ATLANTA TO CHARLOTTE PASSENGER RAIL CORRIDOR INVESTMENT PLAN

TIER 1 COMBINED FINAL ENVIRONMENTAL IMPACT STATEMENT AND RECORD OF DECISION (TIER 1 FEIS/ROD)

GDOT
Georgia Department of Transportation

U.S. Department of Transportation
Federal Railroad Administration

ATLANTA to CHARLOTTE

Passenger Rail Corridor Investment Plan

TIER 1 COMBINED FINAL ENVIRONMENTAL IMPACT STATEMENT AND RECORD OF DECISION (TIER 1 FEIS/ROD)

Prepared by:

Federal Railroad Administration (FRA)

Georgia Department of Transportation (GDOT)

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Pursuant to:
This document is created in accordance with relevant laws, executive orders, and regulations including: The National Environmental Policy Act of 1969, as amended, Section 102(2)(c), 42 USC 4321 et. seq.; The National Historic Preservation Act of 1966, Section 106, 16 USC 470. et seq; Executive Order 11990 (Protection of Wetlands); Executive Order 12898 Environmental Justice for Low-Income and Minority Populations); Section 4(f) of the US Department of Transportation Act of 1966, recodified in 1983 as Title 49 USC 303.

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Russell McMurry, P.E., Commissioner
Georgia Department of Transportation

For FRA: _____ Date of Approval: 6/30/2021
Paul Nissenbaum
Associate Administrator for Railroad Development
Federal Railroad Administration
Railroad Policy and Development

The following people may be contacted for additional information concerning this document:

John Winkle
Transportation Industry Analyst
Federal Railroad Administration
1200 New Jersey Ave SE
Washington, DC 20590

Carol Comer
Division of Intermodal Director
Georgia Department of Transportation
600 West Peachtree Street, N.W.- Sixth Floor
Atlanta, Georgia 30308

ATLANTA to CHARLOTTE

PASSENGER RAIL CORRIDOR INVESTMENT PLAN

TIER 1 RECORD OF DECISION

(TIER 1 ROD)

Pursuant to:

This document is created in accordance with relevant laws, executive orders, and regulations including: The National Environmental Policy Act of 1969, as amended, Section 102(2)(c), 42 USC 4321 et. seq.; The National Historic Preservation Act of 1966, Section 106, 16 USC 470. et seq; Executive Order 11990 (Protection of Wetlands); Executive Order 12898 Environmental Justice for Low-Income and Minority Populations); Section 4(f) of the US Department of Transportation Act of 1966, recodified in 1983 as Title 49 USC 303.

Date of Approval: 6/30/2021

Paul Nissenbaum
Associate Administrator for Railroad Development
Federal Railroad Administration
1200 New Jersey Ave SE

ABSTRACT

The United States Department of Transportation's (USDOT) Federal Railroad Administration (FRA) and the Georgia Department of Transportation (GDOT), in cooperation with the South Carolina Department of Transportation (SCDOT) and the North Carolina Department of Transportation (NCDOT), have prepared a Tier 1 Environmental Impact Statement (EIS) for the proposed Atlanta to Charlotte Passenger Rail Corridor Investment Plan (PRCIP) (hereinafter referred to as the Project) in accordance with the following:

- National Environmental Policy Act of 1969 (NEPA) and its implementing regulations (40 Code of Federal Regulations [CFR] Parts 1500-1508);
- National Historic Preservation Act (16 USC § 470);
- Advisory Council on Historic Preservation NHPA-implementing regulations (36 CFR Part 800);
- Clean Air Act, as amended (42 USC § 7401);
- Endangered Species Act of 1973 (16 USC § 1531-1544);
- Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 USC § 4601);
- Executive Order 12898 (Environmental Justice);
- Executive Order 11900 (Protection of Wetlands);
- Executive Order 13988 (Floodplain Management);
- Safe Accountable Flexible Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU);
- 49 U.S.C. § 304a and 40 CFR § 1503.49(c);
- FRA's *Procedures for Considering Environmental Impacts* (64 Federal Register 28545).[1]

In the American Recovery and Reinvestment Act (ARRA) of 2009,[2] Congress appropriated $8 billion to help create a national network of high-speed rail corridors. As authorized under the Passenger Rail Investment and Improvement Act of 2008 (PRIIA), FRA distributed those funds through the High Speed Intercity Passenger Rail (HSIPR) program. Congress appropriated an additional $2.5 billion in Fiscal Year 2010 for the HSIPR program and on April 1, 2010, FRA issued a Notice of Funding Availability soliciting applications for this funding. The USDOT Secretary of Transportation selected the Atlanta to Charlotte PRCIP to receive HSIPR funding based on the corridor's "… utility and… potential for future development".[3] The Project is a comprehensive planning effort to identify a corridor for new high-speed intercity passenger rail service connecting Atlanta, Georgia and Charlotte, North Carolina.

Due to the likelihood of federal involvement and cooperating states receiving federal financial assistance to fund the implementation and construction of the Project, FRA and GDOT determined that a Tier 1 EIS is the appropriate class of action for this Project. A Tier 1 EIS is part of a staged environmental review process applied to complex projects covering large geographic areas. The Tier 1 EIS establishes the Purpose and Need for the Project; provides a broad assessment of the potential transportation, social, economic, and environmental impacts of "Corridor Alternatives" (generalized areas of travel); and presents the outcomes of public and agency coordination that were considered during the Tier 1 assessment and decision-making processes.

In the Draft Environmental Impact Statement (DEIS), FRA and GDOT identified six Corridor Alternatives, of which three were advanced for detailed analysis: 1) the Southern Crescent Corridor Alternative; 2) the I-85 Corridor Alternative; and 3) the Greenfield Corridor Alternative. The DEIS also analyzed the No Build Alternative, which is the future condition of the Project area if the Project is not built. In accordance with Council on Environmental Quality regulations, in the DEIS, GDOT analyzed the three Corridor Alternative against the No Build Alternative.[4] This document presents a combined Final Environmental Impact Statement (FEIS) and Record of Decision (ROD)

[1] In November 2018, FRA joined the Federal Highway Administration's and Federal Transit Administration's NEPA-implementing regulations found at 23 C.F.R. Part 771. Because FRA issued the Notice of Intent for the Project before FRA joined 23 C.F.R. Part 771, the EIS for the Project was developed using FRA's NEPA Procedures.

[2] Public Law 111-5, American Recovery and Reinvestment Act of 2009

[3] FRA's website, https://www.fra.dot.gov/eLib/details/L02692 (accessed on 10/29/15)

[4] 40 CFR Part 1502(c).

(hereinafter referred to as Tier 1 FEIS/ROD) to identify and select one of the three Corridor Alternatives from the DEIS as the "Preferred Corridor Alternative" and respond to comments received during the public and agency review and comment period on the DEIS. Responses to comments are included in the FEIS and, where FRA and GDOT determined that the EIS should be revised based on a comment, references an entry in the errata table where the changes are documented in the Tier 1 FEIS/ROD.[5]

This Tier 1 FEIS/ROD summarizes the environmental, transportation, and economic impacts of a No Build Alternative and the three Corridor Alternatives for a new high-speed intercity passenger rail service on the human, built, and natural environments within the Project Study Area. In this Tier 1 FEIS/ROD, FRA has identified and selected the Greenfield Corridor Alternative as the Preferred Corridor Alternative based on analysis presented in the Tier 1 DEIS, and input received from the public, stakeholders, agencies during the public meetings and the comment period.

Following the publication of this Tier 1 FEIS/ROD, the FRA will hold a 30-day waiting period to allow the public, stakeholders, Native American Tribes, coordinating agencies and other interested parties the opportunity to review and provide input on the Preferred Corridor Alternative and the contents of the Tier 1 FEIS/ROD. This will not be a formal review and comment period, and the FRA and GDOT will not respond to individual comments as was required for the Tier 1 DEIS. However, these comments will be considered for any subsequent phases of the Project.

As detailed in the DEIS, due to the size and complexity of the Project, FRA and GDOT will defer the following decisions to future Tier 2 analysis:

- The alignment of the corridor (including the approach into Atlanta, Georgia and validate the route into Charlotte, North Carolina);
- Locations of stations and facilities;
- Operating equipment;
- Propulsion technology type; and
- Detailed operating characteristics.

Separate Tier 2 NEPA documentation could be pursued for the Atlanta Approach, which could also consider other intercity passenger rail corridors and planned commuter rail corridors in the Atlanta area.[6] A Tier 2 analysis will also validate the assumptions made here regarding the approach into Charlotte to the Charlotte Douglas International Airport (CLT) and the terminal Charlotte-Gateway Station. Concerning equipment technology, a Tier 2 analysis may explore a phased approach that could initially use diesel technology with the option to electrify the corridor over time, as funding allows. Tier 2 EIS work could also explore phasing construction for the preferred alignment. The Tier 2 process will continue the public involvement and agency coordination that began during this Tier 1 EIS. The Tier 2 process will further document a more detailed environmental analysis, including identifying applicable permits and defining specific avoidance and mitigation measures.

[5] In the FEIS/ROD, GDOT will acknowledge receipt of all comments, but provide responses to only the comments that raised substantive issues. In the attached comment response matrix (included in Appendix B) GDOT responded to all comments.

[6] See Section 2.2.2.2 Phase 2 – Refinement of Corridor Alternatives of the DEIS for detailed descriptions of the Atlanta Approach for each of the three Corridor Alternatives.

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1. Introduction

1.1 READERS GUIDE

The following sections explain how to navigate this Tier 1 FEIS/ROD, define important concepts, provide a comparison between the Tier 1 DEIS and the FEIS/ROD, provide an overview of the project history, and explain the Tiered NEPA process, which is presented in **Section 1.4**.

1.1.1 How to Use This Document

In this Tier 1 FEIS/ROD, FRA identifies and selects the Greenfield Corridor Alternative as the Preferred Alternative (referred to in the DEIS and in this document as the Preferred Corridor Alternative, which is defined below) described and evaluated in the *Atlanta - Charlotte PRCIP Tier 1 Draft Environmental Impact Statement* (September 2019), and includes all technical reports and supporting documentation, incorporated by reference. This Tier 1 FEIS/ROD is a "condensed" document which includes clarifications, errata-style edits, and specific comments related to information provided in the Tier 1 DEIS and is presented in a table format referencing sections of the Tier 1 DEIS where the changes appear. The entire Tier 1 DEIS, including appendices, is presented here as **Appendix A** and is updated to reflect changes noted during the public and agency review and comment period based on the information noted in the Tier 1 DEIS Errata Table and Sheets **(Section 2.3)**.

1.1.2 Consistency between Tier 1 DEIS and the FEIS

The FRA and the GDOT used the same key concepts presented in the Tier 1 DEIS for this Tier 1 FEIS/ROD to maintain consistency between the evaluation of the No Build Alternative, Corridor Alternatives, and the identification and selection of the Preferred Corridor Alternative. There have been no major technical changes to the data that was presented in the Tier 1 DEIS.

1.1.3 Key Concepts and Terminology

The following key concepts remain consistent between the Tier 1 DEIS and this Tier 1 FEIS/ROD:

Atlanta Approach: The options to accommodate the approach of the three Corridor Alternatives for rail transition into the City of Atlanta's downtown area.

Corridor Alternatives: The Corridor Alternatives are those areas that are under consideration as the proposed action during the Tier 1 EIS process. The Corridor Alternatives are approximately 600 feet wide along their routes of travel.

