Northstar

Extension Assessment Study

DEPARTMENT OF TRANSPORTATION

MetroTransit
Northstar Line

Prepared by:

The Minnesota Department of Transportation
395 John Ireland Boulevard
Saint Paul, Minnesota 55155-1899

Phone: 651-296-3000
Toll-Free: 1-800-657-3774
TTY, Voice or ASCII: 1-800-627-3529

To request this document in an alternative format, call 651-366-4718 or 1-800-657-3774 (Greater Minnesota). You may also send an email to ADArequest.dot@state.mn.us

February 9, 2024

The Honorable Melissa Hortman, Speaker
Minnesota House of Representatives
463 State Office Building
Saint Paul, Minnesota 55155

The Honorable Erin P. Murphy, Senate Majority Leader
Minnesota Senate
3211 Minnesota Senate Building
Saint Paul, Minnesota 55155

The Honorable Lisa Demuth, House Minority Leader
267 State Office Building
Saint Paul, Minnesota 55155

The Honorable Mark T. Johnson, Senate Minority Leader
2401 Minnesota Senate Building
Saint Paul, Minnesota 55155

The Honorable Frank Hornstein, Chair
House Transportation Finance & Policy Committee 563
State Office Building
Saint Paul, Minnesota 55155

The Honorable John Petersburg, Republican Lead House
Transportation Finance & Policy Committee
217 State Office Building
Saint Paul, Minnesota 55155

The Honorable Scott Dibble, Chair
Senate Transportation Committee
3107 Minnesota Senate Building
Saint Paul, Minnesota 55155

The Honorable John Jasinski, Ranking Minority Member
Senate Transportation Committee
2227 Minnesota Senate Building
Saint Paul, Minnesota 55155

The Honorable Erin Koegel, Chair
House Sustainable Infrastructure Policy Committee
445 State Office Building
Saint Paul, Minnesota 55155

The Honorable Mary Franson, Republican Lead
House Sustainable Infrastructure Policy Committee
303 State Office Building
Saint Paul, Minnesota 55155

Re: Commuter Rail Extension Assessment Study

Dear Legislators,

The Minnesota Department of Transportation is pleased to provide the assessment report as required by Minn. Session Law Ch. 68, sec. 112. The purpose of the assessment was to collaborate with the Metropolitan Council to perform project scoping; provide a detailed summary of all necessary steps for a project to extend Northstar Commuter Rail to Saint Cloud prior to construction; estimate the project scope and costs of predesign, design, project development, construction, rolling stock and equipment; and document the necessary steps to apply for and receive federal funding.

Please contact me if you have questions or comments about this report at nancy.daubenberger@state.mn.us, or you may contact Greg Mathis at greg.mathis@state.mn.us, or 651-366-4292.

Sincerely,

Nancy Daubenberger

Nancy Daubenberger, P.E.
Commissioner

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Legislative Request

This report is issued to comply with 2023 Laws of Minn., Chap. 68, Art. 4, Sec. 112, Subd. 3(a).

Sec. 112. **RAIL CORRIDOR SERVICE.**

Subdivision 1. **Commuter rail extension.**

The commissioner of transportation, in collaboration with the Metropolitan Council, must conduct an assessment of a project to extend Northstar Commuter Rail service to the city of St. Cloud. The assessment must include but is not limited to project scoping; documentation of the necessary steps to apply for and receive federal funding; estimation of the project scope and costs of predesign, design, PD, construction, rolling stock, and equipment; and a detailed summary of all necessary steps to complete the rail extension to St. Cloud prior to construction, including but not limited to any additional analysis, outreach, predesign, and design.

Subd. 2. **Corridor development analysis.**

(a) Of the amount appropriated under subdivision 1 that remains following the assessment under this subdivision, the commissioner must conduct a comprehensive analysis and evaluation of options for development of transit and rail service improvements in the corridor between the cities of St. Paul, Minneapolis, Coon Rapids, St. Cloud, Fargo, and Moorhead.

(b) At a minimum, the analysis must:

(1) identify and evaluate alternatives for service in the corridor, including but not limited to:

(i) intercity passenger rail, commuter rail, bus service, other public transportation alternatives identified by the commissioner, or a combination of service between Minneapolis and St. Paul;

(ii) extension of current Amtrak train service between Minneapolis and St. Paul and Chicago to St. Cloud;

(iii) intercity passenger rail service between St. Paul, Minneapolis, Coon Rapids, St. Cloud, Fargo, and Moorhead; and

(iv) intercity passenger rail service through Minnesota on a line with origins and destinations outside the state;

(2) evaluate elimination of Northstar Commuter Rail service in conjunction with options under clause (1), including but not limited to a comprehensive fiscal review of costs and reductions in expenditures, analysis of barriers, and any other considerations;

(3) provide for estimation of:

(i) ridership, including potential impacts of stops in the vicinity of St. Cloud State University and the Department of Veterans Affairs health care center in St. Cloud;

(ii) capital and operating costs; and

(iii) revenue impacts;

(4) consider project barriers and risks;

(5) examine transit service administration, which may include jurisdictional transfers and contracting for service; and

(6) make recommendations for rail service development in the corridor.

Subd. 3. **Legislative reports.**

(a) By February 15, 2024, the commissioner of transportation must submit a report on the commuter rail extension assessment under subdivision 2 to the speaker of the house, the house minority leader, the senate majority leader, the senate minority leader, and the chairs and ranking minority members of the legislative committees with jurisdiction over transportation policy and finance. At a minimum, the report must:

(1) include the results of the assessment; and

(2) provide an overview of the status of the corridor analysis under subdivision 2.

(b) By February 1, 2025, the commissioner of transportation must submit a report on the corridor analysis and evaluation under subdivision 2 to the speaker of the house, the house minority leader, the senate majority leader, the senate minority leader, and the chairs and ranking minority members of the legislative committees with jurisdiction over transportation policy and finance. At a minimum, the report must:

(1) provide a summary of the corridor analysis;

(2) review each of the elements specified under subdivision 2, paragraph (b); and

(3) provide recommendations for legislative changes, if any.

EFFECTIVE DATE. This section is effective the day following final enactment.

Executive Summary

In May 2023, the Minnesota Legislature passed the Omnibus Transportation Bill, which allocated $4,000,000 to Minnesota Department of Transportation (MnDOT) for two studies that examine the possible expansion of passenger rail service on the Twin Cities-Saint (St.) Cloud-Fargo/Moorhead corridor. This aligns with the Minnesota Department of Transportation's mission to provide safe, equitable transportation options for all Minnesotans.

The first study has a February 15, 2024 due date, and is a collaborative effort with the Metropolitan Council (Met Council) to assess an extension of Northstar Commuter Rail service to St. Cloud. Its focus is presented below.

A second study will perform a corridor analysis and evaluation of options for development of transit and rail service improvements in the corridor between St. Paul, Minneapolis, Coon Rapids, St. Cloud and Fargo/Moorhead, and is due Feb. 1, 2025.

Study Purpose

The purpose of the current assessment is to perform project scoping, provide a detailed summary of all necessary steps to complete the rail extension to St. Cloud prior to construction, estimate the project scope and costs of predesign, design, Project Development (PD), construction, rolling stock, and equipment, as well as document the necessary steps needed to apply for, and receive, federal funding.

The assessment does not address project viability and feasibility, host railroad interest, or potential competitiveness under federal funding criteria. The report also recommends that project partners engage in further discussions to identify a project sponsor to lead the project delivery. These are all important factors that would be evaluated within the project delivery steps described in the report.

Alternatives Evaluated

To estimate potential costs, the study focused on the further development of two alternatives, Alternative 1 with two daily round trips and Alternative 2 with four weekday roundtrips and two weekend roundtrips. Both assume a project start date of 2025 and are based on capital improvements identified in the 2020 MnDOT Northstar Commuter Rail Extension Feasibility Assessment and the ridership analysis included in the 2023 Met Council Northstar Rail Corridor Post-Pandemic Study. These alternatives demonstrate the minimum service and highest potential ridership among the options studied, with the greatest opportunity to reach new ridership markets.

The Met Council's 2023 ridership study utilized a hybrid model incorporating 2019 and 2022 baselines. Travel behavior and ridership for this report will be evaluated in the next phase of the study to determine effectiveness of each alternative utilizing post-pandemic forecast model.

Capital Improvements and Host Railroad Considerations

Capital improvements included in the two cost estimates below meet two goals. One is to allow for reliable passenger train operations and the other is to ensure that passenger rail operations will not impact existing and future freight operations. This second goal is a crucial requirement of BNSF as it considers the potential introduction of new commuter and passenger rail services on its existing system. Achieving this goal will require

in-depth discussions with the host railroad to establish mutually agreed-upon infrastructure improvements, impacting both the overall cost and schedule.

Operational and Maintenance (O&M) Cost Projections

The O&M costs for the existing Northstar service were escalated by a percentage annually to account for past market trends, future inflation projections and market increases. The alternatives below include only the project cost for the start of service. Additional years of projected costs are included in Appendix B.

Alternative 1 (Low Level Service)

This alternative represents the costs needed to introduce a low level service consisting of two daily roundtrips between St. Cloud and Minneapolis.

- Start of Service: 2036
- Total Capital Cost: $554.5M
- 2036 O&M Cost: $49.0M

Alternative 2 (High Level Service)

This alternative represents the costs needed to introduce a higher level service consisting of four weekday roundtrips and two weekend roundtrips between St. Cloud and Minneapolis.

- Start of Service: 2038
- Total Capital Cost: $690.7M
- 2038 O&M Cost: $83.3M

Conclusion

The collaborative study provides a comprehensive overview of the necessary steps involved in project scoping, cost estimation, and federal funding application with a focus on alternatives that reflects a commitment to maximize ridership potential. The report serves as a valuable strategic resource for informed decision-making and sets the stage for continued collaborative efforts in realizing the vision of an extended and enhanced rail corridor between the Twin Cities and St. Cloud.


Track 2
TARGET FIELD
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Introduction

Legislative Directive

In May 2023, the Minnesota Legislature approved the Omnibus Transportation Bill, and it was signed into law by Governor Tim Walz. This bill appropriated funding for the Minnesota Department of Transportation (MnDOT) to collaborate with the Metropolitan Council (Met Council) to conduct two studies of the Twin Cities-Saint (St.) Cloud-Fargo/Moorhead rail corridor. The first study, which is the subject of this report, is an assessment of a project to extend the existing Northstar Commuter Rail ("Northstar") service to St. Cloud, Minnesota (study referred to herein as "Northstar Extension Assessment Study"). The purpose of this assessment is to do project scoping, provide a detailed summary of all necessary steps to complete the rail extension to St. Cloud prior to construction, estimate the project scope and costs of predesign, design, PD, construction, rolling stock, and equipment, and document the necessary steps to apply for and receive federal funding.

To estimate potential project costs, the assessment also determined potential timelines and project cost estimates for two alternatives: Alternative 1 (Low Level Service) and Alternative 2 (High Level Service). Both were originally defined in MnDOT's Extension Feasibility Report (2020). The two alternatives are further described in the sections below as well as Appendix B where greater detail is provided.

Report Cost

The cost of preparing the report elements required by Minnesota Session Law 2023, Regular Session: Chapter 68, Article 4, Section 112. Rail Corridor Service is approximately $213,000.

The costs reported for the Northstar Extension Assessment Study report includes the costs to document the necessary steps to apply for and receive federal funding; estimation of the project scope and costs of predesign, design, PD, construction, rolling stock, and equipment; and a detailed summary of all necessary steps to complete the rail extension prior to construction.

Report Format

This report summarizes the results of the assessment. It is intended to be high level, and based on four appendices that provide greater detail on information contained in this report:

- *Appendix A* identifies and describes at a high level the necessary steps in each stage of a project lifecycle: Systems Planning, Project Planning, PD, Implementation, and Operations to extend Northstar to St. Cloud. These next steps summarize all the activities from project scoping through ongoing operations which include, but are not limited to Alternatives Analysis, ridership and revenue studies, Rail Traffic Controller (RTC) modeling, evaluation of equipment needs and availability, coordination with the host railroad, stakeholder and public involvement, preliminary engineering (PE), environmental review, final design and construction, operations start-up, and on-going operations and maintenance.
- *Appendix B* provides cost estimates to extend Northstar service to St. Cloud. It is based on the infrastructure needs identified in the Northstar Commuter Rail Extension Feasibility Assessment (Minnesota Department of Transportation, 2020). Cost estimates from that study were escalated based on current market conditions. Other costs not included in that study, such as costs to prepare the required alternatives and environmental review, were also added. The costs were then escalated to the estimated Year of Expenditure (YOE).
- *Appendix C* identifies applicable opportunities to pursue federal discretionary grant funding for the potential extension of the Northstar Commuter Rail service to St. Cloud. This appendix also describes, in detail, both the Federal Transit Administration's (FTA) Capital Investment Grants (CIG) program and Federal Railroad Administration (FRA) grant program application processes, illustrating the varying differences in pursuing commuter vs. intercity passenger rail funding.

Background

Northstar Commuter Rail was initially conceived in the late 1990s to provide alternative transportation options along the fast-growing corridor between the Twin Cities and St. Cloud metro areas. In the initial Commuter Rail Feasibility Study Report (1999) conducted by the Northstar Corridor Development Authority (NCDA), it was assumed that the northerly terminus of the corridor would be in the City of St. Cloud, and potentially extend to the Town of Rice (15 miles north of St. Cloud). The NCDA was a joint-powers authority formed by state statute to develop commuter rail in the corridor.

The NCDA prepared a PE report in June 2001 and submitted it to the FTA. At the time, FTA was prioritizing projects that attracted new rail riders. In 2002, FTA modified the criteria for New Starts (now the CIG program) to emphasizing a "cost effectiveness" analysis that concentrated on the travel time savings of the entire system instead of simply obtaining new rail riders. The Capital Investment Grant program or CIG, is the FTA discretionary grant program which funds transit capital investments, including heavy rail, commuter rail, light rail, streetcars, and bus rapid transit. With these changes in methodology, the NCDA concluded that for the Northstar project to remain competitive in federal scoring, several changes needed to be made. The most notable change was to revise the project scope to terminate at Big Lake rather than in St. Cloud. This change caused the elimination of the proposed stations beyond Big Lake, the proposed Coon Rapids/Foley station and the Northeast Minneapolis stations.

In 2009, Northstar Commuter Rail service began operations between Minneapolis and Big Lake, serving seven stations: Target Field, Fridley, Coon Rapids, Anoka, Ramsey, Elk River and Big Lake. Northstar is a Metro Transit service operated by Burlington Northern Santa Fe Railway (BNSF) on BNSF tracks and right-of-way. At the time,

this service was considered Phase I. Phase II was the planned extension to St. Cloud that would be built once certain ridership goals and other criteria were met. This is further explained in **Appendix A**.

With the decision to terminate in Big Lake, unlike its peer systems, Northstar does not connect a core city with a commuter city that has a population of over 100,000. This puts Northstar as an outlier compared to such peer systems as the FrontRunner that connects Salt Lake City to Ogden and Provo or the Sounder that connects Seattle to Everett and Tacoma. Rather, at roughly 10,000 residents, the City of Big Lake does not generate enough trips to meet ridership goals. The original assumption was for the corridor to connect with the St. Cloud metro area with a population of 200,000 and a large trip generator at St. Cloud State University. This factor, along with others detailed in **Appendix A**, impacts Northstar ridership which has historically trailed other comparable commuter systems illustrated in **Figure 1** below.

Figure 1 Peer Commuter Rail System Ridership Summary

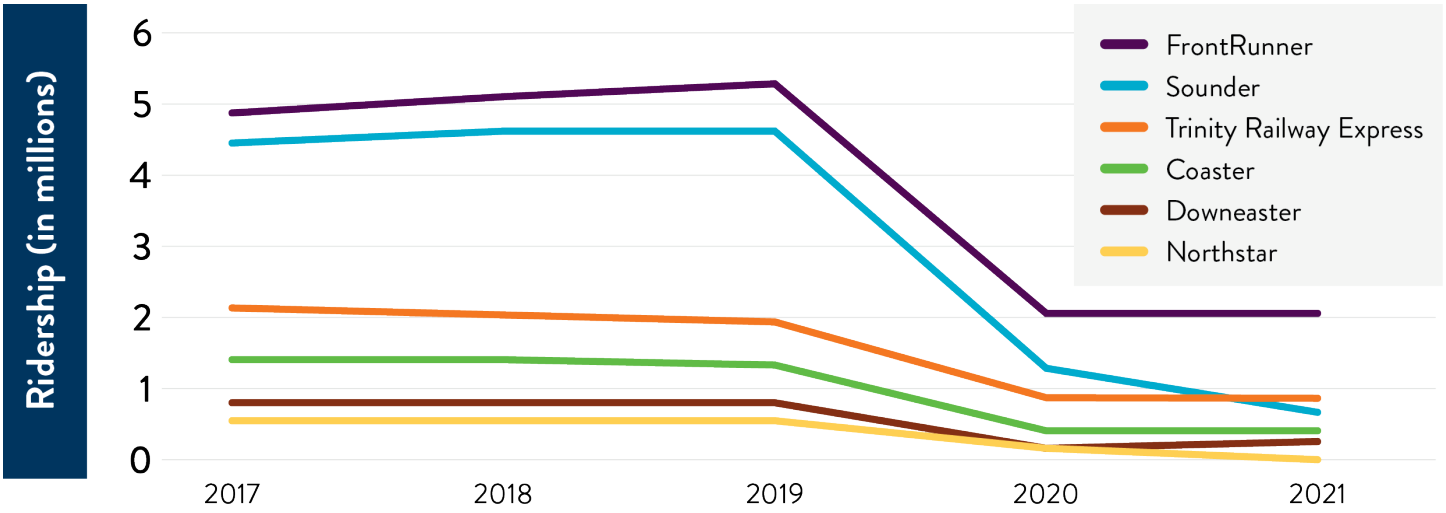


Figure 1 compares peer commuter rail systems in ridership (in millions of annual passenger trips) from 2017 to 2021. These systems are:

- **Downeaster intercity rail in New England**, which is operated by Amtrak and managed by Northern New England Passenger Rail Authority (NNEPRA). This is a 'hybrid' intercity passenger rail system that also serves commuter trip purposes.
- **Coaster commuter rail in San Diego**, which is operated by Bombardier Transportation on behalf of North County Transit District (NCTD)
- **FrontRunner commuter rail in Salt Lake City**, which is operated by Utah Transit Authority (UTA)
- **Sounder commuter rail in Seattle**, which is operated by BNSF on behalf of Sound Transit
- **Trinity Railway Express commuter rail in Dallas/Fort Worth**, which is operated by Herzog Transit Services on behalf of Trinity Metro (Fort Worth/Tarrant County) and Dallas Area Rapid Transit (DART)

Due to Northstar's ongoing underperformance in ridership, NCDA did not apply for federal funding for the extension to St. Cloud. See **Appendix A** for additional background.

Previous Northstar Studies

This assessment report builds upon findings identified in previous studies, most notably the more recent Metropolitan Council's Post-Pandemic Ridership Study (2023) and the MnDOT Extension Feasibility Assessment (2020). These studies are described below:

July 2020 – Extension Feasibility Assessment (MnDOT, Quandel)

- This assessment provides estimated construction, operating, and maintenance costs associated with a range of service alternatives for extending Northstar service to St. Cloud. The four alternatives were: minimum service, minimum bi-directional service; Northstar express service, and bi-directional service.

March 2023 – Post-Pandemic Study (Met Council, SRF)

- The purpose of this study was to inform decision-making regarding the future of the Northstar Rail Corridor. It provides decision makers with the tools to plot a course of action based upon trade-offs of various transit alternatives and the potential benefit and complications of implementation of the transit alternatives. Through the study process, questions about the future of Northstar addressed corridor trends, Northstar pre-pandemic performance, approach by other peer agencies on similar commuter rail corridors, identifying reasonable scenarios for creating a successful Northstar, scenario impacts on ridership, finances, land use, vehicle miles traveled, opportunity to access by transit and the geographical and socio-economic demographics. Six alternative scenarios evaluated were:
    - Commuter rail at current service level
    - Commuter rail at pre-covid service level
    - Extend rail service to St. Cloud – Base
    - Extend rail service to St. Cloud – High
    - Replace rail service with express bus – Base
    - Replace rail service with express bus – High

Alternatives Evaluated

To provide policy makers with a greater understanding of potential options, the study determined the costs for two alternatives. The alternatives are based on capital improvements identified in the 2020 MnDOT Feasibility Study and the ridership analysis included in the 2023 Met Council Ridership Study.

- Alternative 1 (Low Level Service): This alternative represents the costs needed to introduce a low level service consisting of two daily roundtrips between St. Cloud and Minneapolis. In the 2020 Feasibility Study this is referred to as "minimum bi-directional service."
- Alternative 2 (High Level Service): This alternative represents the costs needed to introduce a higher-level service consisting of four weekday roundtrips and two weekend roundtrips between St. Cloud and Minneapolis. In the 2020 Feasibility Study this is referred to as "bi-directional service." This was the highest level of service for which capital costs were estimated in the 2020 study.

For this study, the Feasibility Study alternatives noted above are referred to as the following:

Table 1 Alternatives Evaluated

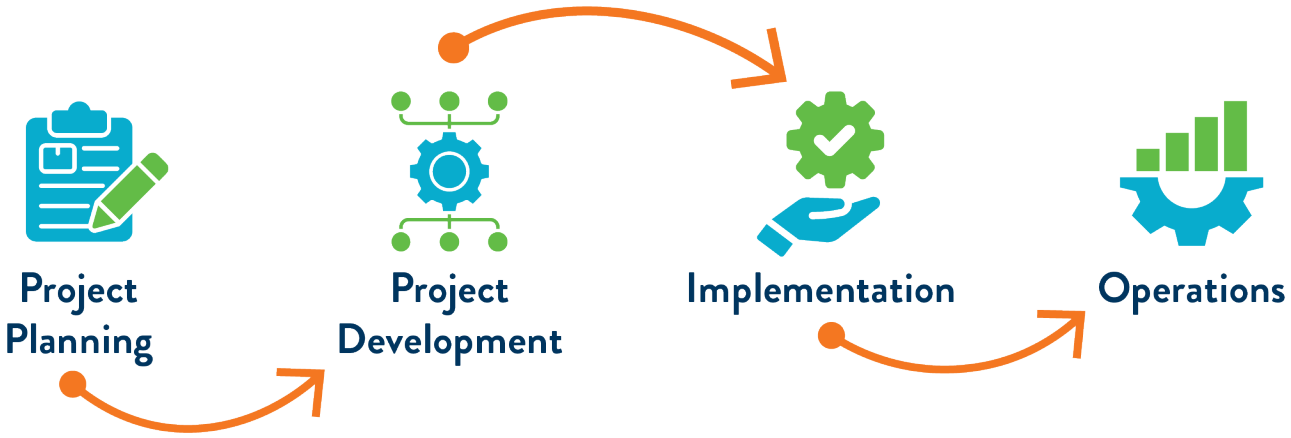
	Alternative 1 (Low Level Service)	Alternative 2 (High Level Service)
	Weekday	**Weekday**
Saint Cloud to Target Field Station	2 round trips per day	4 round trips per day
Big Lake to Target Field Station	6 round trips per day	9 round trips per day
	Saturday/Sunday/Holiday	**Saturday/Sunday/Holiday**
Saint Cloud to Target Field Station	2 round trips per day	2 round trips per day
Big Lake to Target Field Station	3 round trips per day	3 round trips per day

Met Council Northstar Rail Corridor Post-Pandemic Study (2023) provided 2040 annual ridership forecast ranges for the six alternative scenarios. This study's Alternative 1 is comparable to scenario "Extend rail service to St. Cloud – Base" which ranged from 490,000 to 1,400,000 and Alternative 2 is comparable to scenario "Extend rail service to St. Cloud – High" which ranged from 560,000 to 1,500,000. As noted in the following sections, ridership forecasting should be revisited to conduct more detailed analysis with more current FTA guidance on post-pandemic modeling.

