NORTHERN LIGHTS *EXPRESS*

Northern Lights Express Passenger Rail Project from Minneapolis to Duluth, Minnesota

Tier 2 Project Level Environmental Assessment

April 2017

DEPARTMENT OF TRANSPORTATION

U.S. Department of Transportation
Federal Railroad Administration

WISCONSIN DEPARTMENT OF TRANSPORTATION

TIER 2 PROJECT LEVEL ENVIRONMENTAL ASSESSMENT

State Project Number: TCP-NLX-12B
Federal Project Number: FR-HSR-0070-11-01-00

Northern Lights Express Passenger Rail Project from Minneapolis to Duluth, Minnesota

From Target Field Station to the Depot in Duluth
Counties: Hennepin, Anoka, Isanti, Kanabec, Pine, Carlton, and St. Louis of Minnesota and Douglas of Wisconsin
Sections, Townships, Ranges: Multiple. See Appendix A.

Submitted pursuant to 42 USC 4332, 64 FR 28545, M. S. 116D and Wisconsin Administrative Code TRANS 400
By the
U.S. Department of Transportation
Federal Railroad Administration
and
Minnesota Department of Transportation
and
Wisconsin Department of Transportation
In cooperation with the
U.S. Environmental Protection Agency
and
Federal Highway Administration
and
Surface Transportation Board

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4/12/2017
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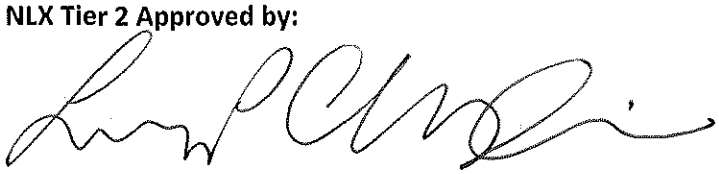

4/10/17

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4/10/2017

for Steve Krebs
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Date

Wisconsin Department of Transportation (WisDOT) signs as a Cooperating Agency under agreement between Minnesota and Wisconsin for the Northern Lights Express Project (November 2009). This WisDOT signatory approval is expressly limited to the adequacy of environmental elements under the jurisdiction of WisDOT, which does not include the system characteristics such as projected ridership, revenue, and/or project cost/benefit.

Executive Summary

The proposed Northern Lights Express (NLX) Project would introduce new higher speed intercity passenger rail service between Minneapolis and Duluth, Minnesota. Stations are proposed in six communities: Minneapolis, Coon Rapids, Cambridge, Hinckley, and Duluth in Minnesota and Superior in Wisconsin. The NLX Project, including proposed station locations, is shown in **Figure ES-1**. In addition, the NLX Project would include one maintenance facility and one layover facility to provide for daily servicing of the trains. These facilities may be on separate sites in Sandstone and Duluth, or co-located on one site in Duluth. The NLX Project would operate four round trips per day at speeds up to 90 miles per hour (mph) on 152 miles of existing BNSF Railway (BNSF), formerly Burlington Northern Santa Fe Railway, track in Minnesota (approximately 129 miles) and Wisconsin (approximately 23 miles). The NLX Project crosses Hennepin, Anoka, Isanti, Kanabec, Pine, Carlton and St. Louis counties in Minnesota, and Douglas County in Wisconsin.

The Federal Railroad Administration (FRA) is the lead federal agency for the National Environmental Policy Act (NEPA) process. The Minnesota Department of Transportation (MnDOT), in cooperation with the Wisconsin Department of Transportation (WisDOT), assisted FRA in the development of this Tier 2 Project Level (Tier 2) Environmental Assessment (EA). This Tier 2 EA was prepared in compliance with NEPA to fulfill the requirements of 42 United States Code (USC) 4331 et seq. and FRA's *Procedures for Considering Environmental Impacts* (64 Federal Register [FR] 28545). Further, the Tier 2 EA was prepared as part of the Minnesota and Wisconsin state environmental review processes to fulfill the requirements of Minnesota Statutes (Minn. Stat.) 116D and Wisconsin Administrative Code Chapter Trans 400.

At the Minnesota state level, this document serves as an Environmental Assessment Worksheet (EAW) (see **Appendix A** of this Tier 2 EA). Minnesota Administrative Rules 4410.1300 allow the EA to take the place of the state EAW, provided that the EA addresses the environmental effects identified in the EAW. For purposes of the EAW, MnDOT is the Responsible Governmental Unit. At the Wisconsin state level, Wisconsin Administrative Code Chapter Trans 400 directs WisDOT to follow the Wisconsin Environmental Policy Act (WEPA) when WisDOT has concurrent responsibility with another federal or state agency for a proposed action. WEPA allows the EA to serve as the environmental document and does not require a separate state-level document. By a November 2009 agreement, WisDOT is participating as both a responsible agency and a Cooperating Agency due to its signatory role.

Figure ES-1: Project Location

Cooperating Agencies are federal agencies, other than the lead agency, that have jurisdiction by law or special expertise with respect to any environmental impact. A state or local agency of similar qualifications, or a tribal agency when effects are on lands of tribal interest, may, by agreement of the lead agency, also become a Cooperating Agency. Cooperating Agencies share responsibility for participating in the NEPA process at the earliest possible time and to expedite reviews; for participating in the scoping process; and for developing information and environmental analyses related to their respective areas of expertise. In addition to WisDOT, the U.S. Environmental Protection Agency, Federal Highway Administration and Surface Transportation Board are Cooperating Agencies on the NLX Project.

This Tier 2 EA describes the purpose and need for the proposed NLX Project; alternatives considered; environmental impacts; measures to avoid, minimize and mitigate these impacts; and agency coordination and public involvement. This Tier 2 EA evaluates proposed changes from the Tier 1 Service Level (Tier 1) EA completed in March 2013 (http://www.dot.state.mn.us/nlx/documents.html). Tiering is a concept encouraged by the Council on Environmental Quality (CEQ) in environmental impact assessment reviews to eliminate repetitive discussions of the same issues and focus on the critical decisions at each level of environmental review (see 40 Code of Federal Regulations [CFR] 1502.20 and 1508.28). The Tier 1 EA evaluated impacts of the NLX Project as a whole and compared multiple route alternatives. It addressed broader issues and likely environmental effects for the entire NLX Project relating to the type of service(s) being proposed, including route alternatives, service levels, types of operations (speed, electric or diesel powered), ridership projections, major infrastructure components, identification of cities served and major terminal area or facility capacity constraints. The Tier 1 EA resulted in the selection of a preferred route with an operating plan of eight trains per day in each direction at speeds up to 110 mph. FRA issued a Finding of No Significant Impact (FONSI) in August 2013, and MnDOT issued a Negative Declaration and a Finding of Fact and Conclusion in September 2013 (http://www.dot.state.mn.us/nlx/documents.html). The FONSI determined that the NLX Project would not have significant environmental impacts and could proceed to preliminary engineering and a Tier 2 EA.

This Tier 2 EA builds on the Tier 1 EA, addressing specific NLX Project-related issues and likely environmental effects associated with proposed track infrastructure, stations, and maintenance and layover facilities. As part of the Tier 2 EA, MnDOT, in cooperation with FRA and WisDOT, examined refinements to the NLX Project in terms of ridership, operations and service and potential reductions in capital cost. The changes to the NLX Project between the Tier 1 EA and the Tier 2 EA are shown in **Table ES-1** and are discussed in more detail in Chapter 2 Alternatives. Each of these changes has altered the NLX Project construction limits and impacts, which are discussed in Chapter 3 Transportation and Chapter 4 Affected Environment and Environmental Consequences.

Table ES-1: Project Modifications between NLX Tier 1 EA and NLX Tier 2 EA

Tier 1 Service Level EA	Tier 2 Project Level EA
Eight round trips per day	Four round trips per day
Speeds up to 110 miles per hour	Speeds up to 90 miles per hour
Estimated capital cost	Refined estimated capital cost
General locations for stations and maintenance and layover facilities	Defined locations for stations and maintenance and layover facilities
Impacts assessed along general NLX Project route	Impacts refined in accordance with design for specific infrastructure improvements

ES.1 Purpose and Need

ES.1.1 Project Purpose

The purpose for the proposed action (the NLX Project) that was established as part of the Tier 1 EA is "to provide a means to meet transportation needs through creating a passenger rail service linking Minneapolis and Duluth, connecting with other existing and planned transportation systems." The NLX Project seeks to introduce a new intercity passenger rail service that would provide a reliable and cost-effective transportation option for travelers between Minneapolis and Duluth. The new service is designed to provide connections not only between the two termini, but to offer a new transportation connection for residents in the largely rural and small city markets of East Central Minnesota, who must currently rely on limited intercity bus or automobile travel for all trips. In keeping with Minnesota's statewide initiatives to increase multimodal transportation, intercity passenger rail and its station stops must provide greater intermodal connectivity[1] to ensure that more options are available to travelers. The new intercity passenger rail service must be cost-effective, using freight railroad infrastructure, but working in concert with freight railroads to coordinate needed rail improvements to support the new intercity passenger rail service.

[1] *Intermodal connectivity refers to the ability of users to use and transfer between more than one mode of transportation (personal automobile, bus, train, etc.) to complete a trip. An example of good intermodal connectivity is the ability to take a train from one city to another and then switch to a bus to reach the final destination. As intermodal connectivity is improved, the ability to take a trip using more than one mode of transportation becomes easier.*

The Tier 2 EA defines the project purpose and the goals developed to articulate desired benefits of the NLX Project, as well as to place the NLX Project in the context of various statewide multimodal plans. These over-arching goals guide MnDOT's intercity passenger rail program, and the environmental analyses of this NLX Project illustrate how MnDOT is working to accomplish these goals. See Section 1.3 of this Tier 2 EA for additional information on the NLX Project purpose and goals.

ES.1.2 Project Need

The need for the NLX Project is based on the limitations and vulnerabilities of available travel modes between Minneapolis and Duluth. Existing transportation modes, including highway, bus and air travel, have inherent problems including congestion near the Twin Cities (including Minneapolis, St. Paul and surrounding suburbs). While I-35 can adequately support vehicular travel outside of the Twin Cities and Twin Ports (including the cities of Duluth, Minnesota, and Superior, Wisconsin) areas, there is a need to consider other types of transportation options for expanding and changing populations that may not have access to vehicles or bus travel.

The NLX Project would address the following needs for intercity travel between Minneapolis and Duluth:

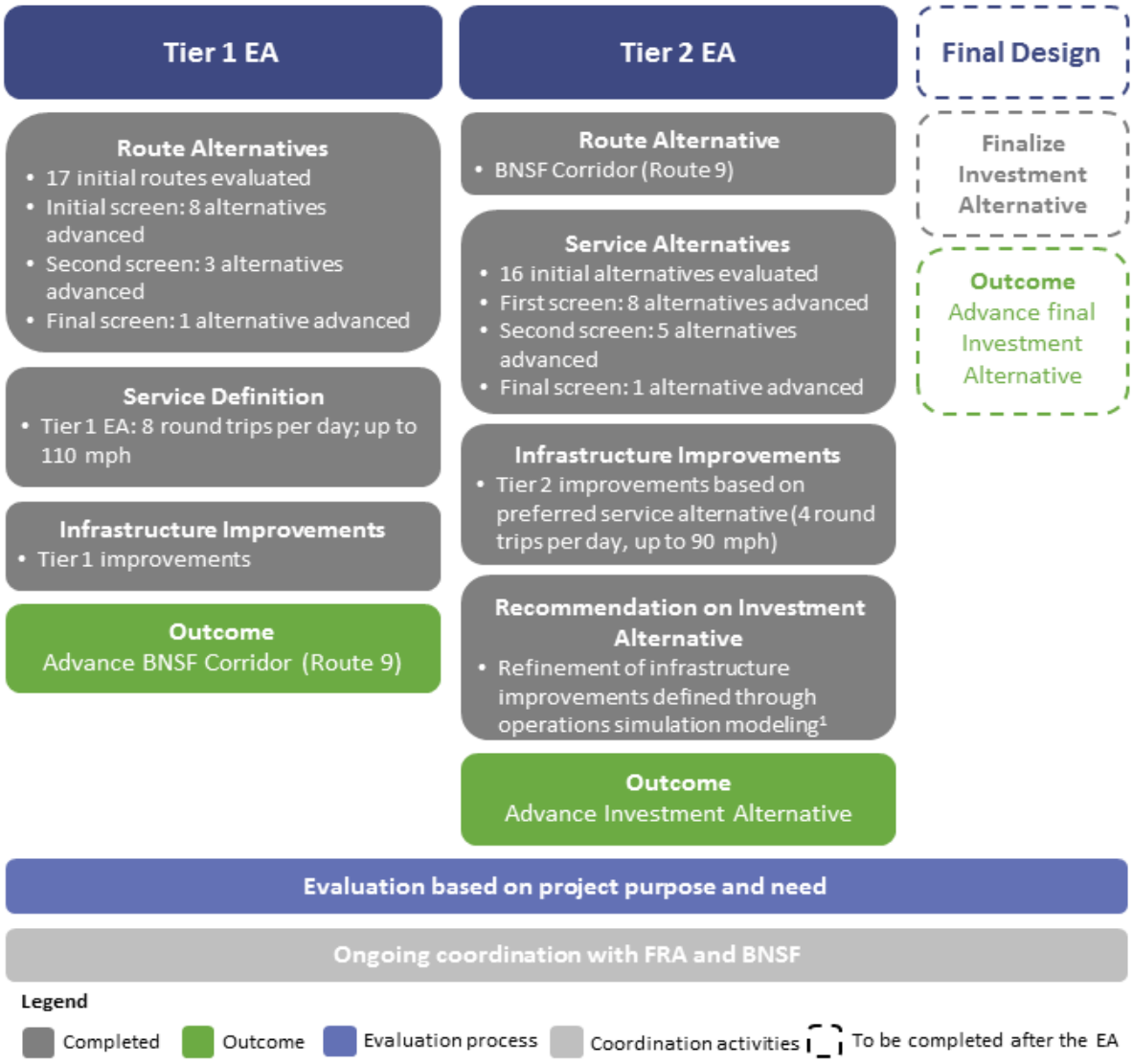
- Limited statewide intermodal connectivity – The transportation system is important in providing Minnesotans with access to work, school, health care and recreation and is a critical factor in supporting the state's economy for movement of goods and services. *Minnesota's Statewide Multimodal Transportation Plan* identifies "Critical Connections" as a priority objective, stating that MnDOT should "maintain and improve multimodal transportation connections essential for Minnesotans' prosperity and quality of life" (MnDOT, 2016a).
- Travel demand related to population trends – Minnesota's population is growing, getting older and more diverse. This growth will in turn increase access needs and travel demand options beyond the current available transportation services.
- Decrease in reliable travel due to congestion – MnDOT has identified Interstate 35 (I-35) as a High Priority Interregional Corridor that is one of the most heavily traveled roads within Minnesota connecting the regional trade centers of the Twin Cities and Duluth. Future traffic volumes in the state are expected to increase by 50 to 100 percent by 2030 (MnDOT, 2013). While I-35 has sufficient capacity at mid-corridor, volumes in the segments approaching the Twin Cities result in traffic delays during peak periods that reduce travel reliability. Anticipated funding for roadway projects will not be adequate to address congestion and reliability problems.