Data Sources, References, and Geographic Information System (GIS) Tools: Secondary source data (GIS data; published reports; technical analyses from USDOT, GDOT, and other government agencies; and U.S. Census Bureau data) readily available from federal, state, and local agencies and governments were analyzed as part of this Tier 1 EIS process. No fieldwork or subsurface testing of any kind occurred as part of this Tier 1 EIS process. A GIS database using desktop analysis was developed to define the characteristics of the Corridor Alternatives, such as existing environmental conditions, existing and future transportation facilities, and existing and future information used to create GIS shapefiles or layers. The interaction of the GIS shapefiles defined the affected environmental areas and was used to assess the environmental consequences in the Tier 1 DEIS desktop analysis.

Environmental Impact Statement (EIS): The National Environmental Policy Act (NEPA) requires federal agencies to assess the environmental effects of their proposed actions prior to making decisions. FRA determined that a tiered NEPA process is appropriate for a project of this scale, as tiering involves a staged environmental review

process applied to complex projects covering large geographic areas. This Tier 1 EIS establishes the Purpose and Need for the project, provides a broad assessment of the potential transportation, social, economic, and environmental impacts of Corridor Alternatives, and the outcomes of public and agency coordination. The Final EIS (FEIS) responds to comments on the Tier 1 DEIS, discusses any changes made since the release of the DEIS, and in the ROD FRA selected a Preferred Corridor Alternative that could be evaluated further in a Tier 2 EIS study.

Decisions that are discussed in this Tier 1 EIS but will be deferred to a Tier 2 EIS Analysis include: station locations, the rail alignment within the Preferred Corridor Alternative, airport connections, train technology, other operational characteristics, and the Atlanta and Charlotte approaches. Tier 2 EIS studies focus on the analysis of project and alignment specific impacts, whereas the Tier 1 EIS focuses on defining broader, corridor-wide impacts. Other future NEPA steps following this Tier 1 EIS/ROD could also include the following: (1) Preliminary Engineering (could be concurrent with Tier 2 EIS study); (2) Service Development Plan (could be concurrent with Tier 2 study); (3) Identification of Project Funding; (4) Final Design; (5) Right-of-way (ROW) acquisition; and (6) Construction.

Environmental Screening Area: Refers to the geographic areas that GDOT evaluated for environmental resources. The Tier 1 EIS generally utilizes a 600-foot wide "environmental screening area" to identify and evaluate impacts to environmental resources; however, the Tier 1 EIS can define environmental screening areas as narrow as 100 feet where such areas are constrained by known resources, such as in developed urban areas, or as wide as 1,000 feet, depending on the resource.

High Speed Rail (HSR): High Speed Rail is a mode of transportation that travels at greater speeds than traditional rail technology. FRA defines "high-speed rail" as having the ability to travel at speeds between 90 miles per hour (mph) and 150 mph, or even higher.[7] For the purposes of this Project, HSR is defined as having the ability to travel at speeds of at least 90 mph.

Level of Detail: The level of detail presented in the Tier 1 EIS is consistent with FRA's tiered environmental review process. FRA's guidance suggests that a tiered NEPA process is appropriate for FRA projects where broad decisions for large expansive corridor programs are 1) too complex to be addressed in one document; 2) are phased over time; 3) where future phases are not fully defined; or 4) when major routing or service alternatives need to be evaluated.

National Environmental Policy Act (NEPA): Requires federal agencies to consider the environmental impacts of major federal projects or decisions, to share information with the public; to identify and assess reasonable alternatives; and to coordinate efforts with other planning and environmental reviews taking place.

No Build Alternative: The No Build Alternative is the future condition of an area in the absence of a project; assumes that no improvements will be made with the exception of periodic maintenance and minor enhancements to existing facilities, as needed to maintain safe operation and those minor enhancements already designated in an approved plan.

Notice of Intent (NOI): A formal announcement of intent to prepare an Environmental Impact Statement (EIS).

Preferred Corridor Alternative: The Preferred Corridor Alternative is the best performing corridor alternative based on the performance measures or criteria defined in the Tier 1 DEIS. The Preferred Corridor Alternative is documented in **Section 2.1** of the Tier 1 FEIS/ROD and is also referred to as the Preferred Corridor Alternative in **Section 3.3** of the Tier 1 FEIS/ROD to be consistent with Council of Environmental Quality (CEQ) requirements for Tier 1 EIS documents. Should a Project proponent be identified and additional funding be secured, the Preferred

[7] *FRA's High Speed Rail Strategic Plan April 2009 website, https://cms8.fra.dot.gov/sites/fra.dot.gov/files/fra_net/1468/hsrstrategicplan.pdf (accessed on 3/3/17)*

Corridor Alternative may be the subject of additional planning work or Tier 2 NEPA studies during subsequent phases of the Project. The Tier 1 FEIS identifies the Preferred Corridor Alternative and in the ROD, FRA selects this Alternative.

Record of Decision (ROD): In accordance with CEQ regulations, the Record of Decision must: 1) state the agency's decision; 2) identify all alternatives considered by the agency in reaching its decision; and 3) state whether all practicable means to avoid or minimize environmental harm from the selected alternative have been adopted, or, if not, why not.[8]

Southeast High-Speed Rail (SEHSR) Corridor: The SEHSR is one of eleven USDOT-designated high-speed rail corridors. The FRA plans to develop an integrated passenger rail transportation solution for the Southeast with high-speed rail from Washington, D.C. through Richmond, VA and Charlotte and Raleigh, NC, and from Charlotte, NC to Atlanta, GA.

Study Area (see Section 1.4 DEIS): The area containing all reasonable Corridor Alternatives connecting the logical termini under study for the Project, for purposes of evaluating environmental impacts. The Study Area generally follows the area bound by Interstate 20 (I-20) (between Atlanta, GA and Columbia, SC) to the south and east, I-77 (between Columbia, SC and Charlotte, NC) to the east, and the Norfolk Southern rail line (between Charlotte, NC and Atlanta, GA) to the north and west. The Study Area also contains the I-85 Corridor between Charlotte, NC and Atlanta, GA as well as parts of surrounding metropolitan areas.

1.1.4 Content of this Combined Tier 1 FEIS/ROD

This Tier 1 FEIS/ROD contains the Tier 1 FEIS, Tier 1 ROD, and corresponding appendices, including the Tier 1 DEIS. This is a condensed FEIS, which re-issues the DEIS and identifies any changes to the DEIS resulting from public/agency comment and reviews.

- **Appendix A:** Tier 1 DEIS and corresponding appendices.
- **Appendix B:** Tier 1 DEIS Public and Agency Involvement Summary Report; includes a comment matrix and response letter for all comments received during the Tier 1 DEIS public involvement period.
- **Appendix C:** NCDOT/SCDOT Correspondence

The individual segments of the FEIS are summarized below.

1.1.4.1 TIER 1 FEIS

The Tier 1 FEIS discloses all environmental effects associated with the Project, whether they are adverse or beneficial, and identifies the Preferred Corridor Alternative. The Tier 1 FEIS includes all comments received on the Tier 1 DEIS and responds to those comments. Responses are in the form of factual corrections or clarifications and are presented as errata-style edits in a table format attached to the Tier 1 DEIS, which documents the changes made to the DEIS that are now reflected in the Tier 1 FEIS/ROD. The preparation of an FEIS by errata sheets attached to the DEIS if certain conditions are met is set forth in 23 USC Section 139(n). As a result of the FAST Act, 23 USC § 139 and 49 USC § 304 require, to the maximum extent practicable, and unless certain conditions exist, that the lead USDOT agency expeditiously develop a single NEPA document that combines the FEIS and ROD. The use of a Tier 1 DEIS Errata Table and Sheets attached to the Tier 1 DEIS and presented as Section 2.3 of this combined Tier 1 FEIS/ROD comply with the requirements of 23 USC §139 and 49 USC § 304.

[8] *40 CFR 1505.2.*

1.1.4.2 TIER 1 ROD

Section 4.6: Next Steps in the Tier 1 DEIS noted that after the FRA publishes the DEIS and the public comment period is complete, GDOT will prepare a combined Tier 1 FEIS/ROD. The ROD provides a written public record of the FRA's decision to select the Preferred Corridor Alternative. It includes the alternatives considered during the DEIS process and discusses the reasons why the Preferred Corridor Alternative was selected by the FRA, which includes public and stakeholder input. This ROD completes the Tier 1 EIS NEPA process and provides for the opportunity of a future Tier 2 NEPA study or studies that may occur in subsequent phases of the Project, should funding become available.

1.1.4.3 TIER 1 DEIS AND DEIS APPENDICES

The Tier 1 DEIS considered all significant issues related to the Project identified during scoping, established the Purpose and Need for the Project, disclosed the alternatives considered and evaluated the alternatives against the Purpose and Need. Additionally, the Tier 1 DEIS disclosed all environmental effects potentially associated with the Corridor Alternatives, both adverse and beneficial. The Tier 1 DEIS process included a public and agency review and comment period on the document, including public meetings as detailed in **Section 2.2.2**. **Appendices A through E** in the Tier 1 DEIS provide technical documentation of findings, as well as supporting information such as coordination materials.

1.2 ABOUT THE PROJECT

The FRA is working with states to improve high-speed and intercity passenger rail corridors via projects that range from upgrading existing services to developing entirely new rail lines and services. The FRA defines "high-speed rail" as having the ability to travel at speeds between 90 mph and 150 mph, or even higher.[9] The FRA is implementing this high-speed rail initiative through the High-Speed and Intercity Passenger Rail Program (HSIPR), created to address the nation's transportation challenges by making strategic investments in an efficient network of passenger rail corridors connecting the growing population across the country.

In October 1992, the U.S. Secretary of Transportation announced the designation of five high speed high rail corridors, including the SEHSR, which originally stretched from Charlotte, NC to Washington, DC. In 1999, the Secretary of Transportation extended the SEHSR from Charlotte to Greenville, SC and to Atlanta, GA.[10] In 2013, FRA and GDOT initiated the Tier 1 EIS for the extension of the SEHSR corridor from Charlotte to Atlanta, including the preparation of the Atlanta to Charlotte Passenger Rail Corridor Investment Plan (PRCIP). The PRCIP consists of an environmental analysis of the proposed routes along the Project Corridor as well as a Service Development Plan (SDP).[11]

The FRA is using a tiered process, as provided for in 40 CFR 1508.28, to complete the NEPA environmental review of the Project. This Tier 1 EIS establishes the purpose and need for the Project; provides a broad assessment of the potential transportation, social, economic, and environmental impacts of Corridor Alternatives for the Project; and presents outcomes of public and agency coordination that were considered in the Tier 1 assessment and decision-making processes.

The Project did not involve any fieldwork, preliminary engineering or design, final effects evaluations on impacts to environmental resources, selection of propulsion technology, specific locations of HSR alignments, or potential

[9] https://www.fra.dot.gov/eLib/Details/L02833 (accessed 5/9/19)
[10] https://www.ncdot.gov/divisions/rail/projects/southeast-corridor/Pages/default.aspx (accessed 5/9/19)
[11] *In May 2018, FRA and GDOT agreed to defer the SDP portion of the PRCIP.*

locations of station facility sites. The Tier 1 EIS defined a 600-foot wide Preferred Corridor Alternative route for most of the corridor, but a specific alignment within the corridor is deferred to a Tier 2 study. Selection of both the corridor and a specific alignment for the Atlanta Approach and validation of the Charlotte Approach is also left to a Tier 2 study. Upon completion of this Tier 1 FEIS/ROD, additional Tier 2 studies would be needed for subsequent phases of the project where additional technical reporting and detailed screening processes will be prepared.

