AGS Feasibility Study

PLT Meeting 3

June 13, 2012

Agenda

- Introduction to the Meeting
- Public Comment
- AGS/ICS/Co-Development Project Coordination
- Review and Endorse Project Work Plan & Stakeholder Involvement Plan
- Review Draft System Performance and Operational Criteria Developed in June 11 Technical Committee Meeting
- Conclusion, Final Remarks and Next Steps

Introduction to the Meeting

- Meeting Objectives
  - Endorse Project Work Plan
  - Endorse Stakeholder Involvement Plan
  - Review Recommended Draft System Performance & Operational Criteria
  - Discuss Draft System Performance & Operational Criteria Identified as Needing PLT Input
  - Provide Update on AGS/ICS/Co-Development Project Coordination
  - Discuss Next PLT Meeting

Introduction to the Meeting

- Review and Approve Meeting Minutes from Last Meeting
- Review Action Items from Last Meeting
- Website Update
- Media Outreach

Public Comment

- Invitation for any comments by the public

Endorse Project Work Plan & Stakeholder Involvement Plan

- No Comments on Project Work Plan
- Comment on Stakeholder Involvement Plan
  - Page three, first paragraph STUDY INTRODUCTION – the comment is offered that the AGS Feasibility Study will incorporate, *to the extent feasible,* the prior studies conducted in the corridor such as the I-70 Mountain Corridor Record of Decision (ROD) – this isn't up for loose interpretation and feasible consideration – the Record of Decision is the final word and that intent should be conveyed here.
  - "to the extent feasible" removed from text

AGS/ICS/Co-Development Project Coordination

- Presentation on ICS Project by Don Ulrich, Consultant Project Manager (CH2M Hill)

Presentation to AGS Project Leadership Team (PLT)

