

## Technical Memorandum No. 2

### Project No. C SWOO-242

Study Approach Statement  
May 18, 2005



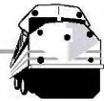
May 18, 2005



Table of Contents

Section	Page
Introduction.....	1
Study Purpose.....	1
Study Focus.....	1
Study Approach.....	2
No-Build Option.....	2
Build Option.....	2
Public Benefits.....	4
Project Costs.....	4
Appendix A .....	A-1





## Introduction

The Colorado Department of Transportation and the two Class One railroad companies operating in Colorado, the Burlington Northern and Santa Fe Railway Company (BNSF) and the Union Pacific Railroad Company (UP), have been recently holding discussions regarding the possible re-location of freight rail infrastructure, as well as through-train service east away from the Front Range urban corridor. These preliminary efforts between CDOT and the Railroads have been known either as the "Colorado Railroad Partnership Project" or as "Colorado's Safety and Mobility Partnership Project," and provide the backdrop for this current study.

CDOT originally evaluated such a relocation concept in 1979. The Colorado State Rail Plan - Rail Bypass Feasibility Study, was conducted in order to evaluate the feasibility of re-routing existing freight railroad through-routes along the Colorado Front Range. Ever-increasing unit coal train traffic carrying Powder River Basin coal from northeast Wyoming to the coal fired electric utilities in Texas. This coal train traffic impacts the Colorado Front Range communities from Denver south to Trinidad. Several alternative alignments in eastern Colorado were evaluated.

At the time that study was conducted, there were seven Class One railroad companies operating within Colorado. Today, following a series of railroad mergers over the past 20 years, only two Class One railroads remain in the Western US: the BNSF and the UP. The institutional constraints involved in dealing with seven railroad companies created a much more difficult environment for resolving the numerous issues involved in such major revisions to the rail infrastructure than exists today.

Colorado's railroads were originally built in the late 1800's and cities and towns grew up around the railroads. The need to be an integral part of the communities was primarily due to the movement of passengers. The Interstate Highway System and other highway improvements in the 1950's changed the environment for passenger mobility within Colorado and throughout the US. It has now become possible to consider the potential benefits and costs to the public, as well as to the railroads of re-locating railroad through-freight movements. A very high level of local freight service to Colorado rail customers would still be maintained, as well as making improvements to current infrastructure. This would improve future freight movement and maintain the competitive balance between the two railroads

## Study Purpose

The purpose of this Public Benefits and Costs Study is to identify and in some cases quantify the potential public benefits and costs, as well as the advantages and disadvantages associated with a possible public-private partnership project between the Colorado Department of Transportation (CDOT), other public entities, and the BNSF and UP. In this context, the parties can better assess the type and extent of their financial participation in such a possible partnership. The ultimate goal of the study will be to investigate whether there are likely to be sufficient benefits accruing to the citizens of Colorado to warrant consideration of the investment of public dollars in the proposal.

## Study Focus

The BNSF and UP have jointly developed and proposed a series of rail infrastructure improvements entitled the *BNSF/UP Front Range Railroad Infrastructure Rationalization Project*. Those improvements are described in Appendix A. The BNSF/UP proposal consists of a wide variety of infrastructure improvements further described in the "Requirements to Achieve Project Operating Plan," as contained in Appendix A. The various tasks to be conducted by the Consultant in addressing the study purpose and goal statements described above will comprise the study related to implementation of the proposed project.



This study is intended to be preliminary in nature and broad in terms of detail, since it may be an initial phase of what may become a more comprehensive analysis of the infrastructure improvements proposed in Appendix A. Additional levels of detail related to environmental mitigation, costs, appraisals related to possible right-of-way acquisitions, transit feasibility, and final considerations due to future refinements in infrastructure location and alignment may be proposed to be conducted in the future based on analysis of the results and recommendations of this study. Also, additional detailed analysis of the economic impacts of the proposed improvements at both the state and regional levels may be an element of a future phase of this work.

This study is not an environmental study, nor is it intended to predetermine any outcome of any environmental study that may be in progress or later undertaken related to this proposal. Furthermore, nothing prepared on behalf of this study shall preclude federal, state or local agencies or officials from fulfilling their responsibilities under the National Environmental Policy Act (NEPA), as codified in 42 U.S.C., section 4321, et seq., or any of NEPA's implementing regulations.

### Study Approach

Following an extensive effort to document and understand the existing conditions within the project study area, the fundamental approach to this study is to prepare a direct comparison of two future options:

- A "No-Build" Option, and
- A "Build" Option.