Steps to Extend Service

A project to extend Northstar service to St. Cloud requires multiple steps that can be divided into four phases: Project Planning, PD, Implementation, and Operations (Figure 2). Additionally, prior to these project phases Systems Planning will occur, where statewide and regional plans are created or updated. Systems Planning will identify potential projects to achieve the plan's vision and possible points of coordination including common infrastructure, program facility and vehicle needs, and opportunities for joint coordination with host railroads. Project Planning develops the groundwork for the project, including identifying project sponsor, defining purpose and need, requesting National Environmental Policy Act (NEPA) class of action, and applying for entry into grant programs. PD completes the NEPA process and conducts preliminary engineering in order to detail mitigations for environmental, utility, and right-of-way impacts. Implementation includes completing project design, constructing the projects, and completing pre-revenue activities governed by the lead agency and project partners. Finally, the Operations phase covers revenue service and on-going maintenance of vehicles and infrastructure. Available funding opportunities for planning, design, and construction, and specific PD requirements that must be met to be eligible for FTA and/or FRA funding, are detailed in Appendix C.

Figure 2 Project Lifecyle Phases



Systems Planning

As a precursor to the other four project lifecycle phases, Systems Planning for passenger rail is the high-level planning process that sets a vision, and objectives to achieve the concept for a state or region. These state and regional plans may consider creating new transportation services and/or enhancing and maintaining existing transportation systems. This planning process promotes a safe, efficient and comprehensive rail system within the multi-modal national transportation system. At its core, Systems Planning examines broad needs, challenges, and opportunities that can be addressed with a transportation-related solution, including capital projects.

A government agency (e.g., a state department of transportation, authority, commission, or interstate-compact), railroad, or private entity may identify the need for a project through its Systems Planning processes. Systems Planning involves analyzing empirical data to identify rail transportation needs and developing strategies and projects to meet these needs. Project sponsors may, for example, accomplish Systems Planning

through a railroad capital planning process, or through preparation of a regional rail study or state rail plan. Some projects may have multiple purposes and be identified through other highway or transit planning processes. The Systems Planning process will identify specific projects to address documented needs, challenges and opportunities.

Project Planning

Project Planning is the first of the four primary project lifecycle phases and typically takes approximately two years to complete. The primary objectives of this phase are to clearly identify the purpose and need for the project, assess alternatives, and determine a high-level estimate of costs for the lifecycle of the project. The rest of this section describes the main steps of the planning under both FTA and FRA guidelines. Additional core activities performed during the Project Planning phase, are described in Appendix A.

Identify the Project Sponsor: Step 1

The first step of any project is to identify the project sponsor. The sponsor will serve as the lead for delivering the project and is responsible for leading the project through the process and applying to and coordinating with the lead agency. The project sponsor is responsible for managing all phases of a project. This includes overseeing development of deliverables, financial and grant management, and establishing, navigating and maintaining relationships among key stakeholder groups. The decision-making associated with determining the project sponsorship can be complicated and may impact the timeline for advancing Project Planning. It is important that the key project stakeholders are part of the decision-making process for determining the Project Sponsor.

Under discretion of the funding agency, the sponsorship of a project may be transferred during the between phases. For Phase I of Northstar from Minneapolis to Big Lake, the Northstar Corridor Development Authority (NCDA) was the initial project sponsor during Project Planning. MnDOT was the project sponsor in cooperation with the NCDA as the project advanced to PD and Implementation. As the project was ready to transition into Operations, the Met Council became the project sponsor.

Service Plan Reevaluation (Market Analysis): Step 2

After identifying the project sponsor and to help in preparation for the development of the purpose and need it is prudent to reevaluate the original/current service plan to ensure there is optimized service in the corridor. The reevaluation will focus on both existing and potential users, ideally considering various ways of serving both intercity and regional rail markets in the same corridor. Traditional commuter rail service is mostly limited to peak commuter periods with its main role being connecting people with jobs, but many systems are changing operations to include service throughout the day to reflect changing needs and travel patterns. Commuter rail is defined as short-haul passenger rail transportation that connects suburban areas with the core city of a metropolitan area. Commuter rail services usually have reduced fares, connecting trips (transfers to additional transit services), shorter station spacing, and service with frequent morning and evening peak operations when compared to Intercity Rail. Intercity passenger rail on the other hand is passenger rail that provides transportation between cities or metropolitan areas at speeds and distance greater than that of commuter or regional rail, often with stops at smaller rural communities in between. Intercity rail may have one or multiple trains/day and not necessarily at peak periods or be bi-directional throughout the day. There are many places

across the nation where commuter and intercity passenger rail operate on the same corridor but serve different needs.

Purpose and Need: Step 3

Once the project sponsor is identified and service plan reevaluation is complete, the next step is to develop a purpose and need statement for the project. The project sponsor will lead this effort in close coordination with the responsible federal review agency. While the purpose and need statement is developed early in the Project Planning phase, it is refined during the environmental review process in response to agency and public comments and is incorporated into the environmental document (only the Environmental Impact Statement class of action formally requires this). A project's purpose and need will exhibit continuity from Project Planning through PD and onto Implementation following funding agency approval. As importantly, the project purpose and need provides criteria for developing and analyzing alternatives in order to select the Locally Preferred Alternative (LPA).

Initiate Federal Application Process: Step 4

Generally, the Project Planning phase is self-funded by the project sponsor, whereas in subsequent phases, federal agencies will increase the share of funding they provide for ongoing work. Early on the project sponsor will initiate contact with the funding agency to help provide updated guidance on available grant programs. Additionally, at initiation the project sponsor must request determination of the National Environmental Policy Act (NEPA) class of action. Further detail on class of Action is provided in the section on environmental review below.

Formalize Partnership with Host Railroad: Step 5

A significant risk to scope, schedule, and budget for passenger rail projects is coordinating, negotiating and reaching agreements with host railroads. Because this is a significant risk to the completion of passenger rail projects, project sponsor's need to have agreements in place with host railroads for usage of their infrastructure prior to applying for a Full-Funding Grant Agreement (FFGA). FFGAs are authorized under federal transit law and are the designated means for providing new starts funds to projects with a federal share of $25 million or more. An FFGA establishes the terms and conditions for federal financial participation in a new starts project. . The host railroad is the owner of the tracks and right-of-way underneath them and is directly accountable to the passenger rail operator by agreement for passenger operations over a railroad line segment. Typically, a host railroad will request an agreement to be signed between the railroad and the project sponsor prior to their engagement with a project. Attachment 1 of Appendix A contains BNSF's Passenger Rail Principles which define the host railroad's priorities. It is advisable that the project sponsor understand the host railroad's priorities prior to any engagement. Coordination with the host railroad will continue throughout the life of a project, and it is crucial to initiate communications early because many steps are dependent on the host railroad's willingness, interest and cooperation in moving the project forward.

Ridership Forecasting: Step 6

The original Northstar Final Environmental Impact Statement (FEIS) projected about 4,100 average weekday boardings for its opening year of 2009, higher than the 1,950 average weekday boardings projected during the first 10 months of service. Weekday ridership estimates largely peaked in 2019 with an average of 2,660 daily rides, while weekend event days added over 1,400 riders on average.

As transit forecasting practice around the country had not yet fully recalibrated to a post-pandemic reality, the Met Council's 2023 study used a hybrid model of 2019 and 2022 baselines. The study evaluated service options for three possible transit service types: commuter rail, extend rail, and express bus. Scenarios for each transit mode represent two levels of service: "Minimum" and "High". These rail alternatives used MnDOT's 2020 Northstar Extension Feasibility Study bi-directional (high and low) service assumptions. The results showed the rail extension alternative offered the highest potential ridership, as it offered the largest potential to reach new ridership markets. Given the variability between the 2019 and 2022 baseline counts, it would be prudent to conduct a more detailed analysis with even more current FTA guidance on post-pandemic modeling and revised travel time assumptions refined during operations modeling.

Operations Modeling: Step 7

Prior to entering into Preliminary Engineering, the project sponsor must coordinate with the host railroad to develop a rail operations model, typically using RTC software. Additionally, operations modeling will inform the development of alternatives evaluated in the Alternatives Analysis and environmental review outlined below. The model serves as a basis for negotiations with a host railroad to identify the required capital infrastructure improvements, validate operational impacts, and determine equipment needs to support additional passenger service. Developing an operations model and receiving agreement from a host railroad may take twelve months or more to complete, so it is prudent to engage the host railroad at the onset of the process. Concurrence from the host railroad requires that the agreement is consistent with its on-going and future operations and understands the impacts and mitigation requirements for all parties.

Alternatives Analysis: Step 8

After defining the purpose and need, receiving class of action determination, and integrating the host railroad, the next step is to conduct an Alternatives Analysis. The Alternatives Analysis is critical to the development of any project since it defines various alternatives or project options (to include "no-build") as a way to both achieve the project's purpose and compare environmental impacts and transportation benefits for a project. In the Project Planning phase, the 2020 Northstar Commuter Rail Extension Feasibility Assessment needs to be revisited to determine whether the alternatives and objectives determined previously still align with current objectives and funding opportunities. An Alternatives Analysis plays a crucial role in detailing the project's viability and its potential impact on the community it seeks to serve. The evaluation will objectively analyze and compare identified alternatives based on positive and/or negative impacts and alignment with the project's purpose and need in a comprehensively documented manner. It is during this time that technical, economic, environmental, and social factors, both existing and projected, are used to establish the strengths and weaknesses of each alternative. Stakeholder engagement and environmental review, outlined further below, are vital for forming the Alternative Analysis.

Locally Preferred Alternative (LPA): Step 9

The culmination of the Alternatives Analysis results is in the selection of the LPA, with significant consideration paid to cost-effectiveness, environmental impact, community preferences, and other project-specific elements. These aspects are closely evaluated to find the optimal balance between project benefits and overall costs that best meets the needs of the corridor. Selection of the LPA serves as an important milestone within the Project Planning process, and it will set the direction for the project's design and overall development through subsequent phases, while meeting the needs of a variety of key stakeholders in the project's success. The

documentation of the Alternatives Analysis is submitted to the funding agency for review and comment as the project sponsor's LPA. The funding agency may carry multiple alternatives forward into PD.

Apply for Entry into Project Development: Step 10

Once an LPA is selected, the last step in the Project Planning phase is for the project sponsor to apply to the federal funding agency to enter into PD. Both FTA and FRA have formal processes for requesting entry into the PD phase and acceptance or approval is required before work is eligible for reimbursement via federal funds. The project sponsor request to funding agencies must provide project merits for additional development. The letter or grant application request may include the following, but not limited to information based on activities described in prior sections:

- Identification of project sponsor, partners, and their roles and responsibilities.
- Identification of a project manager and key staff for Project Development.
- Description of the corridor, transportation problem to be solved, and description of current services.
- Inclusion of links to prior studies completed in the corridor.
- Inclusion of cost estimate, if available.
- Identification of federal grant program being applied for.
- Documentation of anticipated cost to complete Project Development.
- Documentation of local funding commitment to complete Project Development.
- Description of timeline on completing NEPA process including selection of LPA.

Appendix C provides further detail on federal grant programs and their associated processes.

Project Development (PD)

After the Project Planning phase is complete and the project is granted entry into PD, the project sponsor initiates design work, completes the environmental review (once initial design is complete), and conducts other studies to ensure the project is ready for Implementation. In the PD phase, the project sponsor completes preliminary engineering, which is achieved when design is at approximately 30 percent completion and advances other design areas to update detailed estimates of risks, costs, benefits and impacts. This work must be done to support the completion of the environmental review process that is required by NEPA. The PD phase needs close coordination with federal review staff. Regardless of whether FRA or FTA is the lead federal agency, both require key review steps throughout the PD phase. The FTA and FRA processes are explained in greater detail in Appendix C. For FTA New Starts projects, the FTA requires that within two years of the project entering PD, the following activities must be completed. FRA currently does not have any timeline restrictions for completing PD.

- The project sponsor must select an LPA
- The environmental review process required under NEPA must be completed as signified by a final environmental decision (e.g., Categorical Exclusion [CE], combined Environmental Assessment [EA] with Finding of No Significant Impact [FONSI], or combined Environmental Impact Statement [EIS] with Record of Decision [ROD]) covering all impacts of the project proposed for federal funding. Depending on the class of action an EA must be completed within one year or an EIS must be completed within two years.
- The project sponsor must have the preferred alternative adopted into the fiscally constrained metropolitan transportation plan or state long-range transportation plan. Depending on timing of alternatives analysis and environmental review this may occur prior PD.

Preliminary Engineering (PE): Step 1

The first major step during PD phase is PE. This is where the project plans are completed to a 30 percent level of design. For Northstar, PE will identify corridor impacts from capital improvement projects identified from operations modeling for the alternatives carried forward in the environmental review process. PE will also provide a better understanding of preliminary capital cost estimates. Completion of PE is needed to complete a successful environmental review. PE can usually be completed within one to two years consistent with the overall PD timeline. To support PE, the following activities need to be completed or redefined:

- Documentation of alternatives and selection of LPA
- Operations modeling
- Station and access analysis
- Capital cost estimates

Stakeholder Engagement: Step 2

Stakeholder engagement is vital to all phases of a project. NEPA also requires public and agency involvement. Stakeholder engagement is the ongoing process of involving the public in identifying and solving challenges and problems; using public input to make sustainable decisions; educating or informing the public about a topic or issue; and seeking to build meaningful connections and trust with the public through communication and interaction.

A public and agency engagement plan is the starting point. The plan outlines the plans and strategies for engaging the public and agencies with an interest in the project. It also outlines how the agency will reach disadvantaged communities and those that have limited English proficiency. The plan is updated and revised throughout the process. Staff is responsible to remain flexible by considering public and stakeholder agreement feedback and making adjustments as necessary to the public engagement plan. Activities may include:

- Community participation in planning, PD and decision-making processes
- Holding community meetings, focus groups, and/or advisory committees to identify and solve problems or help the project team make a decision
- Reviewing and analyzing public input to inform decision-making
- Negotiating with host railroads
- Coordinating with federal, state, and local governmental agencies with an interest in the project

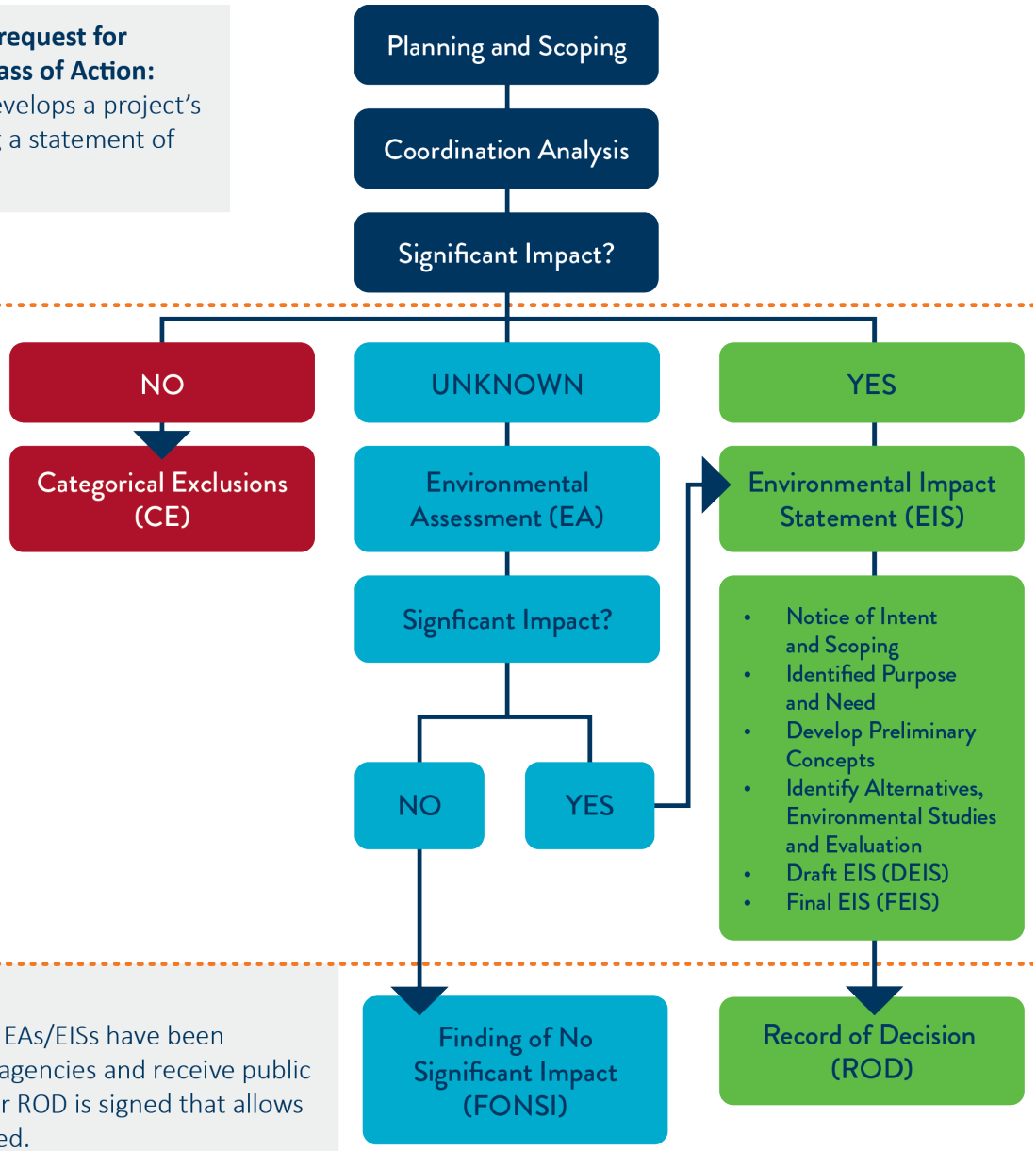
Environmental Review: Step 3

NEPA requires federal agencies to evaluate the environmental effects of federally funded undertakings. As part of the process, agencies must have clear documentation on the proposed project's benefits and effects on the environment as well as measures to avoid, minimize, and mitigate those effects. The environmental process is initiated in Project Planning through the determination of the class of action, while the NEPA process is initiated during the PD after PE based on the class of action. The Council on Environmental Quality (CEQ) rules require that an Environmental Assessment (EA) be completed within one year after the class of action determination. Environmental Impact Statements (EISs) must be completed within two years from the publication of the notice of intent (NOI). There are no time limits for a Categorical Exclusion (CE).

All human and natural environmental resources that could potentially be significantly affected by the proposed project must be evaluated in the NEPA documentation for the project. The documentation about any impacts is disclosed to the public for comments and input on the project via the stakeholder engagement process outlined above. When assessing the benefits and impacts on the human and natural environment, considerations include, but are not limited to, potential conflicts with land use plans and policies, visual effects, noise and vibration impacts, economic benefits, air quality, water quality, environmental justice, and traffic impacts and improvements. Additionally, the benefits and impacts of the proposed project on natural, cultural, and recreational resources, and whether displacements of residences or businesses would be required are assessed. Figure 3 summarizes the entire environmental review process.

Figure 3 Environmental Review Process

Preparation before request for determination of Class of Action:
A project sponsor develops a project's initial plan, including a statement of purpose and need



Determination of Class of Action:
There are three types (or classes) of environmental reviews, ranging from the simplest (CE) to the most complex (EIS).

Decision:
After Draft and Final EAs/EISs have been reviewed by federal agencies and receive public comment, a FONSI or ROD is signed that allows the project to proceed.

Defining Equipment Needs: Step 4

Acquiring locomotives and passenger cars is considered a "long lead time item" (up to and above five years), which must be carefully addressed at the outset of the project. Careful consideration is given to compatibility with existing operating and maintenance (O&M) facilities and equipment. The agency that will own the equipment is normally the agency that undertakes the acquisition process. The existing Northstar fleet has been in service since 2009 and is nearing the period when it is due for a mid-life rebuild. The acquisition of new equipment for the service extension can be scheduled as the first step in the fleet rebuild process. Any future equipment procurements will ideally be coordinated with the other proposed routes (i.e., Northern Lights Express) as there could be economies of scale and new funding sources.

Implementation

Once the lead federal agency approves the environmental review the project is ready to move into the Implementation phase. The Implementation phase includes Final Engineering (FE) and construction.

Final Engineering (FE): Step 1

FE is the first step in the Implementation phase. FE builds on Preliminary Engineering to complete design work and prepare all the required construction documents. This includes plans, specifications, engineering estimates and conducting an independent cost estimate analysis. The timeline for completing FE will depend on the scope of the required capital improvements.

The track-related engineering details and specifications for the project will be based on the host railroad's standards and specifications for improvements within its right-of-way. Any other improvements will be based on MnDOT, the Met Council, or other public agency standards and specifications. In coordination with the host railroad, either or both may procure and lead FE for infrastructure on and off railroad right-of-way, which typically includes track improvements, drainage, and station platforms.

To optimize the construction schedule, the project sponsor and/or the host railroad may choose to procure early work for the project during FE. Examples of early work include utility relocations and ordering track, signal, or communication materials.

During FE, host railroad construction agreements are also finalized. These agreements focus on the division of work between the project sponsor's contractor(s) and railroad forces. Typically, this is dependent on the supply of materials, trackwork, wayside signal and communications, and at-grade crossing surface and warning devices.

During FE and after defining equipment needs during PD, the project sponsor begins the procurement and acquisition of the equipment (rolling stock) necessary to operate the proposed service. The process follows standard project sponsor procurement practices and procedures. It typically involves requesting proposals from equipment vendors to design, assemble and deliver specified equipment on a schedule that meets the timeline for beginning revenue service.

Lastly, for environmental compliance, if there are changes between the PE and FE either a re-evaluation is done, or a supplemental EA or EIS is completed. Later, during construction and Operations, the mitigation measures are applied.

Letting & Construction: Step 2

A standard design-bid-build procurement process is assumed for securing a contractor to construct the capital infrastructure improvements defined in the construction documents. Key elements of a design-bid-build procurement involves the following: assembling a Request-for-Proposal (RFP) package, publishing RFP package, holding a pre-proposal, receiving sealed bid proposals, reviewing sealed bid, and negotiating and signing contract with lowest bidder.

During construction, the contractor will need to coordinate project elements, including the testing and inspection of the completed improvements. Within railroad right-of-way, these tasks are performed by railroad forces. However, improvements outside of railroad right-of-way (such as station facilities) may be led by the project sponsor in coordination with the host railroad.

Operator Selection: Step 3

Following the start of construction an operator will be determined with agreement from Metro Transit, MnDOT and BNSF. Train crews for the current Northstar service are contractually provided by BNSF however, another operator may be contracted once the potential extension begins service. In addition to an open procurement, the project sponsor will evaluate whether the renegotiation or amending the active operations contract is possible and beneficial.

FTA funded projects are eligible for Urban Area Formula Grants (5307) to provide financial assistance to operations. Additionally, the FRA's Restoration and Enhancement Grant Program have provided operating assistance grants for initiating, restoring, or enhancing intercity passenger rail transportation in the past and may be extended in the future.

Readiness for Service: Step 4

Both FTA and FRA have defined processes for determining Readiness for Service of projects. The goal of this step is completing pre-revenue service. This involves system integration testing of project components, equipment, systems and completing safety and security certifications by ensuring constructed elements meet the requirements identified during engineering; then completing pre-revenue operations which offers training and practice to operating staff prior to operations. Additionally, the operator needs to demonstrate that it has the management capacity and capability to operate the new service and has all the necessary standard operating procedures and safety plans in place.

The key to this step is developing and executing a hiring plan to ensure opening day service meets the expectation of the funding partner. This includes hiring maintenance and security. Coordination on operating decisions, such as modifying connections to link with an existing transit system.

Additionally, the host railroad will conduct the additional training requirements for train crews within the corridor. Based on industry experience, this may take up to six months.

The scope of this assessment does not include the operations phase.

