



Milestone 5 – Project Delivery and Implementation Concepts Technical Report

August 26, 2024



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Introduction

Milestone 5 outlines the steps that RTD would need to move the Peak Service plan forward. Project delivery considerations and implementation strategies use the Base Configuration that embodies the initial service plan for commuter rail as requested by the RTD Board of Directors.

There are several basic considerations relative to implementation of the Base Configuration for commuter service across the Northwest Rail corridor consisting of:

- Developing an overall long-term rail service strategy for the corridor that includes freight and passenger services
- Establishing a business relationship with BNSF Railway (BNSF) to utilize and share the trackway
- Understanding the costs and potential funding opportunities
- Outlining implementation opportunities for RTD to consider

This Technical Report is organized into the following sections:

- Service Implementation Strategy
- BNSF Agreements and Associated Costs
- Capital and O&M Costs
- Funding Opportunities
- Implementation Opportunities

Service Implementation Strategy

The Peak Service plan would introduce commuter rail passenger service into a key segment of the BNSF Front Range Subdivision for the first time in more than 60 years. During that time, freight operations have evolved to use more technology to support safe and efficient operations that could allow joint operations with passenger trains. However, as economic, business, and regulatory policy conditions continue to change, BNSF must consider these types of factors to remain profitable.

Returning passenger trains to the Northwest Rail corridor could help BNSF to increase usage of the railway asset to generate revenue. The current freight service is reported to be four to five trains per day, which leaves substantial room in the operating schedule to add trains to increase revenues. An overall service implementation strategy should be developed that would set out the requirements and the responsibilities of the entities that would operate trains on the alignment.

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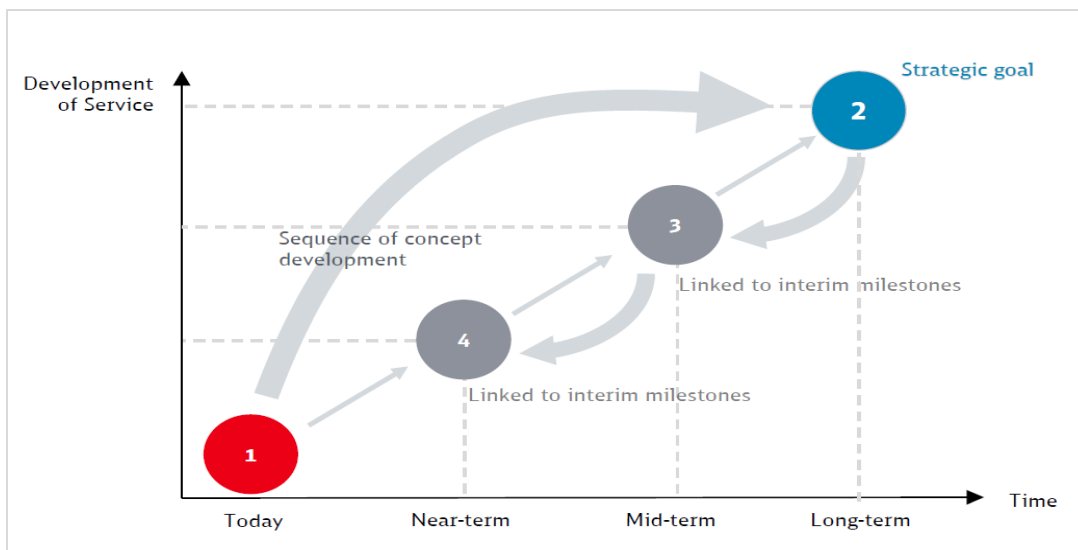
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A service implementation strategy would be composed of three parts:

- Service - set goals and objectives for freight and passenger service to be jointly operated safely and efficiently
- Operations – develop plans to separate passenger and freight trains by time and space
- Infrastructure – plan, design, build, and use freight sidings and control/communication systems to separate by time

These components will probably change over time as the services are added or changed. An iterative process should be used that shares the long-term objectives of each entity. To achieve the long-term goals and objectives, incremental steps in the near-term and mid-term should be defined among the entities. Such an approach is represented in Figure 1. This approach was used recently to assist the BNSF, North County Transit District (commuter rail operator in San Diego County, California) and Amtrak to create the strategy for the Oceanside to San Diego portion of the Los Angeles – San Diego (LOSSAN) Corridor.

Figure 1: Service Implementation Strategy Approach



Source: "San Diego Pathing Study"; Deutsch-Bahn; September 22, 2020

Implementation Strategy: Service Level Objectives

As a first step for commuter rail in the Northwest Corridor, general operating plans for the Near-Term have been defined by RTD as the Peak Service Base Configuration. BNSF is studying the infrastructure requirements for this initial step. It is also important to outline an overall "strategic goal" for both parties in the long-term and iteratively work back to the Near-Term for implementation as depicted in Figure 1. A strategic goal for RTD is to fulfill the commitments in the FasTracks Plan. A strategic goal for BNSF could be to increase usage of the tracks to generate revenue. And finally, a future strategic goal could be to incorporate an intercity passenger service plan such as the Front Range Passenger Rail proposal.

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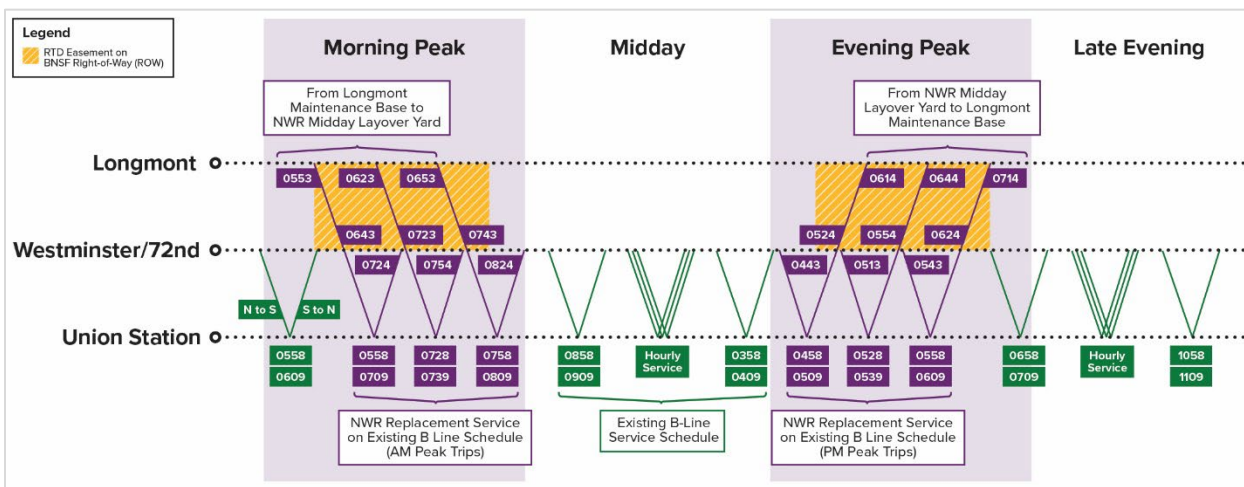
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Implementation Strategy: Time Separated Operating Plans

The Peak Service Feasibility Study (the Study) outlines the commuter rail operating plans which now must be compared to the freight operations. Windows of track time or blocks of time have been defined in the Study where RTD could operate commuter service. Figure 2 illustrates the blocks of time concept in yellow bands for the AM and PM peak periods. In order to implement the Peak Service Schedule, RTD would need to acquire the right to operate during these blocks while BNSF freight traffic was idled or scheduled to operate outside these windows.

BNSF must now consider the initial introduction of commuter service in the Northwest segment of the Front Range Subdivision with their current and future freight operations. The two operating plans must be merged, evaluated and fine-tuned to produce a “management plan” that would serve as the basis for partnership agreements.

Figure 2: Schematic Schedule for Peak Service in the Northwest Corridor



Source: RTD, HDR; July 2024

Implementation Strategy: Trackway Infrastructure Needs

For more than 15 years, RTD and BNSF have been coordinating planning studies to define the trackway infrastructure needs for the joint operation of freight and commuter rail service in the corridor. The most recent efforts consist of the Study by RTD and the corresponding preliminary engineering design work by BNSF and their engineering contractor, Wilson & Company.