See Section 1.4 of this Tier 1 EA for additional information on the NLX Project need.

ES.2 Alternatives Analysis Process

For the Tier 1 EA, completed in 2013, MnDOT identified potential route alternatives for the NLX Project based on the NLX Project purpose and need for the proposed passenger rail service. Route alternatives are the physical corridors that may be capable of supporting intercity passenger rail. Once the route alternatives were identified, MnDOT developed potential service alternatives. Service alternatives are the operating plan for the service including number of round trips per day, the station communities and speed of service for a particular route alternative. The route alternatives and potential service alternatives were evaluated in the Tier 1 EA based on resources present, broad infrastructure improvements needed to support passenger rail service, ridership estimates, and high level cost estimates. **Figure ES-2** depicts the alternatives analysis process that was used for the Tier 1 EA and how that information was translated into the refined service alternatives and infrastructure improvements in the Tier 2 EA, as well as the continuation of future activities for final design. The various steps identified in **Figure ES-2** are further described below. This analysis is documented in the Tier 1 EA and Chapter 2 of this Tier 2 EA.

Figure ES-2: NLX Alternatives Analysis Process



[1] *Operations simulation modeling is an estimate of the performance of anticipated or planned trains on a proposed rail network under conditions different than the present day, or, estimate of the infrastructure necessary to deliver anticipated or planned trains to a desired performance level.*

ES.2.1 Route Alternatives

Prior to development of the Tier 1 EA, MnDOT conducted a three-level alternatives evaluation of travel corridors, in accordance with FRA guidance (FRA, 2005). The three-level analysis identified a wide range of corridors that were screened based on operational characteristics, investment requirements and broad environmental constraints. The alternatives analysis process included public outreach and coordination with stakeholder agencies.

MnDOT identified and screened 17 route alternatives. Of these, Route 9 was the Build Alternative carried forward for analysis in the Tier 1 EA (see **Figure ES-1**) and the basis for further analysis and refinement leading to preparation of this Tier 2 EA. See Section 2.1.1 of this Tier 2 EA for additional information.

ES.2.2 Service Alternatives

Due to the capital cost of the Tier 1 EA service alternative, an additional service alternatives analysis was completed within the Tier 2 EA to evaluate service alternatives that would reduce infrastructure costs using different speed regimes, frequencies and scheduled stops. MnDOT selected a set of 16 service alternatives that represented a reasonable range of speeds and frequencies to potentially address ridership demand while reducing costs. These service alternatives included two with a maximum speed of 79 mph, seven at 90 mph, and seven at 110 mph. MnDOT then conducted a ridership, revenue and operating cost analysis on these service alternatives. Through a series of increasingly detailed benefit-cost, ridership and revenue analyses, MnDOT advanced the Build Alternative with a service alternative of four round trips per day at a maximum speed of 90 mph for further evaluation in the Tier 2 EA. See to Section 2.1.2 of this Tier 2 EA for additional information.

ES.2.3 Infrastructure Improvements

The next step in the alternatives analysis process was to identify the infrastructure improvements needed to implement the proposed route and four round trips per day at a maximum speed of 90 mph for the proposed NLX Service. The process for identifying proposed infrastructure is described in Section 2.2.2 of this Tier 2 EA.

To determine the potential infrastructure improvements needed for the NLX Project, operations simulation modeling was conducted at the Tier 1 EA and Tier 2 EA levels of analysis. Operations simulation modeling provides an estimate of the performance of anticipated or planned trains on a proposed rail network under conditions different than the present day. Analyzing the trains' performance enables planners to estimate the infrastructure necessary to deliver anticipated or planned trains to a desired performance level. During the Tier 1 EA analysis, operations simulation modeling was conducted for eight round trips per day at speeds up to 110 mph. For the Tier 2 EA analysis, operations simulation modeling was conducted for four round trips per

day at speeds up to 90 mph. Potential infrastructure improvements presented in this Tier 2 EA are conservative estimates and represent the largest potential construction limits for environmental analysis. The identified infrastructure improvements would continue to be refined as the NLX Project moves into final design and construction. See Section 2.2 of this Tier 2 EA for additional information.

ES.2.4 Facilities Site Evaluation and Design

The Tier 1 EA proposed stations in six communities: Minneapolis, Coon Rapids, Cambridge, Hinckley and Duluth in Minnesota and Superior in Wisconsin. For potential station locations, the Tier 1 EA identified a single site in Minneapolis; Coon Rapids; Superior, Wisconsin; and Duluth; and two potential sites in Cambridge and Hinckley. The Tier 1 EA service development planning also identified a need for maintenance and layover facility sites.

After publication of the Tier 1 EA, MnDOT undertook a detailed analysis of the potential stations and maintenance and/or layover facilities needed for the NLX Project. The August 2015 *Facilities Site Evaluation and Design Technical Memorandum* (see **Appendix B**) documents the alternatives analysis conducted to identify the preferred locations for stations, the maintenance facility and layover sites. The evaluation considered and, in some locations, expanded the locations of stations and maintenance and layover facilities identified in the Tier 1 EA. See Section 2.2.4 of this Tier 2 EA for additional information.

ES.2.5 Alternatives under Consideration

The Tier 2 EA evaluates the No Build and Build Alternatives as described below.

ES.2.5.1 No Build Alternative

The No Build Alternative reflects existing and committed improvements to the transportation network for the horizon year of 2040. The No Build Alternative does not include implementing the NLX Project. The existing track configuration would remain. BNSF would carry out any rehabilitation or replacement of rail infrastructure to meet its needs for regular freight rail operations. No stations, maintenance or layover facilities specific to NLX Service would be constructed.

The No Build Alternative was retained for detailed analysis, and its consequences were fully developed to serve as a baseline and allow comparison to the Build Alternative and to help decision-makers and the public understand the ramifications of taking no action.

ES.2.5.2 Build Alternative

The NLX Project would introduce new higher speed intercity passenger rail service between Minneapolis and Duluth and would operate on 152 miles of existing BNSF track in Minnesota and Wisconsin (see **Figure ES-1**). The NLX Project was divided into route segments during the Tier 1 EA analysis when 17 route alternatives were still under consideration. As a result, the route segments along the selected route have gaps in the numbering. The NLX Project route segments are shown in **Figure ES-3**.

Figure ES-3: NLX Segments

Source: NLX Tier 1 EA

Proposed Infrastructure Improvements

The scope of the proposed improvements between the Tier 1 EA and Tier 2 EA analyses is a result of the change in the operating plan from eight round trips per day at speeds up to 110 mph to four round trips per

day at speeds up to 90 mph, with new passenger rail equipment traveling on BNSF tracks between Target Field Station in Minneapolis and the Duluth Station. Further, the Tier 2 EA evaluates station stops at Target Field Station in Minneapolis; Coon Rapids; Cambridge; Hinckley; Superior, Wisconsin; and Duluth. See Section 2.3.2.1 of this Tier 2 EA for additional information.

The proposed NLX Project infrastructure improvements consist of six stations, a maintenance facility, a layover facility, about 41.9 miles of improvements to existing track and about 41.7 miles of new track (including new mainline and new sidings), as well as road crossing improvements, bridge improvements and other rail system improvements to maintain acceptable levels of freight service while providing for new passenger service. The proposed infrastructure improvements evaluated in this Tier 2 EA would continue to be refined as the NLX Project moves into final design and construction.

The Tier 2 EA describes the existing social, economic and environmental conditions in the NLX study area, which serve as a baseline for comparing the potential impacts of the No Build Alternative and the Build Alternative. The following improvements are included:

- Track infrastructure improvements (tracks, sidings, turnouts and crossovers)
- Bridge and culvert improvements (new bridge construction, modification of bridge superstructure from open deck to closed deck, culvert extensions)
- Signal system improvements (control points, Centralized Traffic Control (CTC) with a new Positive Train Control (PTC) system overlay)
- Roadway and grade crossing improvements (grade modifications, warning devices)
- Station, and maintenance and layover facilities

See **Table ES-4** (located at the end of Section ES.2) and Chapter 2 of this Tier 2 EA for a detailed description of the NLX Project and changes to Project elements that occurred between the Tier 1 EA and Tier 2 EA. See Chapter 3 and Chapter 4 of this Tier 2 EA for additional information on transportation and environmental impacts, including how the Tier 2 EA updates findings from the Tier 1 EA.

Track Infrastructure

Track infrastructure improvements are needed to accommodate the higher speeds of the passenger trains, as well as to allow the new passenger trains and existing freight trains to operate within the same corridor. The Tier 2 EA analysis includes ballast replacement as part of the track rehabilitation; therefore, track rehabilitation has been included as part of the construction limits. This accounts for the majority of the construction limit increase from the Tier 1 EA to this Tier 2 EA. On the other hand, the reduction in round trips (from eight to four in the Tier 2 EA) at up to 90 mph requires less new infrastructure. **Table ES-4** (located at the end of Section ES.2) summarizes key changes in proposed infrastructure for the Build Alternative between the Tier 1 EA and the Tier 2 EA. See Section 2.3.2.5 of this Tier 2 EA for additional information.

Stations

The NLX stations would meet the needs of modern intercity passenger rail service and would include an enclosed station building, platform and warming shelters, on-site parking and multimodal transportation access. In addition, all stations would be accessible and comply with the Americans with Disabilities Act (ADA). The enclosed station buildings would be climate controlled and include a passenger waiting area, seating, public restrooms, ticket purchasing machines and space for vending machines and drinking fountains. Space would be provided for storage of maintenance items, mechanical and electrical rooms, passenger information displays and public address systems. Stations would not be staffed, which is consistent with Amtrak's guidelines for corridor service. The station locations analyzed in the Tier 2 EA are listed in **Table ES-2** and are shown in **Figures ES-4 through ES-6**. See Section 2.3.2.9 of this Tier 2 EA for additional information.

Table ES-2: Proposed Station Locations

City	General Location	Figure Number
Minneapolis	Target Field Station	ES-4
Coon Rapids	Foley Boulevard	ES-4
Cambridge	City Center Mall	ES-5
Hinckley	Downtown	ES-5
Superior, Wisconsin	Downtown	ES-6
Duluth	New station at Union Depot	ES-6