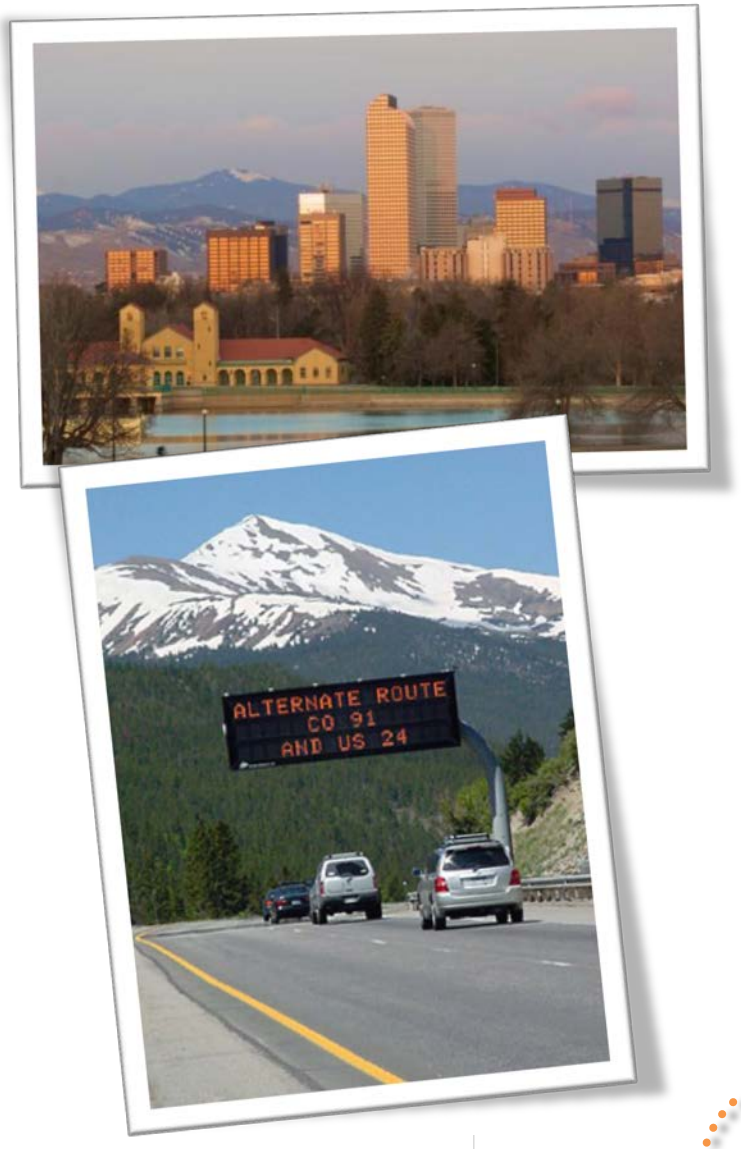
CDOT Interregional Connectivity Study

CH2MHILL

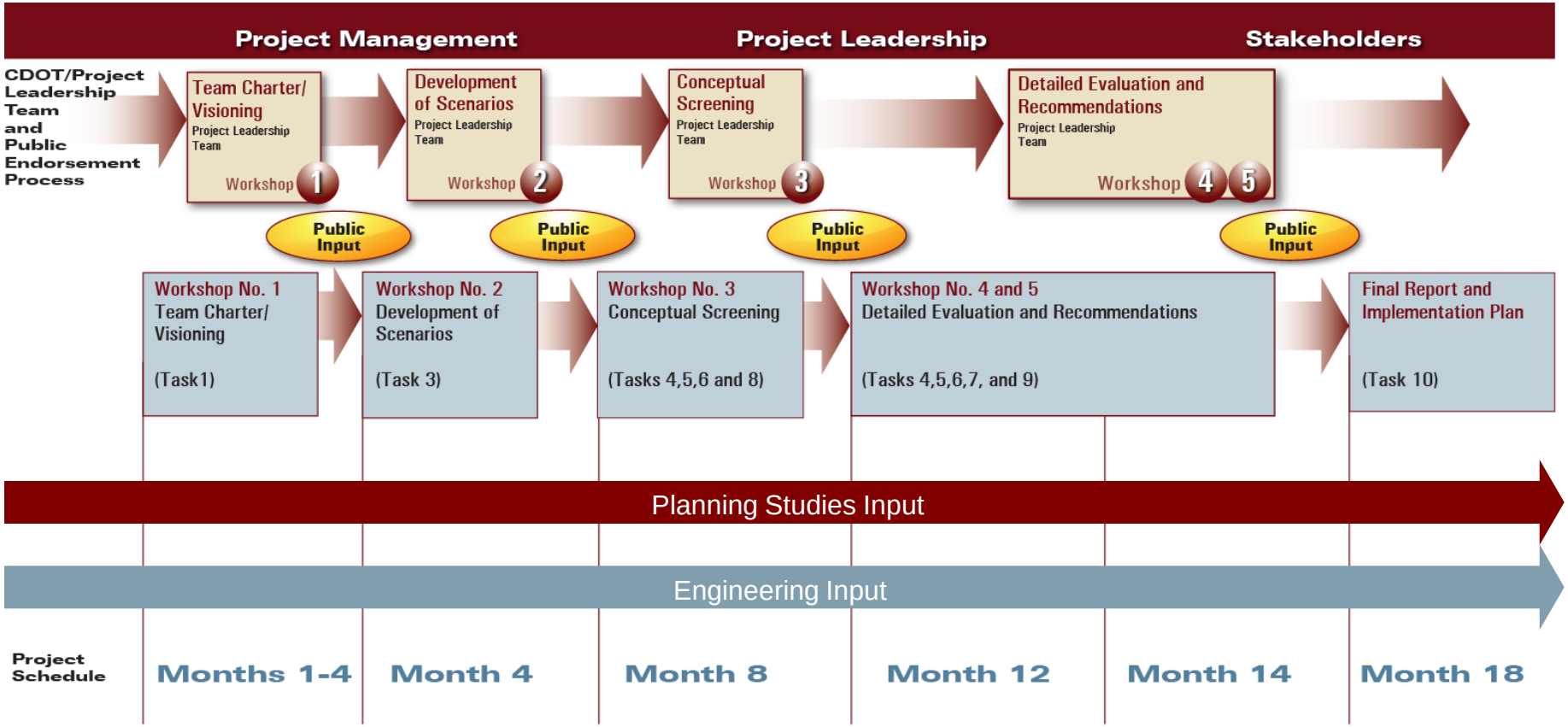
June 13, 2012

Overall Study Purposes

- ICS :
  - Provide cost-effective recommendations for high speed rail alignments, technologies and station locations in the Denver metro area that will maximize ridership between HSIPR and RTD.
  - Suggest method for integrating HSIPR into the statewide multi-modal network.
  - Develop the basis for Next Steps.