The result is definition of the Base Configuration that would support the Peak Service plan. BNSF prepared plan drawings and a cost estimate at the 30% design level for the trackway infrastructure improvements. These improvements were based on train operation simulations modeled by BNSF that called for freight sidings at different points in the corridor into which they could shunt freight trains while the commuter rail trains were operating.

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The resulting plans identified three sidings totaling more than 8.2 miles of siding tracks. The BNSF design also included the station sidings for all six stations along with the necessary drainage, structures, signaling, roadway crossings, communications, and ancillary improvements within the trackway envelope. These improvements would be designed and built by BNSF. All features outside the right-of-way such as station platforms and passenger areas would be designed and built by RTD.

The information generated through these studies and design plans provide a “common set of facts” from which the RTD Board of Directors (Board) could make a determination regarding implementation. If that determination is made, the overall Implementation Strategy to address the service types, the operations of those services and required infrastructure will need to be developed.

Once RTD and BNSF agree to the Implementation Strategy parameters, the two parties will reach initial alignment with regards to the respective interim and long-term service plans. These corridor plans will support the refinement of regional plans to define the service and infrastructure investment milestones. Following the Implementation Strategy agreement, the next step is to negotiate the formal partnership agreements that must be executed between BNSF and RTD to move forward with implementing the Peak Period Service Plan.

BNSF Agreements and Associated Costs

Joint use of the BNSF trackway along the Front Range Subdivision is the only path for RTD to operate a commuter rail service in this corridor. A partnership between RTD and BNSF is needed to implement the commuter rail service. This partnership will require a foundation built on shared goals and outcomes defined by the two entities. For example, a key goal and outcome will be building and operating a commuter rail service at the same time a freight rail service is running. This goal must focus on safety and security of both operations. Another goal may be to limit impacts to existing and future land uses while increasing usage of the tracks. BNSF could have an objective related to increasing the use of the trackway asset to generate new revenues.

The Study defined the Base Configuration to meet the service implementation strategy objectives by:

- Defining both the commuter rail and the freight service plan objectives
- Planning for near-term service to not preclude possible mid-term and long-range operations
- Identification of the additional infrastructure needed for successful commuter rail and freight service

The RTD/BNSF relationship will require a legal and financial basis to go forward. For other commuter rail systems, BNSF has used a straightforward series of steps that lead to the formal agreements, defining the initial access and capital costs and subsequent transactions as well as the on-going operating and maintenance framework. These steps consist of:

1. Access easement
2. Capital improvements to the BNSF infrastructure that enable joint commuter rail and freight rail service.

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3. Non-BNSF capital costs for stations and similar commuter rail related infrastructure
4. Trackway and other on-going asset maintenance.
5. Mandatory operating costs
6. Other operating costs, both mandatory and optional

Access Easement

RTD will need to acquire an interest in the existing BNSF Front Range Subdivision with a one-time payment for an easement in the real property. BNSF will define a value of the easement that would accommodate RTD's peak service operations. The cost of the access easement would be prorated based on the number of hours RTD intends to use the BNSF infrastructure or based on the proportional share of the RTD passenger trips as a percent of total train (commuter and freight rail) trips. It is important to note that RTD's acquisition of the Access Easement will need to be done pursuant to all requirements of the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 as amended.

For the purposes of this analysis, the estimated cost for an easement to utilize the Front Range Subdivision was derived from limited sources, primarily the access easement that the Twin Cities Metro transit agency negotiated with BNSF Railway. In that case the ROW width was assumed to be 100 feet. An alternative for the NWR alignment would be the width of the trackway envelope of 37.5 feet. These two dimensions are used to develop a range of acquisition costs. Examples of alternate methods to cover these costs are presented in the *Costs Summary Technical Report* for the Peak Service plan.

BNSF Capital Improvements

Capital improvements are the RTD share of infrastructure improvements BNSF will implement to accommodate both freight and commuter rail services. As listed above, these will include tracks, positive train control (PTC), pedestrian tunnels, and other improvements to support commuter rail service to address RTD specifications. These improvements would reflect an initial capital expense but would also be subject to asset maintenance requirements including ongoing track replacement and replacement of PTC, switches, technology, etc. at the end of the respective lifecycles.

For the Peak Service project, the improvements will include freight passing sidings and passenger station sidings and track improvements that will enable RTD to provide speed and travel time expectations. Nearly all track improvements are expected to be charged to RTD, since BNSF would not be making the improvements "but for the implementation of commuter rail service".

Track and Other Asset Maintenance

Maintenance of Way (MOW) costs will be defined in an agreement and will reflect a calculated allocation of train miles and weight (ton-miles) to apportion the share of maintenance between BNSF and RTD. This will be an ongoing payment from the RTD that is likely subject to annual inflation or Consumer Price Index (CPI) adjustments. The allocation approach will likely leave RTD with a smaller portion of track maintenance costs because of less annual ton-miles over the segment compared to BNSF. One unique consideration is that RTD's

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addition of station sidings and switches will likely create an additional factor in track maintenance costs that may be less common in commuter rail systems that lack level platform boarding. Further, RTD will probably be charged 100% for PTC maintenance, unless the cost can be allocated jointly to RTD and a second passenger rail service.

A key issue will be how to structure funding responsibility for asset maintenance activities to address State of Good Repair (SOGR) objectives or replacement of the various assets at the end of their useful lives in 20 or 30 years. While the “but for” test will put funding onus on RTD for the initial improvements, both RTD and BNSF will benefit from the new infrastructure going forward. The SOGR or replacement cost allocation approach should be negotiated at the time of the initial agreement. An important component of the cost allocation approach will be an asset depreciation schedule to establish parameters for each entity.

Finally, infrastructure refurbishment for commuter rail are likely to be charged at the time of replacement rather than with an ongoing use fee. One approach in the agreements would be to consider asset replacement to be included in the capital improvement category above and included in the asset depreciation schedule. The method of cost/use allocation would be computed in train miles in the corridor or the cumulative weight of train cars. Passenger trains will be hundreds of feet in length as either three DMU vehicles coupled together or with two to five coaches and a locomotive. Freight trains can be thousands of feet long with hundreds of cars and multiple locomotives.

Mandatory Operational Costs

Specific operational costs that RTD must pay to BNSF will primarily be train dispatching and passenger operations management from BNSF’s Ft. Worth Headquarters. RTD will also likely be responsible for a BNSF Passenger Operations Superintendent for the Northwest Rail portion of the Front Range Subdivision. In addition, RTD will be responsible for PTC operation along the corridor, and any handover operation that occurs between RTD territory and BNSF’s Front Range Subdivision. This will be an ongoing operating cost and associated payment, subject to inflation or CPI adjustments.

It will be important to develop a cost model to specify how these direct costs will be calculated. Because the BNSF Front Range subdivision stretches for more than 100 miles, RTD would negotiate its share of the subdivision dispatch desk in Fort Worth for less than 39 miles of the Northwest Rail line.

Other expenses such as operation and maintenance responsibility of at-grade crossing equipment is a sensitive issue. The O&M costs at roadway crossings can be allocated among the local jurisdictions and the commuter and freight rail services based on reasonable allocation models.

Optional Operational Costs

RTD will be required to pay for the commuter train operations and maintenance. RTD has two options for operations:

- RTD would directly operate the commuter rail service as they do now on the N Line; or,
- RTD would contract with an operator to provide the service as they do now with the A, B and G Lines.

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For any operator, there will be a need for a handoff between RTD and BNSF train operators at Westminster/72nd Station. For any outside contractor serving as the commuter service operator, RTD would be responsible for the negotiated contract terms, if performed by BNSF or qualified third party for RTD. Similarly, the operating costs would be an ongoing internalized expense if RTD operates the service. There are multiple variables to consider in making a decision about the operating approach.

Non-BNSF Capital Improvements (by RTD)

BNSF will not construct stations and other commuter rail infrastructure; therefore, these RTD-specific costs will be in addition to the previously described BNSF capital costs. RTD will have shared infrastructure with local municipalities at certain stations. A standard RTD policy for FasTracks projects is to obtain a cost participation contribution from the local jurisdiction that constitutes 2.5% of the overall cost of the infrastructure improvements.

Additionally, RTD may be required to maintain certain crossing improvements required by the Colorado Public Utilities Commission unless these costs are allocated to a local jurisdiction. RTD as the commuter rail program implementer will be responsible for all capital, maintenance, and operating costs of station infrastructure, some of which may be contributed from other sources such as the 2.5% local jurisdiction participation. In the situation where FRPRD shares a station, costs would be allocated based on some reasonable measure.

