

**FRONT RANGE PASSENGER RAIL  
PRELIMINARY SERVICE DEVELOPMENT  
PLAN AND RAILROAD SIMULATION  
MODELING STUDY**



***CONSOLIDATED RAIL INFRASTRUCTURE AND SAFETY IMPROVEMENTS***

***TRACK 1***

***PROJECT NARRATIVE***

***JUNE 19, 2020***

*Submitted by: Southwest Chief & Front Range Passenger Rail Commission*

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## 1. COVER PAGE

<b>Consolidated Rail Infrastructure &amp; Safety Improvements (CRISI) Grant Application</b>	
<b>Project Info</b>	
<b>Project Title</b>	Front Range Passenger Rail Preliminary Service Development Plan and Rail Simulation Modeling
<b>Applicant</b>	Southwest Chief & Front Range Passenger Rail Commission (Rail Commission)
<b>Project Track</b>	Track 1 - Planning
<b>Was a Federal grant application previously submitted for this project?</b>	No
<b>Is this a Rural Project? What percentage of the project cost is based in a Rural Area?</b>	25%
<b>Cities / States where the project is located</b>	Pueblo, Colorado Springs, Denver Metro Area, Boulder, Longmont, Loveland and Fort Collins
<b>Urbanized Area where the project is located</b>	Pueblo, Colorado Springs, Denver, Boulder, Greeley, and Fort Collins, Colorado
<b>Population of Urbanized Areas</b>	Pueblo – 111,650 Colorado Springs – 473,928 Denver – 717,796 Boulder – 106,456 Greeley – 107,026 Fort Collins – 167,236
<b>Is the project currently programmed in the: State Rail Plan, State Freight Plan, TIP, STIP, MPO Long Range Transportation Plan, State Long Range Transportation Plan?</b>	Yes, included in 2018 Colorado State Freight and Passenger Rail Plan and the Colorado Long Range Transportation Plan

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## 2. PROJECT SUMMARY

The Front Range Passenger Rail Preliminary Service Development Plan and Railroad Simulation Modeling effort will culminate the preliminary planning efforts conducted by the Southwest Chief and Front Range Passenger Rail Commission (Rail Commission) since it issued a Notice to Proceed to its consulting team in August of 2019. That initial effort includes Alternatives Analysis, Stakeholder Engagement and Pre-NEPA activities along the 180-mile corridor between Pueblo and Fort Collins, Colorado. These activities were coordinated with three USDOT agencies (FRA, FHWA, and FTA) throughout the 16 months of the initial (ongoing) effort. Continuing coordination with these three USDOT agencies will occur throughout the effort associated with the Statement of Work related to this Grant Application.

The Preliminary Service Development Plan and Rail Simulation Modeling will position the Rail Commission to move forward to issue a Notice of Intent to enter the formal NEPA process for the Front Range Passenger Rail (FRPR) Project.

## 3. PROJECT FUNDING

The total project cost of the FRPR Preliminary Service Development Plan and Rail Simulation Modeling is estimated to be \$685,000. As described in Table 2-1, the non-Federal cash funding match will be \$137,000 or 20 percent of the total project costs.

The Front Range Passenger Rail Project encompasses the 180-mile Front Range Corridor between Pueblo and Fort Collins, Colorado. Approximately 45 miles of this 180-mile corridor is considered rural between the urbanized areas of Denver, Colorado Springs and Pueblo in the southern portion of the Front Range Corridor. The entire northern portion of the Corridor between Denver and Fort Collins is considered to be an urbanized area. It is anticipated that the planning analysis would be performed by staff (agency and consultant) located in both urbanized and rural areas.

The non-Federal cash funding match is being provided by Pueblo County, the Rail Commission, the City of Trinidad, and ColoRail as shown in Table 2-2. The Statement of Work (SOW) is described under the Technical Merit section and included, with more detail and in accordance with FRA guidance, as *Appendix B*.

**Table 1: Project Funding**

Task	Task Name	Cost	Percentage of Total Cost
1	Project Management	\$65,000	9%
2	SDP Goals, Objectives, Rationale	\$10,000	2%
3	Rail Simulation Modeling	\$200,000	29%
4	Refine Alignment Alternatives	\$40,000	6%
5	Operations Analysis	\$80,000	12%
6	Ridership Demand/Revenue Forecast	\$25,000	4%
7	Station and Access Analysis	\$45,000	7%
8	Conceptual Engineering	\$70,000	10%
9	Capitol and O & M Costs	\$30,000	4%
10	Public Benefits Analysis	\$25,000	4%
11	Program Delivery/Implementation	\$20,000	3%
12	Stakeholder/Public Engagement	\$45,000	6%
13	Draft/Final Summary Reports	\$30,000	4%
<b>Total Project Cost</b>		<b>\$685,000</b>	<b>100%</b>
Federal Funds Received From Previous Grant		\$0	
<b>CRISI Federal Funding Request</b>		<b>\$548,000</b>	
<b>Non-Federal Funding/Match</b>		<b>\$137,000</b>	
Portion of Non-Federal Funding from Private Sector		\$2,000	
<b>Portion of Total Project Costs Spent in a Rural Area</b>		<b>\$171,250 (25%)</b>	
Pending Federal Funding Requests		\$0	

**Table 2: Non-Federal Funding Sources**

Non-Federal Funding Source	Contribution	Percentage of Total Non-Federal Funding
Pueblo County, Colorado	\$100,000	73.0%
Rail Commission	\$25,000	18.2%
City of Trinidad, Colorado	\$10,000	7.3%
ColoRail	\$2,000	1.5%
<b>Total Non-Federal Funding/Match</b>	<b>\$137,000</b>	<b>100%</b>
<b>Portion of Non-Federal Funding from Private Sector</b>	<b>\$2,000</b>	

Written correspondence outlining their support and funding commitment from each of the non-Federal Funding sources in Table 2-2 are included in *Appendix A*. In addition to CDOT's in-kind contribution of staff support (nearly \$900,000) to the initial phase of this project, CDOT will continue staff support of this next phase of work.

#### 4. APPLICANT ELIGIBILITY

The CRISI grant applicant is the Southwest Chief and Front Range Passenger Rail Commission (Rail Commission), a legislatively established body with eleven voting members, created in 2017 in the Colorado Department of Transportation by the enactment of Senate Bill 17-153 (Colorado Revised Statutes, 43-4-1001 et seq.1) by the Colorado General Assembly. As a “publicly chartered authority” within the CDOT, which in turn is a public agency of the State of Colorado, the Rail Commission meets the requirements of an eligible applicant under the Notice of Funding Opportunity (NOFO) issued on April 20, 2020. This legislation replaced the Southwest Chief Rail Line Economic Development, Rural Tourism, and Infrastructure Repair and Maintenance Commission created by the Colorado General Assembly in 2014.

The mission of the Rail Commission is to implement the development of a commuter or intercity passenger rail corridor from Fort Collins to Pueblo (including Denver and Colorado Springs) as a well-integrated component of a modern, efficient, and cost-effective multimodal transportation system. Future passenger rail extensions to Wyoming and New Mexico may also be explored by the Rail Commission. The Rail Commission is also charged with preserving existing Amtrak Southwest Chief rail line service in Colorado and exploring a possible re-route of the Southwest Chief through Pueblo and Walsenburg to Trinidad, Co, and on through New Mexico, and to Los Angeles.

Voting member organizations of the Commission include Union Pacific Railroad (UP); BNSF Railway; ColoRail (the Colorado Chapter of the National Association of Rail Passengers); a representative from the SW Chief counties in SE Colorado (Huerfano, Las Animas, Otero, and Pueblo); Pueblo Area Council of Governments (PACOG); South Central Council of Governments; Pikes Peak Area Council of Governments (PPACG); Denver Regional Council

of Governments (DRCOG); the North Front Range Metropolitan Planning Organization (NFRMPO), the Denver Regional Transportation District (RTD); and two passenger rail advocate representatives. Amtrak, CDOT and a representative from Wyoming are non-voting members of this body.

The Commission, by its enabling legislation, is expressly empowered to accept contributions and expend moneys.

The legislation creating the Rail Commission has no statutory sunset date, which exemplifies the long-range nature of the Rail Commission’s mission. In addition to the roll over funding from the prior Southwest Chief Commission, the Commission received a \$2.5 million appropriation from the 2018 State Legislature. The Commission has the authority to raise and expend additional funds from any legal source to carry out its mission.

## **5. PROJECT ELIGIBILITY**

This project is an eligible rail planning project under Track 1 – Planning. The technical analyses to be conducted during this Preliminary Service Development Plan and Rail Simulation Modeling will analyze and develop Service Planning documents for initiating passenger rail service on the Front Range corridor between Pueblo and Fort Collins.

These technical analyses will include rail ridership, revenue and cost forecasting; railroad operations analysis and rail simulation modeling (possibly Rail Traffic Controller (RTC) if sufficient amounts of track are to be shared with UP and BNSF freight trains); conceptual engineering; and a preliminary environmental analysis related to these proposed services.

## **6. DETAILED PROJECT DESCRIPTION**

In a letter received from FRA on August 12, 2019, FRA stated that “during this pre-NEPA planning phase of a project's development, it is neither necessary nor appropriate to complete a full Service Development Plan (SDP) for the project. Instead, this early phase only requires completion of the scope and detail of Service Planning necessary to develop and analyze a range of reasonable alternatives. In contrast, the SDP for a project documents the results of the complete detailed Service Planning for a single selected preferred alternative, and is intended to establish both the merit and feasibility of implementing that alternative. The SDP invariably draws from Service Planning work that was undertaken earlier in the project's development, including that undertaken during the pre-NEPA planning phase. As such, work on a stand-alone SDP document is not undertaken until after a selected preferred alternative has been identified during the NEPA process.”

A preliminary SDP will be developed for the final selected alternative(s) that are produced by the Level 2 Analysis of the ongoing preliminary service development and pre-NEPA planning effort being conducted by the Rail Commission. FRA has played a key role in working with the Project Team through Level 1, and currently in Level 2 of this effort. The elements that will be included in completing this preliminary SDP are:

- Finalize a preliminary Purpose and Need statement including a description of the challenges/opportunities that may be encountered in markets served by the proposed FRPR service.



- Rationale for how the proposed service will efficiently address transportation and other needs based on forecasted rail ridership.
- Based on previous alternatives analysis, identify preferred alternatives and compare them to a “no build” base scenario.
- Perform rail operations modeling, including possible rail simulations modeling (potentially RTC - discussed in more detail below). Identify proposed rail services to be provided, to include crew and equipment scheduling; yard, terminal and other support operations; rolling stock configuration and ridership projections.
- Identify station locations and access to such stations that maximize the ridership in these locations. This effort will also identify how such access will be integrated into connections to other modes of transportation along the Corridor.
- Rail ridership demand will be developed utilizing CDOT’s Statewide Travel Model. Detailed modeling assumptions will be documented. This will lead to revenue forecasts for the Front Range Service, based on passengers boarding and disembarking at all stations.
- Financial performance and projections: operating costs/revenues, capital replacement costs, maintenance of way and equipment, train operations costs (crews, fuel, access fees) and marketing/ticketing/reservations information/on-board services, etc.
- Conceptual engineering to optimize alignments for speed, traveler comfort and operating efficiency. These will include infrastructure improvements and facilities.
- Benefit-Cost analysis will describe and quantify benefits, when possible, including economic, environmental, transportation related, travel time savings, and community livability.

A key element of the project will be completing any necessary Rail Simulation Modeling that may be necessary to be completed prior to advancing to NEPA required in the event that future rail passenger service within the Front Range corridor will be sharing track with either or both the BNSF and UP. At this point in the current alternatives analysis for the Front Range Passenger Rail Project, how much track will be shared; how much track will be on dedicated passenger rail tracks within the freight rail rights of way; and how much will be in rights of way of existing highway corridors have all yet to be determined.

If the amounts of shared track are significant, the proposal is to conduct Rail Simulation Modeling used by BNSF, UP and other Class I Railroads known as Rail Traffic Controller (RTC) modeling. Since it is premature to know at this point the extent of shared trackage, there may be an opportunity to perform less stringent rail operations analysis than RTC modeling. During meetings with BNSF Railway executive management regarding the upcoming Front Range Rail planning efforts, it has been suggested that a version of rail operations analysis known as a “pathing study” may be sufficient. The “pathing study” links rail infrastructure capital improvements to the rail passenger service’s proposed operating plan. Such a pathing study may suffice if there is limited shared trackage in the 180-mile corridor.