Project Costs and Timelines

Costs and Timelines: Project Planning, Project Development and Implementation

The capital cost presented in this study is an update to the prior cost estimates to reflect current market conditions and escalate these project costs to the associated Year of Expenditure (YOE). As the next phases of this study progress towards an LPA, the estimated costs and timelines will vary based on the service level selected. For both alternatives shown in **Table 1** on page 5, the feasibility study determined the infrastructure needed for both initial operations beginning in 2025 and for the future horizon year in 2040 based on operations modeling of the corridor. The horizon year in the feasibility study considered the anticipated growth of freight commodities and the resulting increases to freight operations in the corridor. These were separated into improvements required for initiating each alternative's proposed service operations and the improvements identified to mitigate for the growth in freight operations in future years after proposed passenger operations are initiated. This results in a phased implementation approach for constructing identified improvements within the corridor. Improvements identified as phase two may be deferred through host railroad negotiations until growth in freight operations is reached as modeled in the feasibility study analysis. The feasibility study assumed those improvements were required to be implemented by year 2040. This assessment study keeps this assumption while allowing the initial start of service to be based on the necessary timelines of Project Planning, PD and phase one implementation. The capital improvements identified in the feasibility study identified capital improvements is summarized in **Table 2** below.

Additionally, capital improvements shown in **Table 2** need to meet two goals. First, is to allow for reliable passenger train operations. The second is to ensure that passenger rail operations will not impact existing and future freight operations. This second goal is an important requirement of BNSF as it considers new commuter and passenger rail services on its system[1]. Therefore, an in-depth discussion with the host railroad is important to determine mutually agreed upon infrastructure improvements which would directly affect the overall project costs.

[1] BNSF has published a document titled Passenger Principles dated February 2023 that provides guidelines for proposed passenger rail service on its network. It is **Attachment 1** in **Appendix A**.

Table 2 Infrastructure improvements

Identified Improvements	Alternative 1: Low Level Service Phase 1- Construction	Alternative 1: Low Level Service Phase 2- Construction	Alternative 2: High Level Service Phase 1- Construction	Alternative 2: High Level Service Phase 2- Construction
St. Cloud Improvements	Needs	Needs	Needs	Needs
Upgrade Universal Crossovers at Control Point (CP), Milepost (MP)	Needs	Needs	Needs	Needs
New Becker Centralized Traffic Control (CTC) CP	Does not need	Needs	Needs	Needs
Big Lake West Siding	Does not need	Does not need	Does not need	Needs
Big Lake Station Track Connection	Needs	Needs	Needs	Needs
Big Lake Station Expansion	Needs	Needs	Needs	Needs
Big Lake Maintenance Facility Expansion	Needs	Needs	Needs	Needs
Third Main Track CP Coon Creek to CP Interstate	Does not need	Needs	Needs	Needs
Third Main Track CP Interstate to CP Van Buren[2]	Does not need	Does not need	Does not need	Needs
Two Main Tracks CP Van Buren to CP Stadium	Does not need	Needs	Needs	Needs
Equipment Procurement	Needs	Needs	Needs	Needs

[2] Improvement is also a required for the Northern Light Express (NLX) passenger rail service within NLX Tier 2 Environmental Assessment.

Project Timeline

The following implementation timeline for each alternative shown in **Table 1** have been developed based on the necessary timelines of Project Planning, PD and phased implementation. Phase 1 construction includes only the improvements highlighted from **Table 2**. Phase 2 construction includes remaining projects not built in Phase 1 that are shown in **Table 2**. Phase 2 is assumed to be completed no later than 2040.

Table 3 Potential timeline: Alternative 1

Phase	Start Year	End Year	Duration
Project Planning	2025	2027	2.5 years
Project Development: PE/NEPA	2028	2030	2 years
Implementation: Final Engineering	2030	2031	1.5 years
Implementation: Equipment (Rolling Stock) Procurement and Acquisition	2030	2035	5 years
Implementation Phase 1: Procurement and Construction	2033	2036	3 years
Implementation Phase 2: Procurement and Construction	2035	2040	5 years

Table 4 Potential timeline: Alternative 2

Phase	Start Year	End Year	Duration
Project Planning	2025	2027	2.5 years
Project Development: PE/NEPA	2028	2030	2 years
Implementation: Final Engineering	2030	2031	1.5 years
Implementation: Equipment (Rolling Stock) Procurement and Acquisition	2030	2035	5 years
Implementation Phase 1: Procurement and Construction	2033	2038	5 years
Implementation Phase 2: Procurement and Construction	2037	2040	3 years

Capital Costs

The cost estimates are organized by Standard Cost Categories (SCC). For additional details on capital costs, refer to Appendix B.

To meet the legislative timeline for this assessment, the cost estimate is based on unit costs in place of developing a full, detailed estimate. It is also based on YOE dollars for design and construction. Contingency is included in the project budget to provide a realistic but conservative project cost. The contingency can be used to cover the costs of accommodating newly acquired or revised information into the design, schedule modifications and other unknown risks. When the project moves forward, overall contingencies are adjusted as the project progresses from planning to Project Development.

Table 5 shows the percentage of contingency applied to each SCC. Categories 10 through 80 have a uniform 30% Allocated Contingency applied to each category's subtotal. Additionally, an Unallocated Contingency of 15% (Category 90) is applied to the subtotal of all Categories 10 through 80 before being summed into the Total Capital Costs. Lastly, contingency is calculated based on the escalated YOE value for the cost categories.

Table 5 Contingencies by Standard Cost Categories

Cost Category	Percentage
10 – Guideway and Track Elements	30%
20 – Stations, Stops, Terminals, Intermodal	30%
30 – Support Facilities: Yards, Shops, Administrative Buildings	30%
40 – Sitework and Special Conditions	30%
50 – Systems	30%
60 – ROW, Land, Existing Improvements	30%
70 – Vehicles	30%
80 – Professional Services	30%
90 – Unallocated Contingency	15%

Project Cost Estimate

Table 6 shows the estimated project costs for planning, Project Development, and Implementation for each alternative. Project costs have then been escalated at a rate of 3.5% compounded yearly from 2023 to the assumed YOE based on the implementation timeline for each alternative shown in Table 3 and Table 4 above. Alternative 2 is estimated to cost approximately $136.2 million more than Alternative 1 in total. Alternative 2 also requires $260.2 million more in initial funding to start extension service operations in the corridor. While the project progresses, adjustments are made to reflect developing circumstances that occur throughout the project lifecycle.

Table 6 Project Cost Estimate Summary

	Alternative 1 Low Service	Alternative 2 High Service
Planning	$6.0 million	$6.2 million
Project Development	$30.5 million	$32.4 million
Implementation: Equipment (Rolling Stock)	$93.9 million	$100.6 million
Implementation: Phase 1 Construction	$144.9 million	$396.2 million
Subtotal (YOE $)	**$275.3 million**	**$535.5 million**
Implementation: Phase 2 Construction	$279.2 million	$155.2 million
Total (YOE $)	**$554.5 million**	**$690.7 million**

Operating and Maintenance Costs

Operating and maintenance (O&M) cost is defined as the cost to operate and maintain equipment for the proposed service. These costs include items such as labor, training, third party contracts, fuel, spare parts, routine maintenance, stations, marketing, insurance and safety measures.

The O&M costs for the existing Northstar service were escalated by a percentage annually to account for past market trends, future inflation projections and market increases.

The feasibility study provided total operating miles for both existing service and proposed alternatives. The difference between the existing and proposed Alternative 1 is estimated to result in an additional 76,144 operating miles annually. Alternative 2 is estimated to result in an additional 207,966 operating miles annually. Table 7 provides the O&M cost for existing service, Alternative 1 plus existing service, and Alternative 2 plus existing service over five-year operating timeframes.

Table 7 Projected O&M Cost Comparison

Year	Existing Service (millions)	Alternative 1 + Existing Service (millions)	Alternative 2 + Existing Service (millions)
2035	$31.3	–	–
2036	$32.4	$49.0	–
2037	$33.6	$50.8	–
2038	$34.7	$52.5	$83.3
2039	$36.06	$54.4	$86.3
2040	$37.2	$56.2	$89.2
2041	$38.5	$58.2	$92.3
2042	$39.9	$60.3	$95.6

Federal Funding

This section identifies and summarizes applicable federal discretionary grant funding programs to potentially pursue for extending Northstar Commuter Rail service to St. Cloud. More information on each program can be found in Appendix C. The most likely source of federal funding is FTA's Capital Investments Grant (CIG) program. If the project was combined with freight and/or intercity passenger rail, the FRA's grant programs are possible sources for funding. The rest of this section summarizes the FTA and FRA application processes, illustrating the differences in pursuing commuter versus intercity passenger rail funding.

While these are the most common grant programs for funding passenger rail projects, additional grant opportunities are described in Appendix C.

Federal Transit Agency Funding

A project to extend Northstar to St. Cloud may apply for funding under FTA's CIG programs. This program has two paths, depending on the project cost: Small Starts and New Starts grants. Figure 4 below illustrates the differences between the New Starts and Small Starts processes, while Figure 5 illustrates the varying funding parameters between the two programs.

Both New Starts and Small Starts funding can be used for the design and construction of new fixed-guideways or extensions to fixed guideways. However, Small Starts can also be used to design and construct a corridor-based bus rapid transit system in the corridor and mirrors the features of rail-based service.

For both the New Starts and Small Starts programs, the FTA requires a formal request of entry into Project Development. This consists of preparing a short letter, meeting the requirements outlined in the CIG policy guidance that identifies the project's merits, and a rough estimate of total project costs. Additionally, the FTA's approval to enter PD is contingent on the availability of local funding to perform PD work. FTA will not fund New Starts until all funding is certain at the time of submission of the Full-Funding Grant Agreement (FFGA).

New Starts

The New Starts program is for projects costing $400 million or more. Federal law requires that New Starts project sponsors must complete the PD phase within two years. The activities that are to be completed during this phase include the selection of an LPA, adoption of the LPA into the fiscally constrained long range transportation plan, a complete environmental review with receipt of approval or exclusion from the FTA, and sufficient information for the FTA to evaluate and rate the project. This may be challenging for exceptionally large projects, projects that may have significant environmental impacts, projects with complicated financial arrangements, or projects with complex engineering and design elements. Therefore, the FTA encourages, although it does not require, that project sponsors perform whatever work they feel is necessary before requesting entry into PD to facilitate their ability to complete PD within the two years.

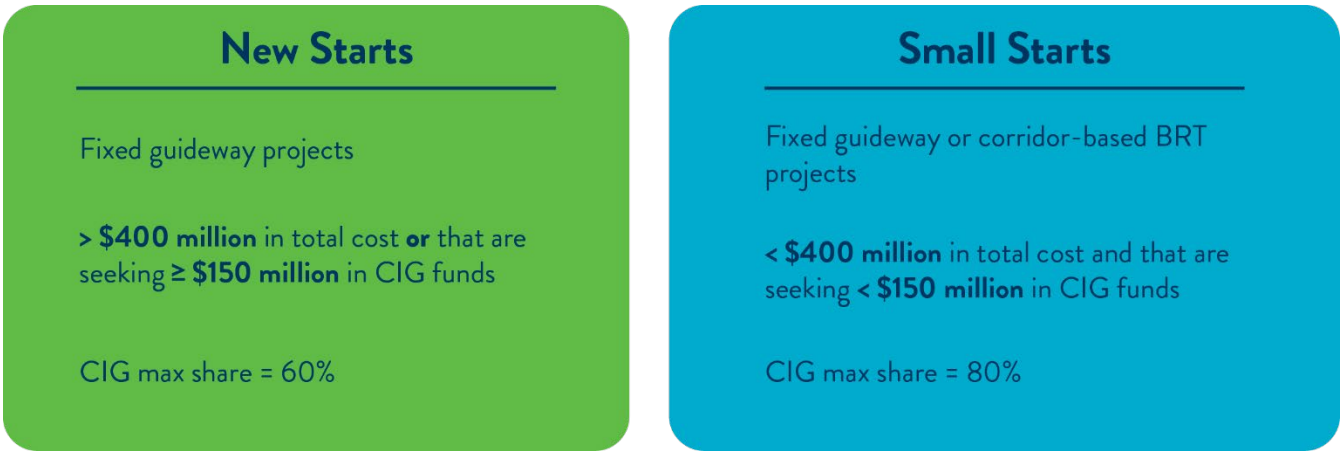
Small Starts

The Small Starts program is for projects costing less than $400 million. Reflective of the smaller scope and scale of the projects it funds, Small Starts is designed to reduce the overhead and timelines necessary to move a project through the CIG process. It does this by eliminating the requirement for project sponsors to formally request entry into Engineering (see **Figure 4** below) by combining PD and engineering into a single phase.

Figure 4 FTA New Starts and Small Starts funding approval process

Figure 5 shows the CIG funding parameters for Small Starts and New Starts grants. It should be noted that it is rare for projects to receive the statutory maximum CIG share, and generally most project sponsors plan for a 50 percent CIG contribution.

Figure 5 CIG Program funding parameters



Federal Railroad Administration Funding

Three Federal Railroad Administration intercity passenger rail funding opportunities may be available to the Northstar extension project if it was coordinated with a project to expand, extend and/or develop a new intercity passenger rail service[3] on the same corridor where improvements would benefit both services. The FRA makes the determination between commuter and intercity rail and focuses solely on intercity rail projects when developing and implementing new and extended services. The FRA programs are described below. Typical funding for each FRA program is shown in Table 8 .

Corridor Identification and Development Program

The Corridor Identification and Development (CID) Program is intended to guide and fund the planning and development of intercity passenger rail corridors throughout the country. The purpose of this three-step program is to create a pipeline of intercity passenger rail projects that are ready for implementation under other FRA grant programs. A corridor may initially be awarded $500,000 from the FRA for the project sponsor to complete project scoping (Step 1). FRA will then provide up to a 90 percent match for service development planning (Step 2) with a minimum 10 percent non-federal match. FRA will provide up to an 80 percent federal match for Project Development (Step 3 [PE and NEPA]) with a minimum 20 percent non-federal match required. Additional details on FRA funding and covered activities are provided in Table 8.

Federal-State Partnership for Intercity Passenger Rail Program

The Federal-State Partnership for Intercity Passenger Rail (FSP) Program funds capital projects. Eligible projects include:

- Improve intercity passenger rail service performance, including reduced trip times, increased train frequencies, higher operating speeds, and improved reliability;
- Expand or establish new intercity passenger rail service;

[3] Intercity rail is rail passenger transportation that does not meet the definition of commuter rail. Intercity rail may have multiple trains/day and not necessarily a peak period or be bi-directional throughout the day.

While primarily intended to fund implementation, FSP may also fund activities associated with planning and NEPA.

The FSP Program is expected to be one of the primary sources of capital funding for intercity passenger rail projects that complete the CID Program. The FSP Program will fund up to 80 percent of total costs with a minimum non-federal share of 20 percent. Additional details on FSP Program funding and covered activities are provided in Table 8.

Consolidated Rail Infrastructure and Safety Improvement Program

The Consolidated Rail Infrastructure and Safety Improvements (CRISI) program is for projects that improve intercity passenger and freight rail safety, efficiency, and reliability. The CRISI program does not set an explicit minimum or maximum funding amount, although sets in place a maximum of 80 percent project federal funding with a 20 percent non-federal match. Additional details on CRISI funding and activities covered are provided in Table 8.

Table 8 FRA Intercity Passenger Rail Funding Grants

Program Name	Funding Amount	Activities Covered
Corridor Identification and Development (CID) Program	Step 1: $500,000. No Minimum non-federal match Step 2: Funding TBD. Minimum 10% non-federal match Step 3: Funding TBD. Minimum 20% non-federal match	• Step 1: Scope, Schedule, and Cost estimate for service development plan (SDP) • Step 2: SDP • Step 3: Project Development
Federal-State Partnership for Intercity Passenger Rail Grant Program (FSP)	80% of total costs with minimum of 20% non-federal match	• Track 1: Project Planning • Track 2: Project Development/Preliminary Engineering • Track 3: Final Design/Construction
Consolidated Rail Infrastructure and Safety Improvements (CRISI) Program	80% of total costs with minimum of 20% non-federal match	• Improve the safety, efficiency, and reliability of intercity passenger and freight rail

Acronyms and Abbreviations

CE	Categorical Exclusion
CEQ	Council on Environmental Quality
CID	Corridor Identification and Development Program
CIG	Capital Investment Grant
CP	Control Point
CTC	Centralized Traffic Control
CRISI	Consolidated Rail Infrastructure and Safety Improvement Program
DART	Dallas Area Rapid Transit
EA	Environmental Assessment
EIS	Environmental Impact Statement
EQB	Environmental Quality Board
FE	Final Engineering
FEIS	Final Environmental Impact Statement
FFGA	Full-Funding Grant Agreement
FRA	Federal Railroad Administration
FSP	Federal-State Partnership for Intercity Passenger Rail Program
FTA	Federal Transit Administration
LPA	Local Preferred Alternative
Met Council	Metropolitan Council
MnDOT	Minnesota Department of Transportation
MP	Mile Post
NCDA	Northstar Corridor Railroad Authority
NCTD	North County Transit District
NEPA	National Environmental Policy Act
NLX	Northern Lights Express
NNEPRA	Northern New England Passenger Rail Authority
NOI	Notice of Intent
O&M	Operations and Maintenance

PD	Project Development
PE	Preliminary Engineering
ROW	Right-of-Way
RTC	Rail Traffic Controller
SDP	Service Development Plan
SSC	Standard Cost Category/Categories
St.	Saint
UTA	Utah Transit Authority
YOE	Year of Expenditure

Appendices

Appendix A – Steps to Extend Northstar Service

Appendix B – Capital Cost Estimate

Appendix C – Steps to Apply for and Receive Federal Funding

DEPARTMENT OF TRANSPORTATION

Northstar Extension Assessment Study

Minnesota - Big Lake to St. Cloud

Date: 02/15/2024
To: Minnesota Department of Transportation
From: HNTB Corporation

RE: Appendix A – Steps to Extend Northstar Service

Introduction

Appendix A identifies and describes steps to extend the Northstar Commuter Rail Service to St. Cloud, Minnesota. It builds upon findings from previous Northstar studies dating back as far as 1999, including Metropolitan Council's (Met Council's) Post-Pandemic Ridership Study (2023) and the Minnesota Department of Transportation's (MnDOT's) Extension Feasibility Assessment (2020) referenced in **Figure 1** on the following page.

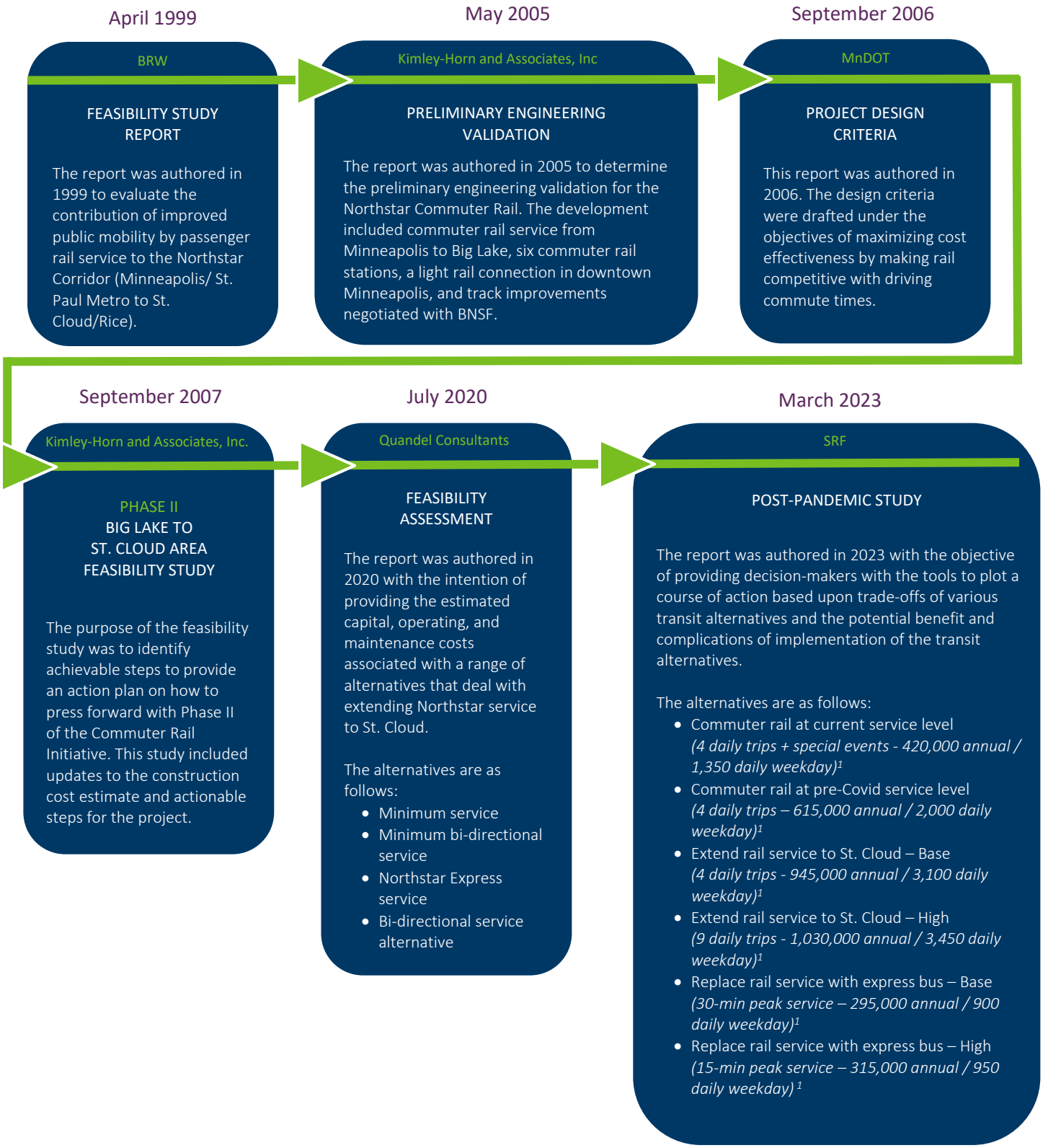
Objective of this Appendix

The primary objective of Appendix A is to identify and describe at a high-level the necessary steps in Project Planning, Project Development (PD), Implementation, and Operations to extend Northstar to St. Cloud. These next steps summarize all the activities from project scoping through ongoing operations which include but are not limited to: Alternatives Analysis, ridership and revenue studies, Rail Traffic Controller (RTC) modeling, evaluation of equipment needs and availability, coordination with the host railroad, stakeholder and public involvement, preliminary design, environmental review, final design and construction, operations start-up, and on-going operations and maintenance.

Corridor Background

The steps to extend Northstar service to St. Cloud are informed by the prior work completed on the Northstar corridor. Northstar Commuter Rail was initially conceived in the late 1990s to provide alternative transportation options along the fast-growing corridor between the Twin Cities and St. Cloud, Minnesota metro areas. In the initial Commuter Rail Feasibility Study Report (1999) conducted by the Northstar Corridor Development Authority (NCDA), it was assumed that the northerly terminus of the corridor would be in the City of St. Cloud, and potentially extend to the Town of Rice (15 miles north of St. Cloud). The common basis for service evaluation, demand forecasting, and cost assumptions, 'Concept B', consisted of nine daily round trips, five of which would be between Minneapolis and St. Cloud/Rice. The preliminary findings (see Table 1 below) using the Concept B daily trip model, suggested comparable cost per mile, and ridership projections to existing or planned commuter rail services in peer markets.

