways, and the operations of Charlotte Pipe and Foundry. Maintenance operations will be in an enclosed facility, and future noise levels in the project area are projected to be 1 to 2 dBA above existing levels, an increase which is not perceived by humans.

3.8 PUBLIC SAFETY

The No-Build Alternative would have no impact on public safety.

Given the nature of the operations of the proposed Project (train movements, etc.), NCDOT will give particular attention to safety in the Project design. The Build Alternative will address public safety in the facility's permanent design through appropriate fencing, gates, video cameras, and other safety and security measures. The NCDOT will construct a more secure facility than existing, which will result in a higher degree of public safety.

Given the typical hazards associated with a construction site, particular attention should be given to the maintenance of public safety for the duration of construction. Public access to the construction site should be limited to the greatest extent possible. This can be accomplished through the use of temporary fencing, warning signs, or other safety precautions.

3.9 RECREATIONAL OPPORTUNITIES

The No-Build Alternative would have no impacts to recreational facilities nor restrict access to recreational opportunities.

NCDOT does not anticipate that construction of the Build Alternative will impact recreational opportunities in and around the Project study area. The Build Alternative will not permanently alter access to local recreational resources.

3.10 SECONDARY AND CUMULATIVE IMPACTS

Secondary Impacts - According to NCDENR, there are two types of secondary impacts, encroachment-alteration effects and growth-inducing effects. Encroachment-alteration effects may include impacts to the function of natural systems resulting from an action. One example would be the degradation of natural habitats due to an increase in pollution. Growth-inducing effects characterize how construction of a project may ultimately affect development patterns

and densities. An example would be changes in land-use and development made possible by increased accessibility.²³

The No-Build Alternative would result in a minor secondary impact. The lack of a more efficient maintenance facility will result in continued conflicts between passenger rail and freight rail operations, by having passenger train maintenance work in the existing NS Charlotte Yard and further removed from the proposed Charlotte Gateway Station.

The Build Alternative will remove passenger rail maintenance activity from the NS Charlotte Yard, which should improve both passenger and freight rail operations in the Charlotte area. The Build Alternative will also locate maintenance activities closer to the proposed Charlotte Gateway Station, which will result in more efficient train movements and operations.

The Build Alternative will also help NCDOT implement the Piedmont Improvement Program (PIP), which is a larger effort to increase capacity and speeds in the Piedmont Corridor.

NCDOT does not anticipate secondary impacts from construction and operation of the LRMF, such as growth-inducing changes in nearby land uses.

Cumulative Impacts - The purpose of performing a cumulative impact analysis is to determine the magnitude and significance of cumulative effects, both adverse and beneficial. According to NCDENR, cumulative impacts can come as a result of multiple or single projects and can be “additive” or “synergistic”. Additive impacts are the effects that multiple projects lend towards the degradation of a common environmental feature. Synergetic impacts can be considered the effects of multiple disturbances, when combined, are greater than the sum of individual disturbances (NCDENR, 2009).

The No-Build Alternative would have negative cumulative impacts. Specifically, under the No-Build Alternative, NCDOT would have no ability to add more passenger train service to Charlotte, and would have no facility to accommodate future SEHSR corridor trains.

The Build Alternative, when combined with other areas of past and planned transportation projects, will have a beneficial impact on the area's transportation system. This Project will provide for the safe operation and maintenance of the existing and planned future passenger rail service, improve the efficiency of intercity passenger rail services, and assist in the implementation of the SEHSR corridor.

The Build Alternative is part of the NCDOT Piedmont Improvement Program (PIP), which is a larger effort to increase capacity and improve operations along the Piedmont corridor between the cities of Charlotte and Raleigh.

The cumulative impact of the foreseeable future PIP actions is considered positive from a local, regional, and national standpoint. They will improve the safety and efficiency of the transportation system and enhance the potential for economic growth in the region.

Indirect impacts are those expenditures or investments not directly resulting from the project, but derived primarily from the increased mobility provided by the project. Induced socioeconomic impacts are additional economic activity within the region resulting from the

²³ NC Department of Natural and Environmental Resources. Guidance for Preparing SEPA Document and Addressing Secondary and Cumulative Impacts. <http://portal.ncdenr.org/web/quest/rules-policies-laws-and-regulations>

Build Alternative. Induced or secondary economic activity is the result of additional industries providing goods and services to supply those industries primarily related to the project. Overall, impacts will be positive when assessed from a regional perspective.

3.11 SUMMARY OF ENVIRONMENTAL CONSEQUENCES

Summary of Environmental Consequences for the Build Alternative		
Section of EA	Summary of Impacts	Proposed Mitigation
3.1.1 Air Quality	<p>No Impact. The results of the Applicability Analysis, as part of the General Conformity process, showed the Build Alternative to be below threshold and regionally insignificant.</p> <p>For air quality analysis of the LRMF operations, see 3.7, Public Health.</p>	Not Applicable.
3.1.2 Noise and Vibration	<p>Minor Impact. Existing noise levels at three site receptors in the Wilmore neighborhood are significantly high. These high noise levels are due to existing noise generated from nearby interstates, existing rail traffic, and activity at Charlotte Pipe and Foundry.</p> <p>None of the three receptors will be impacted by the noise generated by the LRMF only. However, two sites will be moderately impacted by the noise from additional trains sounding their horns while crossing West Summit Avenue, when combined with the noise generated by the LRMF. These future noise levels will be 1 to 2 dBA above existing levels, an increase which is not perceived by humans.</p> <p>No Impact. No vibration impacts will result from construction or operation of the LRMF.</p>	During final design NCDOT will investigate the feasibility of noise mitigation measures.
3.1.3 Water Quality	<p>No Impact. The Build Alternative will not permanently impact water quality, and will not cause a change in the Class C classification designated by NCDENR DWQ. Temporary impacts associated with construction stormwater and sedimentation may occur as part of construction activities.</p>	NCDOT will undertake BMPs in accordance with NCDENR DWQ's <i>Design Standards in Sensitive Watersheds and Stormwater Best Management Practices</i> .

Summary of Environmental Consequences for the Build Alternative		
Section of EA	Summary of Impacts	Proposed Mitigation
3.1.4 Water Bodies and Waterways	Minor Impact. Construction of the Build Alternative will involve crossing an unnamed ephemeral railroad drainage ditch. This activity will result in permanent impacts to the Mecklenburg County 30-foot, post-construction SWIM buffer established for this drainage feature. Temporary impacts associated with construction stormwater and sedimentation may occur as part of construction activities.	NCDOT will undertake BMPs in accordance with NCDENR DWQ's <i>Design Standards in Sensitive Watersheds and Stormwater Best Management Practices</i> .
3.1.5 Floodplains	No Impact. The Build Alternative will not permanently impact any FEMA designated 100-year floodplain areas.	Not Applicable.
3.1.6 Wetlands	No Impact. There are no wetlands within the Project area. Therefore, the Project will not have permanent, temporary, secondary or cumulative wetland impacts.	Not Applicable.
3.1.7 Coastal Zones	No Impact. This Project is located in Mecklenburg County, which is not one of North Carolina's 20 coastal zone counties.	Not Applicable.
3.1.8 Farmland	No Impact. The areas adjacent to the Project area are developed and urban in nature. No land exhibiting the criteria of farmland is present within or adjacent to the Project area.	Not Applicable.
3.2.1 Ecologically Sensitive Areas	No Impact. A survey of the Project area found no ecologically sensitive areas, wildlife habitat, or designated critical areas.	Not Applicable.
3.2.2 Threatened and Endangered Species	No Impact. Field surveys found no evidence of Federally-listed or State-listed Threatened and Endangered Species within the Project area.	Not Applicable.

Summary of Environmental Consequences for the Build Alternative		
Section of EA	Summary of Impacts	Proposed Mitigation
3.3.1 Transportation	<p>Minor Impact. The Build Alternative will improve servicing operations for passenger rail.</p> <p>Vehicular, pedestrian, and bicyclist traffic impacts will occur at the West Summit Avenue at-grade crossing by creating two separately operating at-grade railroad crossings. Minor delays to Charlotte Area Transit System (CATS) bus route 2 will likely occur due to increased train traffic crossing West Summit Avenue.</p> <p>The Build Alternative will eliminate existing surface parking on NCDOT-owned property. These surface lots are currently leased to the Carolina Panthers for use during events at the Stadium and are not for public parking. The existing surface parking agreement allows NCDOT to terminate the lease with a 45-day notice. Prior to construction, NCDOT will terminate the surface parking lease per the existing agreement. The removal of this parking will not impact the amount of parking spaces available for use during normal workdays in Uptown Charlotte.</p>	<p>Traffic delays at the West Summit Avenue crossing will be minor (average number of vehicles per day is fewer than 3,300). Other streets in the area will provide alternative routes for traffic when the crossing gates are down.</p>
3.3.2 Land Use, Zoning, and Property Acquisition	<p>Minor Impact. The Build Alternative will have a minimal impact on land use or zoning as the future land use and zoning designations associated with the Build Alternative will be consistent with all existing land use plans and local planning documents. The Build Alternative will require acquisition of 10 parcels from 3 separate property owners.</p>	<p>NCDOT will follow applicable Federal and State laws on property acquisition and relocations.</p>

Summary of Environmental Consequences for the Build Alternative		
Section of EA	Summary of Impacts	Proposed Mitigation
3.3.3 Environmental Justice and Community Disruption	No Impact. No disproportionately high or adverse effects to identified low-income and minority populations are anticipated. The Build Alternative will not result in the disruption or segmentation of existing communities.	Not Applicable.
3.3.4 Hazardous Materials Inventory	Minor Impact. Surveys identified two potential hazardous materials sites within the Project study area.	If soil disturbing activities will impact the potential hazardous material sites, NCDOT will submit a work plan to NC Department of Natural Resources addressing how hazardous materials will be handled and disposed.
3.3.5 Cultural Resources	No Adverse Effect. The Build Alternative will have no adverse effect on historic resources. However, the Build Alternative will impact a vacant lot included in the locally designated Wilmore Historic District boundary.	Prior to construction, NCDOT will apply for a Certificate of Appropriateness (COA) from the Charlotte-Mecklenburg Historic Landmarks Commission for the impacts to the Wilmore Historic District.
3.3.6 Section 4(f) Resources	No Impact. The Build Alternative will have no impacts to Section 4(f) resources.	Not Applicable.
3.3.7 Section 6(f) Resources	No Impact. There are no Section 6(f) resources in the Project study area.	Not Applicable.
3.4.1 Construction Transportation Impacts	Minor Impacts. Construction activities will result in some delays for pedestrians, cyclists, motor vehicles and buses traveling West Summit Avenue. During construction West Summit Avenue will be closed for extended periods, requiring signed detours.	NCDOT will coordinate with the City of Charlotte on detour routes.
3.4.2 Solid Waste Disposal	No Impact. Accumulated solid waste will be disposed of in accordance with State and local requirements throughout the duration of construction.	Not Applicable.

Summary of Environmental Consequences for the Build Alternative		
Section of EA	Summary of Impacts	Proposed Mitigation
3.4.3 Use of Energy Resources	Minor Impact. During construction, there will be an increase in energy usage due to construction related activities. The facility will provide more services than the existing facility in NS' Charlotte Yard. As such, the proposed facility will result in more energy consumption than the existing locomotive servicing facility. However, the Project will assist in implementing NCDOT's plan to improve passenger rail service, which should result in fewer automobile trips, and thus lower overall energy usage.	
3.4.4 Use of Other Natural Resources	No Impact. The use of other natural resources is anticipated to be minimal during construction of the selected preferred alternative. NCDOT will use BMPs during construction to minimize adverse impacts to natural resources both onsite and adjacent to the construction boundary.	Not Applicable.
3.5 Aesthetic and Design Quality Impacts	Minor Impact. All of the parcels to be acquired are zoned for commercial or industrial use. The Project area is adjacent to the Wilmore neighborhood, and will create changes in the visual landscape. Temporary visual impacts attributed to construction activities will be greatest for those directly adjacent to the construction site. Views of heavy equipment and material stockpiles will be commonplace throughout the duration of construction.	Where feasible, NCDOT will follow City of Charlotte requirements for berms, landscaping, and setback requirements to minimize the visual impacts to the surrounding neighborhood. Prior to construction, NCDOT will apply for a Certificate of Appropriateness (COA) from the Charlotte-Mecklenburg Historic Landmarks Commission for the impacts to the Wilmore Historic District.

Summary of Environmental Consequences for the Build Alternative		
Section of EA	Summary of Impacts	Proposed Mitigation
3.6 Possible Barriers to Elderly and Handicapped	No Impact. Construction of the Build Alternative is not anticipated to result in barriers to the elderly and handicapped populations.	Not Applicable.
3.7 Public Health	<p>No Impact. No impacts to public health are anticipated during construction of the Build Alternative. Air quality assessments performed showed the impacts from project construction to be below air quality thresholds and thus considered regionally insignificant.</p> <p>NCDOT does not anticipate impacts to public health from LRMF operations. All existing NCDOT locomotives comply with current EPA emission requirements, and all new locomotives to be serviced at the facility will be Tier 0+ and Tier II compliant with the Clean Air Act. Trains will not be idling overnight or for extended periods during the day. NCDOT will locate wayside power on-site to provide electricity to the passenger cars and locomotives during servicing, and therefore no head-end power engines will be required to run for extended periods of time between train arrivals and departures at the maintenance facility. Existing area noise levels are already significantly high due to the noise generated by the existing NS rail line, nearby freeways, and the operations of Charlotte Pipe and Foundry. Maintenance operations will be in an enclosed facility, and future noise levels in the project area are projected to be 1 to 2 dBA above existing levels, an increase which is not perceived by humans.</p> <p>The Project is not expected to have</p>	Not Applicable.

Summary of Environmental Consequences for the Build Alternative		
Section of EA	Summary of Impacts	Proposed Mitigation
	impacts to hazardous material sites, wetlands, area streams, or waterways.	
3.8 Public Safety	<p>Positive Impact. Given the nature of the operations of the proposed Project (train movements, etc.), NCDOT will give particular attention to safety in the Project design. The NCDOT will construct a more secure facility than existing, which will result in a higher degree of public safety.</p> <p>The Project will include typical hazards associated with a construction site, and NCDOT will give particular attention to the maintenance of public safety for the duration of construction.</p>	<p>The Build Alternative will address public safety in the facility's permanent design through appropriate fencing, gates, video surveillance cameras, and other safety and security measures. NCDOT will add protection (gates, flashers) to the new at-grade crossing at West Summit Avenue.</p> <p>Public access to the construction site should be limited to the greatest extent possible. This can be accomplished through the use of temporary fencing, warning signs, or other safety precautions.</p>
3.9 Recreational Opportunities	<p>No Impact. Construction of the Build Alternative is not anticipated to impact recreational opportunities in and around the Project study area. The Build Alternative will not permanently alter access to local recreational resources.</p>	Not Applicable.
3.10 Secondary and Cumulative Impacts	<p>Positive Impacts. The Build Alternative will remove passenger rail maintenance activity from the NS Charlotte Yard, which will improve both passenger and freight rail operations in the Charlotte area by separating passenger and freight operations. The Build Alternative will also locate maintenance activities closer to the proposed Charlotte Gateway Station, which will result in more efficient train movements and operations.</p> <p>The Build Alternative will also help NCDOT implement the Piedmont Improvement Program (PIP), which</p>	Not Applicable.

Summary of Environmental Consequences for the Build Alternative		
Section of EA	Summary of Impacts	Proposed Mitigation
	<p>is a larger effort to increase capacity and speeds in the Piedmont Corridor.</p> <p>NCDOT does not anticipate secondary impacts from construction and operation of the LRMF, such as growth-inducing changes in nearby land uses.</p>	

CHAPTER 4.0 - COORDINATION AND CONSULTATION

In accordance with NEPA, the NCDOT coordinated and consulted with agencies, stakeholders, and the general public to ensure that comments and concerns were addressed throughout project development of the LRMF Project. The following sections summarize the coordination and consultation activities completed for the Project.

4.1 AGENCY COORDINATION

Early coordination with various resource agencies was completed for this Project. The purpose of the agency coordination effort was to gain an understanding of potential environmental impacts associated with the Build Alternative. An early-agency coordination letter was drafted and distributed by the NCDOT Rail Division on October 7, 2011. An example of the early-agency coordination letter distributed for the project is included in Appendix H. The early-agency coordination letter was sent to the following resource agencies:

- North Carolina Wildlife Resources Commission – Habitat Conservation Program
- NCDENR - Division of Water Quality
- NCDENR - Division of Water Resources
- NCDENR - Division of Environmental Health
- NCDENR - Division of Air Quality
- NCDENR - Division of Land Quality
- NCDENR - Division of Forest Resources
- NCDENR - Natural Heritage Program
- NCDENR - Division of Soil and Water Conservation
- NC Department of Cultural Resources
- State Historic Preservation Office – Division of Archives and History
- NC Department of Administration – State Environmental Review Clearinghouse
- U.S. Fish and Wildlife Service – Asheville, NC Field Office
- U.S. Army Corps of Engineers – Asheville, NC Office
- U.S. Department of Agriculture - Natural Resources Conservation Service
- U.S. Environmental Protection Agency – Region 4
- NC Department of Transportation – Division 10
- NC Geological Survey
- Mecklenburg-Union Metropolitan Planning Organization
- Mecklenburg County Land Use and Environmental Services Agency

NCDOT received comments from five of the above-listed agencies. Copies of the agency response letters received have been included in Appendix H.

4.2 PUBLIC INVOLVEMENT

On March 27, 2012, NCDOT held a Citizens Information Workshop (CIW). The purpose of the CIW was to inform the public and solicit input regarding the LRMF Project. Each CIW attendee was afforded the opportunity to preview Project exhibits and discuss the Project with representatives from NCDOT Rail Division and NCDOT's engineering consultant. Comments received during and after that CIW were reviewed. Representatives from NCDOT also met with the Wilmore Neighborhood Association on June 4, 2012 to present the Project and solicit input. As a result of these outreach efforts, NCDOT modified the design of the Build Alternative to lessen impacts on residential areas as much as possible and to ensure that the Project

complies with City of Charlotte ordinances for buffers to residential areas. Moreover, NCDOT will work to ensure that the Project meets local, state and federal environmental requirements to minimize impacts to adjacent properties.

As part of the public outreach efforts, NCDOT also will notify the public of the right to request a meeting once the Project's environmental document has been published.

CHAPTER 5.0 - LIST OF PREPARERS

North Carolina Department of Transportation (NCDOT) – Rail Division

Marc L. Hamel, Rail Project Development Manager
Ryan L. White, P.E., Rail Project Development Engineer
Craig Newton, P.E., Facilities Engineer

Gannett Fleming, Inc.

Travis Pollack, AICP, Project Manager and Senior Transportation Planner
Terry L. Winebrenner, P.E., Environmental Manager
Robert W. Parker, M.S., Project Environmental Scientist
Michael A. Krokonko, M.B.A., Project Environmental Scientist
Ahmed A. El-Aassar, Ph.D., INCE, ASA, Noise and Air Quality Manager
Sondra Peterson, Noise Technician
Jasmine R. Sodemann, Environmental Specialist
Beth E. Turner, M.S., Environmental Specialist
John Goddard, Sr. Track Designer
Michael A. MacAllister, P.E., Construction Management Specialist
Richard Cross IV, P.E., Senior Railroad Engineer
Scott Sibley, P.E., Railroad Engineering Project Manager
Matthew Houtz, GISP, Senior GIS Analyst

Mattson, Alexander, and Associates

Richard L. Mattson, Ph.D.
Frances P. Alexander, M.A.

Axiom Environmental, Inc.

Alexander “Sandy” Smith, Senior Project Manager
Scott Davis, Senior Scientist

This page left intentionally blank.

CHAPTER 6.0 – REFERENCES

- Charlotte Area Transit System. CATS System Map, Online.
<http://charmeck.org/city/charlotte/cats/Bus/maps/Documents/Charlotte%20Riders%20GuideA.pdf>. Accessed November 2011.
- Charlotte Center City Partners. "Draft Center City 2020 Vision Plan". July 2011. Online.
<http://www.centercity2020.info/>. Accessed August 2011.
- Charlotte-Mecklenburg Geospatial Information Services. Various GIS data layers. Provided electronically in August 2009.
- Charlotte Department of Transportation. "Center City Transportation Plan." Online:
<http://www.charmeck.org/city/charlotte/Transportation/PlansProjects/Pages/Center%20City%20Transportation%20Plan.aspx>. Accessed August 2011.
- Charlotte Department of Transportation. "Charlotte Cycling Guide, Second Edition."
- Council on Environmental Quality. "A Citizen's Guide to the NEPA: Having Your Voice Heard." December 2007. Online. http://ceq.hss.doe.gov/nepa/Citizens_Guide_Dec07.pdf. Accessed August 2009.
- Environmental Data Resources, Inc. (EDR). Regulatory database search. Completed on June 8, 2009.
- Federal Emergency Management Agency. Floodplain Insurance Rate Maps. Online.
www.msc.fema.gov. Accessed July 2009.
- Gannett Fleming. "Norfolk Southern Mainline Track Improvements - CSX/NS Mainline Grade Separation Feasibility Study Update". December 2011.
- Federal Transit Administration, U.S. Department of Transportation, "Transit Noise and Vibration Impact Assessment". FTA-VA-90-1003-06. 2006.
- Mattson, Alexander and Associates, Inc. "Historic Architectural Resources Survey Report: Charlotte Railroad Improvement and Safety Program (CRISP) Norfolk Southern (NS) Mainline Track Improvements, Mecklenburg County, NCDOT TIP No. P-3800." August 24, 2011.
- Morris Berg Architects and STV. "Programming and Advance Planning Report for Locomotive and Railcar Maintenance Facility, Charlotte, North Carolina." September 2011.
- Morris Berg Architects and STV. "Scope Reduction for Locomotive and Railcar Maintenance Facility, Charlotte, North Carolina." March 2012.
- National Oceanic and Atmospheric Administration
<http://coastalmanagement.noaa.gov/mystate/docs/StateCZBoundaries.pdf>
- NC Department of Environment and Natural Resources. "Guidance for Preparing SEPA Documents and Addressing Secondary and Cumulative Impacts." Online.
http://www.enr.state.nc.us/html/laws_regulations.html. Accessed August 2009.
- NC Department of Environment and Natural Resources, Division of Water Quality. Online.
<http://h2o.enr.state.nc.us/>. Accessed August 2009.

- NC Department of Environment and Natural Resources, Natural Heritage Program. Online. <http://www.ncnhp.org/>. Accessed August 2009.
- NC Department of Environment and Natural Resources, Division of Waste Management. Solid Waste Guidelines, <http://portal.ncdenr.org/web/wm/sw>. Accessed September 2012.
- NC Department of Transportation, Rail Division. "Feasibility Study for the Charlotte Multi-Modal Station and Area Track Improvements." May 2002.
- NC Department of Transportation, GeoEnvironmental Section, Geotechnical Engineering Unit. "Hazardous materials Report for TIP P-3800." April 28, 2011
- Nelson, J.T., Saurenman, H. "A Prediction for Rail Transportation Ground-borne Noise and Vibration" Transportation Research Board, January 1987.
- STV. "West Charlotte Corridor Study." October 2012.
- US Census Bureau, <http://factfinder.census.gov>. 2010 data, accessed December 2011.
- US Department of Agriculture, Natural Resources Conservation Service. Online. <http://www.nrcs.usda.gov/programs/fppa/>. Accessed August 2009.
- US Department of Commerce, National Oceanic and Atmospheric Administration. Online. <http://coastalmanagement.noaa.gov/mystate/docs/StateCZBoundaries.pdf>. Accessed August 2009.
- US Fish and Wildlife Service. National Wetlands Inventory. Online. <http://www.fws.gov/wetlands/Data/Mapper.html>. Accessed July 2009.

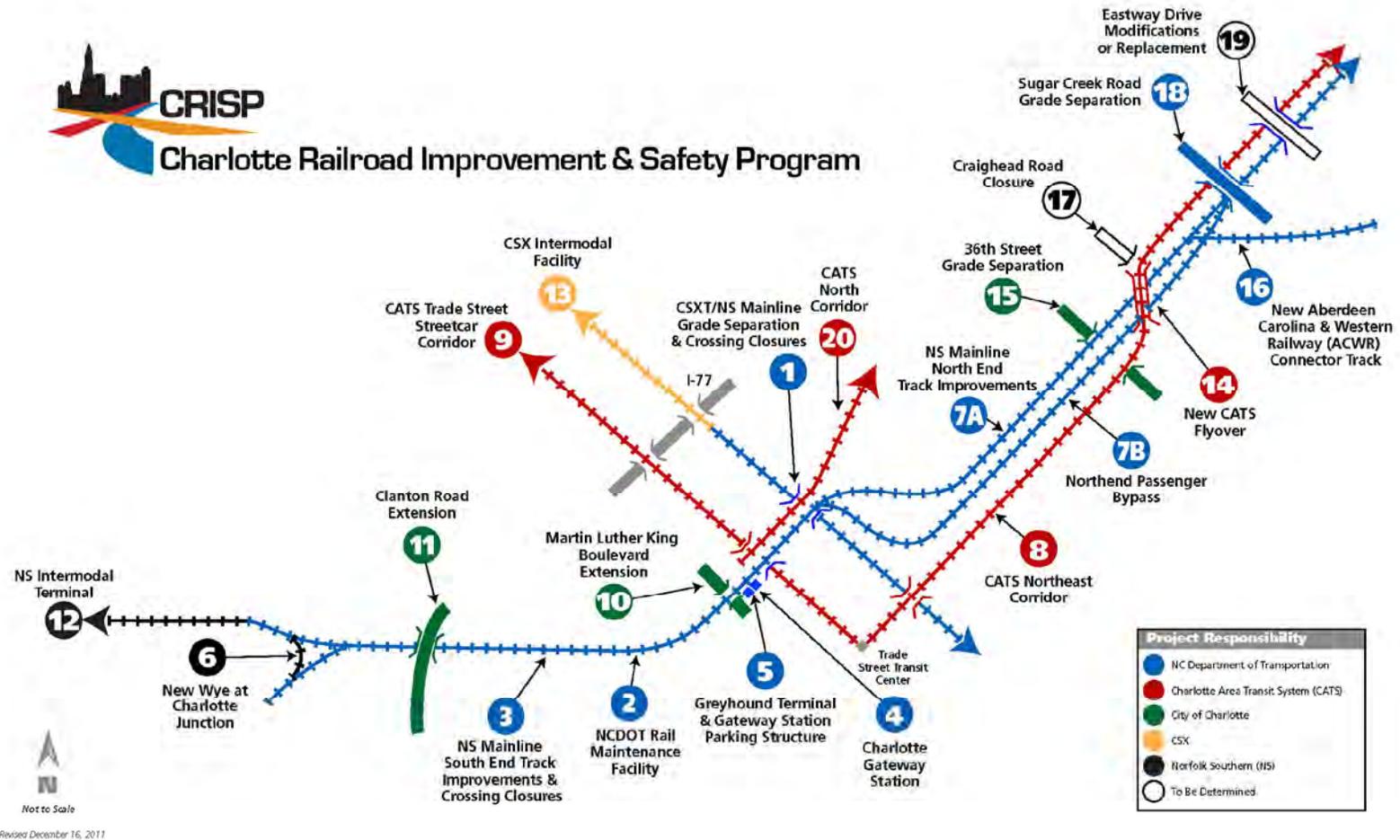


APPENDIX A

Project Mapping



Charlotte Railroad Improvement & Safety Program



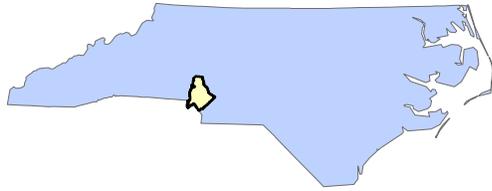
Charlotte Railroad Improvement & Safety Program (CRISP)
 Locomotive and Rrailcar Maintenance Facility Project
 TIP No. P-2918F