Figure ES-4: Minneapolis (Target Field) and Coon Rapids Station Site Locations

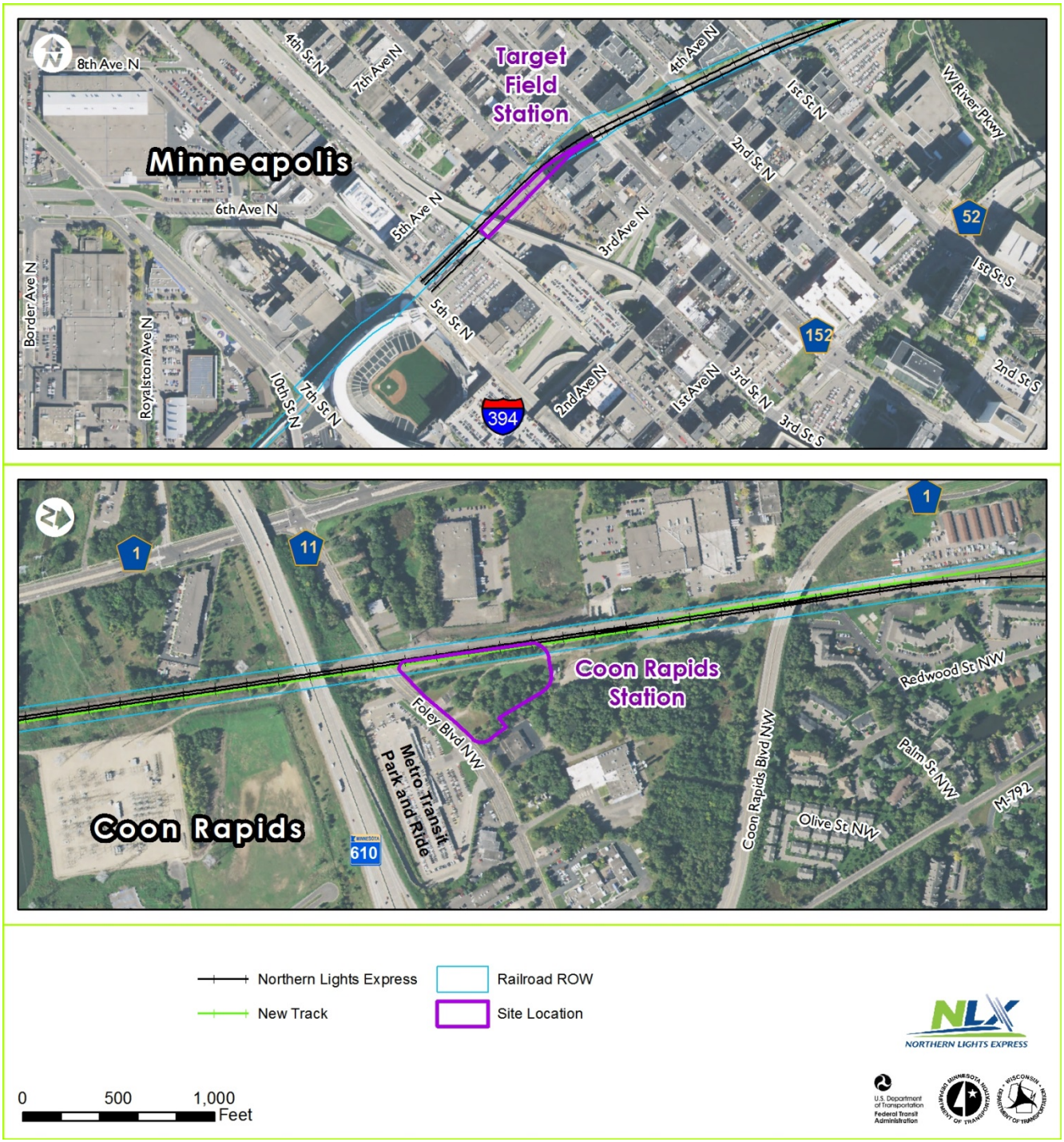


Figure ES-5: Cambridge and Hinckley Station Site Locations

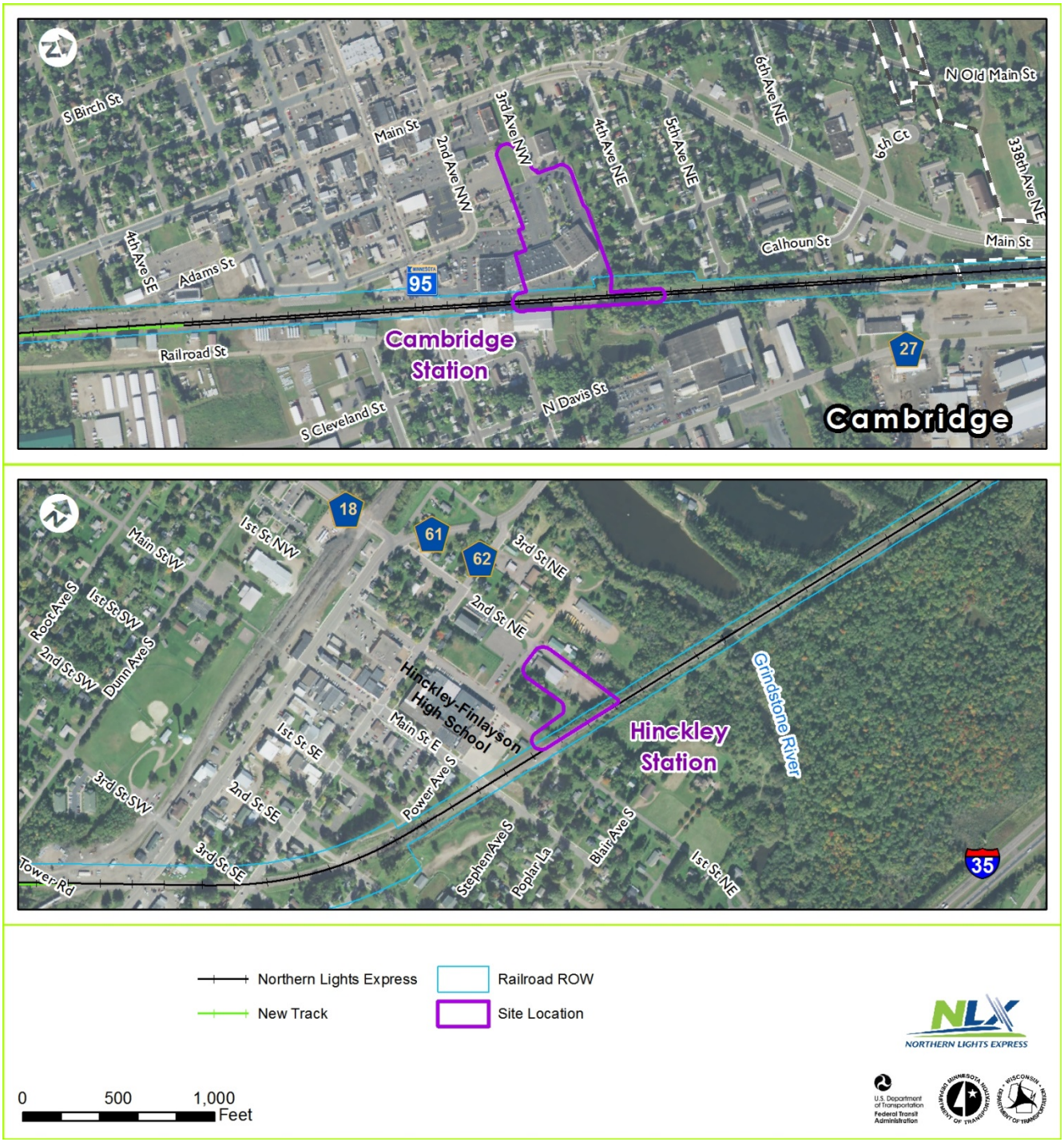


Figure ES-6: Superior, Wisconsin Station and Duluth Station Site Locations

Maintenance and Layover Facilities

To accommodate NLX Service, one maintenance facility and one layover facility would be needed. Two maintenance facility site location alternatives are under consideration for the NLX Project: one in which all maintenance and layover activities would occur in Duluth, and one in which a maintenance facility would be located in Sandstone and an overnight layover facility would be located in Duluth (see **Table ES-3**).

Table ES-3: Proposed Maintenance and/or Layover Facilities Locations

City	General Location	Figure Number
Sandstone Maintenance Facility	Minnesota State Highway 23	ES-7
Duluth Maintenance and/or Layover Facility	Railroad Street	ES-7

The NLX maintenance facility would be used for inspection, servicing, maintenance and repair activities required to keep NLX trains in service and incorporate train layover and storage needs. The maintenance building would accommodate one 650-foot-long train consist. Additional features of the maintenance facility would be a train wash, office and shop space, yard and lead tracks, shop equipment, vehicular access, exterior lighting and signage and security systems. The maintenance facility would not be used for major rebuilds, main engine change-outs, wreck repairs or component rebuilds. See Section 2.3.2.10 of this Tier 2 EA for additional information.

Sandstone

MnDOT identified the Sandstone site location for consideration after completing the Tier 1 EA (see **Figure ES-7**). The 2015 analysis concluded that the MN 23 site in Sandstone is a feasible and functional site for an NLX maintenance facility. The site would accommodate NLX train lengths and all required elements described above including two maintenance bays and yard tracks. This site can accommodate train car switching without conflicting with BNSF mainline operations. The site would be located within BNSF right of way. See Chapter 2 of this Tier 2 EA, including Figures 2-22 through 2-24, for additional information.

Figure ES-7: Sandstone and Duluth Maintenance and/or Layover Facility Site Locations

Duluth

MnDOT identified the Duluth site at Railroad Street as a maintenance and/or layover facility in the Tier 1 EA (see **Figure ES-7**). The 2015 analysis concluded that the Railroad Street site, located approximately 0.34 mile southwest of the proposed NLX Station, would accommodate a feasible and functional maintenance and/or layover facility. Like Sandstone, the site accommodates the length of NLX trains and all required program elements including two maintenance bays and yard tracks. See Chapter 2 of this Tier 2 EA, including Figures 2-25 through 2-28, for additional information.

Other Project Improvements

Bridges and Culverts

Bridge and culvert improvements are needed to accommodate the additional track and other infrastructure necessary for freight and passenger trains to operate on the same corridor. New bridges would be constructed to accommodate additional track at Mississippi Street and Rice Creek in Fridley and over a drainage ditch and Isanti Brook in Isanti County. Open deck bridges would be converted to ballast deck bridges over the following waterways: Coon Creek, Grindstone River, West Balsam Creek, Black River, Nemadji River and Pokegama River. The operating and control systems would be rehabilitated on the Grassy Point swing bridge between Superior, Wisconsin, and Duluth. **Appendix E** lists the various culvert improvements that would be completed under the Build Alternative.

Signal Systems

The NLX Project includes upgrades to train signal and communication systems. Upgrades would include the installation of CTC with a PTC overlay.[2] Additional control points would be located at powered turnouts and crossovers to increase flexibility and capacity in operations.

Roadways/Grade Crossings

A total of 126 public rail grade crossings exist in the NLX Project. The NLX Project proposes improvements to public rail grade crossings, including installation of active warning devices, reconstruction of approach roadways, installation of medians and rail infrastructure improvements, such as construction of an additional track across the roadway. The NLX Project is not proposing to close any public rail grade crossings. Private rail

[2] *CTC is a train control system whereby a train dispatcher provides operational authority to trains remotely via a wayside signal system and radio communication. PTC is an automated communication-based train control system designed to prevent train accidents. PTC technology is capable of automatically controlling train speeds and movements should a train operator fail to take appropriate action for rail system conditions.*

crossings are not under the jurisdiction of MnDOT; any changes to private rail crossings would be addressed by BNSF and the adjacent property owners.

Improvements are needed at certain rail grade crossings to improve site visibility for approaching trains and vehicles. A total of 42 crossings were considered critical, meaning that the slopes of roadway approaches to the railroad did not meet minimum state and federal standards. Improvements to the critical crossing locations include reconstruction of the roadway approaches to flatten the slopes and installation of recommended grade crossing warning devices, signage and striping.

Currently, 62 of the crossings are equipped with automatic gates and flashing lights, and the remainder are stop sign controlled. As part of the NLX Project, each rail grade crossing would be equipped with automatic gate systems and flashing-light signals.

A total of 37 public rail grade crossings would be upgraded to quad gates and flashing lights, 50 public rail grade crossings would be upgraded to dual gates and flashing lights with a median, 21 public rail grade crossings would be upgraded from stop controlled to dual gates and flashing lights with no median, 1 public rail grade crossing would be upgraded from a single gate to dual gates and flashing lights with no median, and 17 public rail grade crossings would have no upgrade to their warning devices or upgrades would be done by others separately from the NLX Project.

Daily operations and maintenance activities would occur at the track level, which is separate from the street network, and no operations impacts from the NLX Project are anticipated. Specifically, trains that are parked in the station for loading or unloading would not block any grade crossings because there are no grade crossings in the vicinity and therefore would not have an impact on traffic or the operation of emergency vehicles.

Construction

Final design plans would be prepared for NLX infrastructure based on the environmental and preliminary engineering work completed by MnDOT for this Tier 2 EA. Final design plans would consider how the NLX Project would be constructed, meaning that the plans would identify how equipment would access construction sites, whether land acquisition or easements would be needed for construction and the utility and underground work that would be required to minimize impacts on BNSF operations. MnDOT, FRA and BNSF would approve final design plans.

For the NLX Project, it is expected that BNSF would construct the majority of the proposed improvements needed for track infrastructure within the BNSF right of way. As such, it is expected that BNSF would schedule the work to be completed for the NLX Project in a comprehensive construction schedule and in the proper sequence.

MnDOT would be responsible for constructing station and maintenance and layover facilities, which would include the following activities:

- Constructing platforms at all stations
- Constructing a station building, warming shelters, bike parking and bus and vehicular pick-up and drop-off locations at the stations in Coon Rapids, Cambridge, Hinckley and Duluth, Minnesota, and in Superior, Wisconsin
- Constructing parking for vehicles at the stations in Coon Rapids, Cambridge and Hinckley, Minnesota, and in Superior, Wisconsin
- Constructing support buildings and street access for maintenance and/or layover facilities in Sandstone or Duluth

Additional Considerations of the Build Alternative

Maintenance

BNSF would continue to own the railway right of way and infrastructure. The NLX Project would be maintained in accordance with a maintenance agreement among MnDOT, the yet-to-be-identified service operator and BNSF. Work on this agreement would be conducted in conjunction with final design of the NLX Project.

Ridership

Opening year (2020) ridership forecasts for four daily round trips at a maximum speed of 90 mph are estimated to be between 700,000 and 750,000 rides per year. By the 2040 horizon year, ridership is anticipated to average between 900,000 and 1,000,000 rides per year (see **Appendix C**).

Capital and Operating Costs

The capital cost is the cost to bring a project to operation. The estimated capital cost of the NLX Project is approximately $547 million in 2014 dollars. Capital costs were identified based on FRA's standard cost categories that include: track improvements; stations, maintenance and layover facilities; land acquisition and easements; signal system improvements; train equipment; design and environmental permitting, and anticipated finance charges. See **Appendix C** for the Capital Cost Report for additional detail on the development of the estimated NLX Project capital cost.

Operating and maintenance costs are the costs incurred to operate a rail service and maintain the track, bridges, buildings, communication and signal systems, and equipment associated with the rail service. Operating costs include fuel costs, maintenance and operating crew salaries and benefits, car and locomotive maintenance, and insurance costs. Maintenance costs include costs for track inspections, spot repairs, and

routine maintenance as well as cyclic costs such as costs for rail replacement, tie renewal, surfacing, ballast replacement, and similar capital improvements. The total operating and maintenance cost for the NLX Project for year 2020 is $17.0 million in 2017 dollars and includes operating costs, expensed maintenance costs, and cyclic capital cost of track, signals, buildings, and bridges. A full description of the methodologies used to calculate the operating and maintenance costs can be found in the Operating and Maintenance Costs and Capital Replacement Forecast Technical Document, included in **Appendix C**.

Equipment

MnDOT would purchase or lease the equipment for the NLX Project. The equipment necessary for daily operations would include two train consists. A third consist would be available for use when one of the two active consists requires maintenance. Each 650-foot-long train consist would include six 85-foot-long coaches and two 70-foot-long push-pull locomotives.