Potential Costs Associated with BNSF Agreements

RTD will need to negotiate the capital and operating and maintenance (OPEX) costs that will be assigned to the Peak Service commuter rail service by BNSF to operate within the BNSF Front Range Subdivision Corridor.

The negotiations will include the use of some basis to apportion the costs between the commuter operations and the freight operations. These can vary from using a “time” basis or using a “train-event” basis. In the “time” basis, the entities that share the track would calculate the proportionate share of time throughout the “day” during which each would be operating. The “train-event” basis would follow the number of trains in a day for each entity. The basis could be as simple as trains per day or could consider the proportionate amount of wear-and-tear related to the weight of each train across the segment.

A source that outlines and documents the expected costs that RTD would incur is not publicly available. Therefore, previous agreements between BNSF and other commuter rail systems were used to indicate possible costs.

As an example, the **Joint Use Agreement** between BNSF and the Metropolitan Council in the Twin Cities (MN) for the NorthStar commuter rail (Exhibit E of the Joint Use agreement) documents the agreed upon cost to implement the commuter service. For the purposes of this study, these costs were inflated to provide a general idea of the potential costs that RTD would incur for the Peak Service plan. The costs are allocated based on a series of methods not stated in the agreement, so they were made using standard industry means to allocate responsibilities among parties.

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Capital and O&M Costs

This section summarizes the capital (CAPEX) and operating and maintenance (OPEX) cost for Peak Service. Estimates are also made for the agreements that are anticipated with BNSF using standard industry means to allocate responsibilities among parties. Details of the calculations are contained in the “*Cost Summary Technical Report*”, HDR/Peak Consulting, August 2024. Table 1 summarizes the potential range of the combined CAPEX and OPEX cost estimates. Additional details on the capital and O&M costs are provided after the table. The range of costs employs the different scenarios from the Cost Estimate Summary and then takes an average of the high and the low values for the mid-range estimate.

Table 1: Total Estimated Costs Summary (2024 \$, in millions)

CAPEX	\$(millions)	% of Estimate
Vehicles	\$ 136.50	21%
Guideway Track/Passing Sidings	\$ 18.67	3%
Stations	\$ 61.01	9%
At Grade Crossings	\$ 4.53	1%
PTC	\$ 40.04	6%
Communications and Ductbank	\$ 32.75	5%
RMF	\$ 89.11	14%
Other Capital Improvements	\$ 81.84	13%
ROW and Access Easement	\$ 82.42	13%
Professional Services	\$ 102.46	16%
	\$ 649.34	100%

Source: “*Cost Summary*” Technical Report; HDR/Peak Consulting, BNSF/Wilson & Co.; July 31, 2024

CAPEX Costs

As noted earlier, there are two categories of rail infrastructure capital costs:

- BNSF Capital Investments: Cost estimates for the trackway portion of the infrastructure improvements were developed based on 30% preliminary engineering design plans provided by BNSF
- Non-BNSF Capital Investments: RTD developed the non-BNSF capital costs for stations and other commuter rail related infrastructure, including the Maintenance Facility and Professional Services

The other primary capital cost is rail car vehicles.

Details on these cost categories are contained in the CAPEX portion of the “*Cost Summary Technical Report*”.

OPEX Costs

Costs Resulting from BNSF Agreements

Table 2 summarizes the range of operating costs that RTD could incur as a result of the agreements that are needed with BNSF to provide commuter service on the NWR alignment.

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Table 2: Possible Operating Costs for BNSF Agreements

BNSF Agreement	Period	Costs	Notes
Access Easement	One Time	\$62 M	Term is length of agreement (30-50 years)
Mandatory Operating Costs – Dispatch and BNSF Management	Annual	\$475,000 to \$770,000	Subject to Annual CPI
MOW / Asset Management	Annual	\$558,600	Subject to Annual CPI
Total Annual Costs	Annual	\$1,033,600 to \$1,386,000	Subject to Annual CPI

Source: HDR, 2024; NorthStar Joint Use Agreement May 2007

Optional Operating Costs

Although RTD intends to operate the trains for Peak Service, RTD could outsource the commuter rail operations to a third party. BNSF operates commuter service in other cities such as Seattle. It is estimated that a contract like that would be in the range of \$16-\$18 M annually. This compares to the estimated OPEX cost in the range of \$12-14 M annually if RTD were to self-perform train operations.

Peak Service with Additional Operations

The Milestone 4 assessment of possible service expansion identified one or two reverse commute trips that could be operated within time block windows in both the morning and evening peak periods. Adding the reverse commute runs would require more operating expenses annually and would require an additional passing siding and associated infrastructure for the commuter trains. Additional vehicles would not be needed for the reverse trips.

The commuter rail reverse commute trips could be made within the three-hour time block so technically could be covered by the access easement terms. That point will be subject to the negotiations with BNSF since the initiation of the Peak Service study was based on the three trips in the same direction for each peak period. If the reverse trip(s) are permitted, a new commuter rail passing siding would be needed and the annual operating costs such as the Mandatory Operating Costs and the MOW Costs would increase along with the RTD service O&M costs.

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Supplemental Federal Funding Opportunities

A key component of any future funding strategy is pursuing federal grant programs that were expanded or created in the 2021 Bipartisan Infrastructure Law (BIL). The BIL includes \$102 billion in new federal funding for transportation projects. Of this, \$66 billion is dedicated to rail infrastructure.

Table 3 compares the federal funding categories available for commuter rail such as the Peak Service plan and the intercity passenger rail such as the FRPR plan. The combination of the two programs would be attractive in the competitive grant programs because of the wider range of benefits that would result from the federal dollars.

These grant opportunities could be pursued for individual investment categories or a bundle of multiple investment categories. Table 4 provides additional information for each of these opportunities and Appendix A provides detailed descriptions and examples of similar projects from around the country that have received grant funding. Finally, the FTA Capital Investment Grant (CIG) Program could provide federal funding for all infrastructure investment categories. However, the Peak Service project would not qualify for the CIG funds because the criteria are highly dependent on ridership estimates compared to the total capital costs. With low ridership and high costs, the Peak Service project would not qualify for this type of federal funding.

Table 3: Potential Federal Funding Opportunities for Commuter Rail and Intercity Rail Projects

Infrastructure Investment Category	Federal Funding Opportunities: Commuter Rail Service	Federal Funding Opportunities: Intercity Passenger Rail Service
Guideway/Track: Passing Sidings	USDOT INFRA* USDOT RAISE DRCOG – Call for Projects	USDOT INFRA* USDOT RAISE FRA CRISI
Stations	USDOT RAISE DRCOG – Call for Projects	USDOT RAISE DRCOG – Call for Projects
Systems: At-Grade Crossings	USDOT INFRA* USDOT RAISE FRA Rail Crossing Elimination FRA CRISI DRCOG – Call for Projects	USDOT INFRA* USDOT RAISE FRA Rail Crossing Elimination FRA CRISI DRCOG – Call for Projects
Systems: Positive Train Control (PTC)	FRA CRISI	FRA CRISI
Systems: Ductwork	USDOT INFRA* USDOT RAISE FRA CRISI	USDOT INFRA* USDOT RAISE FRA CRISI

Note: *INFRA grant opportunities must reflect a benefit to freight movement.