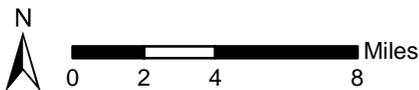
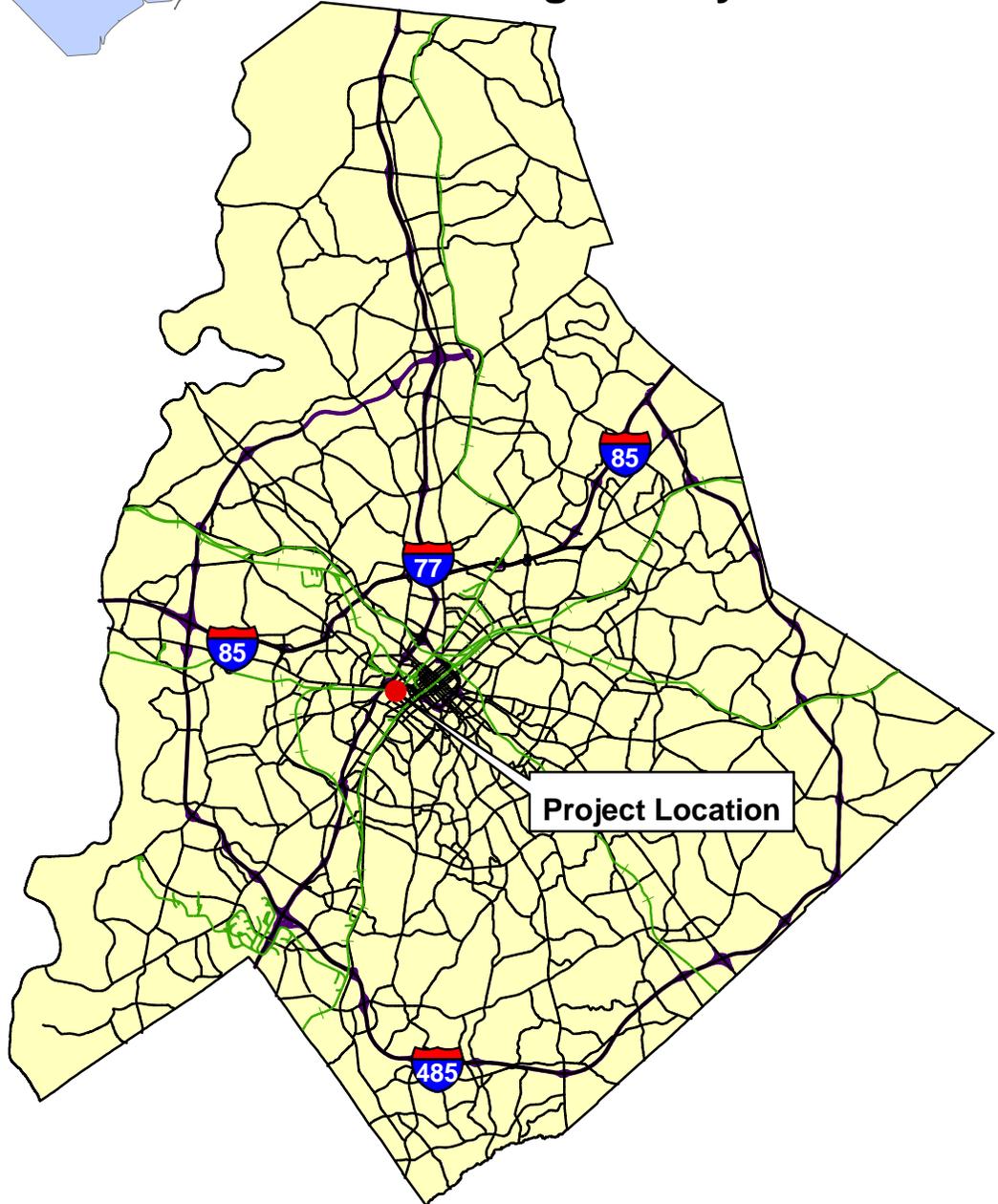
CRISP Projects

Mecklenburg County, North Carolina
 April 2012

North Carolina



Mecklenburg County



Charlotte Railroad Improvement & Safety Program
Locomotive and Railcar Maintenance Facility

TIP No. P-2918F

Data courtesy of Charlotte-Mecklenburg Geospatial Information Services



Project Location

Mecklenburg County, North Carolina
December 2011

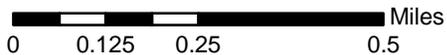
Figure

2



Charlotte Railroad Improvement & Safety Program (CRISP)
 Locomotive and Railcar Maintenance Facility Project

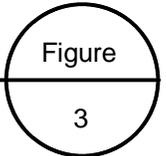
TIP No. P-P-2918F

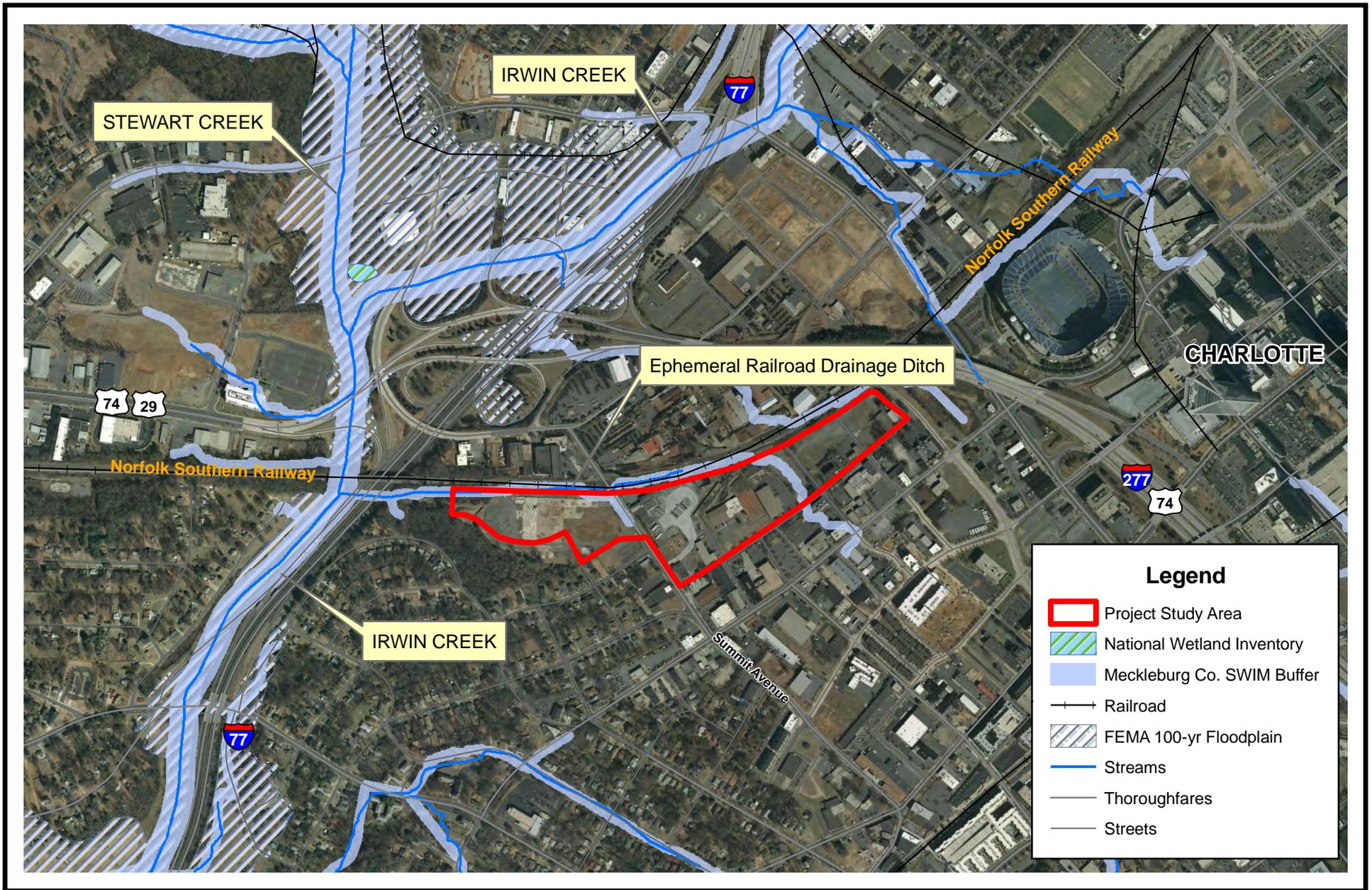


Data courtesy of Charlotte-Mecklenburg Geospatial Information Services

Project Study Area

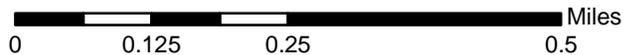
Mecklenburg County, North Carolina
 December 2011





Charlotte Railroad Improvement & Safety Program (CRISP)
 Locomotive and Railcar Maintenance Facility Project
 TIP No. P-2918F

Data courtesy of Charlotte-Mecklenburg Geospatial Information Services



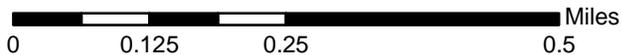
Aquatic Resources

Mecklenburg County, North Carolina
 December 2011



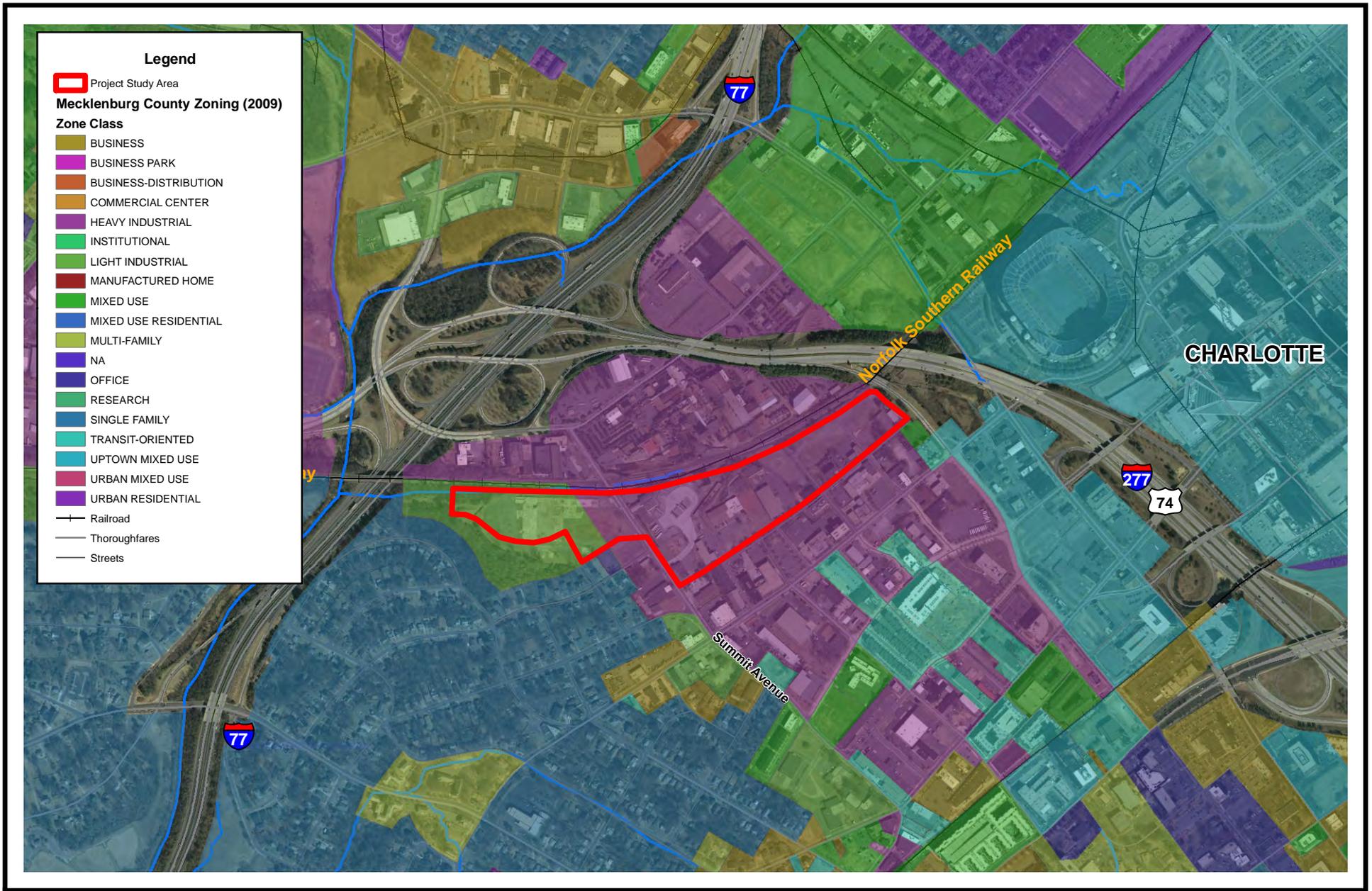
Charlotte Railroad Improvement & Safety Program (CRISP)
 Locomotive and Railcar Maintenance Facility Project
 TIP No. P-2918F

Data courtesy of Charlotte-Mecklenburg Geospatial Information Services



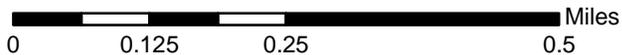
Future Land Use

Mecklenburg County, North Carolina
 December 2011



Charlotte Railroad Improvement & Safety Program (CRISP)
 Locomotive and Railcar Maintenance Facility Project
 TIP No. P-2918F

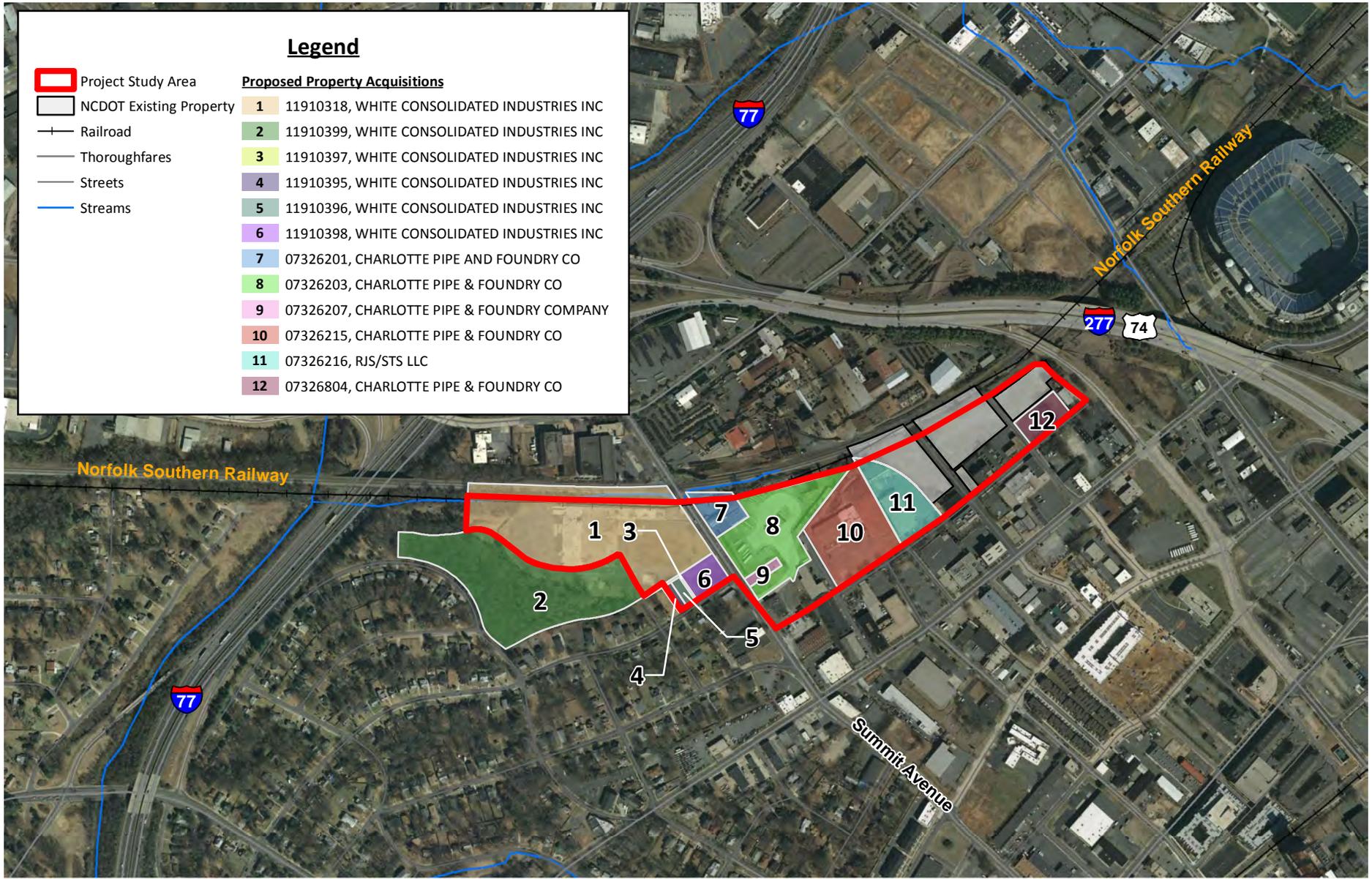
Data courtesy of Charlotte-Mecklenburg Geospatial Information Services



Zoning

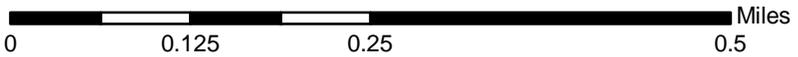
Mecklenburg County, North Carolina
 December 2011

Path: G:\Projects\49468_CRISP\05_Working\Maintenance_Facility\LRMF_Mapping\Figure 7 - Potential Property Acquisitions_rev.mxd



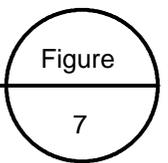
Charlotte Railroad Improvement & Safety Program (CRISP)
 Locomotive and Railcar Maintenance Facility Project
 TIP No. P-2918F

Data courtesy of Charlotte-Mecklenburg Geospatial Information Services



Property Acquisitions

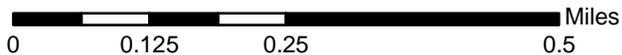
Mecklenburg County, North Carolina
 October 2012





Charlotte Railroad Improvement & Safety Program (CRISP)
 Locomotive and Railcar Maintenance Facility Project
 TIP No. P-2918F

Data courtesy of Charlotte-Mecklenburg Geospatial Information Services



Environmental Justice

Mecklenburg County, North Carolina
 December 2011

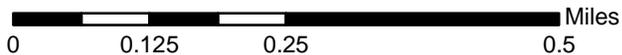


Charlotte Railroad Improvement & Safety Program (CRISP)
 Locomotive and Railcar Maintenance Facility Project
 TIP No. P-2918F

Data courtesy of Charlotte-Mecklenburg Geospatial Information Services

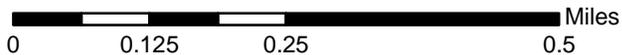
**Existing At-Grade
 Railroad Crossings**

Mecklenburg County, North Carolina
 December 2011





Charlotte Railroad Improvement & Safety Program (CRISP)
 Locomotive and Railcar Maintenance Facility Project
 TIP No. P-2918F



Data courtesy of Charlotte-Mecklenburg Geospatial Information Services

**Potential HAZMAT
 Properties**

Mecklenburg County, North Carolina
 December 2011

This page left intentionally blank.

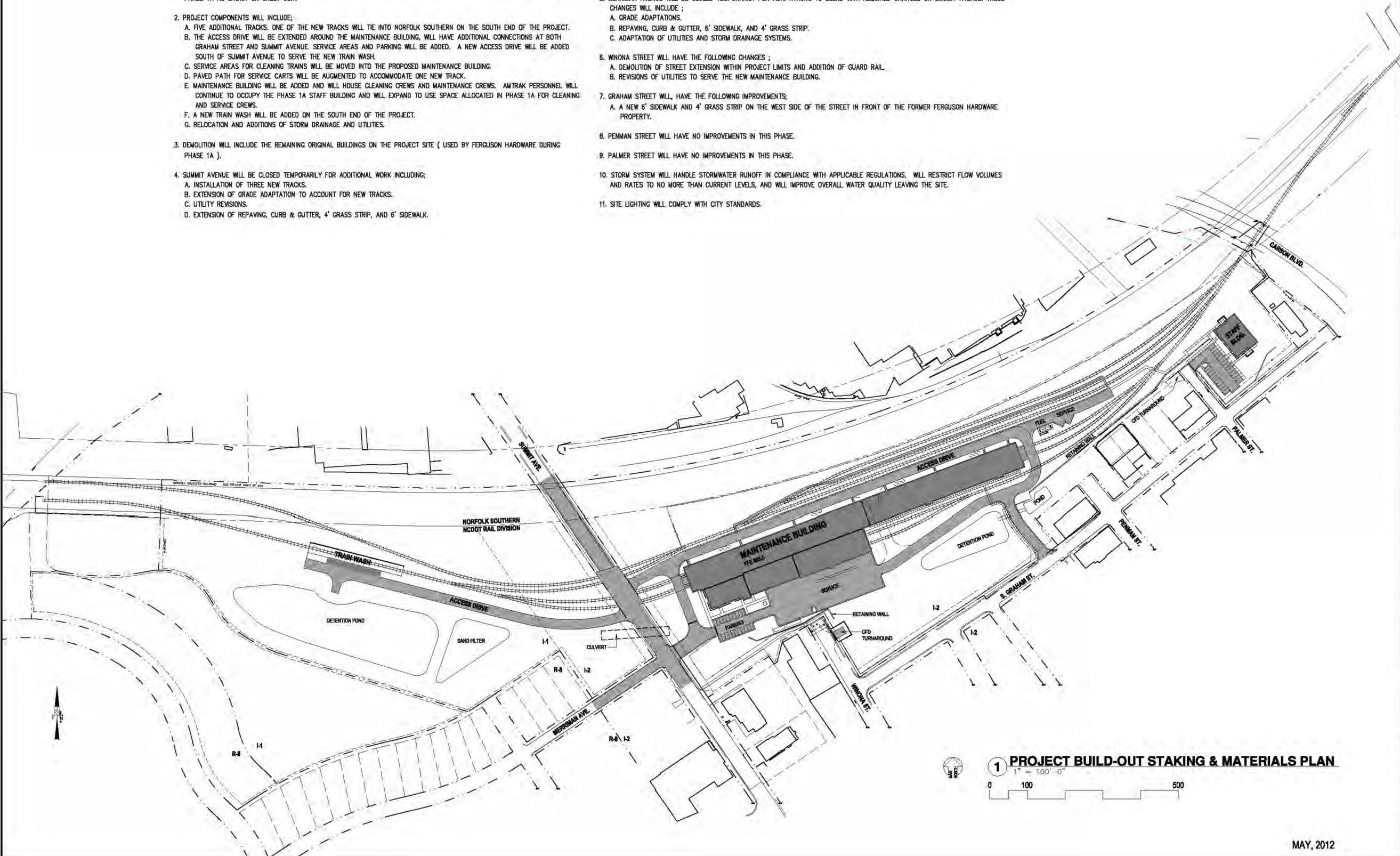


APPENDIX B

Conceptual Plan

NOTES FOR PROJECT BUILD-OUT

1. THE PROJECT BUILD-OUT INCLUDES ALL IMPROVEMENTS SHOWN ON THIS SHEET EXCEPT FOR COMPONENTS TO BE COMPLETED IN PHASE 1A AS SHOWN ON SHEET C3.1.
2. PROJECT COMPONENTS WILL INCLUDE:
 - A. FIVE ADDITIONAL TRACKS. ONE OF THE NEW TRACKS WILL TIE INTO NORFOLK SOUTHERN ON THE SOUTH END OF THE PROJECT.
 - B. THE ACCESS DRIVE WILL BE EXTENDED AROUND THE MAINTENANCE BUILDING, WILL HAVE ADDITIONAL CONNECTIONS AT BOTH GRAHAM STREET AND SUMMIT AVENUE. SERVICE AREAS AND PARKING WILL BE ADDED. A NEW ACCESS DRIVE WILL BE ADDED SOUTH OF SUMMIT AVENUE TO SERVE THE NEW TRAIN WASH.
 - C. SERVICE AREAS FOR CLEANING TRAINS WILL BE MOVED INTO THE PROPOSED MAINTENANCE BUILDING.
 - D. PAVED PATH FOR SERVICE CARTS WILL BE AUGMENTED TO ACCOMMODATE ONE NEW TRACK.
 - E. MAINTENANCE BUILDING WILL BE ADDED AND WILL HOUSE CLEANING CREWS AND MAINTENANCE CREWS. AMTRAK PERSONNEL WILL CONTINUE TO OCCUPY THE PHASE 1A STAFF BUILDING AND WILL EXPAND TO USE SPACE ALLOCATED IN PHASE 1A FOR CLEANING AND SERVICE CREWS.
 - F. A NEW TRAIN WASH WILL BE ADDED ON THE SOUTH END OF THE PROJECT.
 - G. RELOCATION AND ADDITIONS OF STORM DRAINAGE AND UTILITIES.
3. DEMOLITION WILL INCLUDE THE REMAINING ORIGINAL BUILDINGS ON THE PROJECT SITE (USED BY FERGUSON HARDWARE DURING PHASE 1A).
4. SUMMIT AVENUE WILL BE CLOSED TEMPORARILY FOR ADDITIONAL WORK INCLUDING:
 - A. INSTALLATION OF THREE NEW TRACKS.
 - B. EXTENSION OF GRADE ADAPTATION TO ACCOUNT FOR NEW TRACKS.
 - C. UTILITY REVISIONS.
 - D. EXTENSION OF REPAVING, CURB & GUTTER, 4' GRASS STRIP, AND 6' SIDEWALK.
5. MERRIMAN AVENUE WILL BE CLOSED TEMPORARILY FOR ADAPTATIONS TO BLEND WITH REQUIRED CHANGES ON SUMMIT AVENUE. THESE CHANGES WILL INCLUDE :
 - A. GRADE ADAPTATIONS.
 - B. REPAVING, CURB & GUTTER, 6' SIDEWALK, AND 4' GRASS STRIP.
 - C. ADAPTATION OF UTILITIES AND STORM DRAINAGE SYSTEMS.
6. WINONA STREET WILL HAVE THE FOLLOWING CHANGES ;
 - A. DEMOLITION OF STREET EXTENSION WITHIN PROJECT LIMITS AND ADDITION OF GUARD RAIL.
 - B. REVISIONS OF UTILITIES TO SERVE THE NEW MAINTENANCE BUILDING.
7. GRAHAM STREET WILL, HAVE THE FOLLOWING IMPROVEMENTS;
 - A. A NEW 6' SIDEWALK AND 4' GRASS STRIP ON THE WEST SIDE OF THE STREET IN FRONT OF THE FORMER FERGUSON HARDWARE PROPERTY.
8. PENMAN STREET WILL HAVE NO IMPROVEMENTS IN THIS PHASE.
9. PALMER STREET WILL HAVE NO IMPROVEMENTS IN THIS PHASE.
10. STORM SYSTEM WILL HANDLE STORMWATER RUNOFF IN COMPLIANCE WITH APPLICABLE REGULATIONS, WILL RESTRICT FLOW VOLUMES AND RATES TO NO MORE THAN CURRENT LEVELS, AND WILL IMPROVE OVERALL WATER QUALITY LEAVING THE SITE.
11. SITE LIGHTING WILL COMPLY WITH CITY STANDARDS.



1 PROJECT BUILD-OUT STAKING & MATERIALS PLAN
1" = 100'-0"
0 100 500

SCALE:

DATE:

80% SCHEM. DESIGN: _____

75% DESIGN DEVEL.: _____

100% CONSTR. DOC.: _____

PRE-BID REVISIONS: _____

RAIL DIVISION

LOCOMOTIVE & RAILCAR MAINTENANCE FACILITY

Phase 1A

Charlotte Railroad Improvement & Safety Program

CRISP

Charlotte Railroad Improvement & Safety Program

RAIL DIVISION

LOCOMOTIVE & RAILCAR MAINTENANCE FACILITY

Charlotte, North Carolina

SCO PROJECT NUMBER: 100863403

NSA PROJECT NUMBER: 1102

SHEET TITLE: PROJECT BUILD-OUT STKG. & MAT.