Infrastructure Improvements Summary

The proposed Tier 2 EA infrastructure improvements are geographically depicted in **Figure ES-8**. **Table ES-4** provides a summary by segment, location and milepost (MP) of the infrastructure improvements described above and analyzed in the Tier 1 EA and in the Tier 2 EA. The table lists the improvements from south to north by segment and within each segment.

Figure ES-8: NLX Tier 2 EA Proposed Track Infrastructure Improvements

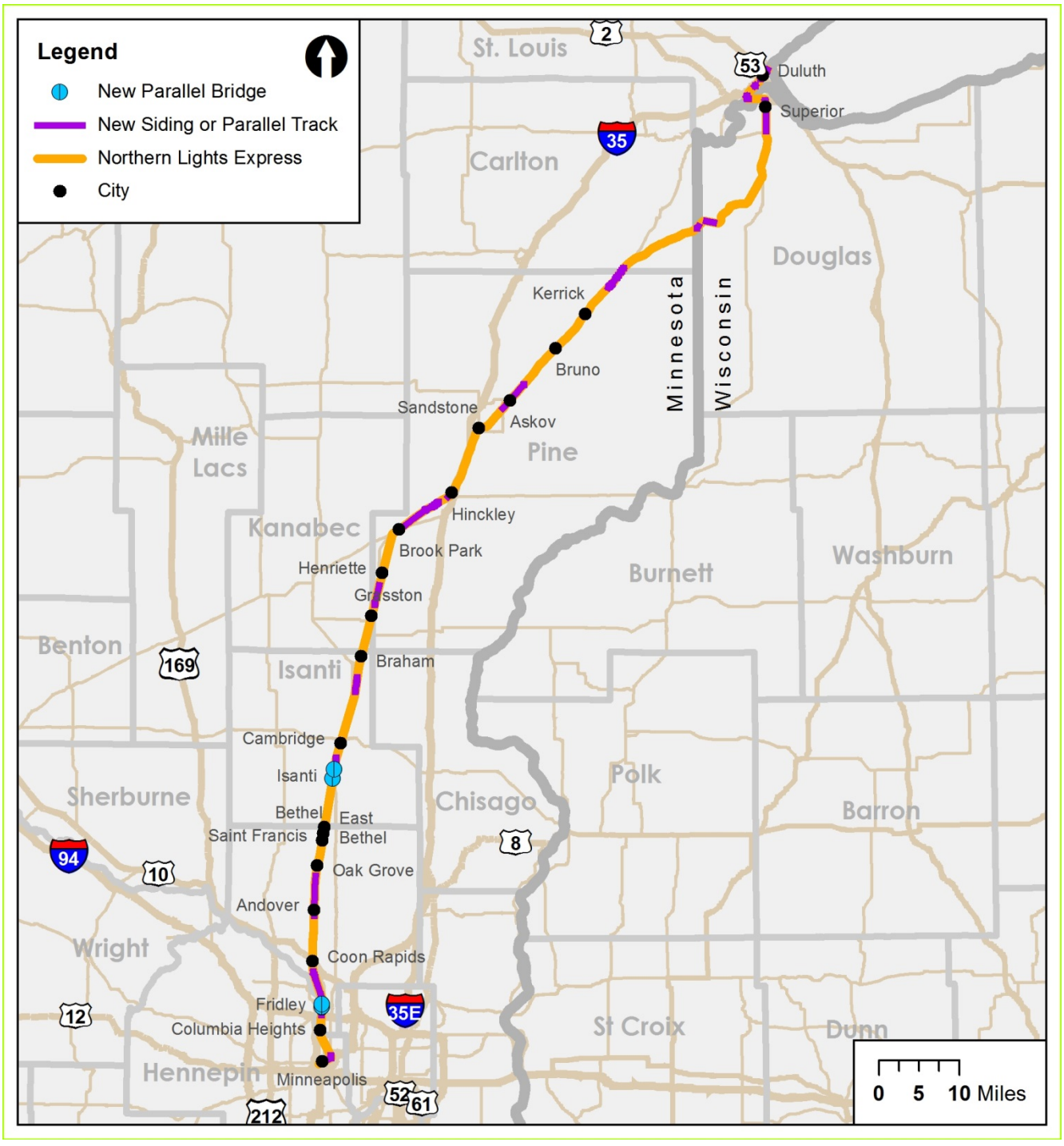


Table ES-4: Infrastructure Improvements Analyzed in NLX Tier 1 EA and NLX Tier 2 EA

NLX Segment	Location		BNSF Railway Milepost[a] (MP)		Segment Mileage[a]	Tier 1 EA Concept-Level Infrastructure Improvements[b]	Tier 2 EA Concept-Level Infrastructure Improvements
	Start	End	Start	End			
1[c] Wayzata Subdivision	Target Field Station, Minneapolis	Minneapolis Junction, Minneapolis	11.6	9.7	2.1	• Construct new connecting track through the wye[d] at Minneapolis Junction for approximately 3,000 feet.	• Construct platform extension at Target Field Station and add station track. • Expand control points at Stadium and Harrison Street. • Upgrade existing track from approximately 480 feet north of the Northstar platform at Target Field Station to approximately Harrison Street to second main track. • Construct 0.69 mile of new second main track on west leg of the wye approximately between Harrison Street and Van Buren Street. Reconfigure industry tracks at Harrison Street and on both sides at Van Buren Street.
2[c] Midway Subdivision	Minneapolis Junction, Minneapolis	University Avenue, Minneapolis	9.7	11.4	1.4		
3 Midway, St. Paul and Staples Subdivisions	University Avenue, Minneapolis	Coon Creek Junction, Coon Rapids	11.4	21.1	9.7	• Construct 6.2 miles of new track between Interstate 694 (I-694) and Coon Rapids Boulevard/Coon Creek Junction in Fridley (referred to as the third main). • Track improvements through Coon Creek Junction. • Construct new railroad bridges over Mississippi Street and Rice Creek. • Modification of Minnesota State Highway 610 (MN 610) overpass.	• Construct 6.2 miles of new third main track between I-694 and Coon Rapids Boulevard/Coon Creek Junction in Fridley. • Construct track shifts south of MN 610 bridge to accommodate all three tracks under the existing bridge. • Construct new railroad bridges for third main over Mississippi Street and Rice Creek. • No change to MN 610 overpass because NLX Coon Rapids Station location would not require modifications.

NLX Segment	Location		BNSF Railway Milepost[a] (MP)		Segment Mileage[a]	Tier 1 EA Concept-Level Infrastructure Improvements[b]	Tier 2 EA Concept-Level Infrastructure Improvements
	Start	End	Start	End			
4 Hinckley Subdivision	Coon Creek Junction, Coon Rapids	Isanti	136.9	113.0	23.9	• Construct 3.0 miles of siding west of existing track and 1-mile siding extension east of existing track in Andover. • Replace existing railroad bridge and build new parallel bridge over Coon Creek. • Replace railroad bridge over Cedar Creek.	• Convert open deck to ballast deck for railroad bridge on main track over Coon Creek. • Upgrade Andover siding track and extend north to new control point at MP 124.8 with intermediate control point at MP 128.0 including new turnouts and signals. • No new railroad bridge over Cedar Creek for Andover siding extension. • Modify seven curves to increase train speeds.
5 Hinckley Subdivision	Isanti	Cambridge	113.0	107.4	5.6	• Construct 6.0 miles of new track between Isanti and Cambridge. • Connect existing sidings between Isanti and Cambridge.	• Upgrade Cambridge siding track and extend south to meet existing Isanti siding at MP 112.76. • Construct new bridges parallel to existing main track bridges at MP 112.4 over a drainage ditch and MP 111.2 over Isanti Brook for the upgraded Cambridge siding track. • Extend North Cambridge siding south and connect to main track at MP 107.9. • Modify one curve to increase train speeds.
6 Hinckley Subdivision	Cambridge	Hinckley	107.4	72.3	34.1	• Construct 35 miles of new track between Cambridge and Hinckley. • New railroad bridges over Snake River at Grasston, ditch near	• Construct new Stanchfield siding on east side of main track between new control points at MP 99.3 and MP 101.1 including new turnouts and signals. • Upgrade existing Grasston siding between MP 89.8 and MP 91.6 and extend north to MP 87.4.

NLX Segment	Location Start	Location End	BNSF Railway Milepost[a] (MP) Start	BNSF Railway Milepost[a] (MP) End	Segment Mileage[a]	Tier 1 EA Concept-Level Infrastructure Improvements[b]	Tier 2 EA Concept-Level Infrastructure Improvements
6 Hinckley Subdivision						Henriette (box culvert), and Pokegama Creek at Brook Park. Replacement of 379th Street overpass over railroad near Grandy. • Rehabilitation of existing bridges over Pokegama Creek and Snake River.	• Convert open deck to ballast deck bridge on main track over Pokegama River at Brook Park. • Upgrade Brook Park siding track between MP 78.7 and MP 80.45 and extend north to connect to South Hinckley siding at MP 73.8. Upgrade South Hinckley siding between MP 73.7 and MP 72.3. • Modify seven curves to increase train speeds. • No new second main track between Cambridge and Hinckley. • No new bridge for second main track at Grasston or over ditch near Henriette. • No replacement of overhead bridge for 379th Street near Grandy. • No rehabilitation of main track bridge over Snake River.
17 Hinckley Subdivision	Hinckley	Boylston	72.3	11.8	60.5	• New or extended sidings to a total length of 3.0 to 4.0 miles each near Sandstone, Askov, Bruno, Holyoke and Foxboro. • Rehabilitation of existing bridges over Grindstone, Kettle, Big Willow, Net (2), Black and Nemadji Rivers, and State Line, Balsam, Little Balsam, Hubert	• Upgrade Askov siding track between new control points at MP 56.5 and MP 57.8 including new turnouts and signals and extend south to MP 58.8. • Extend Askov siding to the north to MP 54.8. • Upgrade Nickerson siding track and extend north to MP 35.5 and south to MP 38.7. • Construct new second siding between new control points at MP 35.9 and MP 38.7 including new turnouts and signals.

NLX Segment	Location Start	Location End	BNSF Railway Milepost[a] (MP) Start	BNSF Railway Milepost[a] (MP) End	Segment Mileage[a]	Tier 1 EA Concept-Level Infrastructure Improvements[b]	Tier 2 EA Concept-Level Infrastructure Improvements
17 Hinckley Subdivision						and Norvell Creeks.	• Upgrade Foxboro siding track between MP 23.3 and MP 24.7 and extend south to MP 25.5 and north to MP 22.4. • At MP 12.43, potential single track construction and new connection to BNSF Lakes Subdivision. • At Boylston, new turnout to BNSF Lakes Subdivision wye track. • Convert open deck to ballast deck for railroad bridges at Grindstone River, West Balsam Creek, Black River and Nemadji River. • Modify 36 curves to increase train speeds. • Rehabilitation of other bridges identified in Tier 1 EA no longer required.
18 Lakes Subdivision	Boylston	Superior, Wisconsin (North of 28th Street)	12.6	5.4	8.7	• Construct 3.0 miles of new passenger track between Central Avenue and 11th Street North in Superior, Wisconsin.	• Construct new crossover, connection and signal modifications at Central Avenue. • Construct new control point, signals and connection to new main track at 28th Street. • Install on Coal Main and NLX Main between 28th Street and LST&T Junction (4.0 miles each track). • Construct 2.6 miles of new track between 58th Street and 28th Street. • New track construction continues into Segment 19. • Modify six curves to increase train speeds.

NLX Segment	Location		BNSF Railway Milepost[a] (MP)		Segment Mileage[a]	Tier 1 EA Concept-Level Infrastructure Improvements[b]	Tier 2 EA Concept-Level Infrastructure Improvements
	Start	End	Start	End			
19 Lakes Subdivision	Superior, Wisconsin (North of 28th Street)	Duluth Union Depot	5.4	0	5.4	• Construct 1.5 miles of new track between Segment 18/19 boundary and 11th Street in Superior, Wisconsin. • Construct 1.1 miles of new freight siding along existing track from the wye west of Grassy Point Bridge to 46th Avenue in Duluth. • Construct bridge over water inlet. • Construct segment of main track approaching the Duluth Station and track for layover at Duluth Station. • Rehabilitation of Grassy Point Bridge.	• Construct 1.5 miles of new track and two track shifts at 21st Street and Belknap Street to accommodate new NLX main track between bridge piers. • Upgrade signal on Coal Main and NLX Main from 28th Street to LST&T Junction. • Construct new connections, control point and signals at north end of new NLX main track at LST&T Junction (MP 4.0). • Construct new control point at west end LST&T Junction and extending signal upgrades to Duluth. • Rehabilitate Grassy Point swing bridge operating and control systems. • No other work at Grassy Point swing bridge. • Upgrade single main track from LST&T Junction (MP 4.0) to new universal crossovers in new control point at MP 1.0. Install electric locks and derails at industry and junction tracks. • Construct new control point and turnout at Berwind Junction and 0.6 mile of new second track to new control point at MP 1.5. • Upgrade main track between new control points at MP X1.0 and MP X.19. Install electric locks and derails at industry and junction tracks. • Construct new NLX track between MP X1.0 and MP X.19.