Acronyms: USDOT = U.S. Department of Transportation; INFRA = Nationally Significant Multimodal Freight & Highway Projects); RAISE = Rebuilding American Infrastructure with Sustainability and Equity; DRCOG = Denver Regional Council of Governments; FRA = Federal Railroad Administration; CRISI = Consolidated Rail Infrastructure and Safety Improvements

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Table 4: Potential Federal Funding Opportunities Summary

Grant Program	Implementing Agency	Program Priorities	Eligible Projects	Selection/Merit Criteria	Benefit Cost Analysis (BCA) Required	Grant Funding Request	Federal Contribution
RAISE	USDOT Office of the Secretary	Helps communities build transportation projects that have significant local or regional impact and improve safety and equity.	<ul style="list-style-type: none"> Capital projects: <ul style="list-style-type: none"> Highway, bridge, or other road Public transit including commuter rail Intermodal Planning projects (planning, design, environmental): <ul style="list-style-type: none"> Comprehensive or corridor plans Equity, community engagement 	<ul style="list-style-type: none"> Safety Environmental sustainability Quality of life Improve mobility and community connectivity Economic competitiveness State of good repair Partnership and collaboration Innovation (technology, project delivery, financing) 	<ul style="list-style-type: none"> Capital Projects: Yes Planning Projects: No 	Minimum Grant Request: \$5M Maximum Grant Request: \$25M	Up to 80% future eligible costs
INFRA	USDOT Office of the Secretary	Multimodal freight and highway projects of national or regional significance to improve the safety, efficiency, and reliability of the movement of freight and people. Grant awards are available under two categories <ul style="list-style-type: none"> Large Projects: costs >\$100M Small Projects: cost <\$100M 	<ul style="list-style-type: none"> Highway/bridge projects on the NHFN Highway/bridge projects on the NHS Freight intermodal, freight rail, or freight projects; intermodal facilities Highway-railway grade crossing or separation Wildlife crossing Transportation project connected to an international border crossing Highway/bridge projects on the NMFN 	<ul style="list-style-type: none"> Safety State of good repair Economic impacts, freight movement and job creation Climate change, resiliency, and the environment Equity, multimodal options, and quality of life Innovation (technology, project delivery, financing) 	Yes	No award size restrictions	<ul style="list-style-type: none"> Up to 60% future eligible costs Other federal assistance may be used for an 80% total federal share
Railroad Crossing Elimination Program	FRA	Fund highway-rail or pathway-rail grade crossing improvement projects that focus on improving the safety and mobility of people and goods.	<ul style="list-style-type: none"> Grade separation or closure including through-use of a bridge, embankment, tunnel or combination. Track relocation. Improvement or installation of protective devices, signals, signs, or other measures to improve safety, provided such activities are related to a separation or relocation project. Other means to improve the safety and mobility of people and goods at highway-rail grade crossings (including technological solutions). A group of related projects that would collectively improve the mobility of people and goods. Planning, environmental review, and design 	<ul style="list-style-type: none"> Safety Equitable economic strength and improvement core assets Equity and barriers to opportunity Climate change and sustainability Transportation of our nation's infrastructure 	No	Minimum grant request is \$1M	Up to 80% future eligible costs
Consolidated Rail Infrastructure and Safety Improvements (CRISI)	FRA	To fund projects that improve the safety, efficiency and/or reliability of intercity passenger and freight rail systems.	Wide range of capital improvement projects including Projects to enhance multimodal connection or facilitate service integration between rail service and other modes: <ul style="list-style-type: none"> Rail safety technology Grade crossing improvements Regional corridor service planning and environmental analysis Emergency plans for hazardous materials Rehabilitation of locomotives 	<ul style="list-style-type: none"> System service and performance Safety, economic competitiveness, reliability, trip time, resiliency Efficiency from improved integration with other modes Ability to meet existing and anticipated demand 	Yes	No award size restrictions	Up to 80% future eligible costs

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Implementation Opportunities

Over the almost 20 years following approval of the FasTracks program, RTD has studied the requirements several times for implementing commuter rail service in the Northwest corridor. The key findings in previous studies and in this Peak Service Study are that costs are high compared to the level of benefits primarily low ridership levels that would be served.

The question of affordability comes up each time RTD studies the project. Findings from each study indicate that actions to improve affordability could increase the chances for implementation.

Implementation of the Peak Service plan requires the following considerations:

- Assessment of affordability options
- Acquiring new sources of funds
- Forming partnerships

Affordability Options

Affordability options that RTD may consider consist of phasing improvements and/or outsourcing certain functions. As general approaches to implementation, these options would require significant study and analysis to be included in an implementation strategy.

The phasing of improvements is dependent on the agreement that would be negotiated with the BNSF. If agreeable with the BNSF, portions of the Base Configuration infrastructure could be phased out over a period of years, lessening the demand on RTD for capital payments.

Phasing of improvements could consider several approaches which would reflect:

- Deferring one or more stations from the initial construction until a future point in time may be timed with land development and/or ridership demands
- More detailed modeling of train operations may indicate that one or more freight sidings could be built in a later phase

One advantage of phasing would be to coordinate the type of improvement with the opportunity to receive federal funding grants to make that improvement. As shown previously in Table 3, there are several categories of federal funding that could be aligned with the components of the Base Configuration over a period of several years.

RTD could also consider outsourcing some of the capital improvements and/or operating functions to a third party. This option would reduce the initial/one-time capital expense in return for an additional annual operating expense. For either option, RTD could better align cash flow requirements for Peak Service with available or anticipated revenues.

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Table 5 presents different options that could be achieved depending on the alignment of required capital and/or operating expenses across the timespan for implementation.

Table 5: Implementation Options with Change in Affordability

Option for Implementation	Change in Affordability
Implement incrementally to be more affordable over time.	CAPEX savings could be possible if improvements can be phased in agreements with BNSF
Align with funding partners – BIL grant programs cover many NWR elements	Jointly pursue grant funds with BNSF, FRPRD, State and local agencies
Outsource certain elements to save capital costs, shift to annual O&M costs	Shifting to OPEX could reduce CAPEX but significantly increase OPEX
Forge partnerships with the State, FRPRD and BNSF to share costs and responsibilities	Cost sharing could leverage RTD FISA funds through bonding.

Source: HDR; June 2024

New Sources of Funds

As detailed in the previous section, RTD could develop a coordinated program of matching the infrastructure improvements needed with the availability of federal or other funds. Table 6 illustrates the potential opportunities and level of federal funding that could be targeted for the conceptual incremental investment categories.

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Table 6: Potential Federal Funding Opportunities for Conceptual Incremental Investment Categories

Infrastructure Investment Category	Applicable Federal Funding Opportunities	Amount (Magnitude)	Probability of Funding
Full Project	FTA Capital Investment Grant Program (New Starts)	Minimum \$400M total cost Minimum grant request \$150M	
Full Project	FTA CIG (Small Starts)	Maximum \$320M Total Cost Maximum grant request \$120M	
Guideway / Track Passing Sidings	USDOT INFRA* USDOT	Up to 60%	
	RAISE	Up to 100%	
Stations	USDOT RAISE	From 15 - 20%	
Systems: At-Grade Crossings	USDOT INFRA*	Up to 60%	
	USDOT RAISE	Up to 30%	
	FRA Rail Crossing Elimination	Up to 80%	
	FRA CRISI	Up to 80%	
Systems: Positive Train Control	FRA CRISI	Up to 75%	
Systems: Ductwork	USDOT INFRA*	Up to 60%	
	USDOT RAISE	Up to 25 %	
	FRA CRISI	Up to 80%	
Total	Combined Sources	Between 40 and 75%	

Source: HDR; July 2024

Note: *INFRA grant opportunities must reflect a benefit to freight movement.

Acronyms: USDOT = U.S. Department of Transportation; INFRA = Nationally Significant Multimodal Freight & Highway Projects); RAISE = Rebuilding American Infrastructure with Sustainability and Equity; DRCOG = Denver Regional Council of Governments; FRA = Federal Railroad Administration; CRISI = Consolidated Rail Infrastructure and Safety Improvements

LEGEND:

- Zero Probability
- Low Probability
- Moderate Probability
- High Probability

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Forming Partnerships

RTD could enlist new partners to help with implementation. Sharing roles, responsibilities and costs could provide added leverage to the ability to implement Peak Service.

Local agencies already have been working with RTD by planning for development and making infrastructure improvements anticipating the transit access. In each of the commuter rail stations in the Base Configuration, local jurisdictions have established guidelines and development requirements to result in Transit Oriented Development (TOD) that will be supportive of the commuter rail service.

Jurisdictions have also made capital improvements such as linkages to future station sites and continued improvement of the at-grade rail crossings along the corridor. Further, an existing RTD policy requires at least a 2.5% infrastructure cost participation by local cities that will further the partnership with local entities.

In the 2024 Colorado legislative session, there was significant work done to define how the state might help with rail transit funding. Options that would include additional funding for RTD could provide further connection to the state with the FasTrack programs. Work in future years may bring this concept to fruition.

One of the requirements of the various federal funding sources is that the local agency (in this case RTD) and the host railroad (BNSF) would need to cooperatively prepare the grant request and then implement the award together. Coupled with the other business agreements described previously, RTD and BNSF would form a sort of “working partnership” that would enhance implementation.

Finally, several entities including RTD are presently engaged in defining the ways in which the FRPR concept could be implemented. The preferred route of the FRPR north segment adopted by that Board is along the BSNF Front Range Subdivision between Fort Collins and Union Station. A portion of this alignment is the same segment over which the Peak Service would operate between Longmont and DUS. Sharing implementation responsibilities between the two programs in partnership with BNSF Railway is a key opportunity for these rail programs.

