

SUBMITTED TO

**ROCKY MOUNTAIN  
RAIL AUTHORITY**

OCTOBER 2008

*High Speed Rail Feasibility Study  
Scoping Report*



SUBMITTED BY

*TEMS*

Transportation Economics & Management Systems, Inc.

in association with

Quandel Consultants, LLC and GBSM, Inc.

# Table of Contents

1 Introduction ..... 1  
2 Scoping Approach ..... 2  
3 Scoping Findings ..... 4  
4 Scoping Participant List ..... 6  
5 Raw Scoping Input ..... 8

Appendices

- A. Corridor Input Team Scoping Meetings - Presentation: September 2008
- B. Corridor Input Team Scoping Comment Form

# 1 Introduction

The Rocky Mountain Rail Authority (RMRA) is a multi-jurisdictional government body created to explore rail passenger service as part of a viable transportation solution in Colorado. Rocky Mountain Rail Authority members include cities, towns, counties and other organizations along the I-70 and I-25 corridors.

The RMRA is conducting a study to determine the technical, financial and economic feasibility of implementing high-speed passenger rail service within a north/south corridor (the I-25 Corridor) from the Wyoming border to the New Mexico border and an east/west corridor (the I-70 Corridor) from Denver International Airport to the Utah state border.

The study will identify whether or not one or both corridors can be expected to meet U.S. DOT investment criteria including a positive operating ratio (operating revenue/operating costs) and a positive cost-benefit ratio (benefits/costs). In addition, the study will identify whether the proposed corridor can support operating speeds of at least 79 mph, (and preferably 90 mph), what will be the projected ridership, percentage of the corridors over which trains will be able to operate at maximum cruise speed, projected benefits to non-riders such as congestion relief, amount of federal, state and local financial support can be anticipated and the level of cooperation from the owner of the rights-of-way (ROW) that can be reasonably expected.

At the outset of the study, the RMRA gathered scoping input from stakeholders including the general public, elected officials, senior municipality staff, Metropolitan Planning Organization (MPO) and Transportation Planning Region (TPR) staff, and representatives from various transportation agencies in both corridors.

This report documents the efforts used to gather scoping input and summarizes the input gathered. This report will help inform the study team, RMRA members and other stakeholders about the key community issues, opportunities and expectations related to potential high-speed rail in Colorado.

## 2 Scoping Approach

Three scoping meetings were held in diverse areas of the state during mid-September 2008. The same information was presented at all three meetings and is included in the appendix. The presentation was divided into three key areas: study purpose/approach, technologies for consideration and alignment/station options. For each area presented, there was time for questions, discussion and input. Each meeting also included ample time for more open-ended discussion and input about opportunities/constraints and local expectations/desires as they relate to the study and potential high-speed passenger rail service.

Scoping comment forms were also distributed to all scoping meeting attendees and are included in the appendix. The comment form asked for specific local input considerations related to rail technologies, alignment options, station options, how high-speed rail does/doesn't support future community vision and specific concerns community members may have about high-speed passenger rail service. The scoping comment forms were distributed between September 10 and 16. Written scoping comments were accepted until September 26.

While the two corridors being considered in the feasibility study have unique characteristics, it was determined that the outreach effort and input opportunities for both corridors needed to be structured in a complimentary fashion. To accomplish this, the RMRA Rail Feasibility Study team partnered with the Metropolitan Planning Organizations (MPOs), Transportation Planning Regions (TPRs) and the I-70 Coalition to create three Corridor Input Teams comprised of elected officials and senior staff from three distinct areas of the state:

- **Denver Metro Input Team** – Coordinated through the Denver Regional Council of Governments (DRCOG), all DRCOG members were invited to participate in this team. The focus of this team was on the greater Denver metropolitan area where the two corridors converge.
- **I-25 Corridor Input Team** – Jointly coordinated through the North Front Range MPO (NFRMPO), Pueblo Area Council of Governments (PACOG), Pikes Peak Area Council of Governments (PPACG) and South Central Council of Governments (SCCOG) members of all these organizations were invited to participate in this team. The focus of this team was on the I-25 Corridor outside of the greater Denver Metropolitan area.
- **I-70 Corridor Input Team** – Jointly coordinated through the I-70 Coalition, Grand Valley Regional Transportation Committee (GVRTC) and the Northwest Transportation Planning Region (NWTPR), members of all these organizations were invited to

participate in this team. The team's focus was on the I-70 Corridor between Jefferson County and the Utah border.

In addition to the Corridor Input Teams, stakeholders throughout Colorado had opportunities to provide input into the scoping process. Information about the Rail Feasibility Study was widely disseminated throughout both corridors via extensive newspaper/radio/television news coverage, newsletter articles and other direct outreach through various organizations, the Rocky Mountain Rail Authority web site and numerous third-party web sites and blogs. Stakeholders were able to submit comments electronically through the project web site or by mail to the project team.

## 3 Scoping Findings

There were 43 entities that provided input at the scoping meetings. In addition, more than 20 organizations and individuals submitted written comments during the scoping period either by completing the scoping comment form or submitting additional comments to the team.

The comments collected during the scoping period generally agreed with the study approach and process, particularly in regards to the types of technology and the range of speeds under consideration, although there were several suggestions to study non-high-speed rail options that may be perceived to be easier to build due to existing infrastructure and right-of-way. In addition, there were several questions from all input teams revolving around whether the Rail Feasibility Study would work with ongoing and past studies.

There were several comments that were consistent between the two corridors recommending that the study consider local land-use and development plans in relation to station location options. The input teams generally agreed that speed was an important issue that would impact ridership in both corridors. There was also general agreement over the concern of safety mitigation and the electricity source, i.e. how is the power produced for electric-powered technology, particularly from the Denver Metro and I-25 Corridor input teams. Across all input teams the issue of system interoperability between corridors (e.g., having one technology versus various technologies) was raised.

### **Denver Metro Input Team**

The Denver Metro input generally agreed that there was no need to push for just one technology since multiple technologies could work together. Additional comments focused on the impact of potential alignments on surrounding communities, while there was agreement that the study should take into consideration local development plans within the potential alignments. Also, because the Denver Metro area has a higher population density than the rest of the two corridors, many comments related to mitigating noise and safety issues, including eliminating at-grade crossings. Concerns were also raised in relation to Colorado's population density and whether it could support high-speed rail and where the electricity would come from for any potential electric-powered technology.

Denver Metro Input Team Key Issues:

- Identify various technologies
- Study should identify potential local impacts and align with local plans
- Alignments should mitigate safety and noise impacts
- Study should consider impact of electric-powered technology energy sources

### **I-25 Corridor Input Team**

The I-25 Corridor input generally agreed the feasibility study should consider use of existing rail rights-of-way to reduce potential infrastructure costs and work with CDOT's ongoing Front Range Rail Relocation study. There were also several comments on the impact of potential alignments on ongoing projects along the corridor, such as the I-25 reconstruction occurring in Trinidad, the Colorado Springs downtown redevelopment, and community growth along north I-25. Safety was raised as a concern, particularly in regard to potential track sharing between commuter rail and freight rail. In addition, there were questions regarding where the electricity would come from for the electric-powered technology and the potential environmental impacts of diesel-powered technology.