1.3 ERRATA SHEETS AND COMBINED FEIS/ROD

1.3.1 Use of Errata Sheets

The use of errata sheets in lieu of writing a Final EIS that repeats a large amount of information already published in the DEIS is appropriate when comments received on a DEIS are minor and the responses to those comments are limited to factual corrections or explanations of why the comments do not warrant further response.[12] The comments received on the Project required only factual corrections and minor clarifications to the DEIS. No comments resulted in further response in the form of additional alternatives or consideration of undisclosed environmental consequences or impacts. As a result, and in accordance with 49 U.S.C. §304a(a), FRA and GDOT have prepared an errata sheet that lists the comments received and the revisions to the DEIS that resulted from the comments.

The errata sheets are being made available to the public to the same extent as the DEIS. Continued availability of the DEIS is also being ensured. The DEIS is currently available to the public in hard copy at GDOT headquarters at 600 W Peachtree Street NW in Atlanta and electronically on the GDOT website at http://www.dot.ga.gov/IS/Rail/AtlantatoCharlotte.

The errata sheets are included in this FEIS/ROD in Section 2.3 and will also be provided with the DEIS on GDOT's Project website (FRA's Project website[13] links to the GDOT website). The revised DEIS sections are included in Appendix A to this FEIS/ROD.

1.3.2 Combined Tier 1 FEIS/ROD

In accordance with the Council on Environmental Quality Regulations, FEIS and ROD documents are traditionally issued separately with a minimum 30-day period between the FEIS and ROD (40 CFR § 1506.11(b)(2)). However, 49 U.S.C. § 304a(b) directs the lead agency to expeditiously develop a single, combined FEIS and ROD, to the maximum extent practicable, unless:

- The FEIS makes substantial changes to the proposed actions that are relevant to environmental or safety concerns.
- A significant new circumstance or information relevant to environmental concerns bears on the proposed action or the impacts of the proposed action.

This combined FEIS/ROD document does not include substantial changes to the proposed action in terms of environmental or safety concerns, nor are there significant new circumstances or information relevant to environmental concerns of the proposed action or its impacts.

In accordance with USDOT Guidance this combined FEIS/ROD includes the following:

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[12] *See 49 USC §304a and 40 CFR §1503.4(c).*

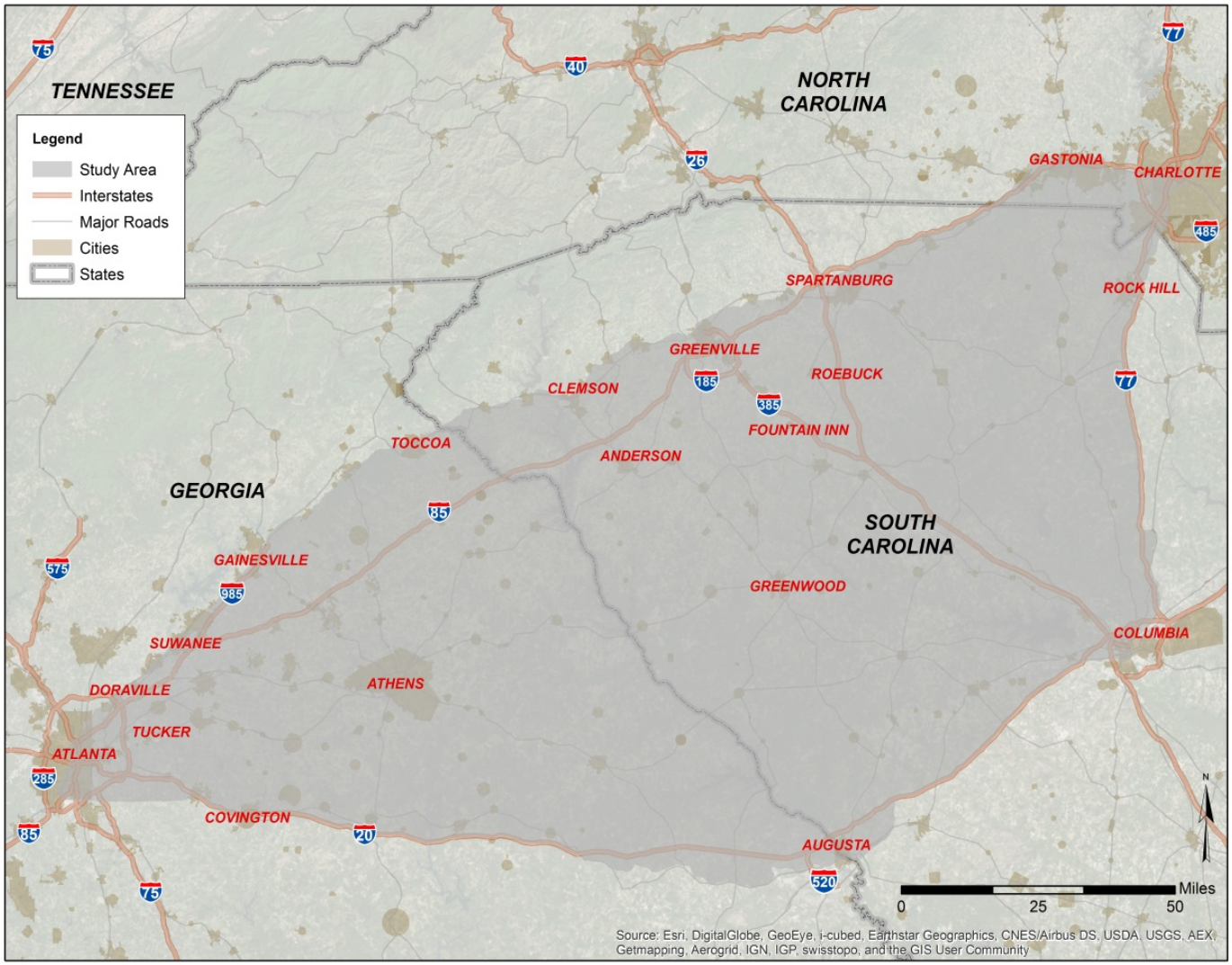
[13] *https://railroads.dot.gov/environment/environmental-reviews/southeast-high-speed-rail-atlanta-charlotte-passenger-rail*

- Identification of the Preferred Alternative (included in Section 2.1 of this FEIS and described in this Tier 1 FEIS/ROD as the Preferred Corridor Alternative).
- List of commitments for mitigation measures for the Preferred Alternative (included in Section 3.3.2 of the ROD).
- Summary of the public outreach efforts, comments received on the DEIS, public meeting information, and public and agency coordination activities that have taken place since the issuance of the DEIS (included in Section 2.2 of this FEIS). Appendix B includes more information on the public involvement process and includes the comments on the Project and FRA/GDOT's responses to those comments. Appendix C includes correspondence from NCDOT and SCDOT received after the publication of the DEIS.

1.4 TIERED NEPA PROCESS

The tiered NEPA process begins when the lead Federal agency publishes a Notice of Intent (NOI) to prepare an EIS in the Federal Register. It is then followed by a public involvement scoping phase that guides the environmental review process for participating agencies, stakeholders, and the general public. "Tiering" is a staged environmental review process applied to complex projects covering large geographic areas. This Tier 1 EIS establishes the Purpose and Need for the Project; provides a broad assessment of the potential transportation, social, economic, and environmental impacts of Corridor Alternatives for the Project; and presents the outcomes of public and agency coordination that were considered during the Tier 1 EIS assessment and decision-making processes. See **Figure 1** below to view the Project Study Area Map that was used for the Tiered Environmental Screening process.

FIGURE 1: PROJECT STUDY AREA MAP



In early 2013, GDOT submitted to FRA a Public Involvement and Coordination Plan (PIP/CP), which FRA approved on February 20, 2013. The PIP/CP provided structure for coordination and communication among the lead federal and state, cooperating, and participating agencies, including tribal governments, and was intended to guide the agency coordination process, make reviews more efficient, and streamline the project decision-making process. The PIP/CP also outlines the activities that occurred during the NEPA process through the coordination and agency participation and comment stages.

On May 16, 2013, FRA published in the Federal Register the NOI to prepare a Tier 1 DEIS for the Project. In the NOI, FRA also announced the agency scoping process. Thirty-one state and federal environmental regulatory and review agencies, Native American tribal councils, municipalities, counties, and other government organizations and officials were notified. Agency scoping meetings were held on June 4, 2013 and June 24, 2013 via webinar and in person, respectively. During these scoping meetings, GDOT provided an overview of the Project, the NEPA process, and the scope of the Project. After the presentation concluded, GDOT opened the floor for discussion and provided the opportunity for the agencies to ask questions and/or specify analysis for consideration in the Tier 1 EIS process.

Interagency coordination meetings among federal and state lead agencies took place throughout the development of the Tier 1 DEIS, which provided an opportunity for ongoing coordination and discussion of the Project process, products, and issues. Additionally, FRA sent coordination letters to the state historic preservation officers (SHPO) of GA, SC, and NC, and other historic preservation-focused agencies and organizations, along with tribal governments, to request information on known eligible historic properties and any other natural or cultural resources within the Project Study Area.[14]

Stakeholders were engaged on an ongoing basis to provide timely and ongoing feedback. Stakeholders were identified as any agency, organization, or group with an interest in the Project that was not designated as a participating agency, such as Norfolk Southern Corp. (NS), CSX Transportation (CSX), Hartsfield-Jackson International Airport, Greenville–Spartanburg International Airport, and others.

Lastly, public involvement activities included three public scoping open houses (one each in Georgia, South Carolina and North Carolina) as well as virtual outreach including a PowerPoint presentation that was available on the Project website, electronic comment cards, and input solicitation, which were able to provide information to a larger group than the public meetings alone. 182 individuals attended the three public scoping meetings, and 139 comments were submitted (94% in favor of the Project). The scoping comment period began on June 4, 2013 and ended on March 1, 2014.

Appendix A, Tier 1 DEIS and Corresponding Appendices, provides additional detail and all correspondence transmitted and received during the agency scoping phase and the public involvement process mentioned above.

Due to the size and complexity of the Project, GDOT and FRA will defer the following decisions and analysis to future Tier 2 NEPA document(s):

- Alignment of the Preferred Corridor Alternative (including the approaches into Atlanta, GA and Charlotte, NC).
- Locations of stations and facilities and interfaces with airports.
- Operating equipment and type of propulsion technology.

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[14] Because this is a Tier 1 EIS that will result in the selection of a Preferred Corridor Alternative, detailed Section 106 analyses, including identification of historic and cultural resources and determination of effects that the Project will have on those resources, was not done. Comprehensive Section 106 analyses, including negotiation and execution of Memoranda of Agreements, if necessary, will be done as part of any Tier 2 studies.

- Detailed operating characteristics.

Should a project sponsor be identified and funding be secured, a future Tier 2 EIS will define an alignment within the broader Preferred Corridor Alternative. The Tier 2 NEPA documents could include any of the following NEPA Classes of Action, based upon the proposed action within the Preferred Corridor Alternative:

- Categorical Exclusion (CE) is designated for actions that do not individually or cumulatively have a significant environmental impact.

- Environmental Assessment (EA) is designated for actions in which the significance of the environmental impact is not clearly established. EAs can lead to the development of a Finding of No Significant Impact (FONSI) or EIS document.

- Environmental Impact Statement (EIS) is designated for projects where it is known that the action will have significant environmental effects and comprehensive analysis is needed to determine the environmental consequences of the proposed action.