SHEET NUMBER: C3.1

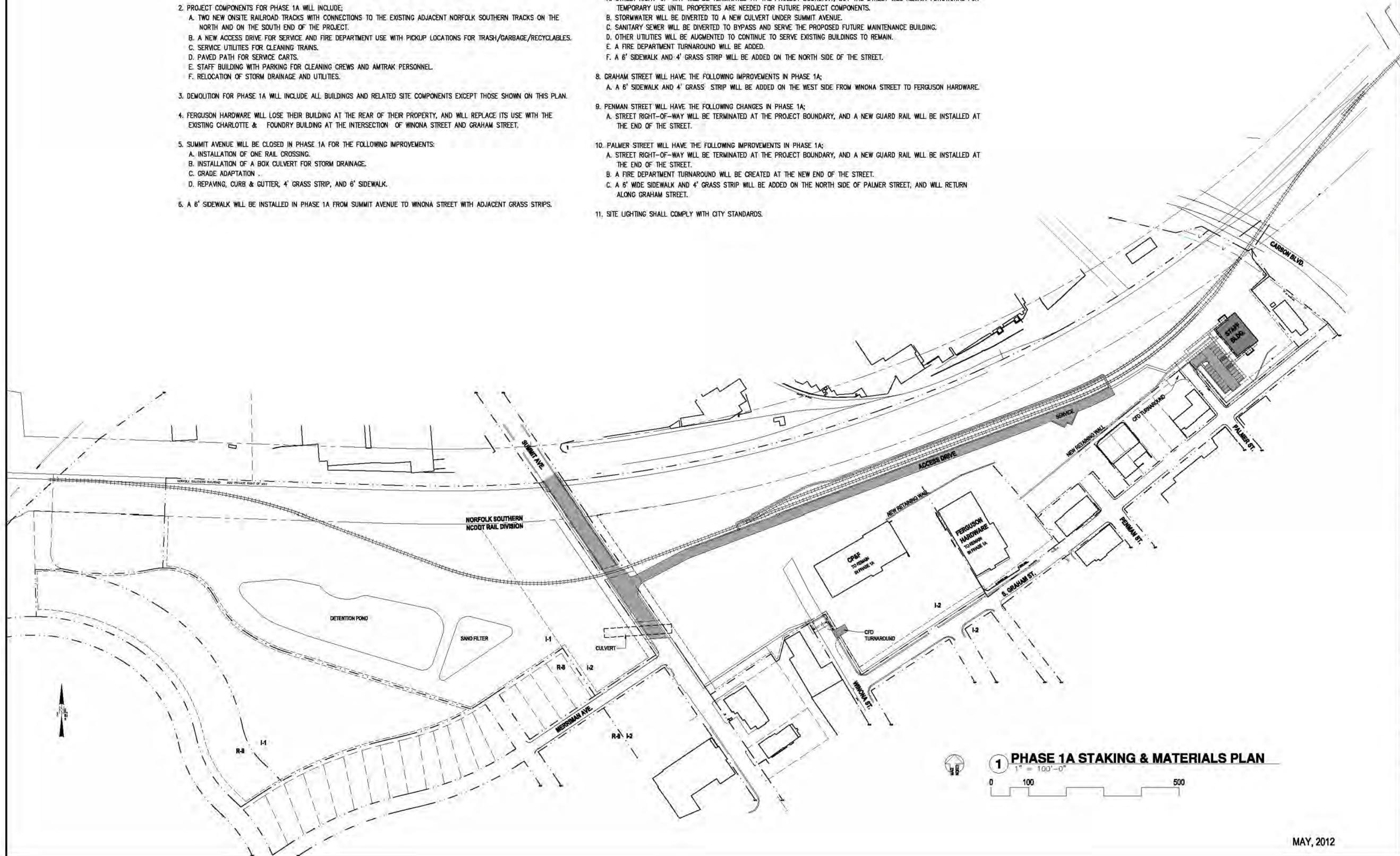
PROJECT COMPONENT:

SITE

MAY, 2012

NOTES FOR PHASE 1A

1. PHASE 1A IS THE INITIAL PHASE OF A TOTAL PROJECT BUILD-OUT AS SHOWN ON SHEET C3.1.
2. PROJECT COMPONENTS FOR PHASE 1A WILL INCLUDE:
 - A. TWO NEW ONSITE RAILROAD TRACKS WITH CONNECTIONS TO THE EXISTING ADJACENT NORFOLK SOUTHERN TRACKS ON THE NORTH AND ON THE SOUTH END OF THE PROJECT.
 - B. A NEW ACCESS DRIVE FOR SERVICE AND FIRE DEPARTMENT USE WITH PICKUP LOCATIONS FOR TRASH/GARBAGE/RECYCLABLES.
 - C. SERVICE UTILITIES FOR CLEANING TRAINS.
 - D. PAVED PATH FOR SERVICE CARTS.
 - E. STAFF BUILDING WITH PARKING FOR CLEANING CREWS AND AMTRAK PERSONNEL.
 - F. RELOCATION OF STORM DRAINAGE AND UTILITIES.
3. DEMOLITION FOR PHASE 1A WILL INCLUDE ALL BUILDINGS AND RELATED SITE COMPONENTS EXCEPT THOSE SHOWN ON THIS PLAN.
4. FERGUSON HARDWARE WILL LOSE THEIR BUILDING AT THE REAR OF THEIR PROPERTY, AND WILL REPLACE ITS USE WITH THE EXISTING CHARLOTTE & FOUNDRY BUILDING AT THE INTERSECTION OF WINONA STREET AND GRAHAM STREET.
5. SUMMIT AVENUE WILL BE CLOSED IN PHASE 1A FOR THE FOLLOWING IMPROVEMENTS:
 - A. INSTALLATION OF ONE RAIL CROSSING.
 - B. INSTALLATION OF A BOX CULVERT FOR STORM DRAINAGE.
 - C. GRADE ADAPTATION .
 - D. REPAVING, CURB & GUTTER, 4' GRASS STRIP, AND 6' SIDEWALK.
6. A 6' SIDEWALK WILL BE INSTALLED IN PHASE 1A FROM SUMMIT AVENUE TO WINONA STREET WITH ADJACENT GRASS STRIPS.
7. WINONA STREET WILL HAVE THE FOLLOWING CHANGES IN PHASE 1A:
 - A. STREET RIGHT-OF-WAY WILL BE TERMINATED AT THE PROJECT BOUNDARY, BUT THE STREET WILL REMAIN FUNCTIONAL FOR TEMPORARY USE UNTIL PROPERTIES ARE NEEDED FOR FUTURE PROJECT COMPONENTS.
 - B. STORMWATER WILL BE DIVERTED TO A NEW CULVERT UNDER SUMMIT AVENUE.
 - C. SANITARY SEWER WILL BE DIVERTED TO BYPASS AND SERVE THE PROPOSED FUTURE MAINTENANCE BUILDING.
 - D. OTHER UTILITIES WILL BE AUGMENTED TO CONTINUE TO SERVE EXISTING BUILDINGS TO REMAIN.
 - E. A FIRE DEPARTMENT TURNAROUND WILL BE ADDED.
 - F. A 6' SIDEWALK AND 4' GRASS STRIP WILL BE ADDED ON THE NORTH SIDE OF THE STREET.
8. GRAHAM STREET WILL HAVE THE FOLLOWING IMPROVEMENTS IN PHASE 1A:
 - A. A 6' SIDEWALK AND 4' GRASS STRIP WILL BE ADDED ON THE WEST SIDE FROM WINONA STREET TO FERGUSON HARDWARE.
9. PENMAN STREET WILL HAVE THE FOLLOWING CHANGES IN PHASE 1A:
 - A. STREET RIGHT-OF-WAY WILL BE TERMINATED AT THE PROJECT BOUNDARY, AND A NEW GUARD RAIL WILL BE INSTALLED AT THE END OF THE STREET.
10. PALMER STREET WILL HAVE THE FOLLOWING IMPROVEMENTS IN PHASE 1A:
 - A. STREET RIGHT-OF-WAY WILL BE TERMINATED AT THE PROJECT BOUNDARY, AND A NEW GUARD RAIL WILL BE INSTALLED AT THE END OF THE STREET.
 - B. A FIRE DEPARTMENT TURNAROUND WILL BE CREATED AT THE NEW END OF THE STREET.
 - C. A 6' WIDE SIDEWALK AND 4' GRASS STRIP WILL BE ADDED ON THE NORTH SIDE OF PALMER STREET, AND WILL RETURN ALONG GRAHAM STREET.
11. SITE LIGHTING SHALL COMPLY WITH CITY STANDARDS.



1 PHASE 1A STAKING & MATERIALS PLAN
1" = 100'-0"
0 100 500

SCALE:

DATE:

30% SCHEM. DESIGN:

75% DESIGN DEVEL.:

100% CONSTR. DOC.:

PRE-BID REVISIONS:



Phase 1A

CRISP
Charlotte Railroad Improvement & Safety Program

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
RAIL DIVISION

LOCOMOTIVE & RAILCAR MAINTENANCE FACILITY
Charlotte, North Carolina

SCO PROJECT NUMBER	100863403
NSA PROJECT NUMBER	1102
SHEET TITLE	PHASE 1A STAKING & MATERIALS
SHEET NUMBER	C3
PROJECT COMPONENT	SITE

This page left intentionally blank.



APPENDIX C

Air Quality



North Carolina Department of Environment and Natural Resources

Division of Air Quality

Beverly Eaves Perdue
Governor

Sheila C. Holman
Director

Dee Freeman
Secretary

February 24, 2012

Mr. Terry L. Winebrenner, P.E.
Vice President
Gannett Fleming, Inc.
1121 Situs Court Suite 170
Raleigh, N.C. 27606-4279

Dear Mr. Winebrenner:

The Division of Air Quality has reviewed the report titled *Record of Non-Applicability for General Conformity for the Norfolk Southern Mainline Track Improvement Project (TIP Project No. P-3800) & Locomotive and Railcar Maintenance Facility (TIP P-2918)*. The second revision of this report was submitted electronically to the Division of Air Quality on November 7, 2011. Although these projects could be evaluated separately without concern about project segmentation, they were evaluated together for convenience and consistency with previous plans. It has been demonstrated that the direct and indirect emissions increases due to the projects are less than the threshold of 100 tons per year of carbon monoxide, nitrogen oxides, or volatile organic compounds as specified in 40 CFR 93.153(b) and NCAC 2D.1603(a). Therefore, the projects are not considered to be significant for the purposes of general conformity and the projects comply with the Federal and State general conformity rules.

If you have any questions about this review please contact Bob Wooten at (919) 707-8704.

Sincerely,

Sheila C. Holman

SCH/rw

cc: Michael Abraczinskas
Laura Boothe
Marc Hamel
Ryan White
Don Willard
Ron Slack

Krokonko, Michael A.

From: Winebrenner, Terry
Sent: Monday, November 07, 2011 3:28 PM
To: Wooten, Bob
Cc: White, Ryan L; Boothe, Laura; Pollack, Travis C.; Sodemann, Jasmine R.; Winebrenner, Terry
Subject: RE: Norfolk Southern Mainline Track Improvements Project P-3800
Attachments: NS Mainline RONA_11.7.2011.pdf

Mr. Wooten

Attached for your review and approval is a revised version of our Record of Non-Applicability (RONA) for the Norfolk Southern Mainline Track Improvements Project (TIP Project No. P-3800). As mentioned in our e-mail of August 5th (shown below), this RONA has been revised to reflect a larger Locomotive and Railcar Maintenance Facility (LRMF). We have also revised the RONA report cover to indicate this November 7, 2011 revision.

It should be noted that the larger LRMF is now known as TIP project No. P-2918, but included in this RONA due to being contiguous with P-3800. The LRMF will have a stand-alone Purpose & Need and will also have a separate NEPA document. You will notice in the attached RONA, in order to allow greater detail in estimating construction activities, we have divided the evaluation of emissions into three portions: North, South, and Maintenance Facility.

Please let me know if you have any questions.

Terry L. Winebrenner, P.E. | Vice President

Gannett Fleming, Inc.

1121 Situs Court Suite 170, Raleigh, NC 27606-4279

Office: 919.859.4880 ext. 8463 | Mobile: 919.368.6669

E-Mail: twinebrenner@gfnet.com

Excellence Delivered As Promised

Gannett Fleming is ISO 9001:2008 Certified.

www.gannettfleming.com | Stay connected: [Twitter](#) | [Facebook](#) | [LinkedIn](#)

CONFIDENTIALITY NOTICE: This email and any attachments may contain confidential information for the use of the named addressee. If you are not the intended recipient, you are hereby notified that you have received this communication in error and that any review, disclosure, dissemination, distribution or copying of it or its contents is prohibited.

From: Wooten, Bob [<mailto:bob.wooten@ncdenr.gov>]

Sent: Thursday, August 04, 2011 6:40 PM

To: Winebrenner, Terry

Cc: White, Ryan L; Hamel, Marc L; Abraczinskas, Michael; Boothe, Laura; Slack, Ron; don.willard@mecklenburgconc.gov

Subject: Norfolk Southern Mainline Track Improvements Project P-3800

Mr. Winebrenner,

Attached is a scanned copy of the letter signed by Sheila Holman approving the demonstration that project No. P-3800 is not significant with respect to general conformity rules.

Please contact me if you have any questions or concerns.

Sincerely,

Bob Wooten

Email correspondence to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties unless the content is exempt by statute or other regulation.

Please note that my email address has changed to bob.wooten@ncdenr.gov

Robert E. Wooten, Jr., P.E., Environmental Engineer
NC DENR, Division of Air Quality
Planning Section, Attainment Planning Branch
1641 Mail Service Center, Raleigh, NC 27699-1641
Phone: (919) 733-1815
Fax: (919) 715-7476
www.ncair.org

E-mail correspondence to and from this address may be subject to the
North Carolina Public Records Law and may be disclosed to third parties.



APPENDIX D

Noise & Vibration

Screening and General Noise Assessment

Locomotive & Railcar Maintenance Facility (P-2918F)

Screening and General Noise Assessment

Gannett Fleming, Inc. conducted a Screening and General Noise Assessment for the Locomotive & Railcar Maintenance Facility (LRMF) project.

The purpose of the Proposed Action is to construct a new passenger rail maintenance facility in Charlotte that will serve the increasing number of conventional passenger trains and support the federally designated SEHSR corridor. The proposed project would construct a new locomotive and railcar maintenance facility to replace the current facility located adjacent to the Norfolk Southern Railway (NS) Charlotte Yard. The new facility will include the following elements:

- Enclosed facility for major maintenance operations
- Fuel pad and onsite fuel tank
- Additional space for the storage of spare parts and equipment
- Enclosed train wash facility
- Train crew base for up to 20 crew members

1.0 Introduction

Noise is typically defined as unwanted or undesirable sound, where sound is characterized by small air pressure fluctuations above and below the atmospheric pressure. The basic parameters of environmental noise that affect human subjective response are: (1) intensity or level; (2) frequency content; and (3) variation with time. Intensity or level is determined by how greatly the sound pressure fluctuates above and below the atmospheric pressure, and is expressed on a compressed scale in units of decibels. By using this scale, the range of normally encountered sound can be expressed by values between 0 and 120 decibels. On a relative basis, a 3-decibel change in sound level generally represents a barely-noticeable change outside the laboratory, whereas a 10-decibel change in sound level would typically be perceived as a doubling (or halving) in the loudness of a sound.

The frequency content of noise is related to the tone or pitch of the sound, and is expressed based on the rate of the air pressure fluctuation in terms of cycles per second (called Hertz and abbreviated as Hz). The human ear can detect a wide range of frequencies from about 20 Hz to 17,000 Hz. However, because the sensitivity of human hearing varies with frequency, the A-weighting system is commonly used when measuring environmental noise to provide a single number descriptor that correlates with human subjective response. Sound levels measured using this weighting system are called “A-weighted” sound levels, and are expressed in decibel notation as “dBA.” The A-weighted sound level is widely accepted by acousticians as a proper unit for describing environmental noise.

Because environmental noise fluctuates from moment to moment, it is common practice to condense all of this information into a single number, called the “equivalent” sound level (L_{eq}). L_{eq} can be thought of as the steady sound level that represents the same sound energy as the varying sound levels over a specified time period (typically 1 hour or 24 hours). Often the L_{eq} values over a 24-hour period are used to calculate cumulative noise exposure in terms of the Day-Night Sound Level (L_{dn}). L_{dn} is the A-weighted L_{eq} for a 24-hour period with an added 10-

decibel penalty imposed on noise that occurs during the nighttime hours (between 10 PM and 7 AM). Many surveys have shown that L_{dn} is well correlated with human annoyance, and therefore this descriptor is widely used for environmental noise impact assessments. Figure 1 provides examples of typical noise environments and criteria in terms of L_{dn} . While the extremes of L_{dn} are shown to range from 50 dBA in a small residential environment to 80 dBA in noisy urban environments, L_{dn} is generally found to range between 55 dBA and 75 dBA in most communities.

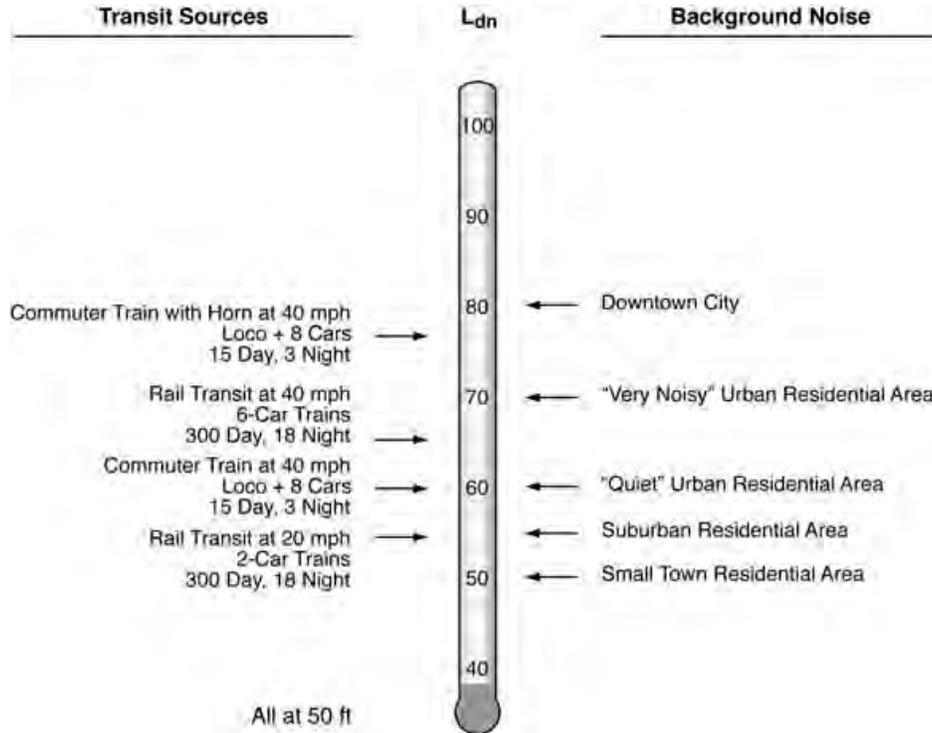


Figure 1– Typical Transit and Background L_{dn} Sound Levels
 Source: *Transit Noise and Vibration Impact Assessment, Federal Transit Administration, May 2006*

2.0 Methodology

The Screening and General Noise Assessments were conducted in accordance with methodologies contained in the Federal Transit Administration’s (FTA) *Transit Noise and Vibration Impact Assessment Manual*, dated May 2006 (FTA, 2006). The initial review of the project aerial maps determined noise sensitive areas and/or receivers of interest were present within or adjacent to the proposed action.

The noise criteria and descriptors used by the FTA to determine impacts depend on land use (Table 1). Residences along the project area were identified as Land Use Category 2. Category 2 consists of buildings where people normally sleep (e.g. residences, hospitals). Therefore, nighttime sensitivity to noise is of utmost importance.

The noise metric used for Category 2 land use is the L_{dn} , the day-night sound level. The L_{dn} descriptor is commonly used by federal agencies to determine the cumulative noise impact for

residential land uses. L_{dn} is defined as the cumulative 24-hour noise exposure that accounts for the moment to moment fluctuations in A-weighted levels from all sound sources during a 24-hour period.

The L_{dn} is the descriptor of choice because it correlates well with surveys measuring the public attitude towards noise impacts, increases with the duration of transit events, and considers the number of transit events over a full day. The L_{dn} accounts for increased sensitivity to noise at night by increasing nighttime noise (between 10:00 PM and 7:00 AM) by 10 decibels before totaling.

The FTA Noise Impact Criteria define the severity of impact for various noise exposure levels for Category 2 land uses (Tables 2 and 3). The criteria are based on a comparison of existing and future project related outdoor noise levels. They incorporate both absolute criteria (noise from the proposed project alone), and relative criteria (annoyance as a result of project induced changes in noise levels). Impacts are assessed based on a combination of the existing ambient noise exposure and the additional noise exposure from the project, which have been determined to be noise levels exceeding 65 dBA and an increase of 3 dBA above existing sound levels.

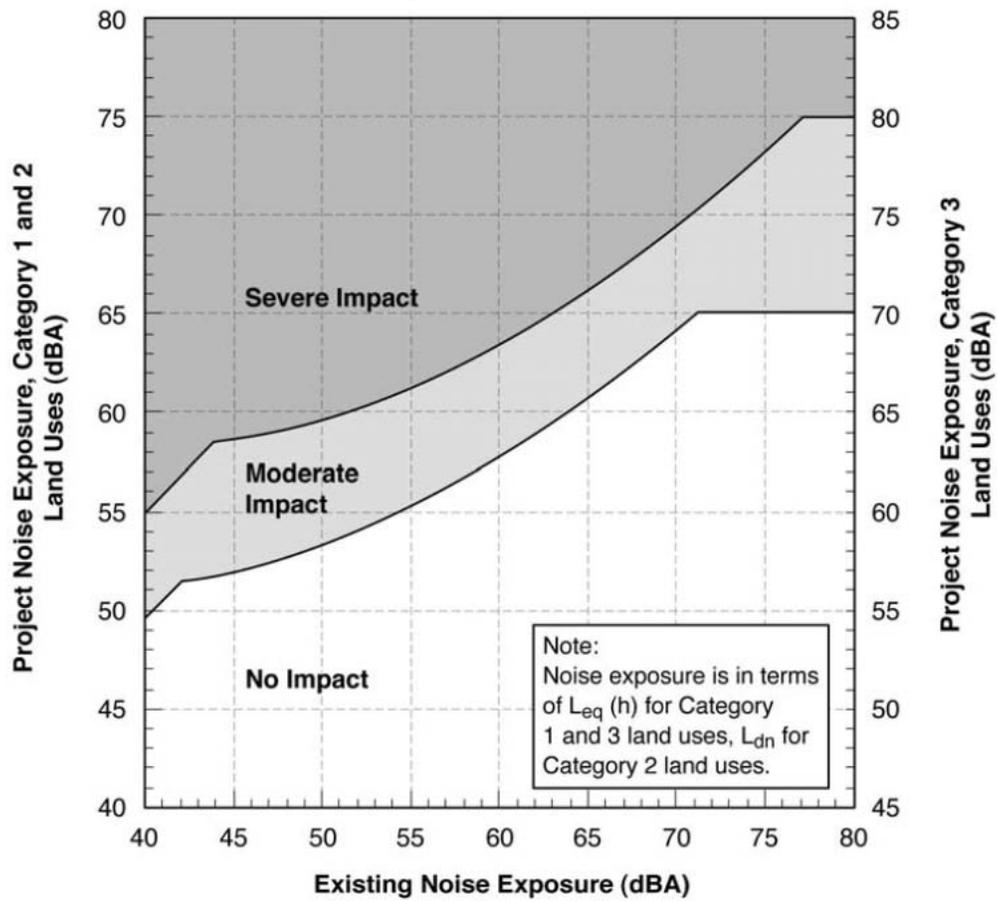
Table 1 – Land Use Categories and Metrics for Transit Noise Impact Criteria

<i>Land Use Category</i>	<i>Noise Metric (dBA)</i>	<i>Description of Land Use Category</i>
1	Outdoor $L_{eq(h)}$ *	Tracts of land where quiet is an essential element in their intended purpose. This category includes lands set aside for serenity and quiet and such land uses as outdoor theater and concert pavilions.
2	Outdoor L_{dn}	Residences and buildings where people normally sleep. This category includes homes, hospitals and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance.
3	Outdoor $L_{eq(h)}$ *	Institutional land uses with primarily daytime and evening use. This category includes schools, libraries, and churches where it is important to avoid interference with such activities as speech, meditation and concentration on reading material. Active parks. Buildings with interior spaces where quiet is important, such as medical offices and conference rooms, recording studios and concert halls, fall into this category. Places of worship, meditation or study associated with cemeteries, monuments, museums and certain historical sites are also included.

* L_{eq} for the noisiest hour of transit-related activity during hours of noise sensitivity.

Source: Transit Noise and Vibration Impact Assessment, Federal Transit Administration, May 2006

Table 2 – Noise Impact Criteria for Transit Projects



Source: Transit Noise and Vibration Impact Assessment, Federal Transit Administration, May 2006

Table 3 – Noise Levels Defining Impact for Transit Projects

Existing Noise Exposure $L_{eq}(h)$ or L_{dn} (dBA)	Project Noise Impact Exposure, ¹ $L_{eq}(h)$ or L_{dn} (dBA)					
	Category 1 or 2 Sites			Category 3 Sites		
	No Impact	Moderate Impact	Severe Impact	No Impact	Moderate Impact	Severe Impact
<43	< Ambient+10	Ambient + 10 to 15	> Ambient+ 15	< Ambient+ 15	Ambient + 15 to 20	> Ambient+ 20
43	<52	52-58	>58	<57	57-63	>63
44	<52	52-58	>58	<57	57-63	>63
45	<52	52-58	>58	<57	57-63	>63
46	<53	53-59	>59	<58	58-64	>64
47	<53	53-59	>59	<58	58-64	>64
48	<53	53-59	>59	<58	58-64	>64
49	<54	54-59	>59	<59	59-64	>64
50	<54	54-59	>59	<59	59-64	>64
51	<54	54-60	>60	<59	59-65	>65
52	<55	55-60	>60	<60	60-65	>65
53	<55	55-60	>60	<60	60-65	>65
54	<55	55-61	>61	<60	60-66	>66
55	<56	56-61	>61	<61	61-66	>66
56	<56	56-62	>62	<61	61-67	>67
57	<57	57-62	>62	<62	62-67	>67
58	<57	57-62	>62	<62	62-67	>67
59	<58	58-63	>63	<63	63-68	>68
60	<58	58-63	>63	<63	63-68	>68
61	<59	59-64	>64	<64	64-69	>69
62	<59	59-64	>64	<64	64-69	>69
63	<60	60-65	>65	<65	65-70	>70
64	<61	61-65	>65	<66	66-70	>70
65	<61	61-66	>66	<66	66-71	>71
66	<62	62-67	>67	<67	67-72	>72
67	<63	63-67	>67	<68	68-72	>72
68	<63	63-68	>68	<68	68-73	>73
69	<64	64-69	>69	<69	69-74	>74
70	<65	65-69	>69	<70	70-74	>74
71	<66	66-70	>70	<71	71-75	>75
72	<66	66-71	>71	<71	71-76	>76
73	<66	66-71	>71	<71	71-76	>76
74	<66	66-72	>72	<71	71-77	>77
75	<66	66-73	>73	<71	71-78	>78
76	<66	66-74	>74	<71	71-79	>79
77	<66	66-74	>74	<71	71-79	>79
>77	<66	66-75	>75	<71	71-80	>80

¹ L_{dn} is used for land use where nighttime sensitivity is a factor; L_{eq} during the hour of maximum transit noise exposure is used for land use involving only daytime activities.

Source: Transit Noise and Vibration Impact Assessment, Federal Transit Administration, May 2006

3.0 General Noise Assessment

The FTA recommends applying a screening procedure to determine if there is a likelihood of noise impact from a project. The areas defined by the screening distances are meant to be sufficiently large to encompass all potentially impacted locations. They were determined using relatively high-capacity scenarios for a given project type. The FTA screening distance is 1,000 feet for unobstructed line of sight according to FTA guideline. Based on aerial photography and field trips to the project site, there are several residential communities adjacent to the proposed Locomotive Railcar and Maintenance Facility that are within 1,000 feet from the maintenance facility.

There are significant sources of existing noise along this area near West Summit Avenue, including the existing NS mainline, I-77 and I-277 freeways, and Charlotte Pipe & Foundry. Noise measurements of NS and Amtrak train operations on this corridor were conducted to assess ambient sound levels caused by both freight and passenger train operations.

The rail mainline in this area is primarily used for the transport of heavy freight including containers, gravel, and other heavy loads. The trains using this line are typically long trains which make heavy freight the dominant noise source on this rail line. In addition, the corridor is also used for Amtrak passenger service specifically 2 daily trips between New York City and New Orleans (Crescent trains #19 and #20). In addition, existing Piedmont (trains #73, #74, #75 and #76) and Carolinian (trains #79 and #80) services terminate at the NS Charlotte Yard, approximately 2 miles north of the proposed LRMF site

Description of the Locomotive & Railcar Maintenance Facility

The Locomotive and Railcar Maintenance Facility is proposed to be constructed near West Summit Avenue, adjacent to the existing NS railroad right-of-way and across from Charlotte Pipe & Foundry. The facility would have two service tracks that will pass through a building to allow for cleaning, refueling and servicing of passenger trains. In a future expansion the state would also construct one layover track on the east side of the service building, with a layover or runaround track on the west side of the service building. The Locomotive and Railcar Maintenance Facility will be the primary service location for the future SEHSR train sets. Some major overnight service of state-sponsored *Piedmont* trains will also occur at NCDOT's Capital Yard in Raleigh.

The Charlotte Locomotive and Railcar Maintenance Facility would include construction of a lead track that would begin north of the I-77 NS Bridge. The Maintenance Facility track would branch into two tracks serving the service building, plus one layover track (for train storage) and one layover/runaround track. Heading north, the lead track would also serve the east side of the proposed main Charlotte Gateway Station platform before connecting back to the new third mainline track south of NS milepost 377. The four tracks at the Maintenance Facility would all cross West Summit Avenue at-grade (Crossing No. 716 172N, NS milepost 378.4), with the service building and other structures located on the north side of West Summit Avenue, and wash facility located on the south side of West Summit Avenue. The Facility would include a service building, a crew base building to accommodate train crews, train parts storage, refueling equipment, train wash equipment, and parking for crew and employees.

The new Maintenance Facility would not only replace the current Charlotte facility but would also complement the existing Capital Yard maintenance facility in Raleigh. The new Charlotte Maintenance Facility will service a majority of NCDOT sponsored trains, while trains that layover in Raleigh would continue to be serviced at Capital Yard.

Locomotive & Railcar Maintenance Facility Noise Analysis

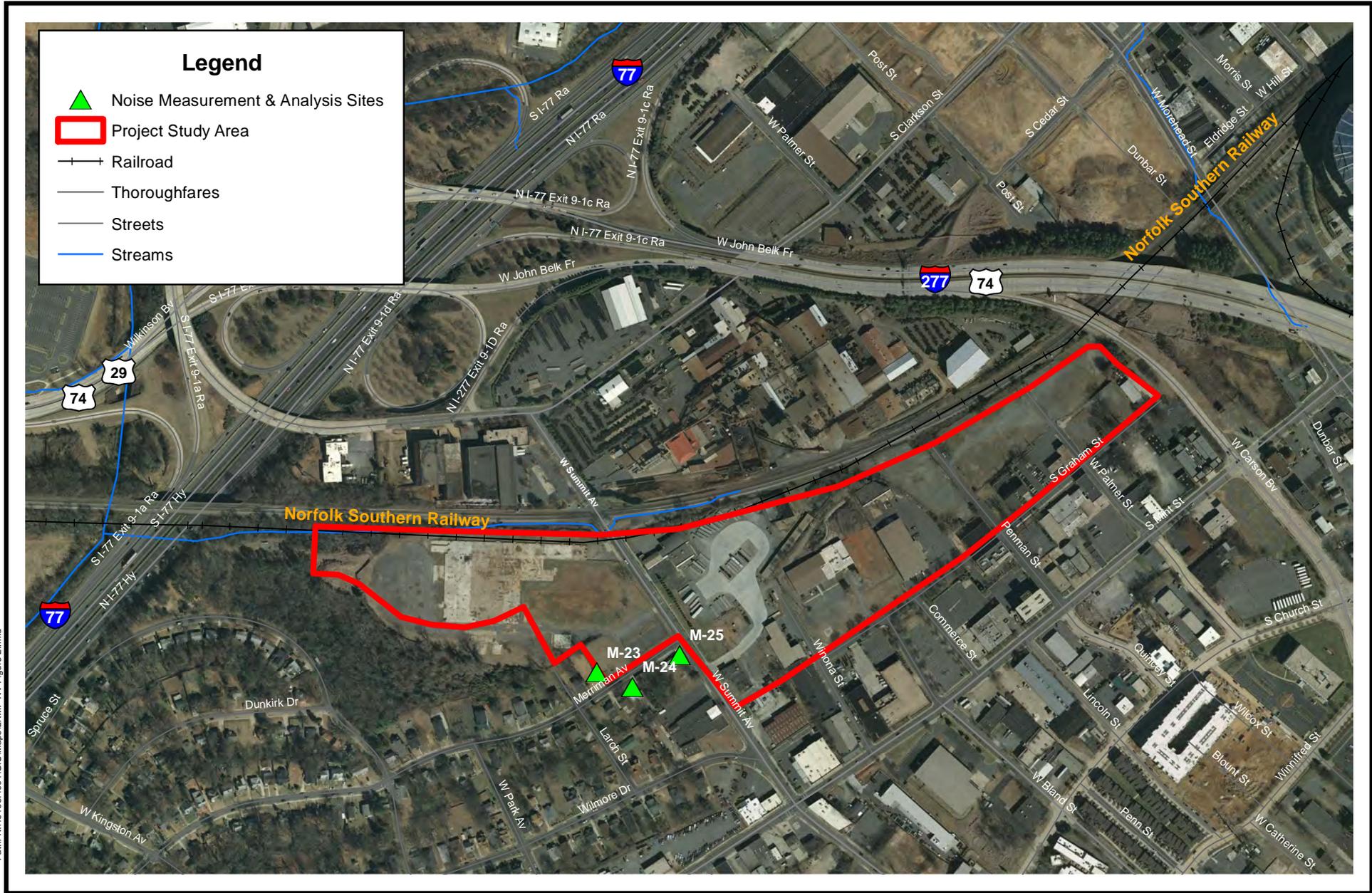
Existing noise levels were assessed based on noise measurements collected at representative sites. The sites selected for noise monitoring were chosen based on a review of the proposed site layout and track alignment of the proposed LRMF. These measurements were used for a comparison to future noise levels in the area and to address possible impact of the proposed facility. These sites consisted mainly of residential dwellings and some institutional land use; they were considered representative properties providing typical ambient noise conditions within the communities bordering the proposed project.