#### **I-25 Corridor Input Team Key Issues:**

- Consider existing rail right-of-way to mitigate infrastructure costs
- Consider potential alignment impacts on ongoing projects
- Safety is a concern in regard to track sharing
- Study the environmental and energy impacts of various technologies

### **I-70 Corridor Input Team**

The I-70 Corridor input generally agreed that ridership potential is an important factor in choosing a speed and technology, but that alignment choices are limited due to topography along the corridor. One representative comment stated an interest in higher-speed alternatives in order to attract ridership, and another preferred to see an unimpeded train able to sustain 65 mph between stops. Input also agreed that potential alignments should strike a balance between complementing local services and reducing traffic along I-70. For example, one comment noted that potential alignments should serve the communities, including residents and businesses, on the I-70 corridor. There was also widespread input on potential station locations in specific communities and how they will connect to existing transit systems, compliment local infrastructure, and produce minimal impact on existing neighborhoods. Several comments suggested consideration of an elevated system throughout much of the corridor to reduce environmental impacts and ease topographical obstacles.

#### **I-70 Corridor Input Team Key Issues:**

- Ridership potential is important in choosing speed and technology
- Alignment options are limited due to topography of corridor
- Potential alignments should balance providing local service with reducing corridor traffic
- Elevated system may reduce impacts

## 4 Scoping Participant List

The following organizations and individuals participated in the scoping process either by engaging in one of the three scoping meetings or submitting written comments.

### *Organizations*

- City of Arvada
- City of Aspen
- Town of Avon
- Town of Breckenridge
- Town of Carbondale
- Colorado Department of Transportation
- Central City
- Clear Creek County
- City of Colorado Springs
- Copper Mountain
- City of Denver
- Town of Dillon
- Denver Regional Council of Governments
- Eagle County
- El Paso County
- Town of Empire
- City of Evans
- Fort Carson
- City of Fort Collins
- City of Frederick
- Town of Frisco
- Town of Georgetown
- City of Golden
- Grand County
- City of Grand Junction
- Grand Valley Regional Transportation Committee
- Jefferson County
- City of Lakewood
- City of Larkspur
- City of Lone Tree
- Mesa County
- Mountain Metropolitan Transit
- North Front Range Municipal Planning Organization
- Northwest Transportation Planning Region
- Pikes Peak Area Council of Governments
- Routt County



- South Central Council of Governments
- Town of Silver Plume
- Town of Silverthorne
- City of Steamboat Springs
- Summit County
- Summit Stage
- Town of Timnath
- Train Master Inc.
- City of Trinidad
- City of Wheat Ridge
- Town of Yampa

# 5 Raw Scoping Input

Every entity that had a representative at the scoping meetings was invited to complete and submit a comment form to provide more thorough input from their organization. The comment form asked for responses to five questions. The questions and the verbatim survey responses from those entities that elected to respond are contained on the following pages.

**1. What input do you have about the categories of high-speed rail technologies that will be evaluated in this study?**

| Entity                   | Verbatim Survey Responses   |
|--------------------------|---|
| TOWN OF AVON             | The approach to comparative evaluation's sound  |
| TOWN OF BRECKENRIDGE     | The design speed of the chosen technology should not rule out stops that are important from a ridership perspective.  |
| TOWN OF CARBONDALE       | I prefer to see an unimpeded train that is able to sustain 65 mph between stops.  |
| CASTLE ROCK              | The various technologies are great but we are not ready to start with ultra high or very high but need to start with the building blocks of conventional or high speed as an initial implementation or study phase.   |
| CITY OF COLORADO SPRINGS | <p>The City of Colorado Springs concurs with the four technologies assuming Conventional Rail is the same as Commuter Rail:</p> <p><u>Four Rail Technologies</u></p> <ol style="list-style-type: none"> <li>1. Conventional Rail (Max. Speed &gt;79 mph)</li> <li>2. High-Speed Rail (Speeds from 110-130 mph)</li> <li>3. Very High-Speed Rail (Speeds from 150-185 mph)</li> <li>4. Ultra High-Speed Rail (Speeds &lt;250 mph)</li> </ol> |

|  |   |
|--|---|
| EAGLE COUNTY   | Eagle County is very interested in rail supporting commuter traffic. With housing skyrocketing, more and more service employees are commuting longer...significant employees are coming from western Colorado. The technology should support more local stops   |
| TOWN OF FRISCO   | None that hasn't been discussed.  |
| TOWN OF GEORGETOWN                                       | The technology should have the capability of being faster than the vehicle traffic, which would probably negate the low speed technologies. The capability of being elevated for at least minor distances appears to be important in the mountain terrain.  |
| CITY OF GRAND JUNCTION                                   | City of Grand Junction will be more interested in the higher speed alternatives in order to attract ridership.  |
| GRAND VALLEY REGIONAL TRANSPORTATION COMMITTEE           | The technologies presented at the September 11, meeting in Frisco appear to offer a number of options. Certainly, as new technologies are developed in the future those should be included in the study. That said, those technologies that provide the highest speeds would be preferable.   |
| CITY OF LONE TREE  | We support exploration of evaluation multiple technologies for high-speed rail.   |
| MOUNTAIN METROPOLITAN TRANSIT – CITY OF COLORADO SPRINGS | Given the I-25 corridor's potential for thru freight rail relocation, the RMRA study on technologies should investigate further and incorporate the potential feasibility for a phased implementation of high speed rail. For example: fully investigate the potential for starting out using low cost existing rail with minimal upgrades to existing signaling and track using standard technology. An example: the 'Capitol Corridor' in CA: for the shorter term and at some future point move to a much higher speed technology. |

|   |   |
|---|---|
| <p>PIKES PEAK AREA<br/>         COUNCIL OF<br/>         GOVERNMENTS</p> | <p>We suggest that the study not preclude non-high-speed rail technologies such as commuter rail, and only focus exclusively on high-speed. We understand the desire to access funding sources, but believe that 80mph service is more realistic within the planning time frames we use (2035). There has been discussion of constructing a new electric generation plant along the rail corridor between Fountain and Pueblo.</p>  |
| <p>TOWN OF<br/>         SILVERTHORNE</p>                                | <p>I-70 coalition technical committee criteria for the system should be used as a guide. Express and local service on the same track is desirable.</p>  |
| <p>TRAINMASTER,<br/>         INC.</p>                                   | <p>Though likely that many of my suggestions are already under consideration or study, I off the following in the event one or two comments contribute something to the RMRA study.</p> <p>In my opinion, the study team should minimize research on esoteric technologies, such as MagLev and monorail because of higher costs, lack of compatibility with the existing rail system, and plain unsuitability to the operating environment. For example, ice and snow build up on rights of way would be a very serious problem with MagLev. More conventional rail systems are much more tolerant of snow and ice. Although monorail could operate in the mountains and would have certain advantages, it is likely to be much more expensive to build, may not be able to attain desired operating speeds, may not have the desired capacity per capital and operating dollar, cannot handle conventional freight traffic, and is not compatible with existing rail systems. Interchangeability may be very important in reducing costs. For example, some equipment in commuter service in the I-25 corridor could easily offer non-commuter service in the I-70 corridor during non-commuter hours if the two systems were compatible. There may be opportunities for synergistic effects of utilizing the same equipment in different services.</p> <p>Train weight should be a major consideration in the mountains. In the I-70 corridor, non-tier two compliant vehicles can greatly reduce weight and capital and operating costs. Positive Train Control systems would virtually eliminate train collisions due to human error. Unfortunately, the same equipment cannot be operated in the I-25 corridor because</p> |