Figure 1 Summary of previous Northstar Corridor studies



[1] 2040 Ridership projections are median estimates from Met Council's 2023 Post-Pandemic Study

Table 1 1999 Comparable cost/mile and ridership projections

Existing Systems (1)	Year Opened	Length (in miles)	Number of Stations	Capital Cost (1999 $)	Capital Cost per Mile (1999 $)	Average Daily Ridership in 1998	Riders per Route Mile in 1998	Riders per Station in 1998
North Coaster San Diego, California	1995	43	8	$169 million	$4 million	4,275	100	535
Tri-Rail Miami/Ft Lauderdale/ W Palm Beach, Florida	1989	66	17	$355 million right-of-way $105 million RS&C	$5 million right-of-way $2 million RS&C	8,470	130	500
Virginia Railway Express Washington, DC	1992	88	18	$161 million	$2 million	6,350	70	350
Trinity Railway Express Dallas, Texas	1996	10	3	$76 million	$8 million	1,980	200	660
Planned System (2)	**Year Opening**	**Length (in miles)**	**Number of Stations**	**Capital Cost (1999 $)**	**Capital Cost per Mile (1999 $)**	**Average Daily Ridership in 2010**	**Riders per Route Mile in 2010**	**Riders per Station in 2010**
Seattle Sounder Seattle, Washington	1999	40	8	$270 million	$7 million	11,800	295	1,475
Northstar Corridor (3)	**Year Opening**	**Length (in miles)**	**Number of Stations**	**Capital Cost (1999 $)**	**Capital Cost per Mile (1999 $)**	**Average Daily Ridership in 2010**	**Riders per Route Mile in 2010**	**Riders per Station in 2010**
Minneapolis to East Saint Cloud	2003	67	10	$144 to $164 million	$2.1 to $2.4 million	7,200/ 8,050	110/120	720/805

The advanced and final design of the Northstar Commuter Rail Project included the design of commuter rail facilities, rail stations and a maintenance facility, and the completion of a Preliminary Engineering Validation Report (PEVR) in 2005. The PEVR reviewed and summarized the work previously performed on the project and provided supplemental information to allow the NCDA and their partners, MnDOT and Met Council, to continue to develop final plans for implementing the first commuter rail system in the State of Minnesota. The NCDA, working on behalf of MnDOT, oversaw several tasks to complement the Major Investment Study (MIS) and environmental impact statement (EIS) which were previously completed. The focus of the MIS was a commuter rail system from Rice to downtown Minneapolis. The EIS along with conceptual and Preliminary Engineering (PE) continued the development of the project. The PE report was completed in June 2001 and submitted to the Federal Transit Administration (FTA). FTA published a record of decision (ROD) in December 2002.

Historical Challenges

When the PE report was completed in June 2001, the FTA was emphasizing new rail riders. In 2002, however, FTA modified its criteria for New Starts (now part of the Capital Investment Grant [CIG] program) to emphasize "cost effectiveness" related to travel time savings of the entire system instead of simply obtaining new rail riders. While this did not change the functionality of the commuter rail system, it required further analysis and emphasis on total system costs. With these changes in methodology, the NCDA concluded that, in order for the project to remain competitive in federal scoring, several notable changes needed to be made. The most significant change was to revise the project to terminate at Big Lake (rather than St. Cloud or Rice), truncating the route from 80.1 miles to 40.1 miles. In addition to the stations eliminated beyond Big Lake, the proposed Coon Rapids/Foley and Northeast Minneapolis stations were also eliminated, leaving the project with six commuter rail stations. Furthermore, it was deemed more cost-effective to move the entire maintenance facility to Big Lake and eliminate the need for a layover facility building.

When Phase I operations ultimately began in 2009 between Minneapolis and Big Lake, there was still interest in extending rail service to St. Cloud (Phase II).[2] However, the new federal criteria and initial challenges outlined below delayed pursuit of an extension to St. Cloud at the time:

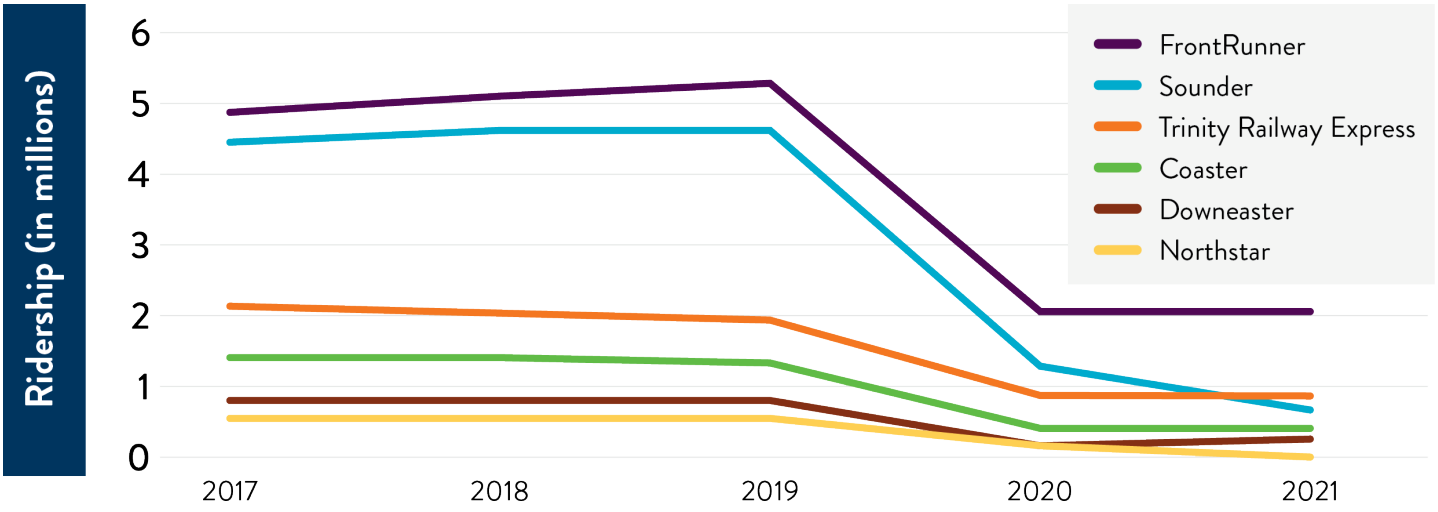
- Low Phase I Ridership: Actual Phase I average daily ridership for the initial 10 months of operation (2009) was 1,950 average weekday boardings (without special events) compared to the estimated 4,100 average weekday daily boardings from the FTA New Starts submittal for Phase I.
- Low Northstar Link Ridership: As with overall Phase I ridership, ridership on the Northstar Link Commuter Bus with service between St. Cloud and Big Lake was below anticipated levels, with approximately 110 average daily boardings.
- Low Phase II Ridership Projections: Based on actual corridor ridership and forecasts for the Phase II project, the projected additional per station boardings were estimated to be 200 to 350 average weekday boardings.

[2] MPR News online article "Construction begins on Northstar park-and-ride in St. Cloud"; Ambar Espinoza, St. Cloud, Minn., August 27, 2009

- **Capital Costs:** The project targeted a maximum capital cost budget of $150 million, which assumed a 50 percent federal funding share. Ongoing negotiations with the host railroad projected capital cost requirements to be greater than targeted costs.
- **Poor Cost Effectiveness:** With low ridership and relatively high capital costs projections for Phase II, the project's estimated cost effectiveness (per FTA's measure) was considered to be unacceptable by the FTA.

Historically, Northstar ridership has lagged behind other comparable commuter systems as shown in **Figure 2**. A description of each system is also provided.

Figure 2 Peer commuter rail system ridership summary



Source: Met Council Post-Pandemic Study (2023)

These systems are:

- **Downeaster** intercity rail in New England, which is operated by Amtrak and managed by Northern New England Passenger Rail Authority (NNEPRA). This is a 'hybrid' intercity passenger rail system that also serves commuter trip purposes.
- **Coaster** commuter rail in San Diego, which is operated by Bombardier Transportation on behalf of North County Transit District (NCTD)
- **FrontRunner** commuter rail in Salt Lake City, which is operated by Utah Transit Authority (UTA)
- **Sounder** commuter rail in Seattle, which is operated by BNSF on behalf of Sound Transit
- **Trinity Railway Express** commuter rail in Dallas/Fort Worth, which is operated by Herzog Transit Services on behalf of Trinity Metro (Fort Worth/Tarrant County) and Dallas Area Rapid Transit (DART)

Unlike its peer systems, Northstar does not connect a core city to a commuter city with a population over 100,000. At roughly 10,000 residents, the City of Big Lake does not generate enough trips to meet ridership goals. The original assumption was for the corridor to connect with the St. Cloud metro area which has a population of 200,000 and includes a large trip generator at St. Cloud State University. While the Northstar Link Commuter Bus has served this market with daily connections between Big Lake and East St. Cloud, it loses many potential riders due to the lack of a single-seat service (i.e., no service transfers). A greater negative impact is

the disconnected location of the East St. Cloud Park & Ride which lacks significant surrounding population, employment centers, or multi-modal connectivity. The opening of the service in 2009 coincided with the housing market crash which had a significant negative effect on station area or transit-oriented development (TOD) and overall forecasted growth along the corridor.

Northstar Link Commuter Bus Service (St. Cloud to Big Lake)

As referenced above, Northstar Link Commuter Bus (Operated by St. Cloud Metro Bus) has connected St. Cloud to Big Lake since Northstar service began operations in 2009. The Northstar Link bus serves as a connection to the Northstar Commuter Rail in Big Lake via three bus stops in St. Cloud (Downtown, St. Cloud State campus, southeast St. Cloud Park & Ride) and a stop in Becker. While the multiple station locations serve a large catchment area, the service frequency is minimal, with three daily roundtrips and no reverse commute or midday options available. The multiple stops within St. Cloud are also a challenge for potential riders given the 15-minute travel time within the city before continuing to Big Lake and transferring to a Northstar train to complete the nearly two-hour trip to downtown Minneapolis. Although Northstar commuter rail achieves time competitiveness with driving from Big Lake to Minneapolis, 50 minutes by car versus 45 minutes by rail, during peak periods, the bus-rail itinerary from St. Cloud to Minneapolis travel time well exceeds auto travel times, 70 minutes by car versus 115 minutes by bus and rail.

Criteria for Reevaluation

While strong interest remained in extending Northstar to St. Cloud, the NCDA put on hold further pursuit of an extension to St. Cloud until certain criteria originally outlined in the NCDA 2007 Phase II study was met. The following criteria are the triggers for any further reevaluation of an extension to St. Cloud:

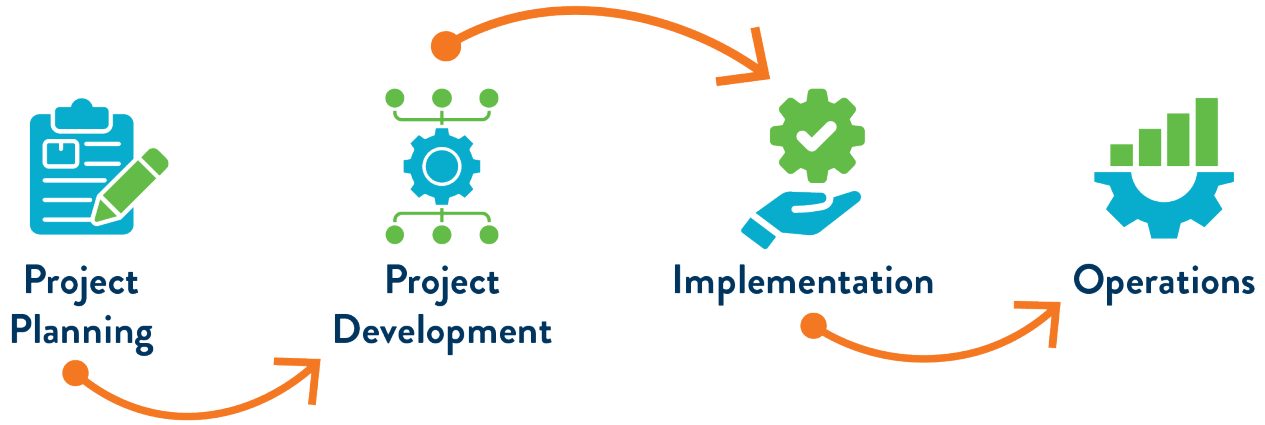
- Ridership: Over 4,500 average daily Phase I and Northstar Link boardings: If average daily Phase I ridership grows closer to initial projections and Northstar Link ridership continues to grow, project reevaluation may be justified. Note that the commuter rail systems that are faring best post-pandemic are those that have shifted to all-day schedules to better align with post-pandemic demand.
- Corridor capacity improvements addressing infrastructure constraints: Installation of a 3rd mainline track within the corridor from Coon Creek Junction to Northtown Yards or installation of a 2nd mainline track between Becker and Big Lake would ease these constraints.[3]
- Changes to FTA rating criteria: Any changes to the FTA's ratings and evaluation of extensions or projects that connect regional centers, or large-scale changes to criteria weighting and thresholds could justify project reevaluation. FTA is scheduled to issue proposed changes to the CIG program evaluation and rating process in late 2023 / early 2024, which will be subject to industry review and comment.
- New grant opportunities for projects over $50 million: With no other changes that would strengthen a CIG submittal, other funding opportunities would be needed to advance Phase II. Appendix C summarizes current grant opportunities including some significant updates that may be appropriate for further consideration.
- Major Economic Development: Over 3,000 new people or jobs in the Phase II corridor: Significant population or employment increase along the corridor will potentially increase the demand for transit.

[3] In 2015, BNSF constructed the recommended 2nd main track between Big Lake, MN and Becker, MN.

Steps to Extend Service

A project to extend Northstar service to St. Cloud will require multiple steps that can be developed into four phases: Project Planning, PD, Implementation, and Operations (**Figure 3**). Additionally, prior to the four project phases, Systems Planning will occur, where statewide and regional plans are created or updated. This effort will identify potential projects to achieve the plan's vision and possible points of coordination between them including common infrastructure, program facility and vehicle needs, and opportunities for joint coordination with host railroads. Project Planning develops the groundwork for the project, including identifying the project sponsor, defining purpose and need, requesting National Environmental Policy Act (NEPA) Class of Action, and applying for entry into grant programs. PD completes the NEPA process and conducts PE in order to detail mitigations for environmental, utility, and right-of-way impacts. Implementation involves completing project design, constructing the projects, and completing pre-revenue activities governed by the lead agency and project partners. Finally, Operations covers revenue service and on-going maintenance of vehicles and infrastructure. Available funding opportunities for Planning, Design, and Construction, as well as specific PD requirements that must be met to be eligible for FTA and/or FRA funding, are detailed in **Appendix C**.

Figure 1 Project Lifecycle Phases



While tasks may bridge multiple phases, their initiation is tied to a specific phase and the following narrative is organized with this in mind. The timeline required for each phase is tied to a funding agency and stakeholder requirements, as well as the overall scale and nature of a project. The overall timeline to begin Northstar extension operations is estimated to be between six to ten years from a 2025 start depending on several factors such as, but not limited to, FTA CIG application acceptance, local funding commitments, host railroad agreements, environmental clearance, construction requirements and rolling stock procurement.

Systems Planning

As a precursor to the other four project lifecycle phases, Systems Planning for passenger rail is the high-level planning process that sets a vision, and goals and objectives to achieve the vision for a state or region. These state and regional plans may consider creating new transportation services as well as enhancing and maintaining existing transportation systems. This planning process promotes a safe, efficient, and comprehensive rail system within the multi-modal national transportation system. At its core, Systems Planning examines broad needs, challenges, and opportunities that can be addressed with a transportation-related solution, including capital projects.

A government agency (e.g., a state department of transportation, authority, commission, or interstate-compact), railroad, or private entity may identify the need for a project through its Systems Planning processes. Systems Planning involves analyzing empirical data to identify rail transportation needs and developing strategies and projects to meet these needs. Project sponsors may, for example, accomplish Systems Planning through a railroad capital planning process, or through preparation of a regional rail study or State Rail Plan. Some projects may have multiple purposes and be identified through other highway or transit planning processes. The Systems Planning process should identify specific projects to address documented needs, challenges, and opportunities.

Project Planning

Project Planning is the first of the four primary project lifecycle phases and typically takes approximately two years to complete. The primary objectives of this phase are to clearly identify the purpose and need for the project, assess alternatives, and determine a high-level estimate of costs for the lifecycle of the project. The rest of this section describes the main steps of planning under both FTA and FRA guidelines. Additional core activities performed during the Project Planning phase, are described in Appendix A.

Identify Project Sponsor: Step 1

The first step of any project is to identify the project sponsor. The sponsor will serve as the lead for delivering the project and is responsible for leading the project through the process and applying to and coordinating with the lead agency. The project sponsor is responsible for managing all phases of a project. This includes overseeing the development of deliverables, financial and grant management, and establishing, navigating and maintaining relationships among key stakeholder groups. The decision-making associated with determining the project sponsorship can be complicated and may impact the timeline for advancing to Project Planning. It is important that the key project stakeholders are part of the decision-making process for determining the project sponsor.

Under the discretion of the funding agency, the sponsorship of a project may be transferred during or between phases. For Phase I of Northstar from Minneapolis to Big Lake, the NCDA was the initial project sponsor during Project Planning. MnDOT was the project sponsor in cooperation with the NCDA as the project advanced to PD and Implementation. As the project was ready to transition into Operations, the Met Council became the project sponsor.

Service Reevaluation (Market Analysis): Step 2

After identifying the project sponsor and to help prepare for development of the purpose and need it is prudent to reevaluate the original/current service plan to ensure an optimized service vision in the corridor. This reevaluation generally focuses on both existing and potential users, ideally considering various ways of serving both intercity and regional rail markets in the same corridor. Traditional commuter rail service is mostly limited to peak commuter periods with its main role being connecting people with jobs, but many systems are changing operations to include service throughout the day to reflect changing needs and travel patterns. Commuter rail is defined as short-haul passenger rail transportation that connects suburban areas with the core city of the metropolitan area. Commuter rail services usually having reduced fare, multiple-ride, and commuter tickets with morning and evening peak operations. Intercity passenger rail on the other hand is passenger rail that provides transportation between cities or metropolitan areas at speeds and distance greater than that of commuter or regional rail, often with stops at smaller rural communities in between. Intercity rail may have all day service with one or multiple trains/day and is not focused on peak periods during the day. There are many places across the nation where commuter and intercity passenger rail operate on the same corridor but serve different needs. If Northstar service moves towards intercity rail, development program efforts would be coordinated with FRA: and a discussion with FTA would be needed about the remaining service life of assets for eligibility of continued use or repayment for discontinued service. These details in part would be determined by the original Full Funding Grant Agreement (FFGA).

The federal definitions of intercity passenger and commuter rail makes clear that a project can be one or the other but not both. If Northstar were to extend to St. Cloud and maintain peak period service, that would continue to be considered commuter rail and MnDOT would need to pursue FTA funding, most likely through the highly competitive CIG program described in Appendix C. Given the changes in travel patterns since the COVID pandemic, it is possible that FTA would favorably view changes to the peak period to meet current demand. This would allow Northstar to apply for CIG funding and continue to receive 5337 State of Good Repair formula funding. If Northstar's operations evolved into service consistent with intercity passenger rail, future environmental and funding pursuits would presumably be through FRA. If Northstar formally rebranded its service as intercity passenger rail, it would compete for FRA funding but may lose its FTA operations funding eligibility.

Should service reevaluation result in recommending Northstar to become an intercity rail service, an assessment of which FTA-funded assets would no longer be needed and potentially subject to federal disposition guidelines would be a key evaluation criterion. If service changes were viewed by FTA to be substantially different than what is required of commuter rail services, Northstar would no longer be in compliance with the terms of its existing CIG FFGA, and would be subject to the potential repayment of FTA's remaining financial interest in its capital assets pursuant to the federal disposition guidelines as detailed in FTA Circular 5010.1E.1E. These questions of FTA support for a significant change in operations from commuter rail to intercity passenger rail should be addressed directly with FTA. An assessment should detail which FTA funded assets could be used in the intercity passenger rail service and the federal interests remaining in those assets.

Purpose and Need: Step 3

Once the project sponsor is identified and service plan reevaluation is complete, the next step is to develop a purpose and need statement for the project. The project sponsor will offer leadership in the development of the cohesive purpose and need. While the purpose and need statement is developed early in the Project Planning phase, it is refined during the environmental review process in response to agency and public comments and is incorporated into the environmental document (only the Environmental Impact Statement Class of Action formally require this). A project's purpose and need should exhibit continuity from Project Planning through PD and onto Implementation following funding agency approval. This is important because 23 United States Code (U.S.C.) § 139(d)(8)(B) requires that, to the maximum extent practicable, the project sponsor must develop an environmental document during the PD phase that is sufficient to satisfy the requirements for any Federal approval or other Federal action required for the project, including permits issued by other Federal agencies. Consequently, the project sponsor needs to closely coordinate with the lead federal agency, as well as with any other applicable federal agencies, to develop the purpose and need statement. A purpose and need section that is clear, concise, and well-justified informs the public and decision-makers of the current issue, why the project investment is necessary and what it solves of the issue identified. In addition, the purpose and need should justify why potential impacts to be identified during the NEPA process are acceptable based on the project's benefits. As importantly, the project purpose and need provides criteria for developing and analyzing alternatives in order to select the Locally Preferred Alternative (LPA). Being able to clearly define goals and, in turn, receiving direct feedback from FTA or FRA on appropriate steps in the development process are dependent on the defined purpose and need for the Northstar extension.

Initiate Federal Application Process: Step 4

Generally, the Project Planning phase is self-funded by the project sponsor, and through subsequent phases, federal agencies will increase the share of funding they provide for ongoing work. Early on the project sponsor will initiate contact with the funding agency to help provide updated guidance on available grant programs. Additionally, at initiation the project sponsor must request determination of the NEPA Class of Action. Further detail on Class of Action is provided in the section on environmental review below.

Formalize Partnership with Host Railroad: Step 5

A significant risk to scope, schedule and budget for passenger rail projects is coordinating, negotiating and reaching agreements with host railroads. As it is a significant risk to the completion of passenger rail projects, project sponsors need to have agreements in place with host railroads for the use of their infrastructure prior to applying for an FFGA. In the simplest of terms, the host railroad is the owner of the tracks and right-of-way underneath and is directly accountable to the passenger rail operator by agreement for passenger operations over a railroad line segment. Typically, a host railroad will request an agreement between the railroad and the project sponsor prior to their engagement with a project. The agreement defines the railroad's level of involvement in the Project Planning phase, including participation in early meetings, document reviews, and early Project Planning activities. It will also allow the project sponsor to coordinate any early field activities. This agreement may establish levels of reimbursement from the project sponsor for time and effort performed by the host railroad. Without an agreement in place with the host railroad, their participation in workshops, design reviews, modeling development, or entry into their right-of-way will be limited. Attachment 1 of this appendix contains BNSF's Passenger Rail Principles which define the host railroad's priorities. These should be well understood by the project sponsor prior to any engagement.

Ridership Forecasting: Step 6

The original Northstar Final EIS (FEIS) projected about 4,100 average weekday boardings for its opening year of 2009, higher than the 1,950 average weekday boardings observed for during the first 10 months of service. However, the estimated ridership was based on the original service plan, yet the number of trains was reduced from 18 to 12 trains per day before the line opened. Weekday ridership largely peaked in 2019 with an average of 2,660 daily rides, while weekend event days added over 1,400 riders on average. Since 2009, the most recent ridership forecasting performed on this corridor was the Met Council's Post-Pandemic Study completed in spring 2023.

Transit forecasting practices around the country had not yet fully recalibrated to a post-pandemic reality, so the Met Council's 2023 study used a hybrid model of 2019 and 2022 baselines. The study evaluated options for three possible transit service types: commuter rail, extend rail, and express bus. Scenarios for each transit mode represent two levels of service: "Minimum" and "High". The extend rail alternatives used MnDOT's 2020 Northstar Extension Feasibility Study bi-directional (minimum and high) service assumptions. The results showed the rail extension alternative offered the highest potential ridership, as it offered the largest potential to reach new ridership markets. Additionally, as the least commuter-centric option, it is well-suited to accommodate changes in travel behaviors due to remote work. This service is more akin to a 'hybrid' service serving both commuter and intercity markets.

Given the variability between the 2019 and 2022 baseline counts, it would be prudent to conduct a more detailed analysis with the more current FTA guidance on post-pandemic modeling and revised travel time assumptions refined during operations modeling. FTA has developed a tool called Simplified Trips-on-Projects Software (STOPS) to estimate trips on a project. The use of this tool is not required for FTA evaluation; however, the standardization of ridership modeling that STOPS provides can simplify the FTA's validation and review process. The FTA has issued post-pandemic guidance on treatment of ridership forecasts which includes a blending of current year and horizon year forecasts and allowances for differences due to pandemic effects.

Operations Modeling: Step 7

Prior to entering into PE, the project sponsor must coordinate with the host railroad to develop a rail operations model, typically using RTC software. Operations modeling will be done concurrently with the Alternative/Feasibility Analysis and inform the development of alternatives evaluated and support identifying capital infrastructure improvements included in the environmental review outlined below. The model serves as a basis for negotiations with a host railroad to identify the required capital infrastructure improvements, validate operational impacts and determine equipment needs to support additional passenger service. Developing an operations model and receiving concurrence from a host railroad may take twelve months or more to complete. It is critical that the model has concurrence from the host railroad and is consistent with its on-going and future operations to best understand impacts and mitigation requirements for all parties. As such, the host railroad should be engaged in any modeling process from initiation.