An approximate 25-year planning horizon has been chosen, and therefore the comparison between these two options will be made for the year 2030. The key advantage of this approach will be the ability to reveal the true and legitimate benefits and costs of the railroad proposal by including the benefits and costs of also *not building* the proposed project in the evaluation. What is needed are the differences between the two options. These differences are also sometimes referred to as the "incremental" or "marginal" differences.

The study area is displayed on Figure 1 on the next page.

### The No-Build Option

The No-Build option is a very important concept in the study because it establishes a future point of reference or baseline from which to compare the railroad proposal, i.e. the Build option. The No-Build option addresses the questions: What would the freight railroad situation be like in the year 2030 if the proposed railroad project were not built? What are the benefits and costs of not taking this proposed action? Clearly, there would be some important capital investments and on-going operating costs accruing to the railroads and to the public anyway. These need to be recognized and understood.

Defining a future No-Build option is not an easy task. "No-Build" only means that the proposed railroad by-pass project will not be built. Significant improvements to the existing freight railroad infrastructure will likely be made and we need to agree on what those future commitments might be. Specific inclusions or exclusions in the No-Build option may affect the outcome of the study.

Hence, the most important consideration in constructing the No-Build option is a list of the freight railroad improvements that would most likely need to be made to the existing Front Range railroad infrastructure between now and the year 2030, assuming the proposed bypass was *not* built.