There are several opportunities in which the two programs could benefit from shared economies of scale that include:

- Probable joint operational efficiencies, especially with regard to the requirements of BNSF as the host railroad
- Potential synergies arising from a common fleet type where spare vehicles could be shared reducing overall fleet costs; sharing portions of a common fleet could save a trainset for RTD which would reduce costs in the range of \$15-20 M
- Possibility to share and reduce operations and maintenance costs with a shared maintenance facility or perhaps outsourcing the O&M tasks; with a shared RMF, RTD could save in the range of \$40-45 M for half of that facility cost
- Potential to share track improvement costs that benefit both entities

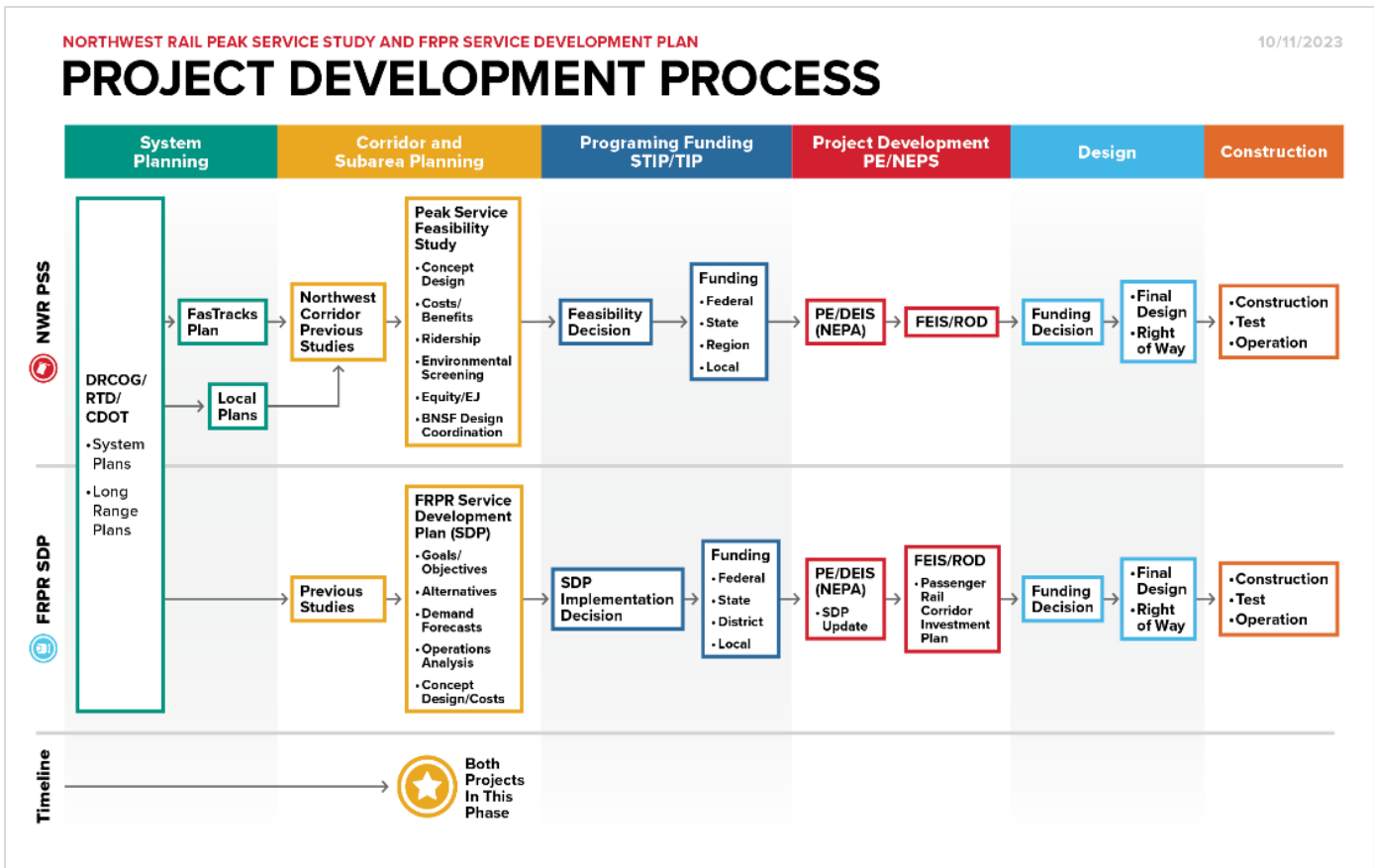
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- Potential to share station CAPEX and OPEX expenses at the common stations in Boulder and Longmont
- Potential to share in costs of safety systems like PTC/communications and crossing upgrades
- Potential to submit stronger grant requests to state and federal programs to more effectively use awarded funds

Figure 3 illustrates the two processes and the current stage for the Peak Service Plan and the FRPR program. The two projects are in the “Corridor and Subarea Planning” stage that would be followed by Programming Funding and then Project Development for preliminary engineering and environmental clearance. The environmental studies would be subject to the RTD FasTracks Environmental Resource Guidance (FERG) that is based on the National Environmental Policy Act (NEPA). Regardless of funding source, the Peak Service plan would fall under these requirements because of the various features that interface with resources and facilities in which federal, state and local governments have an interest in protecting and/or mitigating impacts with implementation of either project.

Figure 3: Project Development Process for Peak Service Commuter Rail and FRPR Intercity Rail



Source: HDR; January 2024

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Project Development and Implementation Opportunities

While the purpose of the Study was to identify the facts associated with an RTD peak service operations, the Project Team identified a potential opportunity for RTD and FRPR to coordinate efforts for a rail solution in the Northwest area. Consistent with the FasTracks plan, RTD could deliver peak service on its own. RTD could also continue to explore the emerging opportunity to deliver the project in partnership with FRPRD.

RTD FasTracks Implementation with Commuter Rail Peak Service Only

RTD could move forward but challenges remain with a funding gap. RTD does not currently have sufficient funding to implement Peak Service with an expected capital cost of \$650 million. The *FasTracks Unfinished Corridors Report*, June 2019 shows a completion date for the Peak Service concept in the 2042-2048 range with current and anticipated funding. A key component of the available funding is the current round of federal grant programs.

Design issues remain to be resolved at some locations. Continuing work with BNSF to keep open the option of access to the line is important. Demonstrating a strong, integrated program with multiple local partners could enhance the probability of being awarded grant funding. RTD will continue to monitor the statewide effort to advance passenger rail service and coordinate the Peak Service concept with that process. A detailed plan could be used to start the commuter rail service and, at the same time, be ready to expand the service, while ensuring not to preclude FRPR. Demonstrating a strong, integrated program with multiple local partners could enhance the probability of being awarded grant funding.

Joint Implementation of RTD Commuter Rail and Intercity Passenger Rail

Legislation passed in 2024 requires RTD and FRPRD to work together to determine whether and how the two programs could be done together. Completion of the RTD and CDOT studies would enable RTD and FRPRD to develop a combined approach for improving infrastructure on the corridor and provide service, either jointly or separately while sharing the common infrastructure. Included in that effort would be an allocation of costs and responsibilities. Opportunities to share economies of scale could be realized between RTD and FRPRD that include joint operational efficiencies, shared fleet, and shared costs of improvements. It is reasonable to expect that cost sharing of common elements would result in a lower cost to each agency.

The first step would outline service and operating plans for each program, and how to integrate with the BNSF freight service plans. Next, the required infrastructure to start initial operations would be agreed upon, as well as shared costs and implementation responsibilities. A funding and financing plan would be aligned with the improvements. RTD and FRPRD would participate jointly in seeking grants and other funding over near-term and long-range horizons.