|  |   |
|--|---|
|  | <p>of federal regulations. This can only be resolved by changes in regulations and use of PTC.</p> <p>Highest priority should be given to electric traction, at least in the I-70 corridor because it can use non-petroleum sources of energy, reduces train weight, and regenerative braking will reduce operating costs, equipment maintenance costs, and return power to the grid to propel uphill trains. Electric traction equipment also has short term ratings that can produce power greater than nominal power ratings for short periods of time – useful in more severe gradients and in achieving higher acceleration rates above 20-25 mph.</p> <p>If electric traction is not economically feasible in the I-25 corridor, self propelled EMU's (Electric Multiple Units) could easily be pulled by diesel electric locomotives (where equipment is used in dual I-25 / I-70 services).</p> <p>Serious consideration should be given to limiting ruling gradients to no more than 4 percent in order to keep open the door for freight use at nights or other times that could fit in with passenger service. Local containerized freight service in the I-70 corridor could offer a significant economic boost to the potential project. Intercity trains in conjunction with Class I railroads could be another potential benefit, significantly achieving a higher project benefit cost ratio and further maximizing the twin goal of increasing corridor transportation capacity and getting traffic off the highway.. Another reason for minimizing gradients (given the higher costs of possibly more tunneling or cuts and fills) is that trains speeds will be reduced on both the uphill (power limitations) and downhill (safe braking conditions) portions of steeper gradients. The latter is much more critical as safe emergency braking distances require greatly reduced speeds on steep downhill grades.</p> <p>Superelevation on curves can be up to six inches on passenger only track. If freight is to be operated, superelevation should be limited to no more than three inches. Tilt trains offer higher speed potentials when curvature rates are 1.5 degrees or greater, allowing roughly 20 MPH higher speeds (6 inches of imbalance compared to 3 inches imbalance without tilt).</p> <p>Tested and proven technologies that are compatible with the existing rail network are likely to work well in the I-25 corridor, though Class I railroads will be most unenthusiastic about trains operating on their</p> |
|--|---|

|                  |   |
|------------------|---|
|                  | <p>tracks. Building the proposed Front Range rail bypass will open up service potential on existing tracks, though infrastructure and train control improvements will be required to attain higher operating speeds.</p> <p>Equipment specifications should be based on performance / cost-based criteria, letting prospective suppliers provide their own detailed specifications that they believe will best meet those criteria.</p> |
| CITY OF TRINIDAD | <p>The needs of our area will be vastly different than in other parts of the corridor as it is more greenbelt and wide open...we of course want to see the fastest train possible! We are at the extreme end of the run.</p>  |

**2. Are there any specific considerations, local or otherwise, you would like the study team and the RMRA to be aware of when they begin identifying potential alignments to evaluate in this study?**

| Entity               | Verbatim Survey Responses   |
|----------------------|---|
| TOWN OF AVON         | <p>We now a multi-modal Transit Center w/bus and Gondola connection to Beaver creek. This Transit Center straddles the current rail alignment through Town.</p>   |
| TOWN OF BRECKENRIDGE | <p>In Summit County, whether one station is being considered or several, it is very important to choose station locations that strike the right balance between complimenting local transit service; reducing VMT at the local level; reducing demand on I-70; and can be located where expensive new supporting infrastructure (private and public) does not have to be developed.</p> |
| TOWN OF CARBONDALE   | <p>Overhead monorail is the only configuration that can work with our narrow valley corridors, when one considers the freedom of cross traffic and animal movement through the valley.</p>  |
| CASTLE ROCK          | <p>For Castle Rock we must look at this situation of a station on one side of town or the other. The transportation aspect is better on the east side for access to the downtown area and for safety and cost, the west side would be easier. We are about to study how we look at local transportation issues in Castle Rock which</p>   |

|                          |  |
|--------------------------|--|
|                          | <p>would have a major impact on locations of stations.</p> <p>Other considerations include:<br/>Environmental concerns for habitat preservation of Plum Creek, in particular the Preble's mouse bank. Relocation and grade separation of UP line near US 85 and Atrium to make room for a roadway connection to US 85. There is potential for a regional hospital to be built in the Meadows subdivision on the west side of town. Tight curves of the BNSF at Plum Creek will pose speed problems.</p>  |
| CITY OF COLORADO SPRINGS | <ul style="list-style-type: none"> <li>• There are ongoing planning efforts to construct a downtown multi-modal center with one criteria being location to service future passenger rail;</li> <li>• FREX transit has had much success along the I-25 corridor;</li> <li>• Need community support for political backing;</li> <li>• Plans should consider extending service to El Paso, Texas to the south as analyzed in a previous passenger rail study conducted in the 1990's;</li> <li>• Need enhanced transit service (funding) in the Colorado Springs urban area to reduce bus headways and expand the service area to make transit more viable for choice riders;</li> <li>• Detailed analysis of proposed stops and potential location(s) in the Colorado Springs area commiserate with the recommended technology to be implemented.</li> </ul> |
| EAGLE COUNTY             | Same as above  |
| TOWN OF FRISCO           | There has been concerned raised from Summit County Commissioners about the social impacts to the community. The I-70 Land Use study should be consulted.   |
| TOWN OF GEORGETOWN       | Georgetown is a part of the Georgetown Silver Plume National Historic Landmark District. The boundaries of the District include all of Georgetown, Silver Plume and the Loop Valley and extend up the mountainsides to the USFS boundary. Any alignment will, in some form bisect the Landmark. Visual and noise impacts will be a major consideration. The hillsides around Georgetown and Silver Plume are a maze on mining claims with over 400 in the Landmark District alone. ROW could be substantial issue. Georgetown has expressed strong interest in a station, Silver Plume has not. Tunnels may be an option in this area.   |