All of the field measurements were collected in accordance with the procedures described in *Sound Procedures for Measuring Highway Noise* (Report Number FHWA-DP-45_1R May 1996) and in *Transit Noise and Vibration Impact Assessment* (May 2006). A calibrated set of Rion and Larson Davis noise measuring equipment was used in the study, including Types Rion NA-28 and NA-27 and Larson Davis (LD) 706. The Rion equipment was used for all short-term peak hour noise readings. For collecting long-term noise measurements, LD noise meter instruments suitable for 24-hour noise monitoring were employed. Each meter was contained in a weatherproof case. All noise measurements were collected under acceptable weather and roadway conditions (rain free days with dry roadway pavements and wind speed less than 12 mph).

The noise measurements were collected at three sites. Table 4 shows the results of the ambient sound levels and Figure 2 shows the location of the measurements sites.

Table 4 – Summary of Existing Sound Levels (dBA)

Site Number	Land Use	Date of Measurement	Existing Sound Levels (dBA)
M-23	Residential	7/13/2011	72
M-24	Residential	7/13/2011	72
M-25	Institutional	7/13/2011	72



Path: K:\49468_4001\GIS\Maps\LRMF_NV Figure 2.mxd

Charlotte Railroad Improvement & Safety Program (CRISP)
 Locomotive and Railcar Maintenance Facility Project
 TIP No. P-2918F

Data courtesy of Charlotte-Mecklenburg Geospatial Information Services



Noise Measurement & Analysis Sites

Mecklenburg County, North Carolina
 August 2012

Figure
 2

The future noise levels were estimated following procedures presented in the FTA 2006 Transit Noise and Vibration Guidance Manual. The procedure predicts vehicle noise emission and quantifies the attenuation of sound as it travels from the vehicle to noise-sensitive receptor locations along the right of way. The propagation assumptions generally are conservative and tend to result in an over-prediction of noise exposure.

The FTA spreadsheet model was used to calculate the future sound levels at three representative properties. Noise impact is assessed based on a combination of the existing ambient noise exposure and the additional noise exposure that would be caused by the project. The existing ambient noise exposure levels were measured as shown in Table 4. The project predicted noise levels were calculated based on the 2020 projected additional trains. A typical Amtrak train consisted of 1 locomotive and 7 railcars with a maximum speed of 5 mph.

Table 5 shows future sound level predictions that are based on Amtrak passenger train activities while crossing West Summit Avenue and activities at the LRMF, while Table 6 shows future sound level based on activities at the LRMF only. Furthermore, the FTA moderate and severe impact levels are shown for each site based on existing sound levels, as well as the project predicted noise levels. In addition, Tables 5 and 6 show the total noise exposure, which a summation of the existing and the project predicted sound levels, as well as the increase over existing based on the total exposure sound levels.

Table 5 – Summary of Future Sound Levels from LRMF and Passenger Trains (dBA)

Site ID	Existing Noise Levels (dBA)	Distance to LRMF (feet)	Distance to LRMF Tracks (feet)	FTA Moderate Impact Threshold Levels (dBA)	FTA Severe Impact Threshold Levels (dBA)	LRMF Predicted Noise Levels (dBA)	Total Noise Exposure (dBA)
M-23	72	460	280	66	72	68	73
M-24	72	410	330	66	72	67	73
M-25	72	250	210	66	72	62	72
FTA Moderate Impact							

Table 6 – Summary of Future Sound Levels from LRMF only (dBA)

Site ID	Existing Noise Levels (dBA)	Distance to LRMF (feet)	Distance to LRMF Tracks (feet)	FTA Moderate Impact Threshold Levels (dBA)	FTA Severe Impact Threshold Levels (dBA)	LRMF Predicted Noise Levels (dBA)	Total Noise Exposure (dBA)
M-23	72	460	280	66	72	54	72
M-24	72	410	330	66	72	55	72
M-25	72	250	210	66	72	56	72

The projected noise exposure was calculated and the FTA guideline was used to assess if any impact will occur. Sites M-23 and M-24 are moderately impacted when activities from trains crossing West Summit Avenue and LRMF are combined as shown in Table 5, while none of the sites are impacted when only the LRMF activities is analyzed as shown in Table 6. Moreover, Table 5 shows that the future total noise exposure will have an increase over existing levels that equals 1 dBA at these sites. The existence of moderate impact at these sites is due to the activation of train horn at the West Summit Avenue crossing. Furthermore, the increase in noise levels due to primarily to the trains crossing West Summit Avenue and not the maintenance facility activities. The trains operation is predicted to increase noise levels by 1 dBA at the residential sites as shown in Table 5. Sound level increases of 1 dBA are not perceived by humans. In addition, the potential noise impacts could be mitigated by elimination of the train horn.

4.0 Conclusion

Based on this Screening and General Noise Assessment, future generated noise levels will increase at the sensitive receivers adjacent to the Locomotive & Railcar Maintenance Facility. Two of the sites will have moderate noise impacts. The existence of impacts can be attributed to the activation of the train horn while trains are crossing West Summit Avenue. Furthermore, the increase in noise levels is primarily due to the trains crossing West Summit Avenue and not the maintenance facility activities. Moreover, the noise levels associated with the trains operation would only increase sound levels by 1 dBA at two sites. A sound level increase of 1 dBA is not perceived by humans hence the sound levels generated by the passenger train activity will not have any perceptible impacts on the residences along the corridor. Furthermore, eliminating the train horn at the grade crossing would allow that no impacts will occur and the predicted sound levels will be below existing sound levels.

5.0 References

1. Transit Noise and Vibration Impact Assessment, FTA-VA-90-1003-06, Federal Transit Administration, U.S. Department of Transportation, 2006.

Screening and General Vibration Assessment

Locomotive & Railcar Maintenance Facility (P-2918F)
Screening and General Vibration Assessment

Gannett Fleming, Inc. conducted a Screening and General Vibration Assessment for the Locomotive & Railcar Maintenance Facility (LRMF) project.

The purpose of the Proposed Action is to construct a new passenger rail maintenance facility in Charlotte that will serve the increasing number of conventional passenger trains and support the federally designated SEHSR corridor. The proposed project would construct a new locomotive and railcar maintenance facility to replace the current facility located adjacent to the Norfolk Southern Railway (NS) Charlotte Yard. The new facility will include the following elements:

- Enclosed facility for major maintenance operations
- Fuel pad and onsite fuel tank
- Additional space for the storage of spare parts and equipment
- Enclosed train wash facility
- Train crew base for up to 20 crew members

1.0 Introduction

Ground-borne vibration is the oscillatory motion of the ground about some equilibrium position that can be described in terms of displacement, velocity, or acceleration. Because sensitivity to vibration typically corresponds to the amplitude of vibration velocity within the low-frequency range of most concern for environmental vibration (roughly 5-100 Hz), velocity is the preferred measure for evaluating ground-borne vibration from rail projects.

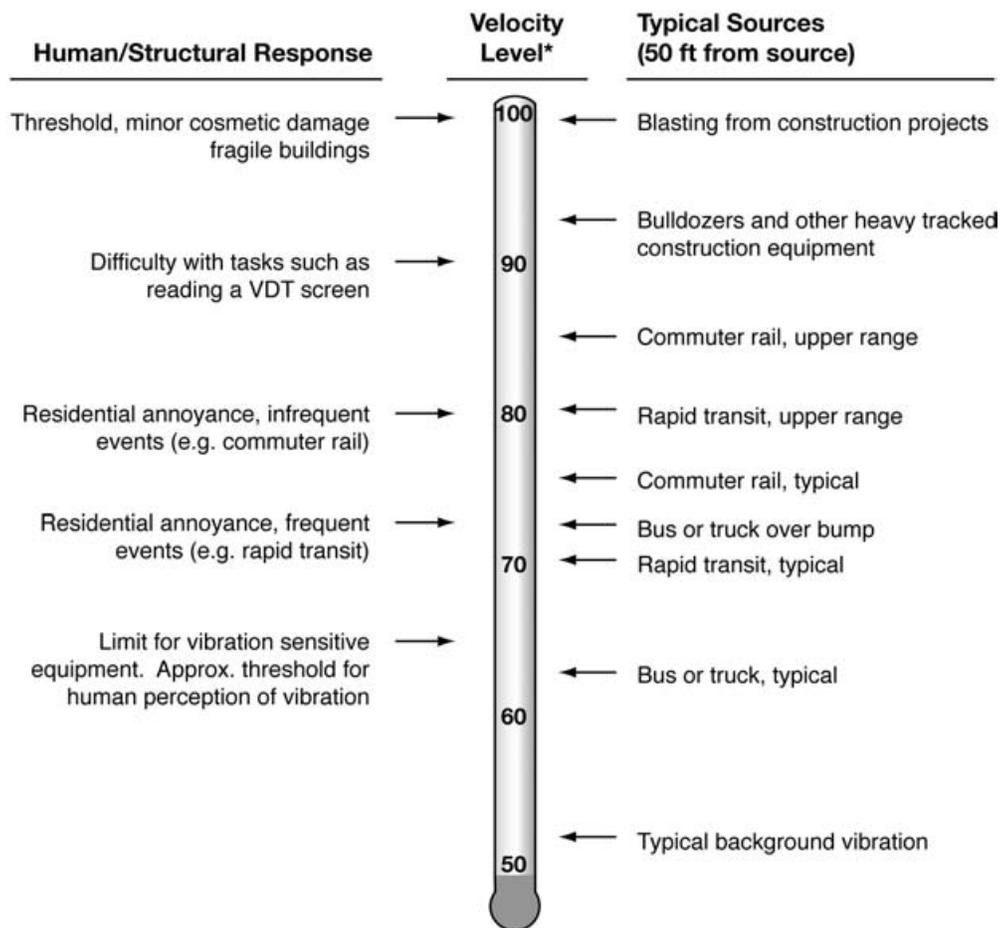
Vibration consists of rapidly fluctuating motions with an average motion of zero. There are several descriptors that can be used to quantify vibration amplitude. The most common measure used to quantify vibration amplitude is the peak particle velocity (PPV), defined as the maximum instantaneous peak of the vibratory motion. PPV is typically used in monitoring blasting and other types of construction-generated vibration since it is related to the stresses experienced by structural components. Although PPV is appropriate for evaluating building damage, it is less suitable for evaluating human response, which is better related to the average vibration amplitude. In a sense, the human body responds to average vibration amplitude. Because the net average of a vibration signal is zero, the root mean square (rms) vibration velocity level, in decibels (VdB), is used to describe the “smoothed” vibration amplitude. Thus, ground-borne vibration levels will be stated in units of vibration decibels (VdB). This unit is equivalent to a velocity of one micro-inch per second (10^{-6} in./sec.). While this is not a universally accepted notation, it is used throughout the Federal Transit Administration (FTA) Guidance manual to reduce the possibility of confusion with sound decibels. Figure 1 illustrates typical ground-borne vibration levels for common sources, as well as criteria for human and structural components.

2.0 Methodology

The Screening and General Vibration Assessments were conducted in accordance with methodologies contained in the Federal Transit Administration’s (FTA) *Transit Noise and Vibration Impact Assessment Manual*, dated May 2006 (FTA, 2006)^[1]. The initial review of the project aerial maps determined vibration sensitive areas and/or receivers of interest were present within or adjacent to the proposed action.

The FTA ground-borne vibration impact criteria are based on land use and train frequency, as shown in Table 1. Vibration sensitive receptors are classified in three categories. Category 1 receptors are those buildings where low ambient vibrations are essential for the operations conducted within the building. An example of Category 1 receptor is a building in which research using electron microscopes is conducted. Category 2 receptors consist of single family residences as well as apartment or townhouse buildings. Category 3 receptors include churches, schools and other commercial buildings that do not house vibration sensitive equipment. Industrial buildings that are mainly used for manufacturing are not included in this category.

There are some buildings, such as concert halls, recording studios, and theaters, which can be very sensitive to vibration, but do not fit into any of the three categories listed above. Due to the sensitivity of these buildings, they usually warrant special attention during the environmental assessment of a rail project and the vibration impact criteria is listed in Table 2.



* RMS Vibration Velocity Level in VdB relative to 10^{-6} inches/second

Figure 1– Typical Ground-Borne Vibration Levels

Source: Transit Noise and Vibration Impact Assessment, Federal Transit Administration, May 2006

Table 1 – Ground-Borne Vibration and Noise Impact Criteria

Land Use Category	Ground-Borne Vibration Impact Levels (VdB re 1 micro inch/sec)		
	Frequent Events ¹	Occasional Events ²	Infrequent Events ³
Category 1: Buildings where vibration would interfere with interior operations.	65 VdB ⁴	65 VdB ⁴	65 VdB ⁴
Category 2: Residences and buildings where people normally sleep.	72 VdB	75 VdB	80 VdB
Category 3: Institutional land uses with primarily daytime use.	75 VdB	78VdB	83 VdB

Notes:

1. “Frequent Events” is defined as more than 70 vibration events of the same source per day. Most rapid transit projects fall into this category.
2. “Occasional Events” is defined as between 30 and 70 vibration events of the same source per day. Most commuter trunk lines have this many operations.
3. “Infrequent Events” is defined as fewer than 30 vibration events of the same kind per day. This category includes most commuter rail branch lines.
4. This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels. Ensuring lower vibration levels in a building often requires special design of the HVAC systems and stiffened floors.
5. Vibration-sensitive equipment is not sensitive to ground-borne noise.

Source: Transit Noise and Vibration Impact Assessment, Federal Transit Administration, May 2006

Table 2 – Ground-Borne Vibration and Noise Impact Criteria for Special Buildings

Type of Building or Room	Ground-Borne Vibration Impact Levels (Vdb Re 1 Micro-Inch/Sec)	
	Frequent Events ¹	Occasional or Infrequent Events ²
Concert Halls	65 VdB	65 VdB
TV Studios	65 VdB	65 VdB
Recording Studios	65 VdB	65 VdB
Auditoriums	72 VdB	80 VdB
Theaters	72 VdB	80 VdB

Notes:

1. “Frequent Events” is defined as more than 70 vibration events per day. Most rapid transit projects fall into this category.
2. “Occasional or Infrequent Events” is defined as fewer than 70 vibration events per day. This category includes most commuter rail systems.
3. If the building will rarely be occupied when the trains are operating, there is no need to consider impact. As an example consider locating a commuter rail line next to a concert hall. If no commuter trains will operate after 7 pm, should be rare that the trains interfere with the use of hall.

Source: Transit Noise and Vibration Impact Assessment, Federal Transit Administration, May 2006

The FTA recommends the following screening procedure to determine if there is a likelihood of vibration impact from a project. The “Vibration Screening Procedure” defined by the FTA follows the flowchart shown in Figure 2.

As per FTA guidelines, the screening distance referred to in Figure 2 is 200 feet for Category 2 receivers (residential). This means that, according to FTA, in the absence of measurements or in-situ testing, it is safe to assume that vibration levels beyond 200 ft. from the track will not cause an impact to residential locations.

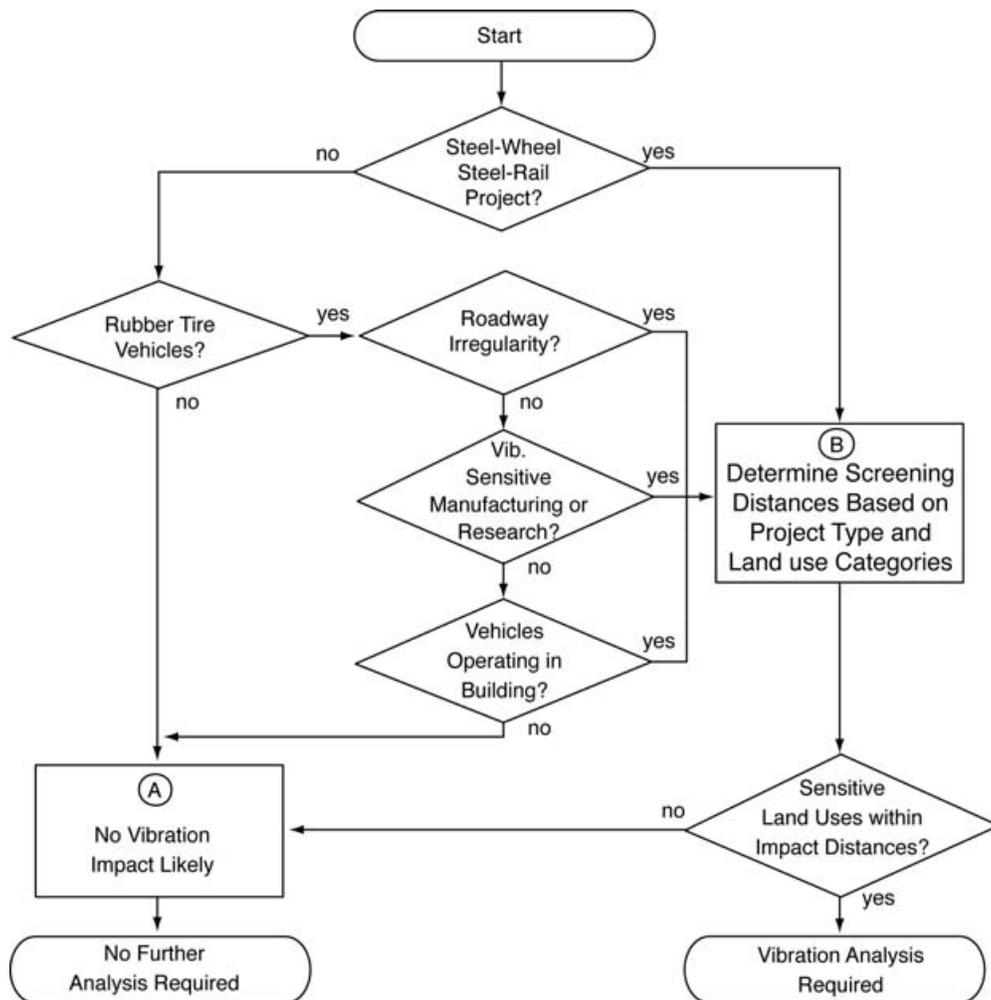


Figure 2– Flow Chart of Vibration Screening Process

Source: Transit Noise and Vibration Impact Assessment, Federal Transit Administration, May 2006

3.0 General Vibration Assessment

The FTA recommends applying a screening procedure to determine if there is a likelihood of vibration impact from a project. The areas defined by the screening distances are meant to be sufficiently large to encompass all potentially impacted locations. They were determined using relatively high-capacity scenarios for a given project type. The FTA screening distance is 200 feet for residences according to FTA guideline. Based on aerial photography and field trips to the project site, there are no residences within 200 feet of the proposed tracks for the LRMF.

There are significant sources of existing ground-borne vibration along this area near West Summit Avenue. In-situ testing of Amtrak train operations in this area was conducted to assess vibration levels caused by passenger train operations. For the purpose of this assessment, rail sources and soil strata remained the same. Existing vibration levels were measured and used as a baseline to predict future vibration levels in the corridor. Vibration measurements have been conducted to address possible impact of track alignment changes.

The rail mainline in this area is primarily used for the transport of heavy freight including containers, gravel and other heavy loads. The trains using this line are typically long trains which makes heavy freight the dominant vibration source on this rail line. In addition, the corridor is also used for Amtrak passenger service, specifically 2 daily trips between New York City and New Orleans (Crescent trains #19 and #20). In addition, existing Piedmont (trains #73, #74, #75 and #76) and Carolinian (trains #79 and #80) services terminate at the NS Charlotte Yard, approximately 2 miles north of the proposed LRMF site. It should be noted that Piedmont trains #75 and #76 began service in June 2010. All these trains will travel through the LRMF project study area in the future.

Description of the Locomotive & Railcar Maintenance Facility

The Locomotive and Railcar Maintenance Facility is proposed to be constructed near West Summit Avenue, adjacent to the existing NS railroad right-of-way and across from Charlotte Pipe & Foundry. The facility would have two service tracks that will pass through a building to allow for cleaning, refueling and servicing of passenger trains. In a future expansion the site would also construct one layover track on the east side of the service building, with a layover or runaround track on the west side of the service building. The Locomotive and Railcar Maintenance Facility will be the primary service location for the future SEHSR train sets. Some major overnight service of state-sponsored *Piedmont* trains will also occur at NCDOT's Capital Yard in Raleigh.

The Charlotte Locomotive and Railcar Maintenance Facility would include construction of a lead track that would begin north of the I-77 NS Bridge. The Maintenance Facility track would branch into two tracks serving the service building, plus one layover track (for train storage) and one layover/runaround track. Heading north, the lead track would also serve the east side of the proposed main Charlotte Gateway Station platform before connecting back to the new third mainline track south of NS milepost 377. The four tracks at the Maintenance Facility would all cross West Summit Avenue at-grade (Crossing No. 716 172N, NS milepost 378.4), with the service building and other structures located on the north side of West Summit Avenue, and wash facility located on the south side of West Summit Avenue. The Facility would include a

service building, a crew base building to accommodate train crews, train parts storage, refueling and train wash equipment, and parking for crew and employees.

The new Maintenance Facility would not only replace the current Charlotte facility but would also complement the existing Capital Yard maintenance facility in Raleigh. The new Charlotte Maintenance Facility will service a majority of NCDOT sponsored trains, while trains that layover in Raleigh would continue to be serviced at Capital Yard.

Locomotive & Railcar Maintenance Facility Analysis

Figure 3 depicts the summary data of Amtrak’s rail operations measured in Charlotte, North Carolina. The figure shows the median vibration level (VdB) at each distance measured and fits a regression line through the data to project fall off rate to further distances. The Amtrak rail operations were measured and found to produce vibration levels of approximately 77 VdB at 100 feet from the track.

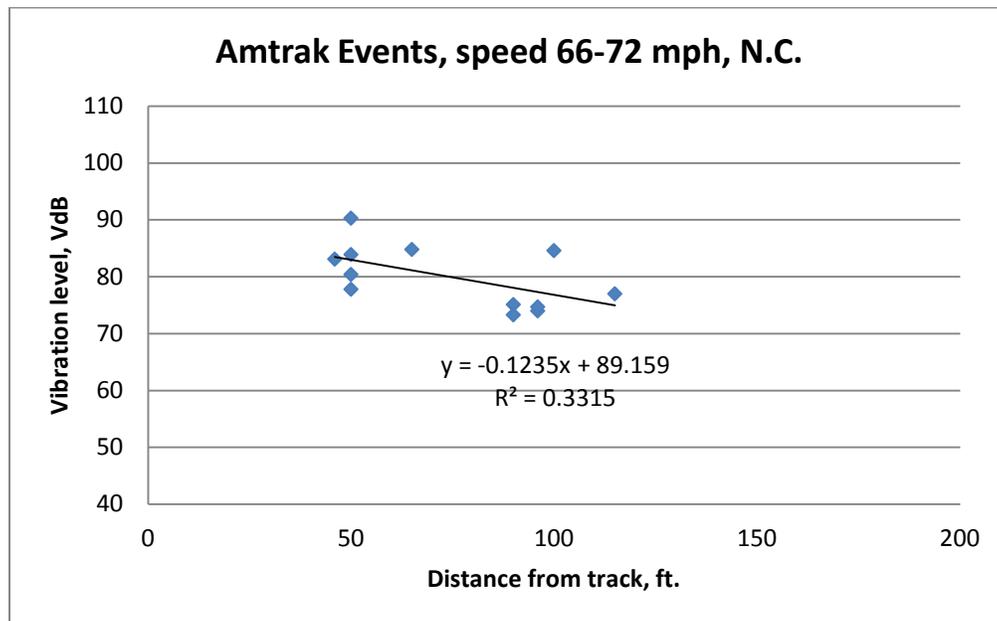


Figure 3—Amtrak Rail Cars Vibration Levels within the NS corridor

As mentioned above in Table 1, the FTA criteria vibration level for infrequent events (less than 30 events) at residential receivers is specified as 80 VdB. The vibration measurements displayed in Figure 3 indicates that Amtrak train sources produce vibration levels that do not exceed the 80 VdB within approximately 100 feet of the track. Beyond this distance, the vibration levels are lower than 80 VdB. Vibration levels are imperceptible at distances greater than 200 feet from the rail and do not cause a residential impact according to the FTA.

According to the FTA guidelines, the impact criteria for fragile buildings, where some flaking of the plaster can occur, is 100 VdB while the vibration level necessary for human

detection is 65 to 70 VdB. Additionally it should be noted that a momentary vibration event will have less impact on humans than a sustained event. In other words, event duration has a significant role on the human perception and most people can tolerate a brief event at higher vibration levels than a sustained event with somewhat lower vibration levels. The peak levels summarized in this report are the maximum peak levels measured during the events and as such are conservative. The sustained vibration levels throughout each event were on the order of 5 to 10 VdB less than these peak levels. This means that conservative approaches and assumptions have been made throughout the analysis and the impact results presented herein represent worst case conditions.

Table 3 indicates that it would be necessary to be within fifty feet of the railway for the Amtrak operations to approach or exceed the fragile building criteria. None of the operations currently operating in the study area are producing vibration levels that exceed the “fragile building” criteria at distances greater than fifty feet from the railway. In most cases a receiver must be closer than fifty feet to experience vibration levels of 100 VdB. Furthermore, Amtrak train movements produce vibration levels that exceed the FTA impact criteria for residential receivers if a receiver is within 100 feet of the rail. Based on a cursory review of recent aerial maps, there are no potential impacts that will result from the Locomotive Rail and Maintenance Facility. Therefore, based on the vibration measurements and the FTA guidance, it can be concluded that the future Amtrak operations will have no impact on residential receivers and the impact will not reach the levels for damage to buildings.

Table 3 -- Future Vibration Impact Assessment

Rail Operation	Distance where damage to fragile buildings occurs (100 VdB)	Distance where Residential impact occurs (75 VdB)	Distance at which vibrations can be felt (65-70 VdB)
<i>Amtrak regular speeds</i>	closer than 50'	100 - 150'	150-200'

4.0 Conclusion

Based on the General Vibration Assessment, vibration impacts would result from the project. There are no residential buildings within 50 feet of the rail which could cause damage impacts if vibration levels exceed 100 VdB for the Locomotive Rail Maintenance Facility. In addition, there are no residential buildings that would perceive vibration impact from future vibration levels according to FTA guidelines.

5.0 References

1. Transit Noise and Vibration Impact Assessment, FTA-VA-90-1003-06, Federal Transit Administration, U.S. Department of Transportation, 2006.



APPENDIX E

Threatened & Endangered Species



Axiom Environmental, Inc.

218 Snow Avenue, Raleigh, North Carolina 27603 919-696-3045

October 27, 2011

Mr. Travis Pollack, AICP
Gannett Fleming
301 S. McDowell Street, Suite 1008
Charlotte, NC 28204

Re: Protected Species Investigations for several Charlotte Railroad Improvement & Safety Program (CRISP) Projects: **11-011**
Norfolk Southern Mainline Improvements (P-3800)
CSX/NS Mainline Grade Separation (P-5002A)
CSXT Pinoca Yard Storage Improvements (P-5002B)
Charlotte Locomotive & Railcar Maintenance Facility (P-2918)

Dear Travis:

Axiom Environmental, Inc. (Axiom) is pleased to provide you with the results of federally protected species surveys for planned rail improvements associated with several Charlotte Railroad & Safety Program (CRISP) projects: Norfolk Southern (NS) Mainline Improvements Build Alternative B (P-3800), the CSX/NS Mainline Grade Separation (P-5002A), CSXT Pinoca Yard Storage Improvements (P-5002B), and the Charlotte Locomotive & Railcar Maintenance Facility (P-2918). All projects are located within Charlotte in Mecklenburg County, NC (Figure 1). Areas associated with the NS Mainline Improvements Build Alternative B are generally located adjacent to the existing rail and include approximately 32.1 acres located in the vicinity of the Berryhill Road crossing of the rail (Figures 1 and 2). The area associated with the Locomotive & Railcar Maintenance Facility (P-2918) encompasses approximately 15.3 acres located in the vicinity of the West Summit Avenue crossing of the rail (Figures 1 and 3). Additional areas studied for the CSX/NS Mainline Grade Separation project (P-5002A) include approximately 1.6 acres located immediately south of the Brookshire Freeway (I-277) crossing of the rail (Figures 1 and 4), and approximately 15.6 acres located adjacent to NC Music Factory Boulevard and approximately 0.2 mile southeast of the I-77/Brookshire Freeway interchange (Figures 1 and 4). The CSXT Pinoca Yard Storage Improvements (P-5002B) project occupies approximately 17.2 acres, extending generally west from Rozzelle's Ferry Road for approximately 0.6 mile to the Hovis Road crossing of the rail and generally encompasses the existing rail yard (Figures 1 and 5). An additional 0.4-acre area is located approximately 0.2 mile west of the existing rail yard (Figures 1 and 5). The study area for all five areas investigated encompasses approximately 82.5 acres.