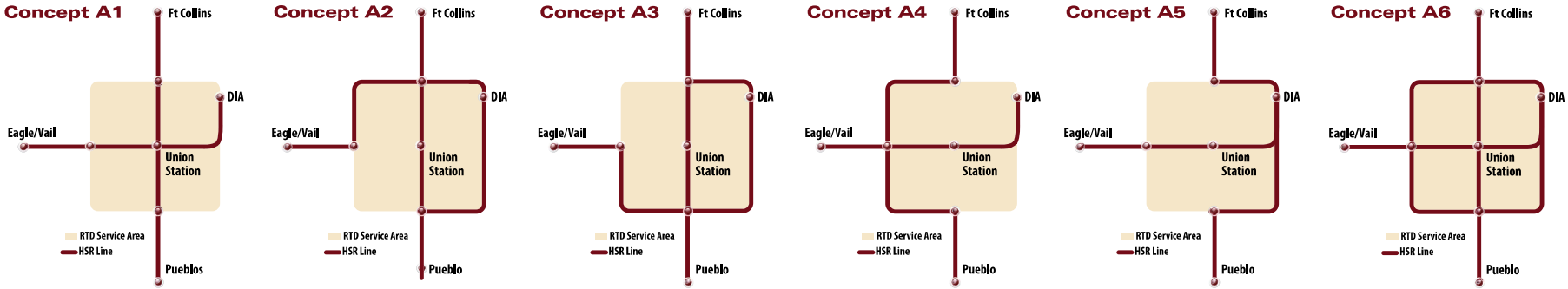


Our Endorsement Approach and Schedule is Based on CSS Processes

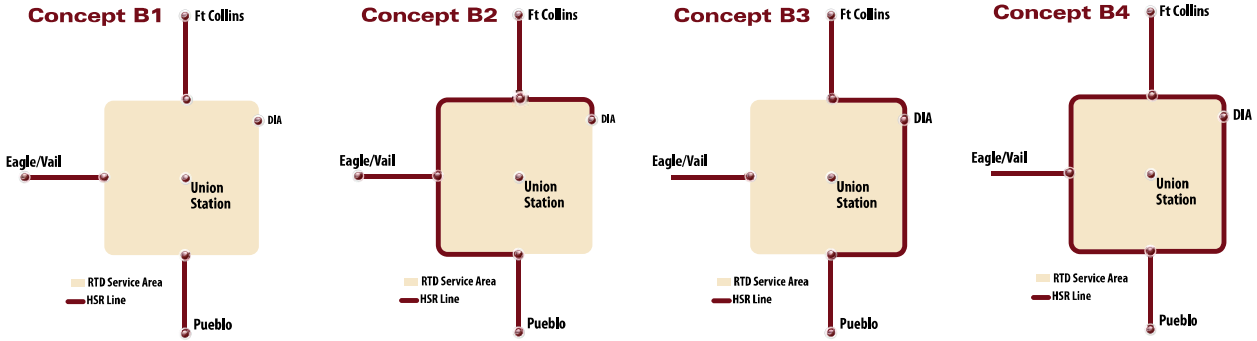


Our Approach Builds Off of Past Studies for Improved Results...