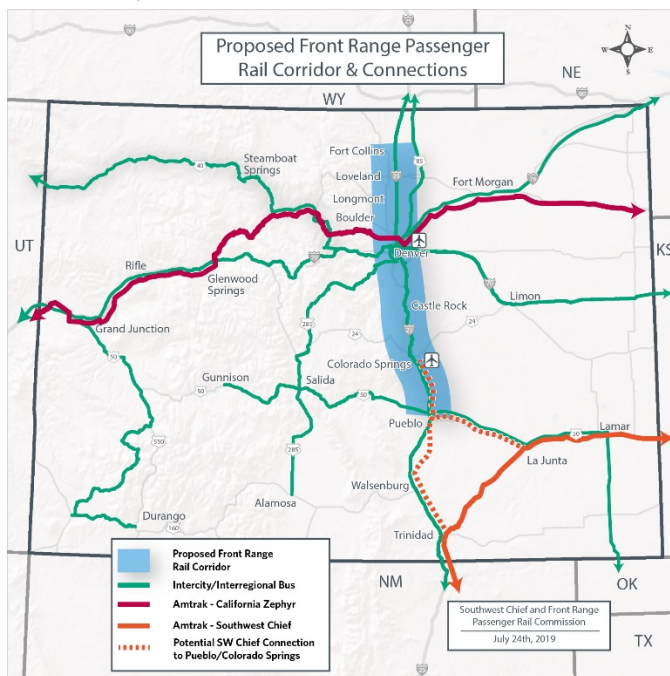
### **A. Project Background**

Plans for a comprehensive passenger rail system serving the Front Range have been under consideration by the Colorado Department of Transportation (CDOT), local governmental coalitions, and advocacy groups for more than a decade. In 2017, Rail Commission was re-established by the Colorado General Assembly (SB 17-153) and tasked with facilitating

development and operation of a passenger rail service along the Front Range. See Figure 1 for an overview of the corridor.

In 2018, the Colorado General Assembly provided funding for the Rail Commission (SB 18-001) to hire staff and retain a consultant team to begin the FRPR Project. With the funds provided by the General Assembly, the team was able to begin the first phase of work to advance preliminary environmental and service development planning. However, additional funds will be required to advance beyond the current project into the formal National Environmental Policy Act (NEPA) process and complete a Service Development Plan (SDP). Additionally, the Rail Commission partnered with CDOT. CDOT, who also has an interest in FRPR implementation, dedicated staff and resources (\$1.5 million over 2 years) to assist the Rail Commission in advancing the current phase of the FRPR Project.

With Rail Commission staff, supporting CDOT staff, and a consultant team in place, the FRPR Project kicked off in the summer of 2019. The team’s focus is to complete the initial



**Figure 1: Front Range Corridor**

steps towards the planning,

engineering, stakeholder engagement, governance, and environmental analysis of the project. The current phase of the project extends from approximately August 2019 through December 2020. Research of the following previous passenger rail studies conducted by the Project Team in Phase 1 of the current planning effort supported this initial phase of work.

### Previous Studies

Previous planning studies have analyzed the feasibility of passenger rail along the Front Range and help to inform the purpose and need and alternatives analysis for the FRPR Project. Of the multiple studies reviewed, brief summaries of the most recent and/or relevant studies are

presented below.

Building on past studies, in 2014 CDOT led a study on high speed rail along the Front Range, using funds awarded to CDOT and the Regional Transportation District (RTD) by the FRA. The CDOT Interregional Connectivity Study (ICS) (CDOT, 2014) and associated ICS Interoperability Report (CDOT, 2017) provided preliminary recommendations for high speed passenger rail segments, technologies, and station locations to maximize ridership for Front Range Passenger Rail and the RTD transit system. Study participants included MPOs, Transportation Planning Regions (TPRs), Class I Railroads, the Colorado Association of Transit Agencies (CASTA), RTD, Denver International Airport (DEN), study area cities and counties. The ICS evaluated passenger rail along the Front Range as a high speed train

system spanning the length of the Front Range. The ICS analyses recommended three alternatives for examination in a future SDP and future NEPA process. The alternatives differed in their use of highway, freight rail, and transit rail corridors; as well as service to DEN Airport and downtown Denver.

Through the North I-25 Environmental Impact Statement (EIS) (CDOT, 2011) and associated North I-25 EIS Commuter Rail Update (CDOT, 2014), CDOT and the Federal Highway Administration (FHWA) approved a Record of Decision (ROD) supporting commuter rail between Fort Collins and Denver. The original EIS recommended an alignment following the US Highway 287/BNSF Railway (BNSF) rail alignment from Fort Collins to Longmont, then moving east to I-25 and connecting to RTD's North Metro line near State Highway (SH) 7. The Commuter Rail Update recommended moving forward with the EIS Commuter Rail Update recommendations, including right-of-way preservation in the commuter rail corridor. Study participants included corridor municipalities and counties, residents and community groups, MPOs, RTD, and state and federal resource agencies.

CDOT's State Freight and Passenger Rail Plan (CDOT, 2018) builds on past freight and passenger rail studies and initiatives, and was developed with participation from transportation industry groups, economic development organizations, local and state agencies, and coordination with surrounding states. The plan's priority strategies include advancing passenger rail along the Front Range between Fort Collins and Trinidad, addressing freight rail needs and issues in the state, and enhancing economic connections. The plan concludes that there is no single region wide preferred alternative or alignment for passenger rail along the Front Range. The plan noted the Front Range would benefit from a visioning exercise to identify the most likely future rail scenarios and chart a path forward.

## **STATEWIDE AND REGIONAL TRANSPORTATION PLANNING**

In addition to the project specific efforts to advance passenger rail, improving transit and travel options has been a consistent theme in CDOT's statewide planning initiatives and many regional planning initiatives by the metropolitan planning organizations (MPOs) along the Front Range. All of the Front Range MPOs are voting members of the Rail Commission and are participating in the FRPR planning process.

## **MPO/COG PLANNING**

Multiple regional planning organizations along the Front Range have examined and supported FRPR through various planning efforts. The Denver Regional Council of Governments' (DRCOG) Metro Vision Regional Transportation Plan (RTP) has included elements of intercity rail in the Denver metropolitan region over several iterations of this plan. The recent 2045 RTP for the Pikes Peak Area Council of Governments speaks directly to the desire for passenger rail connecting the Pikes Peak region to other parts of the Front Range and beyond. The North Front Range Metropolitan Planning Organization's (NFRMPO) 2045 RTP notes their support for strengthening rail coordination, addressing freight rail needs and issues, advancing FRPR, integrating planning processes, and enhancing economic connections related to rail. The Pueblo Area Council of Governments (PACOG) is supportive of once again having passenger rail service in Pueblo.

## CDOT PLANNING

Every four years, the state is required to develop a Statewide Transportation Plan that sets the vision for Colorado’s transportation system. The current 2040 Statewide Transportation Plan (CDOT, 2015) was adopted by the Transportation Commission in 2015 and is currently being updated for the 2045 planning horizon.

The 2045 plan update began in May 2019. The new plan, named Your Transportation Plan (CDOT, 2019), takes a broader look at transportation priorities across the state, focusing on community challenges where infrastructure investments can make the most difference. The expansive and inclusive transportation planning effort includes a data-driven needs assessment and extensive public and stakeholder input to set the 20-year vision and to identify a 10-year priority pipeline of infrastructure investments (projects). Through this process, three common themes emerged that Coloradans across the state agreed on: 1) Road condition and safety need to be addressed, 2) Growth and congestion are impacting quality of life, and 3) the Lack of travel options is an issue. Statewide, lack of rail and transit options were identified by 19 percent of Coloradans as the most important issue to address. Not surprisingly, the priority of expanded travel options in rapidly growing Front Range communities was even higher.

### Coordination with Amtrak’s Southwest Chief

In 2011, Amtrak informed Colorado communities, CDOT, and transportation advocates that the operating and maintenance contract between Amtrak and BNSF Railway for the Southwest Chief was due to expire in 2015, and that upon expiration Amtrak would be responsible for a significantly larger share of the operating and maintenance (O & M) costs for the segment of the Southwest Chief between Newton, Kansas and Madrid, New Mexico. The increase in O&M costs was estimated to be significant – approximately \$111 million over ten years – and an additional \$94 million in capital costs over the same timeframe.

In Spring 2012, the Colorado State Legislature passed a resolution in support of preserving Southwest Chief service. Following passage of this resolution, Colorado, Kansas, and New Mexico formed a three-state coalition. A few years later, in 2014, Colorado state legislation created the Southwest Chief Commission to advocate for preservation of the Southwest Chief and investigate a possible reroute from La Junta. The Southwest Chief Commission was successful in its mandate to save the Southwest Chief and led multiple fundraising efforts. Given the success of the 2014 Southwest Chief Commission, the Southwest Chief and Front Range Passenger Rail Commission was created in 2017.

Building on the work of the 2014 Southwest Chief Commission’s work, the new Commission was charged with presenting a plan to the Colorado Legislature to evaluate Southwest Chief service preservation and route extension to Pueblo and elsewhere. In 2018, the Commission initiated studies to update planning-level estimates for capital and operating costs, positive train control (PTC) support needs, local issues, and station area design and updates on the Front Range Passenger Rail Corridor.

Building from these efforts, the Commission received a 2019 CRISI grant award to conduct a study of the feasibility of adding a new branch of the Amtrak Southwest Chief connecting Pueblo and Colorado Springs to the existing long-distance service between Chicago and Los

Angeles at La Junta. That planning effort is expected to be initiated late summer/early fall of 2020 following the obligation of those CRISI Grant funds.

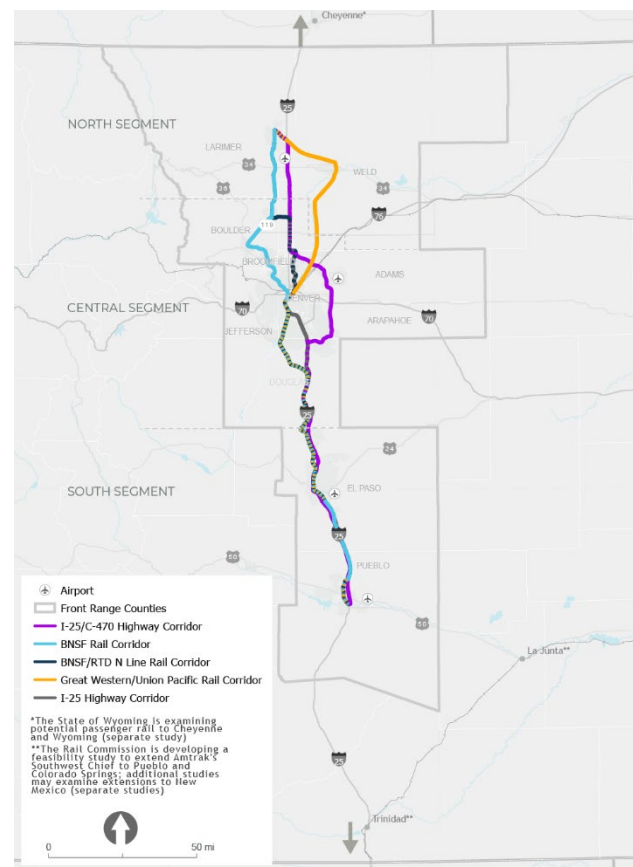
### Rail Commission's current Alternatives Analysis and pre-NEPA Planning

The recently completed Level 1 analysis included an extensive range of potential FRPR Project alternatives. The Level 1 corridors represented broad geographic areas centered on existing freight rail and highway rights-of-way. A ‘corridor’ refers to a wide swath that may include the rights-of-way of multiple existing freight railroads, transit rail alignments, or roadways that could be considered for the FRPR Project. At Level 1, corridors were intentionally broad to encompass a wide range of potential options. The Level 1 alternatives comprised the major rail and highway corridors along the Front Range and a Best Bus alternative consisting of the currently funded and planned transportation improvements, including significant expansion of the Bustang system. For Level 1, the Best Bus alternative serves as a reasonable “no action” rail corridor. The Best Bus alternative would require identification of additional funding to expand and realize the full vision of Bustang. See Figure 2 for alignments under consideration.

Previous studies considered greenfield alignments outside of existing transportation corridors. These studies concluded that existing transportation corridors provide better access to riders with fewer community and environmental impacts. There are sufficient options for passenger rail alignments in existing transportation corridors, and therefore Level 1 is not evaluating any complete greenfield alternatives.

