



6000 East Evans Avenue, Suite 1-428  
 Denver, CO 80222  
 (720) 708-4176

## AGS Feasibility Study Meeting Notes

**Meeting Type & Number:** PLT Meeting #8  
**Meeting Date:** February 13, 2013  
**Meeting Time:** 10:00 AM to 1:00 PM  
**Location:** Summit County Community and Senior Center, 83 Nancy's Place, Frisco, CO 80443  
**Prepared by:** Mike Riggs  
**Date published:** March 8, 2013  
**Attendees:**

Attendees ( * - PLT Member, ** - PLT Alternate)		
Eva Wilson, Eagle County*	Mary Jane Loevlie, I-70 Coalition*	Flo Raitano, Summit County*
Maria D'Andrea, Jefferson County*	Peter Kozinski, CDOT*	Tom Breslin, Clear Creek County*
Cynthia Neely, Clear Creek County**	David Krutsinger, CDOT DTR*	Randy Jensen, FHWA*
Tim Mauck, Clear Creek County*	Angie Drumm, CDOT*	Mike Riggs, AZTEC/TYPESA*
Terri Binder, Club 20*	Peter Lombardi, CDOT*	Tracey MacDonald, CDOT DTR
Jim Bemelen, CDOT R1	Beth Vogelsang, O&V Consulting	Thad Noll, Summit County
Don Ulrich, CH2M Hill	Andy Mountain, GBSM	Ed Romero, Romero & Wilson
Dan Gibbs, Summit County	James Shockey, Town of Winter Park	Margaret Bowes, I-70 Coalition
Ted Barker, Lea + Elliott Inc.		

### 1. Introduction to the Meeting

David Krutzinger opened the meeting and welcomed the PLT. All attendees introduced themselves.

Andy reviewed the meeting agenda and outlined the meeting objectives, which included:

- Share PLT/Technical Review Team's Opinions & Observations of Technology Providers who Participated in Technology Forum
- Discuss Consultant Team's On-Going Coordination with Technology Providers
- Update on Land Use & Station Criteria
- Discuss Alignment Design Process
- Discuss Funding & Financial Task Force Progress
- Update on AGS/ICS/Co-Development Project Coordination

Andy also reminded the PLT of their charge in making sure the CSS process is followed in development of the project.

### 2. Technology Forum Recap

Mike Riggs recapped the technology providers who attended the Technology Forum.

He then led a discussion on 5 key questions:

**What did you learn that you did not know before?**

- PRT is not that attractive based on number of vehicles and concern about weather impacts.
- Some of the technologies are good ideas but lack the money necessary to develop them.
- Technologies\_exist that are feasible on corridor.
- Some (most) technologies did not answer the questions.
- Pods are not good option. Concern about impact of weather and inflexibility on passenger size
- Beth Vogelsang pointed out that 4900 passengers per hour would require 816 6-person pods.
- Mike explained that off line stations would require an interchange to allow vehicles to enter/exit mainline and that significant distances are required for pods to decelerate coming into station and accelerate to leave station and enter mainline at speed.
- PLT expressed appreciation that Talgo made presentation.

#### **What concerns do you have about the technologies?**

- High speed steel wheel on steel rail may not be feasible.
- Need better understanding on how maglev can be deployed in corridor and its limitations.
- Standardization of maglev technology is needed.
- Constructability of guideway is concern.
- Getting federal funding might necessitate accepting HSR.

#### **How realistic do you think the technologies are?**

- Group agrees that both maglev and HSR are realistic.
- Mike points out that consultant team is doing due diligence on costs, operations, maintenance, etc.

#### **Should we pare technologies down to ones that have good chance of deployment?**

- Group agrees.
- Need to do more research on how maglev operates on grades
- Mike explains current alignment design plan

#### **What more do we need to get from the Technology Providers?**

- Maglev – can it really work on grades?
- Pros and cons of smart versus dumb maglev cars.

David Krutsinger stated that CDOT DTR had already determined that AGS is technically feasible. Still to be answered is if alignment, land use, funding and governance are feasible.

### **3. Update on Land Use & Station Criteria**

Beth Vogelsang presented an update on county land use/station planning meetings. The first round of meetings has been held with the 4 counties (Jefferson, Clear Creek, Summit & Eagle). She explained what was covered in each of the meetings and presented a station concept.

Next step is to refine station locations by county. Meetings will continue into and through March.

#### 4. Alignment Design

Mike Riggs explained the current alignment design effort. Four alignments are being developed:

- Wholly inside I-70 right of way alignment (except to get to stations outside right of way) – this alignment is suited for low speed maglev such as American Maglev.
- Greenfield alignment for high speed steel wheel on rail – this is suited for technologies such as Talgo.
- Greenfield alignment for high speed maglev – this is suited for technologies such as Transrapid.
- Hybrid alignment that combines alignment within I-70 right of way with improvements to make it faster by removing substandard curves and leaving highway in places to shorten distance between stations.

Mike pointed out that station locations need to be determined prior to finalization of the alignments.

Preliminary design shows that high speed rail alignment will include between 42.5 to 63.0 miles of tunnel depending on where stations are located. The HSR alignment needs to use the Clear Creek Canyon corridor to bypass Genesee and Floyd Hills.