Alternative/Feasibility Analysis: Step 8

Following defining the purpose and need, receiving Class of Action determination, and engaging the host railroad, the next step is to conduct an Alternatives Analysis. The Alternatives Analysis is critical to the development of any project since it defines various alternatives or project options (to include "no-build") as a way to both achieve the project's purpose and compare environmental impacts and transportation benefits for

a project. In the Project Planning phase, the 2020 Northstar Commuter Rail Extension Feasibility Assessment needs to be revisited to determine whether the alternatives and objectives determined previously still align with current objectives and funding opportunities landscape. An Alternatives Analysis serves a crucial role in detailing the project's viability and its potential impact on the community it seeks to serve. The analysis will objectively analyze and compare identified alternatives based on positive and/or negative impacts and alignment with the project's purpose and need in a comprehensively documented manner. It is during this time that technical, economic, environmental, and social factors, both existing and projected, are used to establish the strengths and weaknesses of each alternative. Stakeholder engagement and environmental review, outlined further below, are critically entwined into an Alternative Analysis. The culmination of an Alternative Analysis results in the selection of the LPA.

Locally Preferred Alternative (LPA): Step 9

The culmination of an Alternative Analysis results in is the selection of the LPA, with significant consideration paid to cost-effectiveness, environmental impact, and community preferences, alongside other project-specific elements. Selection of the LPA serves as a critical milestone within the Project Planning process and sets the direction for the project's design and overall development through subsequent phases, all the while meeting the needs of a variety of key stakeholders involved in the project's success. The documentation of the Alternative Analysis is submitted to the funding agency for review and comment as the project sponsor's LPA. It is possible that the funding agency carries multiple alternatives forward into PD.

Apply for Entry into Project Development: Step 10

Once an LPA is selected, the last step in the Project Planning phase is for the project sponsor to apply to the federal funding agency to enter into PD. Both FTA and FRA have formal processes for requesting entry into the PD phase and acceptance or approval is required before work is eligible for reimbursement via federal funds. The project sponsor request to funding agencies must provide project merits for additional development. The letter or grant application request may include the following, but not limited to information based on activities described in prior sections:

- Identification of project sponsor, partners, and their roles and responsibilities.
- Identification of a project manager and key staff for Project Development.
- Description of the corridor, transportation problem to be solved, and description of current services.
- Inclusion of links to prior studies completed in the corridor.
- Inclusion of cost estimate, if available.
- Identification of federal grant program being applied for.
- Documentation of anticipated cost to complete Project Development.
- Documentation of local funding commitment to complete Project Development.
- Description of timeline on completing NEPA process including selection of LPA.

Appendix C provides further detail on federal grant programs and their associated processes.

Project Development (PD)

After the Project Planning phase is complete, and the project has been granted entry into PD, the project sponsor will initiate design work, complete the environmental review (once initial design is complete), and conduct other studies to ensure the project is ready for Implementation. In the PD phase, the project sponsor completes PE, which is approximately 30 percent design, and advances other design disciplines to inform detailed estimates of risks, costs, benefits, and impacts. This work must be completed to support the completion of the environmental review process that is required by NEPA. The PD phase requires close coordination with federal review staff. Regardless of whether FRA or FTA is the lead federal agency, both require key review steps throughout the PD phase. The FTA and FRA processes are explained in greater detail in Appendix C. For FTA New Starts projects, the FTA requires that within two years of the project entering PD, the following activities must be completed. FRA currently does not have any timeline restrictions for completing PD.

- The project sponsor must select an LPA.
- The environmental review process required under NEPA must be completed as signified by a final environmental decision (e.g., Categorical Exclusion [CE], combined Environmental Assessment [EA] with Finding of No Significant Impact [FONSI], or combined Environmental Impact Statement [EIS] with Record of Decision [ROD]) covering all impacts of the project proposed for federal funding. Depending on the class of action an EA must be completed within one year or an EIS must be completed within two years.
- The project sponsor must have the LPA adopted into the fiscally constrained metropolitan transportation plan or state long-range transportation plan. Depending on timing of Alternatives Analysis and environmental review this may occur prior PD.

Preliminary Engineering (PE): Step 1

The first major step during PD phase is PE. This is where project plans will be completed to a 30 percent level of design. For Northstar, PE will find corridor impacts from capital improvement projects identified from operations modeling for the alternatives carried forward in the environmental review process. PE will also provide a more robust understanding of preliminary capital cost estimates. Completion of PE is needed to finish a successful environmental review and NEPA process. PE can usually be completed within one to two years consistent with the overall PD timeline. To support PE, the following activities need to be completed or redefined:

- Documentation of alternatives and selection of LPA
- Operations modeling
- Station and access analysis
- Capital cost estimates

Stakeholder Engagement: Step 2

Stakeholder engagement is crucial for all phases of a project. NEPA also requires public and agency involvement. Stakeholder engagement is the ongoing process of involving the public in identifying and solving challenges and problems; using public input to make sustainable decisions; educating or informing the public about a topic or issue; and seeking to build meaningful connections and trust with the public through communication and interaction.

A public and agency engagement plan is the starting point. The plan outlines the plans and strategies for engaging the public and agencies with an interest in the project. It also outlines how the agency will reach disadvantaged communities and those that have limited English proficiency. The plan is updated and revised throughout the process. Staff should remain flexible by considering public and stakeholder agreement feedback and making adjustments as necessary to the public engagement plan. Activities may include:

- Community participation in planning, project development, and decision-making processes
- Holding community meetings, focus groups, and/or advisory committees to identify and solve problems or help the project team make a decision
- Reviewing and analyzing public input to inform decision-making
- Negotiating with host railroads
- Coordinating with federal, state, and local governmental agencies with an interest in the project

Environmental Review: Step 3

NEPA requires federal agencies to evaluate the environmental effects of federally funded undertakings. As part of the process, agencies must have clear documentation on the proposed project's benefits and effects on the environment as well as measures to avoid, minimize, and mitigate those effects. The environmental process is initiated in Project Planning through the determination of the class of action, while the NEPA process is initiated during the PD after PE based on the class of action. The Council on Environmental Quality (CEQ) rules require that an Environmental Assessment (EA) be completed within one year after the class of action determination. Environmental impact statements (EISs) must be completed within two years from the publication of the notice of intent (NOI). There are no time limits for a Categorical Exclusion (CE).

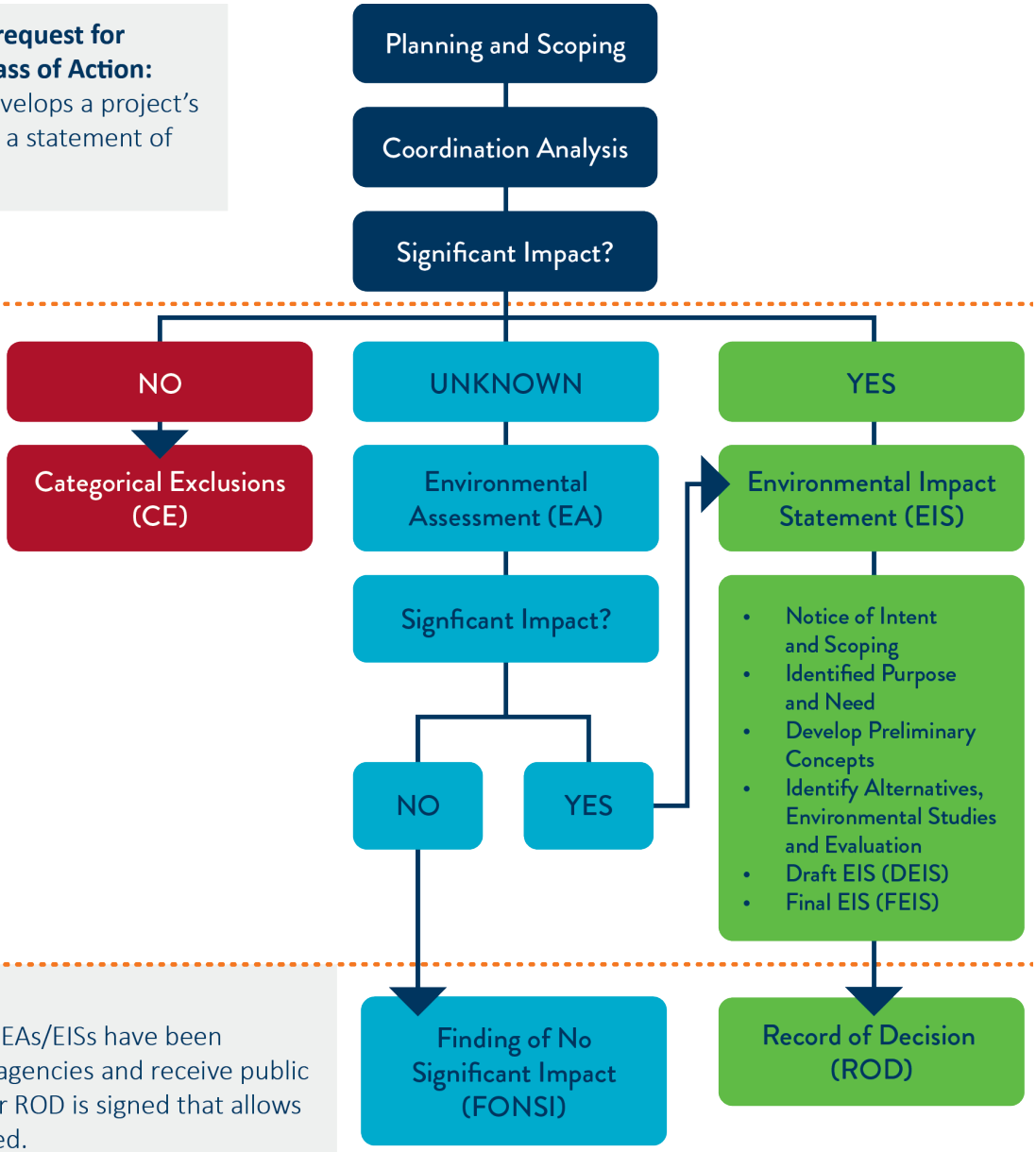
All human and natural environmental resources that could potentially be significantly affected by the proposed project must be evaluated in the NEPA documentation for the project. The documentation about any impacts is disclosed to the public for comments and input on the project via the stakeholder engagement process outlined above. When assessing the benefits and impacts on the human and natural environment, considerations include, but are not limited to, potential conflicts with land use plans and policies, visual effects, noise and vibration impacts, economic benefits, air quality, water quality, environmental justice, and traffic impacts and improvements. Additionally, the benefits and impacts of the proposed project on natural, cultural, and recreational resources, and whether displacements of residences or businesses would be required are assessed. Figure 4 summarizes the entire environmental review process.

Figure 2 Environmental review process

Preparation before request for determination of Class of Action:
A project sponsor develops a project's initial plan, including a statement of purpose and need

Determination of Class of Action:
There are three types (or classes) of environmental reviews, ranging from the simplest (CE) to the most complex (EIS).

Decision:
After Draft and Final EAs/EISs have been reviewed by federal agencies and receive public comment, a FONSI or ROD is signed that allows the project to proceed.



The NEPA class of action determination from the federal lead agency (FTA or FRA) will be one of three classes of actions that prescribe the level of documentation and the associated environmental review process requirements. They include:

- **Categorical Exclusions (CE):** CEs are categories of actions that in the absence of unusual circumstances do not individually or cumulatively have a significant environmental effect and are ordinarily excluded from the requirement to prepare an EA or EIS.[4] Actions that FRA and FTA determine meet the criteria for CEs are listed in 23 CFR 771.116 and 118[5].
- **Environmental Assessment (EA):** EAs are concise public documents that include brief discussions of the needs for the proposal, alternatives, environmental impacts of the proposed action and alternatives, and a listing of agencies and persons consulted (40 CFR 1508.9)[6]. Typically, an EA is required in two situations:
    - Further investigation is needed to determine if the project would significantly affect the quality of the human and natural environment and require an EIS (23 CFR 771.119(a)); or
    - For other purposes in compliance with NEPA (40 CFR 1508.9).
- **Environmental Impact Statement (EIS):** EISs are detailed written statements for major Federal actions that will significantly affect the quality of the human and natural environment. Per 23 CFR 771.115(a), actions that normally require an EIS include:
    - Construction or extension of a fixed transit facility (e.g., rapid rail, light rail, commuter rail, bus rapid transit) that will not be located within an existing transportation right-of-way (ROW); or
    - New construction or extension of a separate roadway for buses not located within an existing transportation ROW.

To request a class of action determination, the project sponsor must provide FRA or FTA staff with project initiation information, including the project description, a list of any anticipated federal approvals, and any additional information that the project sponsor considers important for initiating a project. If the project may qualify as an EIS, it is recommended that the project sponsor provide a summary of prior planning work on the project; the project's general purpose and need; and a graphic showing the location of the proposed project – its proposed termini, station and maintenance facility locations and sizes, and other pertinent project features. For EISs, the information may take the form of a draft NOI that the federal agency publishes in the National Register. If a project may qualify for a CE or EA, the information needed is normally less than that described above, but the project sponsor should at a minimum provide a basic project description and location map/graphic.

The following sections describe the steps that occur once the federal lead agency determines the class of action. For all classes of action, PE needs to be substantially complete to inform the environmental review process about the proposed project's expected impacts. As a result, PE and NEPA are frequently concurrent activities. For more information on the FTA NEPA process, see FTA's Environmental Standard Operating Procedures[7]. For more information on the FRA NEPA process, see FRA's Environment website[8].

[4] eCFR :: 23 CFR Part 771 -- Environmental Impact and Related Procedures

[5] Ibid.

[6] eCFR :: 40 CFR Chapter V Subchapter A -- National Environmental Policy Act Implementing Regulations

[7] Environmental Standard Operating Procedures | FTA (dot.gov)

[8] Environment | FRA (dot.gov)

Categorical Exclusion

For FTA projects, there are two types of CEs. The first type, known as "c-list" CEs (23 CFR 771.118(c)), normally require no more than an adequate description of the project in FTA's online grant management system in terms of documentation. The second type, known as "d-list" CEs (23 CFR 771.118(d)), generally require documentation beyond the project description to verify there are no significant environmental impacts associated with the project.

If the FRA determines that the project would have no significant impact on the human and natural environment, then the project sponsor completes FRA's CE worksheet[9] along with sufficient supporting documentation.

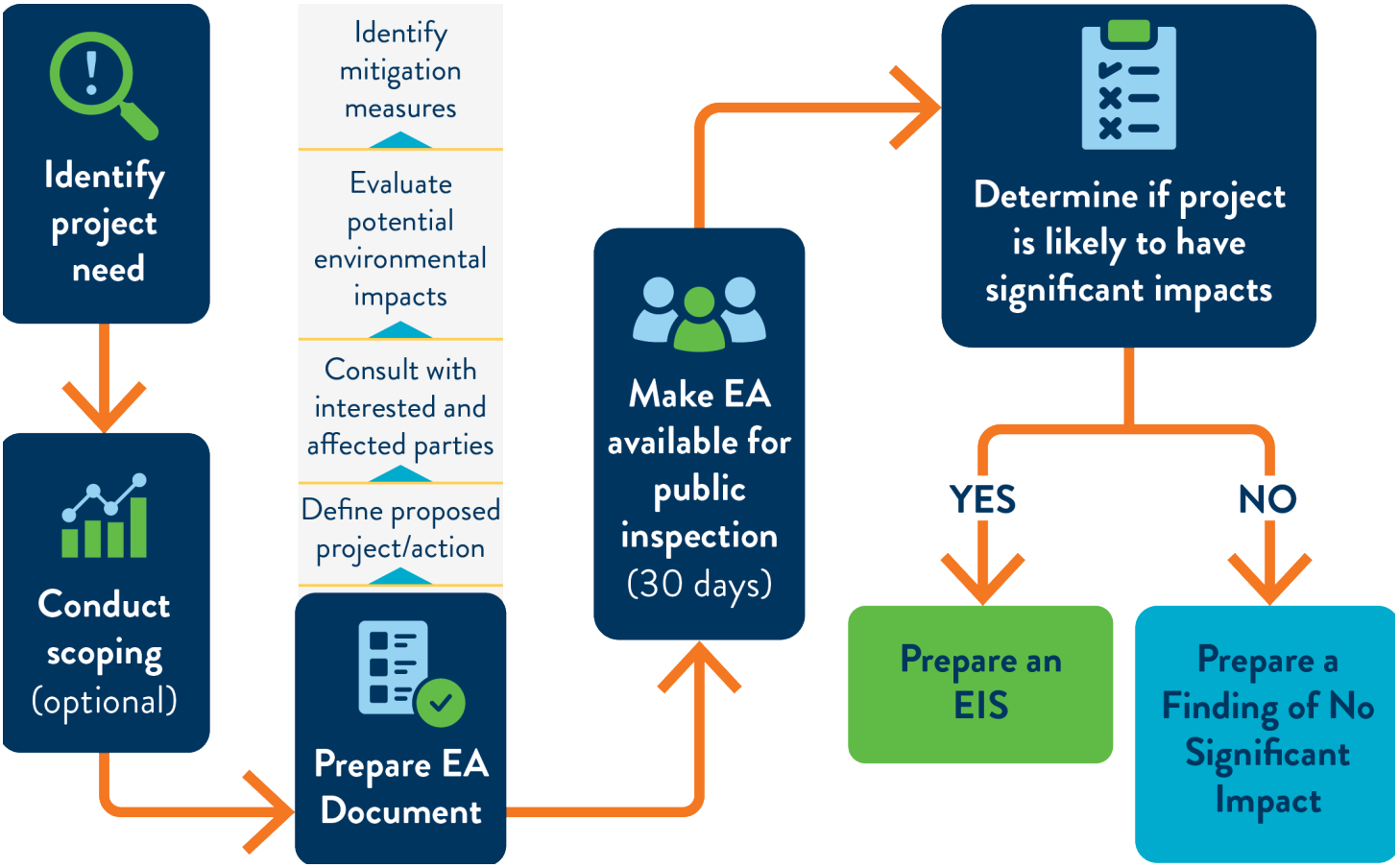
Environmental Assessment

If the federal lead agency determines that the significance of the environmental impact of the project is not clearly established (23 CFR 771.115), an EA is prepared. The purpose of an EA is to determine which aspects of the project have the potential of significant impacts on the human and natural environment. Additionally, an EA assesses alternative solutions to mitigate impacts on the environment. If an EA demonstrates that the action will not have a significant effect on the environment, the process concludes with a finding of no significant impact (FONSI) (23 CFR 771.121). If, however, FTA determines that a project is likely to have significant impacts that cannot be mitigated to a level below "significant," an EIS will be prepared. See **Figure 5** on the following page summarizing the EA process. It is important to note that EAs must be completed within 1 year from the time that the federal lead agency determines the class of action. The EA document can be no more than 75 pages in length[10].

[9] FRA F 217-until 2025.pdf (dot.gov)

[10] Federal Register :: National Environmental Policy Act Implementing Regulations Revisions

Figure 3 Environmental Assessment process workflow



Source: FTA, 2023 EA Process Workflow (dot.gov)

Environmental Impact Statement

If it is determined that the class of action is an EIS, the lead federal agency will publish a NOI in the Federal Register. Once the NOI is published, the EIS must be completed within 2 years[11]. The NOI also initiates the formal scoping process and begins the 30-day period where comments are received from the public and agencies regarding the project and its scope. It is through the scoping process that potentially significant environmental impacts and alternatives to avoid or minimize impacts should be identified for further evaluation in the environmental document, as appropriate. Through the scoping process, the project team can identify impacts that are inconsequential and need no further evaluation or only require limited evaluation, thereby keeping the environmental document focused on the impacts of consequence.

The next step is to prepare the Draft EIS (DEIS). The DEIS provides details on how the transportation project was developed and evaluates the potential impacts of the alternatives under consideration. The DEIS must be no more than 150 pages unless the federal lead agency gives approval for the document to be up to 300 pages with approval from the federal lead agency. Once the lead federal agency approves the DEIS, it is released for a 45-day public and agency comment period. Public hearings are also required. After the 45-day comment period,

[11] Federal Register :: National Environmental Policy Act Implementing Regulations Revisions

the project sponsor responds to all comments received and prepares a combined FEIS and ROD. If a combined FEIS/ROD is not feasible, the traditional approach of separate FEIS (23 CFR 771.125) followed by ROD (23 CFR 771.127) will be used. The ROD presents the reasoning for the decision, summarizes the environmental impacts, and describes any mitigation measures that the project will incorporate into the project. Figure 4 shows the EIS workflow process.

It should be noted that capacity improvements for the third main between Control Point (CP) Coon Creek and CP Interstate were previously recommended as part of the Northern Lights Express EA and are included in the FONSI[12] issued by FRA for that project in February 2014.

Beyond the NEPA process, the project sponsor will need to coordinate with the Minnesota State Environmental Quality Board (EQB) to deliver any supplemental documentation or steps needed to satisfy state-level requirements or Minnesota Environmental Plan Act (MEPA) steps that may go beyond NEPA documentation.

Defining Equipment Needs

Acquisition of locomotive(s) and passenger cars is considered a "long lead time item" (up to or above five years) which must be carefully addressed at the outset of the project. Careful consideration is given to compatibility with existing operating and maintenance (O&M) facilities and equipment. The agency that will own the equipment is normally the agency that undertakes the acquisition process. The existing Northstar fleet has been in service since 2009 and is nearing the period when it is due for a mid-life rebuild. The acquisition of new equipment for the service extension can be scheduled as the first step in the fleet rebuild process. Any future equipment procurements should ideally be coordinated with the other proposed routes (i.e., NLX) as there could be economies of scale and new funding sources.

With provisions for lifecycle software and hardware updates, the trainset(s) planned for the service extension could be purchased earlier than needed and used to replace an existing trainset so that the trainset can be removed from service for a mid-life rebuild. Although the operator must prepare for great variability in the procurement and overhaul program schedule, ideally when the first rebuilt train is completed, the second train to be rebuilt is sent away, and the process continues until all locomotives and cars of the existing fleet have been rebuilt. The trainset(s) purchased for the extension would then become available to fulfill its original role. Using this approach has many advantages both in cost and in system dependability. Specifications and performance requirements for any new equipment must be established and approved by the agency in cooperation with the host railroad and the operator. The principal categories of equipment acquisition activity normally include:

- Locomotives
- Passenger coaches
- Control cab passenger coaches (cab cars)
- Spare parts inventory
- Special tooling & equipment required to test & maintain locomotives and cars

[12] FRA signed FONSI for NLX

Timing of the equipment acquisition is important. Once the vendor selection process has been completed, the equipment (potentially from several vendors on separate purchase orders) must be constructed to approved specifications (with agency inspectors at the plants to observe construction), delivered, tested, and commissioned before the start of system testing with the trains in the field. There may also be some involvement by the federal sponsoring agency equipment staff as part of the approval and inspection processes.

Implementation

Once the lead federal agency approves the environmental review the project is ready to move into the Implementation Phase. The Implementation phase includes FE and construction.

Final Engineering (FE) (Step 1)

FE is the first step in the Implementation phase. FE builds on PE to complete design work and prepare all the required construction documents. This includes plans, specifications, engineering estimates and conducting an independent cost estimate analysis. The timeline for completing FE will depend on the scope of the required capital improvements.

The track related engineering details and specifications for the project will be based on host railroad standards and specifications for improvements within railroad ROW. Any other improvements will be based on MnDOT or other public agency standards and specifications. In coordination with the host railroad, either or both may procure and lead FE for infrastructure on and off railroad ROW which typically include track improvements, drainage, and station platforms.

To optimize the construction schedule, the project sponsor and/or the host railroad may choose to procure early work for the project during FE. Examples of early work may be utility relocations and ordering track, signal or communication materials.