In Level 1, engineering did not optimize alignments to improve speeds or minimize impacts. The Level 1 corridors were studied to understand how the existing freight rail and highway horizontal and vertical geometry, physical location, and right-of-way availability could interact with or support an adjacent passenger rail system. Ridership modeling at Level 1 generated a baseline understanding of demand.

At the time of the writing of this application, Level 1 has been completed with two alternatives being eliminated. Level 2 refinements are being initiated which includes detailed conversations with communities about stations locations, connectivity to existing or future transit services, permissible (desirable) speeds through communities, quiet zones



**Figure 2: FRPR Alignments Under Evaluation**



and other issues of interest at the local level. These communications and analysis may result in development of variations and hybrids of the remaining corridors to improve their performance.

### **Rail Simulation Modeling**

As part of the scope of work for the upcoming efforts associated with this CRISI grant application, a detailed analysis of existing freight rail and passenger rail operations on alternative alignments will be performed. To determine the impacts of future Front Range Passenger rail operations on the freight operations of both the BNSF and UP along the Front Range (both existing and proposed future freight rail operations), we propose coding their entire freight rail operations in the Berkeley Simulation Rail Traffic Controller (RTC) simulation model. Many of today’s Class I railroads, including both BNSF and UP, use the RTC model to simulate operating impacts of changes to their tracks, signals and network required to accommodate passenger trains on their tracks. This work will be conducted on BNSF’s Front Range and Pikes Peak Subdivisions and UP’s Colorado Springs Subdivision where Front Range Passenger Rail trains may be expected to share tracks with the Class I rail freight operations. Operating and engineering data, provided by planning personnel from both BNSF and UP detailing railroad infrastructure, train operations, operating practices and constraints will be collected and entered into the RTC model. Conceptual operating data for Front Range Passenger Rail will also be added to complete the evaluation network.

This modeling effort is a critical step in completing the preliminary SDP and preparing the Commission and the Project to enter into a Notice of Intent to enter NEPA.

### **B. Challenges the Project Aims to Address**

A key element of the SDP will be to address the following planning challenges:

- Identify a service/operating plan that is appropriate for projected ridership.
- Determine alternatives that provide comparable travel times to I-25 and improve reliability.
- Determine infrastructure improvements necessary for operating within a potential shared passenger/freight corridor.
- Create an efficient interface with RTD’s commuter and light rail network in the Denver Metro area.
- Create a service plan with station locations that connect to existing or future transit services.

### **Identify an operating/service plan that is appropriate for projected ridership**

Front Range Passenger Rail will be a new service connecting the 180-corridor between Pueblo in the south, and Fort Collins in the north. In between these termini are the Denver metropolitan area and the 2nd largest urbanized area in the state, Colorado Springs. Preliminary surveys conducted by the Rail Commission in 2019 have shown strong public support for the concept of Front Range Passenger Rail.

A service plan that will initially meet the desires of the public will certainly have elements of service that provides a mobility option for those currently traveling to and from work in and around the Denver metro area on an increasingly congested I-25. There are also many

people commuting from the Denver area to locations north and south for business and recreation purposes.

The Denver metro area is a large attraction in terms of entertainment, shopping, recreation, and major events. There has been interest expressed in initially having multiple options in the morning and evening peaks as well as some mid-day and evening service.

The option of some “express service” has been raised where some trains may not serve a limited number of “secondary” stations that may be located along the Corridor.

#### **Determine alternatives that provide comparable travel times to I-25 and improve reliability.**

The Front Range Corridor has long needed additional mobility options to the use of the private automobile. CDOT has recently instituted some commuter focused Intercity bus service along the I-25 Corridor known as “Bustang”. The popularity of this service suggests that people are willing to get out of their cars to travel the I-25 corridor. Many see Bustang as an excellent precursor to Front Range Passenger Rail.

One of the most often mentioned benefits of passenger rail service is its reliability. The I-25 corridor is so increasingly congested that it is not uncommon to have trip time variability of +/- 30 minutes for a “normal” 45-minute trip. Also, additional investments in adding lanes to I-25 currently underway by CDOT are expected to be negated by the projected growth of an additional 3 million people in the Front Range Corridor by 2045.

#### **Determine infrastructure improvements necessary for operating within a potential shared passenger/freight corridor**

BNSF and UP both own and operate on some of the infrastructure upon which the Front Range Passenger Rail service may operate. This rail freight service is a key connection between the Pacific Northwest and the Gulf Coast today, and is only expected to grow in the future. This conflict between rail freight and passenger services has been on the minds of CDOT planners for decades. The large amount of unit coal train traffic traversing the Front Range Corridor on its way from Wyoming coal fields to Texas electric utilities was the impetus for evaluating the potential of building new rail lines 100+ miles east of the Front Range in eastern Colorado as far back as 20 years ago. With the decline in the use of coal for producing electricity, the possibility of such a new rail route for freight trains has greatly diminished. Therefore, it is likely that some portion of the future Front Range Rail alignment will see freight trains sharing track with Front Range Passenger Rail trains.

RTC modeling, done in close cooperation with both BNSF and UP, will determine the appropriate infrastructure improvements necessary to accommodate the proposed passenger rail operating plans. Addressing this issue is crucial for improving the attractiveness of passenger rail, but needs to be balanced with the needs of growing freight movements.

#### **Create an efficient interface with RTD’s commuter and light rail network in the Denver Metro area**

The Denver Metro area has seen the Regional Transportation District (RTD) develop a very successful light rail and commuter rail network over the past 20 years. It is estimated that

Front Range Passenger Rail will potentially bring an additional 2 million riders per year into the Denver area annually that will be reliant on the RTD transit network to get them to their final destinations. As most of the existing freight rail corridors in the metro area have been jointly used by RTD, it is likely that Front Range Rail will also be utilizing these same corridors to access Denver from points north and south. The RTD has a voting representative on the Rail Commission.

Meetings between the Front Range Rail Project Team and RTD staff have been initiated to determine where track or right of way sharing may be able to take place on RTD’s Commuter Rail Lines.

### **Create a service plan with station locations that connect to existing or future transit services**

Through the ongoing extensive stakeholder engagement efforts taking place for the alternatives analysis and pre-NEPA planning efforts, a consistent theme is the need to assure connectivity at rail stations. This is obviously critical in addressing “first and last mile” issues. The Front Range Passenger Rail network is being considered the backbone for the Front Range Corridor transportation system. It will be critical to have local transit services, both existing and those planned in the future, to efficiently and effectively link to this passenger rail backbone to attract riders and improve the “bottom line” for Front Range Passenger Rail and the local transit services as well.

For rail service along the Corridor to be successful in attracting all types of customers, access to stations must be more convenient to commuters and address multiple modes. In Colorado, bicycle commuting and travel is extremely popular throughout most of the year, so amenities at stations geared to bicyclists will be an important element of station design and service/equipment planning.

### **C. Anticipated Outcomes**

Through the development of the preliminary SDP, the Rail Commission will:

- Establish the preliminary purpose and need of Front Range Passenger Rail service between Pueblo, Colorado Springs, the Denver metro area, and Fort Collins as well as determine relevant goals and performance metrics for future service.
- Consider alignments and equipment appropriate for desired design speeds.
- Gather information and perform analyses to determine possible phasing on infrastructure and service implementation.
- Analyze conceptual alternatives for interference and crossover delays and capacity using RTC modeling. Identify bottlenecks, track conditions, and operating conflicts.
- Prepare high-level capital cost estimates for selected alternatives.
- Perform a high-level environmental screening of reasonable conceptual alternatives, and use high-level benefit cost analysis (BCA) as an evaluation tool.
- Examine station locations as well as access and multimodal transportation connections to improve the mobility of the region’s residents, visitors, workers and business owners, and provide economic development opportunities for communities.
- Evaluate the potential to reduce emissions and traffic fatalities by initiating use of rail as a travel mode in the Front Range corridor.



#### **D. Expected Users and Beneficiaries of the Project**

The development and completion of the preliminary SDP will benefit the residents, visitors, and business owners in the region by ensuring that the future passenger rail transportation investments are planned and implemented in a coordinated fashion among rail service providers and operators and in accordance with a comprehensive set of goals and performance measures. The use of the preliminary SDP to guide investment decision-making will lead to the most efficient use of taxpayer and stakeholder dollars as well as fare box revenues, and will be useful for outlining opportunities and benefits that could attract private funding to the corridor.

The preliminary SDP will also identify locations for stations and access to them that will encourage the use of multi-modal transit options within cities. The use of transit and bicycles will improve local mobility and minimize impacts on the environment for residents, visitors and business owners.

Coloradoans using the rail system between Pueblo and Fort Collins all along the Front Range will be the primary beneficiaries of this project and of projects to follow. Additional beneficiaries will be the numerous visitors to the state. Tourism has moved past agriculture as the state’s most important industry.

Additionally, employers in Colorado are learning that major corporations are unwilling to locate in the Front Range due to lack of travel options for their employees. Front Range Passenger Rail is seen as that job creating option. And, local communities are anticipating the economic development that occurs around the transit oriented development that will occur in the vicinity of stations along Front Range Passenger Rail.

This effort has the support of many of the Rail Commission’s partners within the Front Range corridor. Letters of support are attached in *Appendix A*.

#### **E. Specific Components and Elements of the Project**

This work will consist of a series of technical tasks and deliverable documents and ongoing coordination with stakeholders and partners. Statement of Work (SOW) tasks include information gathering, a stakeholder outreach process, methodology formulations, modeling, alternative identification, and technical analyses, followed by recommendations. The flow and content of project tasks are summarized under *Technical Merit*, and the Statement of Work is included as *Appendix B*.

The preliminary SDP will build on demographic, socio-economic, and ridership volume findings from the alternatives analysis and pre-NEPA work currently underway.

### **7. PROJECT LOCATION**

The study area for the Front Range Passenger Rail Preliminary Service Development Plan and Railroad Simulation Modeling effort is the Front Range Corridor of Colorado from Pueblo to Fort Collins. This corridor, approximately 180 miles in length, serves as the backbone for 85% of the population of the entire state of Colorado. The possible future Front Range Passenger Rail alignments are generally within or adjacent to the Class I Railroad rights of way, or in or adjacent to the CDOT owned rights of way of the Interstate 25 corridor between Pueblo and Fort Collins.

The width of the corridor being evaluated for Front Range Passenger Rail varies depending on location but is at the most no more than 30 miles wide.

The freight rail corridors that are being considered for possible evaluation through the use of rail simulation modeling are: BNSF’s Front Range Subdivision from Denver to Fort Collins and its Pikes Peak Subdivision between Pueblo and Denver; as well as Union Pacific’s Colorado Springs Subdivision between Pueblo and Denver.

In addition to the freight rail corridors, the I-25 Corridor and E-470 beltway are also being evaluated for possible use by Front Range Passenger Rail.

The project area crosses through seven congressional districts in Colorado (01, 02, 03, 04, 05, 06, 07). Figure 3 displays these districts.

The geospatial data for the project is:

### **Pueblo**

Latitude: 38.2544° N

Longitude: 104.6091° W

### **Fort Collins**

Latitude: 40.5853° N

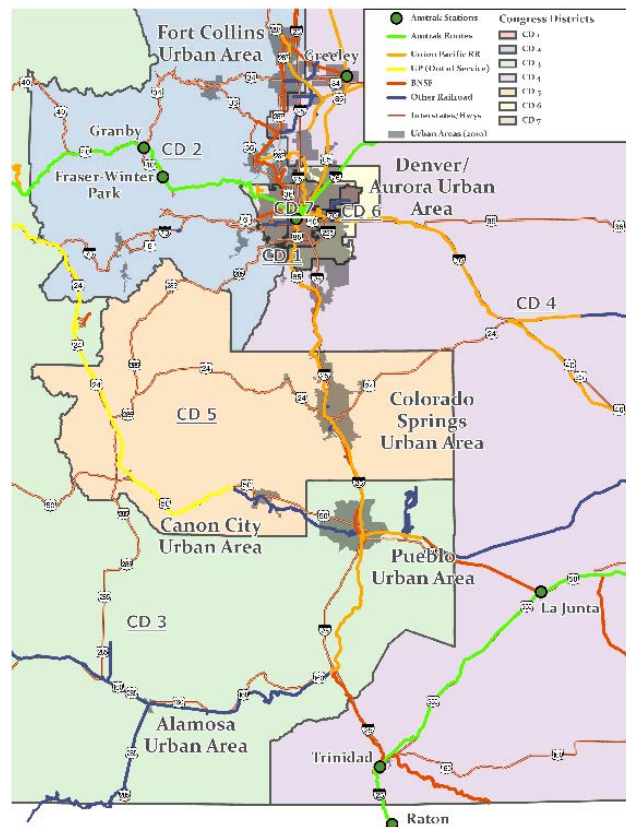
Longitude: 105.0844° W

Lastly, the rights-of-way owned by the Regional Transportation District (RTD) for their commuter rail and light rail services within the Denver metro area are also being analyzed for possible Front Range Passenger Rail use.