Group A: Independent of RTD System



Group B: RTD Collection/Distribution

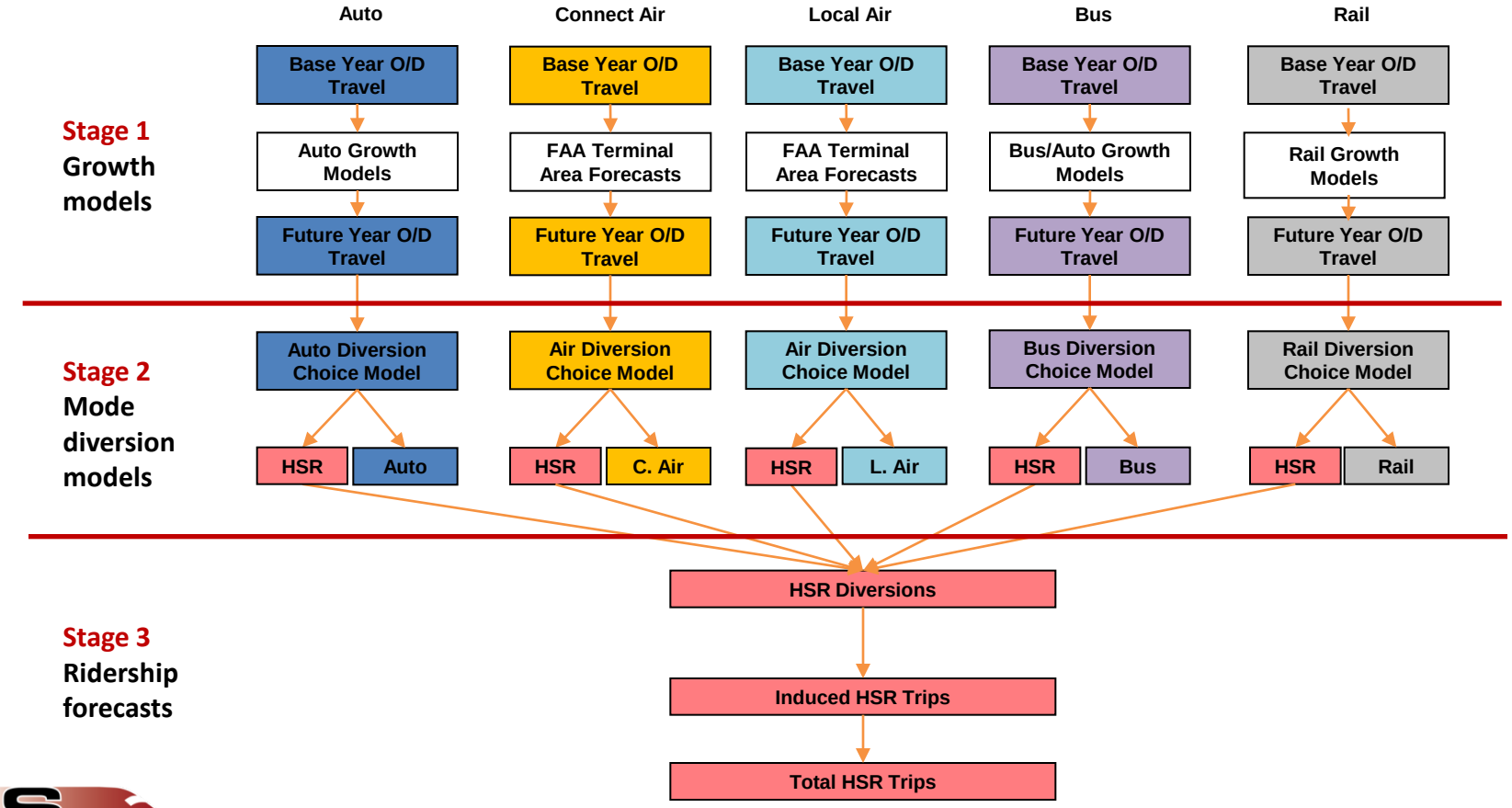


The Current Ridership Study Must Withstand Close Scrutiny

- A completely transparent demand forecasting approach
- Use of DRCOG and other MPO models and model inputs and outputs as appropriate
- Handling of all major travel markets
- Reflect other future transportation system improvements that are likely to happen
- Possible new, original local data collection to address the gaps in existing data and enhance the quality of forecasts

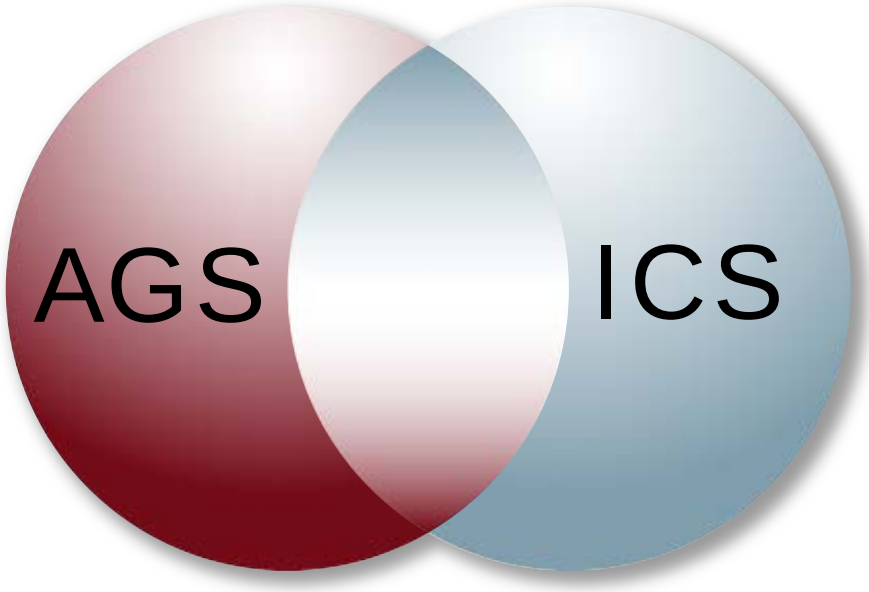
Approach to High Speed Rail Ridership and Revenue Forecasting

- A three-stage process (separate models for separate travel purposes)



Each Study Must Complement the Other for Successful, Endorsed Results

- Consistent vision & goals
- Consistent criteria
- Common methodologies:
  - Governance
  - Cost estimating
  - Ridership
  - Impact analyses
  - Financial strategies



Project goals presented to the ICS PLT

- Goal 1 – Develop a persuasive vision for HSIPR in Colorado
- Goal 2 – Develop a plan that maximizes ridership for HSIPR and RTD FasTracks system
- Goal 3 – Maintenance of public support at all levels
- Goal 4 – Develop a logical step next step for implementing HSIPR in Colorado
- Goal 5- HSIPR is proven beneficial for Colorado
- Goal 6 – Develop an effective project funding and financial plan

Draft "Purpose" Statement

- The purpose of the Interregional Connectivity Study is to evaluate the benefits, technical feasibility, and cost-effectiveness of implementing a high-speed intercity passenger rail system in Colorado. The best alternatives will provide the following success factors:
  - Maximize ridership between Colorado HSIPR and RTD's FasTracks systems.
  - Be publically supported.
  - Affordable and economically beneficial to the state (as evidenced though positive benefit cost ratios and positive operation cost ratios).
  - Fulfill FRA criteria for an emerging HSIPR corridor
  - Able to accommodate a phased implementation, allowing early implementation of an affordable minimum operable segment (MOS).
  - Minimize undesirable environmental impacts

Draft Fatal Flaw Evaluation Criteria

PLANNING

- Meets the purpose & need
- One seat ride travel time
  - Faster than RTD in metro area
  - Faster than auto outside metro area
  - Meets FRA criteria for emerging HSR corridor: (90 to 110 mph)
  - Population served
- Potential for environmental impact
  - Major disruption to local communities
  - Impacts on highly regulated resources
- Safety
  - Rail-rail crossings
  - Auto-rail at grade crossings

ENGINEERING

- Probable high cost
  - Length of alignment
  - Number of road or rail structures affected
  - Probable quantity of elevated structure
  - Use of existing infrastructure
- Probable high operating cost
- Constructability
  - Tunnel
  - Access to DUS
  - Freight conflicts
  - Capacity on existing freight corridor
- Technology
  - Limits choice
  - Compatibility