During FE, host railroad construction agreements are also finalized. These agreements focus on division of work between the project sponsor's contractor(s) and railroad forces. Typically, this is dependent on the supply of materials, trackwork, wayside signal and communications, and at-grade crossing surface and warning devices.

During FE and after defining equipment needs during PD, the project sponsor will begin the procurement and acquisition of the equipment (rolling stock) necessary to operate the proposed service. The process will follow standard project sponsor procurement practices and procedures. It typically involves requesting proposals from equipment vendors to design, assemble, and delivery specified equipment on a schedule that meets the timeline for beginning revenue service.

Lastly, for environmental compliance, if there are changes between the PE and FE either a re-evaluation is done, or a supplemental EA or EIS is completed. Later, during construction and operations, the mitigation measures are applied.

Letting & Construction (Step 2)

A standard design-bid-build procurement process is assumed for securing a contractor to construct the capital infrastructure improvements defined in the construction documents. A design-bid-build procurement involves the following:

- Assembling standard provisions and construction plans and specifications into a Request-for-Proposal (RFP) package.
- Publicly publishing RFP package along with notice of a pre-proposal meeting, response deadline, and bid opening (letting) date.
- Holding a pre-proposal meeting for potential contractors to discuss RFP details and provide a forum for questions.
- Publishing responses to questions received by contractors and issuing RFP amendments if necessary.
- Receiving sealed bid proposals prior to published deadline.
- Letting sealed bid proposals and publishing list of bids.
- Verifying that lowest apparent bidder is responsive by meeting all RFP requirements.
- Reviewing and responding to all protests by other bidders.
- Negotiating and signing contract with lowest bidder.

During construction, the contractor will need to coordinate project elements, including the testing and inspection of the completed improvements. Within railroad right-of-way, these tasks shall be designated to be performed by railroad forces. However, improvements outside of railroad right-of-way (such as station facilities) may be led by the project sponsor in coordination with the host railroad.

Operator Selection

Following the start of construction an operator will need to be determined and agreed upon by Metro Transit, MnDOT, and BNSF. Train crews for the current Northstar service are contractually provided by BNSF, however it may be possible another operator may be contracted as the potential extension begin service. In addition to an open procurement, the project sponsor should evaluate whether the renegotiation or amending the active operations contract is possible and beneficial.

FTA funded projects are eligible for Urban Area Formula Grants (5307) to provide financial assistance to operations. Additionally, the FRA's Restoration and Enhancement Grant Program has provided operating assistance grants for initiating, restoring, or enhancing intercity passenger rail transportation in the past and may be extended in the future.

Readiness for Service

Both FTA and FRA have defined processes for determining Readiness for Service of projects. Primarily the goal of this step is completing pre-revenue service that involves system integration testing of project components, equipment, and systems, completing safety and security certification by ensuring constructed elements fulfill requirements identified during engineering, and completing pre-revenue operations that provides training and practice to operating staff prior to operations. Additionally, the operator will need to demonstrate that it has the management capacity and capability to operate the new service and has all necessary standard operating procedures and safety plans in place. Key to this step is developing and executing a hiring plan to ensure opening day service meets the expectation of the funding partner. This includes hiring maintenance, security, and coordination on operating decisions such as modifying connections to coordinate with the existing transit system. Additionally, the host railroad will impose the additional training requirements for train crews within the corridor. Based on industry experiences, this may take up to six months.

The scope of this assessment does not include the operations phase.

Attachment 1 – BNSF Passenger Rail Principles

Passenger Principles

BNSF is willing to cooperate on passenger rail studies and provide federal, state, and local officials with information. Where passenger rail service is proposed on a minimally used line that BNSF is willing to sell, BNSF shall be paid fair market value for the property. Where passenger rail service is proposed on a line BNSF intends to continue owning and to be jointly used for passenger and freight use, the following principles apply:

- Any passenger rail operation cannot degrade BNSF's freight service, negatively affect BNSF's freight customers or BNSF's ability to provide them with service.
- BNSF must be compensated for any and all costs incurred in providing passenger rail service and make a reasonable return for providing the service.
- Capital investments necessary for passenger rail service are the responsibility of the public, including investments for future capacity which is potentially more expensive, especially in urbanized areas.
- BNSF will not incur any liability for passenger rail operations that it would not have but for those operations. These operations are provided by BNSF primarily as a public service; the relatively modest compensation BNSF receives does not begin to justify assuming the significant liability associated with passenger service.
- Studies of how passenger rail service might be provided must take into account not only the current freight traffic levels, but projected freight traffic growth.
- Investments made for passenger rail projects must not result in BNSF incurring a higher tax burden. Property improvements should not become part of our tax base; materials used should be exempt from all sales and use taxes, etc. or BNSF must be made whole for any increased tax burden.
- BNSF must retain operating control of rail facilities used for passenger rail service. All dispatching, maintenance and construction must be done under the control of BNSF. Passenger stations, parking lots and other non-rail facilities may be publicly owned and operated.
- Studies must reflect BNSF's actual operating conditions and cost structures. For example, construction work estimates must reflect our labor contract costs, schedules cannot assume that we will not operate any freight trains during peak commuter periods, etc.
- BNSF will limit passenger rail operations to the passenger schedules initially agreed upon and for which the capital improvement plan has been designed. Future expansions will have to undergo the same analysis and provide any required capital improvements before schedules can be altered, service added, or stations added.
- Improvements must include grade crossing protection and intertrack fencing as required to minimize the risk of accidents, due to liability and service interruption concerns.

BNSF's relationship with Amtrak intercity passenger service is governed by Federal regulation supplemented by an operating contract between BNSF and Amtrak. Please direct questions about passenger rail service on BNSF Railway to www.bnsf.com/about-bnsf/contact-us/ or the passenger rail sponsoring agency.

Includes revisions from August 2007 and February 2023

DEPARTMENT OF TRANSPORTATION

Northstar Extension Assessment Study

Minnesota - Big Lake to St. Cloud

Date: 02/15/2024
To: Minnesota Department of Transportation
From: HNTB Corporation

RE: Appendix B – Capital Cost Estimate

Since the publication of the Northstar Commuter Rail Extension Feasibility Assessment in 2020 (Feasibility Study), the transportation market has experienced significant cost increases related to labor, materials, and risk that directly impacts project cost. The primary objective of this technical memorandum is to update the prior cost estimates to current market conditions and escalate these project costs to the associated Year of Expenditure (YOE).

Secondary objectives for refining project cost estimates are to:

- Inform decision-makers of the estimated overall project cost for all phases,
- Identify state budgetary and program needs, and
- Outline future grant funding requirements for potential service implementation.

Alternatives Evaluated for Costs

The scope of this effort focuses on two alternatives from the Feasibility Study. For each alternative noted below, the existing Northstar service between Minneapolis and Big Lake is preserved with minor schedule adjustments. The proposed additional operating characteristics of the two alternatives considered are as follows:

Minimum Bi-Directional Service Alternative

1. Weekday morning peak period
    a. One existing Northstar train would be rescheduled to begin in St. Cloud rather than Big Lake

b. One existing Northstar train would be rescheduled to terminate in St. Cloud rather than Big Lake

2. Weekday afternoon peak period
    a. One existing Northstar train would be rescheduled to terminate in St. Cloud rather than Big Lake
    b. One existing Northstar train would be rescheduled to begin in St. Cloud rather than Big Lake
3. Saturdays and Sundays/holidays
    a. Two new northbound and two new southbound express trains would operate between Minneapolis and St. Cloud.

Bi-Directional Service Alternative

1. Weekday Morning Peak Period
    a. Two existing Northstar trains would be rescheduled to begin in St. Cloud rather than Big Lake
    b. One new train would operate from Minneapolis to St. Cloud
2. Weekday Afternoon Peak Period
    a. Two trains from St. Cloud to Minneapolis
        i. One new train
        ii. One existing train rescheduled to begin in St. Cloud rather than Big Lake
    b. One new train from Big Lake to Minneapolis
    c. Four trains from Minneapolis to St. Cloud
        i. Two new trains
        ii. Two existing Northstar trains extended to St. Cloud
3. Saturdays and Sundays/holidays
    a. Two new northbound and two new southbound express trains would operate between Minneapolis and St. Cloud.

For this study, the Feasibility Study alternatives have been referred to as the following:

Table 1 Alternatives evaluated

	Alternative 1 (Low Level Service)	Alternative 2 (High Level Service)
Weekday		
Saint Cloud to Target Field Station	2 round trips per day	4 round trips per day
Big Lake to Target Field Station	6 round trips per day	9 round trips per day
Saturday/Sunday/Holiday		
Saint Cloud to Target Field Station	2 round trips per day	2 round trips per day
Big Lake to Target Field Station	3 round trips per day	3 round trips per day

As the next phases of this study progress toward a Locally Preferred Alternative (LPA), further analysis of the service needs of this corridor will identify the merits of these and other options. For both alternatives, the Feasibility Study determined the infrastructure needed for both initial operations beginning in 2025 and for the future horizon year in 2040 based on operations modeling of the corridor. The horizon year in the Feasibility Study considered the anticipated growth of freight commodities and the resulting increases to freight operations in the corridor. The Feasibility Study did not consider operational changes to existing Northstar service or additional passenger rail service between 2025 and horizon year of 2040 in effort to mitigate demand for capacity between freight and passenger operations. The Feasibility Study identified capital improvements for both of these alternatives. These were separated into improvements required for initiating the alternatives proposed service operations and the improvements identified to mitigate for the growth in freight operations in future years after proposed passenger operations are initiated. This approach results in a phased implementation approach for constructing identified improvements within the corridor. Improvements identified as phase two may be deferred through host railroad negotiations until growth in freight operations is reached as modeled in the Feasibility Study analysis. The Feasibility Study assumed those improvements were required to be implemented by year 2040. This assessment study keeps this assumption while allowing the initial start of service to be based on the necessary timelines of Project Planning, Project Development and phase one implementation. The Feasibility Study identified capital improvements is summarized in Table 2 on the following page.

Table 2 Capital improvements for alternatives

Identified Improvements	Alternative 1 Low Level Service Phase 1 Construction	Alternative 1 Low Level Service Phase 2 Construction	Alternative 2 High Level Service Phase 1 Construction	Alternative 2 High Level Service Phase 2 Construction
St. Cloud Improvements	Needs	Needs	Needs	Needs
Upgrade Universal Crossovers at Control Point (CP) Milepost (MP) 66	Needs	Needs	Needs	Needs
New Becker Centralized Traffic Control (CTC) CP	Does not need	Needs	Needs	Needs
Big Lake West Siding	Does not need	Does not need	Does not need	Needs
Big Lake Station Track Connection	Needs	Needs	Needs	Needs
Big Lake Station Expansion	Needs	Needs	Needs	Needs
Big Lake Maintenance Facility Expansion	Needs	Needs	Needs	Needs
Third Main Track CP Coon Creek to CP Interstate[1]	Does not need	Needs	Needs	Needs
Third Main Track CP Interstate to CP Van Buren	Does not need	Does not need	Does not need	Needs
Two Main Tracks CP Van Buren to CP Stadium[Error! Bookmark not defined.]	Does not need	Needs	Needs	Needs
Equipment Procurement	Needs	Needs	Needs	Needs

[1] Improvement is also a required for Northern Light Express (NLX) passenger rail service within NLX Tier 2 Environmental Assessment.

Project Timeline

The following implementation timeline for each alternative shown in **Table 3** and **Table 4** has been developed based on the necessary timelines of Project Planning, Project Development and phased implementation. Phase 1 Construction includes only the projects highlighted from **Table 2**. Phase 2 Construction includes remaining projects not built in Phase 1 that are shown in **Table 2**. Phase 2 is assumed to be completed no later than 2040.

Table 3 Potential timeline: Alternative 1

Phase	Start Year	End Year	Duration
Planning	2025	2027	2.5 years
Project Development: PE/NEPA	2028	2030	2 years
Implementation: Final Engineering	2030	2031	1.5 years
Implementation: Equipment (Rolling Stock) Procurement & Acquisition	2030	2035	5 years
Implementation Phase 1: Procurement & Construction	2033	2036	3 years
Implementation Phase 2: Procurement & Construction	2035	2040	5 years

Table 4 Potential timeline: Alternative 2

Phase	Start Year	End Year	Duration
Planning	2025	2027	2.5 years
Project Development: PE/NEPA	2028	2030	2 years
Implementation: Final Engineering	2030	2031	1.5 years
Implementation: Equipment (Rolling Stock) Procurement & Acquisition	2030	2035	5 years
Implementation Phase 1: Procurement & Construction	2033	2038	5 years
Implementation Phase 2: Procurement & Construction	2037	2040	3 years

Methodology

This costing methodology serves as the backbone for the project cost estimate presented. As the project progresses, adjustments may be required to the methodology to better reflect specific circumstances and costs during the analysis.

The attached estimate table is organized by Standard Cost Categories (SCC) which is used by both by the Federal Transit Administration (FTA) and the Federal Railroad Administration (FRA). SCC is separated into 10 categories for capital projects/programs. The categories are broad enough to be applied to all service alternatives and both federal agencies. Below are the ten major categories based on FTA guidance in **Table 5**.

Table 5 Standard cost categories

Standard Cost Categories
10 – Guideway & Track Elements
20 – Stations, Stops, Terminals, Intermodal
30 – Support Facilities: Yards, Shops, Administrative Buildings
40 – Sitework and Special Conditions
50 – Systems
60 – ROW, Land, Existing Improvements
70 – Vehicles
80 – Professional Services
90 – Unallocated Contingencies
100 – Finance Charges

Each category is broken down into subcategory items that expand upon the capital cost estimate of each major category. Category 100 Finance Charges do not apply at this time because the funding strategy is yet to be defined.

Unit Costs and Unit of Measure

The cost estimate will be developed using unit cost instead of developing a full, detailed estimate. Unit cost refers to the average cost incurred to construct one unit. It is derived by dividing the total cost of construction by the quantity of units being constructed. All unit costs include estimate items such as labor, materials, equipment, overhead, profit, premium time, and all applicable taxes and fees.

Unit costs will be developed using typical parametric estimating strategies, historical data, past project experience, similar feasibility studies, and from engineering staff's years of estimating and construction experience. Below is a list of resources that may be referenced when developing the unit costs:

- Published construction documents, such as "RS Means Heavy Construction Cost Data," current edition;
- MnDOT and other state transportation agencies weighted unit cost;
- FRA and FTA website for typical elements cost; and
- Various Class 1 Railroad cost estimates.

The project team will present all unit costs in 2023 dollars for design and construction. Escalating older unit costs to 2023 dollars will be conducted by using the *Engineering News Record* Construction Cost Index (CCI) for Minneapolis, MN. The CCI uses local prices for Portland cement and 2"x4" lumber and the national average price for structural steel. It also uses local union wages (plus fringes) for carpenters, bricklayers and iron workers.

Equation 1 Unit costs in 2023 dollars

$$Unit\ Cost_{\ 2023} = (Unit\ Cost_{Year\ X}) \times \frac{(August\ 2023\ Index)\ -\ (Prior\ Year\ Index)}{(Prior\ Year\ Index)}$$

All units will be based on U.S. Customary Units defined by the National Institute of Standards and Technology. U.S. Customary Units are officially used in the United States and are also known in the U.S. as "English" or "Imperial" units.

Quantities

The estimate is based on quantities and values from the Feasibility Study conceptual plan sheets contained in Appendix G, "Technical Memorandum on Conceptual Engineering" and Appendix I – "Technical Memorandum on Capital Cost Estimating Methodology Attachment 1 – PTC/CTC Cost Breakdown" as a primary source for tabulated quantities.

From the various data sources, the project team also may develop additional conceptual take-off quantities for other cost categories. Take-off quantities refer to the process of quantifying or measuring the various materials and components required to construct project components Take-off quantities will be made from drawings, typical sections and sketches created from Feasibility Study documents. Take-off quantities are estimated to be within 30% (+/-) of actual quantities.

Professional Services

The costing approach for Category 80 Professional Services will be based on percentages of the construction cost for Categories 10 through 50. Category 70 Vehicles is excluded because standard federal guidance is for professional services for vehicle procurement, design, manufacturing and oversight to be included in the unit cost of the vehicles.

The following **Table 6** shows the assumed percentage values that will be used. These percentages are based on the Construction Value of SCC 10 – 50 and are common practice percentages for planning.

Table 6 SCC 80 Professional Services percentage costs

Item Number	Item Description	Percentage
80.01	Project Development	2.0%
80.02	Engineering	3.0%
80.03	Project Management for Design and Construction	3.0%
80.04	Construction Administration and Management	3.0%
80.05	Professional Liability and Other Non-Construction Insurance	2.0%
80.06	Legal; Permits; Review Fees by other agencies, cities, etc.	0.33%
80.07	Surveys, Testing, Investigation, Inspection	0.33%
80.08	Start Up	0.33%

Contingency

For the purposes of the cost estimate, contingency is assigned into two major categories – Allocated and Unallocated. Allocated Contingency is added to each cost category based on an assessment of the quality of design information, means and methods, and site accessibility available for individual items of work.

Unallocated Contingency typically includes more widespread uncertainties like schedule delays, changes in contracting environment, or other such issues that are not associated with individual construction activities.

Contingency is included to generate a project budget cost that is realistic but conservative and can be used to cover the costs of accommodating newly acquired or revised information into the design, schedule modifications and other unknown risks. Overall contingencies should be adjusted as the project progresses from planning to detailed design. At the current level of project development being planning/concept design, the contingency used should be in the range of 25-35% for allocated and 10-20% for Unallocated because there are many unknown conditions that may be found as the project progresses.

Within the estimate worksheet, Categories 10 through 80 have a uniform 30% Allocated Contingency applied to each category's subtotal. Additionally, an Unallocated Contingency of 15% is applied to the subtotal of all

Categories 10 through 80 before being summed into the Total Capital Costs. Lastly, contingency is calculated based on the escalated YOE value for the cost categories.

The following **Table 7** is the percentages the project team assumes for capital cost estimates.

Table 7 Contingencies by Standard Cost Categories

Cost Category	Percentage
10 – Guideway and Track Elements	30%
20 – Stations, Stops, Terminals, Intermodal	30%
30 – Support Facilities: Yards, Shops, Administrative Buildings	30%
40 – Sitework and Special Conditions	30%
50 – Systems	30%
60 – ROW, Land, Existing Improvements	30%
70 – Vehicles	30%
80 – Professional Services	15%

Escalation

As stated above, all unit prices are developed in 2023 dollars. Project costs have then been escalated at a rate of 3.5% compounded yearly from 2023 to the assumed YOE based on the following implementation timeline for each alternative shown in **Table 3** and **Table 4** above.

Project Cost Estimate

Table 8 shows the estimated project costs for Planning, Project Development and Implementation for each alternative based on YOE dollars. Alternative 2 is estimated to cost approximately $141.6 million more than Alternative 1 in total. Alternative 2 also requires $272 million more in initial funding to initiate extension service operations in the corridor. See ***Attachment 1*** for detailed capital cost estimate breakdown.

Table 8 Estimate summary

	Alternative 1 Low Level Service	Alternative 2 High Level Service
Planning	$6.0 million	$6.2 million
Project Development	$30.5 million	$32.4 million
Implementation: Equipment (Rolling Stock)	$93.9 million	$100.6 million
Implementation Phase 1: Construction	$144.9 million	$396.2 million
Subtotal (YOE $)	**$275.3 million**	**$535.5 million**
Implementation Phase 2: Construction	$279.2 million	$155.2 million
Total (YOE $)	**$554.5 million**	**$690.7 million**

Operating and Maintenance Costs

Operating and Maintenance (O&M) cost is defined as the cost to operate and maintain equipment for the proposed service. These costs include items such as labor, training, third party, fuel, spare parts, routine maintenance, stations, marketing, insurance, and safety measures.

From **Table 3** and **Table 4** each alternative is assumed to have different years for when the service will begin operations. Alternative 1 is assumed to begin operations by 2036 and Alternative 2 by 2038. Both start years are assumed based on the completion of Phase 1 Construction.

Northstar is an existing operating service and has historical O&M costs for current operations. The objective is to determine the incremental O&M cost increase for each of the proposed service alternatives. Met Council

provided recent O&M costs and total train operating miles from current service operations. From this information, **Table 9** represents the O&M cost per train mile operated.

Table 9 2019 Full Service Northstar O&M Costs

O&M Item	2019 Cost
Labor and Benefits	$4.2 million
Contracted Services	$5.5 million
Materials, Parts and Supplies	$1.7 million
Other Expenses	$4.0 million
Allocated Expense	$2.1 million
Total O&M Cost	$17.5 million
Operated Train Miles	148,795
Cost/Train Mile	$117.66

To determine projected future O&M costs, the O&M costs for the existing service were escalated by a percentage annually to account for past market trends, future inflation projections and market increases. Inflation rates for years 2020-2022 is based on US Bureau Labor and Statistics annual average consumer price index. Rates for 2023 and beyond are assumed to be 3.5% annually. Attachment 2 shows projected O&M costs for the existing full Northstar service per current operations.

The Feasibility Study provided total operating miles for both existing service and proposed alternatives. The difference between the existing and proposed Alternative 1 is estimated to result in an additional 76,144 [2] operating miles annually. Alternative 2 is estimated to result in an additional 207,966 [2] operating miles annually. **Table 10** on the following page provides the O&M cost for Existing Service, Alternative 1 plus Existing Service, and Alternative 2 plus Existing Service over five-year operating timeframes.

[2] Additional operated train miles are calculated from Northstar Commuter Rail Extension Feasibility Assessment Appendix J – Table 1 Operating Characteristic for Existing Service and Proposed Service Alternatives.

Table 10 Projected O&M Costs Comparison

Year	Existing Service (millions)	Alternative 1 + Existing Service (millions)	Alternative 2 + Existing Service (millions)
2035	$31.3	–	–
2036	$32.4	$49.0	–
2037	$33.6	$50.8	–
2038	$34.7	$52.5	$83.3
2039	$36.06	$54.4	$86.3
2040	$37.2	$56.2	$89.2
2041	$38.5	$58.2	$92.3
2042	$39.9	$60.3	$95.6

Attachment 3 and *Attachment 4* provide the incremental O&M cost per year for from initial year of service through a 20-year horizon for each alternative.

DEPARTMENT OF TRANSPORTATION

Northstar Extension Assessment Study

Minnesota - Big Lake to St. Cloud

Date: 02/15/2024
To: Minnesota Department of Transportation
From: HNTB Corporation

RE: Appendix C – Steps to Apply for and Receive Federal Funding

Laying Out the Steps Forward

This appendix identifies applicable opportunities to pursue federal discretionary grant funding programs to potentially pursue extending Northstar Commuter Rail service to Saint (St.) Cloud. This appendix also describes, in detail both the Federal Transit Administration's (FTA) Capital Investment Grants (CIG) program and Federal Railroad Administration (FRA) grant program application processes, illustrating the varying differences in pursuing commuter vs. intercity passenger rail funding.

Grant opportunities summarized here include the FTA's Capital Investment Grants (CIG) program; the FRA's Federal-State Partnership (FSP), Consolidated Rail Infrastructure and Safety Improvements (CRISI), and Corridor Identification and Development (CID) programs. Additionally, the United States Department of Transportation's (USDOT's) Multimodal Project Discretionary Grant (MPDG), Rebuilding American Infrastructure with Sustainability and Equity (RAISE) and Congestion Mitigation and Air Quality (CMAQ) programs.

Federal Transit Administration (FTA) Capital Investment Grants (CIG) Process

FTA's CIG program provides discretionary funding through a multi-year, multi-step Project Development (PD) process that proposed new or expanded fixed guideway transit must go through to be eligible for and receive a grant agreement. Project sponsors will coordinate primarily with both FTA regional and headquarters offices throughout the CIG process. FTA Region 5 is responsible for oversight of applicants and grantees from Minnesota. There is a complex statutory framework that candidate CIG applicants must strictly adhere to in order to maintain eligibility for funding, including the following:

- Interim FTA approvals before a grant
- Formal FTA evaluation and ratings of the project's merit and local financial commitment
- A comprehensive FTA oversight and risk management program

Moreover, because of the size of CIG projects – and a demand for funding far exceeding annual CIG program resources – most projects are funded under multi-year grant agreements subject to Congressional appropriations. The CIG program is currently authorized at up to $4.6 billion annually through 2026.