Separate Tier 2 NEPA documentation could be pursued for the Atlanta Approach, which could also consider other intercity passenger rail corridors and planned commuter rail corridors in the Atlanta area. A Tier 2 analysis will also validate the assumptions made in the Tier 1 EIS regarding the approach into Charlotte, to CLT airport and the terminal Charlotte-Gateway Station. Concerning equipment technology, a Tier 2 analysis may explore a phased approach that would initially use diesel technology with the option to electrify the corridor over time, as funding allows. Tier 2 EIS work could also explore phasing construction for the preferred alignment. The Tier 2 process will continue the public involvement and agency coordination that began during this Tier 1 EIS. The Tier 2 process will further document a more detailed environmental analysis, including applicable permits and defining specific avoidance and mitigation measures.

2. Tier 1 Final Environmental Impact Statement

2.1 PREFERRED CORRIDOR ALTERNATIVE

In this Tier I FEIS, FRA identifies the Greenfield Corridor Alternative, as defined in this Tier 1 FEIS and further in **Section 3.3** and illustrated in **Figure 3-2** of the ROD, as the Preferred Corridor Alternative**.** The Greenfield Corridor Alternative is a 274-mile route that connects Charlotte, NC (Charlotte Gateway Station) and Atlanta, GA (Hartsfield-Jackson Atlanta International Airport – H-JAIA) and generally follows a new dedicated alignment between the CLT airport and northeast Atlanta. Future Tier 2 study will define the specific alignment for the Greenfield Corridor Alternative, including the final approaches into Atlanta and Charlotte. GDOT assumes this Corridor Alternative could use either diesel or electric propulsion technology. Additional description of the corridor is provided below.

1) In North Carolina, the Greenfield Corridor Alternative follows the route of the NS Right-of-Way (ROW) for 10 miles on dedicated passenger tracks, potentially operating at speeds of 80 to 110 mph, from Charlotte Gateway Station to the CLT airport station before transitioning to a new greenfield alignment just west of the Catawba River crossing. From the Catawba River, the greenfield alignment extends for approximately 15 miles passing southeast of Belmont, NC to a station at South Gastonia near the state line. This route serves three stations in North Carolina: Charlotte Gateway, CLT airport, and South Gastonia. Once on greenfield alignment, this corridor can sustain speeds of up to 125 mph using diesel or 220 mph using electric propulsion.

2) In South Carolina, the Greenfield Corridor Alternative continues along a greenfield alignment for 65 miles passing east of Kings Mountain State Park to a route paralleling I-85, approximately 10 miles to the southeast, then diverging westward to a station near the Greenville-Spartanburg International Airport (GSP). From the GSP airport, this corridor returns eastward to a route paralleling I-85, approximately 15 miles to the east, for 50 miles to the state line at the Savannah River with a station in Anderson, SC. This Corridor Alternative can support speeds of up to 125 mph (diesel) or 220 mph (electric) throughout most of South Carolina until reaching the first stop in Georgia.

3) In Georgia, the Greenfield Corridor Alternative continues along a greenfield alignment for approximately 80 miles with a station in Athens, GA. Due to the complex environment of the approaches to and through Atlanta and the nature of a tiered NEPA process, this Tier 1 EIS defers the selection of the preferred Atlanta Approach to a future Tier 2 EIS. In the Tier 1 EIS, GDOT considered two corridors for the segment of the Greenfield Alternative between Gwinnett County and Howell Junction in Atlanta, one with passenger-dedicated tracks in a corridor generally alongside elements of I-85 and NS (with potential stations in Suwanee and Doraville) and the other alongside the CSX Abbeville Subdivision to the CSX Atlanta Belt Line (with potential stations at Lawrenceville and Tucker) as shown in **Figure 3-2**. From Howell Junction the route would be in passenger-dedicated tracks to H-JAIA in the existing railroad corridor (with a station proposed for downtown Atlanta (Georgia MMPT[15]). Within the shared ROW of the Atlanta Approach, speeds are generally between 70 mph and 110 mph for both diesel and electric options. In addition to the two potential Atlanta Approaches (NS and CSX), a future Tier 2 EIS could also identify additional feasible approaches or construction methods traversing the Atlanta area, such as use of public or private rights-of-way with at-grade, elevated (bridge or viaduct), or below-grade (tunnel) infrastructure, and could consider infrastructure shared with other planned intercity and commuter rail projects.

For this Tier 1 EIS, a 600-foot wide buffer was used for the Greenfield Corridor Alternative, and it gives future potential project sponsors the flexibility to refine alignments during Tier 2 NEPA studies and to potentially avoid or minimize impacts to resources within the corridor.

2.2 OVERVIEW OF PUBLIC AND AGENCY OUTREACH AND COORDINATION SINCE RELEASE OF THE TIER 1 DEIS

This section provides an overview of the public and agency outreach coordination that has occurred since the publication of the Tier 1 DEIS. **Appendix B** contains a comprehensive public involvement summary report that includes information distributed to agencies, public meeting information, a comment and response matrix, and any correspondence received during the Tier 1 DEIS comment and review period.

2.2.1 Distribution of the Tier 1 DEIS

The Tier 1 DEIS was included in the Environmental Protection Agency's Notice of Availability (NOA) published in the Federal Register on September 20, 2019 (see **Appendix B**). The NOA initiated the public and agency review and comment period, which ran for 45 days, ending on November 4, 2019. The complete Tier 1 DEIS, including the appendices and supporting documentation, was made available for review on GDOT's and FRA's project websites

[15] This Tier 1 EIS considers the formerly proposed Georgia MMPT as one potential station location in Downtown Atlanta, although other opportunities may be explored during a Tier 2 analysis. The Georgia MMPT project was listed in the Atlanta MPO's Long Range Transportation Plan (LRTP) while this Tier 1 EIS was being prepared; however, it has since been removed from the LRTP due to recent changes in property ownership in Downtown Atlanta.

and was displayed at the public meetings. Instructions for sending comments were included in **Section 4.5.4** of the Tier 1 DEIS.

Legal notices announcing the publication of the Tier 1 DEIS and the public meetings appeared in three newspapers for each state within the Project Study Area. Placement of legal notices and supporting proofs are referenced in **Appendix B – Attachment 2**.

2.2.2 Public Meetings

GDOT advertised notice of public meetings and the availability of the Tier 1 DEIS as well as any other project information twice within the 45-day agency and public comment period. The advertisements were made thirty days in advance of each public meeting, and again two weeks prior to the date of each public meeting. These were advertised through three separate newspapers, state DOT (GDOT, NCDOT and SCDOT) social media outlets, and press releases.

FRA and GDOT held three open-house style public meetings, one each in Atlanta, GA, Greenville, SC, and Charlotte, NC. The purpose of these meetings was to provide agencies and the general public with the opportunity to learn about the proposed project, ask questions, and provide verbal or written comments on the DEIS, the proposed alternatives, and other issues related to the development of the Project. Information was made available on FRA and GDOT project websites for those that could not attend the meetings. Opportunities to provide online comments were also made available via an online comment form on GDOT's project website. Additionally, a court reporter was present at each meeting for those who wanted to dictate verbal comments.

Written comments at the public meetings, including court reporter transcripts, and comments provided online through the comment form are included as part of the project record and are referenced in **Appendix B – Attachment 3, Comment Matrix and Response Letter**.

Attendance numbers reported in **Table 2-1** below are approximate and are based on the number of persons who registered on the sign-in sheets. Some attendees, possibly, did not provide their information into the sign-in sheet, therefore are not accounted for**.** Based on the sign-in sheets, a total of 276 attendees came to the three public meetings.

TABLE 2-1: DEIS PUBLIC MEETINGS

Public Meeting	Location	Date/Time	Number of Attendees
Atlanta, GA	Georgia Department of Transportation One Georgia Center 600 West Peachtree Street NW Atlanta, Georgia 30308	Tuesday, October 22, 2019 5:30 pm – 8:00 pm	84
Greenville, SC	Greenville County Square 301 University Ridge, Suite 400 Greenville, South Carolina 29601	Wednesday, October 23, 2019 5:30 pm – 8:00 pm	127

Public Meeting	Location	Date/Time	Number of Attendees
Charlotte, NC	Metrolina Transportation Management Center 2327 Tipton Drive Charlotte, North Carolina 28206	Thursday, October 24, 2019 5:30 pm – 8:00 pm	65
		Total	**276***

* Based on the number of individuals who registered on the sign-in sheets. Additional persons may have been present but did not choose to register.

Meeting attendees received a project fact sheet and a comment card, which mirrored the online comment form. The public meetings were conducted in an open house format. No formal presentation was given; however, nine display boards were exhibited in the meeting rooms for the public to view and ask questions. The displays were staffed by Project team members. A hardcopy of the Tier 1 DEIS and the supporting map books (refer to **Appendix A** of the Tier 1 DEIS) were available for review at the public meetings. Representatives from the FRA and GDOT were also available to answer any questions. Meeting venues and materials were coordinated with SCDOT, NCDOT, and local jurisdictions.

2.2.2.1 ADDITIONAL PUBLIC OUTREACH ACTIVITIES

Following the three public meetings, representatives from the Gaston-Cleveland-Lincoln Metropolitan Planning Organization (MPO) requested an additional briefing to their constituents due to the proximity of all evaluated alternatives. A GDOT Project Manager provided a brief presentation to the Gaston-Cleveland-Lincoln MPO Technical Coordinating Committee (TCC) during the regularly scheduled TCC meeting on Wednesday, November 13, 2019 to share information on the Project.

2.2.3 Comments and Responses on the Tier 1 DEIS

FRA and GDOT encouraged public review and comment on the Tier 1 DEIS at each of the public meetings and through the various advertisements (i.e., legal ads, social media posts, and press releases). During the 45-day public review and comment period, GDOT received a total of 2,154 public and agency comments. Comments were submitted electronically via an online comment form, through written comment cards at the public meetings, and verbally to the court reporter at public meetings.[16]

Of the 2,154 agency and public comments submitted, most were in support of the overall proposed project. 111 comments (5%) expressed opposition to the project. 1,260 comments expressed clear support for one or more Preferred Corridor Alternatives, as follows:

- Greenfield Preferred Corridor Alternative = 957
- Southern Crescent Corridor Alternative = 173
- I-85 Corridor Alternative = 130

[16] Given the number of comments submitted, FRA and GDOT are not including the original public comments in this FEIS/ROD. Instead, in accordance with 40 CFR §1503.4(b), the comments-response matrix in Appendix B includes reprints of all the public comments. All agency and public official comments are included in Appendix B.

Approximately 76% of commenters who expressed support for a Preferred Corridor Alternative chose the Greenfield Corridor Alternative, followed by the Southern Crescent (14%) and the I-85 Corridor Alternative (10%). 51 respondents (4%) expressed support for more than one Preferred Corridor Alternative. Many comments expressed support for the fastest and most reliable travel times between major population areas along the corridor, which is consistent with the public's preference for the Greenfield Corridor Alternative. Many commenters also expressed support for stations in their communities, or stations serving airports or universities. Commenters were also interested in the environmental benefits of non-vehicular modes, the economic benefits of passenger rail service, and potential connections between passenger rail and local transit systems.

SCDOT and NCDOT also provided letters of support for the Preferred Corridor Alternative. On May 29, 2020 SCDOT submitted a letter to GDOT stating that due to high potential impacts in five environmental categories and significant construction on Interstate 85, SCDOT concurred with selection of the Greenfield Corridor as the Preferred Corridor Alternative. On April 15, 2020, NCDOT submitted a letter of support to GDOT concurring with selection of the Greenfield Corridor Alternative as the Preferred Corridor Alternative, provided that additional studies are conducted as a part of the Tier 2 NEPA process to determine how the Greenfield Alignment can best access the Charlotte/Metrolina region. These letters are found in **Appendix C** of the FEIS.