Review Draft System Performance and Operational Criteria

- Technical Committee Meeting 1 held June 11, 2012
- 9 of 13 TC members attended
- 7 consultant team members and 2 CDOT DTR staff attended
- Split into 2 groups to review CE Consensus Recommendations for criteria plus additional criteria that had not been defined
- TC Meeting 2 will be held June 14 to complete draft criteria

Review Draft System Performance and Operational Criteria

- We developed 3 groups of criteria for presentation today:
  - Criteria that need to be discussed at PLT or CE level
  - Criteria that has not been completed or where TC requested PLT involvement
  - Criteria we feel has been completed or will be completed when consultants gather data

Review Draft System Performance and Operational Criteria

- Criteria that need to be discussed at PLT or CE level
- Alignment
  - Key question is how far from I-70 Right of Way can AGS be located and not stray from either PEIS/ROD or CE? What drives the alignment envelope?
  - PEIS says "It is located along the general alignment of the I-70 highway. It could be located north, south, or in the median of the I-70 highway (but not necessarily always within the highway right-of-way)."

Review Draft System Performance and Operational Criteria

- The ROD has as a triggers
  - The specific highway improvements are complete and an Advanced Guideway System is functioning from the Front Range to a destination beyond the Continental Divide.
  - The specific highway improvements are complete and Advanced Guideway System studies that answer questions regarding the feasibility, cost, ridership, governance, and land use are complete and indicate that an Advanced Guideway System cannot be funded or implemented by 2025 or is otherwise deemed unfeasible to implement
- Does this imply the first trigger must happen before 2025?

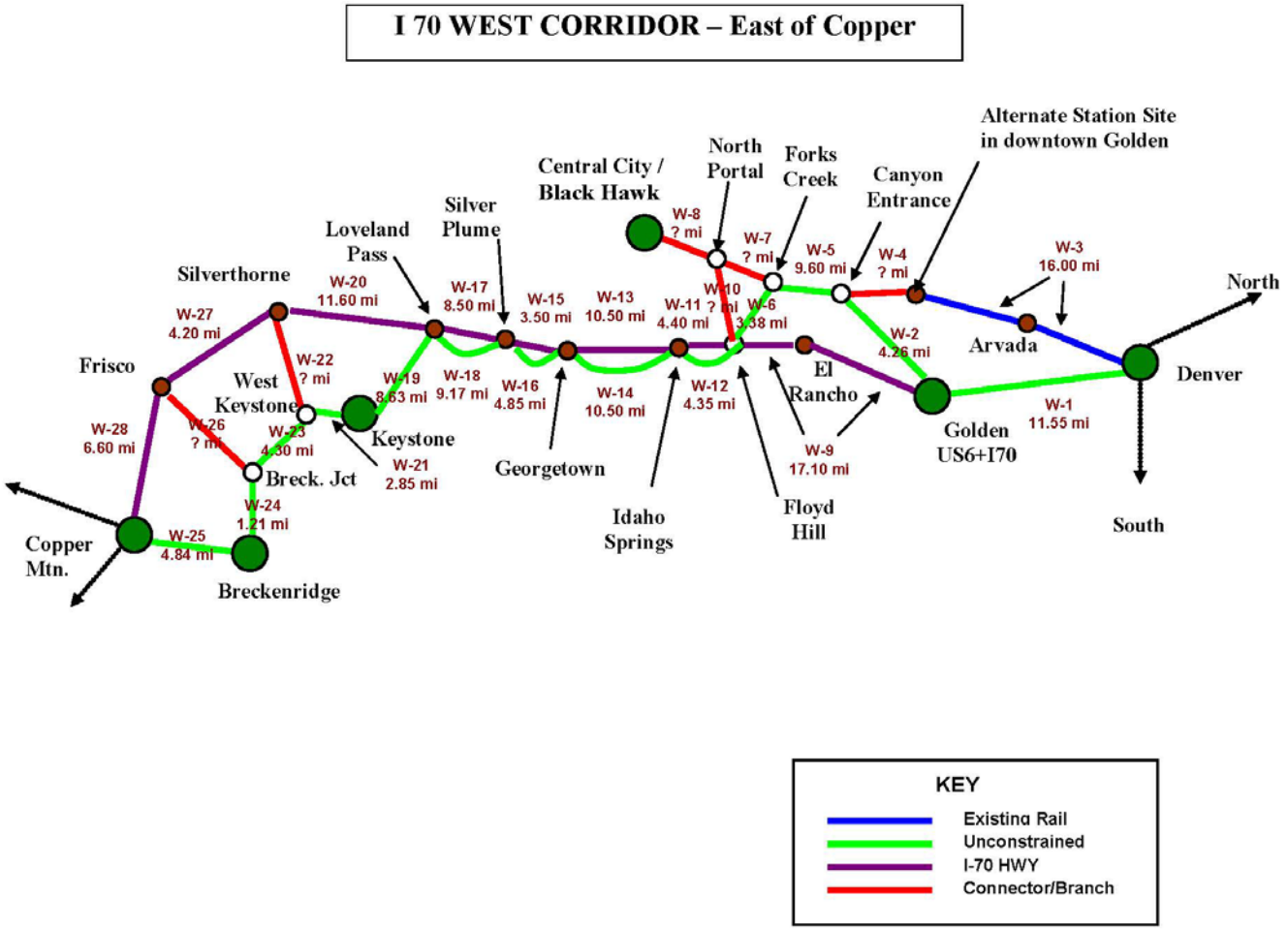
Review Draft System Performance and Operational Criteria

- Termini
  - Would an incremental development of the AGS be acceptable? For instance, what if the first phase only went to Silverthorne/Frisco?
  - The first segment may involve the search for the best net financial position and location of an initial O&M facility.
  - If incremental development is elected, by what date should the remainder of the system be constructed and operational?