The study area consists of highly urbanized, residential and industrial, well-maintained land with few forested areas and woodland edges that exist primarily in the form of thin hedgerows that separate the railroad corridors from abutting properties. Prior to commencing field investigations, Axiom biologists

Axiom Environmental, Inc.

Mr. Travis Pollack
October 27, 2011
Page 2

visited the University of North Carolina Botanical Garden in Chapel Hill, NC to verify the form and flower of the federally protected plants of interest. Axiom biologists visited the study area on July 14 and October 10, 2011, and performed systematic surveys within all areas of suitable habitat for federally protected plant species listed by the United States Fish and Wildlife Service (USFWS) as occurring in Mecklenburg County, NC. Our field investigation resulted in a determination that no federally protected plants occur within the study area.

The federally protected species surveys for the CRISP Projects described in this memo supplement the previous CRISP investigations completed in 2009 and detailed in Axiom's October 8, 2009 technical memo.

Attached to this letter you should find a section of text describing the results of our survey that is suitable for inclusion in a Natural Resources Technical Report. Also attached is a set of five figures depicting the project study areas.

Axiom appreciates the opportunity to assist Gannett Fleming with this project and is available to assist with the completion of any other project-related tasks. If you have any questions or concerns, please let us know. Should you have any questions, please do not hesitate to call me (919-696-3045) or Mr. Sandy Smith (919-270-9306).

Yours truly,

AXIOM ENVIRONMENTAL, INC.



Scott Davis
Senior Scientist/ Project Manager

Attachments

Endangered Species Act Protected Species

As of May 20, 2011, the U.S. Fish and Wildlife Service (USFWS) lists three federally protected plant species for Mecklenburg County (Table 1). A brief description of each species' habitat requirements follows, along with the Biological Conclusion rendered based upon the results of our investigation within the study area. Habitat requirements for each species are based on the current best available information as per referenced literature and USFWS correspondence. The USFWS also lists one Endangered freshwater mussel, Carolina heelsplitter (*Lasmigona decorata*) as occurring within Mecklenburg County; however, no habitat assessments or detailed surveys were performed for this species.

Table 1. Federally protected plant species listed for Mecklenburg County.

Scientific Name	Common Name	*Federal Status	Habitat Present	Biological Conclusion
<i>Echinacea laevigata</i>	Smooth coneflower	E	Yes	No Effect
<i>Helianthus schweinitzii</i>	Schweinitz's sunflower	E	Yes	No Effect
<i>Rhus michauxii</i>	Michaux's sumac	E	Yes	No Effect

*Federal Status: E = Endangered.

Smooth coneflower

USFWS optimal survey window: late May-October

Habitat Description - Smooth coneflower, a perennial herb, is typically found in meadows, open woodlands, the ecotonal regions between meadows and woodlands, cedar barrens, dry limestone bluffs, clear cuts, and roadside and utility right-of-ways. In North Carolina, the species normally grows in magnesium- and calcium-rich soils associated with gabbro and diabase parent material, and typically occurs in Iredell, Misenheimer, and Picture soil series. It grows best where there is abundant sunlight, little competition in the herbaceous layer, and periodic disturbances (e.g., regular fire regime, well-timed mowing, and careful clearing) that prevents encroachment of shade-producing woody shrubs and trees. On sites where woody succession is held in check, the plant community is characterized by a number of species with prairie affinities.

Biological Conclusion: **No Effect.** Marginal habitat for smooth coneflower occurs along the margins of roads, parking lots, and rail lines, along woodland edges, and within utility-line corridors. Regular disturbance and routine maintenance of most areas of potential habitat preclude establishment of this species. Systematic surveys were performed in all areas of suitable habitat on July 14, 2011, and no individuals of this species were observed. A review of N.C. Natural Heritage Program (NCNHP) records, accessed July 13, 2011, indicates no known smooth coneflower occurrences within 2.0 miles of the study area.

Schweinitz's sunflower

USFWS optimal survey window: late August-October

Habitat Description - Schweinitz's sunflower is endemic to the Piedmont of North and South Carolina. The few sites where this rhizomatous perennial herb occurs in relatively natural vegetation are found in Xeric Hardpan Forests. The species is also found along roadside right-of-ways, maintained power lines and other utility right-of-ways, edges of thickets and old pastures, clearings and edges of upland oak-pine-hickory woods and Piedmont longleaf pine forests, and other sunny or semi-sunny habitats where

disturbances (e.g., mowing, clearing, grazing, blow-downs, storms, frequent fire) help create open or partially open areas for direct sunlight to reach the ground. This sunflower is intolerant of full shade and excessive competition from other vegetation. Schweinitz's sunflower occurs in a variety of soil series, including Badin, Cecil, Cid, Enon, Gaston, Georgeville, Iredell, Mecklenburg, Misenheimer, Secrest, Tatum, Uwharrie, and Zion, among others. It is generally found growing on shallow sandy soils with high gravel content; shallow, poor, clayey hardpans; or shallow rocky soils, especially those derived from mafic rocks.

Biological Conclusion: No Effect. Suitable habitat for Schweinitz's sunflower occurs along the margins of roads, parking lots, and rail lines, along woodland edges, open fields, and within utility-line corridors. Regular disturbance and routine maintenance of most areas of potential habitat preclude establishment of this species. Systematic surveys were performed in all areas of suitable habitat on October 10, 2011, and no individuals of this species were identified. A review of NCNHP records, accessed July 13, 2011, indicates no known Schweinitz's sunflower occurrences within 2.0 miles of the study area.

Michaux's sumac

USFWS optimal survey window: May-October

Habitat Description - Michaux's sumac is endemic to the inner Coastal Plain and lower Piedmont, grows in sandy or rocky, open, upland woods on acidic or circumneutral, well-drained sands or sandy loam soils with low cation exchange capacities. The species is also found on sandy or submesic loamy swales and depressions in the fall line Sandhills region as well as in openings along the rim of Carolina bays; maintained railroad, roadside, power line, and utility rights-of-way; areas where forest canopies have been opened up by blow-downs and/or storm damage; small wildlife food plots; abandoned building sites; under sparse to moderately dense pine or pine/hardwood canopies; and in and along edges of other artificially maintained clearings undergoing natural succession. In the central Piedmont, this sumac occurs on clayey soils derived from mafic rocks. The plant is shade intolerant and, therefore, grows best where disturbance (e.g., mowing, clearing, grazing, periodic fire) maintains its open habitat.

Biological Conclusion: No Effect. Suitable habitat for Michaux's sumac occurs throughout the study area along the margins of roads, parking lots, and rail lines, along woodland edges, and within utility-line corridors. Regular disturbance and routine maintenance of most areas of potential habitat preclude establishment of this species. Systematic surveys were performed in all areas of suitable habitat on July 14, 2011, and no individuals of this species were identified. A review of NCNHP records, accessed July 13, 2011, indicates no known Michaux's sumac occurrences within 2.0 miles of the study area.

Endangered Species Act Candidate Species

As of May 20, 2011, the USFWS lists one Candidate species for Mecklenburg County: Georgia aster (*Symphyotricum georgianum*). Suitable habitat is present within the study area along utility corridors, roadside shoulders, woodland edges, and the margins of the railroad corridor; however, no individuals were observed during this investigation. A review of NCNHP records, accessed July 13, 2011, indicates no known Georgia aster occurrences within 2.0 miles of the study area.

Bald and Golden Eagle Protection Act

As of May 20, 2011, the USFWS lists one species protected by the Bald and Golden Eagle Protection Act (BGEPA) for Mecklenburg County: bald eagle (*Haliaeetus leucocephalus*). Habitat for bald eagle primarily consists of mature forest in proximity to large bodies of open water for foraging. Large, dominant trees are utilized for nesting sites, typically within 1.0 mile of open water. Suitable habitat for bald eagle does not exist within the study area. A review of NCNHP records, accessed July 13, 2011, indicates no known bald eagle occurrences within 2.0 miles of the study area.

References

- Buchanan, M.F. and J.T. Finnegan. 2010. Natural Heritage Program List of the Rare Plant Species of North Carolina. North Carolina Natural Heritage Program. Raleigh.
<http://www.ncnhp.org/Pages/publications.html>
- N.C. Natural Heritage Program. 2009. Element Occurrence Search Report: Mecklenburg County, North Carolina. May 20, 2011. <http://www.ncnhp.org/Pages/heritagedata.html>
- N.C. Natural Heritage Program. 2001. Guide to Federally Listed Endangered and Threatened Species of North Carolina. Raleigh, NC. 134 pp.
- Radford, A.E., H.E. Ahles, and C.R. Bell. 1968. Manual of the Vascular Flora of the Carolinas. Chapel Hill: University of North Carolina Press. 1183 pp.
- Schafale, M.P. and A.S. Weakley. 1990. Classification of the Natural Communities of North Carolina: Third Approximation. North Carolina Natural Heritage Program, Division of Parks and Recreation, and North Carolina Department of Environment, Health and Natural Resources. Raleigh, North Carolina. 325 pp.
- U.S. Department of the Army. 2007. Michaux's Sumac (*Rhus michauxii*).
http://www.bragg.army.mil/esb/michaux's_sumac.htm (accessed September 25, 2009).
- U.S. Fish and Wildlife Service, Region 4: Southeast Region, North Carolina Ecological Services. 2011. Threatened and Endangered Species in North Carolina: Mecklenburg County (updated September 22, 2010). <http://nc-es.fws.gov/es/countyfr.html> (Accessed May 20 and October 13, 2011).
- U.S. Fish and Wildlife Service. 2006. Optimal Survey Windows for North Carolina's Federally Threatened and Endangered Plant Species. http://www.fws.gov/nc-es/plant/plant_survey.html
- U.S. Fish and Wildlife Service. 1995. Smooth Coneflower Recovery Plan. Atlanta, GA. 31 pp.
- U.S. Fish and Wildlife Service. 1994. Schweinitz's Sunflower Recovery Plan. Atlanta, Ga. 28 pp.
- U.S. Fish and Wildlife Service. 1993. Michaux's Sumac Recovery Plan. Atlanta, Georgia. 30 pp.

- U.S. Fish and Wildlife Service. Carolina heelsplitter in North Carolina.
<http://www.fws.gov/nc-es/mussel/carolheel.html> (Accessed: May 20, 2011).
- U.S. Fish and Wildlife Service. Michaux's sumac in North Carolina (*Rhus michauxii*).
<http://www.fws.gov/nc-es/plant/michsumac.html>. (Accessed: May 20, 2011).
- U.S. Fish and Wildlife Service. Schweinitz's sunflower (*Helianthus schweinitzii*).
<http://www.fws.gov/nc-es/plant/schwsun.html> (Accessed: May 20, 2011).
- U.S. Fish and Wildlife Service. Smooth Coneflower (*Echinacea laevigata*).
<http://www.fws.gov/nc-es/plant/smooconefl.html> (Accessed: May 20, 2011).
- U.S. Geological Survey. 2010. Charlotte East, North Carolina, Topographic Quadrangle (7.5-minute series). 1 sheet.
- U.S. Geological Survey. 1988. Charlotte East, North Carolina, Topographic Quadrangle (7.5-minute series). 1 sheet.
- U.S. Geological Survey. 2010. Charlotte West, North Carolina, Topographic Quadrangle (7.5-minute series). 1 sheet.
- U.S. Geological Survey. 1980. Charlotte West, North Carolina, Topographic Quadrangle (7.5-minute series). 1 sheet.
- U.S. Geological Survey. 2010. Mountain Island Lake, North Carolina, Topographic Quadrangle (7.5-minute series). 1 sheet.
- U.S. Geological Survey. 1997. Mountain Island Lake, North Carolina, Topographic Quadrangle (7.5-minute series). 1 sheet.



Prepared for:



Project:

CHARLOTTE RAIL IMPROVEMENT AND SAFETY PROGRAM

FEDERALLY-PROTECTED SPECIES SURVEYS

Mecklenburg County, NC

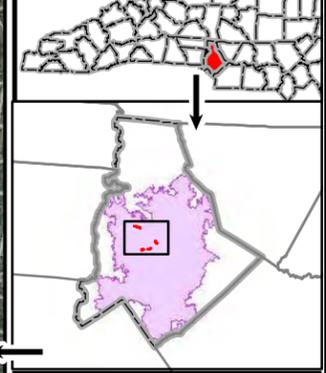
Title:

Study Area Sites Locations

Notes:

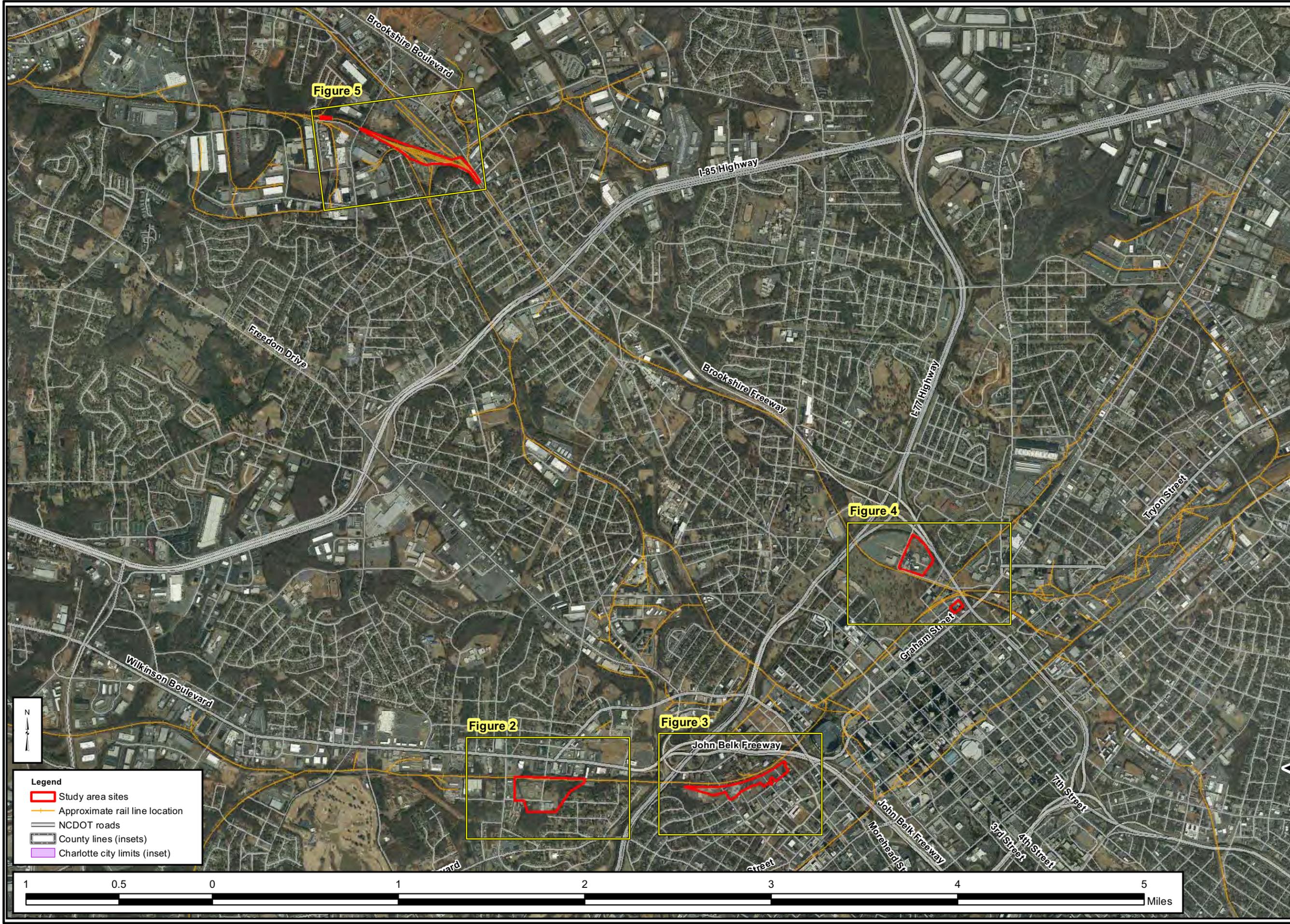
1. Background imagery source: 2010 aerial photography provided by the NC OneMap program (online, supported by the NC Geographic Information Coordination Council).

Location:



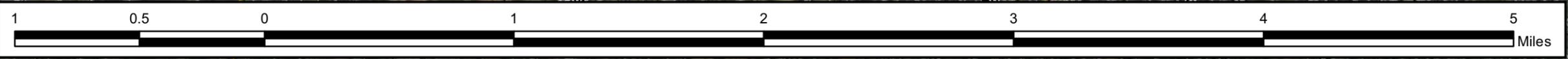
Drawn by:	SGD
Date:	OCT 2010
Scale:	1:30,000
Project No.:	11-011

FIGURE 1



Legend

- Study area sites
- Approximate rail line location
- NCDOT roads
- County lines (insets)
- Charlotte city limits (inset)





Prepared for:



Project:

**CHARLOTTE
RAIL IMPROVEMENT
AND SAFETY
PROGRAM**

**FEDERALLY-
PROTECTED
SPECIES SURVEYS**

Mecklenburg County, NC

Title:

**Study Area
Sites
Locations**

Notes:

Background imagery source:
2010 aerial photography
provided by the NC OneMap
program (online, supported by
the NC Geographic Information
Coordination Council).

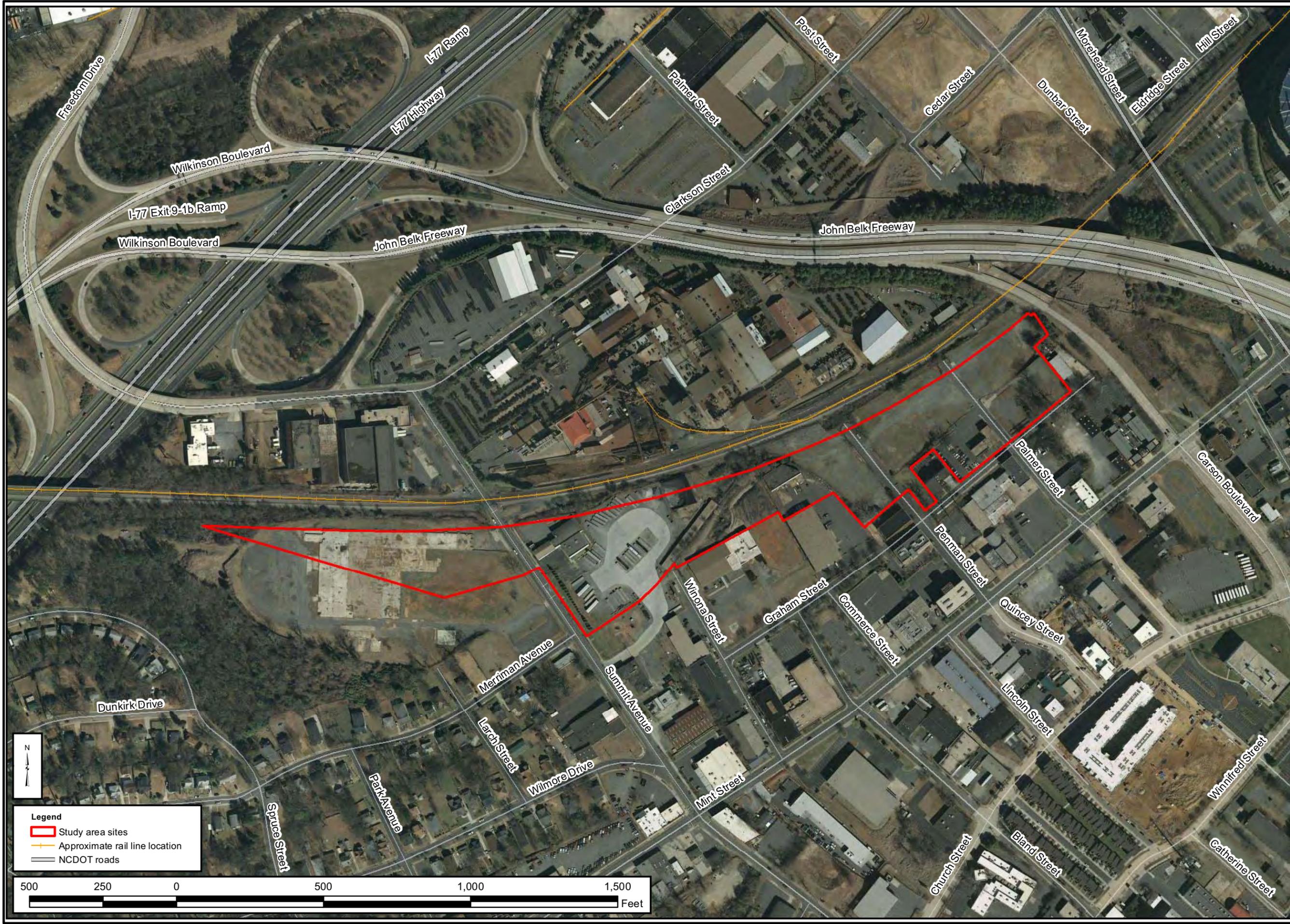
Drawn by: SGD

Date: OCT 2010

Scale: 1:3600

Project No.: 11-011

**FIGURE
2**



Prepared for:



Project:

**CHARLOTTE
RAIL IMPROVEMENT
AND SAFETY
PROGRAM**

**FEDERALLY-
PROTECTED
SPECIES SURVEYS**

Mecklenburg County, NC

Title:

**Study Area
Sites
Locations**

Notes:

Background imagery source:
2010 aerial photography
provided by the NC OneMap
program (online, supported by
the NC Geographic Information
Coordination Council).

Drawn by: SGD

Date: OCT 2010

Scale: 1:3600

Project No.: 11-011

**FIGURE
3**



Prepared for:



Project:

**CHARLOTTE
RAIL IMPROVEMENT
AND SAFETY
PROGRAM**

**FEDERALLY-
PROTECTED
SPECIES SURVEYS**

Mecklenburg County, NC

Title:

**Study Area
Sites
Locations**

Notes:

Background imagery source:
2010 aerial photography
provided by the NC OneMap
program (online, supported by
the NC Geographic Information
Coordination Council).

Drawn by: SGD

Date: OCT 2010

Scale: 1:3600

Project No.: 11-011

**FIGURE
4**



Prepared for:



Project:

**CHARLOTTE
RAIL IMPROVEMENT
AND SAFETY
PROGRAM**

**FEDERALLY-
PROTECTED
SPECIES SURVEYS**

Mecklenburg County, NC

Title:

**Study Area
Sites
Locations**

Notes:

Background imagery source:
2010 aerial photography
provided by the NC OneMap
program (online, supported by
the NC Geographic Information
Coordination Council).

Drawn by: SGD

Date: OCT 2010

Scale: 1:3600

Project No.: 11-011

**FIGURE
5**



Axiom Environmental, Inc.

218 Snow Avenue, Raleigh, North Carolina 27603 919-696-3045

October 27, 2011

Ms. Marella Buncick
U.S. Fish and Wildlife Service
Asheville Ecological Services Field Office
160 Zillicoa Street
Asheville, NC 28801-1082

RE: Federally Protected Species Surveys **11-011**
Charlotte Railroad Improvement & Safety Program (CRISP) Projects:
Norfolk Southern Mainline Improvements (P-3800)
CSX/NS Mainline Grade Separation (P-5002, P-5002A)
CSXT Pinoca Yard Storage Improvements (P-5002B)
Charlotte Locomotive & Railcar Maintenance Facility (P-2918)
Mecklenburg County, NC

Dear Marella,

Environmental investigations have been conducted by Axiom Environmental, Inc. (Axiom) for the N.C. Department of Transportation (NCDOT) Rail Division in support of rail siding improvements associated with Charlotte Railroad Improvement & Safety Program (CRISP) projects in Mecklenburg County, NC. As part of these investigations, Axiom has conducted surveys for terrestrial federally protected species within several areas associated with the CRISP projects. Areas surveyed for the CRISP projects include approximately 10.7 miles of railroad corridors (approximately 359 acres, Attachment 1) in addition to six distinct areas located generally adjacent to the rail that total approximately 82.5 acres (Attachment 2). The total area surveyed encompasses approximately 441.5 acres.

Axiom biologists visited the 359-acre study area associated with the railroad corridors (Attachment 1) during the week of September 28, 2009. Axiom biologists visited the 82.5-acre study area associated with the areas located adjacent to the rail on July 14 and October 10, 2011. Systematic surveys were performed within all areas of suitable habitat for federally protected plant species listed by the United States Fish and Wildlife Service (USFWS) as occurring in Mecklenburg County, NC: Schweinitz's sunflower (*Helianthus schweinitzii*, Endangered), Michaux's sumac (*Rhus michauxii*, Endangered), and smooth coneflower (*Echinacea laevigata*, Endangered). Additionally, the USFWS lists Georgia aster (*Symphoricarpos georgianum*) as a Candidate species and bald eagle (*Haliaeetus leucocephalus*) as protected by the Bald and Golden Eagle Protection Act. The USFWS also lists one freshwater mussel, Carolina heelsplitter (*Lasmigona decorata*, Endangered) as occurring within Mecklenburg County; however, no habitat assessments or detailed surveys were performed for this species.

Axiom Environmental, Inc.

Ms. Marella Buncick

October 27, 2011

Page 2

The study areas consist of highly urbanized, residential and industrial, well-maintained land with few forested areas and woodland edges that exist primarily in the form of thin hedgerows that separate the railroad corridors from abutting properties. Prior to commencing field investigations, Axiom biologists visited the University of North Carolina Botanical Garden in Chapel Hill, NC to verify the form and flower of the federally protected plants of interest. Our field investigation resulted in a determination that no federally protected plants occur anywhere within the study area.

Our NCDOT Rail Division contact for this project is:

Mr. Ryan White

Planning Engineer

N.C. Department of Transportation, Rail Division

1553 Mail Service Center

Raleigh, NC 27699-1553

Phone: 919-733-7245x266

E-mail: rlwhite@ncdot.gov

Please let us know if you have any questions or would like to visit any portions of the study area. Many areas will be accessible by road; however, in order to visit all portions of the study area, coordination with the railroad for a hi-rail vehicle will likely be necessary. We are interested in obtaining USFWS comments on the proposed project. Please let me or Mr. Sandy Smith (919-270-9306) know if you need additional information or have questions about the information provided to you in this package. Thank you for your time and assistance with this important project.

Sincerely,

AXIOM ENVIRONMENTAL, INC.



Scott Davis

Senior Scientist/Project Manager

Attachments: Attachment 1 (1_CRISP_Survey_Results_10_08_09.pdf). September 28, 2009 survey memo and associated figures for the 359-acre study area associated with the railroad corridors

Attachment 2 (2_CRISP_Survey_Results_10_27_11). September 25, 2011 survey memo and associated figures for the 82.5-acre study areas adjacent to the railroad corridors



APPENDIX F

Hazardous Materials

Hazardous Materials Inventory Photographic Log



White Consolidated Industries - 601 W. Summit Avenue

PHOTO #: 1 **Direction:** West **DATE:** February 2010
Note: Only structure foundation remains.



White Consolidated Industries - 601 W. Summit Avenue

PHOTO #: 2 **Direction:** Northwest **DATE:** July 2011
Note: Foundation has been removed and grass has been planted.



White Consolidated Industries - 601 W. Summit Avenue

PHOTO #: 3 **Direction:** West **DATE:** July 2011
Note: Foundation has been removed and grass has been planted.
Note vehicles in background - site work may be in progress.



White Consolidated Industries - 601 W. Summit Avenue

PHOTO #: 4 **Direction:** Southwest **DATE:** July 2011
Note: Foundation has been removed and grass has been planted.
Note vehicles in background - site work may be in progress.

Hazardous Materials Inventory Photographic Log



White Consolidated Industries - 601 W. Summit Avenue

PHOTO #: 5 **Direction:** Southwest **DATE:** July 2011
Note: Work was in progress on site at the time of the field visit.



Charlotte Pipe & Foundry - Various addresses

PHOTO #: 6 **Direction:** East **DATE:** February 2010



Charlotte Pipe & Foundry - Various addresses

PHOTO #: 7 **Direction:** Northeast **DATE:** February 2010



Charlotte Pipe & Foundry - Various addresses

PHOTO #: 8 **Direction:** Northeast **DATE:** February 2010

Hazardous Materials Inventory Photographic Log



Charlotte Pipe & Foundry - Various addresses

PHOTO #: 9

Direction: Northeast

DATE: February 2010



Charlotte Pipe & Foundry - Various addresses

PHOTO #: 10

Direction: West

DATE: February 2010



APPENDIX G

Cultural Resources

Federal Aid #

TIP # P-2918

County: Mecklenburg

CONCURRENCE FORM FOR ASSESSMENT OF EFFECTS

Project Description: Charlotte Locomotive and Railcar Maintenance Facility

On December 8, 2011, representatives of the

- North Carolina Department of Transportation (NCDOT)
- Federal Railroad Administration (FRA)
- North Carolina State Historic Preservation Office (HPO)

Reviewed the subject project and agreed to the effects findings listed within the table attached to this signature page.