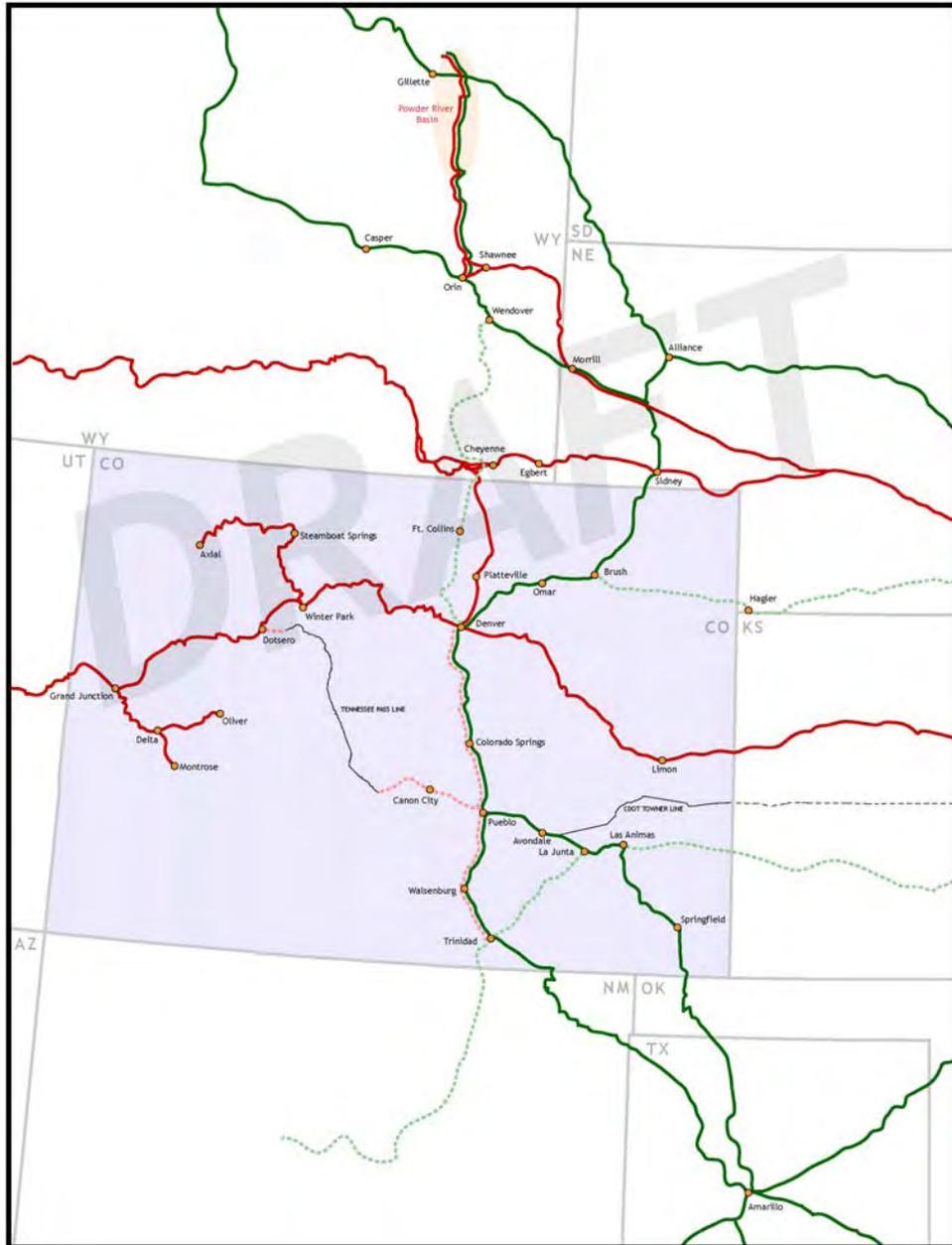


Figure 1 - Study Area



## The Build Option

The Build option is largely defined by the capital and operating improvements, as well as a corresponding freight service plan proposed by the UP and BNSF Railroads, as described in Appendix A.

## Public Benefits

Some examples of the expected public benefits (positive and negative) of the No-Build and Build options will be generally grouped and studied as follows. Additional benefits will likely be uncovered during the course of the study and will be included, as appropriate.

### Transportation

- General traffic delay
- Emergency traffic delay

### Environmental

- Noise and vibration
- Air quality
- Energy
- Visual
- Odor
- Natural environment
- Community barriers

### Land Use and Economic Development

- Community development
- Business development
- Property re-use
- Construction jobs

### Safety and Security

- Vehicle/railroad accidents
- Pedestrian/railroad accidents
- Emergency vehicle blockage
- Hazardous materials risk
- Terrorism risk

### Quality of Life and Image

### Future Passenger Rail Facilitation

- New right-of-way opportunities
- Shared right-of-way opportunities
- Shared track opportunities

## Project Costs

The capital, as well as the operating and maintenance (O&M) cost information associated with the No-Build and Build options will be provided by the UP and BNSF railroads to the maximum extent possible. Where cost information is unavailable, the Consultant will prepare additional conceptual-level estimates for review by the study participants, including the two affected railroad companies.

**APPENDIX A**  
**The BNSF/UP Front Range Railroad Infrastructure Rationalization Project**  
**(the “Railroad Project”)**

The following sections describe the Objectives, proposed Operating Plans, Requirements proposed to Achieve the Operating Plans (New Construction, Trackage Rights, Agreements between the BNSF and UP), proposed conveyances of ROW related to the proposed Railroad Project (such as easements, line sales, and/or track use agreements), and the Anticipated Changes Resulting from the Railroad Project.

**Railroad Project Objectives**

1. Facilitate Front Range freight movement and increase commuter options.
2. Minimize through-freight operations in major population centers along the Front Range
3. Remove or minimize through-freight operations movements in the center city in Denver
4. Minimize rail/vehicle conflicts
5. Concentrate through rail freight operations in a limited number of corridors
6. Make available rail corridors for light or heavy rail transit and other economic development
7. Create economic development opportunities in Colorado

**Railroad Project Operating Plan**

1. Consolidate UP and BNSF freight operations in Denver into one freight corridor
2. Relocate Freight Terminals to outside Denver center city
  - A. BNSF Globeville, Rennick and Denver Intermodal
  - B. UP 36th and 40th Streets
  - C. UP Burnham and Rolla Automobile Distribution
3. Construct a freight bypass around Denver (95 miles of new construction)
  - A. New 35-mile line Omar to Peoria
  - B. UP Limon Subdivision Peoria to Aroya (84 miles)

- C. New 60-mile line Aroya to Las Animas
- 4. Remove through-freight trains from following lines (while a high level of local freight service to Colorado rail customers continues to be provided by the current owning carrier)
  - A. BNSF Front Range Subdivision Fox Jct. to Loveland
  - B. BNSF Brush Subdivision Fox Jct. to Sand Creek
  - C. BNSF Pikes Peak Subdivision South Denver to Sedalia
  - D. UP Colorado Springs Subdivision 19th Street to South Denver; Sedalia to Palmer Lake
  - E. UP Boulder Branch Sand Creek to Boulder
  - F. UP Greeley Subdivision Sand Creek (M.P. 4.0) to Denver Union Terminal (DUT)
  - G. UP Limon Subdivision Pullman Jct. to Sandown Jct.
- 5. Freight and commuter passenger service on common line Palmer Lake to Crews

### **Requirements to Achieve the Railroad Project Operating Plan**

- 1. Estimated New Construction Requirements
  - A. Double track connection between UP Moffat Subdivision and Belt Line at Utah Junction
    - Grade Separation at Pecos Street
  - B. Grade separate BNSF Front Range Subdivision and switching lead from UP North Yard to Belt Junction Main Line
  - C. Double track with CTC UP's Utah Junction to Belt Junction Line
    - Grade separate or close all road crossings
  - D. Rebuild and double track with CTC Denver Rock Island (DRI)/COE line between Belt Junction and Sandown Junction
    - Grade separate or close all road crossings
  - E. Remove BNSF-UP crossing at Sand Creek; replace with power operated crossovers, including double track on UP's Greeley Subdivision M.P. 4.0 to M.P. 7.0.