High speed maglev requires 20.0 to 37.7 miles, again dependent on where stations are located.

Mike indicated that some refinement of alignments have already been done in concert with DTR and Beth Vogelsang.

Speed profile for HSR is being developed and will be provided to ICS team on February 22.

Plan is to rollout alignments to Technical Team on March 11 and to PLT on March 14 (changed to Thursday due to PLT conflicts). TYPASA staff will be present for both meetings.

Once alignments have been reviewed, they will be reviewed against known environmental issues (high level).

Alignments will be finalized by mid-April for cost estimating and ridership modeling.

#### 5. Funding/Financing Workgroup

David Krutsinger explained the workgroup charge which includes taking a statewide viewpoint for funding, identification of funding sources and financing tools to support implementation of a statewide HST network, evaluation of applicability of sources and tools and guiding development of a Financial Request for Information (RFI).

PLT asked question as to whether the Financial RFI was for I-70 Corridor or for whole system. The response was it will be for both.

One PLT member was concerned that this ties I-70 to I-25 feasibility, particularly due to possible differences in technology.

AGS Feasibility Study  
Meeting Notes  
PLT Meeting #8  
February 13, 2013

David then presented a timeline for the workgroup. The workgroup will report out to the PLT on a monthly basis.

David laid out who is included on the workgroup. One PLT member was concerned that the workgroup needs to look at all sources of funding and wondered if the group included people knowledgeable in other funding sources and international funding. It was pointed out that the AGS team includes international finance people and that Ernst & Young and KPMG work all over the US and world.

David then explained the difference between financing and funding. In general, financing is private and funding is public. To put it another way, financing is like a mortgage on a house and funding is similar to paying your monthly mortgage payment.

David then explained what steps the workgroup are taking to identify funding/financing. These include development of a Funding Financing Memo, a Travel Model to estimate ridership, and project cost estimates.

David pointed out that the PLT will need to answer the question as to what participation cities and counties can commit to.

A PLT member asked if anyone has approached ski areas about their willingness to help fund the project. David stated that he has talked to Colorado Ski Country and has plans to talk to Vail Associates. Colorado Ski Country has stated they are opposed to any lift ticket surcharge.

A PLT member stated that they want to make sure that the focus on the workgroup is not just on public funding.

David pointed out that DTR has been actively involved in reviewing the scope of services for the I-70 Traffic & Revenue (T&R) Study.

A PLT member asked if the T&R Study would relate to this project, i.e. will it look at using revenues from highway improvements to pay for AGS? Jim Bemelen responded by saying that he expects that the T&R firms would tell CDOT how they plan on integrating AGS with highway tolls.

David then explained the process the workgroup will use to evaluate different funding sources. They are financial effectiveness, financial efficiency and political acceptance.

Finally David talked about the Funding/Financing RFI. One key message was that HPTE and CDOT have an overarching goal of balancing transit & tolls.

Don Uhrlich then presented several slides on possible funding sources. Don stated that you can typically leverage yearly funds by 12:1 to 14:1 for financing. For example, \$1.0 Billion of funding a year could fund a project of \$12 to \$14 billion.

Don stated that the total budget for the State of Colorado was \$24.3 billion and about 5% or \$1.3 billion went to CDOT (2010-2011). For FY 2013, CDOT's budget is \$1.2 billion, of which less than 1% goes to expanding capacity.

Don then presented a slide showing what a 1% increase in sales tax would generate in the 16 counties along the AGS and ICS alignments. In 2011 dollars, it would generate about \$572

million. Assuming a 50% federal match, and assuming that a portion of sales tax \$ would go to other transportation projects, it would be possible to have \$1.0 billion, meaning a \$12 to \$14 billion project is possible.

Don's final slide showed how much various funding sources could raise. He cautioned PLT that he was not saying that all could be undertaken.

As a final point, Don mentioned that RMRA spun off \$4.0 billion in excess revenue over 25 years, but said that was probably optimistic.

#### 6. AGS/ICS/Co-Development Project Coordination

Don Ulrich gave an update on the ICS project. He stated:

- The Sources of Funding Memo is complete
- CAPEX Estimates substantially complete
- Environmental consequences substantially complete – most environmental issues are related to wetlands
- Speed profiles are complete and Don showed an example using Talgo technology along the I-76 alignment that showed DIA to Golden in 22 minutes
- Ridership modeling is about a month late and should be available in early April

Jim Bemelen gave an update on Co-Development Project.

- Four teams were shortlisted for project. Two submitted.
- Parsons' proposal was deemed "best value" by panel
- CDOT decided to put Co-Development Project on hold while they conduct their own T&R Study to determine financial feasibility & political acceptance
- RFP for T&R Study will go out soon
- Parsons will be providing engineering support
- Ernst & Young will merge T&R and engineering
- There will be one PLT

#### 7. Conclusion, Final Remarks & Next Steps

Next PLT Meeting will be March 14, 2013 (changed to Thursday due to conflict). Main topic will be alignments.

Next Technical Committee Meeting will be March 11, 2013. Main topic will be alignments.