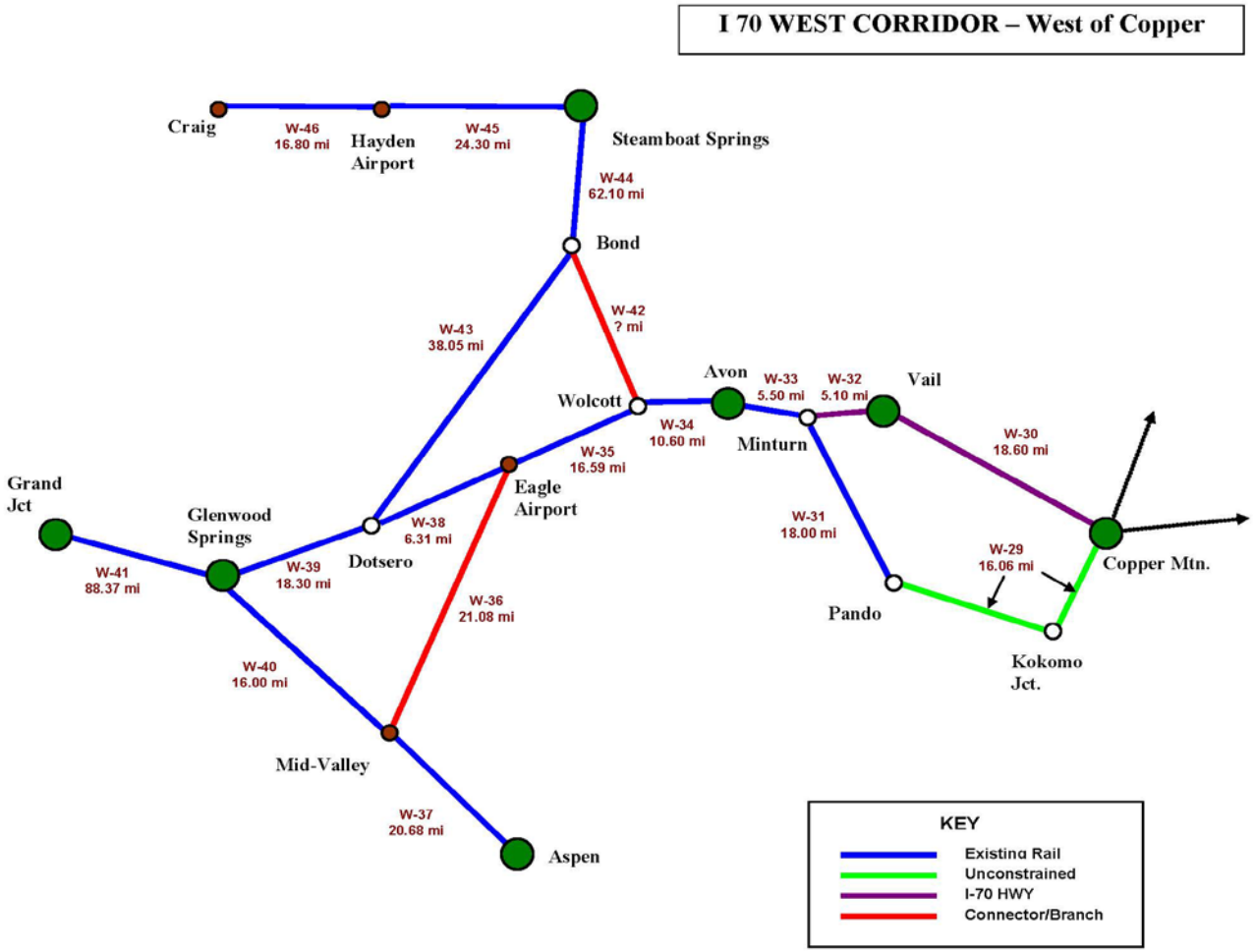
Review Draft System Performance and Operational Criteria

- Station Locations
  - In order to complete ridership modeling, station locations MUST be determined sooner than later.
    - PEIS had 15 stations (Jeffco to ECRA)
    - RMRA had 13 stations (I-70 alignment without connector branches)
    - MIS had 13 stations
    - CIFGA had 11 stations

RMRA East of Copper Mountain



RMRA West of Copper Mountian



Review Draft System Performance and Operational Criteria

- Land Use Considerations
  - Will TOD be allowed/encouraged around the stations?
  - Would local agencies grant the AGS Developer development rights around the stations?
  - Is rezoning required?
  - Do land use plans need to be developed?