In the future, it is expected that future connections to Front Range Passenger Rail may possibly extend to Cheyenne, Wyoming and Santa Fe/Albuquerque, New Mexico.

## **8. EVALUATION CRITERIA**

The preliminary Service Development Planning work and Rail Simulation Modeling is a continuation of a rail planning project that will be used to gather and generate information to examine the costs and benefits of implementing Front Range Passenger Rail service in Colorado. As such, insufficient data and information is available at this stage before the preparation of the analyses to provide a robust set of quantifiable benefits and cost estimates.



*Figure 3: Front Range Corridor District Map*

An overview of anticipated benefits is provided below:

### **A. Project Benefits**

Front Range Passenger Rail service in Colorado would generate economic benefits related to USDOT’s five merit criteria, namely: Quality of Life, Economic Competitiveness, Safety, State of Good Repair, and Environmental Sustainability. This service would generate economic benefits for existing rail users (RTD), for new users who shift modes from air, bus and private vehicles, and for all travelers. Passenger rail service connecting Front Range communities is likely to result in the following outcomes and associated economic benefits:

- Provide a new, accessible transportation option between communities in Colorado
- Provide improved convenience for travelers
- Increase safety through improved infrastructure
- Reduce safety costs by reducing highway VMT
- Contribute to economic growth and tourism in Colorado
- Strengthen military readiness nationally and in Colorado
- Serve as an impetus for public/private development opportunities along the corridor
- Promote connectivity with other transportation modes, including intercity bus and regional transit agencies along the Front Range.

### **Public Benefits**

Public benefits represent economic values resulting from rail service improvements, and can be experienced by current or future users of passenger rail service or the public at-large. The benefits derived involve a reduction in the costs associated with transportation activities, and can be broken down into following categories:

- 1) Benefits to passenger rail users
  - Transportation cost savings to new users
- 2) External benefits
  - Travel time savings for highway users resulting from reduced congestion
  - Reduced vehicle crashes generating safety benefits
  - Pavement maintenance savings
  - Reduced emissions from highway and air users who mode-shift to rail
  - Increased economic activity resulting from improved connections to employment nodes and enhanced goods movement

### **Benefits to passenger rail users**

Passenger rail users in Colorado are currently limited to Amtrak riders on the Southwest Chief and California Zephyr and those riders on the commuter rail network operated by RTD in the Denver metro area. New Front Range Passenger Rail riders may experience travel time savings compared to their previous travel mode. Riders might also be motivated by changes in the comfort and reliability of the system, or reductions in their overall trip expenses. The availability of transportation at a more affordable price will encourage users to travel more, increasing the total number of trips.

### 1) Transportation cost savings to new users

Historical data demonstrates generally that as service becomes more frequent or more reliable, more intercity travelers have elected to travel by rail instead of by air, bus, or private vehicle. The economic benefits these users realize should be considered separately from those generated for existing users, and should consider the overall set of effects that results from their mode shift.

Any additional service improvement in the future will increase ridership and attract passengers from other modes or induce new travelers; and those new riders will benefit from travel time savings compared to their previous travel modes. These benefits can be estimated through projecting the diverted or induced numbers of riders and considering the corresponding change in trip time to new users compared to their previous modes, and the value of travel time. Detailed benefit analysis will be conducted as part of the future Service Development Plan (SDP) process that will occur after a single preferred alternative has been selected in the NEPA process.

### 2) Effects on system and service performance

The growth in population along the Front Range will continue to generate an increasing demand for freight movement by rail. Understanding the growth of demand for regional freight and passenger rail services will inform time-sensitive capital planning. Those demand scenarios will be modeled by BNSF and UP in conjunction with the desired passenger service contemplated in operating plans proposed in the preliminary SDP to identify improvements required to accommodate both freight and passenger growth.

### 3) Effects on safety

As the core of a system-wide rail safety technology, the locomotive-based PTC systems can be combined with real-time monitoring capabilities to increase the efficiency of line utilization, schedule reliability and locomotive performance. Additionally, computer-based operations control incorporates a system of safety measures and technologies designed to eliminate 98 percent of injuries, fatalities and damage caused by preventable derailments and incidents at grade crossings. The benefits resulting from additional safety measures beyond PTC will be quantified and monetized to the extent possible. These benefits will include safety benefits associated with the elimination of crashes (and associated injuries and/or fatalities).

## External Benefits

External benefits represent a source of potential benefits beyond those experienced directly by users of a new rail service.

### 1) Benefits for highway users resulting from mode shift to rail

Travelers switching from automobiles to passenger rail mode will result in reduced VMT on the regional roadway network. Reduced VMT can generate external benefits to the roadway users and the society at large through reduced roadway congestion, reduced incident costs, savings in pavement and bridge maintenance costs, and reduced emissions.

### 2) Increased competitiveness, reliability, and resilience

Front Range Passenger Rail service is expected to create the potential for substantial economic benefits resulting from facilitating better connections between workers and key employment nodes. These benefits can include a range of outcomes. For example, fast, reliable passenger rail service the Front Range region’s fast-growing economies can create opportunities for business creation or expansion, generating additional well-paying jobs for the region. In addition, a diverse range of transportation options would enhance the region’s ability to attract and retain highly skilled workers in industries that generate substantial second-order economic impacts.

### **Anticipated monetized benefits**

The Preliminary SDP will generate a series of quantified, monetized benefits. These benefits will be aggregated into several broad categories that align with U.S. DOT’s five merit criteria, and include:

- Travel time savings for a range of user types, monetized using the appropriate values of time as defined by U.S. DOT
- Reductions in VMT for a range of user types, converted to monetized benefits related to vehicle operating costs, fuel savings, emissions, reduced pavement damage, and reduced noise costs
- Reductions in safety incidents, including crashes on the regional highway network, converted to monetized benefits associated with reduced injuries and values using the appropriate value of a statistical life (VSL) metrics as defined by U.S. DOT

Analyses will also consider the project’s potential to support employment and wage growth in the region. Along with any temporary job impacts associated with construction activity, these impacts will be quantified and described to the extent practicable.

### **B. Project Costs**

For cost estimates, the following cost categories will be considered in the preliminary SDP:

#### **Capital Expenditures**

The Commission will estimate the capital costs including project planning and design, environmental reviews, land or real estate acquisition, direct construction costs, and equipment acquisition.

#### **Operating and Maintenance Costs**

The Commission will estimate the ongoing O&M costs for the proposed services, including but not limited to train staff and crews, energy, equipment maintenance and overhauls, station services, and long term maintenance programs.

### **C. Technical Merit**

#### **Summary of Statement of Work**

The Rail Commission will prepare a preliminary SDP in compliance with FRA’s current guidance. The Statement of Work (SOW) includes the effort to complete the service planning necessary to analyze the range of reasonable alternatives in the Level 1 and Level 2 analysis currently underway. Any subsequent or additional guidance published by FRA prior to the issuance of a request for proposals will be incorporated into this SOW as

appropriate. The methodology for each task and subtask will address each of the expected outcomes described in Table 8-1 of this application.

*Table 3: Summary of Statement of Work*

<b>Task #</b>	<b>Task Name</b>	<b>Description</b>
<b>1</b>	<b><i>Project Management</i></b>	The Rail Commission will create and maintain a detailed project work plan, budget, and schedule, formalizing the planning and analysis methodologies, defining deliverables, and developing a plan for quality assurance/quality control. Rail Commission Project Director will also manage consultant activities related to the Project.
<b>2</b>	<b><i>Rationale, Goals and Objectives</i></b>	Confirm the rationale, goals and objectives identified in the current pre-NEPA and preliminary SDP effort. Focus on providing a viable travel option to automobile traffic on I-25 in the Front Range Corridor, improved travel time reliability, and creating a transportation backbone to connect to existing and future transit service along the Front Range.
<b>3</b>	<b><i>Rail Simulation Modeling</i></b>	A key element of the project will be completing any necessary rail simulation modeling that may be necessary to be completed prior to advancing to NEPA. Such modeling will be required in the event that future rail passenger service within the Front Range corridor will be sharing track with either or both the BNSF and UP.
<b>4</b>	<b><i>Alignment Alternatives</i></b>	Finalize the evaluation of a reasonable range of service alternatives and infrastructure improvements for the Front Range corridor between Pueblo and Fort Collins. The area of study includes the existing BNSF and UP freight rail rights of way as well as portions of the Interstate 25 and E-470 beltway rights of way. A preliminary environmental screening for any “red flags” is being conducted in the pre-NEPA phase of the Project.
<b>5</b>	<b><i>Operations Analysis</i></b>	Service planning will be conducted based on any refinements to the alternatives identified in Task 4. The Rail Commission will work with BNSF/UP to validate conceptual infrastructure planning (Task 3), proposed schedules, and proposed operating plans. Tasks 4, 5 and 6 will advance iteratively in parallel.
<b>6</b>	<b><i>Ridership Demand And Revenue Forecasts</i></b>	This task will utilize CDOT’s Statewide Travel Model for final ridership modeling based on the alternatives analysis and service planning tasks. Coordinate with RTD’s commuter rail operations and Amtrak for frequency, reliability, and scheduled trip time savings to forecast ridership growth.
<b>7</b>	<b><i>Station And Access Analysis</i></b>	Rail Commission and communities will coordinate to recommend ways to improve station access and enhance passenger amenities both on-board and at stations. Connecting transportation services and opportunities for better future multimodal coordination will be identified.



8	<b>Conceptual Engineering</b>	Identify the required infrastructure improvements and investments, including equipment, needed to support the new service, and quantify new track, train control systems, and communications infrastructure necessary to deliver the proposed service reliably, at reasonable cost, and for the 20-year time horizon required by the FRA.
9	<b>Capital And Operating &amp; Maintenance Costs</b>	Preliminary capital cost estimates will be developed for the selected alternatives. Capital costs will be prepared using FRA standard cost categories. Operating and maintenance (O&M) costs will be developed to help to determine the cost of operating the rail service. The costing methodology will be based on cost models used in Front Range Rail preliminary service development planning.
10	<b>Public Benefits Analysis</b>	Public benefits to be achieved from the remaining alternatives will be identified and will include consideration of jobs creation and broader economic impacts.
11	<b>Governance</b>	Governance represents the long-term management structure for design, construction, maintenance and operations of a future Front Range Passenger Rail system. Options could include: elected/appointed interregional rail authority, special district, existing transit agency, etc..
12	<b>Stakeholder And Public Involvement</b>	Outline the ongoing public and agency involvement program and identify and additional contacts within agencies, public officials, civic and business groups, relevant interest groups, present and potential riders/users, private sector service providers/shippers, and the public
13	<b>Draft And Final Report</b>	Prepare an annotated outline for FRA review and approval. develop a draft and final preliminary SDP using work products and findings from Tasks 2 through 11.

The Commission will also deliver a Final Performance Report within 90 days of the end of the grant’s period of performance, describing the cumulative activities of the project, including a complete description of the Grantee’s achievements with respect to objectives and milestones.

### Project readiness under Track 1

CDOT has completed their [2018 Colorado Freight and Passenger Rail Plan](#). This plan provides key data and information that will be referenced in the preliminary SDP to identify a wide range of reasonable operating strategies and investment options, including anticipated freight demand on the corridor and planned passenger rail improvements.

The County of Pueblo is completing their study of locations for a Pueblo Station, including potential use of the historic Santa Fe Pueblo Depot. Findings from this study will be coordinated with the analysis of infrastructure and alignment needs.

The Rail Commission is in the process of obligating its 2019 CRISI Grant award to study the feasibility of Southwest Chief Thru-car service from La Junta to Pueblo and Colorado Springs. This effort will be closely coordinated by the Commission’s staff with the work to be completed in this 2020 CRISI grant application.

And of course, this work is an extension of the current preliminary service planning and pre-NEPA planning effort currently being coordinated with FRA SW Regional staff as well as FTA and FHWA staff.