|   |   |
|---|---|
| <p>CITY OF GRAND JUNCTION</p>                                   | <p>The City of Grand Junction realizes that ridership is key to any transit alternative. In order to encourage ridership, alignment selection could play a key role in marketing of the train. Elevating the train in the median along the corridor would minimize right of way acquisition as well as conflicts with weather and vehicles. More importantly, the elevated train would provide great marketing opportunity as motorists would be able to observe a faster transportation alternative from the comfort of their own cars that are stuck in traffic (or snow).</p> <p>With the Grand Junction terminus proposed to be near the airport (see #3 below) where there is vacant land, the City would also</p> <p>like to urge the RMRA to consider a train maintenance facility be located near the Grand Junction terminal.</p>  |
| <p>GRAND VALLEY REGIONAL TRANSPORTATION COMMITTEE</p>           | <p>As the study moves forward, Mesa County will want to review alternative alignments, however, at this point it time those options in many locations are quite limited due to topography. In those locations shared corridors including elevated track may be required.</p>  |
| <p>CITY OF LONE TREE</p>  | <p>Lone Tree is very concerned about the connectivity our light rail and high-speed rail.</p>   |
| <p>MOUNTAIN METROPOLITAN TRANSIT – CITY OF COLORADO SPRINGS</p> | <p><u>Please refer to the 2035 Long Range Transit Plan</u> for the Pikes Peak area (2008) for numerous details and opportunities. This plan was completed by Mountain Metropolitan Transit in cooperation with PPACG. The RMRA plan could dovetail with the Pikes Peak area plan and make local transit connections. For example: the 2035 plan envisions numerous local transit connections continuing from defined hubs. Presumably, the Pikes Peak area would benefit if the RMRA intercity corridor and technology could complement a future north/south metro area corridor.</p> <p>Please also refer to the City of Colorado Springs’ recent 2008 <u>‘Senate Bill #1’ application for a downtown intermodal transit center</u> (along E side of existing rail tracks near Colorado St. in Downtown Colorado Springs). This application describes a project that has been in the planning process for many years and was submitted by Mountain Metropolitan Transit on behalf of the City.</p> <p><u>The Fort Carson Growth Plan</u>, by PPACG also includes many expansion plans that should be considered in RMRA’s modeling and planning.</p> |



|   |  |
|---|--|
| <p>PIKES PEAK AREA<br/>COUNCIL OF<br/>GOVERNMENTS</p> | <p>The spread of development to the east of Colorado Springs would make it very difficult to construct a new alignment, although within the median of I-25 could be possible. Fountain and Monument both expect a station and Colorado Springs would like two.</p>   |
| <p>TOWN OF<br/>SILVERTHORNE</p>                       | <p>The alignment should serve the communities, including residents and businesses, on the I-70 corridor. Communities along the I-70 corridor should not be bypassed to serve resort areas.</p>   |
| <p>TRAINMASTER,<br/>INC.</p>                          | <p>Critical to identifying potential alignments is the desired location of stations. For example, a location of a station in Silverthorne would require a significant different alignment than if the train were to be built alongside the Dillon Dam, avoiding the requirement for a significantly greater descent into Silverthorne, then a climb out of Silverthorne en route to / through Frisco.</p> <p>Each stop will add between 5-8 minutes of additional schedule time, requiring a careful analysis of the trade-offs between patronage, convenience, and running time. Alignment considerations should look forward to future traffic needs – both passenger and freight – either local or in coordination with private freight railroads (at least in the I-70 corridor). Tunneling costs for rail are lower than building highway tunnels of comparable capacity. If electric traction is used, only emergency ventilation needs to be provided. New, greatly improved tunnel boring machines have been developed that may help make tunneling less unattractive and costly. Tunnels in certain areas may be much more environmentally attractive. It is even possible to build stations in tunnels, much like subway stations, providing an environmental plus.</p> <p>In recent conversations with Harry Dale, he commented on the importance of getting the BNSF and UP to run through trains via the Colorado Front Range bypass. I agree with Harry that this is absolutely essential to gaining access to BNSF and UP rights of way in the I-25 corridor, but the building of the bypass is still no guarantee that ROW (Right of Way) access will be granted by either road. If any federal or state monies are involved in building the Front Range Bypass, the investment should be used as leverage for the two railroads to cooperate.</p> <p>Unfortunately, the UP is not as enthusiastic about the Front Range Bypass, as is the BNSF. The BNSF, by far, will be the major beneficiary (and should, therefore, pay most of its costs). It could be possible that some other quid pro</p> |

|                         |   |
|-------------------------|---|
|                         | <p>quo may be required to get the UP on board, if that is reasonably possible. Harry suggested (and I agree) that the long term view of rail commuter and HSR should include some consideration of an entirely private right of way. In the future, the BNSF and UP might be interested in using these tracks in off peak hours, if they are compatible with freight.</p> |
| <p>CITY OF TRINIDAD</p> | <p>CDOT is currently rebuilding I25 through Trinidad...it will precipitate the building of a new train station for AMTRAK. CDOT and AMTRAK are currently in discussions about this and I have contact information for the CDOT representative, Lowell Lester and he is aware of us and happy to help RMRA.</p>  |

**3. What existing or planned local activity/population centers should the study team and the RMRA be aware of as they begin considering potential station locations?**

***NOTE TO I-70 CORRIDOR INPUT TEAM: The RMRA is coordinating its station evaluation process through the I-70 Coalition’s Land Use Planning Study.***

| Entity                      | Verbatim Survey Responses   |
|-----------------------------|---|
| <p>TOWN OF AVON</p>         | <p>As presented in The Land Use Planning Group – The core area of town is currently being redeveloped under an Urban renewal Authority w/a possible density of 50-60 D.U per acre.</p>  |
| <p>TOWN OF BRECKENRIDGE</p> | <p>They should be aware of the importance of serving ski resorts in order to lessen travel demands on I-70. They account for many more trips than do other non ski resort points or towns along the I-70 corridor. For example, Breckenridge is both a tourism destination (3 million visits annually, 1.6M of which occur during the ski season, and 1.4M occurring outside of the ski season), and its a major employment center as well. Relative to other potential station locations along the corridor, ski resorts are point locations with existing local transit capacity already in place. Rail service to ski resorts would have a much higher potential to displace passenger and freight trips currently served by rubber tire transportation modes on I-70 than would stations at most other non-ski resort locations in the I-70 corridor.</p> |

|                          |   |
|--------------------------|---|
| TOWN OF CARBONDALE       | The monorail must connect with local public transport modes and trails.   |
| CASTLE ROCK              | <p>We need to continue to talk to Greenwood Village, Parker, Lone Tree and Centennial about this effort since we may go up I 25 or e-470.</p> <p>TOCR currently owns the former BNSF Railroad Depot. This location could connect to Downtown Castle Rock if a crossing over I 25 was built. TOCR is trying to create a Downtown Development Authority and maintaining a vibrant downtown is important to the community.</p>   |
| CITY OF COLORADO SPRINGS | <ul style="list-style-type: none"> <li>• Redevelopment area in the southwest quadrant of downtown Colorado Springs. This area is adjacent to the planned downtown intermodal transit station;</li> <li>• Consideration of a new park-and-ride/transfer station at I-25/Nevada Ave./UC-CS;</li> <li>• Fort Carson and the planned expansion of the base;</li> <li>• Briargate Business/Technology Park located near the Air Force Academy on the north side of Colorado Springs;</li> <li>• Colorado Springs Airport/Business Park/Peterson Air Force Base located in the southeast area of Colorado Springs.</li> </ul> |
| TOWN OF FRISCO           | Okay, so I should have read #3 before answering #2.   |
| TOWN OF GEORGETOWN       | Georgetown has participated regularly in the I70 Coalition land-use study. The Town would like to be a station location.  |
| CITY OF GRAND JUNCTION   | The City of Grand Junction would prefer the terminus of the train be at the Grand Valley Regional Airport for three reasons: 1) rental car companies are located either on airport property or very near, 2) Grand Valley Transit already serves the airport providing connections to downtown, commercial areas and the Clifton area and 3.) The alignment would have minimal impact on existing neighborhoods.  |