Review Draft System Performance and Operational Criteria

- Right of Way
  - In order to mitigate right-of-way risk to the concessionaire, CDOT and Local Agencies will obtain all necessary right-of-way prior to financial close of the P3 Agreement.
  - Can this be committed to?
  - How should we define the costs?

Review Draft System Performance and Operational Criteria

- Interface with Existing & Future Transit Systems
  - Should it be the responsibility of the local agencies to provide transit systems that would connect from the stations to destinations?
  - Or, should it be part of the AGS system to provide those connections?
  - How will AGS passengers reach destinations such as campgrounds, trailheads and other destinations not typically served by conventional transit?

Review Draft System Performance and Operational Criteria

- AGS Governance Authority
  - Transit governance structures are highly related to finance mechanisms
  - Who could be the governing party for the system?
  - Would it be beneficial to setup a transit district/authority comprised of the counties and cities along the corridor?
  - How would the segment east of I-70/C-470 be governed and how RTD would fit into governance?
  - May also wish to look at the regulated utility model

Review Draft System Performance and Operational Criteria

- Potential System Owner/Operator
  - Do the mountain corridor communities envision a system that is government owned at some point?
  - Would the mountain corridor communities accept a wholly-private system, controlled only through PUC oversight?

Review Draft System Performance and Operational Criteria

- Criteria that has not been completed or where TC requested PLT involvement
- Travel Time
  - The AGS shall accommodate both local and express traffic simultaneously.
    - Express – AGS travel times including station dwell time shall be no greater than a travel time calculated as the highway distance between the station locations divided by 65 mph.
    - Local – as least as fast as unimpeded vehicle on highway (including station dwell time), equivalent of existing local transit systems (Summit Stage, Eco-Transit, etc.) between local locations.

Review Draft System Performance and Operational Criteria

- Adaptability
  - The system should be able to incorporate or evolve to future technological developments without scrapping the entire system.
  - Not yet discussed with Technical Committee. Consider removing this as a criterion.

Review Draft System Performance and Operational Criteria

- Equipment Design Flexibility
  - The system should be able to accommodate multiple needs for passengers, freight, passenger “stuff,” possibly even cars (based on European models). It should allow for private entities (UPS) to build specific needs vehicles (proprietary) to meet very specialized cargo needs. This may include a need for different vehicle configurations to accommodate low demand travel times and locations as well as the high demand, peak travel times and destinations.
  - Not yet discussed with Technical Committee.Consider deleting this. See Baggage Capacity and Light Freight criteria.

Review Draft System Performance and Operational Criteria

- Technology
  - The AGS technology shall be proven and available. This includes commercial availability, and subject to full-size independent evaluation.
  - Input required from PLT regarding which of the criteria are “must” versus “desired”.
  - Some technologies may not be able to meet all criteria. In such cases, the SOQ/Technical Proposal review panel will look at which criteria cannot be met to see if the technology will remain in the selection process.

Review Draft System Performance and Operational Criteria

- Role in AGS in freight delivery both in and through the corridor
  - See Light Freight and Heavy Freight sections. Consider deleting this criterion.

Review Draft System Performance and Operational Criteria

- Criteria we feel has been completed or will be completed when consultants gather data
- Noise
  - The AGS shall consider both external (system) noise and internal (cabin) noise as follows:
    - External – noise level generated by the AGS should not exceed those levels specified in the Technical Specifications of Interoperability (TSI, European Directive) Rolling Stock. Mitigation requirements shall follow FHWA noise mitigation policy.
    - Internal – ability to hold a conversation without raising one's voice (current research indicates this is approximately decibel levels of about 50 db).

Review Draft System Performance and Operational Criteria

- Footprint (~~Elevated)~~
  - The AGS design shall follow Context Sensitive Solutions guidelines to accommodate local community desires and needs. The footprint of the AGS shall be minimized to the extent possible to avoid environmental impacts (especially wildlife) and to maximize safety.
- Weight
  - The AGS shall accommodate passengers, luggage (and recreational paraphernalia) as well as light freight that could include light-weight and high-value packages including food deliveries to resorts with the goal to reduce delivery trucks in the I-70 corridor. Refer also to Light-Freight and Heavy-Freight sections.

Review Draft System Performance and Operational Criteria

- Grade
  - AGS system needs to have the ability to traverse grades as required by the alignment while meeting the travel time requirements.
- Safety
  - The AGS shall meet the TSI criteria (at guideway) for non-compensated lateral acceleration and braking deceleration.
  - The AGS shall provide grade separated crossings, an access controlled guideway, emergency egress from the guideway including structures and tunnels, and provide wildlife crossings.

Review Draft System Performance and Operational Criteria

- Weather
  - The AGS shall be capable of operating in severe weather events with minimal interruption or delays in service. This includes tolerances for extremes of heat, cold, wind, ice and snow. The AGS proposer shall specify the level of service their system can provide relative to temperature range, wind speed and ice/snow accumulation.