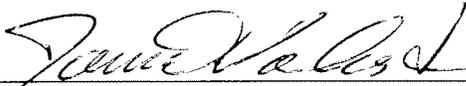
Signed:



Representative, NCDOT

4/5/2012

Date



FRA, for the Division Administrator, or other Federal Agency

5/23/12

Date



State Historic Preservation Officer

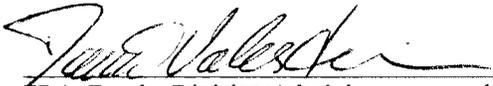
4.2.12

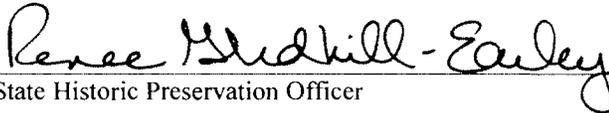
Date

**Charlotte Locomotive and Railcar Maintenance Facility
 TIP Project: P-2918, Federal Aid Number: N/A
 Section 106 Effects Determination Summary (12/8/2011)**

Property and Status	Effect Determination	Alternative	Comments
Wilmore Historic District (Recommended Eligible, Criteria C)	No Effect	1	The project will have <i>No Effect</i> to the Wilmore Historic District. The project does impact a vacant lot that is included in the Wilmore HD boundary. Due to this impact, a Certificate of Appropriateness (COA) will be required from the Charlotte Mecklenburg Historic Landmarks Commission.
Textile Mill Supply Company Building (National Register, Criteria A, C)	No Effect	1	

NCDOT Environmental Commitment: Due to the project having an impact on vacant lot that is part of the Wilmore Historic District, NCDOT will coordinate with the Charlotte Mecklenburg Historic Landmarks Commission (HLC) in the development of a Certificate of Appropriateness (COA). NCDOT will also work with the HLC on the development of signage along Summit Avenue identifying the entrance to the Wilmore HD.


 FRA, For the Division Administrator, or other Federal Agency FRA 5.23.12
 Agency Date


 State Historic Preservation Officer 4.2.12
 Date

_____: FRA intends to use SHPO's concurrence as a basis of a "de minimis" finding for the following properties, pursuant to Section 4(f): FRA Initials _____



**North Carolina Department of Cultural Resources
State Historic Preservation Office**

Ramona M. Bartos, Administrator

Beverly Eaves Perdue, Governor
Linda A. Carlisle, Secretary
Jeffrey J. Crow, Deputy Secretary

Office of Archives and History
Division of Historical Resources
David Brook, Director

November 8, 2011

MEMORANDUM

TO: Ryan White
NCDOT Rail Division
Environmental and Planning Branch

FROM: Ramona M. Bartos *RMB for Ramona M. Bartos*

SUBJECT: Charlotte Railroad Improvement and Safety Program, Norfolk Southern Mainline Track Improvements, P-3800, Mecklenburg County, ER 01-9056

We are in receipt of your memorandum of September 6, 2011, transmitting the historic architectural resources survey prepared by Mattson, Alexander and Associates for the above project. We apologize for our delayed response, but we were experiencing workflow problems due to required travel and illness of key staff members.

For the purposes of compliance with Section 106 of the National Historic Preservation Act, we concur that the following properties are currently listed in, and remain eligible for listing in, the National Register of Historic Places under the criteria cited:

- ◆ **Textile Mill Supply Company Building** (MK 1835, Site #28, National Register (NR) 1999, Local Landmark 2000): Criterion A for commerce and industry and Criterion C for architecture; and,
- ◆ **North Charlotte Historic District** (MK 1666, Site #47, NR 1990): Criterion A for industry and Criterion C for architecture.

For the purposes of compliance with Section 106 of the National Historic Preservation Act, we concur that the following properties are *eligible* for listing in the National Register under the criteria cited, and that the proposed National Register boundaries appear appropriate:

- ◆ **Ford Motor Company Automotive Parts Distribution Center** (MK 3071, Site #2, Determination of Eligibility (DOE) 2006): Criterion A for commerce and Criterion C for architecture;
- ◆ **Wilmore Historic District** (MK 2932, Site #19, Local Historic District 2010): Criterion C for architecture – *see note below*;
- ◆ **Elmwood/Pinewood Cemetery** (MK 0072, Site #40, DOE 2003, Local Landmark 2004): Criterion A for African American heritage and Criterion C for design;
- ◆ **Seaboard Street Historic District** (MK 2658, Site #41, DOE 2003, State Study List 2001): Criterion A for industry and Criterion C for architecture;

- ◆ **Southern Railway Bridge over North Tryon Street** (MK 3077, Site #43): Criterion C for design;
- ◆ **Standard Trucking Company Terminals** (MK 3078, Site #44): Criterion A for transportation and Criterion C for architecture – *see note below*;
- ◆ **Chadbourn Hosiery Mills** (MK 2879, Site #46, DOE 2009): Criterion A for industry and Criterion C for architecture;
- ◆ **Herrin Brothers Coal and Ice Company Complex** (MK 2905, Site #48, DOE 2009): Criterion A for commerce and Criterion C for architecture;
- ◆ **Standard Chemical Products Plant** (MK 2910, Site #49, DOE 2008): Criterion A for industry and Criterion C for architecture; and,
- ◆ **Republic Steel Corporation Plant** (MK 2911, Site #50, DOE 2008): Criterion A for industry and Criterion C for architecture.

At this time we cannot concur with the recommendation that the **Carolina Golf and Country Club** (MK 3072, Site #6) is eligible for listing in the National Register without further information on the Donald Ross course design and the “extensive” restoration, including documentary aerial photographs, plans of the original design, and plans of the current design.

We have reconsidered our previous concurrence that the **Southern Railway Bridge over West Sixth Street** (MK 3076, Site #39, DOE 2003) is eligible for listing in the National Register. With this bridge’s lack of rail connectivity and the construction of the elevated, three-track structure, the Southern Railway Bridge has suffered major losses to its integrity and context.

While we concur that the Wilmore Historic District is eligible for listing in the National Register, we do not feel that ending its proposed period of significance at 1961 has been fully justified. The National Register Bulletin for historic residential subdivisions states that for neighborhoods eligible for listing under Criterion C the period of significance “generally corresponds to the actual years when the design was executed and construction took place.” The local designation report ends the period of significance at 1949.

At the Standard Trucking Company Terminals site, a small, utilitarian building (that appears to be a repair shed or similar) located approximately 100 feet northeast of the 1953 terminal is not mentioned in the description or boundary justification, nor is it identified on the site plans. If this is proposed as a contributing resource to the site, a photograph, description, and any available history of the building should be included in the report. If this is proposed as a non-contributing resource, the final sentence of the boundary description should be revised accordingly.

For the purposes of compliance with Section 106 of the National Historic Preservation Act, we also concur that the following properties are *not eligible* for listing in the National Register:

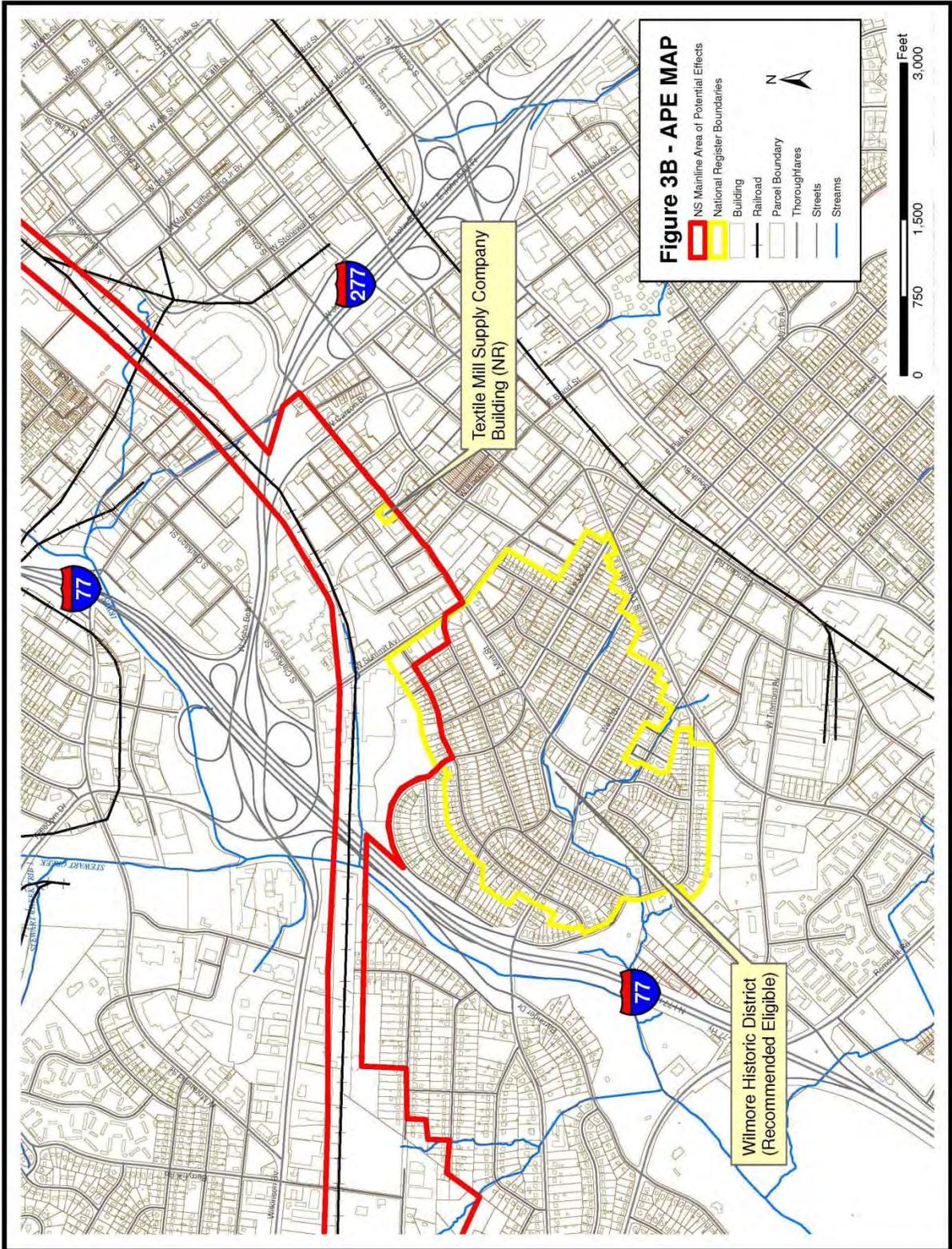
- ◆ **General Dye Stuffs Corporation Building** (MK 3074, Site #14);
- ◆ **Westover Hills Neighborhood** (Site #17);
- ◆ **Charlotte Pipe and Foundry Company Complex** (MK 3075, Site #20);
- ◆ **Electric Supply and Equipment Company** (MK 1877, Site #30, Local Landmark 2001);
- ◆ **Wica Chemical Company Plant** (MK 3079, Site #51); and,
- ◆ The 31 properties included in **Appendix A** barring additional information to the contrary.

We are disappointed to learn of the recent demolition of the **Southern Engineering Company** (MK 3073, Site #7); we concur this site is not eligible for listing in the National Register.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919-807-6579. In all future communication concerning this project, please cite the above-referenced tracking number.

cc: John Rogers, Charlotte Historic District Commission, Jrogers@ci.charlotte.nc.us
Dan Morrill, Charlotte-Mecklenburg HLC, morrild@co.mecklenburg.nc.us



This page left intentionally blank.



APPENDIX H

Agency Coordination



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

October 7, 2011

Mr. Ron Linville
Regional Coordinator
NC Wildlife Resources Commission
Habitat Conservation Program
1721 Mail Service Center
Raleigh, NC 27699-1721

SUBJECT: NCDOT Locomotive and Railcar Maintenance Facility Phase 1 – Charlotte
TIP Project (P-2918),
City of Charlotte, Mecklenburg County, North Carolina

Dear Mr. Linville,

The North Carolina Department of Transportation (NCDOT) Rail Division is undertaking an Environmental Assessment (EA) of the Charlotte Railroad Improvement and Safety Program (CRISP). As part of that program, the proposed NCDOT Locomotive and Railcar Maintenance Facility Phase 1 – Charlotte (LRMF) was originally included as part of the NS Mainline Track Improvements project (TIP P-3800). Since NCDOT received American Recovery & Reinvestment Act (ARRA) funding for the LRMF project (and not the other track improvements under P-3800), NCDOT has decided to complete a separate environmental document for the maintenance facility as a stand-alone project (TIP P-2918) with a distinct purpose and need. Attached Figure 1 shows a project location map and Figure 2 shows the project study area for the LRMF.

A Federally-funded Environmental Assessment (EA) document is being prepared in coordination with the Federal Railroad Administration (FRA). This document is intended to satisfy the requirements of both the National Environmental Policy Act (NEPA) and the North Carolina Environmental Policy Act (SEPA).

In an effort to expedite the environmental clearance process, we are asking your agency to provide any information you might have that would be helpful in evaluating the potential environmental impacts of the proposed rail yard storage improvements project. If applicable, please also identify any permits or approvals that may be required by your agency. We ask that you please respond in writing by **October 28, 2011**.

We appreciate your time and cooperation on this project. If you have any questions or need any additional information concerning this project, please contact either:

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
RAIL DIVISION
1553 MAIL SERVICE CENTER
RALEIGH, NC 27699-1553

TELEPHONE: 919-733-4713
FAX: 919-715-6580
WEBSITE: WWW.BYTRAIN.ORG

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH, NC



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

Ryan White, P.E.
NCDOT-Rail Division
Rail Project Development Engineer
(919) 733-7245 ext 266
rlwhite@ncdot.gov

Terry
Gannett
(919)

Winebrenner, PE
Fleming, Inc.
Environmental Project Manager
859-4880
twinebrenner@gfnet.com

Sincerely,

A handwritten signature in cursive script that reads "Marc Hamel".

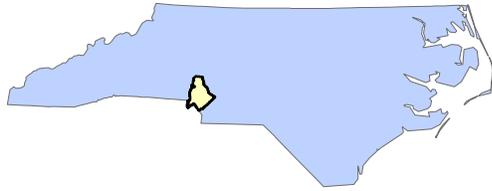
Marc Hamel
North Carolina Department of Transportation
Rail Division – Environmental & Planning Branch

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
RAIL DIVISION
1553 MAIL SERVICE CENTER
RALEIGH, NC 27699-1553

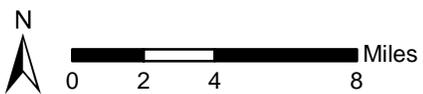
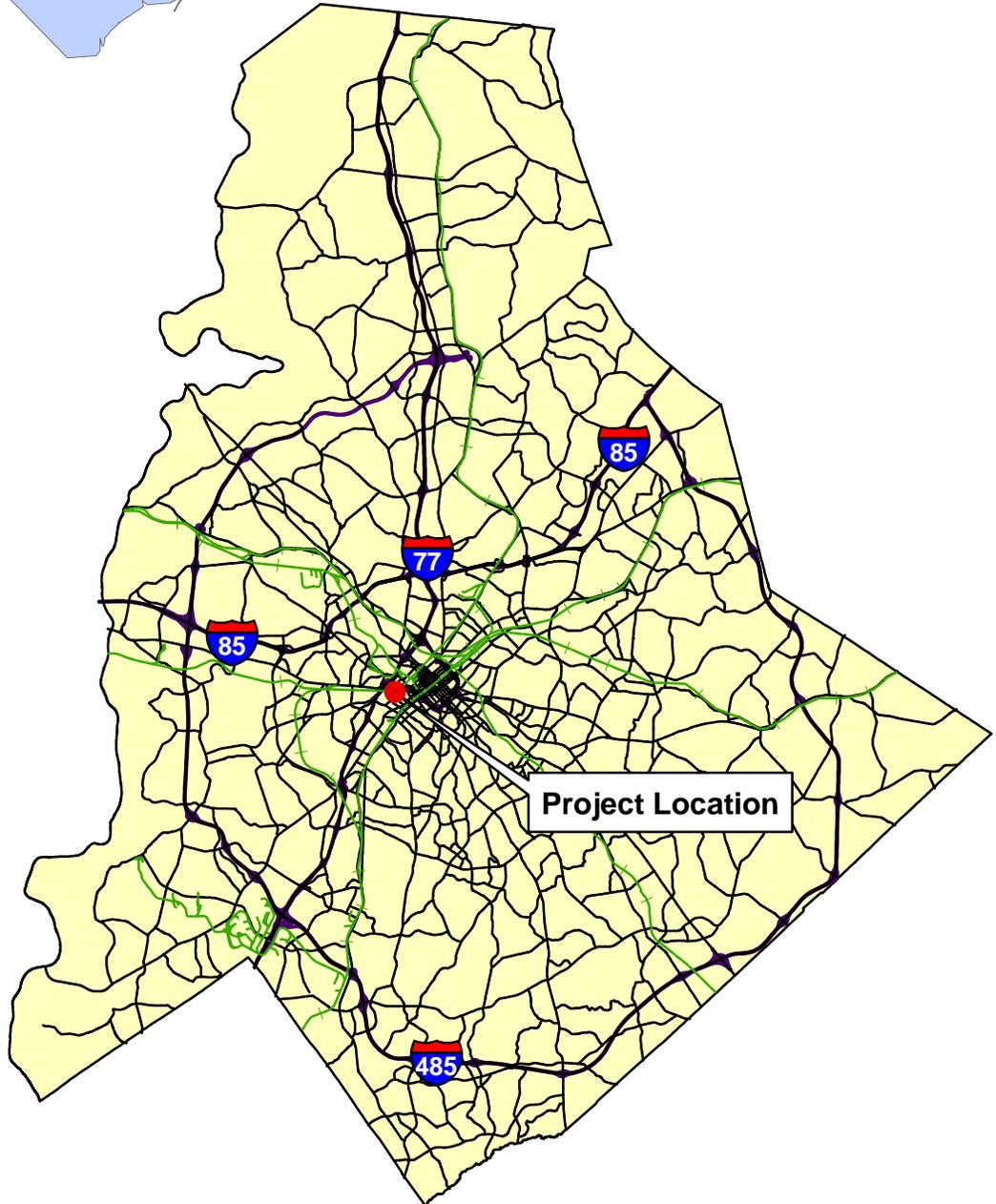
TELEPHONE: 919-733-4713
FAX: 919-715-6580
WEBSITE: WWW.BYTRAIN.ORG

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH, NC

North Carolina



Mecklenburg County



Data courtesy of Charlotte-Mecklenburg Geospatial Information Services

Charlotte Railroad Improvement & Safety Program
Locomotive and Railcar Maintenance Facility

Project Location

Mecklenburg County, North Carolina
Date

Figure

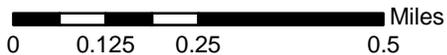
1





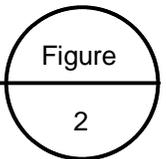
Charlotte Railroad Improvement & Safety Program (CRISP)
 Locomotive and Railcar Maintenance Facility Project

Data courtesy of Charlotte-Mecklenburg Geospatial Information Services



Project Study Area

Mecklenburg County, North Carolina
 Date





M E C K L E N B U R G - U N I O N
METROPOLITAN PLANNING ORGANIZATION

600 East Fourth Street
Charlotte, North Carolina 28202-2853
704-336-2205
www.mumpo.org

MEMORANDUM

CHARLOTTE
CORNELIUS
DAVIDSON
HUNTERSVILLE
INDIAN TRAIL
MATTHEWS
MECKLENBURG
COUNTY
MINT HILL
MONROE
NCDOT
PINEVILLE
STALLINGS
UNION
COUNTY
WAXHAW
WEDDINGTON
WESLEY CHAPEL
WINGATE

TO: Ryan White, PE
Rail Project Development Engineer
North Carolina Department of Transportation

FROM: Robert W. Cook, AICP, Secretary
Mecklenburg-Union Metropolitan Planning Organization

DATE: October 27, 2011

SUBJECT: **P-2918 NCDOT Locomotive & Railcar Maintenance Facility**

The Mecklenburg-Union Metropolitan Planning Organization (MUMPO) offers the following comments in response to your letter of October 7, 2011.

1. The study area appears to be inadequate to properly analyze the potential effects of the project.
2. The environmental justice (EJ) Degree of Impact for the study area is “Moderate.” This means that three to four of the six EJ categories analyzed by MUMPO are represented in, or are adjacent to, the study area at levels that exceed the regional averages for those groups. The Rail Division is urged to seriously consider potential environmental justice impacts when preparing the Environmental Assessment (CE).
3. The proposed facility is adjacent to the Wilmore neighborhood, and potential impacts on the neighborhood must be considered. Of particular concern are the following issues:
 - a. Noise
The existing noise impacts of I-77 and I-277 are recognized; however, the potential impacts of the proposed facility must be a part of the EA.
 - b. Visual Impacts
Adequate buffering and screening of the facility will be crucial to lessening its impact.
 - c. Historic District
The site is adjacent to the Wilmore Historic District. Potential impacts on the district must be considered.
4. The study area abuts Wilmore Neighborhood Park.

5. The site is bisected by Summit Avenue which provides an important link in the transportation network in an area lacking in connectivity due to the rail line, I-77 and I-277. MUMPO and the City of Charlotte are opposed to Summit Avenue being closed due to the importance of the street to emergency response times and overall mobility. Of particular concern is access to Charlotte Pipe and Foundry. Access to this major industrial facility is already limited; closing Summit Avenue would exacerbate the problem.
6. Information on the traffic to be generated by the facility, and its potential impact on the surrounding area, should be provided.
7. Information should be provided describing the relationship between the proposed facility and the maintenance of the vehicles associated with the Charlotte Area Transit System's proposed Red Line.

If you have any questions about these comments, please contact me at 704-336-8643 or via email at rwcook@charlottenc.gov.



North Carolina Department of Environment and Natural Resources

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

MEMORANDUM

TO: Zeke Creech
State Clearinghouse

FROM: Melba McGee
Environmental Review Coordinator

RE: 12-0097 Scoping - NCDOT Locomotive and Railcar Maintenance
Facility Phase I in Mecklenburg County

DATE: November 16, 2011

The Department of Environment and Natural Resources has reviewed the proposed project. The attached comments are for the applicant's consideration. More specific comments will be provided during the environmental review process.

Thank you for the opportunity to respond.

Attachment



North Carolina Department of Environment and Natural Resources
Division of Water Quality

Beverly Eaves Perdue
Governor

Coleen H. Sullins
Director

Dee Freeman
Secretary

November 7, 2011

MEMORANDUM

To: Melba McGee, NCDENR Environmental Coordinator

From: Polly Lespinasse, Division of Water Quality, Mooresville Regional Office

Subject: **Scoping Comments for the NCDOT Locomotive and Railcar Maintenance Facility Phase I, Charlotte TIP Project (P-2918), Charlotte, Mecklenburg County, NCDENR Project No. 12-0097, Due Date 11/8/11**

This office has reviewed the referenced document dated October 7, 2011. The Division of Water Quality (DWQ) is responsible for the issuance of the Section 401 Water Quality Certification for activities that impact Waters of the U.S., including wetlands. The DWQ offers the following comments based on review of the aforementioned document:

1. Based on a preliminary review of the document, no jurisdictional streams and/or wetlands appear to exist within the project area, **however, an unnamed tributary to Stewart Creek may be located within close proximity to the project.** If the project limits change and/or jurisdictional streams and wetlands are identified within the project limits and will be affected, a 401 Water Quality Certification will be required. A 401 Water Quality Certification requires satisfactory protection of water quality to ensure that water quality standards are met. Final permit authorization will require the submittal of a formal application by the NCDOT and written concurrence from the NCDWQ.
2. A 401 Water Quality Certification application will need to specifically address the proposed methods for stormwater management. More specifically, stormwater should not be permitted to discharge directly into streams or surface waters.
3. Borrow/waste areas should avoid wetlands to the maximum extent practicable. Impacts to wetlands in borrow/waste areas could precipitate compensatory mitigation.
4. Sediment and erosion control measures should not be placed in wetlands.

The NCDWQ appreciates the opportunity to provide comments on your project. Should you have any questions or require any additional information, please contact Polly Lespinasse (704) 663-1699.

cc: Liz Hair, US Army Corps of Engineers, Asheville Field Office (electronic copy)
Chris Militscher, Environmental Protection Agency (electronic copy)
Marla Chambers, NC Wildlife Resources Commission (electronic copy)
Marella Buncick, US Fish and Wildlife Service (electronic copy)
Sonia Carrillo, DWQ Central Office
File Copy

State of North Carolina
Department of Environment and Natural Resources

Reviewing Office: Monesville

INTERGOVERNMENTAL REVIEW - PROJECT COMMENTS

Project Number: 12-0097 Due Date: 11/8/11

After review of this project it has been determined that the ENR permit(s) and/or approvals indicated may need to be obtained in order for this project to comply with North Carolina Law. Questions regarding these permits should be addressed to the Regional Office indicated on the reverse of the form. All applications, information and guidelines relative to these plans and permits are available from the same Regional Office.

PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (statutory time limit)
<input type="checkbox"/> Permit to construct & operate wastewater treatment facilities, sewer system extensions & sewer systems not discharging into state surface waters	Application 90 days before begin construction or award of construction contracts. On-site inspection. Post-application technical conference usual.	30 days (90 days)
<input type="checkbox"/> NPDES - permit to discharge into surface water and/or permit to operate and construct wastewater facilities discharging into state surface waters.	Application 180 days before begin activity. On-site inspection. Pre-application conference usual. Additionally, obtain permit to construct wastewater treatment facility-granted after NPDES. Reply time, 30 days after receipt of plans or issue of NPDES permit-whichever is later.	90-120 days (N/A)
<input type="checkbox"/> Water Use Permit	Pre-application technical conference usually necessary	30 days (N/A)
<input type="checkbox"/> Well Construction Permit	Complete application must be received and permit issued prior to the installation of a well.	7 days (15 days)
<input type="checkbox"/> Dredge and Fill Permit	Application copy must be served on each adjacent riparian property owner. On-site inspection. Pre-application conference usual. Filling may require Easement to Fill from N.C. Department of Administration and Federal Dredge and Fill Permit.	55 days (90 days)
<input type="checkbox"/> Permit to construct & operate Air Pollution Abatement facilities and/or Emission Sources as per 15 A NCAC (2Q.0100 thru 2Q.0300)	Application must be submitted and permit received prior to construction and operation of the source. If a permit is required in an area without local zoning, then there are additional requirements and timelines (2Q.0113).	90 days
<input type="checkbox"/> Permit to construct & operate Transportation Facility as per 15 A NCAC (2D.0800, 2Q.0601)	Application must be submitted at least 90 days prior to construction or modification of the source.	90 days
<input type="checkbox"/> Any open burning associated with subject proposal must be in compliance with 15 A NCAC 2D.1900		
<input type="checkbox"/> Demolition or renovations of structures containing asbestos material must be in compliance with 15 A NCAC 20.1110 (a) (1) which requires notification and removal prior to demolition. Contact Asbestos Control Group 919-707-5950.	N/A	60 days (90 days)
<input type="checkbox"/> Complex Source Permit required under 15 A NCAC 2D.0800		
<input type="checkbox"/> The Sedimentation Pollution Control Act of 1973 must be properly addressed for any land disturbing activity. An erosion & sedimentation control plan will be required if one or more acres to be disturbed. Plan filed with proper Regional Office (Land Quality Section) At least 30 days before beginning activity. A fee of \$65 for the first acre or any part of an acre. An express review option is available with additional fees.		20 days (30 days)
<input checked="" type="checkbox"/> Sedimentation and erosion control must be addressed in accordance with NCDOT's approved program. Particular attention should be given to design and installation of appropriate perimeter sediment trapping devices as well as stable stormwater conveyances and outlets.		(30 days)
<input type="checkbox"/> Mining Permit	On-site inspection usual. Surety bond filed with ENR Bond amount varies with type mine and number of acres of affected land. Any acre mined greater than one acre must be permitted. The appropriate bond must be received before the permit can be issued.	30 days (60 days)
<input type="checkbox"/> North Carolina Burning permit	On-site inspection by N.C. Division Forest Resources if permit exceeds 4 days	1 day (N/A)
<input type="checkbox"/> Special Ground Clearance Burning Permit - 22 counties in coastal N.C. with organic soils	On-site inspection by N.C. Division Forest Resources required "if more than five acres of ground clearing activities are involved. Inspections should be requested at least ten days before actual burn is planned."	1 day (N/A)
<input type="checkbox"/> Oil Refining Facilities	N/A	90-120 days (N/A)
<input type="checkbox"/> Deer Safety Permit	If permit required, application 60 days before begin construction. Applicant must hire N.C. qualified engineer to prepare plans, inspect construction verify construction is according to ENR approved plans. May also require permit under mosquito control program. And a 404 permit from Corps of Engineers. An inspection of site is necessary to verify Hazard Classification. A minimum fee of \$200.00 must accompany the application. An additional processing fee based on a percentage of the total project cost will be required.	30 days (60 days)

listing of designated plant species can be developed through consultation with the following programs:

The Natural Heritage Program
<http://www.ncnhp.org>
1601 Mail Service Center
Raleigh, N. C. 27699-1601

and,

NCDA Plant Conservation Program
P. O. Box 27647
Raleigh, N. C. 27611
(919) 733-3610

2. Description of any streams or wetlands affected by the project. If applicable, include the linear feet of stream that will be channelized or relocated.
3. Cover type maps showing wetland acreage impacted by the project. Wetland acreage should include all project-related areas that may undergo hydrologic change as a result of ditching, other drainage, or filling for project construction. Wetland identification may be accomplished through coordination with the U. S. Army Corps of Engineers (USACE). If the USACE is not consulted, the person delineating wetlands should be identified and criteria listed.
4. Cover type maps showing acreage of upland wildlife habitat impacted by the proposed project. Potential borrow sites and waste areas should be included.
5. Show the extent to which the project will result in loss, degradation, or fragmentation of wildlife habitat (wetlands or uplands).
6. Include the mitigation plan for avoiding, minimizing or compensating for direct and indirect degradation in habitat quality as well as quantitative losses.
7. Address the overall environmental effects of the project construction and quantify the contribution of this individual project to environmental degradation.
8. Provide a discussion of the probable impacts on natural resources, which will result from secondary development, facilitated by the improved road access.
9. If construction of this facility is to be coordinated with other state, municipal, or private development projects, a description of these projects should be included in the environmental document, and all project sponsors should be identified.