### **Technical qualifications and experience of key personnel**

The Rail Commission, supported by CDOT, brings a team of experienced, qualified personnel to lead the effort. In addition, the Rail Commission and CDOT have internal qualified resources available to perform the management functions, including the oversight of external technical consultants, as needed to fully and successfully execute the proposed project within the proposed timeframe and budget.

### **Private sector participation**

BNSF and UP are private railroads that own the right-of-way and track infrastructure in the 180-mile corridor that Front Range Passenger Rail may either share track or right-of-way with. Union Pacific has submitted a Letter of Support to FRA.

Members of the Commission, Commission staff, CDOT and BNSF have proven their ability to work together successfully under the following previous efforts:

- Randy Grauberger, Rail Commission Project Director, was the consultant team Project Manager for a 2015 CDOT Study that worked closely with BNSF Railway; the North I-25 EIS Commuter Rail Update. Commissioners Becky Karasko, David Krutsinger, and BNSF’s Pete Rickershauser and DJ Mitchell were also involved in that study.
- Randy is also the project manager for the ongoing \$1.5 million state funded Alternatives Analysis (Preliminary SDP) and pre-NEPA Front Range Passenger Rail Project.

### **Legal, financial, and technical capacity**

The Rail Commission is providing financial contribution to this project in the amount of \$25,000, or 3.6% of the total project cost.

The Rail Commission and CDOT have the legal, financial, and technical capability to carry out the proposed project. CDOT has successfully performed multiple rail planning projects, including completion of the following planning documents:

- 2012 State Freight and Passenger Rail Plan
- 2014 Interregional Connectivity Study
- 2015 North I-25 EIS Commuter Rail Update
- 2018 Colorado Freight and Passenger Rail Plan

### **Planning consistency**

The project is consistent with guidance and documents set forth by USDOT. The Commission has followed USDOT planning requirements required by law or State rail plans developed under Title 49, U.S. Code, Chapter 227.



The Commission is familiar with Federal Reporting requirements and committed to conform to Federal requirements for project progress reporting as identified in the CRISI NOFO link to the FRA site ([https://www.fra.dot.gov/Page/P0274\[SL7\]](https://www.fra.dot.gov/Page/P0274[SL7])).

## **9. SELECTION CRITERIA**

### **Federal share**

The proposed Federal share of the total project costs of the Preliminary Service Development Plan and Rail Simulation Modeling is 80 percent.

### **Net benefits**

The development of this proposed preliminary SDP, in conjunction with the Alternatives Analysis and pre-NEPA work already underway, is a vital step toward planning for Front Range Passenger Rail between Pueblo and Fort Collins. It is anticipated that the rapid population and economic growth in the Front Range, which is expected to gain an additional 3 million people in the next 20 years, will require additional mobility options for Colorado’s citizens and visitors. The estimated expenditures for this rail planning project cost of \$685,000 will be overshadowed by the benefits of Front Range Passenger to the state, region, nation, and private and public stakeholders.

### **Regional and national economic benefits**

This Preliminary SDP and Rail Simulation Modeling will analyze transportation and mobility in the growing Front Range of Colorado. This area not only serves the population of the Front Range, but is also a key freight corridor with rail freight along the UP and BNSF corridors in the Front Range providing a valuable north/south connection between the Pacific Northwest and the Gulf Coast and Mexico. This corridor is the major north/south freight corridor between the West Coast and the I-35 and Mississippi corridors in the Midwest. Allowing for reliability and growth of both passenger and freight networks will be critical for the Front Range and Rocky Mountain Region as a whole.

### **Leveraging Federal funding**

This work will continue efforts to provide rail passenger service along Colorado’s Front Range. Previous TIGER and CRISI grants awarded to the Rail Commission and neighboring states of Kansas and New Mexico have ensured long range viability of the rail infrastructure carrying Amtrak’s Southwest Chief. This past February, the Rail Commission received a 2019 CRISI Grant to evaluate the feasibility of a thru-car service for the Southwest Chief from La Junta into Pueblo and Colorado Springs. This planning effort with Amtrak is being coordinated with the alternatives analysis/pre-NEPA work as well as the SDP work to be conducted with funding from this CRISI application.

Additionally, Amtrak has recently included the Colorado Front Range in its proposal to Congress for \$30 billion of proposed investments for Amtrak’s national network. Of that amount, \$21.6 billion has been identified for track improvements and infrastructure, new fleet and stations for new corridor routes. The Colorado Front Range is one of 4 suggested new corridor routes along with the Texas Triangle, Nashville to Atlanta, and expansion of Virginia corridors. Amtrak has targeted \$2.1 billion of this amount to the Colorado Front Range.

### Using innovative approaches

The Rail Commission is utilizing CDOT’s statewide travel model, which has been reviewed and approved for use by FRA staff for rail ridership modeling for the current alternatives analysis and pre-NEPA work. The Blended Team of the Rail Commission’s consultant and CDOT staff will make use of ArcGIS data viewing, to further evaluate hybrid versions to the range of reasonable infrastructure and service alternatives being currently evaluated in Level 2 of the current planning effort.

In addition, the Rail Commission will continue its excellent collaboration with UP and BNSF in the running of the RTC model in the event sufficient amounts of shared track are required for Front Range Passenger Rail operations.

### Performance accountability

CDOT, through its Division of Transit and Rail (DTR), has recently delivered the State Management Plan (2016) and State Freight and Passenger Rail Plan (2018) along with other previous rail planning studies that have been used as background studies for the current Alternatives Analysis and pre-NEPA planning efforts. DTR’s Grants Unit will provide administrative support in managing this Grant and will assist the Rail Commission in meeting all USDOT reporting requirements.

## 10. PROJECT IMPLEMENTATION AND MANAGEMENT

### Southwest Chief and Front Range Passenger Rail Commission Structure, Staffing and CDOT Assistance

The Rail Commission is a legislatively established body with eleven voting members, created in 2017 in the Department of Transportation by the enactment by the Colorado General Assembly of Senate Bill 17-153. Colorado Revised Statutes, 43-4-1001 et seq. [1] As a “publicly chartered authority” within the Colorado Department of Transportation (CDOT), a public agency of the State of Colorado, the Commission meets the requirements of an eligible applicant under this Notice of Funding Opportunity (NOFO) issued on July 19, 2019.

The Commission’s Project Director provides executive leadership for the promotion, planning, direction and implementation of the Commission’s mission for both the Southwest Chief and Front Range Passenger Rail elements. The Project Director manages Passenger Rail Commission activities and operations and oversees the work of Commission consultants. The Preliminary Service Development planning and rail simulation modeling efforts will be conducted by a consultant that will be retained by the Rail Commission following awarding of the 2020 CRISI Grant.

The Project Director also interacts regularly with CDOT’s Executive Director, the Director of the Division of Transit and Rail as well as other divisions of CDOT as required and appropriate, CDOT Transportation Commission members, and the numerous stakeholders interested in the Commission’s mission. Reporting to the Project Director is the Commission Liaison. The Liaison provides support in the areas of research, stakeholder and public involvement, special projects and administrative functions. The Project Director of the Southwest Chief and Front Range Passenger Rail Commission, while being a CDOT

employee, reports directly to the Commission. The Project Director will be the Commission’s Project Manager for the work proposed in this CRISI grant application.

CDOT and the Rail Commission have executed a Memorandum of Understanding (MOU) creating a blended team of CDOT staff and Rail Commission Consultant team members to assist in carrying out the Front Range Passenger Rail Pre-NEPA and preliminary Service Development Planning effort currently underway. This relationship will be expected to be continued when this grant is received and the preliminary Service Development Plan and rail simulation modeling are completed leading up to NEPA.

CDOT developed the Colorado State Freight and Passenger Rail Plan approved by the Colorado Transportation Commission in August 2018. The State Rail Plan includes extensive discussion of the mission of the Rail Commission to preserve and extend the Southwest Chief in Colorado and develop the Front Range Passenger Rail System.

### **Staffing and Reporting**

The Rail Commission anticipates the involvement of Rail Commission staff, in addition to external experts and consultants, for the duration of the project. The Rail Commission will provide project-specific reporting by recording costs and outcomes quarterly in a manner that meets or exceeds federal reporting standards. The quarterly report will include quantitative and narrative outcomes and is designed to keep stakeholders apprised of project successes and challenges, and accomplish a proactive approach to reporting.

### **Commission Day to Day Roles and Responsibilities**

The Rail Commission will ensure this CRISI funded project will meet all state and federal requirements. It will be managed utilizing public procurement standards that comply with Federal and state of Colorado law. The project budget has been developed internally with the assistance of consultants with extensive rail experience.

The Rail Commission facilitates the development of a Front Range Passenger Rail system, as well as legislation for rail service in and along the I-25 corridor that is a well-integrated component of a modern, efficient and cost-effective multimodal transportation system.

Additionally, the Rail Commission coordinates and oversees efforts by state and local governments—and cooperates with Kansas, New Mexico, Amtrak and the BNSF Railway (BNSF)—to ensure completion of track repairs and upgrades required to continue Southwest Chief Rail service in Colorado.

## **11. CONCLUSION**

The Rail Commission is a State Agency that has shown successful performance of similar rail planning projects. The Rail Commission and its partners will provide 20 percent of the total project cost as a non-federal match. No prior federal request has been made in support of tasks associated with this preliminary SDP and Rail Simulation Modeling.

**This CRISI Grant funding will enable the Rail Commission to complete work necessary to take the next step to issuing a Notice on Intent to enter into the formal NEPA process.** The proposed work will build on the alternatives analysis and pre-NEPA work currently being completed in coordination with FRA staff. This will be a critically important step in the Rail Commission’s legislative charge to implement Front Range

Passenger Rail Service. The Rail Commission looks forward to working with USDOT on this effort.

## ***Appendix A***

**LETTERS OF FUNDING COMMITMENT**

**LETTERS OF SUPPORT**



The Honorable Elaine L. Chao  
Secretary of Transportation  
U.S. Department of Transportation  
1200 New Jersey Avenue, SE  
Washington, DC 20590

June 16, 2020

Dear Secretary Chao:

We write, on behalf of Pueblo County, Colorado, to express our support for the Southwest Chief & Front Range Passenger Rail Commission's (the Rail Commission's) grant application for Consolidated Rail Infrastructure and Safety Improvements (CRISI) Track 1 funding for the Front Range Passenger Rail Service Development Plan and Rail Traffic Controller (RTC) Modeling efforts. This project represents a critical step towards providing passenger rail service from Pueblo to Fort Collins, including Colorado Springs and Denver; thereby unlocking significant benefits for residents and travelers from across our region and indeed the entire nation.

Pueblo County has agreed to commit \$100,000 toward the matching funds required for this critically important grant application and request. This letter is being submitted in order to document this matching fund commitment supporting the Rail Commission's grant application.

This effort will capitalize on the ongoing efforts that the Rail Commission and the Colorado Department of Transportation (CDOT) are making to prepare for first-ever passenger rail service up and down the Front Range - from Pueblo to Colorado Springs, and north to Denver and Fort Collins, and ultimately extended to connect Cheyenne, Wyoming south through the Colorado Front Range with AMTRAK's Southwest Chief line at Trinidad, Colorado and then on south through New Mexico. The Front Range Passenger Rail Study is currently underway, evaluating the feasibility of rail service along the 173-mile corridor from Pueblo to Fort Collins and initiating a streamlined environmental review of alternatives. The Service Development Plan and RTC modeling will position the Rail Commission to issue a Notice of Intent to enter NEPA for the Front Range Passenger Rail Project.

The Front Range Passenger Rail Service Development Plan and Rail Traffic Controller (RTC) Modeling Study will finalize the ongoing efforts to develop a preliminary Service Development Plan, including all incorporated elements. Additionally, given the potential need for shared track with BNSF Railway and Union Pacific Railroad, this study will complete the necessary RTC modeling. With CRISI grant funding, the Commission will develop an analysis that identifies the key economic benefits, costs, and potential constraints of providing passenger rail service to and along the Front Range. Among the important activities that the study will complete are an assessment of current infrastructure, ridership and revenue projections, and preliminary environmental screening and cost estimates.

We urge you to give this application your full and fair consideration, and please don't hesitate to contact me with any questions.