There are three pathways towards receiving CIG funding, depending upon the characteristics of the project: New Starts, Small Starts, and Core Capacity. Each path has a unique set of requirements, although many similarities exist. For this study, the Core Capacity path is not considered because the existing and projected ridership on the Northstar service does not demonstrate a need for additional capacity improvements, which is the purpose of the Core Capacity category.

Figure 1 below shows the CIG funding parameters for both Small Starts and New Starts grants. It should be noted that it is rare for projects to receive the statutory maximum CIG share, and most project sponsors plan to receive a 50 percent CIG contribution.

Figure 1 CIG Program funding parameters

Funding Parameters

The 2020 Northstar Commuter Rail Extension Feasibility Assessment report estimated $95.6 million for short-term and $206.7 million for long-term capital improvements for the low service alternative and $187.5 million and $256.8 million for the high service alternative for short-term and long-term capital improvements, respectively. While both the short-term and long-term cost estimates for the Northstar Extension fall within the Small Starts parameters, the previous estimates need to be revisited based on current industry trends, which may result in elevated capital costs exceeding Small Starts maximums. Should the total project cost exceed $400 million and, or the federal funding sought equal or exceed $150 million, then the project will need to follow the New Starts program guidelines extending the overall project timeline. Appendix B revisits the 2020 estimate and applies recent trends and impacts from a potential project delivery timeline. Therefore, the following sections briefly describes the general CIG PD process, distinguishing between the Small Starts and New Starts pathways.

New Starts

The New Starts path to a grant is more complex than for Small Starts. As shown in Figure 2, below, there is an interim step between PD and receipt of a grant called New Starts Engineering (NSE). The PD phase for New Starts projects includes the completion of NEPA, at least 30 percent design, the securement of at least 30 percent of the local match to a future CIG, the preparation of project management plans and policies, and the development of the criteria FTA uses to evaluate and rate the project, as described in the next section of this appendix. Although the FTA occasionally may grant an extension under extenuating circumstances, New Starts projects must complete PD within two years, or risk losing funding and removal from the CIG program. This statutory deadline requires a strategic decision on the part of the project sponsor on when to apply for PD. Once New Starts project sponsors complete these activities, they may request entry into NSE. During NSE the project definition is finalized, all critical third-party agreements are executed, and all local financial commitments are secured. If the project a) continues to maintain a positive rating (as discussed in the next section); b) the sponsor demonstrates sufficient technical capacity to manage the construction of the project (as described in the section following that); and c) CIG funding is available, FTA may execute a Full-Funding Grant Agreement, committing a multi-year CIG revenue stream to the project, subject to Congressional appropriations.

Small Starts

The Small Starts process is for projects costing less than $400 million. Reflective of the smaller scope and scale of the projects it funds, Small Starts is designed to reduce the overhead and timelines necessary to move a project through the CIG process. It does this by eliminating the requirement for project sponsors to formally request entry into engineering (see in Figure 2 below) by combining PD and engineering into a single phase.

Figure 2 Overview of CIG grant processes

CIG Application Process

The law indicates that New Starts project sponsors must complete the PD phase within two years, which may be challenging for proposed projects that have significant environmental impacts, complicated financial arrangements, or complex engineering and design elements. Therefore, FTA encourages project sponsors to perform whatever work they feel is necessary before requesting entry into PD to facilitate their ability to complete PD for a proposed New Starts project within the two-year timeframe. For example, before requesting entry into PD, project sponsors may wish to conduct early planning work and initiate the environmental review process under the National Environmental Policy Act (NEPA), including, where appropriate, early scoping.

FTA awards Section 5309 CIG Program funding for a portion of the total project cost, including design and construction. Federal public transportation law limits New Starts projects to a maximum Section 5309 CIG Program share of 60 percent of the total project cost. In comparison, Core Capacity and Small Starts projects are limited to a maximum Section 5309 CIG Program share of 80 percent of the total project cost, with Small Starts projects further capped at a maximum $150 million grant. In practice, however, it is rare for a project to receive more than a 50 percent share of project costs. project sponsors should be aware that any activities undertaken before a project entering PD are not covered by automatic pre-award authority and will not be eligible for future reimbursement from the CIG program should a construction grant be awarded in the future. In other words, costs incurred before entry into PD are not considered by FTA to be part of the project cost that would be included in a CIG construction grant should one be awarded in the future.

The CIG program is guided by FTA's *Capital Investment Grants Policy Guidance* issued in January 2023. Before requesting entry into PD, the project sponsor must determine whether the project will be Small Starts or New Starts based on estimated project value. Regardless of the grant program, the project sponsor should assume a multi-year process between entering PD and receiving a grant. A successful CIG application should demonstrate the following on three primary characteristics:

- Ability to successfully navigate the PD Process
- Strong Project Merit (Evaluation and Rating)
- Strong sponsor Management and Technical Capacity & Capability (MCC & TCC)

CIG PD Process

Navigating the CIG PD process requires close coordination with both the FTA regional and headquarter offices. Throughout the development process, statutory interim FTA approvals are required outside of the NEPA process that need to be coordinated as candidate CIG projects are advanced. The first step for both New Starts and Small Starts is requesting Entry into PD. The request consists of a short letter meeting the requirements outlined in FTA's CIG Policy Guidance that describes the proposed project, summarizes its planning history, presents a schedule and budget, and shows evidence that funding for the PD budget is committed. With PD approval comes pre-award authority, which means that costs incurred to advance the project are reimbursable (that is, those costs can serve as the local match) under a future grant.

For PD under New Starts, federal law states that no later than two years after the date the project enters PD, the following activities must be completed:

- The project sponsor must select a Locally Preferred Alternative (LPA)
- The project sponsor must get the LPA adopted into the fiscally constrained metropolitan transportation plan
- The environmental review process required under NEPA must be completed as signified by a final FTA environmental decision (e.g., categorical exclusion, finding of no significant impact, combined final environmental impact statement/record of decision, or record of decision) covering all aspects of the project proposed for FTA funding

With Small Starts projects, PD covers all of the environmental, design, management, and procurement activities necessary to achieve an FTA-accepted cost estimate and schedule for the grant. It also involves the preparation of the criteria and financial plan FTA evaluates to determine a project rating, as described in the next section. Under Small Starts there is no time-limit within which project sponsors must complete PD. The completion of PD is either a) receipt of a Small Starts Grant Agreement or b) a local decision to terminate the project.

The project sponsor must also develop sufficient information for FTA to develop a project rating, described further in the next section.

During PD, FTA also requires project sponsors complete the following activities:

- Obtain commitment of at least 30 percent of the non-CIG capital funding for the project
- Complete at least 30 percent design and engineering

It is also during PD that project sponsors develop Project Management Plan (PMP) and sub-plans which presents the processes and procedures to continuously manage the project during advanced design and a staffing plan that identifies key personnel and demonstrates the sponsor's management capacity and capabilities, as discussed later in this document. Other expectations of PD work include:

- Project definition – key elements are identified and reasonably defined.
- Cost Estimate – addresses key items within the project's work breakdown structure at an appropriate level. Includes both the basis for the estimate and required contingency based on the level of design and in accordance with FTA and industry best practices.
- Schedule – addresses key activities, milestones and elements within the project's work breakdown structure and incorporates proposed delivery methodology.
- Third Party Agreements and Right-of-Way – are identified with a plan and schedule for completion.
- Geotechnical – a preliminary geotechnical report has been completed and provided to FTA where applicable (for example, this may not be needed when no geotechnical work is required - such as for most BRT projects).
- Project Delivery Method – the delivery method is identified (with related methodologies, activities, and milestones reflected throughout the other required products).

- Value Engineering (VE) Report – the report is substantially complete and a draft report shared with FTA where applicable (for example, a separate VE report may not be needed for some project delivery methods such as design-build, since bidders may be required to provide the VE options as part of their proposals).
- Safety – a preliminary safety hazard analysis and a preliminary threat and vulnerability analysis have been completed and the development of safety and security design criteria has been initiated.
- Accessibility – the sponsor demonstrates steps that will be taken to ensure compliance with DOT regulations and standards issued under the Americans with Disabilities Act (ADA), including a preliminary analysis of accessibility features such as accessible routes to, from, and within the station sites or boarding locations; detectable warnings; signage and communications; curb ramps; and other accessibility features required under the ADA.
- Constructability Review Report– a draft report is submitted, where applicable (for example, for very simple projects, a constructability review early in the PD process might not yield great benefits). The report includes at a minimum the general construction approach, a discussion of site access, and other potential constraints. A more detailed Constructability Review is to be performed during the Engineering phase that may focus on the bid documents, among other aspects, that would affect procurement of the construction contracts.

Federal law intends to ensure projects make sufficient progress and move quickly through the CIG process. Therefore, project sponsors should complete all of the PD activities listed above within the two-year timeframe specified in the law. If the activities mentioned above cannot be completed within the two-year timeframe due to unforeseen circumstances, the project sponsor should submit a written request for an extension of PD. FTA will consider requests for PD extensions on a case-by-case basis and respond in writing whether an extension is granted or not. FTA anticipates such requests will occur infrequently since project sponsors are advised to be cautious about timing their entry into PD only when they feel confident, they can complete the above-listed activities within the two-year timeframe. If a PD extension is not granted by FTA, the project will automatically be withdrawn from PD. project sponsors must complete the work activities listed above before they are allowed to apply for entry into the engineering phase of the CIG program. Any work performed after withdrawal from PD and prior to re-entry into engineering would not be covered by pre-award authority and would be ineligible for reimbursement at a future date should FTA ultimately award a CIG construction grant agreement. FTA requires that at a minimum the design and engineering work described in the bulleted list above (equivalent to a 30 percent design level) be completed during PD. However, FTA encourages project sponsors to complete as much engineering and design work on the locally preferred alternative as needed to produce a reliable of the project cost, scope, and schedule, as FTA intends to freeze the maximum CIG value based on the estimate submitted with the request for entry into Engineering.

Project Merit (Evaluation and Rating)

Project ratings are required at multiple points during the multi-year, multi-step process before a CIG funding commitment can be made. The ratings are based on a set of statutory project justifications and local financial commitment criteria. Projects must receive and maintain a “medium” or better overall rating to advance through the process and be eligible for funding. Ratings are point-in-time evaluations by FTA and may change as proposed projects proceed through planning and design, as information concerning costs, benefits, financial

plans, and impacts is refined.

The FTA assigns a Project Management Oversight contractor to CIG projects in PD to assess the management and technical capacity and capability of project sponsors. FTA must find that the sponsor is approved for entry into New Starts Engineering (NSE) or is receiving a grant. FTA also subjects project cost and schedule estimates to a rigorous risk assessment process, which often results in the need to add contingency to either. In addition to following the process described above, Congress has defined in law specific project justification and local financial commitment criteria that FTA must evaluate and rate for projects to receive a grant, – as well as for New Starts projects to advance into NSE. The CIG project justification rating is currently comprised of the sum of the ratings for the following six criteria, each of which is weighted equally:

- Cost Effectiveness
- Mobility Improvements
- Environmental Benefits
- Congestion Relief
- Land Use
- Economic Development

By law, each criterion is to be rated on a five-point scale, from low to high. Summary project justification and local financial commitment ratings are prepared and combined to arrive at an overall project rating. FTA's current measures for each of these financial criteria are presented in **Table 1** Current CIG project justification measurements below.

Table 1 Current CIG project justification measurements

Criteria	Measure(s)
Cost Effectiveness	Annual capital and operating and maintenance (O&M) cost per trip on the project
Mobility Improvements	Total number of annual linked trips using the proposed project, with a weight of two given to trips that would be made on the project by transit-dependent persons
Environmental Benefits	Dollar value of the anticipated direct and indirect benefits to human health, safety, energy, and the air quality environment scaled by the annualized capital and operating cost of the project
Congestion Relief	New weekday linked transit trips resulting from implementation of the project

Criteria	Measure(s)
Land Use	• Employment within ½ mile of stations • Residential population density within ½ mile of stations • Proportion of legally binding affordability-restricted housing in the project corridor compared to the proportion in the counties through which the project travels • Average Central Business District (CBD) daily parking cost • CBD parking spaces per employee
Economic Development	Transit Supportive Plans and Policies, including • Growth Management; • Transit Supportive Corridor Policies; • Supportive Zoning Regulations Near Transit Stations; and • Tools to Implement Land Use Policies Performance and Impacts of Policies, including: • Performance of Land Use Policies; and • Potential Impact of Transit Project on Regional Land Use Tools to maintain or increase the share of affordable housing in the project corridor

FTA also evaluates projects against three Local Financial Commitment criteria:

- Current Capital and Operating Condition
- Commitment of Capital and Operating Funds
- Reasonableness of the Capital and Operating Cost Estimates and Planning Assumptions

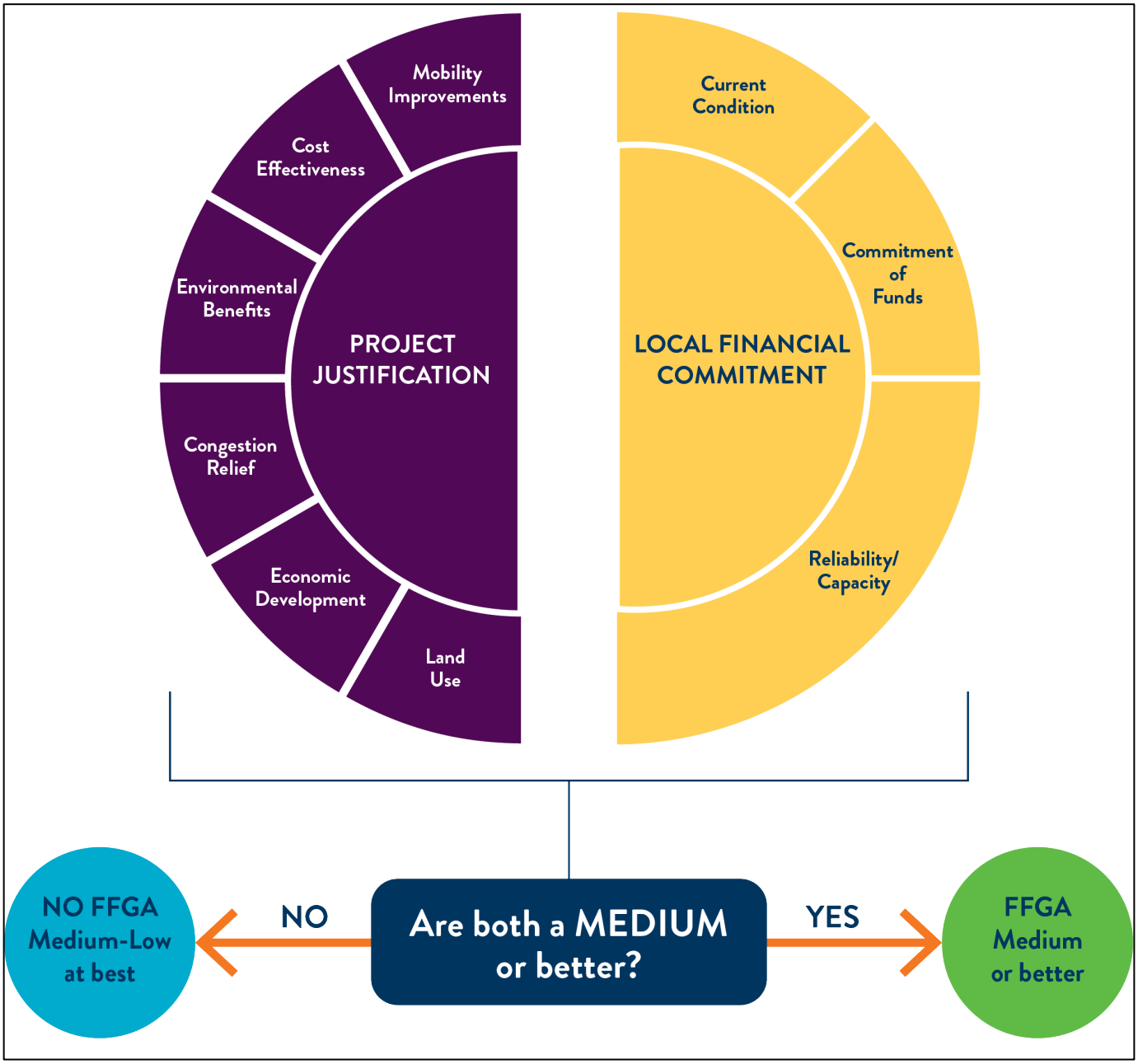
FTA's current measures for each of these criteria are presented in the **Table 2** below.

Table 2 Current FTA local financial commitment measures

Criteria	Measure(s)
Financial Condition	• Average fleet age • Bond ratings within the last two years • Current ratio (current assets/current liabilities) • Recent service history
Commitment of Funds	Amount of committed, budgeted, or planned funds
Financial Capacity and Reasonableness of Assumptions	• Assumptions about revenue and expense growth comparable to historical experience • Reasonableness of project capital cost estimate • Adequacy of meeting state-of-good repair needs • Financial capacity to withstand funding shortfalls or cost overruns (above and beyond contingency included in the cost estimate)

Each criterion is rated on a five-point scale (1. *Low* 2. *Medium Low* 3. *Medium* 4. *Medium High* 5. *High*). A candidate CIG project must attain at least a summed medium rating for both project justification and local financial commitment to receive a Medium overall project rating, which is the minimum rating necessary to qualify for a Full Funding Grant Agreement (FFGA); see **Figure 3** below, which also presents the relative weights of both sets of criteria. Furthermore, the FTA will not issue an FFGA without full commitment of local funding.

Figure 3 FFGA Scoring Criteria



Demonstrating Management and Technical Capacity & Capability

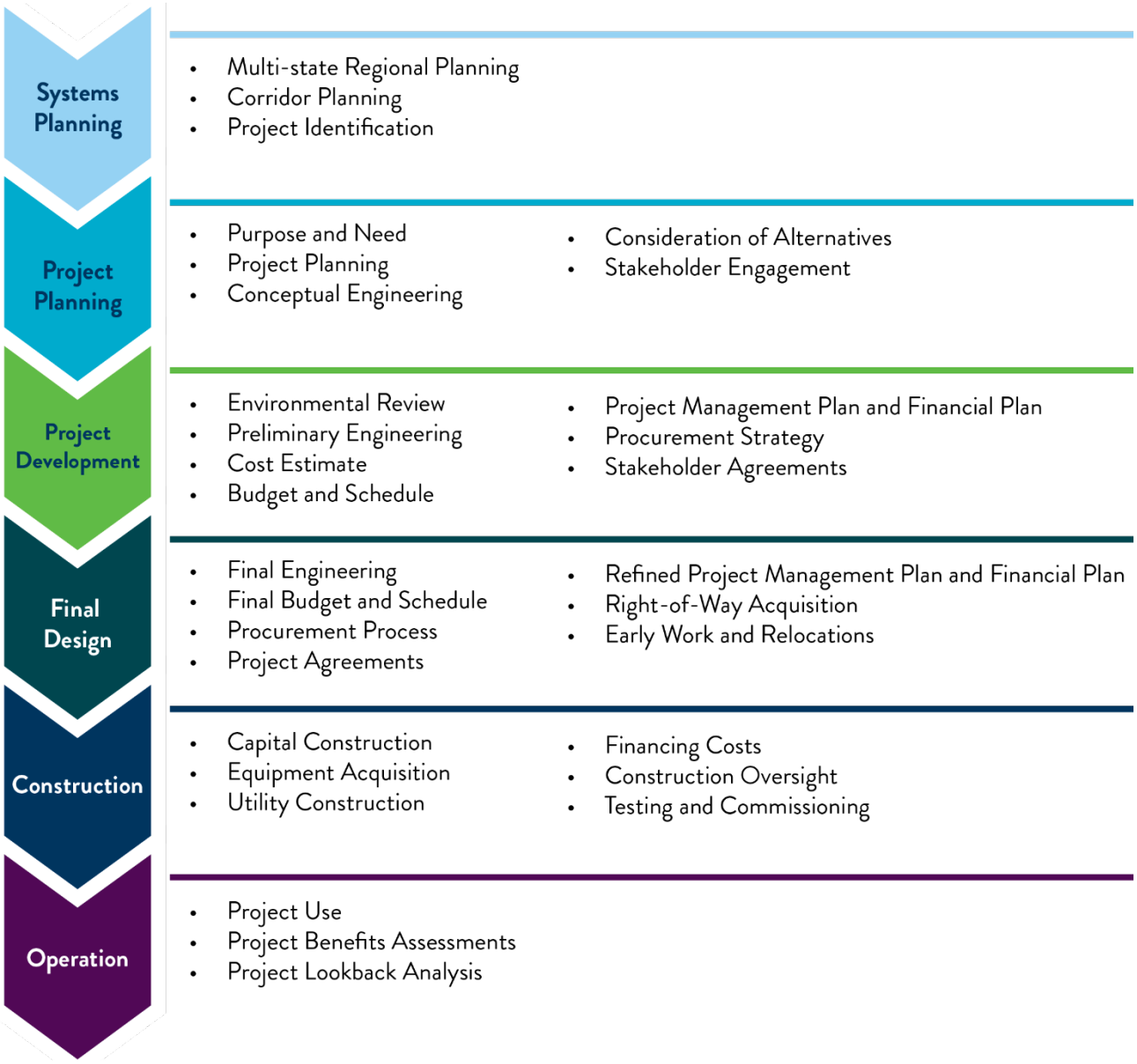
Another critical requirement for securing CIG funding is the applicants' ability to demonstrate the management and technical grantee staff capacity and capability to deliver a major transit capital investment efficiently and effectively. Demonstrating these capabilities starts with a robust and thorough PMP that outlines how the grantee will deliver the project. The PMP must include:

- Project organization staffed by experienced personnel and enabled by well-defined functions and reporting relationships
- Project budget and schedule monitoring procedures
- Procedures for document control and change orders
- Quality Control and Quality Assurance functions

Federal Railroad Administration (FRA) Grants Process

FRA funding helps project sponsors plan, develop, and implement railroad capital projects following a typical project lifecycle. As shown in **Figure 4** below, the project lifecycle described in this guidance has six stages, beginning with the identification of a railroad capital project during systems planning and continuing through development to implementation and then to project completion. Project implementation delivery approaches vary for different types of projects and circumstances. Project sponsors may choose to use innovative contracting and delivery methods and to initiate procurement processes starting in the PD stage of the lifecycle. This guidance recognizes innovative delivery opportunities, such as integrating the Final Design and Construction stages and advancing some project elements ahead of others when necessary.

Figure 4 FRA Project Development lifecycle



Awareness of the project lifecycle stages can help federal, state, regional, local, private organizations, and officials make informed decisions when managing railroad capital projects. For FRA-funded activities, FRA may consider the readiness of a project for subsequent stages of the project lifecycle when evaluating a project for funding or grant agreement deliverables. As a condition of a grant agreement, FRA may require the Project sponsor to obtain FRA concurrence that a project is ready to advance into PD, Final Design, or Construction. Even if no FRA funds are used for a proposed project, FRA encourages project sponsors to follow the Project Lifecyle Model and to seek technical assistance from FRA, as appropriate, to ensure development of the appropriate studies and documents and enhance eligibility for future FRA funding.

While conformity with this guidance is generally voluntary, FRA may require, in whole or in part, compliance with this guidance in an FRA grant agreement funding a railroad capital project. When FRA requires compliance with this guidance in a grant agreement, the grant agreement will specify how FRA will review and act on the documentation identified in this guidance. To date, FRA has not scrutinized project financial plans and applicants' technical and management capacity and capability to the same extent as FTA. However, with the significant increase in discretionary funding established by the Bipartisan Infrastructure Law (BIL) – and the associated accountability that comes with it – it is expected that FRA will begin to enhance its oversight of candidate projects and their sponsors.

The FRA has several discretionary grant programs for advancing intercity passenger rail systems. In contrast to the statutory PD and rating criteria that guide the FTA's CIG program, the FRA process has less statutory requirements, although, as described below, FRA's Corridor Identification and Development Program is intended to establish a disciplined pipeline of projects similar to that which results from FTA's PD process, with interim approvals that establish a framework for monitoring the progress of candidate FRA grant applicants.