Thank you for the opportunity to provide input in the early planning stages of this project. If you have any questions regarding these comments, please contact me at (704) 485-8291.

cc: Polly Lespinasse, NCDWQ

PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (statutory time limit)
<input type="checkbox"/> Permit to drill exploratory oil or gas well	File surety bond of \$5,000 with ENR running to State of NC conditional that any well opened by drill operator shall, upon abandonment, be plugged according to ENR rules and regulations.	10 days N/A
<input type="checkbox"/> Geophysical Exploration Permit	Application filed with ENR at least 10 days prior to issue of permit. Application by letter. No standard application form.	10 days N/A
<input type="checkbox"/> State Lakes Construction Permit	Application fees based on structure size is charged. Must include descriptions & drawings of structure & proof of ownership of riparian property	15-20 days N/A
<input type="checkbox"/> 401 Water Quality Certification	N/A	60 days (130 days)
<input type="checkbox"/> CAMA Permit for MAJOR development	\$250.00 fee must accompany application	55 days (150 days)
<input type="checkbox"/> CAMA Permit for MINOR development	\$50.00 fee must accompany application	22 days (25 days)
Several geodetic monuments are located in or near the project area. If any monument needs to be moved or destroyed, please notify: N.C. Geodetic Survey, Box 27687 Raleigh, NC 27611		
<input type="checkbox"/> Abandonment of any wells, if required must be in accordance with Title 15A Subchapter 2C.0100.		
<input type="checkbox"/> Notification of the proper regional office is requested if "orphan" underground storage tanks (USTS) are discovered during any excavation operation.		
<input type="checkbox"/> Compliance with 15A NCAC 2H 1050 (Coastal Stormwater Rules) is required		
<input type="checkbox"/> Tar Pamlico or Neuse Riparian Buffer Rules required.		

* Other comments (attach additional pages as necessary, being certain to cite comment authority)

LO - Eum & Sedent Canal Permit request for NCDOT Approval Pgr. Zeb S. K. 10/17/11
 AZZ - No Comment. A Hook 10/17/2011

AFS - Known groundwater contamination at the Cones - Vulcan site which appears to be part of the proposed facility. Numerous monitoring and injection wells may be impacted and would need to be properly abandoned by a EWC. UNC permit would need to be modified/rescinded.
 AAK 11.8.11

REGIONAL OFFICES

Questions regarding these permits should be addressed to the Regional Office marked below.

Asheville Regional Office
 2090 US Highway 70
 Swannanoa, NC 28778
 (828) 296-4500

Mooresville Regional Office
 610 East Center Avenue, Suite 301
 Mooresville, NC 28115
 (704) 663-1699

Wilmington Regional Office
 127 Cardinal Drive Extension
 Wilmington, NC 28405
 (910) 796-7215

Fayetteville Regional Office
 225 North Green Street, Suite 714
 Fayetteville, NC 28301-5043
 (910) 433-3300

Raleigh Regional Office
 3800 Barrett Drive, Suite 101
 Raleigh, NC 27609
 (919) 791-4200

Winston-Salem Regional Office
 585 Waughtown Street
 Winston-Salem, NC 27107
 (336) 771-5000

Washington Regional Office
 943 Washington Square Mall
 Washington, NC 27889
 (252) 946-6481



North Carolina
Department of Administration

Beverly Eaves Perdue, Governor

Moses Carey, Jr., Secretary

November 18, 2011

Mr. Ryan White
NCDOT
Rail Division
1553 Mail Service Center
Raleigh, NC 27699-1553

Dear Mr. White:

Re: SCH File # 12-E-4220-0097; SCOPING; Proposal of the NCDOT Locomotive and Railcar Maintenance Facility Phase I. TIP No. P-2918

The above referenced environmental impact information has been submitted to the State Clearinghouse under the provisions of the National Environmental Policy Act. According to G.S. 113A-10, when a state agency is required to prepare an environmental document under the provisions of federal law, the environmental document meets the provisions of the State Environmental Policy Act. Attached to this letter for your consideration are **additional** comments made by agencies in the course of this review.

If any further environmental review documents are prepared for this project, they should be forwarded to this office for intergovernmental review.

Should you have any questions, please do not hesitate to call.

Sincerely,

A handwritten signature in black ink, appearing to read "W. E. H. Creech".

William E. H. Creech

Attachments

cc: Region F

Mailing Address:
1301 Mail Service Center
Raleigh, NC 27699-1301

Telephone: (919)807-2425
Fax (919)733-9571
State Courier #51-01-00
e-mail state.clearinghouse@doa.nc.gov

Location Address:
116 West Jones Street
Raleigh, North Carolina



⊠ North Carolina Wildlife Resources Commission ⊠

TO: Marc Hamel, Rail Project Development Engineer
Rail Division – Environmental and Planning Branch, NCDOT

FROM: Marla Chambers, Western NCDOT Permit Coordinator *Marla Chambers*
Habitat Conservation Program, NCWRC

DATE: January 31, 2012

SUBJECT: Scoping review of NCDOT's proposed locomotive and railcar maintenance facility, phase 1, in Charlotte, NC, Mecklenburg County. TIP No. P-2918.

North Carolina Department of Transportation (NCDOT) is requesting comments from the North Carolina Wildlife Resources Commission (NCWRC) regarding impacts to fish and wildlife resources resulting from the subject project. Staff biologists have reviewed the information provided and have the following preliminary comments. These comments are provided in accordance with the provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

The NCDOT proposes to construct a locomotive and railcar maintenance facility, phase 1, in Charlotte. This project was formerly a part of the Norfolk Southern mainline track improvements project (P-3800), but is now being pursued as a stand alone project due to receipt of American Recovery and Reinvestment Act (ARRA) funding for the subject facility.

Irwin Creek, which is in the project vicinity but outside the study area, is on the State's 303(d) list of impaired waters. If portions of this project drain to impaired waters, we recommend enhanced sediment and erosion control measure to avoid or minimize further degradation of the waterway. In addition, to help facilitate document preparation and the review process, our general information needs are outlined below:

1. Description of fishery and wildlife resources within the project area, including a listing of federally or state designated threatened, endangered, or special concern species. Potential borrow areas to be used for project construction should be included in the inventories. A



**APPENDIX =
Public Involvement**

Citizens Information Workshop Summary Locomotive & Railcar Maintenance Facility TIP Project P-2918F March 27, 2012 Clanton Park Pavilion, Charlotte, NC

1. Purpose and Intent

The purpose of the Citizens Information Workshop was to inform the public of and to solicit public input on the Locomotive & Railcar Maintenance Facility project, which is in the planning and environmental phase. The Transportation Improvement Program (TIP) Project Number is P-2918F. The project is sponsored by the North Carolina Department of Transportation (NCDOT) Rail Division.

The workshop also served to comply with requirements of the National Environmental Policy Act (NEPA) environmental study process for this project. Through this effort, both written and verbal comments were solicited and received. Comments are detailed within this workshop summary. Open dialogue between the public and the project team was encouraged.

The workshop at the Clanton Park Pavilion was attended by local business owners, property owners, and residents living along the project study area. Questions from the public generally focused on project noise and vibration, project timing, and possible impacts to the stability of the Wilmore neighborhood.

It should be noted that the Locomotive & Railcar Maintenance Facility was previously considered part of the NS Mainline Track Improvements project (P-3800) and that a Citizens Information Workshop for that project was also held in August 2009.

2. Workshop Date, Time, and Location

The workshop was held on March 27, 2012 at the Clanton Park Pavilion (3132 Manchester Drive, Charlotte) from 5 p.m. to 7 p.m.

3. Public Notices

3.1. Mailings

In advance of the workshop, approximately 400 newsletters were mailed around March 21, 2012 to addresses within ½ mile of the projects' alignments. A copy of the newsletter mailer is attached.

3.2 Newspaper Announcements

Newspaper advertisements invited the public to participate in a discussion about the rail project. The advertisements were published in local newspapers and appeared on the following dates:

- *The Charlotte Observer* on 03/11, 03/18, 03/25
- *The Charlotte Post* on 03/15, 03/22
- *La Noticia* on 03/14, 03/21

3.3 Other Communications

In addition to mailings and newspaper advertisements, the NCDOT employed the following workshop notification methods:

- Press releases sent on 03/20
- Notices sent to NCDOT Division 10 staff and City of Charlotte staff and elected officials on 03/20

3.4 Handouts and Displays

Information materials were provided to each workshop attendee. These materials included the following documents:

- Write-ups describing the projects and purpose of workshop
- Project study area maps
- Comment sheet

The following poster-size displays were set up at the workshop and were available for viewing:

- Hearing map showing the footprint and layout of the proposed facility
- Architect's rendering of facility building
- Board showing levels of possible noise impacts

Copies of these handout materials and the displays are attached to this summary.

4. Workshop Procedure

4.1. Citizens Information Workshop

A Citizens Information Workshop was held between 5 p.m. and 7 p.m. The workshop was organized as an open house format where citizens or officials could review the handouts with descriptions of the project and the environmental process and also could view aerial maps of the project study limits with the proposed project footprint. Staff from NCDOT, along with staff from Gannett Fleming, the NCDOT's project consultant, were on hand to describe the project and answer questions as needed.

Participants were asked to complete comment sheets regarding the projects and to note concerns they might have. The data compiled from the comment sheets are summarized in Section 5.

4.2 Attendance

Twenty-five (25) persons attended the workshop in addition to eight persons from NCDOT and Gannett Fleming who were on hand to discuss the project with workshop attendees and to answer questions and comments.

5. Summary of Public Input

5.1 Verbal Questions and Comments

Many workshop attendees wanted information on the project, including information on possible noise, vibration and air quality impacts, when the facility will operate, and when trains will enter the facility. Many attendees were residents of the Wilmore neighborhood and expressed concern about the project.

5.2 Phone Calls and Emails

Prior to and after the workshop, a few phone calls were received asking for information on the project. Most wanted to know the location of the workshop, and wanted to know more information about the project. At least two persons who could not attend the workshop were emailed copies of the handout.

Prior to the workshop, NCDOT completed another workshop on a separate project (P-3309K) that is investigating changes to at-grade crossings along the Norfolk Southern railway in Charlotte. That project includes investigating the West Summit Avenue at-grade crossing. At least four persons submitted email comments noting concerns about noise from trains crossing West Summit Avenue. West Summit Avenue is located within the study area for the Locomotive & Railcar Maintenance Facility project (P-2918F).

5.3 Workshop Comment Sheets

Comment sheets were distributed to each of the workshop attendees. Four comment sheets were received at the workshop. At least two commenters were against the project. Other commenters requested that NCDOT look to mitigate noise, vibration and visual impacts. At least two individuals requested that NCDOT implement a quiet zone for the at-grade crossing of West Summit Avenue. Representatives from the Wilmore neighborhood association attended the workshop and requested follow-up meetings with NCDOT.

The workshop comment sheet stated that individuals were allowed to submit comments to NCDOT on the project through April 27, 2012. Subsequent to the workshop, one person wrote an email to Charlotte Mayor Anthony Foxx objecting to the proposed maintenance facility. No other comment sheets were received.

5.4 Other Media

Approximately one week before the workshop, WSOC-TV broadcast a story about the project and reaction from some residents in the Wilmore neighborhood who were concerned about noise and how the project might impact the Wilmore neighborhood. The story aired on March 21, 2012 and was on the station's webpage. News-14 Carolina did a similar story that appeared both on the web and on air on April 14, 2012.

On April 6, 2012, the Charlotte Observer newspaper printed a story about Charlotte Pipe and Foundry's plan to rezone property near Morehead Street to replace the approximately 10 acres that the company owns near West Summit Avenue which NCDOT plans to acquire for this project.

No news media were present at the workshop.

6. Follow-up Meetings and Other Outreach

After the March 27, 2012 workshop, NCDOT was in contact with representatives from the Wilmore neighborhood association and arranged at least one follow-up meeting, which may include a train trip to Raleigh and a tour of NCDOT's Capital Yard maintenance facility. Representatives from the Wilmore neighborhood also met with staff from the Charlotte-Mecklenburg Planning Department in April 2012 to discuss their concerns about the proposed facility. To address the concerns expressed by the public, NCDOT agreed to modify the project's design, such as relocating driveways and adding vegetation buffers.

Attachments

- Mailer/Newspaper Advertisement/Webpage Press Release (1 page)
- Workshop Handouts (3 pages)
- Workshop Displays: Hearing Map, Architect's Rendering, and Noise Board (3 pages)

**NOTICE OF A CITIZENS' INFORMATIONAL WORKSHOP FOR THE PROPOSED
PASSENGER LOCOMOTIVE AND RAILCAR MAINTENANCE FACILITY
IN CHARLOTTE**

TIP Project No. P-2918F

Mecklenburg County

The North Carolina Department of Transportation Rail Division will hold the above citizens' informational workshop on March 27, 2012, between 5-7 p.m. at the Clanton Park Pavilion, located at 3132 Manchester Ave. in Charlotte.

NCDOT representatives will be available in an informal setting to answer questions and receive comments about the rail project. The opportunity to submit written comments or questions will be provided. Interested citizens may attend the workshop at any time during the above mentioned hours. Please note: there will be no formal presentation.

The Rail Division, in conjunction with Federal Railroad Administration, is studying alternatives for the Piedmont Improvement Program locomotive & railcar maintenance facility project. NCDOT proposes to construct a new facility to replace the current one next to the Norfolk Southern Railway Charlotte yard.

The proposed facility will serve the increasing number of conventional passenger trains and support the Southeast High Speed Rail Corridor. The proposed facility will be in the vicinity of West Summit Avenue and West Carson Boulevard. The facility will include:

- Enclosure for major maintenance operations;
- Fuel pad and onsite fuel tank;
- Additional space for spare parts and equipment storage;
- Enclosed train wash facility; and
- Train crew base for as many as 20 crew members.

For more information, contact Ryan White, Rail Division, NCDOT Environmental & Planning Branch, 1553 Mail Service Center, Raleigh, NC 27699-1553, by phone at (919) 707-4717, or via email at rlwhite@ncdot.gov. Citizens may also contact project consultant Travis Pollack of Gannett Fleming, 301 South McDowell St., Suite 1008, Charlotte, NC 28204, by phone at (704) 375-2438, extension 16, or via email at tpollack@gfnet.com.

NCDOT will provide auxiliary aids and services under the Americans with Disabilities Act for disabled persons who want to participate in this workshop. Anyone requiring special services should contact Kimberly Hinton at (919) 707-6072 or khinton@ncdot.gov as early as possible so that arrangements can be made.



LOCOMOTIVE AND RAILCAR MAINTENANCE FACILITY

Mecklenburg County, North Carolina

TIP PROJECT P-2918F

CITIZENS INFORMATIONAL WORKSHOP HANDOUT

Welcome to the Workshop

The North Carolina Department of Transportation (NCDOT) Rail Division is here this evening to gather your input on the proposed **Locomotive and Railcar Maintenance Facility (LRMF)** project. We are very interested in your opinions on the project in general and the concept plan being presented. Project team members are available to answer questions and provide any additional information that you may need. The workshop is informal and there will be no formal presentation. This will allow project team personnel to answer as many individual questions as possible. You may submit your concerns and comments on the sheet provided. Your **comment sheet** may be left at the sign-in desk or taken home and mailed or emailed to:

Mr. Ryan White, PE
NC Dept. of Transportation
Rail Division
Environmental Planning Branch
1553 Mail Service Center
Raleigh, NC 27699-1553
rlwhite@ncdot.gov

Locomotive and Railcar Maintenance Facility (LRMF) (TIP Project No. P-2918F)

The purpose of the LRMF Project is to construct a new passenger train maintenance facility in Charlotte that will serve the increasing number of conventional passenger trains and support implementation of the federally designated Southeast High Speed Rail corridor. The LRMF is a component of the NCDOT Piedmont Improvement Program which is an initiative by NCDOT to improve passenger and freight rail service along the

Norfolk Southern/North Carolina Railroad Raleigh to Charlotte Corridor.

The proposed Locomotive and Railcar Maintenance Facility will be located adjacent to the existing NS railroad near I-277 and I-77 and across the tracks from the Charlotte Pipe and Foundry on West Summit Avenue. The facility will include the following elements:

- Enclosed facility for major maintenance operations
- Fuel pad and onsite fuel tank
- Additional space for the storage of spare parts and equipment
- Enclosed train wash facility
- Train crew base for up to 20 crew members

The LRMF will be the primary service location for the future Southeast High Speed Rail train sets. Overnight service of state-sponsored Charlotte to New York *Carolinian* passenger trains will occur at the LRMF. Layover servicing and some nighttime service of Charlotte to Raleigh *Piedmont* passenger trains will also occur at the LRMF.

The LRMF Project would also include construction of north and south tracks connecting to the existing easternmost Norfolk Southern mainline track. The LRMF track would branch into two service and inspection tracks serving the maintenance building, plus one layover track (for train storage) and one layover/runaround track. The five tracks at the LRMF would all cross West Summit Avenue at street level, with the maintenance building and other structures located on the north side of West Summit

Avenue, and wash facility located on the south side of West Summit Avenue. The LRMF would include a service building with a crew base to accommodate train crews and train parts storage; refueling and train wash equipment; and parking for crew and employees. The study limits for the project are identified in Exhibit A of this handout. A concept plan of the facility is available for view at the workshop.

It should be noted that, given funding constraints, the LRMF will be constructed in phases, with the first phase consisting of the proposed Amtrak and contractor staff building near West Palmer and Graham Streets, two maintenance facility tracks (tracks 5 and 6), and an emergency access driveway from West Summit Avenue. Later phases would construct the additional maintenance facility tracks, the maintenance building, and train wash facility.

Environmental Assessment

NCDOT is conducting an Environmental Assessment (EA) of the LRMF as required under the National Environmental Policy Act. This EA will assess the project's potential impacts on the human and natural environment, including possible noise and vibration impacts to residential areas. The LRMF will be constructed to meet all federal and state safety and environmental requirements.

Proposed Schedule

Below is a proposed construction schedule for the first phase of the project.

Finalize Environmental Document: July 2012

Right-of-Way Acquisition: July 2012-April 2013

Construction: May 2013-April 2014

Proposed Construction Costs

The entire LRMF is projected to cost \$44 million. This figure includes right-of-way, tracks, buildings, driveways and changes to West Summit Avenue, as well as planning and design fees.

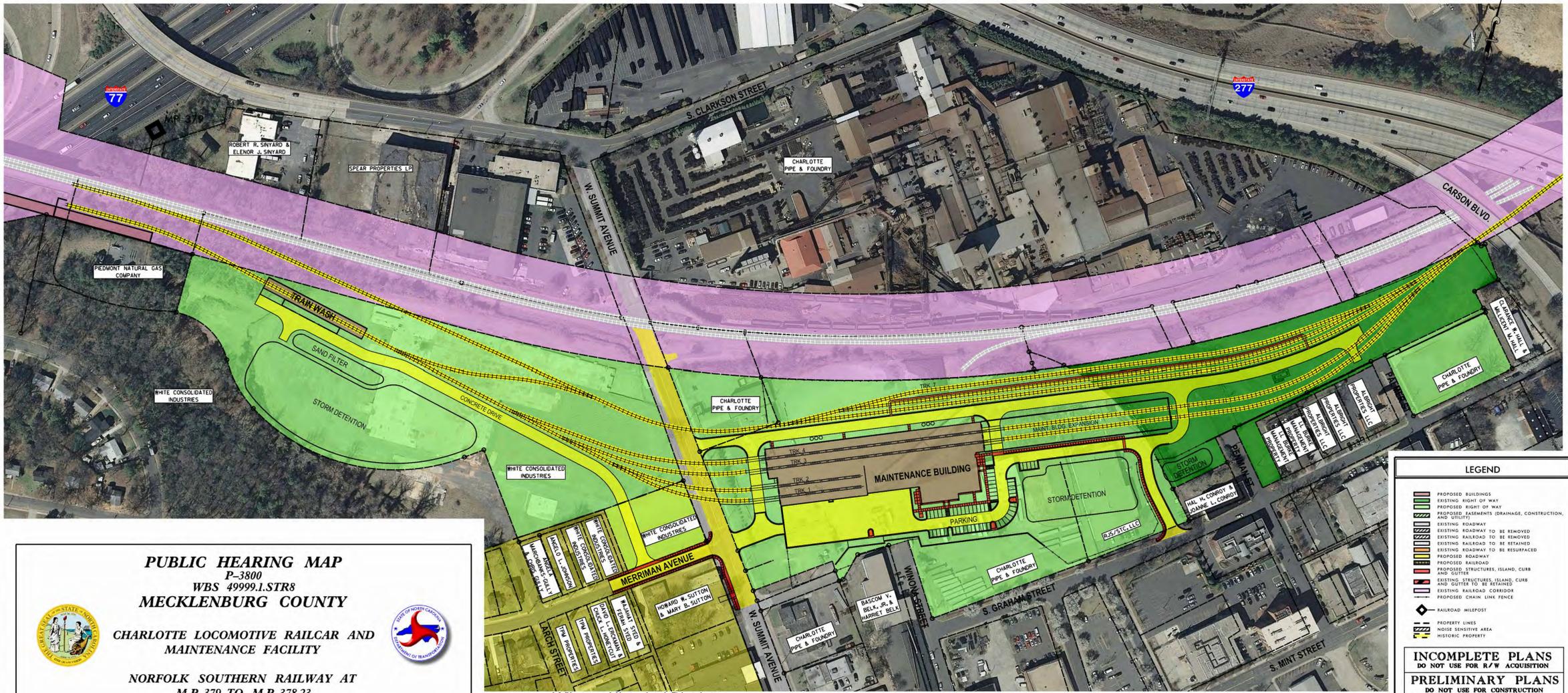
The first phase of the LRMF will consist of tracks 5 and 6 and the contractor staff building near West Palmer Street. That first phase is estimated to cost \$12.6 million.

These are projected costs based upon a schematic design and are subject to change.

Thank You for Coming

The project team appreciates your participation in the workshop this evening. Please contact us with any additional concerns and comments.

If you require additional information after today's workshop, you may contact Mr. Ryan White, PE, NC Dept. of Transportation, Rail Division, at rlwhite@ncdot.gov, or view the project webpage at www.bytrain.org.



LEGEND

- PROPOSED BUILDINGS
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- PROPOSED EASEMENTS (DRAINAGE, CONSTRUCTION, AND UTILITIES)
- EXISTING ROADWAY
- EXISTING ROADWAY TO BE REMOVED
- EXISTING RAILROAD TO BE REMOVED
- EXISTING RAILROAD TO BE RETAINED
- EXISTING ROADWAY TO BE RESURFACED
- PROPOSED ROADWAY
- PROPOSED RAILROAD
- PROPOSED STRUCTURES, ISLAND, CURB AND GUTTER
- EXISTING STRUCTURES, ISLAND, CURB AND GUTTER TO BE RETAINED
- EXISTING RAILROAD CORRIDOR
- PROPOSED CHAIN LINK FENCE
- RAILROAD MILEPOST
- PROPERTY LINES
- NOISE SENSITIVE AREA
- HISTORIC PROPERTY

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

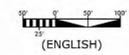
PUBLIC HEARING MAP
P-3800
WBS 49999.1.STR8
MECKLENBURG COUNTY

CHARLOTTE LOCOMOTIVE RAILCAR AND MAINTENANCE FACILITY

NORFOLK SOUTHERN RAILWAY AT M.P. 379 TO M.P. 378.23



Wilmore Historical District
(Recommended Eligible)





NCDOT Locomotive & Railcar Maintenance Facility

Charlotte, NC

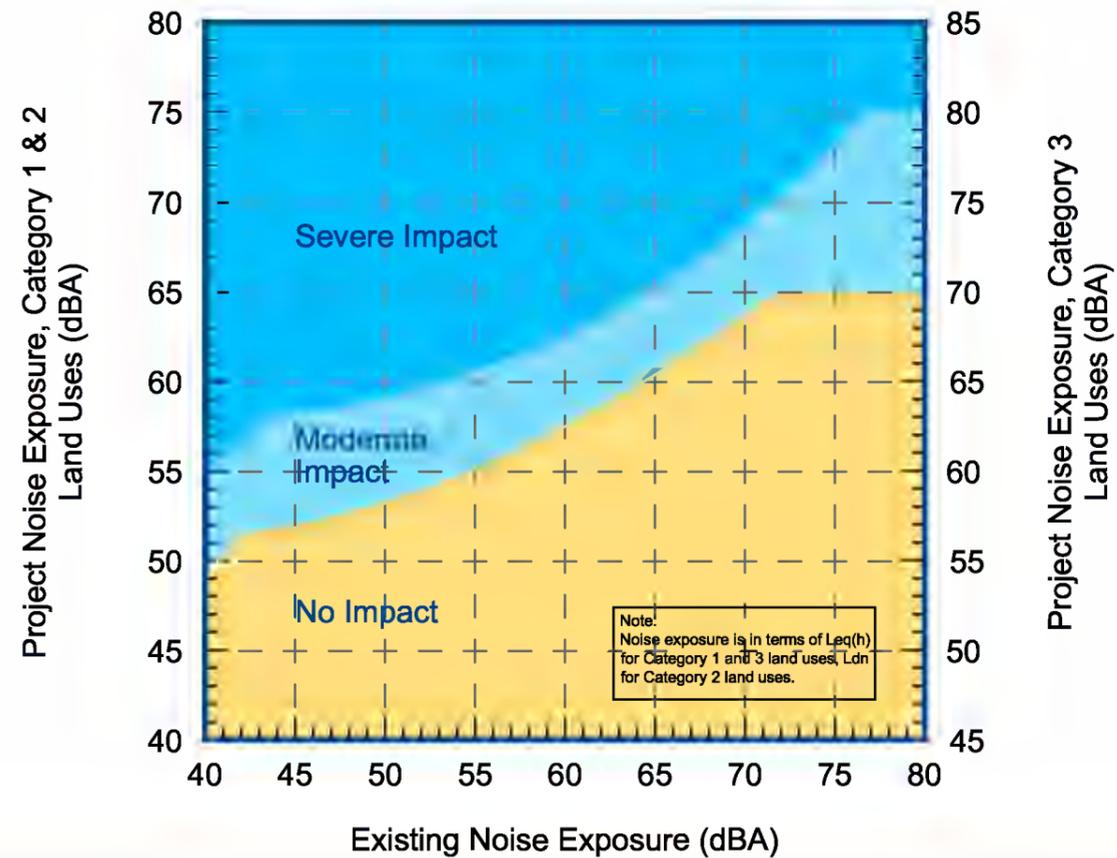
NCSCO #1008634-03



Land Use Categories and Metrics for Transit Noise Impact Criteria

Land Use Category	Noise Metric (dBA)	Description of Land Use Category
1	Outdoor $L_{eq}(h)$	Land where quiet is an essential element in their intended purpose.
2	Outdoor L_{dn}	Residences and buildings where people normally sleep.
3	Outdoor $L_{eq}(h)$	Institutional land uses with primarily daytime and evening use.

Noise Impact Criteria for Transit Projects



Source: *Transit Noise and Vibration Impact Assessment, Federal Transit Administration, May 2006*

Predicted noise impacts are based on increase above existing background noise levels.

Perceived Change in Decibel Level

Change in Sound Level

Perceived Change to the Human Ear

- ± 1 dB** ----- **Not Perceptible**
- ± 3 dB** ----- **Barely Perceptible**
- ± 5 dB** ----- **Noticeable**
- ± 10 dB** ----- **Twice (or Half as Loud)**

Source: *Highway Noise Fundamentals, Federal Highway Administration, September 1980*

Neighborhood Meeting Summary Locomotive & Railcar Maintenance Facility TIP Project P-2918F June 4, 2012 Wilmore Community Center, Charlotte, NC

1. Purpose and Intent

The purpose of the neighborhood meeting was to inform the public of and to solicit public input on the Locomotive & Railcar Maintenance Facility project, which is in the planning and environmental phase. The Transportation Improvement Program (TIP) Project Number is P-2918F. The project is sponsored by the North Carolina Department of Transportation (NCDOT) Rail Division.

The meeting also served to comply with requirements of the National Environmental Policy Act (NEPA) environmental study process for this project. During the meeting both written and verbal comments were solicited and received. Open dialogue between the public and the project team was encouraged.

The meeting was part of the Wilmore neighborhood's regularly scheduled quarterly meeting. The meeting was attended mostly by residents of the Wilmore neighborhood, which is adjacent to the proposed project. The meeting was requested by members of the Wilmore community as a follow-up to the March 27, 2012 Citizens Informational Workshop for the project, and as a follow-up to a tour of the Capital Yard Maintenance Facility by community members and City staff on May 12th.

Questions from the public generally focused on project noise, project timing, and possible impacts to the stability of the Wilmore neighborhood.

2. Meeting Date, Time, and Location

The meeting was held on June 4, 2012 at the Wilmore Community Center (501 West Boulevard, Charlotte) from 7 p.m. to 8:30 p.m. The meeting was a regularly scheduled Wilmore neighborhood meeting, announced through the neighborhood association's email list, website, and community newsletter.