Sincerely,

Garrison Ortiz, Chairman  
Board of Pueblo County Commissioners



135 N. Animas Street  
P O Box 880  
Trinidad, CO 81082



(719) 846-9843  
fax (719) 846-4140  
[www.trinidad.co.gov](http://www.trinidad.co.gov)

June 18, 2020

Secretary Elaine Chao  
U.S. Department of Transportation  
1200 New Jersey Avenue,  
SE Washington DC 20590

Dear Secretary Chao:

I write to support the Southwest Chief & Front Range Passenger Rail Commission's (the Rail Commission's) application with \$10,000 matching funds for Consolidated Rail Infrastructure and Safety Improvements (CRISI) Track 1 funding for the Front Range Passenger Rail Service Development Plan and Rail Traffic Controller (RTC) Modeling efforts. This project represents a critical step towards providing passenger rail service from Pueblo to Fort Collins, including Colorado Springs and Denver; thereby unlocking significant benefits for residents and travelers from across our region and indeed the entire nation.

This effort will capitalize on the ongoing efforts that the Rail Commission and the Colorado Department of Transportation (CDOT) are making to prepare for first-ever passenger rail service up and down the Front Range – from Pueblo to Colorado Springs, and north to Denver and Fort Collins. The Front Range Passenger Rail Study is currently underway, evaluating the feasibility of rail service along this 173-mile corridor and initiating a streamlined environmental review of alternatives. The Service Development Plan and RTC modeling will position the Rail Commission to issue a Notice of Intent to enter NEPA for the Front Range Passenger Rail Project.

The Front Range Passenger Rail Service Development Plan and Rail Traffic Controller (RTC) Modeling Study will finalize the ongoing efforts to develop a preliminary Service Development Plan, including all incorporated elements. Additionally, given the potential need for shared track with BNSF Railway and Union Pacific Railroad, this study will complete the necessary RTC modeling. With CRISI grant funding, the Commission will develop an analysis that identifies the key economic benefits, costs, and potential constraints of providing passenger rail service to and along the Front Range. Among the important activities that the study will complete are an assessment of current infrastructure, ridership and revenue projections, and preliminary environmental screening and cost estimates.

I urge you to give this application your full and fair consideration, and don't hesitate to contact me with any questions.

Respectfully,

A handwritten signature in blue ink, appearing to read 'Mike A. Valentine', is written over the typed name.

Michael A. Valentine  
Trinidad City Manager  
email: [mike.valentine@trinidad.co.gov](mailto:mike.valentine@trinidad.co.gov)



P.O. Box 9613  
Denver, CO 80209

June 17, 2020

The Honorable Elaine L. Chao, Secretary  
U.S. Department of Transportation  
1200 New Jersey Avenue, SE  
Washington, DC 20590

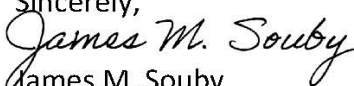
Dear Secretary Chao:

The Colorado Rail Passenger Association (ColoRail) is a non-profit, membership organization advocating for improved transportation services in Colorado. ColoRail supports the Southwest Chief & Front Range Passenger Rail Commission's (the Rail Commission's) application for Consolidated Rail Infrastructure and Safety Improvements (CRISI) Track 1 funding for the Front Range Passenger Rail Service Development Plan and Rail Traffic Controller (RTC) Modeling efforts. This project represents a critical step towards providing passenger rail service from Pueblo to Fort Collins, including Colorado Springs and Denver; thereby unlocking significant benefits for residents and travelers from across our region and indeed the entire nation. ColoRail will provide \$2,000 in matching funds for this grant.

This effort will capitalize on the ongoing efforts that the Rail Commission and the Colorado Department of Transportation (CDOT) are making to prepare for first-ever passenger rail service up and down the Front Range – from Pueblo to Colorado Springs, and north to Denver and Fort Collins. The Front Range Passenger Rail Study is currently underway, evaluating the feasibility of rail service along this 173-mile corridor and initiating a streamlined environmental review of alternatives. The Service Development Plan and RTC modeling will position the Rail Commission to issue a Notice of Intent to enter NEPA for the Front Range Passenger Rail Project.

The Front Range Passenger Rail Service Development Plan and Rail Traffic Controller (RTC) Modeling Study will finalize the ongoing efforts to develop a preliminary Service Development Plan, including all incorporated elements. Additionally, given the potential need for shared track with BNSF Railway and Union Pacific Railroad, this study will complete the necessary RTC modeling. With CRISI grant funding, the Commission will develop an analysis that identifies the key economic benefits, costs, and potential constraints of providing passenger rail service to and along the Front Range. Among the important activities that the study will complete are an assessment of current infrastructure, ridership and revenue projections, and preliminary environmental screening and cost estimates.

I urge you to approve this application. Please contact me with any questions.

Sincerely,  
  
James M. Souby  
President





**BUILDING AMERICA®**

June 12, 2020

The Honorable Elaine Chao  
Secretary, U.S. Department of Transportation  
1200 New Jersey Ave, SE  
Washington, DC 20590

**RE: 2020 CRISI Grant – Colorado’s Southwest Chief & Front Range Passenger Rail Commission**

Dear Secretary Chao:

Union Pacific supports the Southwest Chief & Front Range Passenger Rail Commission's CRISI grant application for the *Front Range Passenger Rail Service Development Plan and Rail Traffic Controller (RTC) Modeling* efforts, which will progress the Commission's efforts towards providing passenger rail service from Pueblo to Fort Collins, including through Colorado Springs and Denver.

If awarded a grant, Union Pacific will continue working with the Commission to ensure the application of any study results, and execution of resulting plans, meet current Union Pacific Railroad engineering standards, operating needs and safety requirements.

Thank you for your consideration, please feel free to contact me if you have any questions.

Sincerely,

Liisa Stark

June 18, 2020

The Honorable Elaine Chao, Secretary  
US Department of Transportation  
1200 New Jersey Ave, SE  
Washington, DC 20590

Dear Secretary Chao:

I write to support the Southwest Chief & Front Range Passenger Rail Commission's application for Consolidated Rail Infrastructure and Safety Improvements (CRISI) Track 1 funding for the Front Range Passenger Rail Service Development Plan and Rail Traffic Controller (RTC) Modeling efforts. This project represents a critical step towards providing passenger rail service from Pueblo to Fort Collins, including Colorado Springs and Denver.

This effort will capitalize on the ongoing efforts that the Rail Commission and the Colorado Department of Transportation (CDOT) are making to prepare for first-ever passenger rail service up and down the Front Range – from Pueblo to Colorado Springs, and north to Denver and Fort Collins. The Front Range Passenger Rail Study is currently underway, evaluating the feasibility of rail service along this 173-mile corridor and initiating a streamlined environmental review of alternatives. The Service Development Plan and RTC modeling will position the Rail Commission to issue a Notice of Intent to enter NEPA for the Front Range Passenger Rail Project.

The Front Range Passenger Rail Service Development Plan and Rail Traffic Controller (RTC) Modeling Study will finalize the ongoing efforts to develop a preliminary Service Development Plan, including all incorporated elements. Additionally, given the potential need for shared track with BNSF Railway and Union Pacific Railroad, this study will complete the necessary RTC modeling. With CRISI grant funding, the Commission will develop an analysis that identifies the key economic benefits, costs, and potential constraints of providing passenger rail service to and along the Front Range. Among the important activities that the study will complete are an assessment of current infrastructure, ridership and revenue projections, and preliminary environmental screening and cost estimates.

I urge you to give this application your full consideration.

Sincerely,



Douglas W. Rex  
Executive Director



# City of La Junta

SIXTH AND COLORADO - P.O. BOX 489  
LA JUNTA, COLORADO 81050  
PHONE 719-384-2578  
FAX 719-384-7231

June 11, 2020

The Honorable Elaine L. Chao  
Secretary of Transportation  
U.S. Department of Transportation  
1200 New Jersey Avenue, SE  
Washington, DC 20590

Dear Secretary Chao:

I write to support the Southwest Chief & Front Range Passenger Rail Commission's (the Rail Commission's) application for Consolidated Rail Infrastructure and Safety Improvements (CRISI) Track 1 funding for the Front Range Passenger Rail Service Development Plan and Rail Traffic Controller (RTC) modeling efforts. This project represents a critical step towards providing passenger rail service from Pueblo to Fort Collins, including Colorado Springs and Denver; thereby unlocking significant benefits for residents and travelers from across our region and indeed the entire nation.

This effort will capitalize on the ongoing efforts that the Rail Commission and the Colorado Department of Transportation (CDOT) are making to prepare for first-ever passenger rail service up and down the Front Range from Pueblo to Colorado Springs, and north to Denver and Fort Collins. The Front Range Passenger Rail Study is currently underway, evaluating the feasibility of rail service along this 173-mile corridor and initiating a streamlined environmental review of alternatives. The Service Development Plan and RTC modeling will position the Rail Commission to issue a Notice of Intent to enter NEPA for the Front Range Passenger Rail Project.

The Front Range Passenger Rail Service Development Plan and Rail Traffic Controller (RTC) Modeling Study will finalize the ongoing efforts to develop a preliminary Service Development Plan, including all incorporated elements. Additionally, given the potential need for shared track with BNSF Railway and Union Pacific Railroad, this study will complete the necessary RTC modeling. With CRISI grant funding, the Commission will develop an analysis that identifies the key economic benefits, costs, and potential constraints of providing passenger rail service to and along the Front Range. Among the important activities that the study will complete are an assessment of current infrastructure, ridership and revenue projections, and preliminary environmental screening and cost estimates.

I urge you to give this application your full and fair consideration, and don't hesitate to contact me with any questions.

Sincerely,

A handwritten signature in blue ink that reads "Rick Klein".

Rick Klein  
La Junta City Manager



June 15, 2020

The Honorable Elaine L. Chao  
Secretary of Transportation  
U.S. Department of Transportation  
1200 New Jersey Avenue, SE  
Washington, DC 20590

1660 Blake Street  
Denver, CO  
80202  
303.299.6000

Dear Secretary Chao:

I write to express support for the Southwest Chief & Front Range Passenger Rail Commission's (the Rail Commission's) application for Consolidated Rail Infrastructure and Safety Improvements (CRISI) Track 1 funding for the Front Range Passenger Rail Service Development Plan and Rail Traffic Controller (RTC) Modeling efforts. This project represents a critical step towards providing passenger rail service from Pueblo to Fort Collins, including Colorado Springs and Denver; thereby unlocking significant benefits for residents and travelers from across our region and indeed the entire nation.

This effort will capitalize on the ongoing efforts that the Rail Commission and the Colorado Department of Transportation (CDOT) are making to prepare for first-ever passenger rail service up and down the Front Range – from Pueblo to Colorado Springs, and north to Denver and Fort Collins. The Front Range Passenger Rail Study is currently underway, evaluating the feasibility of rail service along this 173-mile corridor and initiating a streamlined environmental review of alternatives. The Service Development Plan and RTC modeling will position the Rail Commission to issue a Notice of Intent to enter NEPA for the Front Range Passenger Rail Project.

The Front Range Passenger Rail Service Development Plan and Rail Traffic Controller (RTC) Modeling Study will finalize the ongoing efforts to develop a preliminary Service Development Plan, including all incorporated elements. Additionally, given the potential need for shared track with BNSF Railway and Union Pacific Railroad, this study will complete the necessary RTC modeling. The Front Range Passenger Rail Service is being planned to coordinate, complement and potentially integrate with RTD's rail services in the Denver metropolitan region, as well as with other local transit providers' services along the front range.

With CRISI grant funding, the Commission will develop an analysis that identifies the key economic benefits, costs, and potential constraints of providing passenger rail service to and along the Front Range. Among the important activities that the study will complete are an assessment of current infrastructure, ridership and revenue projections, and preliminary environmental screening and cost estimates.

I urge you to give this application your full and fair consideration, and don't hesitate to contact me with any questions.

Sincerely,



William C. Van Meter

## ***Appendix B***

### **STATEMENT OF WORK**

## **Appendix B**

### **Statement of Work**

#### **Front Range Passenger Rail Preliminary Service Development Plan and Rail Simulation Modeling**

#### **Southwest Chief and Front Range Passenger Rail Commission Consolidated Rail Infrastructure and Safety Improvements (CRISI) FY 2020**

### **I. BACKGROUND**

Plans for a comprehensive passenger rail system serving the Front Range have been under consideration by the Colorado Department of Transportation (CDOT), local governmental coalitions, and advocacy groups for more than a decade. In 2017, the Southwest Chief and Front Range Passenger Rail Commission (Rail Commission) was re-established by the Colorado General Assembly (SB17-153) and tasked with facilitating development and operation of a passenger rail service along the Front Range.