NLX Segment	Location		BNSF Railway Milepost[a] (MP)		Segment Mileage[a]	Tier 1 EA Concept-Level Infrastructure Improvements[b]	Tier 2 EA Concept-Level Infrastructure Improvements
	Start	End	Start	End			
19 Lakes Subdivision							• At the Depot in Duluth, rehabilitate existing lead and station tracks, construct new turnout at the north end and construct the new NLX platform. • Extend Depot Track 3 to accommodate NLX train length.
Total					152.4		

[a] *Mileposts are based on current BNSF Railway mileposts. Mileposts are often not exact miles; therefore, differences between MP references may not equate to actual distances.*
[b] *In addition the items listed here, other elements were generally discussed in Section 3.2 of the Tier 1 EA that are addressed more specifically in the Tier 2 EA.*
[c] *Improvements for Segment 1 Wayzata Subdivision and Segment 2 Midway Subdivision are listed together because the improvements are located where the subdivisions meet.*
[d] *A wye, named for its resemblance to the letter Y, is the location where tracks deviate from each other forming a triangle (Schulte, 1990). Wye tracks enable a train or piece of rail equipment to reverse direction.*

ES.3 Impacts and Measures to Avoid, Minimize and Mitigate

The Tier 1 EA, completed in 2013, evaluated potential impacts of the NLX Project as a whole and compared multiple route alternatives. Specifically, the Tier 1 EA addressed broad issues and potential environmental effects for the entire NLX Project relating to the type of service(s) being proposed, including cities and stations served, route alternatives, service levels, types of operations (speed, electric or diesel powered), ridership projections, major infrastructure components and identification of major terminal area or facility capacity constraints. The Tier 1 EA did not identify any substantial impacts. See Section 2.1, Table 3-2 and the summary tables in Chapter 4 of this Tier 2 EA for additional information on the Tier 1 EA.

The Tier 2 EA evaluates potential impacts of the No Build Alternative and the Build Alternative. The No Build Alternative includes the existing transportation system and reasonably foreseeable future projects, and the Build Alternative includes the route alternative, service alternative, and infrastructure improvements identified through the analysis documented in Chapter 2 of this Tier 2 EA.

Under the No Build Alternative, the NLX Project would not occur and would not alter current conditions. There would be no changes except planned and programmed actions that are independent of the NLX Project. See Section 2.3.1 and the applicable sections in Chapters 3 and 4 for additional information on the No Build Alternative.

Under the Build Alternative, the NLX Project would advance through the design process and would be constructed and operated. Operations evaluated in the Tier 2 EA include daily operation of the NLX Service as well as routine maintenance activities for safe and reliable passenger rail service. Construction includes the building of NLX Project track and related infrastructure as summarized in Section ES.2.5.2, stations, the maintenance facility and the layover facility. **Table ES-5** summarizes operations (long-term) and construction (short-term) impacts of the NLX Project, as well as measures to avoid, minimize and mitigate these impacts.

MnDOT would provide intercity passenger rail service, working with BNSF as the owner of the railroad right of way and railroad infrastructure, and the yet-to-be identified service operator. MnDOT would enter into agreements with the service operator and BNSF to carry out construction, day to day operations and maintenance (see discussion in Section 2.3.2.1 of this Tier 2 EA). Work on these agreements would be conducted in conjunction with final design of the NLX Project. Final design plans prepared for the NLX Project would consider how the NLX Project would be constructed, including how equipment would access construction sites, whether land acquisition or easements would be needed for construction and the utility and underground work that would be required to minimize impacts on BNSF operations.

The NLX Project would continue to avoid, minimize and mitigate impacts on the resource areas as the Project advances through the design process. This would be accomplished through design refinements to the NLX Project, infrastructure improvements and continuing coordination with local, state and federal agencies. As

appropriate and necessary, this Tier 2 EA would be refined through future supplemental NEPA documentation as the final design advances and funding is secured for the NLX Project. Future supplemental environmental documentation is identified as appropriate throughout this Tier 2 EA.

Table ES-5: Summary of Impacts and Avoidance, Minimization and Mitigation Measures for the NLX Project (Build Alternative)

EA Section and Resource	Identified Impacts in NLX Tier 2 Project Level EA	Avoidance, Minimization and Mitigation Measures[a]
3.3 Freight and Passenger Rail Operations	**Freight Rail:** Operations • No substantial impacts based on proposed infrastructure improvements • Long-term operational benefits to BNSF freight service • Additional efficiency to the local businesses relying on freight service • Improved safety at crossings • Improvements to public rail grade crossings, including installation of active warning devices, reconstruction of approach roadways, installation of medians and rail infrastructure improvements, such as construction of an additional track across the roadway Construction • Temporary service outages during construction of new or replaced infrastructure **Passenger Rail:** Operations • No substantial impacts on Amtrak or North Shore Scenic Railroad (NSSR) operations • New building would replace existing NSSR ticket office Construction • No substantial impacts on Amtrak service • Potential outage of NSSR service at the station	**Freight Rail:** Operations • No mitigation required • Ongoing coordination with BNSF to maintain freight service levels and infrastructure capacity through proposed infrastructure improvements • Continued coordination with freight rail stakeholders to secure agreements to operate NLX Project within the BNSF right of way Construction • Coordination with other freight railroads to maintain operations • Scheduling construction activities to minimize impacts on BNSF operations **Passenger Rail:** Operations • No mitigation required • Ongoing coordination with Metro Transit, Amtrak and NSSR to maintain passenger service levels and infrastructure capacity through proposed infrastructure improvements • Continued coordination with passenger rail stakeholders to secure agreements to operate NLX Project within the BNSF right of way Construction • Coordination with passenger rail stakeholders to maintain operations • Scheduling construction activities to minimize impacts on Amtrak and NSSR operations
3.4 Transit	**Intercity Regional Bus:** Operations • No substantial impacts • Opportunities for multimodal connections to intercity bus services Construction • Potential temporary disruptions or detours where rail grade crossings would be closed for reconstruction or installation of new crossing warning devices **Station Community Transit Service:** Operations *Target Field Station, Coon Rapids, Cambridge, Hinckley, Duluth* • No substantial impacts on existing light rail, bus transit or Northstar Commuter Rail service • Opportunities for local transit connections • Potential for increased transit ridership *Superior, Wisconsin* • No substantial impacts • Modified local bus service routes or schedules to complement the NLX Project and improve multimodal connections	**Intercity Regional Bus:** Operations • No mitigation required Construction • Communication with intercity transit providers regarding temporary crossing closures during construction **Station Community Transit Service:** Operations *Target Field Station; Coon Rapids; Cambridge; Hinckley; Superior, Wisconsin; Duluth* • No mitigation required • Coordination with local bus services Construction *Target Field Station* • Coordination with BNSF and Metro Transit regarding construction activities to ensure that freight and commuter rail service are not impacted • Negotiation of agreements with BNSF and Metro Transit to complete platform construction *Coon Rapids* • Coordination with the City of Coon Rapids and Metro Transit to determine construction schedules that

EA Section and Resource	Identified Impacts in NLX Tier 2 Project Level EA	Avoidance, Minimization and Mitigation Measures[a]
	• Extra time in bus route schedules for bus service that would divert to the station and directly interchange with the trains <u>Construction</u> • Potential temporary disruptions or detours where rail grade crossings are closed for reconstruction or installation of new crossing warning devices *Target Field Station* • Platform and track infrastructure construction occurring where Northstar Commuter Rail operates between Target Field Station and Coon Creek Junction *Coon Rapids* • Potential temporary traffic disruptions due to construction of a new entrance road to the station • Potential changes to travel times for routes required to detour around crossings temporarily closed for reconstruction or installation of crossing warning devices • Potential temporary access and egress changes to the Foley Boulevard park and ride as part of NLX station construction to create a new access point along Foley Boulevard *Cambridge* • No substantial impacts • Small changes to travel times for Heartland Express routes that are required to detour around crossings temporarily closed for reconstruction or installation of crossing warning devices *Hinckley; Superior, Wisconsin; Duluth* • No substantial impacts	minimize disruption to local traffic for intersection reconstruction at Foley Boulevard, the Foley Boulevard park and ride and the station access road *Cambridge; Hinckley; Superior, Wisconsin; Duluth* • No mitigation required • Coordination with local transit providers
3.5 Traffic Circulation in Station Communities	**Traffic:** <u>Operations</u> *Target Field Station; Coon Rapids; Superior, Wisconsin; Duluth* • No substantial impacts *Cambridge* • No substantial impacts • Lengthened average westbound queue on 1st Avenue East to 364 feet (130 feet past crossing) because of additional NLX station traffic *Hinckley* • Potential traffic impacts associated with train and Hinckley-Finlayson High School schedules <u>Construction</u> • Temporary impacts on at-grade crossings and more circuitous travel during construction *Target Field Station, Cambridge* • No substantial impacts *Coon Rapids* • Temporary traffic disruptions to Foley Boulevard and to Foley Boulevard park and ride because of new entrance road to station	**Traffic:** <u>Operations</u> *Target Field Station; Coon Rapids; Superior, Wisconsin; Duluth* • No mitigation required *Cambridge* • Conducting a detailed analysis of the 1st Avenue East and Buchanan Street intersection during final design *Hinckley* • Monitoring traffic in vicinity of high school and coordination with school, if necessary <u>Construction</u> *Target Field Station* • No mitigation required *Coon Rapids* • Coordination with the City of Coon Rapids to determine construction schedules that minimize disruption to local traffic for intersection reconstruction at Foley Boulevard and the station access road *Cambridge* • Coordination with the City of Cambridge to determine construction schedules that minimize disruption to local traffic for rail grade crossing reconstruction

EA Section and Resource	Identified Impacts in NLX Tier 2 Project Level EA	Avoidance, Minimization and Mitigation Measures[a]
	Hinckley • Temporary closure or lane reductions to resurface Power Avenue North • Elimination or reconfiguration of some informal parking that occurs in front of Trinity Church along 1st Street Northeast • Potential temporary disruption of access to buildings on the north side of 2nd Street Northeast • Acquisition of City-owned building located on the south side of 2nd Street Northeast as part of station construction • Potential temporary rail grade crossing closures because of railroad infrastructure construction impacts on traffic in the vicinity of the station *Superior, Wisconsin* • Short-term traffic disruption and detours to the surrounding street grid because of construction at the North 14th Street and Oakes Avenue intersection *Duluth* • Temporary access disruptions of parking ramp and Union Depot **Crossings:** <u>Operations</u> • No substantial impacts • No permanent closures of either public or private crossings • Safety improvements at at-grade crossings <u>Construction</u> • Potential temporary closures and detours because of crossing reconstruction or installation of new warning devices	*Hinckley* • Coordination with the City of Hinckley to determine appropriate construction phasing along Powers Avenue North to minimize traffic impacts • Coordination with Trinity Church and the City to determine parking needs along 1st Street Northeast, as well as maintaining access to structures along 2nd Avenue Northeast *Superior, Wisconsin* • Coordination with the City of Superior, Wisconsin, to determine construction schedules that minimize disruption to local traffic for intersection reconstruction at North 14th Street and Oakes Avenue *Duluth* • Coordination with the City of Duluth to determine appropriate construction phasing along the existing access road to the parking ramp and Union Depot **Crossings:** <u>Operations</u> • No mitigation required <u>Construction</u> • Coordination with individual communities to determine appropriate measures to minimize traffic disruption through construction schedules, phasing and, as needed, detours to route traffic around temporary closures
3.6 Bicycle and Pedestrian Facilities	**Station Community Bicycle Routes and Pedestrian*:*** <u>Operations</u> • Opportunities for multimodal connections for bicycles and pedestrians at NLX stations *Target Field Station; Coon Rapids; Cambridge; Hinckley; Superior, Wisconsin; Duluth* • No substantial impacts <u>Construction</u> • Potential temporary disruptions or detours where grade separation construction or rail grade crossings are closed for reconstruction or installation of new crossing warning devices *Target Field Station; Cambridge; Hinckley; Superior, Wisconsin* • No substantial impacts *Coon Rapids* • Temporary closure of access across the Foley Boulevard grade crossing (existing sidewalks on either side of the Foley Boulevard grade crossing do not extend into existing BNSF right of way) *Duluth* • Temporary closure of a sidewalk between West Michigan Street and track level, and the public road at	**Station Community Bicycle Routes and Pedestrian:** <u>Operations</u> *Target Field Station; Coon Rapids; Cambridge; Hinckley; Superior, Wisconsin; Duluth* • No mitigation required <u>Construction</u> *Target Field Station; Cambridge; Hinckley; Superior, Wisconsin* • No mitigation required *Coon Rapids* • Coordination with the City of Coon Rapids to communicate construction schedules and minimize impacts on bicycle and pedestrian access because of temporary closures *Duluth* • Coordination with the City of Duluth to communicate construction schedules and minimize impacts on bicycle and pedestrian access temporary closures **NLX Project Corridor Bicycle Routes and Pedestrian:** <u>Operations</u>

EA Section and Resource	Identified Impacts in NLX Tier 2 Project Level EA	Avoidance, Minimization and Mitigation Measures[a]
	track level **NLX Project Corridor Bicycle Routes and Pedestrian:** <u>Operations</u> • No substantial impacts • Enhanced safety at crossings for bicyclists and pedestrians because of new crossing warning devices at rail grade crossings <u>Construction</u> • Temporary closures of trail crossings during construction at crossings	• No mitigation required <u>Construction</u> • Coordination with jurisdictional agencies (such as local municipalities, boards or counties) to communicate construction schedules • Installation of trail closure signs and coordination with agencies on press releases to provide sufficient information to trail users • Redirection of bicyclists and pedestrians to other nearby crossings when feasible
4.1 Land Use and Land Cover	<u>Operations</u> **Land Use and Land Cover:** • No substantial impacts or significant change in land use type • Approximately 878 acres of land cover within construction limits, primarily within BNSF right of way (includes rehabilitation of existing track) • Compatible with land use in NLX study area • Stations and maintenance and layover facility locations compatible with local land use plans **Compatibility with Regional, State and Local Plans and Regulations:** • Consistent with land use plans and applicable regulations in the communities that lie along the NLX study area <u>Construction</u> **Land Use and Land Cover:** • No substantial impacts because the majority of land use will be maintained as a transportation land use **Compatibility with Regional, State and Local Plans and Regulations:** • Consistent with land use plans and applicable regulations	<u>Operations and Construction</u> **Land Use and Land Cover:** • No mitigation required **Compatibility with Regional, State and Local Plans and Regulations:** • No mitigation required • Requirement for contractors to comply with applicable local construction-related ordinances for allowable hours of construction, building and safety
4.2 Right of Way	<u>Operations and Construction</u> • Approximately 13 acres from 27 parcels in the form of temporary and permanent easements, primarily on undeveloped land • No residential acquisitions anticipated • One relocation – City of Hinckley maintenance building	<u>Operations</u> • Acquisitions and relocations in accordance with the Uniform Act (49 CFR 24), Minnesota Statutes Chapter 117 and Wisconsin Statutes (Wis. Stat.) Chapter 32, as applicable • Negotiation with BNSF and other property owners on long-term easements for stations and maintenance and layover facilities <u>Construction</u> • Development of agreements with property owners for temporary easements
4.3 Vegetation and Wildlife	<u>Operations</u> **Native Prairie:** • Periodic impacts when maintenance or repairs to existing tracks or bed are needed (amount of impacts may vary depending on the types of maintenance or repair needed) **USFWS National Wildlife Refuges, Wildlife Management Areas, Outstanding Biodiversity Significance Sites and Scientific and Natural Areas:** • No substantial impacts	<u>Operations</u> **Native Prairie:** • Continued coordination with the Minnesota Department of Natural Resources (MnDNR), as needed • Completion of field surveys to quantify the area of impact relative to the total area of the prairie remnant • Planting of native prairie species, where applicable **USFWS National Wildlife Refuges, Wildlife Management Areas, Outstanding Biodiversity Significance Sites and Scientific and Natural Areas:**