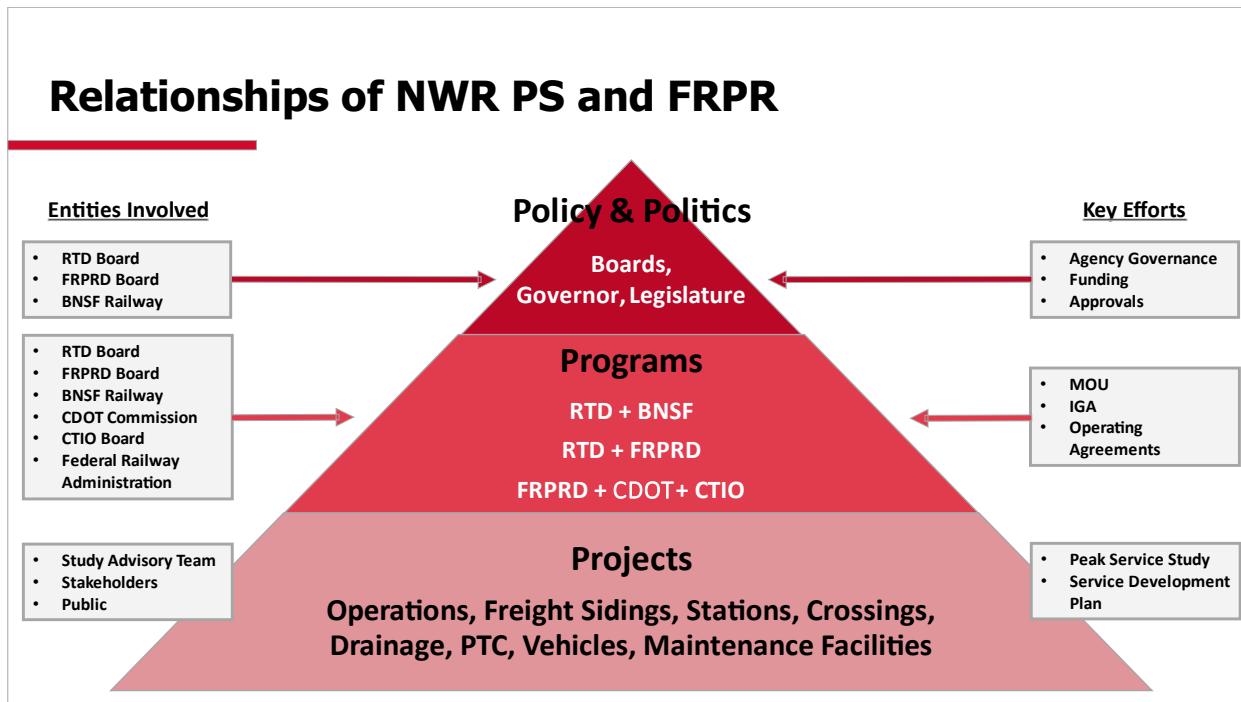
Implicit in joining with significant partners is working closely with CDOT, RTD's long-time partner in the region. Figure 4 depicts the various entities involved in the discussions related to the Peak Service plan for NWR and the FRPR proposal. The State of Colorado is moving forward with several programs that lead to the implementation of intercity passenger rail. CDOT is the lead agency for the State.

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The RTD system is in the center of those connections. The Northwest Corridor is currently the first segment where RTD and FRPRD are working together. In the future, planning operations and improvements at DUS, and along the Central and the Southwest Corridors will possibly be brought forward for planning together as partners in those segments. Those other locations will need to be studied together regardless of the option chosen by RTD for NWR.

Figure 4: Relationships Among Entities Involved with NWR Peak Service and FRPR Proposal



Source: HDR; April 2024

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Appendix
Potential Federal Funding and Financing Opportunities



Appendix 1. Potential Federal Funding and Financing Opportunities

The following provides an overview of the potential federal grant programs identified previously in Table 4. If the decision is made to pursue one or more of these grant programs in the future, it is important to remember that all federal grant awards and federal loans carry substantial regulatory requirements for award, obligation, and compliance reporting. The Uniform Guidance detailed in *2 C.F.R. Part 200* details overarching administrative requirements, cost principles, and audit requirements for federal awards.

As part of any future decision to pursue federal funding or financing, RTD's and potential regional partners' implementation strategy should reflect the potential schedule and cost impacts associated with administrative and project development requirements tied to the pursuit and use of awarded federal funds. While RTD may be well-versed in these requirements, if applications are led by regional partners or reflect a joint application, it will be important to educate the regional partners on the requirements summarized below.

Additionally, for each grant and financing program, the federal department that oversees these programs has its own requirements. These requirements could result in longer project implementation schedules, delays in the start of construction, and increased costs. Consideration of these potential impacts on an implementation schedule should be incorporated as part of federal funding and financing pursuit efforts. Further, each program carries specific requirements for meeting obligation deadlines (agreement execution), monitoring and reporting performance measurements, and expending grant funds within a specific time period.

Requirements that should be considered in the context of the current implementation strategy discussions include:

- Compliance with the [National Environmental Policy Act](#), which includes preparation and approval of an environmental clearance document for the infrastructure project that receives federal funding.
- Use of local prevailing wage rates as required by the Davis-Bacon and Related Acts Plan.
- Adherence to the Uniform Relocation Assistance and Real Property Acquisition Policies for Federal and Federally Assisted Programs for all real-estate acquisition activity.
- Compliance with Disadvantaged Business Enterprise (DBE) requirements of Title 49, Code of Federal Regulations Part 26 <https://www.transportation.gov/osdbu/disadvantaged-business-enterprise/49-cfr-part-26-sample-disadvantaged-business> including establishing a DBE participation goal and regular monitoring and compliance reporting.
- Adherence to the USDOT's Made in America policies and Build America, Buy America Act which directs Federal agencies to maximize the use of goods, products, and materials produced in, and services offered in, the United States through their financial assistance awards and procurements.

Grant Funding Programs for Specific Project Elements

Nationally Significant Multimodal Freight and Highway Projects (INFRA)

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Description: This program awards competitive grants for multimodal freight and highway projects of national or regional significance to improve the safety, efficiency, and reliability of the movement of freight and people in and across rural and urban areas. As noted earlier, while funding from this program could support some of the incremental investments needed for the NWR Peak Service, the primary element of the application would be demonstrating how the project would benefit freight service.

Eligible Project Categories: Eligible projects are those that improve safety, generate economic benefits, reduce congestion, enhance resiliency, and hold the greatest promise to eliminate freight bottlenecks and improve critical freight movements.

Potential NWR Peak Service elements that could be funded by an INFRA grant: These include sidings, highway-rail crossing improvements and similar trackway improvements.

Revenue Potential: Grant awards can fund up to 60 percent of project costs. Under the BIL, the INFRA program is authorized for \$1.5 billion annually through FY 2026. Additionally, 30 percent of annual funding is allocated to projects between \$5 million and \$100 million and 70 percent is allocated to projects over \$100 million.

The INFRA program includes categories for large and small projects. For a large project, the minimum INFRA grant must be at least \$25 million. For a small project, including both construction awards and project development awards, the grant must be at least \$5 million. For each fiscal year of INFRA funds, 10 percent of available funds are reserved for small projects and 90 percent are reserved for large projects.

In the FY 2022 application cycle, 26 transportation projects in 23 states were awarded grants ranging from \$10 million to \$150 million and averaged \$37.7 million. Examples of recent rail projects that received awards reflect the following:

- FY 2022: The Illinois Department of Transportation received \$70 million to rehabilitate railroad track, upgrade signaling, and replace, remove, or rehabilitate 18 viaduct structures on an approximately 1.9-mile-long rail segment.
- FY 2021: The Palmetto Railways, a division of the South Carolina Department of Commerce, received \$25 million to build approximately 22.7 miles of new track and related facilities to connect the Camp Hall Commerce Park to the CSX rail network.

Most Recent Application Cycle: The application cycle for FY 2025 and FY2026 funding ended on May 4, 2024. Future funding of the INFRA program is contingent upon additional funding approved by Congress.

Rebuilding American Infrastructure with Sustainability and Equity (RAISE)

Description: The RAISE program, formerly known as the Better Utilizing Investments to Leverage Development (BUILD) program, and before that, the Transportation Investment Generating Economic Recovery (TIGER) program, is one of USDOT's largest multimodal discretionary grant programs and supports innovative multi-modal projects that would be otherwise difficult to fund through traditional federal programs. Competitive projects prove the ability to catalyze long-lasting, positive changes in safety, economic

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competitiveness, quality of life, environmental sustainability, innovation, and partnerships with a broad range of stakeholders.

Eligible Project Categories: Eligible projects include surface transportation infrastructure improvements that will have a significant local or regional impact. This includes projects that support roads, bridges, transit, rail, ports, or intermodal transportation.

Potential NWR Peak Service elements that could be funded by a RAISE grant: Sidings, stations, highway-rail crossing improvements.