|   |   |
|---|---|
| <p>GRAND VALLEY REGIONAL TRANSPORTATION COMMITTEE</p>           | <p>Within Mesa County we are definitely interested in the possibility of a high-speed rail terminal adjacent to Grand Junction Regional Airport. The airport, in our view has the greatest potential for an inter-modal facility serving Grand Junction and Mesa County.</p>  |
| <p>CITY OF LONE TREE</p>  | <p>While we believe that the I-70 corridor is extremely important, we believe that I-25 support is also essential.</p> <p>Lone Tree recommends that a High-Speed rail station be located near the Ridgeway Interchange.</p> <p>Ridgeway Interchange is recommended because it is the terminus for proposed light rail and it provides major connectivity among the communities in Northern Douglas County (Highlands Ranch, Lone Tree, and Parker) and Southern Arapahoe County. Its large parking lot will support commuters who enter the system at that point.</p>   |
| <p>MOUNTAIN METROPOLITAN TRANSIT – CITY OF COLORADO SPRINGS</p> | <p><u>Downtown Redevelopment</u> is expected, the urban renewal growth area Downtown, and Downtown Intermodal Station area plans are fairly well developed.</p> <p><u>Fort Carson</u> has significant on-post troop expansion and construction plans. It is already proceeding.</p> <p><u>Along I-25</u>, station locations locally that have been discussed for regional and/or intercity rail have included (a) Downtown intermodal station, (b) north side (Woodmen Rd./USAFA area) (c) south side (Ft. Carson area) and potentially many others for a north/south regional fixed guideway corridor (technology not yet defined).</p> <p>City growth is expected to also grow east and northeast <u>‘Banning-Lewis’ Ranch</u> – east of Powers Blvd. However, extending local transit to this area is likely to lag development.</p> |
| <p>PIKES PEAK AREA COUNCIL OF GOVERNMENTS</p>                   | <ol style="list-style-type: none"> <li>1. PPACG developed a socio-economic scenario during the most recent long range plan that included inter-city rail as a major factor in future HH and job locations.</li> <li>2. The City of Colorado Springs is supporting the development of a rail/bus Intermodal Transportation Center south of the downtown core area;</li> </ol>  |

|                             |  |
|-----------------------------|--|
|                             | <ol style="list-style-type: none"> <li>3. Colorado Springs is discussing stopping sales tax leakage by constructing a new regional mall at the connection between I-25 and the North Powers extension.</li> <li>4. Fort Carson (southern Colorado Springs and Fountain) will be expanding in the coming years and is looking for sustainable solutions to expected access and mobility issues.</li> </ol>  |
| <p>TOWN OF SILVERTHORNE</p> | <p>Town of Silverthorne Comprehensive Plan establishing a Gateway District and Town Core District. I-70/Hwy 6/Sh9 (Exit 205) intersection is a year round busy intersection, both east and west bound. Silverthorne is the largest permanent resident community in Summit county and is the Gateway to Northwest Colorado. Over 500 + residential units being planned.</p>   |
| <p>TRAINMASTER, INC.</p>    | <p>Many towns and tourist centers would like to see feeder services to any proposed HSR. To some communities, this may be critical to obtaining their support. While their potential benefits should not be ignored, it is most important to begin with a core system. A successful core system will make it less risky and more attractive to add feeder services. In the interim, a lower cost bus system without infrastructure support could provide desired feeder systems and demonstrate the patronage potentials.</p> <p>While the I-25 corridor clearly offers both commuter and intercity potential, the potential for at least commuter services in the I-70 corridor is not as apparent. Some people are concerned that rail could increase Denver bedroom community development in Clear Creek, Summit and Eagle Counties - perceived as undesirable by some residents.</p> <p>Being designated as a High Speed Corridor is not likely to generate any federal funds, first because there are so few dollars available and, second, because the difficult geography will produce a much lower benefit to cost ratio compared to higher population areas where infrastructure costs will be much less. The focus on estimating benefit cost ratios should be on comparing them with building equivalent highway capacities.</p> <p>It will be critical to convince the public that an alternative transportation mode is required. Highway closures will be more frequent with a six lane interstate highway than a four lane highway, if only because the frequency of accidents will increase due to volume. Construction delays</p> |

|                  |   |
|------------------|---|
|                  | <p>will go on for years before any capacity improvement is achieved. Maintenance delays will increase because or more traffic lanes to maintain. Trains can operated in conditions (snow, fog, that might close or slow traffic on a highway.</p> <p>The RMRA study should clearly identify how important speed, fares, and average running times are in attracting riders. An attractive, comfortable, reliable, modest cost system may very well compete with the highway even if running times are longer.</p> <p>Any town or population center served by the train must have good local transportation that tightly integrates with rail. The Summit County Stage is an excellent example of a good local transportation network that could meet many, if not most, patron requirements. Car rental services at key stations would make rail service more attractive, especially for those traveling from the Denver airport.</p> |
| CITY OF TRINIDAD | I25 is being rebuilt as we speak changing our layout in town. You have to see it to believe it.   |

**4. How could a high-speed rail service, as described, support the future vision for your community?**

| Entity               | Verbatim Survey Responses  |
|----------------------|--|
| TOWN OF AVON         | The mobility provided by this service is pivotal to success of the region, that has Limited potential for future “pavement solutions”  |
| TOWN OF BRECKENRIDGE | Breckenridge has made a commitment to taking care of peoples’ transportation needs once they arrive. This includes visitors, workers and locals alike. To this end, the community has planned its transportation infrastructure to hub around a single multi-modal node at the gondola base. The transportation hub will be complimented by a planned TOD public/private joint venture surrounding it. The transit center located at the gondola node for three separate local free public bus operations already serves 1.8 M transit riders annually. It would be a very compatible location to introduce a rail transit stop. Giving travelers a public transit mode alternative on I-70 to get to Breckenridge, would round out the Town’s transportation vision for the future. |