EA Section and Resource	Identified Impacts in NLX Tier 2 Project Level EA	Avoidance, Minimization and Mitigation Measures[a]
	Invasive Species: • No substantial impacts • Potential for inadvertent introduced invasive species during operation, maintenance or rehabilitation **Wildlife Habitat:** • Potential impacts during maintenance or repairs if repairs are required outside of the existing rail corridor **Animal Mortality and Movement:** • Potential increased likelihood of mortality due to affected animals not being able to avoid faster and more frequent trains **Aquatic Habitats:** • Addition of piers where new bridges would be constructed over Rice Creek in Anoka County • Extension of existing culverts over other streams in construction areas (seven in Anoka County, four in Isanti County and one in Pine County) • Potential impacts during maintenance- or repair-related activities beyond the scope of BNSF's routine maintenance activities that would happen with or without the NLX Project <u>Construction</u> **Native Prairie:** • Impacts on nine Minnesota Biological Survey (MBS) railroad prairie remnants due to grading, track work and other rail infrastructure improvements at these locations • Impacts on two Anoka County prairie remnants accounting for approximately 0.47 acre of the 3.84-acre site and approximately 1.02 acre of the 6.9-acre site **USFWS National Wildlife Refuges, Wildlife Management Areas, Outstanding Biodiversity Significance Sites and Scientific and Natural Areas:** • No substantial impacts **Invasive Species:** • No substantial impacts • Inadvertent introduction of invasive species via attachment to worker clothing, equipment and unwashed vehicles or in materials imported for construction **Wildlife Habitat:** • No substantial impacts • Increased construction traffic and machinery • Increased noise associated with construction equipment • Possible dust or sedimentation associated with earth moving activities at limited locations **Animal Mortality and Movement:** • No substantial impacts **Aquatic Habitats:** • Potential for erosion/sedimentation and other construction impacts on aquatic habitat, including	• No mitigation required **Invasive Species:** • No mitigation required • Adherence to best management practices (BMPs) in Minnesota and Wisconsin to limit spread of invasive species during operation, maintenance or rehabilitation **Wildlife Habitat:** • Coordination with USFWS regarding the Migratory Bird Treaty Act **Animal Mortality and Movement:** • Incorporation of features such as fencing, ballast level alteration, bio-netting and wildlife crossings, including escape routes for turtles and other wildlife, in coordination with MnDNR and the Wisconsin Department of Natural Resources (WDNR) • Installation of fencing only in areas necessary for pedestrian safety and not extended into waterways • Consultation with MnDNR and WDNR regarding fencing and wildlife crossing **Aquatic Habitats:** • Bridge activities timed to avoid spawning periods • Coordination with state and local agencies to mitigate trout stream impacts <u>Construction</u> **Native Prairie:** • Mitigation as required by MnDNR • Completion of field surveys to quantify the area of impact relative to the total area of the prairie remnant **USFWS National Wildlife Refuges, Wildlife Management Areas, Outstanding Biodiversity Significance Sites and Scientific and Natural Areas:** • No mitigation required **Invasive Species:** • Good housekeeping construction practices, such as decontamination of equipment on site and use of weed-free mulch, and other BMPs **Wildlife Habitat:** • Re-vegetation within construction limits, where appropriate • Planting native pollinator-friendly species in areas disturbed by construction, to the extent practical • Construction BMPs such as timing construction activities to minimize light and noise impacts, implementing stormwater and erosion control measures and restoring temporarily disturbed areas • Keeping bridges cleared of nests and protected from nest-building during construction • Prevention of bat roosts by sealing and filling holes and crevices, and coordination with agencies as the NLX Project advances through the design process **Animal Mortality and Movement:** • Consultation with MnDNR and WDNR regarding fencing and wildlife crossing • Consideration of measures such as installation of bio-netting, ballast level alteration between rail escape

EA Section and Resource	Identified Impacts in NLX Tier 2 Project Level EA	Avoidance, Minimization and Mitigation Measures[a]
	11 trout streams directly crossed within NLX Project construction limits (6 in Minnesota and 5 in Wisconsin)	sites, surveys, and coordination with USFWS, MnDNR and WDNR **Aquatic Habitats:** • Bridge activities timed to avoid spawning periods • Coordination with state and local agencies to mitigate trout stream impacts • Obtaining required permits, such as National Pollutant Discharge Elimination System (NPDES) permit • Use of construction BMPs
4.4 Threatened and Endangered Species	Operations **Federally Listed Species:** • No adverse effects determinations • Requested concurrence from USFWS of "may affect, but not likely to adversely affect" determination for Canada lynx and gray wolf • Continuing coordination with USFWS for No Jeopardy Determination on rusty patched bumble bee • May affect, but will not cause prohibited incidental take of northern long-eared bat **State-Listed Species:** • Potential effects on Blanding's turtles (Minnesota), wood turtles (Minnesota and Wisconsin), slender spike-rush (Wisconsin) and seaside crowfoot (Wisconsin) Construction **Federally Listed Species:** • Temporary impacts where bridge modification or maintenance would occur where avian and aquatic species inhabit these structures or are located in adjacent waterbodies **State-Listed Species:** • Potential effects on mussel populations during construction of new railroad bridges over water • Potential effects on Blanding's turtles (Minnesota), wood turtles (Minnesota and Wisconsin), slender spike-rush (Wisconsin) and seaside crowfoot (Wisconsin)	Operations **Federally Listed Species:** • No mitigation required • Incorporation of 'Passage Bench' design feature to minimize impact on Canada lynx and gray wolf • Completion of biological surveys, where necessary • Coordination with USFWS, MnDNR and WDNR regarding any need for avoidance, minimization and/or mitigation measures related to the additional federal listing of threatened and endangered species as the NLX Project advances through the design process • Completion of surveys to confirm whether northern long-eared bat habitat, including hibernacula and roost trees, is present • Reinitiation of consultation with USFWS prior to authorizing final plans, specifications and estimates to more fully address endangered species impacts **State-Listed Species:** • Coordination with MnDNR and WDNR for necessary surveys for listed species • Coordination with MnDNR on plan of action to protect seaside three-awn, as needed Construction **Federally and State-Listed Species:** • Consultation with agencies for transplant procedures and other mitigation measures, as required • Installation of wildlife friendly erosion mesh during construction • Use of BMPs that limit sedimentation or debris from entering streams
4.5 Wetlands	Operations and Construction **Wetlands:** • Impacts on up to 92 acres of wetlands within construction limits (type of impact [temporary or permanent] would be determined as the NLX Project advances through the design process) **MnDNR Public Waters:** • Impacts on two public waters and three public water wetlands (construction-related impacts would be determined as the NLX Project advances through the design process)	Operations **Wetlands:** • Mitigation of all unavoidable impacts in accordance with applicable regulatory rules • Use of a combination of on-site and off-site permittee-responsible mitigation and purchase of wetland bank credits • Delineations of all wetlands located within construction limits **MnDNR Public Waters:** • Adherence to applicable regulatory rules Construction **Wetlands and MnDNR Public Waters:**

EA Section and Resource	Identified Impacts in NLX Tier 2 Project Level EA	Avoidance, Minimization and Mitigation Measures[a]
		• Use of construction BMPs to minimize impacts • Obtaining federal, state and local wetland and water permits for construction activities • Continued coordination with MnDNR, WDNR, the Minnesota Board of Water and Soil Resources and the U.S. Army Corps of Engineers as the NLX Project advances through the design process
4.6 Surface Water	Operations **Land Cover (Erosion and Sedimentation):** • Increased impervious surface up to approximately 47 acres **Surface Waters:** • Potentially higher runoff rates and volumes and a reduction in the pre-treatment of stormwater runoff entering surface waters due to increased impervious surface • Increased pollutant loading potential • New piers where new bridge would be constructed over Rice Creek in Anoka County and the extension of existing culverts over other streams in construction areas (seven in Anoka County, four in Isanti County and one in Pine County) • Potential for pollutants generated by operation and maintenance activities at passenger stations, maintenance and layover facilities and loading and unloading activities to affect surface water resources when exposed to precipitation during NLX Project operations **Floodplains:** • 26,130 linear feet of floodplain identified within the construction limits that may be temporarily or permanently filled; further evaluation required for project-level definition • 32 Zone A floodplain crossings in areas of new construction **Shorelands:** • Potential permanent impacts on several shoreland areas resulting from track and bridge improvements required for the NLX Project **Coastal Zone Management Areas – Lake Superior:** • Changes to land cover, including the U.S. Environmental Protection Agency (EPA)-designated St. Louis River Area of Concern **Navigable Waters:** • No substantial impacts **Wild and Scenic Rivers:** • No substantial impacts Construction **Land Cover (Erosion and Sedimentation):** • Impacts on land cover during construction as a result of activities that disturb existing vegetation and expose sediment to erosion **Surface Waters:** • New piers where new bridge would be constructed over Rice Creek in Anoka County and extension of	Operations **Land Cover (Erosion and Sedimentation):** • Minimization of impacts as the project advances through the design process **Surface Waters:** • Permanent treatment of stormwater runoff from new impervious area as required by the NPDES construction stormwater permits from the Minnesota Pollution Control Agency (MPCA) and WDNR • Maintenance of permanent BMPs • Obtaining NPDES multi-sector or industrial stormwater permits from MPCA and WDNR • Development and implementation of multi-sector or industrial Stormwater Pollution Prevention Plan (SWPPP) for Minnesota and Wisconsin • Incorporation of green infrastructure that could include bioswales, rain gardens and permeable pavements for parking lots and access roads, to the extent practical **Floodplains:** • Coordination with local floodplain administrators to determine mitigation measures required as the NLX Project advances through the design process **Shorelands:** • Consultation with unit of government regulating shoreland management to coordinate permitting during future design activities **Coastal Zone Management Areas – Lake Superior:** • Continued coordination with EPA remediation team for EPA-designated St. Louis River Area of Concern **Navigable Waters:** • No mitigation required **Wild and Scenic Rivers:** • No mitigation required Construction **Land Cover (Erosion and Sedimentation):** • Implementation of BMPs to minimize erosion **Surface Waters:** • Use of minimum design standards for work in public waters to accommodate fish spawning and migration • Obtaining NPDES construction stormwater permit from MPCA and WDNR • Development of construction SWPPP for Minnesota and Stormwater Management Plan (SWMP) for Wisconsin • Development of erosion control plan and use of BMPs

EA Section and Resource	Identified Impacts in NLX Tier 2 Project Level EA	Avoidance, Minimization and Mitigation Measures[a]
	existing culverts over other streams in construction areas (seven in Anoka County, four in Isanti County and one in Pine County) • Potential for sediment and construction-related pollutants to be carried into surface water resources via stormwater runoff during construction • Temporary changes to land cover could result in higher runoff rates and volumes and a reduction in the pre-treatment of stormwater runoff prior to entering surface waters • Potential for increased pollutant loading **Floodplains:** • Decreased capacity to convey flow **Shorelands:** • Potential to deposit sediment onto downstream shorelands **Coastal Zone Management Areas – Lake Superior:** • Changes to land cover, including the EPA-designated St. Louis River Area of Concern **Navigable Waters:** • Potential increases in pollutant loading **Wild and Scenic Rivers:** • Potential for sediment deposition into the Kettle River	• Soil stabilization during construction **Floodplains:** • Coordination with local floodplain administrators to determine permitting compliance measures **Shorelands:** • Consultation with unit of government regulating shoreland management to coordinate permitting during future design activities **Coastal Zone Management Areas – Lake Superior:** • Continued coordination with EPA remediation team for EPA-designated St. Louis River Area of Concern **Navigable Waters:** • No mitigation required **Wild and Scenic Rivers:** • No mitigation required
4.7 Groundwater	<u>Operations</u> **Wellhead Protection:** • Potential impacts on groundwater quality in public water systems because of stormwater runoff from stations and maintenance and layover facilities **Wells:** • No known wells within construction limits **Springs and Sinkholes:** • No known springs or sinkholes within construction limits **Shallow Groundwater:** • Potential for encountering existing contamination and generating hazardous materials (for example, spills or leaks) that could impact groundwater quality <u>Construction</u> **Wellhead Protection:** • Potential impacts on groundwater quality in public water systems because of stormwater runoff from areas disturbed during construction mixing with construction-related pollutants and percolating into the ground, introducing contaminants to the groundwater supply **Wells:** • Potential temporary drawdown of water levels during dewatering activities (if applicable) and corresponding temporary reduction of well yield for undocumented wells **Springs and Sinkholes:**	<u>Operations</u> **Wellhead Protection:** • Development of mitigation measures as the Project advances through the design process • Review of wellhead protection plans for source water protection requirements **Wells:** • No mitigation required • Addressing unused or unsealed wells in accordance with Minnesota Administrative Rules Chapter 4725 and Wisconsin Administrative Code Chapter NR 812.26, if encountered **Springs and Sinkholes:** • No mitigation required • Completion of spring survey at Sandstone Maintenance Facility site **Shallow Groundwater:** • Obtaining proper permits for the appropriation and disposal of groundwater prior to any work if groundwater dewatering is necessary <u>Construction</u> **Wellhead Protection:** • Review of wellhead protection plans for source water protection requirements **Wells:** • Addressing unused or unsealed wells in accordance with Minnesota Administrative Rules Chapter 4725 and Wisconsin Administrative Code Chapter NR 812.26, if encountered