In 2018, the Colorado General Assembly provided funding for the Rail Commission (SB 18-001) to hire staff and retain a consultant team to begin the FRPR Project. With the funds provided by the General Assembly, the team was able to begin the first phase of work to advance preliminary environmental and service development planning. However, additional funds will be required to advance beyond the current project into the National Environmental Policy Act (NEPA) process and complete the preliminary Service Development Plan (SDP). Additionally, the Rail Commission partnered with CDOT. CDOT, who also has an interest in FRPR implementation, dedicated staff and resources (\$1.5 million over 2 years) to assist the Rail Commission in advancing the current phase of the FRPR Project.

With Rail Commission staff, supporting CDOT staff, and a consultant team in place, the FRPR Project kicked off in the summer of 2019. The team's focus is to complete the initial steps towards the planning, engineering, stakeholder engagement, governance, and environmental analysis of the project. The current phase of the project extends from approximately August 2019 through December 2020.

### **II. OBJECTIVE**

The Rail Commission will complete a preliminary Passenger Rail Service Development Plan (SDP) and perform Rail Simulation Modeling to prepare the Rail Commission to issue a Notice of Intent to enter into NEPA for the Front Range Passenger Rail Project.

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### III. PROJECT LOCATION

The study area for the Front Range Passenger Rail Preliminary Service Development Plan and railroad simulation modeling effort is the Front Range Corridor of Colorado from Pueblo to Fort Collins. This corridor, approximately 180 miles in length, serves as the backbone for 85% of the population of the entire state of Colorado. The possible future Front Range Passenger Rail alignments are generally within or adjacent to the Class I Railroad rights of way, or in or adjacent to the CDOT owned rights of way of the Interstate 25 corridor between Pueblo and Fort Collins.

The width of the corridor being evaluated for Front Range Passenger Rail varies depending on location but is at the most no more than 30 miles wide.

The freight rail corridors that are being considered for possible evaluation through the use of rail simulation modeling are: BNSF's Front Range Subdivision from Denver to Fort Collins and its Pikes Peak Subdivision between Pueblo and Denver; and Union Pacific's Colorado Springs Subdivision between Pueblo and Denver.

In addition to the freight rail corridors, the I-25 Corridor and E-470 beltway are also being evaluated for possible use by Front Range Passenger Rail.

### IV. DESCRIPTION OF WORK

#### **Task 1: Project Management; Detailed Project Work Plan, Budget, Schedule**

The Rail Commission will prepare a Detailed Project Work Plan, Budget, and Schedule for the Project. The Detailed Project Budget will be consistent with the Approved Project Budget but will provide a greater level of detail. The Detailed Project Work Plan will describe, in detail, the activities and steps necessary to complete the tasks outlined in this Statement of Work. The Detailed Project Work Plan will also include information about the project management approach (including team organization, team decision-making, roles and responsibilities and interaction with FRA), as well as address quality assurance and quality control procedures. In addition, the Detailed Project Work Plan will include the Project Schedule (with Commission and agency review durations) and a detailed Project Budget. The Detailed Project Work Plan, Budget, and Schedule will be reviewed and approved by the FRA.

The Commission acknowledges that work on subsequent tasks will not commence until the Detailed Project Work Plan, Budget, and Schedule has been completed, submitted to FRA, and the Grantee has received approval in writing from FRA, unless such work is permitted by pre-award authority provided by FRA. The FRA will not reimburse the Commission for costs incurred in contravention of this requirement.

#### **Task 1 Deliverables:**

- Detailed Project Work Plan
- Budget
- Schedule

## **Task 2: Vision, Purpose and Need**

The Rail Commission will build on the work done in the alternatives analysis and pre-NEPA efforts currently underway. The preliminary vision statement, developed in conjunction with stakeholders along the Front Range Corridor, will be refined to form a more definitive Purpose and Need to guide a future the Service Development Plan.

### **Task 2 Deliverables:**

- Project Vision
- Project Purpose and Need

## **Task 3: Rail Simulation Modeling**

A key element of the project will be completing any necessary rail simulation modeling that may be necessary to be completed prior to advancing to NEPA. Such modeling will be required in the event that future rail passenger service within the Front Range corridor will be sharing track with either or both the BNSF and UP. This would identify required capacity improvements to permit anticipated passenger service to be operated without degrading freight service on the line segment. At this point in the current alternatives analysis, how much track will be shared, how much track will be on dedicated passenger rail tracks within the freight rail rights of way, and how much will be in the rights of way of existing highway corridors has yet to be determined.

If the amounts of shared track are significant, the proposal is to conduct rail simulation modeling used by BNSF, UP and other Class I Railroads known as Rail Traffic Controller (RTC) modeling.

Two potential routes will be simulated: BNSF's Front Range Subdivision from Denver to Fort Collins and its Pikes Peak Subdivision between Pueblo and Denver; and Union Pacific's Colorado Springs Subdivision between Pueblo and Denver. The required infrastructure improvements in each case will be evaluated. The rail simulation model will likely be developed using Rail Traffic Controller (RTC) by Berkeley Simulation Software, LLC. RTC is an industry standard rail simulation tool which is capable of modeling and simulating complex networks involving a diverse array of services including both passenger and freight.

### **Data Requirements**

In order to provide an accurate simulation of the corridor and vehicles, the following data will be required from BNSF, UP, and the proposed geometric alignments of the project:

- Current Track Alignment data
  - For existing shared use sections of the corridor
  - Proposed (new rights-of-way)
- Proposed passenger/commuter operations
  - Route
  - Schedules
  - Locomotive type for performance data



- Train consists
- Maintenance/ layover locations
- Freight Train operations
  - Current timetables for subdivisions
  - Freight train schedules
  - Dwell time assumptions

Since it is premature to know at this point the extent of shared trackage, there may be an opportunity to perform less stringent rail operations analysis than RTC modeling. During meetings with BNSF Railway executive management regarding the upcoming Front Range Rail planning efforts, it has been suggested that a version of rail operations analysis known as a "pathing study". The "pathing study" links rail infrastructure capital improvements to the rail passenger service's proposed operating plan. Such a pathing study may suffice if there is limited shared trackage in the 180-mile corridor.

### **Task 3 Deliverables:**

Results of Rail Traffic Controller (RTC) or other railroad simulation modeling tools.

- Stringline diagrams describing the operations and required trains meets
- Tables showing operational savings for UP and BNSF operated trains
- Class of trains: unit coal, merchandise, Premium service, other, Amtrak
- Tables showing run time and average velocity for various corridor segments
- Fuel savings and crew savings
- Required additional signal systems including PTC
- Needed infrastructure (double track, passing sidings, etc.) to accommodate passenger trains based on proposed operating plans.

### **Task 4: Refinement of Alignment Alternatives**

The current alternatives analysis and pre-NEPA efforts have identified and evaluated a reasonable range of alternatives that will satisfy the purpose and need. Some alternatives considered were those previously evaluated in previous studies. Fatal flaw analysis has eliminated two corridors from further consideration. All segment stakeholder coalition groups confirmed the elimination of these two corridors.

These refinements may include:

- Alignment opportunity and service delivery to either directly serve downtown Denver/Denver Union Station and a potential new station location at Burnham Yard, located in SW Denver.
- Maximizing connections with present and planned local transit services, ensuring connectivity with previous transit investments (i.e. RTD's FasTracks, MAX BRT in Fort Collins, etc.);
- Utilization of existing freight rail corridors, new green field alignments, or a combination thereof;
- Rights-of-way in or adjacent to existing interstate/state highway rights of way.
- Other alignment and route options along the Front Range Corridor.

As the process moves into Level 2 analysis, refinements to the remaining corridors will be made. Preliminary screening of the remaining alternatives will be evaluated by agreed-upon NEPA appropriate criteria and measures of effectiveness. These may include but are not limited to:

- Operational considerations
- Community and Environmental impacts
- Economic considerations
- Feasibility/implementation

#### **Task 4 Deliverables:**

- Documentation of the screening criteria and measures of effectiveness utilized in evaluating the alternatives.
- Identification of a preliminary preferred alternative to be utilized in creating the documentation to be provided to the Colorado Legislature in the 2022 legislative session.
- Memorandum documenting the rationale for the selection of the preliminary preferred alternative.

#### **Task 5: Operations Analysis**

Develop a Conceptualized Operating Plan including, but not limited to:

- 1) Proposed type of passenger rail system (commuter rail, higher speed rail, etc.);
- 2) Type and quality of preferred train equipment to be used, with technical specifications such as maximum speed, passenger capacity, energy consumption profile, acceleration and deceleration rates, and technologies used including Positive Train Control.
- 3) Service frequency and operating speeds;
- 4) Fares and fare structure comparisons among proposed services;
- 5) Describe alignment with existing and planned intermodal connections;
- 6) Station locations and maintenance facility location and, for each, whether it is existing or new, and how it maximizes the use of existing infrastructure;
- 7) Capacity improvement concepts for required infrastructure investments and improvements including the feasibility of building new track and the method for securing required ROW;
- 8) The plan should be developed in partnership with track owners and freight service operators, when appropriate.
- 9) Recommendation for potential qualified service operator (i.e. existing transit agency, other public agency, new transit agency, Amtrak, BNSF Railway, private operator, etc.)

#### **Task 5 Deliverables:**

- Documentation of the assumptions utilized in the development of the operating plan.
- Memorandum detailing the potential operating plans for various phases/segments (i.e. Fort Collins to Denver, Denver to Colorado Springs, Colorado Springs to Pueblo or others).
- Conceptual operating plan for the preliminary preferred alternative for the purposes of the documentation to a future Legislative session.

## **Task 6: Ridership Demand/Revenue Forecasting**

CDOT’s travel demand model has been utilized in the Alternatives Analysis and pre-NEPA phase of the Project to identify passenger rail travel demand. Inputs to this effort include but are not limited to station locations, transit connections, equipment technology, operating speeds, land use, etc. This was developed in close coordination with the Front Range MPO’s and their travel models. FRA staff have reviewed the model and approved its use for the Front Range Passenger Rail Project. Additional model runs will be made as refinements to alignments are made, station locations are refined, and train speeds and other issues affect the operating plans.

A ticket pricing strategy will be proposed for this service based on comparable services around the country and reflecting RTD’s existing pricing of its commuter rail services in the Denver metro area. This information will then be used to generate revenue forecasts from fares/ridership.

Additional work to identify other revenue sources for Front Range Passenger Rail (advertising, grants, local contributions, etc.),

### **Task 6 Deliverables:**

- Boardings and alightings by station.
- Model runs testing sensitivity of varying station locations and other key variables
- Model runs incorporating special events: (NFL, NBA, NHL games at Mile High Stadium and the Pepsi Center, College football games, National Western Stock Show, State fair, etc.)
- Trip tables to/from various stations located on the 180-mile corridor.
- Revenue forecasts based on ridership and pricing strategies.
- Projection of other revenue sources that may be available to front Range Passenger Rail

## **Task 7: Station and Access Analysis**

The new Front Range Passenger Rail service will require new stations in most of the markets along the Front Range Corridor. Only Denver Union Station in downtown Denver is currently served by Passenger Rai. Therefore, the Rail Commission, in close cooperation with stakeholders in the station market areas, will develop a station location analysis for the Corridor that:

- 1) Determines the operational requirements of stations, and station access for the new passenger rail service with focus on the ability to maximize ridership on Front Range Passenger Rail.
- 2) Maximizes connectivity to existing transit services where available and to future planned services not yet providing service to these specific station locations.
- 3) Accommodates pedestrian, bicycle and other ride services with efficient access.
- 4) Discusses the economic development potential (commercial/residential) at each station area.
- 5) Develops a conceptual engineering layout for each of the stations, including parking sufficient for projected ridership and operations plans.

**Task 7 Deliverables:**

- Draft technical memorandum presenting the operational requirements and assumptions of station areas.
- Draft technical memorandum identifying station access recommendations.
- Draft Conceptual engineering diagrams of new recommended station areas.
- Draft memorandum discussing recommended rail access and other station area improvements at Denver Union Station.

**Task 8: Conceptual Engineering**

The Project will identify the required infrastructure improvements and investments, including equipment, needed to support the new service, and quantify new track, train-control, and communications infrastructure necessary to deliver the proposed service reliably, at reasonable cost, and for the 20-year time horizon required by the FRA.

Engineering to the level appropriate to estimate quantities and right-of-way acquisition will be required. This will include rail infrastructure, other structures, fencing, yards, maintenance facilities.