FRA and GDOT have reviewed the public and agency comments and have prepared responses while taking comments into consideration in the decision-making process for the Tier 1 EIS. Upon publication of this Tier 1 FEIS/ROD, responses to comments will be provided online for public and agency reference. An additional 30-day waiting period will be held after the Tier 1 FEIS/ROD is issued to allow for public and agency input on the selection of the Preferred Corridor Alternative. The 30-day waiting period will not be a formal comment and review period. Individual responses to comments submitted will not be provided. However, the FRA and the GDOT and any other future project sponsors will consider input received on this Tier 1 FEIS/ROD in subsequent phases of the Project, which may include a Tier 2 NEPA process.[17]

2.3 TIER 1 DEIS ERRATA TABLE

Table 2-2 presents changes that have been made to the Tier 1 DEIS released on September 20, 2019. **Appendix A** of this Tier 1 FEIS/ROD contains the edited Tier 1 DEIS based on the actions listed. In the DEIS, changes that were made to the text, tables, and/or figures are highlighted in yellow. The edited Tier 1 DEIS combined with the Tier 1 DEIS Errata Table is re-issued as the Tier 1 FEIS for the Project under this Tier 1 FEIS/ROD.

[17] *Please submit any input to the FRA and/or GDOT points of contact listed on the FEIS-ROD signature page.*

TABLE 2-2: TIER 1 DEIS ERRATA TABLE

ID	Chapter	Page(s) in Tier 1 DEIS	Description of Action	Page(s) in Tier 1 FEIS	Comment Addressed (see Appendix B – Attachment 4)
1	Chapters 1 and 4	Pg. 1-19; Pg. 4-3	1. A footnote was inserted to clarify the number of MPOs in the Study Area. 2. The name for the Mecklenburg-Union Metropolitan Planning Organization was revised to the 'Charlotte Regional Transportation Planning Organization (CRTPO)'.	Pg. 1-19; Pg. 4-3	City of Charlotte Comments, November 1, 2019 "The document refers to five MPOs being located with the study area. There are seven. Please ensure the Gaston-Cleveland-Lincoln MPO (GCLMPO) and the Rock Hill/Ft. Mill Area Transportation Study (RFATS) are identified in the final EIS." "The document refers to the Mecklenburg-Union Metropolitan Planning Organization. The MPO for the Charlotte region was renamed the Charlotte Regional Transportation Planning Organization (CRTPO) in 2013. The final EIS should make the correction."
2	N/A	N/A	Parameters for high, medium, and low impacts would be discussed in a Tier 2 EIS.	N/A	EPA, November 1, 2019
3	N/A	N/A	Cumulative Impacts would be discussed in a Tier 2 EIS.	N/A	EPA, November 1, 2019
4	N/A	N/A	Environmental Justice (EJ) evaluation would be done in Tier 2 EIS; Preferred Corridor Alternative, compared to the other alternatives, would have the lowest impacts on EJ communities.	N/A	EPA, November 1, 2019
5	N/A	N/A	Air Analysis would be done in Tier 2 EIS.	N/A	EPA, November 1, 2019
6	N/A	N/A	State Implementation Plan (SIP) Conformity would be done in Tier 2 EIS.	N/A	EPA, November 1, 2019
8	Chapter 1	Pg. 1-18	Typo: Seven 'Needs', described, but there are actually eight 'Needs' listed. Text has been revised.	Pg. 1-18	N/A – Error identified by Project Team

ID	Chapter	Page(s) in Tier 1 DEIS	Description of Action	Page(s) in Tier 1 FEIS	Comment Addressed (see Appendix B – Attachment 4)
9	Chapter 2	Pg. 2-34	Typo: The text on page 36 describing the travel time for the Southern Crescent (2:34) does not correspond to the travel time listed on page 42. Therefore, the text on page 36 has been revised to match Exhibit 2-20 (pg. 42) ("2:34" should be "5:34").	Pg. 2-34	N/A – Error identified by Project Team
10	Chapter 3	Pg. 3-39	Typo: The Table on pg. 3-39 titled "Exhibit 3.3-12: Comparison of Existing Travel Modes and Proposed Corridor Alternatives" has been revised to have the correct number of round trips for each of the Corridor Alternatives.	Pg. 3-39	N/A – Error identified by Project Team

3. Tier 1 ROD

The Federal Railroad Administration (FRA) has determined that pursuant to National Environmental Policy Act of 1969 (42 USC Section 4321 et seq.), and implementing regulations (40 CFR Parts 1500-1508), Section 4(f) of the U.S. Department of Transportation Act (49 USC 303) ;the Federal Railroad Administration's Procedures for Considering Environmental Impacts (64 Federal Register 28545); the National Historic Preservation Act (54 USC 306101 et seq.) and implementing regulations (36 CFR Part 800); the Clean Air Act as amended (42 USC 7401 et seq.) and implementing regulations (40 CFR Parts 51 and 93); the Endangered Species Act of 1973 (16 USC 1531-1544) and implementing regulations (50 CFR Part 402); the Clean Water Act (33 USC 1251-1387) and implementing regulations (33 CFR Parts 320 to 324 and 40 CFR Part 230) and Section 6(f) of the Land and Water Conservation Fund Act (36 CFR Part 59), all obligations for completing a Tier 1 NEPA environmental review process for the Project have been met.

In this Tier 1 ROD, FRA selects the Greenfield Corridor Alternative described and evaluated in the Atlanta to Charlotte Tier 1 DEIS as the Preferred Corridor Alternative. This Tier 1 ROD includes all technical reports and supporting documentation, incorporated by reference. Should a project sponsor be identified and funding be secured, a subsequent Tier 2 analysis will determine the specific alignment within the Greenfield Corridor Alternative, as well as the alignment for the Atlanta Approach, locations of stations and maintenance facilities, the type of locomotive propulsion technology, and other operating characteristics.

3.1 PURPOSE AND NEED FOR THE PROJECT

FRA and GDOT developed the Purpose and Need for the Project during the scoping process following the issuance of the NOI (refer to **Section 1.4)**. The Purpose and Need remained consistent between the DEIS and FEIS and is the basis for the development of the Project objectives and goals and performance measures or criteria for which the FRA has based its decision in selecting the Preferred Corridor Alternative for the Project. The Purpose of the Project is to improve intercity passenger travel between Atlanta, GA and Charlotte, NC by expanding the region's transportation system capacity and improving trip time and reliability through high-speed passenger rail services.

The Project will provide the transportation system capacity necessary to accommodate current and projected population and economic growth occurring along the SEHSR Corridor network, including the following metropolitan areas in the Piedmont Atlantic Megaregion: Atlanta, GA; Charlotte, NC; Greenville, SC; and Spartanburg, SC.

GDOT identified eight transportation system needs relevant to the Project Study Area, each corresponding to the anticipated population and employment growth with increasing travel demand. The Project addresses the following needs: population and employment growth; improve regional transportation system connectivity; increase transportation system capacity; improve travel times and reliability; provide an alternative travel mode; improve traveler safety; improve energy efficiency and air quality; and maintain and enhance economic growth and vitality.

3.2 ALTERNATIVES CONSIDERED IN THE TIER 1 DEIS

The Alternatives considered remain consistent between the DEIS and FEIS. The Alternatives include the No-Build Alternative and the three Corridor Alternatives that scored the highest in the Phase I screening evaluation (more detail provided in **Chapter 2** of the DEIS) – the Southern Crescent Corridor Alternative, the I-85 Corridor Alternative, and the Greenfield Corridor Alternative. GDOT evaluated the Corridor Alternatives on performance measures or criteria developed for the Tier 1 EIS process and their effectiveness in meeting the Purpose and Need for the Project as presented in **Exhibits 2-4 through Exhibits 2-6** of the Tier 1 DEIS. The Phase 2 alternatives analysis introduced some new considerations and refined some of the components of the three remaining Corridor Alternatives. Phase 2 concludes with a comparison of the three Corridor Alternatives' potential service characteristics, including the following metrics: daily round trips, travel time, ridership, revenue, capital cost, operating and maintenance (O&M) cost, operating ratio,[18] and benefit-cost ratio.

3.3 DESCRIPTION OF THE PREFERRED CORRIDOR ALTERNATIVE

FRA is selecting the Greenfield Corridor Alternative as the Preferred Corridor Alternative. The Greenfield Corridor Alternative is detailed in this Tier 1 FEIS **Section 3** and illustrated in **Figure 3-2** below**.** The Greenfield Corridor Alternative is a 274-mile route that connects Charlotte, NC (Charlotte Gateway Station) and Atlanta, GA (Hartsfield-Jackson Atlanta International Airport – H-JAIA) and generally follows a new dedicated alignment between the CLT airport and northeast Atlanta. Any future Tier 2 studies will define the specific alignment for the Greenfield Corridor Alternative, including the final approaches into Atlanta and Charlotte. GDOT assumes this Corridor Alternative could use either diesel or electric propulsion technology. Additional description of the corridor is provided below.[19]

1) In North Carolina, this corridor follows the route of the NS Right-of-Way (ROW) for 10 miles on dedicated passenger tracks, potentially operating at speeds of 80 to 110 mph, from Charlotte Gateway Station to the CLT airport station before transitioning to a new greenfield alignment just west of the Catawba River crossing. From the Catawba River, the greenfield alignment extends for approximately 15 miles passing southeast of Belmont, NC to a station at South Gastonia near the state line. This route potentially serves three stations in North Carolina: Charlotte Gateway, CLT airport, and South Gastonia. Once on greenfield

[18] *GDOT calculated the operating ratio for each Corridor Alternative by dividing the system revenues by the operating costs.*

[19] *See section 2.2.2.2 Refinement of Corridor Alternatives of the DEIS for details on the three alternatives, including potential operating speeds based on propulsion technology.*