|                                 |  |
|---------------------------------|--|
| <p>TOWN OF CARBONDALE</p>       | <p>With the current economic stratification along valley corridors, a smooth and timely movement of people to jobs and shops without a serious degradation of the environment is a huge challenge. High speed, overhead monorail rail is less polluting, most likely to get used and eventually the only expansion option in ROW constricted corridors.</p>  |
| <p>CITY OF COLORADO SPRINGS</p> | <ul style="list-style-type: none"> <li>• The PPACG 2035 Plan considers passenger rail service within the Colorado Springs metropolitan area;</li> <li>• City of Colorado Springs Comprehensive Plan supports higher densities for infill development;</li> <li>• Downtown Action Plan supports the development of a multi-modal center;</li> <li>• Intermodal Transportation Plan supports the development of alternative mode facilities to the automobile;</li> <li>• High-speed rail could help reduce energy consumption and auto emissions to improve air quality for the region; Improves access for tourism opportunities to the Colorado Springs and Front Range communities.</li> </ul> |
| <p>EAGLE COUNTY</p>             | <p>Same as #1...we see as a local commuter system to include moving tourist from Eagle Airport to our two major resort areas; Vail and Beaver Creek.</p>   |
| <p>TOWN OF GEORGETOWN</p>       | <p>Georgetown is dependent on tourist traffic for its revenues. A high-speed rail service would make this historic community even more available to the Denver metro region for a one-day or weekend getaway. High-speed rail is viewed as an economic stimulus. Further, a number of Georgetown residents work in Denver and would use the rail on a commuter basis. A connection to DIA would be used by most traveling citizens. Georgetown plans to have an increased partnership with the Loveland Basin Ski Area. A high-speed rail connection to the resort would also be helpful to Georgetown.</p>  |
| <p>CITY OF GRAND JUNCTION</p>   | <p>Grand Junction's vision is "to become the most liveable City west of the Rockies by 2025". A part of that vision is to provide a range of transportation alternatives of which high speed rail could play a big part. High speed rail service would increase accessibility as Grand Junction's role as a gateway to the ski resorts and other recreational opportunities throughout Western Colorado and Eastern Utah. The high speed rail service would also provide business travelers a quick alternative to flying and driving. All of which ultimately reduces vehicle miles traveled (VMT) along the I-70 corridor.</p>   |

|   |  |
|---|--|
|   | <p>The City’s urban area extends from Fruita on the west and Palisade on the east and encompasses a population of approximately 140,000. As a regional hub for many services, the estimated population of the Grand Junction service area is over 300,000. In the next 30 years, the population within the urban growth boundary is anticipated to grow to over 250,000 people.</p>  |
| <p>GRAND VALLEY<br/>         REGIONAL<br/>         TRANSPORTATION<br/>         COMMITTEE</p>                        | <p>Mesa County is in the process of developing goals and visions for a Regional Transportation Plan for the County and all communities within it. Alternative modes of travel will be a key component of that plan, thus the possibilities of high-speed serving the region is of great interest to many within the County. High-speed rail would enhance Mesa County’s ability to serve as a gateway to the many resort areas in Western Colorado.</p> <p>Since there are many ties between Grand Junction and the Western Slope to Denver, high-speed rail will enhance the ability of travels between the two areas to travel quickly, safely and economically.</p> |
| <p>CITY OF LONE<br/>         TREE</p>   | <p>Lone Tree strongly supports public transportation. Public transportation is essential for the future of our growing metropolitan area.</p>  |
| <p>MOUNTAIN<br/>         METROPOLITAN<br/>         TRANSIT – CITY<br/>         OF COLORADO<br/>         SPRINGS</p> | <p>Key issues benefitting local area have been discussed that include: local urban redevelopment, reduction of SOV travel and increased transit oriented development, improvements in air quality, improvements in quality of life pedestrian and bicycling access, and increased access to jobs and improved long term mobility for an expected growth in civilian and military population. Increased mobility for expected traffic increases to/from local military bases.</p>   |
| <p>PIKES PEAK AREA<br/>         COUNCIL OF<br/>         GOVERNMENTS</p>   | <p>I-25 rail service was the single most requested transportation improvement during the most recent long range planning process.</p> <p>Rail service along the Front Range and I-70 corridor would meet a growing need as commuters and travelers look for alternative means to move throughout the State. The ridership growth on the existing FREX commuter bus service, as well as current fuel prices, support the public’s desire for options to the single occupancy vehicle.</p>   |
| <p>TOWN OF<br/>         SILVERTHORNE</p>  | <p>Silverthorne is the gateway to Northwest Colorado, to access all points to the west and north you must go through the exit 205 interchange. Token vision is for higher densities in the Gateway and Town Core Districts.</p>  |



|                          |   |
|--------------------------|---|
| <p>TRAINMASTER, INC.</p> | <p>I leave this for the communities to address, though it is certain to make tourism and travel into the mountains much more attractive. Seamless integration with airlines (one ticket, automatic baggage transfer) could make the service extremely attractive and benefit both modes.</p> <p>Many train trips are attractive rides in themselves, attracting riders for the sole purpose of riding the train and enjoying the scenery or experience. Its potential should not be ignored, as many full-one and two day trips could be developed by the tourist industry. (Fast ski train services to Summit and Eagle Counties could negatively affect the Winter Park ski train.)</p> |
|--------------------------|---|

**5. What concerns do you think members of your community will have about a high-speed rail service, as described?**

| Entity               | Verbatim Survey Responses  |
|----------------------|--|
| TOWN OF AVON         | The extent of the lost to the Local Transit system in order to disperse passengers. One we are focusing on through our Comprehensive Plan & the approval process (Impact Analysis) of the P.U.D's on the Table.  |
| TOWN OF BRECKENRIDGE | One concern may be additional growth pressures. However, there is currently a growth cap in Breckenridge and in the surrounding Upper Blue River Planning basin.   |
| TOWN OF CARBONDALE   | Noise, Creating a barrier to cross traffic flow in narrow valleys, Further fragmentation of pedestrian and animal migrations, New taxes, Unknown considerations of a new mode of transportation and Viewshed impacts.  |
| CASTLE ROCK          | The Town of Castle Rock (TOCR) residents will have concerns about noise, safety and emergency vehicle access. TOCR and Douglas County has an accident history of car/train collisions. A recent train/car accident united the Town to build a grade- separated intersection. The TOCR is contemplating implementation of a quiet zone in approximately 2010. |

|   |  |
|---|--|
| <p>CITY OF COLORADO SPRINGS</p>                       | <ul style="list-style-type: none"> <li>• What are the short- and long-term costs and who is going to pay for it?</li> <li>• Safety and security for the users (for both passengers and parking areas);</li> <li>• Convenience and dependability of service;</li> <li>• Comfort with amenities to attract choice riders;</li> <li>• Intermodal and linked with other multi-modal facilities;</li> <li>• Accommodating to the disabled and elderly population.</li> </ul>  |
| <p>EAGLE COUNTY</p>                                   | <ul style="list-style-type: none"> <li>- Cost</li> <li>- Aesthetics</li> <li>- Noise</li> </ul>  |
| <p>TOWN OF FRISCO</p>                                 | <p>Impacts on land use and other local services provisions; could change character of community; could continue to drive up land and housing costs.</p>  |
| <p>TOWN OF GEORGETOWN</p>                             | <p>Concerns: A station location.<br/>       Station design compatible with local architecture<br/>       Location of alignment<br/>       Noise and visual impact<br/>       Energy sources and locations</p>  |
| <p>CITY OF GRAND JUNCTION</p>                         | <p>City staff believes that the community will be most concerned about alignment, frequency, predictability (weather conditions). Staff will also want to look at impacts to existing ground carriers such as Greyhound and Amtrak.</p>  |
| <p>GRAND VALLEY REGIONAL TRANSPORTATION COMMITTEE</p> | <p>Certainly cost of developing and maintaining the service comes to mind first. Integrating the service with other modes is also a major consideration if not a concern.<br/>       Will the study include any analysis of extending the service beyond its current limits? For example could it extend west of Albuquerque or west of Grand Junction to Las Vegas or Salt Lake City? Service extension west of Grand Junction would seem critical for building the numbers for bring the service to the western slope. The sparse population centers between Grand Junction and Las Vegas or Grand Junction and Salt Lake City would lend to higher speed rail travel.</p> |