Review Draft System Performance and Operational Criteria

- Wind
  - The AGS technology and network must be able to withstand windshear in excess of extreme alpine wind storms such as those frequently experienced throughout the corridor. The AGS infrastructure shall be designed to withstand wind forces as specified in the applicable building codes.
  - The AGS provider shall specify the level of service their system can provide for ranges of wind speeds along with the maximum wind speed at which operations must cease.

Review Draft System Performance and Operational Criteria

- Scalability
  - The AGS shall allow expansion of alignments and carrying capacity (within hours) to address both growth in demand over time as well as peak demand vs. off-peak demand. The AGS provider shall describe the ability of their system to respond to this criterion.

Review Draft System Performance and Operational Criteria

- Passenger Comfort
  - The AGS passenger acceleration/deceleration/lateral cabin experience shall conform to the requirements set forth in the European HSR Rolling Stock passenger comfort parameters/standards.

    The following requirements must be met:
    - Ability to have a cup of coffee on board without concern for spilling it.
    - Work on a laptop
    - Ride comfort – ability to move around without being slammed against a wall.
    - Acceleration/Deceleration
    - Restrooms.
    - Seating for all passengers.
    - ADA compliant.

Review Draft System Performance and Operational Criteria

- Baggage Capacity
  - The AGS shall accommodate gear, luggage, outdoor gear, “stuff” or anything one could normally carry in or on a passenger vehicle. Loading of such accoutrements must have minimal impact on station dwell and boarding times.
- Light Freight
  - The AGS shall provide for light-weight and high-value packages. This includes food deliveries to reduce delivery trucks in the corridor.

Review Draft System Performance and Operational Criteria

- Energy Efficiency
  - The AGS provider shall describe the ability of their system to respond to incorporating green technology for renewable power sources such as wind and solar power.
- Growth
  - The AGS shall accommodate 50 years of growth in demand.
- Tunnels
  - Tunnels are acceptable provided they are a cost-effective solution.

Review Draft System Performance and Operational Criteria

- Reliability
  - Except for the extreme weather events to be defined by the AGS proposer under the Weather criterion, the AGS shall provide 98% on-time reliability. On-time is defined as within 5-minutes of the scheduled arrival or departure time.
- Frequency
  - The AGS headway times shall be capable of addressing peak period demands.

Review Draft System Performance and Operational Criteria

- Operational Efficiencies and Low Maintenance Costs
  - The AGS proposer shall provide an operational efficiency and maintenance plan.
- Context Sensitive Solutions
  - The AGS shall conform to CSS principles for environmental and community considerations in construction and operations in all locations, the development of transit stations of all designs, all system facilities and for all types of technologies.

Review Draft System Performance and Operational Criteria

- Feasibility of HST Passenger Service
  - TYPSA/AZTEC is preparing draft feasibility criteria for discussions. This will be emailed to PLT in next two weeks.
- Funding Requirements and Sources
  - TYPSA/AZTEC is preparing possible funding scenarios and strategies for discussions. This will be discussed at next PLT meeting.
- AGS ~~Transit~~ Ridership
  - Technical work is underway as part of ICS project but will be influenced by station locations.

Review Draft System Performance and Operational Criteria

- Power Generation, Transmission and Distribution
  - The AGS shall define the system consumption and the proposer's plan to obtain power.
  - The AGS proposer shall describe their system's ability to accommodate electrical power transmission/distribution lines within the guideway area both for the system use and for uses outside of the AGS.

Review Draft System Performance and Operational Criteria

- Sustainability
  - The AGS shall be implemented in a sustainable manner. The AGS proposer shall describe a basic sustainability plan that as a minimum covers: supply chain, carbon footprint, construction methods and impacts, green materials, life-cycle analysis, and alternative energy.

Review Draft System Performance and Operational Criteria

- Heavy Freight
  - This criterion is optional. The AGS proposer may accommodate heavy freight with the system. If the proposer chooses to include heavy freight as part of their AGS, the details of this should be presented in the proposal. The provision for heavy freight on the AGS shall not negatively affect the passenger traffic on the system.

Review Draft System Performance and Operational Criteria

- Cost
  - There is no limit on the financial size of the proposed system. The AGS proposer shall provide a not-to-exceed cost along with their expected/required level of public funding participation for both capital and O&M costs.
  - PPPs are encouraged to provide a range of system size and capabilities. This might include scenarios of $5 B, $10 B, $20 B and $30 B. Providing multiple system sizes is not a requirement.

Review Draft System Performance and Operational Criteria

- Criteria we recommend be deleted
- Accommodate Local & Express Traffic Simultaneously
  - Included under Travel Time
- Alignment
  - Covered under prior item
- Stations
  - Covered under Potential Station Location and Local Land Use Considerations
- Indirect Benefits
  - Not a criteria.

Conclusions, Final Remarks & Next Steps

- Industry Forum/Webinar will be June 27 from 9:00 AM to 10:30 AM – info will be sent out to PLT
- Industry White Paper and explanation of informal industry outreach
- Next PLT meeting July 11, 2012
  - Discuss Feasibility
  - Discuss Funding Sources, Strategies & Scenarios
  - Discuss Industry Input
  - Endorse/Finalize Draft System Performance & Operational Criteria