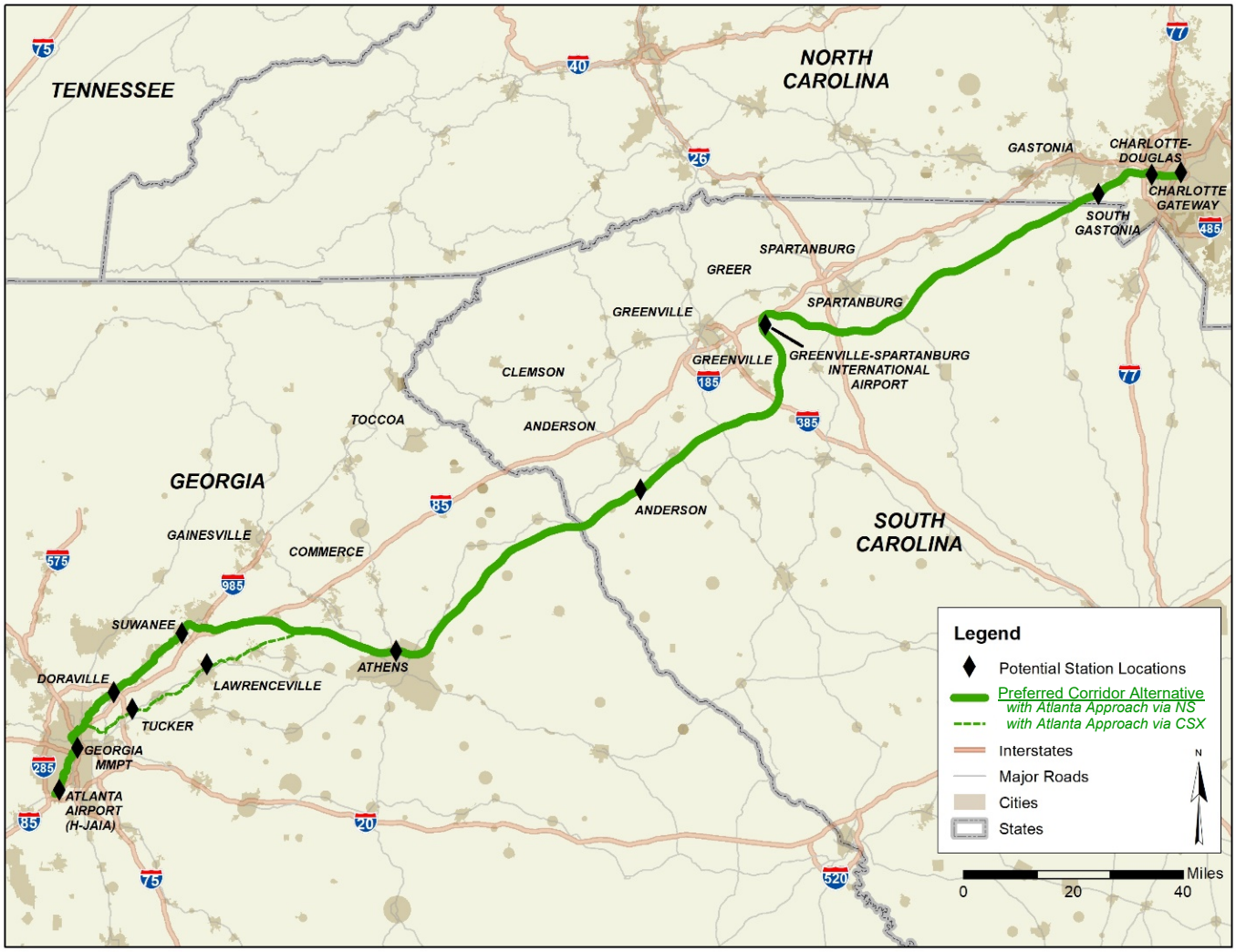
alignment, this corridor can sustain speeds of up to 125 mph using diesel or 220 mph using electric propulsion.[20]

2) In South Carolina, this corridor continues along a greenfield alignment for 65 miles passing east of Kings Mountain State Park to a route paralleling I-85, approximately 10 miles to the southeast, then diverging westward to a station near the Greenville-Spartanburg International Airport (GSP). From the GSP airport, this corridor returns eastward to a route paralleling I-85, approximately 15 miles to the east, for 50 miles to the state line at the Savannah River with a station in Anderson, SC. This Corridor Alternative can support speeds of up to 125 mph (diesel) or 220 mph (electric) throughout most of South Carolina until reaching the first stop in Georgia.

3) In Georgia, this corridor continues along a greenfield alignment for approximately 80 miles with a potential station in Athens, GA. Due to the complex environment of the approaches to and through Atlanta and the nature of a tiered NEPA process, this Tier 1 EIS defers the selection of the preferred Atlanta Approach to a future Tier 2 NEPA study. In the Tier 1 EIS two corridors were considered for the segment of the Greenfield Alternative between Gwinnett County and Howell Junction in Atlanta, one with passenger-dedicated tracks in a corridor generally alongside elements of I-85 and NS (with potential stations in Suwanee and Doraville) and the other alongside the CSX Abbeville Subdivision to the CSX Atlanta Belt Line (with potential stations at Lawrenceville and Tucker) as shown in **Figure 3-2**. From Howell Junction the route would be in passenger-dedicated tracks to H-JAIA in the existing railroad corridor (with a station proposed for downtown Atlanta (Georgia MMPT). Within the shared ROW of the Atlanta Approach, speeds are generally between 70 mph and 110 mph for both diesel and electric options. In addition to the two potential Atlanta Approaches (NS and CSX), a future Tier 2 NEPA study could also identify additional feasible approaches or construction methods traversing the Atlanta area, such as use of public or private rights-of-way with at-grade, elevated (bridge or viaduct), or below-grade (tunnel) infrastructure, and could consider infrastructure shared with other planned intercity and commuter rail projects. Examples of intercity routes that might share tracks include multiple planned routes radiating from Atlanta northwest to Chattanooga and Nashville, TN; west to Birmingham, AL; southwest to Columbus, GA and Montgomery, AL; east to Columbia, SC; and southeast to Macon, GA and Jacksonville, FL. FRA and GDOT defer the definition and evaluation of any additional approaches to the Tier 2 analysis .For this Tier 1 EIS, a 600-foot wide buffer was used for the Greenfield Corridor Alternative, and it gives future potential project sponsors the flexibility to refine alignments during Tier 2 NEPA studies and to potentially avoid or minimize impacts to resources within the corridor.

[20] *For more information on operating speeds and how GDOT determined speed ranges for the alternatives, see the Alternatives Development Report, which is Appendix B to the Draft EIS.*

FIGURE 3-2: PREFERRED CORRIDOR ALTERNATIVE – GREENFIELD CORRIDOR ALTERNATIVE



In comparison to the other Corridor Alternatives, the Greenfield Corridor Alternative performed better overall in meeting the Project's Purpose and Need. This is also true for other relevant metrics, illustrated in **Table 3-3**. The environmental impacts illustrated in **Table 3-3** are based on the respective CSX and NS Atlanta Approaches.

TABLE 3-3: COMPARATIVE SUMMARY OF THE CORRIDOR BUILD ALTERNATIVES

Performance Measure (Criteria/Resource)	Definitions/ Description	Southern Crescent Corridor Alternative	I-85 Corridor Alternative	Greenfield Corridor Alternative (Preferred Corridor Alternative)
Top Operating Speed (MPH)	Diesel shared track	**79**	**-**	**-**
	Diesel shared and dedicated track	**79 to 110**	**-**	**-**
	Diesel dedicated track	**-**	**125**	**125**
	Electric dedicated track	**-**	**180**	**220**
End to End Travel Time (hrs:min)	Diesel shared track	**5:34**	**-**	**-**
	Diesel shared and dedicated Track	**4:35**	**-**	**-**
	Diesel dedicated track	**-**	**2:50**	**2:44**
	Electric dedicated track	**-**	**2:42**	**2:06**
2050 Annual Ridership	Projected ridership in 2050	**0.94M to 1.18M**	**5.50M to 5.62M**	**5.38M to 6.30M**
Capital Cost	Cost to build the Project	**$2.0B to $2.3B**	**$13.3B to $15.4B**	**$6.2B to $8.4B**
2050 Annual O&M Cost	Project cost to operate and maintain high speed rail passenger service	**$63.17M to $66.1M**	**$192.9M to $169.9M**	**$205.7M to $211.9M**
Revenue/O&M Cost Ratio	Helps measure the financial solvency of a corridor alternative (i.e. self-sustaining)	**0.66 to 0.82**	**2.05 to 2.30**	**2.08 to 2.32**
Potential Environmental Impacts				
% Diverted Trips*	Projected Automobile, Air, and Bus Trips Diverted to Rail	**20%**	**30%**	**29%**
Socioeconomic and Environmental Justice	Percentage of Census Block Groups Meeting EJ Criteria for Minority and Low-Income Populations	**30% to 34%**	**23% to 27%**	**19% to 23%**
Noise	Number of Potential Noise Receptor Impacts	**11,310 to 11,872**	**6,963 to 7,163**	**9,246 to 9,628**

Performance Measure (Criteria/Resource)	Definitions/ Description	Southern Crescent Corridor Alternative	I-85 Corridor Alternative	Greenfield Corridor Alternative (Preferred Corridor Alternative)
Vibration	Number of Potential Vibration Receptor Impacts	**29 to 37**	**21 to 26**	**145 to 149**
Parklands and Wildlife Refuges	Acres of Parklands and Wildlife Refuge Sites	**28 to 33**	**21 to 26**	**17 to 22**
Cultural and Historic Resources	Number of Known Cultural Resources	**110 to 117**	**49 to 52**	**37 to 44**
Threatened and Endangered Species Habitats	Number of Known Threatened and Endangered Species Habitats	**38 to 41**	**38 to 41**	**35 to 38**
Wetlands	Acres of Wetlands	**45 to 100**	**148 to 194**	**130 to 169**
Waterbody Crossings	Number of Waterbody Crossings (Rivers, Streams, Lakes)	**169 to 270**	**462 to 525**	**566 to 629**
Floodplains	Acres of Floodplains	**494 to 918**	**762 to 1,181**	**738 to 1,129**
Community Facilities	Number of Known Community Facilities	**354 to 366**	**185 to 187**	**116 to 120**

** Figure represents cumulative percentage of trips diverted for automobile, air, and intercity bus trips*

3.3.1 Preferred Corridor Alternative Attributes

The Greenfield Corridor Alternative will be fully separated from the existing roadway and railroad transportation systems. The high-speed passenger rail corridor will be on a new dedicated ROW between CLT airport and a point west of Athens, GA before potentially following existing railroad ROW approaching the Charlotte and Atlanta termini. Dedicated, passenger-only tracks would be provided throughout; however, these might be shared with trains of other proposed intercity or commuter rail routes. Station opportunities for the Greenfield Corridor Alternative include: Charlotte Gateway, CLT airport, South Gastonia, GSP airport, Anderson, Athens, Suwanee, Lawrenceville, Doraville, Tucker, downtown Atlanta (Georgia MMPT), and H-JAIA. Exact alignment configurations and station locations would be dependent on the existing terrain, land use, land cover, roadway and railroad networks, and environmental conditions along the route and would be further defined during a Tier 2 NEPA analysis.

Due to the size and complexity of the Project, FRA and GDOT will defer the following decisions to future Tier 2 analysis: alignment of the corridor (including the approaches into Atlanta, Georgia and validating the route into Charlotte, North Carolina); locations of stations and facilities; operating equipment; propulsion technology type; and detailed operating characteristics. Separate Tier 2 NEPA documentation could be pursued for the Atlanta Approach, which could also consider other intercity passenger rail corridors and planned commuter rail corridors in the Atlanta or Charlotte area. A Tier 2 analysis will also validate the assumptions regarding the approach into Charlotte to CLT and the terminal Charlotte-Gateway Station. Concerning equipment technology, a Tier 2 analysis may explore a

phased approach that would initially use diesel technology with the option to electrify the corridor over time, as funding allows. Tier 2 analysis could also explore phasing construction for the preferred alignment. The Tier 2 process will continue the public involvement and agency coordination that began during this Tier 1 EIS. Should a project sponsor be identified and funding be secured, the Tier 2 process will further document a more detailed environmental analysis, including applicable permits and defining specific avoidance and mitigation measures.