Information materials were available for meeting attendees. These materials included the following documents:

- Description of project
- Project study area map
- Comment sheet

The following poster-size displays were set up at the meeting and were available for viewing:

- Hearing map showing the footprint and layout of the proposed facility
- Architect's rendering of facility building
- Concept site plans of the project's first phase and final build out

Copies of these handout materials and the displays are attached to this summary.

3. Meeting Procedure & Attendance

The meeting was organized by the Wilmore neighborhood and was a regularly scheduled neighborhood meeting, with NCDOT on the meeting agenda. NCDOT Rail Division representatives gave an overview of the project, some background on why the West Summit Avenue site was selected for the facility, and discussed changes to the project design that were a result of input received from the March 27, 2012 Workshop and from other meetings with residents of the Wilmore neighborhood. Staff from NCDOT, along with staff from Gannett Fleming, STV and Morris-Berg, were on hand to describe the project and answer questions as needed.

It should be noted that several residents rode the train and toured the NCDOT Capital Yard rail maintenance facility in Raleigh in May to get a better understanding of the activities that would occur at the Charlotte facility. The residents will also have an opportunity in June to tour the CATS light rail train wash facility.

Participants were asked to complete comment sheets regarding the projects and to note concerns they might have. To date, only one person has completed a comment sheet for this meeting.

Approximately twenty to twenty-five persons attended the meeting, in addition to two persons from NCDOT and four consultant representatives. Representatives from the City of Charlotte and Charlotte-Mecklenburg Police Department also were present.

4. Summary of Public Input

4.1 Verbal Questions and Comments

Below is a summary of the questions posed by the public and answers provided by NCDOT or consultant staff, unless otherwise noted.

1. Is there really demand for the train service between Raleigh and Charlotte?

Train ridership on the *Piedmont* has doubled since 2009 and Charlotte and Raleigh are the busiest stations in North Carolina. Annual boardings and alightings in Charlotte in 2011 were close to 200,000 and the existing station is overcrowded.

Currently trains are serviced at the Amtrak station on North Tryon Street (in the Norfolk Southern freight yard) and there is no space for servicing additional passenger trains. Thus the lack of a maintenance facility is preventing NCDOT from adding additional passenger train service. NCDOT also cannot do maintenance at the current Amtrak station.

2. How tall will the maintenance building be?

The tallest portion will be the equivalent of a 2-story building. The office area facing West Summit Avenue will be a single story building. The layout of the facility was revised (after discussions with the neighborhood) to place the office building closer to West Summit Avenue to improve the appearance of the facility closest to Wilmore.

3. How many tracks will cross West Summit Avenue? How many trains will use these tracks?

Under the revised plan, NCDOT reduced the number of facility tracks crossing West Summit Avenue from 5 to 4 and moved them further from the neighborhood. In the full build out, 5 conventional passenger trains will be serviced in Charlotte. A majority of the rail traffic in the area will continue to be the freight trains on the Norfolk Southern (NS) mainline tracks.

4. If West Summit Avenue is permanently closed, will trains blow their horns? If West Summit Avenue remains open, can there be a quiet zone?

If West Summit Avenue is closed, then trains would not sound their horns. A request for a quiet zone needs to be made by the City of Charlotte to the Federal Railroad Administration (FRA).

The City of Charlotte does not have a quiet zone policy, and is in the process of developing one. The policy would then need to be adopted by City Council before the City can place a request for a quiet zone. (Answer provided by Charlotte DOT staff)

5. If the maintenance facility were not constructed, would passenger trains travel over the West Summit Avenue crossing?

Without the maintenance facility, NCDOT sponsored *Piedmont* and *Carolinian* trains would likely not cross West Summit Avenue. However, the *Crescent*, which travels between New Orleans and New York City crosses West Summit today and will continue to do so.

6. How many times will the passenger trains cross West Summit Avenue? Will the trains sound their horn each time they cross Summit Avenue?

Each train will cross West Summit Avenue twice: once when on the facility tracks, and once when on the NS mainline. Trains are required to sound their horn for 15 seconds prior to a road crossing, plus through the crossing, which will take about 5 seconds within the facility.

7. Can the storm detention pond be moved further away from the residential? Is the pond size shown on the plans the proposed size of the pond?

The location of the detention pond is dependent upon topography. The size shown on the concept plans may not be the exact size and location; these will be developed further as design progresses.

8. *What type of smells or odors can we expect from the facility? What type of pollution will be emitted by the trains and the facility?*

The environmental study will consider emissions. The diesel fueling activities will occur on the north side of the proposed maintenance facility. The Environmental Protection Agency (EPA) sets strict requirements for diesel locomotive emissions and all of Amtrak's and NCDOT's passenger train locomotives must meet those emission requirements.

9. *Where in the US are there similar sized maintenance facilities? Are they located near residential areas?*

NCDOT has a similar but smaller facility in Raleigh. There are similar facilities operated by Amtrak and other rail agencies, including Amtrak facilities that are adjacent to residential areas in Bear, DE and Beech Grove, IL.

10. *Will NCDOT purchase both large lots owned by White Consolidated Industries?*

NCDOT only intends to acquire property needed for the project.

11. *Where will the refueling occur?*

The train refueling will occur on the north side of the proposed maintenance building.

12. *Where will the passenger trains turn around for the northbound trip? Will they use the maintenance facility to turn around?*

The trains will likely use a wye at Arrowood. Another proposed rail project to make other proposed track improvements will either construct a new wye near Morris Field Drive, or will construct a loop track near Berryhill Road. Trains will not use the proposed maintenance facility to turn around.

13. *What type of buffers (berms, vegetation, fencing, etc.) will be built around the facility?*

There will be buffers. The exact type and location will be determined during the next phase of design. Amtrak security protocols require fencing around the facility.

14. *If you lived in this neighborhood, what would be your feeling about this proposed facility?*

The land where the maintenance facility is proposed is currently zoned industrial. If the maintenance facility were not there, some other industrial use could be constructed without a public hearing and without community input. Since federal and state funds will be used, NCDOT is required to conduct a public input process during the design and environmental assessment.

15. *Is it certain that this project will happen?*

Yes. The purpose of these public meetings and the environmental assessment is to determine possible impacts, and ways to minimize or mitigate the impacts.

16 If the facility is to be constructed in phases, what is the timeline for each phase? Will there be a phase 3 where the facility would be expanded beyond what is shown on the plans?

The first phase will be completed by 2014. NCDOT has no funding for future phases, so there is no timeframe for the full build out. NCDOT does not anticipate expanding the site beyond what is shown in the plans.

17. Could NCDOT reconstruct the crumbled sidewalk along Merriman Avenue as part of this project?

We will look into that. NCDOT will do some mitigation at the corner of Merriman Avenue and West Summit Avenue as a result of NCDOT acquiring some property within the Wilmore historic district. This will likely be in the form of signage or other marker that will identify the Wilmore neighborhood. NCDOT will be working with the local historic landmarks commission to develop the mitigation measures.

4.2 Comment Sheets

Comment sheets were available for the meeting attendees. One comment sheet was received at the meeting. The commenter requested that NCDOT look to mitigate noise impacts, and include a quiet zone for the at-grade crossing of West Summit Avenue as part of the project.

4.3 Other Media

On June 3, 2012, the Charlotte Observer newspaper printed a story about the project and concerns from the Wilmore neighborhood.

No news media were present at the meeting.

5. Follow-up and Other Outreach

At the end of the question and answer session, the public was informed that the next steps are to complete the environmental assessment (EA) in the fall. When the draft EA is completed the public will have a chance to review the document and they can request a meeting or public hearing. The plans shown at tonight's meeting will also be available on the NCDOT Rail Division website.

Attachments

- Meeting Handouts (3 pages)
- Meeting Displays: Hearing Map, Concept Plans, Architect's Rendering (4 pages)



NORTH CAROLINA PIEDMONT IMPROVEMENT PROGRAM



LOCOMOTIVE AND RAILCAR MAINTENANCE FACILITY
Mecklenburg County, North Carolina
TIP PROJECT P-2918F

CITIZENS INFORMATIONAL WORKSHOP HANDOUT

Welcome to the Workshop

The North Carolina Department of Transportation (NCDOT) Rail Division is here this evening to gather your input on the proposed **Locomotive and Railcar Maintenance Facility (LRMF)** project. We are very interested in your opinions on the project in general and the concept plan being presented. Project team members are available to answer questions and provide any additional information that you may need. The workshop is informal and there will be no formal presentation. This will allow project team personnel to answer as many individual questions as possible. You may submit your concerns and comments on the sheet provided. Your **comment sheet** may be left at the sign-in desk or taken home and mailed or emailed to:

Mr. Ryan White, PE
NC Dept. of Transportation
Rail Division
Environmental Planning Branch
1553 Mail Service Center
Raleigh, NC 27699-1553
rlwhite@ncdot.gov

Locomotive and Railcar Maintenance Facility (LRMF) (TIP Project No. P-2918F) - The purpose of the LRMF Project is to construct a new passenger train maintenance facility in Charlotte that will serve the increasing number of conventional passenger trains and support implementation of the federally designated Southeast High Speed Rail corridor. The LRMF is a component of the NCDOT Piedmont Improvement Program which is an initiative by NCDOT to improve passenger and freight rail service along the

Norfolk Southern/North Carolina Railroad Raleigh to Charlotte Corridor.

The proposed Locomotive and Railcar Maintenance Facility will be located adjacent to the existing NS railroad near I-277 and I-77 and across the tracks from the Charlotte Pipe and Foundry on West Summit Avenue. The facility will include the following elements:

- Enclosed facility for major maintenance operations
- Fuel pad and onsite fuel tank
- Additional space for the storage of spare parts and equipment
- Enclosed train wash facility
- Train crew base for up to 20 crew members

The LRMF will be the primary service location for the future Southeast High Speed Rail train sets. Overnight service of state-sponsored Charlotte to New York *Carolinian* passenger trains will occur at the LRMF. Layover servicing and some nighttime service of Charlotte to Raleigh *Piedmont* passenger trains will also occur at the LRMF.

The LRMF Project would also include construction of north and south tracks connecting to the existing easternmost Norfolk Southern mainline track. The LRMF track would branch into two service and inspection tracks serving the maintenance building, plus one layover track (for train storage) and one layover/runaround track. The five tracks at the LRMF would all cross West Summit Avenue at street level, with the maintenance building and other structures located on the north side of West Summit

Avenue, and wash facility located on the south side of West Summit Avenue. The LRMF would include a service building with a crew base to accommodate train crews and train parts storage; refueling and train wash equipment; and parking for crew and employees. The study limits for the project are identified in Exhibit A of this handout. A concept plan of the facility is available for view at the workshop.

It should be noted that, given funding constraints, the LRMF will be constructed in phases, with the first phase consisting of the proposed Amtrak and contractor staff building near West Palmer and Graham Streets, two maintenance facility tracks (tracks 5 and 6), and an emergency access driveway from West Summit Avenue. Later phases would construct the additional maintenance facility tracks, the maintenance building, and train wash facility.

Environmental Assessment

NCDOT is conducting an Environmental Assessment (EA) of the LRMF as required under the National Environmental Policy Act. This EA will assess the project's potential impacts on the human and natural environment, including possible noise and vibration impacts to residential areas. The LRMF will be constructed to meet all federal and state safety and environmental requirements.

Proposed Schedule

Below is a proposed construction schedule for the first phase of the project.

Finalize Environmental Document: July 2012

Right-of-Way Acquisition: July 2012-April 2013

Construction: May 2013-April 2014

Proposed Construction Costs

The entire LRMF is projected to cost \$44 million. This figure includes right-of-way, tracks, buildings, driveways and changes to West Summit Avenue, as well as planning and design fees.

The first phase of the LRMF will consist of tracks 5 and 6 and the contractor staff building near West Palmer Street. That first phase is estimated to cost \$12.6 million.

These are projected costs based upon a schematic design and are subject to change.

Thank You for Coming

The project team appreciates your participation in the workshop this evening. Please contact us with any additional concerns and comments.

If you require additional information after today's workshop, you may contact Mr. Ryan White, PE, NC Dept. of Transportation, Rail Division, at rlwhite@ncdot.gov, or view the project webpage at www.bytrain.org.



Data courtesy of Charlotte-Mecklenburg Geospatial Information Services, MCDOT, and MCDOT

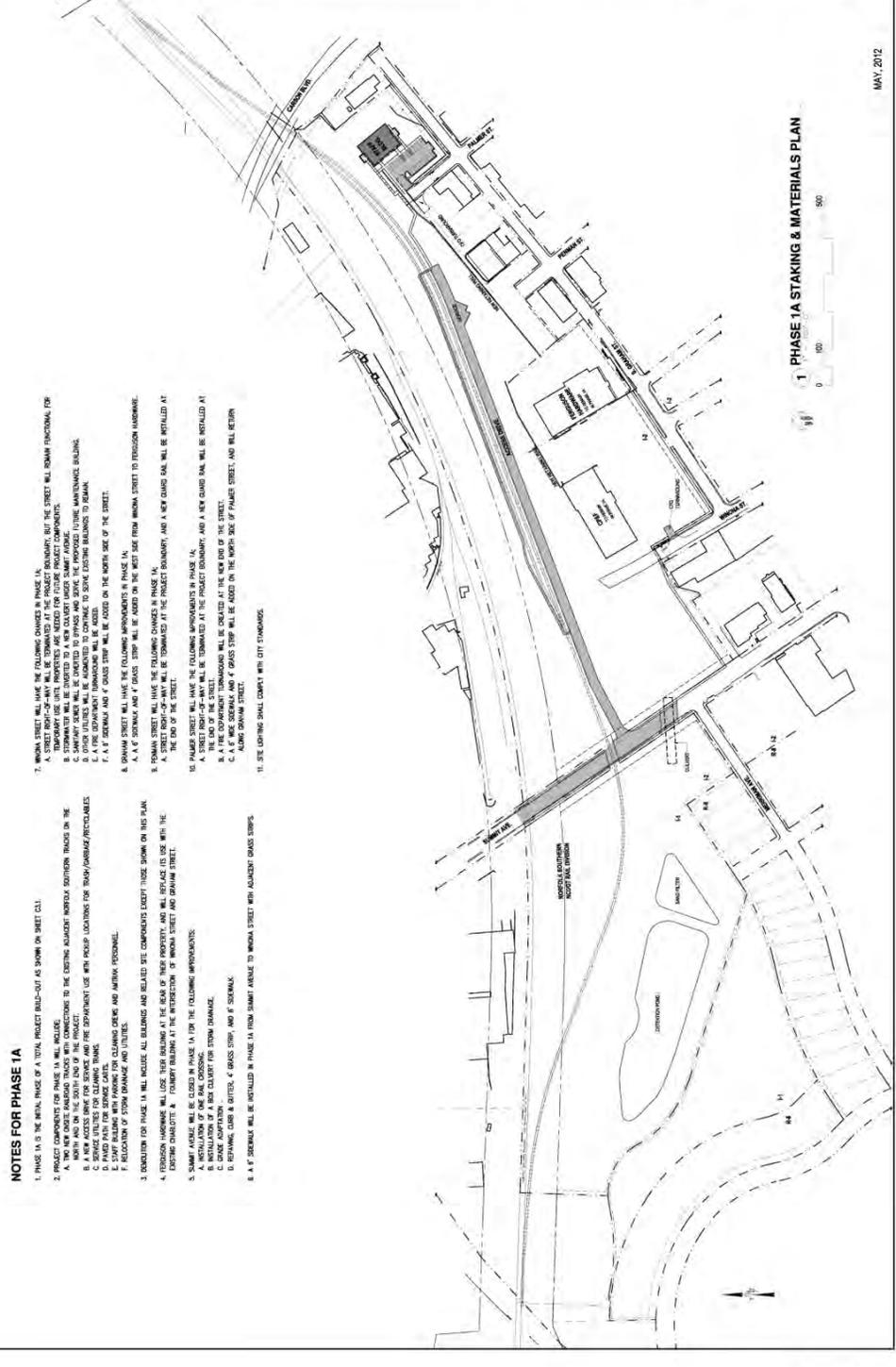
Exhibit
A

Project Study Area
Mecklenburg County, North Carolina
March 2012

Locomotive and Railcar Maintenance Facility Project
TIP No. P-2918F



Plan View: 4000 East/West Unit Field Study Area



NOTES FOR PHASE 1A

1. PHASE 1A IS THE MAIN PHASE OF A TOTAL PROJECT BUILD-OUT AS SHOWN ON SHEET C-11.
2. PROJECT COMPONENTS FOR PHASE 1A WILL INCLUDE:
 - A. EXISTING AND PROPOSED SIDEWALKS TO THE EXISTING BUILDINGS INDICATED SOUTHERN TRAILS ON THE NORTH AND ON THE SOUTH END OF THE PROJECT.
 - B. NEW ACCESS STOPS FOR SERVICE AND THE DEPARTMENT USE WITH PICKUP LOCATIONS FOR TRASH/CANWAS/RECYCLABLES.
 - C. NEW ACCESS STOPS FOR SERVICE AND THE DEPARTMENT USE WITH PICKUP LOCATIONS FOR TRASH/CANWAS/RECYCLABLES.
 - D. PAVED PATH FOR SERVICE CARS.
 - E. NEW SIDEWALKS TO THE EXISTING BUILDINGS AND NEW SIDEWALKS.
 - F. RELOCATION OF STORM DRAINAGE AND UTILITIES.
3. EXISTING FOR PHASE 1A WILL INCLUDE ALL BUILDINGS AND RELATED SITE COMPONENTS EXCEPT THOSE SHOWN ON THIS PLAN.
4. FUTURE IMPROVEMENTS WILL USE THESE BUILDINGS AT THE BEAR OF THEIR PROPERTY AND WILL REPLACE ITS USE WITH THE EXISTING CHARACTER & FORMS/STYLING AT THE INTERSECTION OF WINDY STREET AND SHAWAN STREET.
5. SHAWAN STREET WILL BE CLOSED IN PHASE 1A FOR THE FOLLOWING IMPROVEMENTS:
 - A. INSTALLATION OF A NEW CURB FOR STORM DRAINAGE.
 - B. INSTALLATION OF A NEW SIDEWALK.
 - C. INSTALLATION OF A NEW SIDEWALK.
 - D. SIDEWALK CURB & OTHERS, A GRASS STRIP, AND A SIDEWALK.
 - E. SIDEWALK CURB & OTHERS, A GRASS STRIP, AND A SIDEWALK.
6. A 6' SIDEWALK WILL BE INSTALLED IN PHASE 1A FROM SUMMIT AVENUE TO WINDY STREET WITH ADJACENT GRASS STRIPS.
7. WINDY STREET WILL HAVE THE FOLLOWING CHANGES IN PHASE 1A:
 - A. STREET RIGHT-OF-WAY WILL BE TERMINATED AT THE PROJECT BOUNDARY, BUT THE STREET WILL REMAIN FUNCTIONAL FOR TEMPORARY USE UNTIL PROPERTIES ARE READY FOR FUTURE PROJECT COMPONENTS.
 - B. SIDEWALKS WILL BE INSTALLED TO THE PROJECT BOUNDARY AND TO THE PROPOSED 10,000 SQUARE FOOT MAINTENANCE BUILDING.
 - C. SIDEWALKS WILL BE INSTALLED TO THE PROJECT BOUNDARY AND TO THE PROPOSED 10,000 SQUARE FOOT MAINTENANCE BUILDING.
 - D. SIDEWALKS WILL BE INSTALLED TO THE PROJECT BOUNDARY AND TO THE PROPOSED 10,000 SQUARE FOOT MAINTENANCE BUILDING.
 - E. SIDEWALKS WILL BE INSTALLED TO THE PROJECT BOUNDARY AND TO THE PROPOSED 10,000 SQUARE FOOT MAINTENANCE BUILDING.
 - F. A 6' SIDEWALK AND A GRASS STRIP WILL BE ADDED ON THE NORTH SIDE OF THE STREET.
 - G. A 6' SIDEWALK AND A GRASS STRIP WILL BE ADDED ON THE NORTH SIDE OF THE STREET.
8. SHAWAN STREET WILL HAVE THE FOLLOWING IMPROVEMENTS IN PHASE 1A:
 - A. A 6' SIDEWALK AND A GRASS STRIP WILL BE ADDED ON THE WEST SIDE FROM WINDY STREET TO FUTURE IMPROVEMENTS.
 - B. SIDEWALKS WILL BE INSTALLED TO THE PROJECT BOUNDARY AND A NEW GRASS STRIP WILL BE INSTALLED AT THE END OF THE STREET.
 - C. SIDEWALKS WILL BE INSTALLED TO THE PROJECT BOUNDARY AND A NEW GRASS STRIP WILL BE INSTALLED AT THE END OF THE STREET.
 - D. SIDEWALKS WILL BE INSTALLED TO THE PROJECT BOUNDARY AND A NEW GRASS STRIP WILL BE INSTALLED AT THE END OF THE STREET.
 - E. SIDEWALKS WILL BE INSTALLED TO THE PROJECT BOUNDARY AND A NEW GRASS STRIP WILL BE INSTALLED AT THE END OF THE STREET.
 - F. SIDEWALKS WILL BE INSTALLED TO THE PROJECT BOUNDARY AND A NEW GRASS STRIP WILL BE INSTALLED AT THE END OF THE STREET.
 - G. SIDEWALKS WILL BE INSTALLED TO THE PROJECT BOUNDARY AND A NEW GRASS STRIP WILL BE INSTALLED AT THE END OF THE STREET.
9. FUTURE IMPROVEMENTS WILL BE INSTALLED AT THE PROJECT BOUNDARY AND A NEW GRASS STRIP WILL BE INSTALLED AT THE END OF THE STREET.
10. FUTURE IMPROVEMENTS WILL BE INSTALLED AT THE PROJECT BOUNDARY AND A NEW GRASS STRIP WILL BE INSTALLED AT THE END OF THE STREET.
11. SITE LIGHTING SHALL COMPLY WITH CITY STANDARDS.

1 PHASE 1A STAKING & MATERIALS PLAN

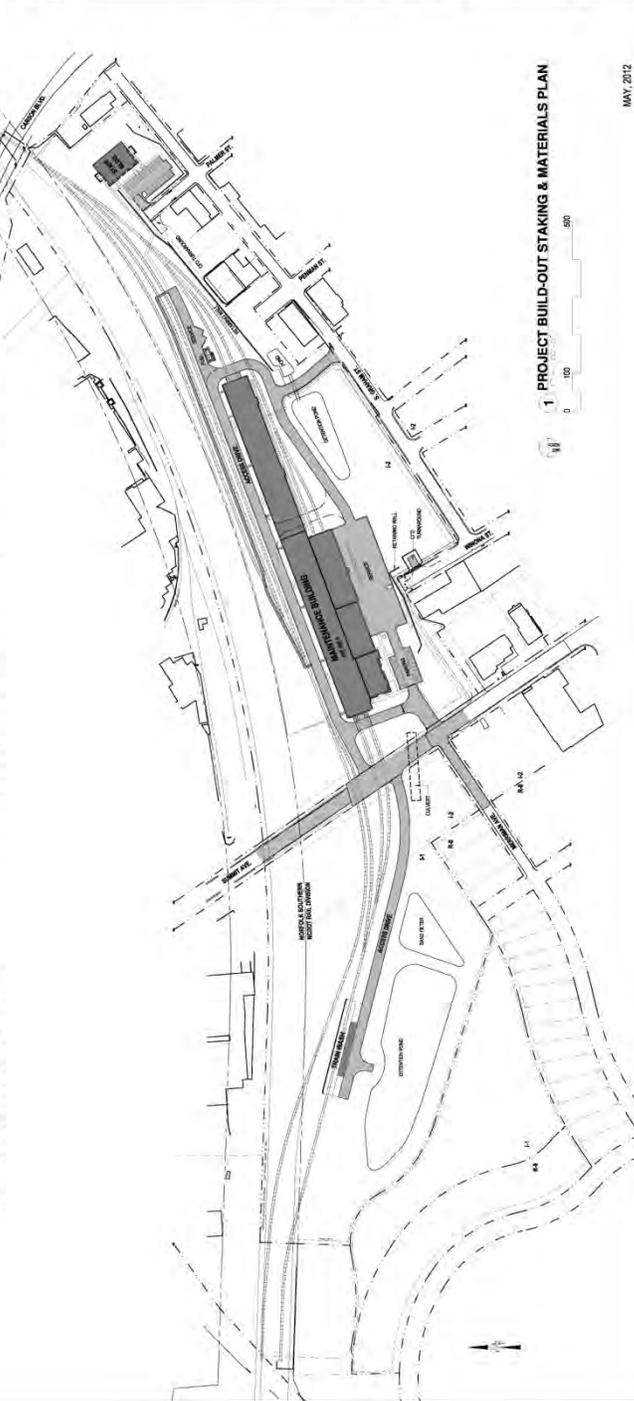


NOTED: JUN 01, 2012 8:59AM

DATE	11/15/11
BY	STV
PROJECT	RAIL DIVISION
DRAWING	1102
SCALE	AS SHOWN
DESCRIPTION	PROJECT BUILD-OUT STAKING & MAT.
DATE	05/15/12
BY	STV
PROJECT	RAIL DIVISION
DRAWING	1102
SCALE	AS SHOWN
DESCRIPTION	PROJECT BUILD-OUT STAKING & MAT.

NOTES FOR PROJECT BUILD-OUT

1. THE PROJECT BUILD-OUT INCLUDES ALL IMPROVEMENTS SHOWN ON THIS SHEET EXCEPT FOR COMPONENTS TO BE COMPLETED IN PHASE 1A AS SHOWN ON SHEET C3.1.
2. PROJECT COMPONENTS WILL INCLUDE:
 - A. THE ADDITIONAL TRACKS, ONE OF THE NEW TRACKS WILL BE INTO WORKING CONDITION ON THE SOUTH END OF THE PROJECT.
 - B. IMPROVED STORM DRAINAGE AND STORM WATER TREATMENT SYSTEMS.
 - C. GRAHAM STREET AND SHAMPTON AVENUE SIDEWAYS AND PARKING WILL BE ADDED. A NEW ACCESS DRIVE WILL BE ADDED SOUTH OF SHAMPTON AVENUE TO SERVE THE NEW TRUCK BAYS.
 - D. PAVED PAVS FOR SERVICE CARS WILL BE ADDED TO ACCOMMODATE ONE NEW TRACK.
 - E. IMPROVED STORM DRAINAGE AND STORM WATER TREATMENT SYSTEMS WILL BE ADDED TO ACCOMMODATE THE NEW TRACKS.
 - F. CONTINUED TO OCCUPY THE PHASE 1A COST BUDGET AND WILL BE ADDED TO THE BUDGET ALLOCATED IN PHASE 1A FOR CLEANING AND SERVICE DRIVE.
 - G. IMPROVED STORM DRAINAGE AND STORM WATER TREATMENT SYSTEMS WILL BE ADDED TO ACCOMMODATE THE NEW TRACKS.
3. DEMOLITION WILL INCLUDE THE REMAINING ORIGINAL BUILDINGS ON THE PROJECT SITE (LISTED BY TRACKS) INCLUDING:
 - A. SHAMPTON AVENUE WILL BE CLOSED TEMPORARILY FOR ADDITIONAL WORK INCLUDING:
 - A. INSTALLATION OF THREE NEW TRACKS.
 - B. IMPROVED STORM DRAINAGE AND STORM WATER TREATMENT SYSTEMS TO ACCOMMODATE FOR NEW TRACKS.
 - C. UTILITY REWORKS.
 - B. EXTENSION OF REPAIRING, CARE & CUTTER, 4' GRASS STRIP, AND 6' SIDEWALK.
4. WERNHAM AVENUE WILL BE CLOSED TEMPORARILY FOR ADAPTATIONS TO BLEND WITH INCREASED CHANGES ON SHAMPTON AVENUE. THESE ADAPTATIONS WILL INCLUDE:
 - A. REPAIRING, CARE & CUTTER, 4' SIDEWALK AND 4' GRASS STRIP.
 - B. REPAIRING, CARE & CUTTER, 4' SIDEWALK AND 4' GRASS STRIP.
 - C. ADAPTATION OF UTILITY AND STORM DRAINAGE SYSTEMS.
5. WERNHAM STREET WILL HAVE THE FOLLOWING CHANGES:
 - A. IMPROVED STORM DRAINAGE AND STORM WATER TREATMENT SYSTEMS.
 - B. REPAIRING, CARE & CUTTER, 4' SIDEWALK AND 4' GRASS STRIP.
 - C. ADAPTATION OF UTILITY AND STORM DRAINAGE SYSTEMS.
 - D. REVISIONS OF UTILITIES TO SERVE THE NEW MAINTENANCE BUILDING.
6. GRAHAM STREET WILL HAVE THE FOLLOWING IMPROVEMENTS:
 - A. A NEW 6' SIDEWALK AND 4' GRASS STRIP ON THE WEST SIDE OF THE STREET IN FRONT OF THE FORMER TRACKS IMPROVING PRIORITY.
 - B. FURNISH STREET WILL HAVE NO IMPROVEMENTS IN THIS PHASE.
 - C. PALMETTO STREET WILL HAVE NO IMPROVEMENTS IN THIS PHASE.
 - D. STORM SYSTEM WILL INCLUDE STORMWATER RUNOFF IN COMPLIANCE WITH APPLICABLE REGULATIONS. WILL RELOCATE T/S/W VOLUMES AND PAVES TO BE MADE THIN THAN CURRENT LEVELS, AND WILL IMPROVE OVERALL WATER QUALITY LEAVING THE SITE.
 - E. THE LIGHTING WILL COMPLY WITH CITY STANDARDS.



1 PROJECT BUILD-OUT STAKING & MATERIALS PLAN

MAY, 2012

PLOTTED: Jun 01 09:20:12 - 10:00am



NCDOT Locomotive & Railcar Maintenance Facility

Charlotte, NC NCSCO #1008634-03

Morris·Berg
ARCHITECTS

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
RAIL DIVISION



Charlotte Railroad Improvement & Safety Program



May, 2012