- F. New track connection in the northeast quadrant between UP's Greeley Subdivision (M.P. 4.3) and the current DRI line.
  - G. Add sidings or sections of double track with CTC on UP's Limon Subdivision between Sandown Junction (M.P. 634.2) and Watkins (M.P. 612), including necessary grade separation of road crossings
  - H. New 35-mile line with CTC between Omar (BNSF Brush Subdivision) and Peoria (UP Limon Subdivision)
  - I. Add 9300' sidings or sections of double track with CTC on UP's Limon Subdivision between M.P. 612 and Aroya
  - J. New 60-mile line with CTC between Aroya and BNSF Boise City Subdivision at Las Animas
  - K. Add 9300' sidings or sections of double track on BNSF Brush Subdivision between Union and Omar
  - L. Add a second track with CTC on UP Moffat Subdivision between Utah Jct. and Prospect Jct.
  - M. CTC and additional sidings as necessary on the UP-BNSF freight line between South Denver and Palmer Lake
  - N. Additional capacity (sidings, double track, CTC) as needed on UP-BNSF joint line between Palmer Lake and Pueblo  
Accommodate both freight and commuter passenger operations on a common line
  - O. Potential freight terminal facilities at Hudson, the Rocky Mountain Arsenal, and/or Watkins to replace facilities in the Denver center city area.
2. Proposed Trackage Rights
- A. BNSF overhead trackage rights on UP
    - Aroya to Peoria
    - Sand Creek to Belt Junction
    - Belt Junction to Utah Junction
    - Utah Junction to Prospect Junction
  - B. UP overhead trackage rights on BNSF - Omar to Union - Las Animas to Pueblo
  - C. BNSF and UP trackage rights on new bypass - Omar to Peoria
    - Aroya to Las Animas

3. Potential Agreements between BNSF and UP
  - A. Co-located dispatching office in Denver
  - B. Joint venture for commuter rail service between Denver and Palmer Lake /Colorado Springs / Pueblo
4. Potential conveyances of ROW (such as easements, line sales, and/or track use agreements) in lieu of condemnation to CDOT, RTD or other public entity with BNSF or UP retaining exclusive local service rights
  - A. BNSF Front Range Subdivision Loveland to Fox Jct.
  - B. BNSF Brush Subdivision Sand Creek to Fox Jct.
  - C. BNSF Pikes Peak Subdivision South Denver to Sedalia
  - D. UP Colorado Springs Subdivision 19th Street to South Denver; Sedalia to Palmer Lake
  - E. UP Boulder Branch Sand Creek to Boulder
  - F. UP Greeley Subdivision M.P. 4.0 to DUT
  - G. UP Limon Subdivision Pullman Jct. to Sandown Jct.
  - H. UP right-of-way for Air-Train Sandown Jct. to Pena Blvd.
  - I. BNSF Globeville, Rennick and Denver intermodal yard
  - J. UP 36th Street yard, 40th Street Intermodal yard and Burnham yard

### **Anticipated Changes Resulting from the Railroad Project**

Following are the anticipated changes that would be expected to be achieved by the accomplishment of the infrastructure improvements that are identified in the above sections.

1. Thirty two (32) trains per day are expected to be removed from the Central Denver area (sixteen trains from each railroad).
2. Five to seven (5 – 7) trains are expected to remain along the Front Range from Denver to Pueblo. 1 to 2 of these trains will be BNSF and 4 to 5 of these trains will be UP.

3. Freight will move within and through the Denver area within a consolidated freight corridor.
4. The following facilities and rail rights-of-way will be available to the public for development or commuter rail service: Denver to Boulder, Longmont, Fort Collins and Cheyenne, WY, Denver area, Air-Train to Denver International Airport (DIA), Denver to Castle Rock, and Castle Rock to Pueblo.
5. Rail terminal and facilities of both the BNSF and UP will be relocated to locations outside of central Denver area.
6. Rail-Vehicle conflict and emissions reductions are both expected to be significant.

(END OF DOCUMENT)