|   |  |
|---|--|
| <p>CITY OF LONE TREE</p>  | <p>The first concern is that we need to ensure that the needs of our workforce be met. The second concern is the connectivity of the front range cities to the recreational offerings in the mountains. Also, the demand for capacity of the highway system is continuously increasing, particularly I-25 with the number of commuters from both north and south to the Denver metro area.</p>   |
| <p>MOUNTAIN METROPOLITAN TRANSIT – CITY OF COLORADO SPRINGS</p> | <p>Citizens have recently expressed local concerns over: large public projects in general, rejected many local tax proposals, increased public spending, project cost estimates and whether government bailouts may be needed, desires to keep government small, already very short local government budgets, and public handouts to the poor. High speed rail may be perceived as ‘pie in the sky’, expensive, a luxury, and unnecessary. Citizens commonly express suspicion over solutions led by government sector.</p> <p>Conversely, local citizens also have recently expressed support for: a recent 2006 PPRTA road tax (1%), military troops and projects that benefit the military in general, efforts to beat the affects of higher gasoline prices, limited transit that benefits middle income (‘choice’) riders, limited solutions that mitigate climate change, and solutions led by and/or that benefit overall area business and economic development interests.</p> |
| <p>PIKES PEAK AREA COUNCIL OF GOVERNMENTS</p>                   | <p>One concern is that the constant use of the term “high-speed” may unnecessarily raise the public’s expectations for the implementation of nothing but high-speed rail. But, the realities of the study could end up showing that it is only feasible to have a commuter rail service, leaving the public feeling that this alternative is just not good enough when compared to high-speed rail. This could ultimately have a negative impact toward gaining public support. Noise concerns will be a very high profile item.</p>   |
| <p>TOWN OF SILVERTHORNE</p>                                     | <p>There is a community desire to support Multi Modal Transit and to have a connection to the Front Range. Land use impacts, both positive and negative, if a transit stop is located in the community is a concern. Visual and noise impacts of transit moving through the community is a concern.</p>  |

|                          |  |
|--------------------------|--|
| <p>TRAINMASTER, INC.</p> | <p>As previously noted, there are some local concerns in the I-70 corridor that passenger rail services could make points as far west as Eagle County more of a bedroom community to Denver. I don't think this is necessarily bad, but the objections, real or perceived, need to be addressed</p> <p>As everyone knows, the biggest concern and deal-killer is project cost and financing. The popular feeling, at least among politicians, is no increase in gas taxes or imposition of tolls on Interstates. It is generally proven that even where alternatives to toll roads exist, many people will still use toll roads even if the advantage of the toll road is not large. Citizens in states with higher gas taxes get used to it and pay them.</p> <p>People need to realize that they are going to pay more for travel – in gas, time lost, accidents, and frustrations – if the transportation network is not improved. An essential component of the RMRA study is the selling of the idea that a revenue stream needs to be developed to pay for infrastructure improvements. While perhaps all citizens should contribute in one way or another, the highway users that directly benefit from modal traffic diversions, either themselves or others, should pay a higher percentage of costs. If payments can be structured to be tax deductible, it represents some indirect subsidies from the federal government.</p> <p>A lot of research has been done in areas directly or indirectly related to this study. Among them are some American Association of State Highway and Transportation Officials (AASHTO) reports, such as “Transportation – Invest in Our Future: Surface Transportation Policy Recommendations for the National Surface Transportation Policy and Revenue Study Commission” (Code 10-TIF2-1), “Transportation – Invest in Our Future: Accelerating Project Delivery” (Code 10-TIF-1) and others. The Transportation Research Board (TRB) also has published a number of documents that could be useful references. One such paper is “Commuting in America, 3<sup>rd</sup> Edition” (AASHTO Code 10-CA-3). Go to <a href="https://bookstore.transportation.org">https://bookstore.transportation.org</a> for more information.</p> |
| <p>CITY OF TRINIDAD</p>  | <p>Cost and Frequency.</p>   |

# Appendices

## Appendix A

### **Corridor Input Team Scoping Meetings**

### **Presentation**

### **September 2008**



# Rocky Mountain Rail Authority (RMRA)

## *High-Speed Rail Feasibility Study*

### Corridor Input Team Scoping Meetings

September 2008



## Agenda

- **Introductions**
- **Roles Responsibilities**
- **RMRA Overview**
- **Feasibility Study Overview**
  - Study Overview
  - Technologies
  - Alignments
- **Discuss Opportunities & Constraints**
- **Next Steps**



- **RMRA representatives**
- **Study team representatives**
- **Corridor Input Team representatives**



- **Multi-jurisdictional government body formed in 2007**
- **Created to determine viability of high-speed passenger rail in Colorado**
- **46 member counties, municipalities and other organizations**
  - Board and Executive Committee
  - Rail Feasibility Study Steering Committee
- **Funded by CDOT SB-1 Transit Grant and memberships**

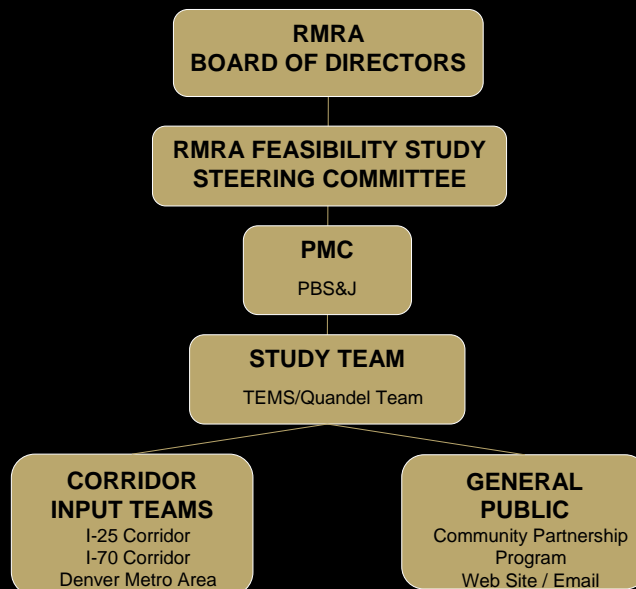


## Role of the Corridor Input Teams

- **Cities, Counties, MPOs, TPRs, Transit/Transportation Agencies**
- **Elected Officials / Senior Staff**
- **Provide Policy/Technical Input at Key Milestones**
  - September `08: Study Kick-Off / Scoping
  - November `08: Alternatives Selection
  - February `09: Alternatives Analysis
- **Represent Local Constituencies**
- **Share Study Information w/ Local Constituencies**
- **Individual Collaboration as Appropriate**