3.3.2 Environmental Benefits, Consequences, and Potential Mitigation for the Preferred Corridor Alternative

The FRA has selected the Greenfield Corridor Alternative as the Preferred Corridor Alternative in this Tier 1 FEIS/ROD. A summary of key findings, including potential benefits and consequences for the Preferred Corridor Alternative are referenced in **Section 3** in this Tier 1 FEIS/ROD and **Chapter 3** and **Exhibit 3.2-1** of the Tier 1 DEIS. General mitigation and avoidance minimization strategies for potential impacts of the Preferred Corridor Alternative are discussed at the end of each affected environment section in the Tier 1 DEIS (refer to **Sections 3.3-3.10** of the Tier 1 DEIS). A table summarizing the potential environmental impacts of the Preferred Corridor Alternative are presented in Table 2-1: DEIS Public Meetings. Potential impacts to environmental resources analyzed include:

- Transportation
- Air Quality
- Noise and Vibration
- Socioeconomics and Environmental Justice
- Parklands, Wildlife Refuges, and Recreational Areas
- Cultural Resources
- Water Resources
- Biological Resources

TABLE 3-2: SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACT

Measures	Greenfield Corridor Alternative
Percentage of automobile trips diverted to rail (2050, rounded)	4%
Percentage of air trips diverted to rail (2050, rounded)	10%
Percentage of intercity bus rips diverted to rail (2050, rounded)	15%
Number of potential noise receptor impacts	9,246-9,628
Number of potential vibration-receptor impacts	145-149
Percentage of Census Block Groups meeting EJ criteria for Minority Population	37.2%-37.7%

Percentage of Census Block Groups meeting EJ criteria for Low-Income Population	19.02%-22.7%
Parklands and Wildlife Refuges Sites (number)	17-22
Parklands and Wildlife Refuges (acres)	48.01-66.18
Known Historic Resources (number)	37-44
Community Facilities (number)	116-120
Wetlands (acres)	130-169
Waterbody Crossings (number)	566-629
Floodplains (acres)	738-1,129
Known Threatened and Endangered Species Habitats (number)	35-38
Natural Terrestrial Habitat (acres)	10,520-10,854

**Table 3-2 presents the Greenfield Corridor Alternative's environmental impacts as a range to represent the impacts of selecting either the NS or CSX Atlanta Approach. In future Tier II studies, this range will be refined based on the selection of the Atlanta Approach.*

During a Tier 2 NEPA study, field verification and a detailed preliminary design would be required to assess direct, indirect, and cumulative impacts of the Preferred Corridor Alternative (more than one preliminary design will need to be prepared for the Atlanta Approach corridor since this Tier 1 study has not selected the route for the Atlanta Approach in the Preferred Corridor Alternative). Background and desktop research, fieldwork, assessment of effects reporting for all special studies, and continued public involvement would also be included as part of the Tier 2 NEPA process.

The Greenfield Corridor Alternative also best meets the Purpose and Need of the Project in the following ways:

- The Greenfield Corridor Alternative would improve overall regional connectivity by providing an intercity passenger rail linkage between Atlanta and Charlotte and other proposed SEHSR locations, enhance multimodal transportation connections, improve capacity and travel times by decreasing travel times between major urban centers compared to auto and air time travel.

- The Greenfield Corridor Alternative would provide a safe and reliable alternative mode resulting in improved energy efficiency and decreasing greenhouse gas emissions.

- The Greenfield Corridor Alternative would promote economic development through increasing economic activity and employment opportunities via transportation connectivity resulting in a more productive and competitive economy with an expansion of the labor market along the corridor.

- The Greenfield Corridor Alternative would potentially have fewer impacts on community facilities, parks, wildlife refuges and recreational areas, cultural resources, and biological resources identified in the Tier 1 DEIS.

A brief description of the benefits, consequences, and mitigation to be further evaluated for each resource during any subsequent phases of work for the Project, including Tier 2 NEPA studies, are summarized below:

Transportation (Section 3.3 of the DEIS)

This section discusses the potential network-wide effects of the Greenfield Corridor Alternative on existing transportation facilities within the Study Area, and identifies potential measures to avoid, minimize, or mitigate these effects. The potential effects include effects on ridership, travel time, level of service (LOS), connectivity, and operations.

TABLE 3-3: SUMMARY OF TRAVEL TIMES BY MODE

Travel Mode	Frequency of Trips (Round Trips)	Average Travel Time between Atlanta and Charlotte
Automobile		
I-85	N/A	3 hours, 45 minutes[21]
I-20, I-77	N/A	4 hours, 43 minutes[22]
Intercity Bus	14	5 hours, 14-16 minutes, depending on carrier
Intercity Rail		
Amtrak Crescent	1	5 hours, 17 minutes[23]
Air	36	
American	18	1 hour 17 minutes (direct flight time only)[24]
Delta	18	1 hour, 10 minutes (direct flight time only)[25]
Passenger Rail Preferred Corridor Alternative		
Greenfield	8-11*	2 hours, 6 minutes** to 2 hours, 44 minutes
With electric high-speed technology, 11 round trips can be supported		
Potential travel times for electric high-speed technologies		
Sources: HNTB Revenue and Ridership Results, May 2013; Websites of Greyhound, Megabus, and Amtrak; Google maps		

Effects on Auto Trips

Regionally, rider choice to use passenger rail service instead of the existing highways could impact traffic near potential station locations. The local and regional effect on roadways due to the Preferred Project Alternative would be analyzed in the Tier 2 analysis. In general, the change in driving patterns would potentially affect roadway LOS, particularly in places where roadways already experience some congested time periods.

Locally, the Preferred Corridor Alternative would change travel patterns near proposed stations as people travel to and from the stations. Localized roadway improvements may be required to accommodate roadway impacts resulting from the Project. Such improvements would relate to managing circulation, accommodating added traffic

[21] *Travel times reflect start/end points from city-centers of Charlotte and Atlanta Google Maps Driving Directions, assumes vehicles are driving the posted speed limits*
[22] *Travel times reflect start/end points from city-centers of Charlotte and Atlanta. Google Maps Driving Directions, assumes vehicles are driving the posted speed limits*
[23] *Amtrak, http://www.amtrak.com/home (accessed on 1/31/18)*
[24] *Estimate based on information provided by searching for weekday flights between Atlanta and Charlotte*
[25] *This number is dependent on which rail alternative is preferred. However, The Volpe Center in their "Evaluation of High-Speed Rail Options in the Macon-Atlanta-Greenville-Charlotte Rail Corridor." (2008) provides this estimate*

volume, and considering safety of pedestrians and bicyclists. Stations have the potential to induce re-zoning and development in the area around stations. For example, transit-oriented development (TOD), which increases the density of residential and commercial land uses, can change vehicular, transit, pedestrian and bicycle travel patterns. In coordination with local and state planning officials, each proposed station location will be examined during a Tier 2 analysis. Necessary improvements will be identified and recommended as warranted and reasonably feasible.

The Tier 2 analysis will determine if roadway crossings are required and evaluate potential road closures and/or realignments. GDOT will coordinate with local governments to resolve rail- roadway design concerns. Roadway crossings would be guided by FRA's 2009 *Highway-Rail Grade Crossing Guidelines for High Speed Passenger Rail* which focuses on safety issues such as warning systems and traffic controls, train controls, barriers, and requires grade separations for high speed operation. GDOT anticipates that the Greenfield Corridor Alternative will not have any at-grade crossings.

In 2025, the Greenfield Corridor Alternative remaining auto trips is estimated to be just over 104 million, therefore demonstrating the Greenfield Corridor Alternative as diverting close to four million auto-trips, or 3.5%. In 2050, GDOT estimates remaining auto trips at just over 114 million and diverting 4.3 million, or 3.6% of auto trips.

Effects on Existing Rail

Within the approaches to Atlanta and Charlotte, the Greenfield Corridor Alternatives would transition to dedicated passenger rail tracks in a shared-use freight corridor to access the stations including the Georgia MMPT, H-JAIA, CLT and Charlotte Gateway Station. GDOT anticipates that existing freight railroads will maintain the track and ROW that they own, and that the cost of track maintenance will be resolved through negotiations with the railroads.

Effects on Existing Transit

Trip diversion from intercity bus travel is larger than automobile trip diversion. In 2025 and 2050, the Greenfield Corridor Alternative would divert 40,000 inter-city bus trips, or 17.4% and 15.4% respectively.

Existing intercity bus travel is expected to provide a viable travel option in future years, but faster passenger rail service would divert some intercity bus travelers. The projected travel time for the Greenfield Corridor Alternative would be competitive with intercity bus service. The Greenfield Alternative would be significantly shorter than existing inter-city bus trip travel time. **Table 3-3** shows a comparison of the travel times between Atlanta and Charlotte for existing modes and the Greenfield Corridor Alternative.

Connectivity of the Project with existing transit services is an important need. Potential linkages will be studied during a Tier 2 analysis, including connections to Atlanta's MARTA heavy rail system and Charlotte's transit system. In addition, the Greenfield Corridor Alternative may introduce new stations that could affect local and regional bus transit routes. Some bus routes may also change to accommodate changes in traffic patterns resulting from the locations of stations. During construction, surface transit operations on roadways within the construction area could experience delays which would affect existing bus service.

Effects on Air Transportation

The introduction of a high-speed rail service with one or more stations at hub airports can produce changes in levels and patterns of commercial air travel.

Table 3-3 provides the total number of trips, both for air and the Greenfield Corridor Alternative high-speed passenger rail service, occurring at the three primary airports in the Study Area. These trips are categorized by

mode in order to illustrate the number of trips diverted from the air service to high-speed passenger rail service. The chart provides the potential diverted trips for each airport as well as for the entire corridor. For the Greenfield Corridor Alternative, the trip diversion was the greatest at the Greenville-Spartanburg Airport, diverting over 30 percent in 2025 and 2050. As a result of a high-share of connecting air traffic and short travel distances (ATL to GSP is around 150 miles; CLT to GSP is around 100 miles), air trips may be diverted from GSP as travelers consider Atlanta or Charlotte as a possible alternate origin/destination of their air trips if high-speed rail offers competitive travel times to the hub airports.

At H-JAIA and CLT, the projection of the Greenfield Corridor Alternative is 4 and 7 percent diversion of trips to a high-speed passenger rail service in 2025 and 2050. GDOT expects this lower diversion compared to GSP due to higher volume of annual riders.

Potential Mitigation

In future Tier 2 studies, the Project sponsor will make an effort to avoid and minimize negative impacts on transportation facilities as the Preferred Corridor Alternative advances. The Project sponsor will consider a number of strategies to mitigate impacts. Strategies that would mitigate the Project's impacts on highways, local roads, transit operations, and parking will vary depending on the nature of the impact. For example, near stations or where the Preferred Corridor Alternative intersects with existing roadways, improvements may be required at intersections or roadway cross-sections to facilitate access and safe circulation Mitigation strategies may also include improvements to accommodate existing and growing freight traffic on shared rail right-of-way, such as bypass routes, additional tracks, signalization, and coordination with the host railroad.

Station, parking, and maintenance facility designs could include operational and geometric improvements that maintain, wherever reasonably feasible, vehicle traffic conditions at acceptable levels of service. Mitigation could include the realignment of local traffic patterns and the creation of additional parking. Examples of roadway improvements to facilitate station access include turn lanes at intersections, local roadway capacity improvements, traffic control measures, coordination with local transit operations, and improvements in pedestrian and bicycle access. Landscape and streetscape enhancements could improve integration of stations with adjacent land uses.

Air Quality (Section 3.4 of the DEIS)

Operations Impacts

Regardless of the rail technology selected, it is reasonable to assume that the Greenfield Alternative will not cause or contribute to an increase in criteria pollutants emissions. The Greenfield Corridor Alternative could result in net reduction of criteria pollutants within the Study Area and so would have positive long-term health benefits for the region. As noted above in the Transportation discussion, the Greenfield Corridor Alternative has the potential to positively affect regional air quality by attracting riders to rail service from other modes of transportation, particularly the widely-used automobile. The Greenfield Corridor Alternative has the greatest potential to attract riders from automobile use (4 percent), thereby reducing emissions within this area as compared to the No-Build alternative.

Air quality impacts were assessed as a result of the overall potential reduction in emissions of the criteria air pollutants, based on the forecasted trips transferred from the highway system to HSR ridership, thereby potentially reducing the number of vehicles on the highway systems within the Project Study Area from which mobile emissions, including emissions from the criteria air pollutants that are the subject of the EPA's National Ambient Air Quality Standards (NAAQS) under the Clean Air Act (49 USC § 7409, et seq.). This Tier 1 EIS methodology does not include an analysis of greenhouse gases (GHG). The FRA anticipates that a project-level conformity analysis would be performed during Tier 2 NEPA studies. All regulations for the determination of the Project's impact on air quality within the nonattainment regions in the Project Study Area and potential air quality impacts to neighborhoods and communities adjacent to HSR facilities, including stations and vehicle storage and maintenance facilities, would be

assessed at that time. An assessment of the Project's air quality impacts to populations protected by Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks and Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations would occur during Tier 2 NEPA studies.