<table>
<tr><th>EA Section and Resource</th><th>Identified Impacts in NLX Tier 2 Project Level EA</th><th>Avoidance, Minimization and Mitigation Measures[a]</th></tr>
<tr><td></td><td>• No known springs or sinkholes within construction limits
Shallow Groundwater:
• Potential for encountering existing contamination and generating hazardous materials (for example, excavation or equipment spills or leaks) that could impact groundwater quality
• Impacts on the water table from drawdown if dewatering were required</td><td>• Documentation of undocumented wells visually identified during construction and avoidance of physical damage to the well
Springs and Sinkholes:
• No mitigation required
Shallow Groundwater:
• Obtaining permits for appropriation and disposal of groundwater, as needed
• Development of plan for assessing and managing existing contamination in construction areas
• Development of contamination plan and spill prevention, control and countermeasures</td></tr>
<tr><td>4.8
Air Quality</td><td><u>Operations</u>
• No substantial impacts
• Slight nitrogen oxide (NO_x) increase in 2040
• Relatively small (compared to moving train emissions) amount of emissions at stations and at maintenance and/or layover facilities due to idling locomotives
<u>Construction</u>
• No substantial impacts
• Fugitive dust emissions</td><td><u>Operations and Construction</u>
• No mitigation required
• Minimization of locomotive emissions by limiting idle time to the extent practicable
• Minimization of construction emissions to the extent practicable by minimizing construction equipment engine idling time
• Application of dust control measures to minimize fugitive dust generation, such as suspending earthmoving activities in dry/windy conditions and application of water sprays to exposed earth piles and unpaved driving surfaces</td></tr>
<tr><td>4.9
Noise and Vibration</td><td>Identified Impacts
in NLX Tier 2 Project Level EA with Sandstone Maintenance Facility Alternative

<u>Operations</u>
Noise:
• 84 severe residential impacts.
• 13 severe institutional (parks, churches, schools) impacts
• 228 moderate residential impacts
• 16 moderate institutional impacts
Vibration:
• 1 residential impact
<u>Construction</u>
Noise and Vibration:
• Potential impacts from activities associated with the construction of new tracks and stations, utility relocation, grading, excavation, track work, demolition, and installation of systems components</td><td>Identified Impacts
in NLX Tier 2 Project Level EA with Duluth Maintenance and/or Layover Facility Alternative

<u>Operations</u>
Noise:
• 33 severe residential impacts
• 13 severe institutional (parks, churches, schools) impacts
• 234 moderate residential impacts
• 16 moderate institutional impacts
Vibration:
• 1 residential impact
<u>Construction</u>
Noise and Vibration:
• Potential impacts from activities associated with the construction of new tracks and stations, utility relocation, grading, excavation, track work, demolition, and installation of systems components</td><td><u>Operations</u>
Noise:
• Municipalities must initiate the request to establish quiet zones at rail grade crossings through application to the FRA Office of Safety as a separate regulatory approval process.
• Completion of site-specific long-term existing noise measurement as the NLX Project advances through the design process
Vibration:
• Completion of ground-borne vibration propagation testing, as needed, as the NLX Project advances through the design process
<u>Construction</u>
Noise and Vibration:
• Avoidance of nighttime construction in residential neighborhoods
• Locating stationary construction equipment as far as possible from noise-sensitive sites
• Construction of noise barriers, such as temporary walls or piles of excavated material, between noisy activities and noise-sensitive receivers
• Routing construction-related truck traffic to roadways that will cause the least disturbance to residents
• Use of alternative construction methods to minimize the use of impact and vibratory equipment (for example, pile-drivers and compactors)</td></tr>
</table>

EA Section and Resource	Identified Impacts in NLX Tier 2 Project Level EA	Avoidance, Minimization and Mitigation Measures[a]
4.10 Contaminated Properties and Regulated Waste	Operations • No substantial impacts anticipated • Production of regulated waste at the maintenance facility as a part of normal operation and maintenance of passenger trains • Solid waste generation at the stations in the form of waste receptacles and other general maintenance and upkeep of the station • Minor spills and releases due to normal operation of the NLX Project along the tracks, at maintenance and layover facilities and at stations Construction • Four High Risk Properties, four Medium Risk Properties, and one Low Risk Property identified • Long-term liability associated with the disturbance and/or acquisition of contaminated property • Removal of potential polychlorinated biphenyls (PCBs) and/or lead-based paint and chemically treated wood from rehabilitation of railroad bridges • Potential spills of petroleum and other regulated materials during construction activities, especially where heavy construction equipment is used • Potential solid waste generation during construction, including excess construction materials and demolition materials from bridge rehabilitation and building removal • Potential to encounter contamination during proposed new bridge construction, especially where excavation and/or dewatering is required for bridge piers and abutments • Potential to encounter contamination during crossing signal upgrades	Operations • No mitigation required Construction • Completion of targeted Phase I ESAs • Completion of Phase II ESA • Implementation of MnDOT and/or BNSF standard construction BMPs to avoid spills that could contaminate soil, surface water and groundwater in the NLX study area • Immediately taking appropriate action in the event of a release during construction to remediate the situation in accordance with MPCA and WDNR containment and remedial action procedures • Minimization of substantial impacts in the event of a hazardous material spill from a passenger train by following environmental spill response procedures • Implementation of a Contaminated Materials Management Plan approved by MPCA and WDNR, as needed • Development of a containment plan, environmental monitoring plan, waste management plan, and contingency plan
4.11 Cultural Resources	Operations and Construction • No adverse effects anticipated on properties listed on and eligible for listing on the National Register of Historic Places (NRHP) based on preliminary assessment of effects, with the provision that the NLX Project would identify measures to avoid construction impacts in the vicinity of the Cedar Potato Warehouse and the Kerrick Cheese Factory and Creamery	Operations and Construction • Completion of a determination of effects report for the effects on historic properties that are listed on and determined eligible for listing on the NRHP • Continued consultation with Minnesota Historic Preservation Office (MnHPO) and consulting parties as the NLX Project advances through the design process • Identification of measures to avoid construction impacts in the vicinity of the Cedar Potato Warehouse and the Kerrick Cheese Factory and Creamery • If adverse effects are identified, consultation with MnHPO, Wisconsin State Historic Preservation Office (WisSHPO) and consulting parties to develop avoidance, minimization and mitigation measures in accordance with the Programmatic Agreement
4.12 Farmland and Soils	Operations **Farmland:** • Impacts on approximately 2.7 acres, including approximately 1.0 acre of farmland of statewide importance and no prime farmland • No crossing closures and no effect on farming operations **Soils:** • Potential need for soil correction in areas of soft soils	Operations **Farmland and Soils:** • No mitigation required • Where practicable, replacement or reuse of topsoil in the NLX study area for farmland and soils Construction **Farmland:** • No mitigation required

EA Section and Resource	Identified Impacts in NLX Tier 2 Project Level EA	Avoidance, Minimization and Mitigation Measures[a]
	Construction **Farmland:** • No substantial impacts **Soils:** • No substantial impacts with implementation of BMPs	**Soils:** • No mitigation required • Implementation of appropriate erosion and sediment control measures in accordance with MnDNR • Implementation of BMPs, including silt curtains and revegetation guidelines, to minimize potential impacts due to soil erosion • Hauling excavated unsuitable soils off site and properly disposing of such soils at appropriate sites
4.13 Parks and Recreation Areas and Appendix Q Draft Section 4(f) and Section 6(f) Evaluation	Operations and Construction **Parks and Recreation Areas and Wildlife Refuges:** • No permanent impacts • Temporary noise, dust, and visual impacts on numerous parks during construction **Trails:** • No permanent impacts **Section 4(f):** • No permanent Section 4(f) use, including constructive use • Temporary occupancy of Edgewater Gardens Park, Locke Lake Park, Plaza Park, Rice Creek West Regional Trail Corridor, Springbrook Nature Center and the following winter use trails, at various locations: Orange Trail (Snowmobile and Winter ATV); Saunders Grade Snowmobile Trail and Winter ATV Trail; Rum River Snowmobile Trail; Cambridge-Weber-Starks-Isanti Snowmobile Trail; Northern Lite Snowmobile Trail; Hinckley-Pine City Snowmobile Trail; Pine 1, 2, 3 Snowmobile Trail and Moosehorn Snowmobile Trail • Preliminary *de minimis* impact determination of the following trails: Cedar Lake Trail, Grand Rounds Trail, Mississippi River Regional Trail, Rice Creek West Regional Trail, Osborne Road Trail, 85th Avenue Northwest Trail, Coon Rapids Boulevard Extension Northwest Trail, Egret Boulevard Northwest Trail, Tom Anderson Trail, North Anoka County Regional Trail (proposed), Isanti-Cambridge Trail, North Country National Scenic Trail, Cross City Trail, Gandy Dancer Snowmobile Trail and ATV (winter and summer) Road Route, Trail 28 (Snowmobile and ATV) and Proposed North 58th Street Trail • Historic Resources: No Section 4(f) use **Section 6(f):** • No permanent Section 6(f) use • Temporary non-conforming use of Springbrook Nature Center	Operations and Construction **Parks and Recreation Areas and Wildlife Refuges:** • No mitigation required for operations • Complying with local ordinances applicable to construction activities **Trails:** • No mitigation required for operations • Posting trail closure signs and working closely with park officials to provide timely public information regarding closures • Development of potential detours to maintain trail access and connectivity to the extent practicable • Minimization of noise, visual and dust impacts through compliance with local ordinances **Section 4(f):** • Continued coordination with jurisdictional agencies regarding temporary occupancy concurrence, along with avoidance and minimization measures • Continued coordination with jurisdictional agencies regarding *de minimis* findings for trail resources, along with avoidance and minimization measures • Consultation with federal, state and local officials with jurisdiction (MnHPO) on no Section 4(f) use of historic properties • Further evaluation if subsequent NLX Project refinement reveals the potential for use of any properties subject to Section 4(f) or Section 6(f) resources **Section 6(f):** • Coordination with the City of Fridley, MnDNR and NPS to obtain approval of a temporary non-conforming use
4.14 Visual	Operations • Impacts on views caused by fencing at stations, in populated areas and at grade crossings where pedestrian crossings currently exist • Potential visual impacts caused by operation of additional trains, which could be noticeable in less populated areas with less train activity, but would be a minor visual change consistent with existing activity Construction	Operations and Construction • No mitigation required

EA Section and Resource	Identified Impacts in NLX Tier 2 Project Level EA	Avoidance, Minimization and Mitigation Measures[a]
	• No substantial impacts • Potential impacts from visible construction activities in the corridor, which would be consistent with the corridor context	
4.15 Socioeconomics	<u>Operations</u> **Community Facilities:** *Hinckley:* • Relocation of the City of Hinckley maintenance building • Acquisition of a strip of vacant land (0.3 acre) from the Trinity Episcopal Church, but no church facilities would be affected *Duluth:* • Replacement of the existing NSSR ticket office at Union Depot by the new NLX passenger waiting area for the Duluth Station (both services would be co-located in the new waiting area) • Depending on selected maintenance facility site, moderate noise impacts at up to four schools, eight churches, three parks and one daycare; severe noise impacts at two schools, five churches, two cemeteries and four parks (see Section 4.9 for noise impacts) **Community Access:** • No substantial impacts • No public or private rail grade crossing closures **Community Cohesion:** • No substantial impacts **Possible Barriers to Elderly and Handicapped:** • No substantial impacts **Safety and Security/Public Health:** • No substantial impacts • Enhanced safety at existing public rail grade crossings **Infrastructure and Public Services:** • Required replacement or relocation of public and private utilities in some locations because of development of NLX stations and facilities **Acquisitions and Relocations:** • No acquisitions or relocations of residences or private businesses • Acquisition of approximately 4 acres of private property at the proposed Cambridge Station; Superior, Wisconsin Station; Hinckley Station; and Sandstone maintenance facility site <u>Construction</u> **Community Facilities:** *Cambridge:* • Potential temporary impact on the City-owned portions of the parking lot at the City Center Mall due to	<u>Operations and Construction</u> **Community Facilities:** • Coordination with affected community facilities during construction regarding temporary construction impacts and alternative access • Coordination with NSSR and the owner and operator of Duluth Station to identify a temporary space for NSRR's ticketing office functions while the NLX Project passenger waiting area is under construction **Community Access:** • No mitigation required • Development of a traffic management plan to identify alternate access during crossing closures • Continued public outreach to keep local communities informed of construction schedules and crossing closures **Community Cohesion:** • No mitigation required **Possible Barriers to Elderly and Handicapped:** • No mitigation required **Safety and Security/Public Health:** • No mitigation required • Installation of fencing in locations where there is a high probability where people would cross the tracks, such as at grade crossings and in developed areas with residential development on both sides of the tracks • Use of BMPs and adherence to local ordinances and safety requirements **Infrastructure and Public Services:** • Continued coordination with utilities to avoid or minimize utility impacts and to avoid service disruptions during construction **Acquisitions and Relocations:** • Compliance with the Uniform Act (49 CFR 24), Minnesota Statutes Chapter 117 and Wis. Stat. Chapter 32, as applicable, for unavoidable land acquisitions, displacements or relocations of privately owned properties