A Major Project will meet either of the following definitions:

- A capital project with a Capital Cost Estimate equal to or greater than $500 million and with at least $100 million in federal assistance to improve railroad safety, efficiency, or reliability; improve capacity and mitigate passenger or freight rail congestion; enhance multi-modal connections; or improve or establish intercity passenger or freight rail transportation.
- A capital project that FRA determines to be a Major Project. FRA considers the complexity of a project and how additional procedures for PD and management will benefit the agency or the project sponsor.

A Non-Major Project is simply a capital project that does not meet the definition of a Major Project above.

FRA Project Planning

Project Planning is the first development stage of a project when the project sponsor identifies capital project concepts to adequately address transportation needs and opportunities. The purpose of project planning is to identify and compare the costs, benefits, and impacts of project options as a means of providing private and government decision-makers with information to reach transportation solutions. For railroad projects that may be used by multiple operators (i.e., "shared infrastructure"), the project sponsor should consider and coordinate the needs of the various operators during project planning. FRA encourages project sponsors to identify potentially impacted environmental resources and engage with interested parties, agencies, and the public in order to link Project Planning to the subsequent environmental review process early on.

A primary goal of Project Planning is to develop project concepts that establish the type and scope of capital improvements that best meet the goals and objectives identified in systems planning. Project Planning elements may include railroad transportation market forecasting, operations analysis, fleet planning, station and facility planning, cost analysis, environmental resource consideration, resilience planning, and financial and economic analysis. Public disclosure of potentially impacted environmental resources and engagement of potentially affected communities, tribes and the public as part of project planning can allow for linking Project Planning to the subsequent environmental review in PD. In successful project planning, the project sponsor identifies one or more design concepts to advance during the PD stage. Key elements of project planning include:

- A description of the transportation needs and opportunities for the project.
- The goals and objectives, including environmental factors, that the project sponsor used to assess the performance of design concepts.
- Conceptual engineering and other design that defines project concepts.
- Consideration of avoidance, minimization, and mitigation of potential environmental effects on the natural and human environment resources.
- An evaluation of how the design concepts meet the goals and objectives, considering capital and operating cost implications and whether they have stakeholder support and a rationale for implementation.

Benefit-Cost Analysis (BCA)

The FRA strongly believes that the systematic process of identifying, quantifying, and comparing expected benefits and costs helps decision-makers organize information about and evaluate trade-offs among transportation investment alternatives. Benefit-Cost Analysis (BCA) is a method that determines the future risk reduction benefits of a hazard mitigation project and compares those benefits to its costs. The result is a Benefit-Cost Ratio (BCR). A project is considered cost-effective when the BCR is 1.0 or greater. To determine if project benefits justify the project costs, a project sponsor should conduct an appropriately thorough BCA. A BCA estimates the net benefits (benefits minus costs) over a specified time period. The benefit-cost ratio (benefits divided by the costs) is also an important metric; projects that yield positive net benefits have a ratio greater than one. In addition to serving as a valuable tool for defining and narrowing investment alternatives, BCAs are also increasingly a prerequisite to receiving financial assistance under Federal investment programs, including those administered by the U.S. Department of Transportation (USDOT). Where a project sponsor's investment budget is limited (and all other project evaluation factors are otherwise equal), a project sponsor should normally accord preference for funding to those projects with the highest benefit-cost ratios (provided the ratio for those projects exceeds one), since doing so will maximize the benefits a project sponsor can obtain from its limited resources.

FRA grant programs typically feature criteria that address topics such as safety, state of good repair, economic competitiveness and equity. In addition to these generally qualitative criteria, FRA capital funding candidates are also evaluated for their safety, performance (reliability, speed, etc.), and environmental impacts, which are quantified via a BCA.

To be most competitive for FRA funding, the monetized benefits of candidate projects should exceed their cost. Typically, the most impactful monetized benefits for passenger rail will be those associated with:

- A reduction in accidents resulting in property damage, injuries, or fatalities;
- A reduction in travel time for passengers;
- A reduction in greenhouse gas emissions; and
- Avoided investments in air or highway infrastructure.

It is critical that candidate projects are able to demonstrate these benefits based on prior planning and analysis. Typically, this analysis is based upon defensible cost estimates and a travel demand forecast. This travel demand forecast will capture the impact of travel time improvements that induce a mode shift to passenger rail and includes an estimate in the change in regional vehicle miles resulting from the project. Faster travel time for existing passengers can also be estimated and monetized but will not on their own generate safety benefits and only marginal GHG reductions.

Safety benefits can be estimated with good data on past and current incidents and their anticipated prevention due to safety measures implemented as part of the candidate project scope. Avoided investments in airports or highways or the value of additional airport capacity created by a shift of short flights to passenger rail have significant benefits of passenger rail investment programs around the world, especially high-speed rail. Quantifiable and defensible operating cost savings estimates can contribute to reduced annualized costs and are another important variable in the BCA.

A project is ready to enter the subsequent PD stage when project planning has demonstrated a practical project proposal to address a clear project need and when the project sponsor has the support of participant stakeholders (e.g., host railroads and funding partners). FRA will review and consider applicable documentation of the following factors when assessing whether a project is ready for the PD stage and initiation of the environmental review process:

A. Identification of the project in a systems planning process, such as a railroad capital planning process, an interstate or regional rail study (typically led by FRA), or through State Rail Plans consistent with 49 U.S.C. § 227.2 Documentation should also demonstrate:
    (1) the transportation market(s) to be served; and
    (2) the role of the capital project in the rail system and overall transportation network;
B. A well-developed draft purpose and need statement;
C. Documentation showing that the project alternatives developed based on the project's purpose, need, and appropriateness for the type of project were considered. This may include operations, financial, economic, equity, resilience, climate and other analyses as appropriate. Analysis of project alternatives may consider, as applicable:
    (1) route options for new or modified rail lines and services;
    (2) service options for new or modified rail operations;
    (3) physical infrastructure investment options and design options; and
    (4) the methodology and criteria for eliminating preliminary project alternatives screened out from further consideration.
D. Completion of conceptual engineering and other design that identifies one or more preliminary project alternatives that fulfill the draft purpose and need and transportation goals and objectives, and that at a minimum, consist of:
    (1) the specific operational objectives and functional requirements of the project and the ability of the proposed design to fulfill them;
    (2) the location of the project;
    (3) the physical feasibility and general constructability of the design, including consideration of potential construction phasing and continuity of operations during the construction period; and
    (4) scale design drawings of the proposed project.

a) For new track infrastructure, scale design drawings should include, as appropriate: turnout sizes and type (e.g., powered, hand thrown); proposed signal locations; distance between signals; limits of signalization; and the extent of curves and curve geometry, gradients, and proposed speeds. For new track on existing rail lines, drawings should show both the existing and proposed track configuration.

E. Completion of an environmental resource inventory and potential environmental concerns analysis that addresses:
   (1) natural and built environmental conditions;
   (2) environmental resources and environmentally sensitive areas, including environmental justice communities;
   (3) potential environmental effects, including the identification of resources of concern on those resources to both the natural and human environment; and
   (4) potential minimization or avoidance measures;
F. Public, stakeholder, tribal and agency involvement;
G. Completion of an order-of-magnitude project cost estimate; and
H. For Major Projects, project sponsors should complete an initial Project Management Plan (PMP) that addresses project delivery strategy including consideration of alternative delivery contracting methods.

FRA Project Development

After Project Planning, the PD stage is when the project sponsor conducts design, environmental, and other studies to ensure the project is ready for implementation. In the PD stage, the project sponsor completes Preliminary Engineering (PE) and advances other design disciplines to inform detailed estimates of risks, costs, benefits, and impacts, and to support completion of the environmental process required under the National Environmental Policy Act (NEPA) and other laws. This works to the advance the permitting processes as appropriate, and to inform economic benefits assessments such as benefit-cost analysis. The project sponsor prepares or updates the PMP addressing the intended project delivery strategy, including considering alternative delivery contracting methods and establishing the status of agreements and the availability of implementation funding. For Major Projects, the project sponsor develops the initial Financial Plan. During PD, the project sponsor may advance the level of design of certain project elements to meet critical path milestones or mitigate procurement risks. FRA considers a project ready for the final design stage following a review of documentation from the PD stage that indicates completion of certain milestones.

A. Environmental Review – A NEPA decision has been issued along with necessary documentation confirming compliance with other environmental laws, such as Section 106 of the National Historic Preservation Act and Section 7 of the Endangered Species Act.
B. Design – PE and architectural or other design and functional definition of the selected project alternative is complete and sufficient to define operational performance, resilience outcomes, construction duration, material quantities, domestic material and product sourcing strategy, practical construction methods, utility and road relocations, property acquisition, and risks, including third-party risks, that influence schedule and cost. For projects with track reconfiguration, FRA seeks documentation showing concurrence on the engineering track configuration to ensure that the project sponsor, host railroad, railroads with operating rights, and FRA all agree with the operationally relevant elements of the design (e.g., track and signals).

C. Project Management Plan – The project sponsor has completed a PMP that addresses project implementation consistent with this guidance including agreements governing the construction, operation, and maintenance of the project such as those with governing bodies and partnering agencies.
D. Schedule – The project sponsor has completed a project schedule that has been used for preparation of the Capital Cost Estimate and is summarized in other documents.
E. Capital Cost Estimate – The project sponsor has completed a Capital Cost Estimate prepared using the completed preliminary design consistent with this guidance. For Major Projects, an independent risk review informs the cost estimate.
F. Financial Plan – The project sponsor has completed an Initial Financial Plan.

FRA Grant Programs

Table 3 FRA Intercity Passenger Rail Funding Grants

Program Name	Funding Amount	Activities Covered
Corridor Identification and Development (CID) Program	Step 1: $500,000. No Minimum non-federal match Step 2: Funding TBD. Minimum 10% non-federal match Step 3: Funding TBD. Minimum 20% non-federal match	• Step 1: Scope, Schedule, and Cost estimate for service development plan (SDP) • Step 2: SDP • Step 3: PD
Federal-State Partnership for Intercity Passenger Rail Grant Program (FSP)	80% of total costs with minimum of 20% non-federal match	• Track 1: Project Planning • Track 2: PD/Preliminary Engineering • Track 3: Final Design/Construction
Consolidated Rail Infrastructure and Safety Improvements (CRISI) Program	80% of total costs with minimum of 20% non-federal match	Improve the safety, efficiency, and reliability of intercity passenger and freight rail

Corridor Identification and Development (CID) Program

Authorized under 49 U.S. Code § 25101(a) and as described earlier, the Corridor Identification and Development (CID) Program is a comprehensive intercity passenger rail planning and development program that is intended to guide intercity passenger rail development throughout the country and create a pipeline of intercity passenger rail projects ready for implementation. The CID program features a three-step process that covers the Project Planning and PD phases of the PD lifecycle presented in Figure 4 earlier in this appendix:

- Step 1 is the initiation of an applicant's Corridor development efforts and the development of a scope, schedule, and cost estimate for preparing a service development plan (SDP) for a Corridor.
- Step 2 is the preparation of an SDP (or an update to an existing SDP) to complete Project Planning work consistent with FRA's *Guidance on Development and Implementation of Railroad Capital Projects.*
- Step 3 is the preparation of documentation to complete PD work required to ready the Corridor (or phase of the Corridor) for Implementation, including project designs that are reasonably expected to conform to all regulatory, safety, security and other design requirements, including those under the American with Disabilities Act. Such work includes the completion of PE and NEPA activities, and other documentation for the Corridor's capital project(s) to advance to implementation, consistent with FRA's *Guidance on Development and Implementation of Railroad Capital Projects.*

If a corridor is selected, FRA will initially award $500,000 for a project sponsor to complete project scoping (Step 1). FRA will then provide up to a 90 percent match for service development planning (Step 2) with a minimum 10 percent non-federal match. FRA will provide up to an 80 percent federal match for PD (Step 3 [PE and NEPA]) with a minimum 20 percent non-federal match required. It is understood that acceptance into the CID program will become a prerequisite for pursuing the FRA funding described below. Additional detail on funding and activities covered is provided in Table 3above.

Federal-State Partnerships for Intercity Passenger Rail (FSP)

(Authorized under 49 U.S. Code § 24911)

The BIL transforms the former Federal State Partnership for State of Good Repair (SGR) Program from a $200 million annual resource for improving the state of repair of facilities used for Amtrak service to one that could provide up to $8.7 billion per year through 2026 for both recapitalization and the construction of new intercity passenger rail systems. Of the total $43.5 billion for the five-year program availability, no more than $31.5 billion can be used on the Northeast Corridor (NEC), meaning that at least $12 billion is reserved for rail investments throughout the country. FRA intends to issue a Notice of Funding Opportunity (NOFO) on an annual basis for the FSP program, however FSP grants may only be available for CID grantees in the future.

Eligible projects include those which:

- Improve intercity passenger rail service performance, including reduced trip times, increased train frequencies, higher operating speeds, and improved reliability;
- Expand or establish new intercity passenger rail service;

While primarily intended to fund implementation, FSP may also fund activities associated with planning and NEPA.

The FSP Program is expected to be one of the primary sources of capital funding for intercity passenger rail projects that complete the CID Program. The FSP Program will fund up to 80 percent of total costs with a minimum non-Federal share of 20 percent. Additional detail on funding and activities covered is provided in Table 3 above.

Consolidated Rail Infrastructure and Safety Improvements (CRISI) Program

Authorized under 49 U.S. Code § 22907

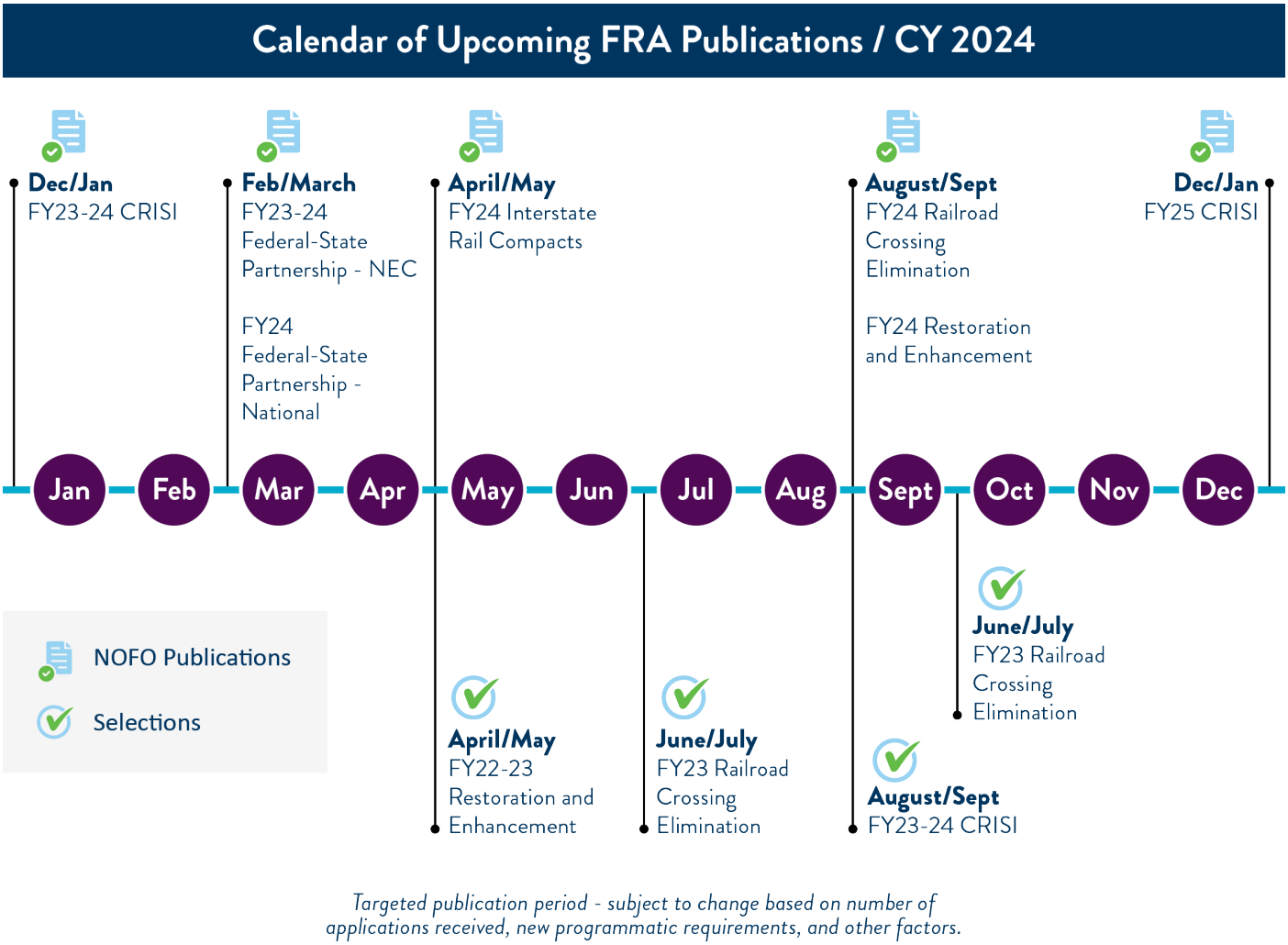
The purpose of the CRISI Program is to invest in a wide range of projects to improve railroad safety, efficiency, and reliability; mitigate congestion at both intercity passenger and freight rail chokepoints to support more efficient travel and goods movement; enhance multi-modal connections; and lead to new or substantially improved intercity passenger rail transportation corridors. Projects under this program may have secondary benefits to commuter rail services. Up to $2 billion annually is available under the program through 2026. The FRA intends to issue a Notice of Funding Opportunity (NOFO) on an annual basis for the CRISI program. Eligible CRISI projects include:

- Deployment of railroad safety technology;
- Capital projects, as defined in section 49 U.S.C. § 24401(2) for intercity passenger rail service;
- Capital projects that:
    - address congestion challenges affecting rail service,
    - reduce congestion and facilitate ridership growth along heavily traveled rail corridors, and/or
    - improve short-line or regional railroad infrastructure;
- Highway-rail grade crossing improvement projects;
- Rail line relocation and improvement projects;
- Regional rail and corridor service development plans and environmental analyses;
- Any project necessary to enhance multimodal connections or facilitate service integration between rail service and other modes;
- The development and implementation of a safety program or institute;
- The development and implementation of measures to prevent trespassing;
- Any research that the Secretary considers necessary to advance any particular aspect of rail-related capital, operations, or safety improvements;
- Workforce development and training activities, coordinated to the extent practicable with the existing local training programs supported by the Department of Transportation, the Department of Labor, and the Department of Education;
- Research, development, and testing to advance and facilitate innovative rail projects;
- Preparation of emergency plans for communities where hazardous materials are transported by rail;
- Rehabilitating, remanufacturing, procuring or overhauling locomotives for emissions reduction; and
- Deployment of Magnetic Levitation Transportation Projects.

Because of the need to evaluate cost-effectiveness through a BCA, and the challenges of combining discretionary federal grants from multiple programs into a single project financial plan, CRISI grants are frequently sought for supportive investments that add value to a passenger rail project. CRISI grants could be most effective for the Northstar corridor for grade separation projects, railroad capacity improvements that benefit passenger and freight traffic, grade crossing improvements, and safety projects.

The CRISI program does not set an explicit minimum or maximum funding amount, although sets in place a maximum of 80% percent project federal funding with a 20% percent non-federal match. Additional detail on funding and activities covered is provided in Table 3 above.

Figure 5 Calendar of upcoming FRA Notice of Funding Opportunities (NOFO)



Targeted publication period - subject to change based on number of applications received, new programmatic requirements, and other factors.

Other Federal Funding Programs

Both passenger and commuter rail are eligible under two competitive multimodal funding opportunities administered by USDOT. In addition, the Federal Highway Administration (FHWA) administers the CMAQ program through State DOTs that permit the "flexing" of funding to FTA to advance commuter rail projects. These opportunities are described below.

Multimodal Project Discretionary Grants (MPDG)

Authorized under 49 U.S. Code § 6701, 23 U.S. Code § 117, and 23 U.S. Code § 173

USDOT has combined three programs in a single NOFO. The Multimodal Project Discretionary Grants (MPDG) program include the Nationally Significant Multimodal Freight and Highways Projects grants program (INFRA), the National Infrastructure Project Assistance grants program (Mega), and the Rural Surface Transportation

Grant program (Rural). Project sponsors are able to apply to one or more programs with a single application. Each program focuses on supporting projects that improve safety, economic strength and global competitiveness, equity, and climate and sustainability consistent with the Department's strategic goals. The BIL makes available up to $8 billion to the INFRA program, up to $5 billion for the Mega program for the period of FY 2022 through 2026; and up to $2 billion for the Rural program for the period of FY 2022 through 2026, for a combined total of up to $15 billion, or nearly $3 billion per year. For the Northstar corridor, a grant from the MPDG program could be most effective for grade separation projects, railroad capacity improvements that benefit passenger and freight traffic, grade crossing improvements, and safety projects.

Rebuilding American Infrastructure with Sustainability and Equity (RAISE)

Authorized under Bipartisan Infrastructure Law (BIL)

Formerly known as National Infrastructure Investments and administered by USDOT as TIGER, BUILD and, most recently, RAISE grants, the BIL formally authorizes this multimodal program at up to $3 billion per year. Any surface transportation project – including both commuter and intercity passenger rail - is eligible for RAISE funding, but grants cannot exceed $25 million.

RAISE projects are evaluated against the following six criteria, as well as a BCA:

- Improves safety
- Improves environmental sustainability
- Improves quality of life
- Increases economic competitiveness and opportunities
- Contributes to a state of good repair
- Improves mobility and community connectivity

Because of the limited grant size under the RAISE program, the need to evaluate cost-effectiveness through a BCA, and the challenges of combining discretionary federal grants from multiple programs into a single project financial plan, RAISE grants are frequently sought for supportive investments that add value to a passenger rail project. For the Northstar corridor, RAISE grants may be most effective for the construction of stations, station-area streetscaping and quality of life improvements, bicycle and pedestrian trails, grade crossing improvements, and safety features.

Congestion Mitigation and Air Quality Improvement Program (CMAQ)

Authorized under 23 U.S. Code § 149

First authorized by the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 and reauthorized under every successive transportation law since, funding over 16,000 projects and $22.7 billion in funding to States, metropolitan planning organizations (MPOs), and transit agencies. From its beginning, the CMAQ program has been a key funding mechanism for helping urban areas meet air quality goals and supporting investments that encourage alternatives to driving alone and improve traffic flow. CMAQ funds must be invested in nonattainment areas (or any area that does not meet the national primary or secondary ambient air quality standard for a NAAQS), or former nonattainment (also known as maintenance) areas in a state. Projects must also come from a transportation plan and Transportation Improvement Program (TIP). Hennepin and Anoka Counties are currently classified as maintenance areas. Neither Sherburne nor Stearns Counties have a Nonattainment/Maintenance Status.

The BIL continues the CMAQ to provide a flexible funding source to State and local governments for transportation projects and programs to help meet the requirements of the Clean Air Act. The BIL also allows for CMAQ funds to be used for operating assistance in association with a transit system in certain areas. Historically, CMAQ funds have been used in the Twin Cities region for travel demand management, transit service expansion, or highway traffic management technology projects (such as traffic signal coordination). **Figure 6** below demonstrates the ongoing CMAQ transportation funding under the BIL.

Figure 6 CMAQ Program funding under the BIL

	FAST Act (extension)	Bipartisan Infrastructure Law (BIL)				
Fiscal Year (FY)	2021	2022	2023	2024	2025	2026
Contract Authority	$2.494 billion	$2.536 billion*	$2.578 billion*	$2.639 billion*	$2.692 billion*	$2.746 billion*

*Calculated (sum of estimated individual State CMAQ apportionments)

In total, there is over $106 million in CMAQ funding programmed for projects in the 2023-2026 TIP (Met Council, 2022). The net benefit of these projects is meant to help achieve a reduction of approximately 2,647 kg/day of mobile source pollution in the Twin Cities region. The CMAQ projects include the purchase of a number of transit vehicles, activities to market and incentivize the use of carpools, vanpools, and ride matching programs, and projects aimed at retiming and optimizing traffic signal coordination.