Engineering activities will include refining the conceptual engineering currently being conducted in the Alternatives Analysis and pre-NEPA work. This work will refine alignments to avoid and/or mitigate potential environmental impacts, while improving train speeds and reducing cost. These alignments will be estimated to reach a 10-15% design level for movement into NEPA.

**Task 8 Deliverables:**

- Draft design standards and technical criteria for track layout and right of way
- Conceptual alignments for proposed new track as well as shifted or joint-use track.
- 3D corridor models as needed for estimating right of way needs, grading quantities, and impact at a preliminary level
- Design drawings at a larger scale showing proposed alignments, station locations, and other critical wayside equipment and facilities.

**Task 9: Capital and O&M Costs**

The Rail Commission will develop cost estimates for the numerous elements of Front Range Passenger Rail.

**Capital Expenditures**

The preliminary SDP will contain estimates of the project capital costs including: project planning and design, environmental reviews, land or real estate acquisition, direct construction costs, and equipment acquisition.

**Operating and Maintenance costs**

The Preliminary SDP will contain estimates of the ongoing O&M costs for the proposed services, including but not limited to train staff and crews, energy, equipment maintenance and overhauls, station services, railroad O&M.

**Task 9 Deliverables:**

- Cost Estimates for construction of new passenger rail sole use corridors
- Infrastructure improvements required, station and access construction and equipment, including description of methods and assumptions
- Pre-construction cost estimates: planning, environmental/ National Environmental Policy Act (NEPA) documentation as well as estimated costs of required mitigations, design, ROW acquisition, etc.;
- Costs of construction of rail and station locations, acquisition of fleet equipment, and establishment of operating systems;
- Cost estimates for infrastructure and train control needs, will include:
  - a. Train control systems, including Positive Train Control (PTC);
  - b. Track, signals, and interlocking upgrades;
  - c. Need for sidings and double tracking;
  - d. Grade crossing facilities (new crossings, new crossing gates, signals, and surface improvements; quiet zones), as well as opportunities to consolidate/eliminate grade crossings;
- Station facilities: platforms, shelters, lighting, parking, and facilities that could be repurposed.
- Estimates of annual operating costs by expenditure type;

**Task 10: Public Benefits Analysis**

Public benefits represent economic values resulting from rail service improvements, and can be experienced by current or future users of passenger rail service or the public at-large. The benefits derived involve a reduction in the costs associated with transportation activities, and can be broken down into following categories:

**Benefits to passenger rail users**

- Transportation cost savings to new users

**External benefits**

- Travel time savings for highway users resulting from reduced congestion
- Reduced vehicle crashes generating safety benefits
- Pavement maintenance savings
- Reduced emissions from highway and air users who mode-shift to rail
- Increased economic activity resulting from improved connections to employment nodes and enhanced goods movement.

The benefit cost analysis will document the overall economic impact of the Project. This will include not just the financial results as described in financial planning but the benefits and impacts for the project such as operational benefits, travel time savings, air quality impacts, community development, and other user and non-user economic benefits. This is informed by other elements of preliminary Service Planning and will be used to assess the transportation-related merits of the service alternative.

**Task 10 Deliverables:**

- Project Memorandum detailing the various analytical assumptions utilized in the benefit cost analysis, including descriptions of any specific analysis “tools” and monetized values for the various array of elements of “public benefit”.
- Memorandum summarizing the results of the benefit cost analysis

**Task 11: Governance**

Governance represents the long-term management structure for design, construction, maintenance and operations of a future Front Range Passenger Rail system. Options could include: elected/appointed interregional rail authority, special district, existing transit agency, etc.). Up to three potential governance scenarios that could lead to the implementation of Front Range Passenger Rail will be proposed.

Determine the feasibility of an aggregation of those “Front Range” jurisdictions to be formed into a “District” to be served by an interregional passenger rail system. This could be relevant for a possible ballot measure in 2021 or 2022.

**Task 11 Deliverables:**

- Memorandum identifying technology and other project characteristics, the project will need to be coordinated with several federal and state agencies to ensure project planning and deployment process requirements are met (i.e. NEPA). Agencies that need to be involved, include, but are not limited to:
  - Federal Railroad Administration (FRA)
  - Federal Transit Administration
  - Federal Highway Administration
  - Colorado department of Transportation
  - Colorado Public Utilities Commission
- Memorandum proposing ‘optimum’ regional boundaries for the purposes of attaining a successful future ballot issue
- Governance memorandum identifying alternative governance structures and a recommended path forward for Front Range Passenger Rail.

**Task 12: Stakeholder and Public Involvement**

To successfully implement new passenger rail service along the Front Range Corridor, stakeholder support along the Corridor will be critical. Colorado law requires any tax increase to be voted on by the citizens of the state; or a particular region such as the Front Range Counties that would make up a Front Range Passenger Rail District. Therefore, region-wide support of the project will be critical.

The ongoing Alternative Analysis and pre-NEPA efforts have successfully engaged stakeholders in North, Central and South Segment Coalitions to create very positive momentum for Front Range Passenger Rail. This program will be expected to be continued entering into the preliminary SDP effort to be funded by this CRISI Grant.

Additional forms of engagement that could occur to garner support for the Project include surveys, semi-structured interviews, on-line public meetings or telephone town halls.

**Task 12 Deliverables:**

- Technical memorandum outlining the outreach effort and findings.
- Segment Coalition meeting notes and presentation materials

**Task 13: Draft and Final Reports**

The Rail Commission will prepare a draft report of the preliminary SDP including the results of the Rail Simulation Modeling that includes an Executive Summary. Following appropriate reviews by the Rail Commission, its stakeholders, and FRA, the Draft will be revised based on comments received and a final preliminary SDP document will be produced.

**Task 13 Deliverables:**

- Draft Report
- Final Report

**I. PROJECT SCHEDULE AND DELIVERABLES**

The period of performance for all work will be approximately 12 months, from February 2021 to February 2022. The tasks associated with this Grant/Cooperative Agreement are listed below.

Task #	Deliverable Name	End Date
1	<b><i>Project Management; Detailed Project Work Plan, Budget, Schedule</i></b>	March 2021
2	<b><i>Vision, Purpose and Need</i></b>	May 2021
3	<b><i>Rail Simulation Modeling</i></b>	September 2021
4	<b><i>Refinement of Alignment Alternatives</i></b>	June 2021
5	<b><i>Operations Analysis</i></b>	July 2021
6	<b><i>Ridership Demand / Revenue Forecasting</i></b>	September 2021



7	<i>Station and Access Analysis</i>	August 2021
8	<i>Conceptual Engineering</i>	September 2021
9	<i>Capital and O &amp; M Costs</i>	November 2021
10	<i>Public Benefits Analysis</i>	December 2021
11	<i>Governance</i>	November 2021
12	<i>Stakeholder and Public Involvement</i>	January 2022
13	<i>Draft and Final Reports</i>	February 2022

## II. PROJECT ESTIMATE/BUDGET

The total estimated cost of the Project is \$685,000, for which federal funding awarded under this grant application will contribute up to 80% of the total cost. Any additional expense required beyond that provided in this grant to complete the Project shall be borne by the Grantee.

### Project Estimate by Task

<b>Task #</b>	<b>Task Name</b>	<b>Total Cost</b>
1	<i>Project Management</i>	\$65,000
2	<i>Preliminary SDP Rationale And Goals And Objectives</i>	\$10,000

3	<i>Rail Simulation Modeling</i>	\$200,000
4	<i>Alignment Alternatives</i>	\$40,000
5	<i>Operations Analysis</i>	\$80,000
6	<i>Ridership Demand And Revenue Forecasts</i>	\$25,000
7	<i>Station And Access Analysis</i>	\$45,000
8	<i>Conceptual Engineering</i>	\$70,000
9	<i>Capital And Operating &amp; Maintenance Costs</i>	\$30,000
10	<i>Public Benefits Analysis</i>	\$25,000
11	<i>Program Delivery And Implementation</i>	\$20,000
12	<i>Stakeholder And Public Involvement</i>	\$45,000
13	<i>Draft And Final Report</i>	\$30,000
<b>Total Project Cost</b>		<b>\$685,000</b>

**Project Estimate Contributions**

<b>Funding Source</b>	<b>Project Contribution Amount</b>	<b>Percentage of Total Project Cost</b>
FRA Grant	\$548,000	80%
Pueblo County, SW Chief and Front Range Passenger Rail Commission, City of Trinidad, ColoRail	\$137,000	20%
<b>Total Project Cost</b>	<b>\$685,000</b>	<b>100%</b>

**III. PROJECT COORDINATION**

The Commission shall perform all tasks required for the Project in a coordinated process that will involve affected host railroads, operators, and funding and regulatory partners, including:

**BNSF Railway-** BNSF owns and operates tracks in the entire 180-mile corridor between Pueblo and Fort Collins.

**Union Pacific Railroad -** UP owns and operates tracks between Pueblo and Denver and also operates on a light density line in northern Colorado that may provide access into Fort Collins from the I-25 area east of Loveland.

**FRA:** The Commission will ensure that the Project complies with all applicable FRA requirements.

**FTA and FHWA:** The Commission will ensure that the Project complies with all applicable FTA and FHWA requirements in the event Front Range Rail alignments are in FTA or FHWA jurisdiction (Highway rights-of-way or FTA commuter rail corridor (RTD) jurisdiction).

**IV. PROJECT MANAGEMENT**

The Grantee is responsible for facilitating the coordination of all activities necessary for implementation of the Project. Upon award of the Project, the Grantee will monitor and evaluate the Project's progress through regular meetings scheduled throughout the Project Performance Period. The Applicant/Grantee will:

- Participate in a project kickoff meeting with FRA
- Complete necessary steps to hire a qualified consultant/contractor to perform required Project work

- Hold regularly scheduled Project meetings with FRA
- Review and approve work as it is completed
- Review and approve invoices as appropriate for completed work
- Perform Project close-out audit to ensure contractual compliance and issue close-out report
- Submit to FRA all required Project deliverables and documentation on-time and according to schedule, including periodic receipts and invoices
- Comply with all FRA Project reporting requirements, including, but not limited to:
  - a. Status of project by task breakdown and percent complete
  - b. Changes and reason for changes in and updated versions of Detailed Project Work Plan, Budget, and Schedule
  - c. Description of unanticipated problems and any resolution since the immediately preceding progress report
  - d. Summary of work scheduled for the next progress period
- Read and understand the Terms and Conditions of its Grant Agreement
- Notify FRA of changes to the Agreement that require written approval or modification to the Agreement.

*Appendix C*

**LETTER FROM THE SOUTHWEST CHIEF AND FRONT RANGE PASSENGER RAIL  
COMMISSION**



June 19,2020

The Honorable Elaine L. Chao  
Secretary of Transportation  
U.S. Department of Transportation  
1200 New Jersey Avenue, SE  
Washington, DC 20590

Dear Secretary Chao:

The Southwest Chief & Front Range Passenger Rail Commission (the Rail Commission) is pleased to apply for \$548,000 in Consolidated Rail Infrastructure and Safety Improvements (CRISI) Track 1 funding for the *Front Range Passenger Rail Preliminary Service Development Plan and Railroad Simulation Modeling Study*.

The Front Range Passenger Rail Preliminary Service Development Plan and Railroad Simulation Modeling effort will culminate the preliminary planning efforts conducted by the Southwest Chief and Front Range Passenger Rail Commission since it issued a Notice to Proceed to its consulting team in August of 2019. That initial effort includes Alternatives Analysis, Stakeholder Engagement and Pre-NEPA activities along the 180-mile corridor between Pueblo and Fort Collins, Colorado

The Preliminary Service Development Plan and Rail Simulation Modeling will position the Rail Commission to move forward to issue a Notice of Intent to enter the formal NEPA process for the Front Range Passenger Rail (FRPR) Project.

The \$548,000 in CRISI funding will be matched by \$137,000 in contributions from the Rail Commission, Pueblo County and Trinidad, Colorado and the Colorado Chapter of the Rail Passengers Association. Future partners in this planning effort will also be CDOT, BNSF Railway and the Union Pacific Railroad.

We thank you for your consideration of the Commission's application. Please contact me with any questions you may have!

Sincerely,

A handwritten signature in blue ink that reads "Jill Gaebler". The signature is fluid and cursive, with a long horizontal stroke at the end.

Jill Gaebler, Chair – Southwest Chief and Front Range Passenger Rail Commission