Revenue Potential: The largest grant award is \$25 million. Under the BIL, the RAISE program is authorized for \$2 billion annually through FY 2026, and the allocation of grant awards must be split 50 percent to urban areas and 50 percent to rural areas. Additionally, the RAISE program includes a Planning Grant category and a Construction Grant category.

In 2022, RAISE funded 166 projects in all 50 states, the District of Columbia, Puerto Rico, the Northern Mariana Islands, and the US Virgin Islands. The Construction Grant category awards ranged from \$1.1 million to \$25.0 million. Colorado received three RAISE Grants: the Westward Three Project that funded the construction of three mobility hubs in Grand Junction, Rifle, and Glenwood Springs; the Rio Grande Intermodal Transportation facility in Alamosa; and the West Side Connector in Pueblo connecting the West Side of the city with downtown.

Examples of other recent grant awards that were similar to elements of the NWR Peak Service infrastructure needs include:

- FY 2022: Downtown Baton Rouge and Gonzales Train Station Project in the City of Gonzales, Louisiana. The award was for \$20 million to acquire right-of-way, design, and construct the two train stations along the planned Baton Rouge-New Orleans Inter-City Rail Service.
- FY 2022: The Town of Wake Forest, North Carolina received a \$3.4 million grant to fund the planning of mobility hubs in seven communities along the S-Line passenger rail project. The planning activities include feasibility and site assessments for all the partner communities, NEPA compliance, and preliminary engineering for four of the seven communities.
- FY 2021: The Derby-Shelton Multimodal Transportation Center in Connecticut was awarded \$12.6 million to construct a multimodal transportation center. Improvements to the existing Derby-Shelton Train Station include construction of a high-level rail platform and new bus and rail passenger amenities, improvements to station safety, rehabilitation of the existing train station building, bus waiting/loading areas, electric vehicle charging infrastructure, sidewalks and crosswalks throughout the station site, and improved vehicle parking and bus access.
- FY 2021: The City of Springfield, Illinois received a \$13.5 million award to implement new underpasses, grading and trackwork, and new grade crossing/pedestrian signals.

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- FY 2021: The Michigan Department of Transportation received a \$10 million award to construct an intermodal facility, which includes a combined rail and bus station; ticketing, waiting, baggage handling, and amenities; a 12-berth intercity bus boarding and alighting area covered by a multi-level parking garage; a lengthened and widened passenger rail platform; and a passenger tunnel connecting the combined passenger station and rail platform to the bus.

Next Application Cycle: The FY 2025 RAISE Grant cycle will open in October 2024 and applications will be due in January 2025.

Railroad Crossing Elimination (RCE) Program

Description: This is a new competitive grant program that provides funding for highway-rail or pedestrian/bicycle pathway-rail grade crossing improvement projects that focus on improving the safety and mobility of people and goods. The program is intended to eliminate highway-rail grade crossings that are often blocked by trains; improve the health and safety of communities; reduce the impacts that freight movement and railroad operations may have on underserved communities; and to improve the mobility of people and goods.

Eligible Project Categories: Eligible projects include the following:

- Grade separation or closure, including through the use of a bridge, embankment, tunnel, or combination thereof
- Track relocation
- Improvement or installation of protective devices, signals, signs, or other measures to improve safety
- Other means to improve the safety and mobility of people and goods at highway-rail grade crossings
- A group of related projects described above
- The planning, environmental review, and design of a project described above

Potential NWR Peak Service elements that could be funded by the RCE Program: Highway-rail crossing improvements

Revenue Potential: The BIL appropriates \$300 million annually through FY 2026 for this program. Each grant must be at least \$1 million, and there is no statutory maximum. Additionally, the RCE program includes a Planning Grant category and a Construction Grant category.

FY 2022 was the first round of applications for this program and to date, grant awards have not been announced.

Most Recent Application Cycle: The FY 2023 and 2024 NOFO was released on July 9, 2024, and applications are due on September 23, 2024.

Consolidated Rail Infrastructure and Safety Improvements (CRISI)

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Description: The goal of this competitive grant program is to support safety enhancements and general improvements to infrastructure for both intercity passenger and freight railroads by leveraging private, state, and local funding. The CRISI program is administered by the FRA and invests in a wide range of construction projects to improve railroad safety, efficiency, and reliability; mitigate congestion at both intercity passenger and freight rail chokepoints; enhance multi-modal connections; and lead to new or substantially improved intercity passenger rail transportation corridors. Although this grant program is generally intended for intercity passenger rail rather than commuter rail, commuter rail projects that implement or sustain PTC systems can be awarded CRISI grant funding. In these instances, the grant award would be administered by FTA rather than FRA.

Eligible Project Categories: There are five grant categories (called “tracks”) within the CRISI program, of which the following three would be relevant to the NWR Peak Service investments: Track 1 - Systems Planning, Track 2 - Project Development, and Track 3 – Final Design and Construction.

Potential NWR Peak Service elements that could be funded by the CRISI program: Sidings, PTC, highway-rail crossing improvements, ductwork.

Revenue Potential: Grant awards can fund up to 60 percent of project costs. Under the BIL, the CRISI program is authorized for \$1.4 billion annually through FY 2026. Additionally, 25 percent of annual funding is allocated to rural projects, \$150 million is allocated for Intercity Passenger Rail Projects, \$25 million for implementing anti-trespassing measures, and \$2 million for MagLev projects. Example of recent relevant grant awards include:

- FY 2021: The North Carolina DOT received a \$57.9 million award to perform surveys and complete preliminary engineering for the Raleigh to Richmond (R2R) Corridor Program improvements between Raleigh, NC, and Richmond, VA. The project will advance the next phase of the R2R corridor development, which will eventually result in new intercity passenger rail service on a state-owned route that will access currently underserved and minority rural communities with rail service, as well as improve travel times on the existing Amtrak Silver Meteor service.
- FY 2021: The City of San Jose received \$7.5 million to fund preliminary engineering and environmental reviews necessary for grade separations at three existing at-grade crossings in a high-fatality corridor. Additionally, the preliminary engineering and environmental work will allow the project to be built concurrently with the California High Speed Rail Project that will use the grade separations.
- FY 2021: \$8 million was awarded to the San Diego Association of Governments to replace the Pacific Surfliner Bridge with a new concrete bridge constructed above the flood zone to ensure safe and efficient operations. This corridor sees significant daily train traffic for intercity, freight, and commuter services.
- FY 2020: \$31.8 million was awarded to the Wisconsin DOT for six infrastructure improvements in Wisconsin and Minnesota on Canadian Pacific’s Soo Line to increase service frequency on the first state-supported intercity passenger rail between the Twin Cities and Milwaukee. Upgrades include

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communication and signaling, extending rail sidings, improving at-grade crossings, extending yard lead track, and reconstructing and modifying turnouts and mainline track.

- FY 2020: The City of Boca Raton, Florida received a \$16.35 million award to construct a new passenger rail station and parking garage. This project consists of a new station on Brightline’s existing train corridor, track improvement work, and construction of a parking garage, which will provide an intermodal connection between vehicles and rail.

Most Recent Application Cycle: The FY 2023 and 2024 NOFO was published on March 29, 2024, and grant applications were due on May 28, 2024.

Regional Transportation Improvement Program (TIP) Call for Projects

Description: Every year the Denver Regional Council of Governments (DRCOG) solicits transportation projects to be included in the Regional Transportation Plan through the Transportation Improvement Program (TIP). Local governments within the DRCOG boundaries decide on a process and criteria for including projects in the TIP and awarding DRCOG-controlled federal and state funds, which allows the region to set and agree upon its transportation priorities. All program projects must meet current air quality standards.

In addition, RTD is also invited to participate in the Subregional Forums which are responsible for submitting projects, programs, or studies for consideration by the DRCOG Board. In addition to the main Regional and Subregional Calls for Projects, DRCOG also develops and maintains a group of regional set-aside programs, each having their own funding amount and call for projects. RTD is also included in this set of programs.

Eligible Project Categories: Projects that are eligible for inclusion in the TIP and for funding include those that reduce congestion, improve air quality, maintain a state of good repair on the existing system, capital costs for transit projects, fringe and corridor parking facilities, highway and transit safety infrastructure improvements and programs, transportation alternatives activities, and bicycle and pedestrian facilities.

Potential NWR Peak Service Elements that could be funded through the TIP: passing sidings, stations, at-grade crossings.