## Input & Decision Making Process







# RMRA Feasibility Study

- The purpose of the study is to **determine the technical, financial and economic feasibility** of implementing high-speed intercity passenger rail service in the I-25 Corridor, I-70 Corridor and secondary corridors along I-70.
- FRA and public-private partnership potential will depend on positive cost-benefit and operating ratios



# Feasibility Study vs. NEPA Study

|  | Feasibility Study  | NEPA Study (e.g. EIS)  |
|--|--|--|
| <b>Alignments</b>  | Identify representative and feasible alignment(s)  | Preliminary engineering of alignments, structures, etc.  |
| <b>Stations</b>  | Potential station locations generally identified (e.g. within a community)                             | Station locations and footprints selected  |
| <b>Alternatives</b>  | Reasonable alternatives considered for each technology to determine if "a feasible alternative exists" | Full range of alternatives considered to select and gain environmental approval for one "Preferred Alternative"            |
| <b>Environmental Impacts</b> (e.g. noise, traffic, parks/open space) | Obvious "fatal flaw issues" are considered   | Analysis of environmental resources to identify likely impacts and proposed mitigations (where appropriate) for a project. |
| <b>Cost</b>  | Typical unit costs and quantities for major elements used to estimate order of magnitude project costs | Cost estimate based on quantities developed during the preliminary engineering   |
| <b>Financing &amp; Economics</b>                                     | Preliminary financing option developed for preferred technology/technologies                           | Final financing plan developed for "Preferred Alternative"   |



## The Study will Include

- **Full market assessment including stated-preference survey and investment-grade ridership and revenue forecasts**
- **Evaluation of full range of high-speed rail technologies**
- **Assessment of potential alignments to identify those capable of supporting high-speed rail operation**
  - Potential station location options
- **Development of a business and implementation plan**
  - Cost-benefit and operating ratios
  - Detailed financial and economic analysis
- **Pro-Forma Financials**
  - Expected levels of federal, state, local and private financial support
- **Potential economic benefits to local communities, regions and the state**
- **Recommended next steps**



## Study Schedule

- **Scoping (July-Sep `08)**
  - Introduce the study and its purpose
  - Gather input on local needs, concerns and desires
  - Gather existing data (from MPOs, railroads, CDOT, local plans, etc.)
- **Alternatives Selection (Oct-Nov `08)**
  - Determine technology and route alternatives to be evaluated
  - Gather data on the proposed technology and route alternatives
  - Develop market database (o/d data, travel flows, socioeconomic data, stated preference surveys)
  - Introduce and gather input on proposed alternatives
- **Alternatives Analysis (Dec `08-June `09)**
  - Identify most feasible alternative(s) (alignments, stations, cost-benefit ratios, operating ratios, potential economic/community benefits, etc.)
  - Select most feasible alternative(s) and identify next steps
  - Develop business and implementation plan



## If a Feasible Alternative is Found

- Submit to Federal Railroad Administration for designation as nation's 11<sup>th</sup> high-speed rail corridor
- Conduct necessary environmental studies (e.g. Environmental Impact Statement)



## Study Questions & Comments



## Vehicle Technology Categories

| Type                 | Power Source       | Maximum Operating Speeds* |
|----------------------|--------------------|---------------------------|
| Conventional Rail    | Electric or Diesel | <79 mph                   |
| High-Speed Rail      | Electric or Diesel | 110 – 130 mph             |
| Very High-Speed Rail | Electric           | 150 – 185 mph             |
| Ultra High-Speed     | Electric           | >250 mph                  |

\* Actual operating speeds would vary depending on community sensitivities, topography and other factors. Particularly in densely populated and other sensitive areas, actual operating speeds would be much lower than these speeds.



## Vehicle Technology Examples

**Conventional Rail**  
Max Speeds: <79 mph

Example: Conventional Amtrak



**High-Speed Rail**  
Max Speeds: 110-130 mph

Example: Talgo T21





## Vehicle Technology Categories

### Very High-Speed Rail Max Speeds: 150-185 mph

Example: Siemens ICE



### Ultra High-Speed Rail Max Speeds: >250 mph

Example: Transrapid Maglev



## Key Technology Considerations

- **Physical/Performance**
  - Maximum grade, speed and tilt capabilities
  - Acceleration and braking
  - Operational reliability and in-service history
- **General**
  - Weight, size, seating capacity
  - Light freight and baggage capabilities
  - Emergency evacuation safety procedures
- **Economic**
  - Staffing (train crew size & duties, station staff size & roles)
  - Operating, maintenance and capital costs
  - Regulatory approvals



## Technology Questions & Comments



## Key Alignment Considerations



### ▪ I-70 Corridor

- Grades and curves (speed vs. cost)
- Do not assume I-70 reconstruction
- Environmental sensitivities
- Local plans/needs/desires

### ▪ I-25 Corridor

- Constraints on existing rail alignment (pending Rail Relocation Study)
- New “greenway” alignment not dependent on freight rail relocation but very costly
- Local plans/needs/desires

### ▪ Denver Metro Area

- Connection and coordination with DIA and FasTracks
- Local plans/needs/desires
- Distinction between local and intercity service



## General Alignment Options



## Alignment Questions & Comments



- **Workshop 2: Alternatives Selection**

Early/Mid November 2008

*Input Needed: Senior-staff and/or elected official input on preferences related to the alternatives to be considered in the feasibility analysis*

- **Workshop 3: Alternatives Analysis**

February 2009

*Input Needed: Policy and senior-staff level input on the feasibility analysis and recommendations – if a feasible alternative is found – of the Most Preferred Alternative(s) for each corridor*



# Thank You



## Appendix B

### Corridor Input Team Scoping Comment Form



**RMRA High-Speed Rail Feasibility Study  
Scoping Workshop  
Corridor Input Team Comment Form**

**COMMENTS DUE: September 22, 2008**

Email to: [rmrastudy@gbsm.com](mailto:rmrastudy@gbsm.com) or fax to RMRA Study Team at 303-825-6109

|                                    |  |
|------------------------------------|--|
| Commenting Organization:           |  |
| Individual Submitting<br>Comments: |  |
| Date Submitted:                    |  |

**1. What input do you have about the categories of high-speed rail technologies that will be evaluated in this study?**

**2. Are there any specific considerations, local or otherwise, you would like the study team and the RMRA to be aware of when they begin identifying potential alignments to evaluate in this study?**

**3. What existing or planned local activity/population centers should the study team and the RMRA be aware of as they begin considering potential station locations?**

***NOTE TO I-70 CORRIDOR INPUT TEAM: The RMRA is coordinating its station evaluation process through the I-70 Coalition's Land Use Planning Study.***



**4. How could a high-speed rail service, as described, support the future vision for your community?**

**5. What concerns do you think members of your community will have about a high-speed rail service, as described?**