Construction Impacts

GDOT anticipates minor, temporary localized construction impacts. The Project would adhere to the GDNR-EPD 2010 Fugitive Dust regulation 391-3-1-02(2)(n) and the APC Regulation for Fugitive Dust (Chapter 1200-3-8). Construction activities can result in short-term, localized effects on ambient air quality and generate a temporary increase in Mobile Source Air Toxics (MSAT) emissions. These potential effects include direct emissions from construction equipment and trucks, increased emissions from motor vehicles on the streets due to disruption of traffic flow, and fugitive dust emissions. Emissions from construction equipment and trucks are expected to be much less than the total emissions from other industrial and transportation sources in the region, and therefore, are not expected to cause a violation of the NAAQS. Fugitive dust emissions could occur during demolition, ground excavation, material handling and storage, movement of equipment at the site, and transport of material to and from the site.

Noise and Vibration (Section 3.5 of the DEIS)

GDOT determined that, depending on the Atlanta Approach, the Greenfield Corridor Alternative has approximately 9,246 and 9,628 noise receptors and between approximately 145 and 149 vibration receptors. Potential noise and vibration effects from the Project were identified and inventoried, comprising land use types that are noise- and vibration-sensitive, and the number of potential noise- and vibration-sensitive receptors within the Preferred Alternative. This Tier 1 EIS identifies potential receptors as a measure of potential impacts. This level of analysis does not indicate a negative noise or vibration impact, but the estimated number of possible noise and vibration receptors located within the Preferred Alternative. A Tier 2 analysis will conduct a detailed noise and vibration analysis of the Preferred Alternative and explore noise and vibration impacts related to construction activities and station areas. The Tier 2 analysis will also identify mitigation strategies for propulsion technology and station area.

Potential Noise Mitigation

Potential noise mitigation strategies include installing noise barriers, building sound insulation, source treatments, Quiet Zones (if pursued by local jurisdictions), grade separations, and routine maintenance. A Tier 2 analysis will include potential noise mitigation measures based on the specific area that would experience noise impacts.

Potential Vibration Mitigation

Potential vibration mitigation strategies include resilient track design, which can help control ground-borne vibration that exceeds FRA effect criteria. In addition, depending on the track design, there are different methods to control vibration. For direct fixation slab track, resilient fasteners are a mitigation option. For ballast and tie track, shredded tire aggregate or rubber ballast mats may be an appropriate mitigation. A Tier 2 analysis will potential vibration mitigation measures based on the specific area that would experience vibration impacts.

Socioeconomic and Environmental Justice (Section 3.6 of the DEIS)

Populations protected by Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations were assessed for the Preferred Alternative based on the procedures and guidance included in USDOT Order 5610.2(a), Department of Transportation Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. GDOT determined that for the Greenfield Corridor Alternative with the NS Atlanta Approach, 37.7% of Census Block Groups meet Environmental Justice (EJ) criteria

for Minority Populations, and for the Greenfield Corridor Alternative with the CSX approach, 37.2% of Census Block Groups meet EJ criteria for Minority Populations. GDOT determined that for the Greenfield Corridor Alternative with the NS Atlanta Approach 22.7% of Census Block Groups meet EJ criteria for Low-Income Populations and for the Greenfield Corridor Alternative with the CSX approach 19.02%% of Census Block Groups meet EJ criteria for Low-Income Populations. Additional analysis during subsequent phases of the Project, including Tier 2 NEPA, would evaluate potential impacts to the populations protected by the Executive Order and would provide additional opportunities for outreach and engagement of low-income and minority populations within the Preferred Alternative.

Potential Mitigation

Potential mitigation will depend on the nature and extent of impacts to the local communities, including displacements, noise and vibration, access, view-shed, and safety. Public and agency input will help to identify appropriate mitigation measures through a Tier 2 NEPA analysis. Potential site-specific mitigation strategies might include accommodation of pedestrian access at proposed station sites, measures to reduce the impacts of noise and vibration, coordination with localities to determine primary emergency routes, and construction Best Management Practices to lessen the temporary effects on area residents during construction.

Parklands, Wildlife Refuges, and Recreational Areas (Section 3.7 of the DEIS)

Based on parklands, recreational areas, and wildlife refuges resources identified during the desktop analysis of the GIS database, GDOT determined that several properties and resources potentially protected under Section 4(f) of the U.S. Department of Transportation Ace and Section 6(f) of the Land and Water Conservation Fund Act are located within the Preferred Corridor Alternative. GDOT identified 17 (48.01 acres) parklands and wildlife refuge sites on the Greenfield Corridor Alternative with the NS Approach and 22 (66.18 acres) parklands and wildlife refuge sites on the Greenfield Corridor Alternative with the CSX Approach. The potential use of these resources protected by Section 4(f) and Section 6(f) as a result of the Project will be further evaluated during Tier 2 NEPA studies and specific mitigation measures identified.

Potential Mitigation

Using a tiered NEPA approach allows FRA to not preclude the ability to identify, evaluate and ultimately select a specific route within the Preferred Corridor Alternative that satisfies Section 4(f) and Section 6(f). The width of the Greenfield Corridor Alternative gives Tier 2 Project sponsors the flexibility to develop one of more alignments during Tier 2 NEPA studies and to potentially avoid or minimize impacts to 4(f) or 6(f) resources within the corridor. Opportunities to minimize harm to any Section 4(f) properties that may be used by the Project as evaluated during subsequent Tier 2 NEPA studies are not precluded by this Tier 1 FEIS/ROD.

Cultural Resources (Section 3.8 of the DEIS)

GDOT determined that the Greenfield Corridor Alternative with the NS Atlanta Approach has approximately 44 known historic resources and the Greenfield Corridor Alternative with the CSX Corridor Alternative has approximately 37 known historic resources. Historic and archaeological resources identified during desktop analysis of the GIS database will be further evaluated during Tier 2 NEPA studies. Further consultation activities with the Georgia SHPO, South Carolina SHPO, North Carolina SHPO, Tribal Historic Preservation Officers (THPO), and other consulting parties as required by Section 106 of the National Historic Preservation Act (NHPA), will occur during Tier 2 NEPA studies.

Potential Mitigation

If potential adverse effects are determined through subsequent analysis, a Memorandum of Agreement (MOA), or multiple MOAs, with specific mitigation measures will be developed as warranted by the Project sponsor through consultation with the FRA, the SHPOs of Georgia, South Carolina and North Carolina, other consulting parties and tribal partners in accord with NHPA Section 106 (ACHP 2004) and applicable state regulations. If NRHP-eligible archaeological sites cannot be avoided or protected, data recovery excavations could be conducted to mitigate the adverse impacts. Cemeteries and burial sites will be avoided to the extent feasible. Any effects to cemeteries that cannot be avoided will be treated in accordance with the federal and state requirements.[26]

Water Resources (Section 3.9 of the DEIS)

The Tier 1 DEIS identified numerous water resources within the Preferred Corridor Alternative. GDOT determined that the Greenfield Corridor Alternative with the NS Atlanta Approach contained approximately 130 acres of wetlands, 566 waterbody crossings, and 738 acres of floodplains; and the Greenfield Corridor Alternative with the CSX Approach contained 169 acres of wetlands, 629 waterbody crossings, and 1,129 acres of floodplains. An analysis of potential impacts to water resources, including 303(d) listed impaired waters, and general water quality issues within the Preferred Corridor Alternative would occur during Tier 2 NEPA studies.

Potential Mitigation

In accordance with the United States Army Corps of Engineers' goal of no net loss of wetlands, the Project sponsor will aim to avoid and minimize impacts and use compensatory mitigation if necessary. As design progresses, the Project sponsor will examine reasonably feasible ways to avoid affecting wetlands, streams, and lakes that are appropriate to the scope and practicable in terms of cost. The Project sponsor will then examine appropriate and practicable steps to reduce the potential impacts to wetlands, streams, and lakes as Project design is refined. Minimization will typically focus on decreasing the footprint of the Project in and near these resources. Other examples of minimization that will be considered include:

- Minimizing clearing and grubbing activity;
- Decreasing or eliminating discharges into streams;
- Minimization of activities within stream channels; and
- Use of spanning structures and bottomless culverts over streams.

As with wetlands, streams and lakes, the Project sponsor will examine reasonably feasible ways to avoid affecting floodplains that are appropriate to the scope and degree of the potential Project effects and practicable in terms of cost, existing technology, and logistics in light of the Project's purpose. Minimization strategies could include design aspects such as right-angle crossings, typical section reductions, and increased numbers of bridge spans or longer span length. For water quality potential mitigation, surface waters would be reviewed to determine where it is possible and practical to avoid or minimize impacts to these resources and to water quality. Potential mitigation measures to be considered include the use of temporary and permanent Best Management Practices (BMPs) to avoid or minimize sediment pollution and water quality impacts through reductions in stormwater runoff from the site. Additionally, an Erosion and Sediment Control (ESC) Plan would be prepared. Permanent BMPs, such as stormwater treatment or detention/retention facilities, or drainage channels/facilities, would be utilized where appropriate to improve stormwater management/flow and water quality.

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[26] *In 2016, FRA, NCDOT, the Virginia Department of Rail and Public Transportation, the Advisory Council on Historic Preservation and the State Historic Preservation Offices of North Carolina and Virginia signed a Programmatic Agreement (PA) detailing compliance with Section 106 of the National Historic Preservation Act for the SEHSR corridor between Richmond, VA and Raleigh, NC. That PA included provisions concerning adding other sections of the SEHSR and other signatories to the PA.*

Biological Resources (Section 3.10 of the DEIS)

GDOT determined that the Greenfield Corridor Alternative with the NS Atlanta Approach has approximately 35 known threatened and endangered species habitats and the Greenfield Corridor Alternative with the CSX Corridor Alternative has approximately 38 known threatened and endangered species habitats. There is the potential to encounter numerous flora (plants) and fauna (bird, bat, fish, invertebrate, and vertebrate animal species) habitat and individual occurrences of species protected under state and federal laws in the Preferred Corridor Alternative based on information obtained during coordination activities with the Georgia Department of Natural Resources (GADNR), the South Carolina Department of Natural Resources (SCDNR), the North Carolina Wildlife Resources Commission and the Department of the Interior (DOI), United States Fish and Wildlife Service (USFWS), during this Tier 1 EIS process. Further analysis of potential impacts to these resources, including a potential Section 7 consultation process under the Endangered Species Act for potential adverse impacts to protected species within the Preferred Corridor Alternative, would occur during Tier 2 NEPA studies.

Potential Mitigation

The Project sponsor will examine appropriate and practicable steps to reduce the potential effects of the Project on threatened and critical habitats. These steps will be implemented through design refinements in consultation with state and federal agencies as appropriate. Minimization will typically focus on decreasing the footprint of the Project in and near these critical habitats and alignment shifts to avoid populations and/or habitat areas. Potential mitigation and minimization strategies could include, but are not limited to, restricting construction activities during time of year that is sensitive to species (i.e., breeding, nesting, migration). Permanent BMPs, such as grassed channels, enhanced swales, infiltration trenches, stormwater ponds, and detention ponds, could provide measures to avoid or minimize impacts to biological resources.