Revenue Potential: The amount available per Call varies from year to year. In general, the maximum grant award is \$20 million. The Federal share can cover up to 80 percent of total costs. Examples of recently awarded projects include:

- The Federal BRT Corridor received \$15 million in the 2024-2027 TIP Regional Share Call #3 for design, environmental, and early action projects associated with side-running bus rapid transit (BRT). The final project will include enhanced bus stops, sidewalk improvements, transit lane striping, and operational improvements including transit signal priority.
- The East Colfax BRT project received \$12 million from the 2022-2025 TIP Regional share and \$3 million from the 2022-2025 TIP Subregional Share for a total funding of \$15 million. The awards will fund preconstruction activity, including design for the center-running bus rapid transit from Civic Center Station to Yosemite.

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- Boulder County received \$8.2 million in the 2020-2023 Regional Share TIP funding allocation to enhance the BRT system along State Highway (SH) 119, including centering the busway in Longmont, creating transit bypass lanes on SH 119, and providing Bus Access Transit lanes in Boulder. The project received an additional \$11.2 million in the 2022-2025 TIP First Call.
- In the 2022-2025 TIP Regional Share – First Call, the City and County of Broomfield received \$7.3 million for design and environmental studies for the passenger vehicle, transit, and active transportation components at six locations along the SH 7 corridor.

Most Recent Application Cycle: In 2022, DRCOG held two Calls for Projects (Regional and Subregional Share call to program the fiscal year 2022-2025 TIP) that began programming anticipated funding available for fiscal year 2022 through FY2027. Then, to begin programming a new TIP covering FY2024-2027, DRCOG held a Regional Share call from late August until early October, and a Subregional Share call from November 2022 until January 2023. At this point, no TIP funding has been identified for the NWR Project.

Grant Funding Programs for the Entire NWR Peak Service Project

The following provides an overview of two potential federal grant programs that could provide funding support for all infrastructure investments needed for the NWR Peak Service Project.

FTA Capital Investment Grant Program (CIG)

Description: If the project is classified as a Commuter Rail System, the FTA Capital Investment Grant Program could provide full funding for the project. Within the CIG program there are three funding categories: New Starts (project costs greater than \$450 M); Small Starts (project costs <\$450 M); and Core Capacity (increase capacity of existing fixed guideway systems by at least 10 percent). The NWR Peak Service Project could potentially pursue funds under the New Starts category. As noted earlier, a key factor to being competitive for this grant program is the ridership forecast. Based on the FTA's Project Justification rating process, the ridership forecast is an input to four of six Project Justification criteria: Mobility Improvements, Cost Effectiveness, Environmental Benefits, and Congestion Relief.

Revenue Potential: Historically, New Starts grants have provided between 40 and 50 percent of total project costs. The BIL significantly increases funding for the CIG program with approximately \$23 billion authorized over the FY 2022 to FY 2026 period.

Most Recent Application Cycle: Unlike other federal discretionary grant programs that have a defined application schedule and submittal date, the CIG program is a multi-year process that can start at any point during a calendar year

FRA Federal-State Partnership Grant Program

Description: If the project is classified as an Intercity Passenger Rail System, it would be eligible for the FRA Federal-State Partnership Grant Program. This program was revised in BIL to include broader eligibility in terms of project types and selection criteria. More specifically, the BIL provides funding for projects that replace, rehabilitate, or repair infrastructure, equipment, or a facility used for providing intercity passenger rail

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service to bring such assets into a state of good repair; or improve intercity passenger rail service performance, including reduced trip times, increased train frequencies, higher operating speeds, improved reliability, expanded capacity, reduced congestion, and electrification; or to expand or establish new intercity passenger rail service. The program additionally provides funds to complete planning, environmental review, and final design of an eligible project or group of projects described above.

Revenue Potential: Funding from this program can cover up to 80 percent of total project costs. As enacted, the BIL appropriated \$36 billion over the FY 2022 to FY 2026 period for the program, of which no more than \$24 billion may be awarded to projects on the Northeast Corridor (NEC) and \$12 billion would be available for off-NEC network expansion (National Network).

In addition to the \$36 billion appropriated under the BIL, the law also authorizes an additional \$7.5 billion contingent on future Congressional appropriations, of which \$3.4 billion to \$4.1 billion would be available for network expansion, with the remainder reserved for projects on the NEC.

Most Recent Application Cycle: The first round of applications for the National Network were submitted on April 5, 2023. Grant award announcements are expected by the end of 2023.

Federal Financing Programs

The following programs assist local grantees with the financing of major CAPEX projects. To qualify for these programs the project sponsor needs to demonstrate a reliable revenue stream. These programs provide low interest loans and not grants.

Transportation Infrastructure Financing and Innovation Act of 1998 (TIFIA)

TIFIA is an established federal credit assistance program for eligible transportation projects of national or regional significance. The goal is to leverage public resources with low interest credit. Under TIFIA, the USDOT can provide three forms of credit assistance to eligible projects. These means of assistance include secured (or direct) loans, loan guarantees, and standby lines of credit. Principal amounts of credit assistance provided by TIFIA are limited to no more than 49 percent of eligible project costs. Additionally, interest rates for TIFIA loans generally reflect the government's borrowing costs, and the terms of repayment are generally favorable to project sponsors. Current Colorado state law for public-private partnerships (§43-1-1202) has no express provision against the use of TIFIA in the support of financing projects.

Major requirements:

- **Minimum Anticipated Project Costs:**
 - \$10 million for Transit-Oriented Development, Local, and Rural Projects
 - \$15 million for Intelligent Transportation System Projects
 - \$50 million for all other eligible Surface Transportation Projects

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- **TIFIA Credit Assistance Limit.** Credit assistance is limited to 33 percent of reasonably anticipated eligible project costs (unless the sponsor provides a compelling justification for up to 49 percent, the project meets certain rural, transit, or transit-oriented development eligibility, or is part of the Rural/INFRA/Mega grant Extra programs).
- **Investment Grade Rating.** Senior debt and TIFIA loan must receive investment grade ratings from at least two nationally recognized credit rating agencies (only one rating required if less than \$75 million).
- **Dedicated Repayment Source.** The project must have a dedicated revenue source pledged to secure both the TIFIA and senior debt financing.

Railroad Rehabilitation and Improvement Financing Program (RRIF)

The RRIF program is a revolving loan and loan guarantee program administered by the FRA. It is legislatively enabled to issue up to \$35 billion in loans. Not less than \$7 billion is reserved for projects benefiting freight railroads other than Class I carriers. The program was established by the Transportation Equity Act for the 21st Century (TEA-21) and amended by the Safe Accountable, Flexible and Efficient Transportation Act: A Legacy for Users (SAFETEA-LU).

The funding may be used to:

- Acquire, improve, or rehabilitate intermodal or rail equipment or facilities, including track, components of track, bridges, yards, buildings and shops, and including the installation of positive train control systems
- Develop or establish new intermodal or railroad facilities
- Reimburse planning and design expenses relating to activities listed above
- Refinance outstanding debt incurred for the purposes listed above
- Finance transit-oriented development

Attractive interest rates, similar to those available under TIFIA, also exist under RRIF. This program can fund up to 100 percent of a project's costs, allows for a five-year grace period, and requires an up-front risk premium. As RRIF is typically senior debt, a RRIF loan could be combined with a TIFIA subordinate loan. It is important to note that these sources are loans and will need to be repaid. Eligible borrowers include railroads, state and local governments, government-sponsored authorities and corporations, limited option freight shippers that intend to construct a new rail connection, and joint ventures that include at least one of the preceding.

Private Activity bonds

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Appendix 1. Potential Federal Funding and Financing Opportunities

Private Activity Bonds (PABs) are tax-exempt bonds issued by the state or local government on behalf of a private entity. Their purpose is to facilitate private investment for projects that generate public benefit. PABs allow for the private sector to borrow at tax-exempt rates resulting in lower overall financing costs.

PABs are highly attractive to private investors in conjunction with a public-private partnership program that includes equity investment, design-build, and operations involvement and could be used in conjunction with TIFIA/RRIF. For instance, PABs were recently used by RTD in the financing of \$398 M for the A, B, and L lines.

Passage of the private activity bond legislation reflects the federal government's desire to increase private sector investment in U.S. transportation infrastructure. Providing private developers and operators with access to tax-exempt interest rates lowers the cost of capital significantly, enhancing investment prospects. Increasing the involvement of private investors in highway and freight projects generates new sources of money, ideas, and efficiency. The \$30 billion in exempt facility bonds is not subject to the state volume caps.