EA Section and Resource	Identified Impacts in NLX Tier 2 Project Level EA	Avoidance, Minimization and Mitigation Measures[a]
	the reconfiguration of parking spaces in the front and back of the building for Cambridge Station construction • Potential temporary impact of the rear parking area by construction staging *Duluth:* • Temporary relocation of the NSSR ticket office within Union Depot during construction • Potential temporary access disruptions to other existing facilities located at Union Depot during construction of the Duluth Station **Community Access:** • Temporary crossing closures to reconstruct crossings and install new warning devices **Community Cohesion:** • Potential temporary inconveniences for communities adjacent to the NLX Corridor during construction, such as construction noise, visual changes from construction activities and staging, dust impacts and temporary access changes to reconstruct crossings and install new warning devices **Possible Barriers to Elderly and Handicapped:** • No substantial impacts **Safety and Security/Public Health:** • No substantial impacts **Infrastructure and Public Services:** • Temporary disconnections for related utilities **Acquisitions and Relocations:** • No substantial impacts	
4.16 Environmental Justice	Operations and Construction • Minority and low-income populations identified in the NLX study area, but no high or disproportionate adverse effects	Operations **Transportation:** • See Chapter 3 for mitigation measures **Right of Way:** • Completion of right of way acquisition in accordance with the Uniform Act (49 CFR 24), Minnesota Statutes Chapter 117 and Wis. Stat. Chapter 32; see Section 4.2 **Air Quality:** • No mitigation required **Noise and Vibration:** • Municipalities must initiate the request to establish quiet zones at rail grade crossings through application to the FRA Office of Safety as described in Section 4.9.4. **Visual:** • No mitigation required **Socioeconomics:** • No mitigation required beyond what is reported in Section 4.15 **Economics:**

EA Section and Resource	Identified Impacts in NLX Tier 2 Project Level EA	Avoidance, Minimization and Mitigation Measures[a]
		• No mitigation required Construction • Use of BMPs to eliminate or minimize temporary and short-term construction-related impacts on the communities with minority and low-income populations • Development of traffic management plans to identify alternative access during crossing closures • Continued public outreach to keep local communities informed of construction schedules, including targeted communications to organizations that represent minority and low-income populations • Posting trail closure signs and working closely with park officials to provide timely public information regarding closures
4.17 Economics	Operations • No substantial impacts • Potential benefits of $355M in taxes and $136M in property value increase • Potential benefits of an average of 380 jobs annually during the first 5 years of operation • Potential benefits of tourism revenues in the range of $378 million, which would support about 10,600 total job years and wages in the range of $233 million over a 40-year period Construction • Potential temporary impacts associated with access disruptions to businesses and services during construction where crossings are closed for short durations to reconstruct crossings and install new warning devices • Potential benefits of 3,100 jobs annually during construction	Operations • No mitigation required Construction • Development of traffic management plans to identify alternative access to businesses and services during potential roadway crossing closures • Continued public outreach to keep local communities and businesses informed of construction schedules and activities
4.18 Indirect and Cumulative Effects	**Indirect:** • *Transportation* – There are no anticipated substantial indirect impacts at the station locations with the exception of the Duluth station, where temporary construction impacts would occur to reconstruct the public access. • *Land Use* – Potential indirect impacts could occur as a result of induced development around station locations. • *Right of Way* – Potential indirect impacts could occur because of induced development around station locations that could indirectly lead to property acquisitions and displacements. • *Wetlands* – Potential indirect impacts could occur as a result of filling or diminishing wetland function due to induced development. • *Surface Water* – Potential indirect impacts could occur because of induced development at station locations. This could indirectly lead to increased export of pollutants and decreased pollutant filtration. • *Noise and Vibration* – Potential indirect impacts could occur because of induced development around the station locations. Increased exposure to noise produced by train horn blowing, rail equipment and park and ride facilities is likely to occur. There could be more exposure to ground-borne vibration from the potential induced development. • *Contaminated Properties and Regulated Waste* – Potential indirect impacts could occur because of	**Indirect & Cumulative:** • *Transportation*– No additional mitigation required • *Land Use* – No additional mitigation required • *Right of Way*: No mitigation required • *Vegetation and Wildlife* – No additional mitigation required with implementation of BMPs • *Threatened and Endangered Species* – No additional mitigation required with implementation of BMPs • *Wetlands* – No additional mitigation required • *Surface Water* – No additional mitigation required with implementation of BMPs • *Groundwater* – No additional mitigation required with implementation of BMPs • *Noise and Vibration* – No additional mitigation required • *Contaminated Properties and Regulated Waste* – No additional mitigation required • *Cultural Resources* – Effects on historic properties would be identified and addressed in accordance with procedures in the PA • *Visual* – No additional mitigation required • *Socioeconomics* – No mitigation required • *Environmental Justice* – Local regulations and policies could minimize potential negative indirect or cumulative effects

EA Section and Resource	Identified Impacts in NLX Tier 2 Project Level EA	Avoidance, Minimization and Mitigation Measures[a]
	induced development at station locations. There are high risk properties located at Target Field Station; Sandstone Maintenance Facility; Superior, Wisconsin Station; Duluth Station and Duluth Maintenance and/or Layover Facility. These properties could lead to greater environmental risk to surrounding properties undergoing redevelopment. • *Cultural Resources* – Potential indirect impacts could occur because of induced development at station locations. Impacts on historic properties could occur if redevelopment changes the character of the property's use or setting. • *Visual* – Potential indirect impacts could occur because of induced development at station locations. Long-term impacts due to improved accessibility to areas around the stations may create increased demand for new development. • *Socioeconomics* – Potential indirect impacts could occur because of induced development around station locations. Impacts related to redevelopment around station locations could affect community facilities, community character and community cohesion. • *Environmental Justice* – Potential indirect impacts could occur because of induced development at station locations. • *Economics* – Potential indirect impacts could occur because of induced development around station locations. This could increase property taxes for the affected local jurisdictions. **Cumulative:** • *Transportation* – The indirect impact of rider diversion in combination with the reasonably foreseeable future actions could place increased demand on all transportation modes. • *Land Use* – Cumulative impacts could occur over time around station locations due to induced development. • *Right of Way* – Cumulative impacts could occur as a result of redevelopment around station locations. This could lead to acquisitions and relocation of residents. • *Wetlands* – Cumulative impacts on wetlands could occur as a result of new development. • *Surface Water* – Increased sediment and pollutant loading to surface waters could occur as a result of new development. • *Noise and Vibration* – Cumulative impacts could occur as a result of induced development that would expose more people to traffic in the area. • *Contaminated Properties and Regulated Waste* – Positive cumulative impacts are anticipated due to the remediation of hazardous waste sites. • *Cultural Resources* – Cumulative impacts could occur as a result of induced development. Impacts on historic properties could occur if redevelopment changes the character of the property's use or setting. • *Visual* – Induced development could cumulatively change views that could become more urbanized over time. • *Socioeconomics* – Cumulative impacts are not anticipated on socioeconomic conditions because the infrastructure improvements would be largely located in the BNSF right of way.	• *Economics* – No mitigation required

EA Section and Resource	Identified Impacts in NLX Tier 2 Project Level EA	Avoidance, Minimization and Mitigation Measures[a]
	• *Environmental Justice* – Cumulative impacts are not anticipated on environmental justice populations. • *Economics* – Positive cumulative impacts are anticipated because the Project could strengthen the business climate by providing improved transportation options.	

[a] *The NLX Project would continue efforts to avoid, minimize and mitigate impacts for all resource areas as the project advances through the design process.*

ES.4 Public and Agency Involvement

ES.4.1 Public Involvement

MnDOT developed and implemented a Stakeholder Engagement Plan (SEP) early in the Tier 1 EA process to identify public and agency outreach activities. The SEP was completed in 2013 and updated in 2015. This was followed by the Public Involvement Plan Supplement (February 2015), which identifies additional outreach activities that built on the work initiated during the Tier 1 EA process. The SEP established a process for communication with MnDOT, FRA, WisDOT, relevant state and federal agencies (see Section 5.2.1 of this Tier 2 EA), Indian tribes and the public, as well as identified outreach tools for implementation.

MnDOT's outreach activities during the Tier 2 EA process included establishing an NLX Steering Committee, hosting stakeholder meetings and workshops, holding public open houses, developing nine project newsletters, and maintaining a project website. Three series of public open houses (12 meetings total) were held between December 2014 and October 2016. The meetings were informal with an open house format featuring visual display boards on varying topics. Verbal and written comments received during these open houses included general support of the NLX Project, as well as concerns about aesthetics, project operations, project costs and grade crossings. All materials, including meeting summaries and collected feedback, are posted on the NLX Project website for review (www.dot.state.mn.us/nlx/). See Section 5.1 of this Tier 2 EA for additional information.

ES.4.2 Agency Involvement

FRA, MnDOT and WisDOT are designated responsible agencies for the Tier 2 EA process. FRA is the federal lead agency, MnDOT is the state lead agency and WisDOT is both a responsible agency and a Cooperating Agency due to its signatory role. Cooperating Agencies are federal agencies, other than the lead agency, that have jurisdiction by law or special expertise with respect to any environmental impact. A state or local agency of similar qualifications, or a tribal agency when effects are on lands of tribal interest, may, by agreement of the lead agency, also become a Cooperating Agency. In addition to WisDOT, the U.S. Environmental Protection Agency, Federal Highway Administration and Surface Transportation Board are Cooperating Agencies on the NLX Project.

The NLX Project maintains an agency contacts list, which is used to distribute meeting notifications. In addition to the Cooperating Agencies, the following agencies and other groups have been added to the agency contacts list and invited to participate in agency coordination meetings:

- U.S. Fish and Wildlife Service
- U.S. Army Corps of Engineers
- Minnesota Department of Natural Resources
- Minnesota Department of Agriculture
- Minnesota Department of Commerce
- Minnesota Indian Affairs Council
- Minnesota Board of Water and Soil Resources
- Wisconsin State Historical Society
- Metropolitan Council
- East Central Regional Development Commission
- Fort Snelling History Center
- U.S. Coast Guard
- Federally recognized tribes in Minnesota and Wisconsin
- Minnesota State Historic Preservation Office
- Minnesota Pollution Control Agency
- Minnesota Environmental Quality Board
- Minnesota Department of Health
- Wisconsin Department of Natural Resources
- Great Lakes Indian Fish and Wildlife Commission
- St. Louis/Lake County Regional Rail Authority
- Arrowhead Regional Development

ES.4.3 Coordination with BNSF

MnDOT coordination with BNSF, which began in 2008 during preparation of the Tier 1 EA, is continuing through Tier 2 EA activities. Since the Tier 1 EA was completed in 2013, MnDOT coordination with BNSF has occurred periodically to discuss project progress and capacity improvements needed to accommodate both NLX passenger rail and freight rail operations. Throughout 2016, MnDOT and BNSF met to further update operational and engineering requirements for the proposed NLX service. BNSF has evaluated and commented on proposed operations, infrastructure, and analyses with regard to track schematics, timetables, and proposed infrastructure improvements. The infrastructure improvements identified during these coordination efforts are evaluated in this Tier 2 EA. MnDOT will continue working with BNSF as the project progresses to further refine operational and engineering requirements.

It is anticipated that BNSF would prepare final design plans and construct improvements on their facilities under formal agreements with MnDOT.

ES.4.4 Permits and Approvals

A variety of federal, state and local permits and approvals would be needed for the NLX Project. Additionally, several agreements are anticipated to be needed with BNSF, Metro Transit and St. Louis and Lake Counties Regional Railroad Authority and the Lake Superior Railroad Museum. See Section 5.2.3, **Table 5-3** of this Tier 2 EA for a complete list of anticipated permits, approvals and agreements needed for the NLX Project.

ES.5 Availability of Environmental Assessment and Environmental Impact Statement Need Determination

Comments from the public and agencies affected by the NLX Project are requested during the public comment period described in the transmittal letter distributing this EA. A formal 30-day public comment period will begin in April 2017. A public meeting will be held during that comment period, following the distribution of this EA to the public and Cooperating Agencies, as well as interested federal, state and local agencies and Native American Tribes, for their review.

Public meeting attendees will have the opportunity to comment on the Tier 2 EA outcomes. Comments received at this meeting and during the public comment period will become part of the official record.

Copies of this document have been sent to agencies, local government units, libraries and other interested organizations in accordance with Minnesota Rule 4410.1500 (Publication and Distribution of an EAW) and Wisconsin Administrative Code Chapter Trans 400.11 (Distribution and Review of Environmental Documents). In addition, copies of this document have been distributed to all agencies and individuals who received a copy of the Tier 1 EA. Additionally, those who provided comments during the Tier 1 EA public comment period have received notification of the Tier 2 EA availability and information on where to access the document for review. The Tier 1 EA and this Tier 2 EA are also available on the NLX Project website for review at www.dot.state.mn.us/nlx/.

The final FRA decision and Minnesota Finding of Fact and Conclusion are anticipated to be published by late summer 2017.

ES.6 Next Steps

Following the comment period, the responsible agencies (FRA, MnDOT and WisDOT) will make a determination as to the adequacy of the environmental documentation. If further documentation is necessary, it could be accomplished by preparing an Environmental Impacts Statement (EIS), revising the EA, or providing clarification in the Findings of Fact and Conclusion, whichever is appropriate.

If an EIS is not necessary, MnDOT will prepare a Negative Declaration on the Need for an EIS (Negative Declaration) to fulfill Minnesota state environmental requirements. If FRA agrees that this finding is appropriate, it will issue a FONSI. WisDOT will adopt the FRA decision.

Notices of the federal and state decisions and availability will be placed in the Minnesota EQB Monitor. MnDOT will distribute the Negative Declaration and FONSI to the EAW distribution list. Notices will be posted to the NLX Project website and distributed to local media outlets. The FONSI, if warranted, will be published on the FRA and NLX Project websites.

As appropriate and necessary, this Tier 2 EA would be refined through future supplemental NEPA documentation as the final design advances and funding is secured for the NLX Project.