



AGS Feasibility Study

PLT Meeting 16
January 24, 2014

Agenda

- ▶ Introduction to the Meeting
- ▶ Public Comments
- ▶ Review of Draft AGS Feasibility Study Report
- ▶ AGS Wrap-Up
- ▶ Final Remarks

Introduction to the Meeting

- ▶ Meeting Objectives
 - Review Draft AGS Feasibility Study Report
 - Release Draft Study to Public

Introduction to the Meeting

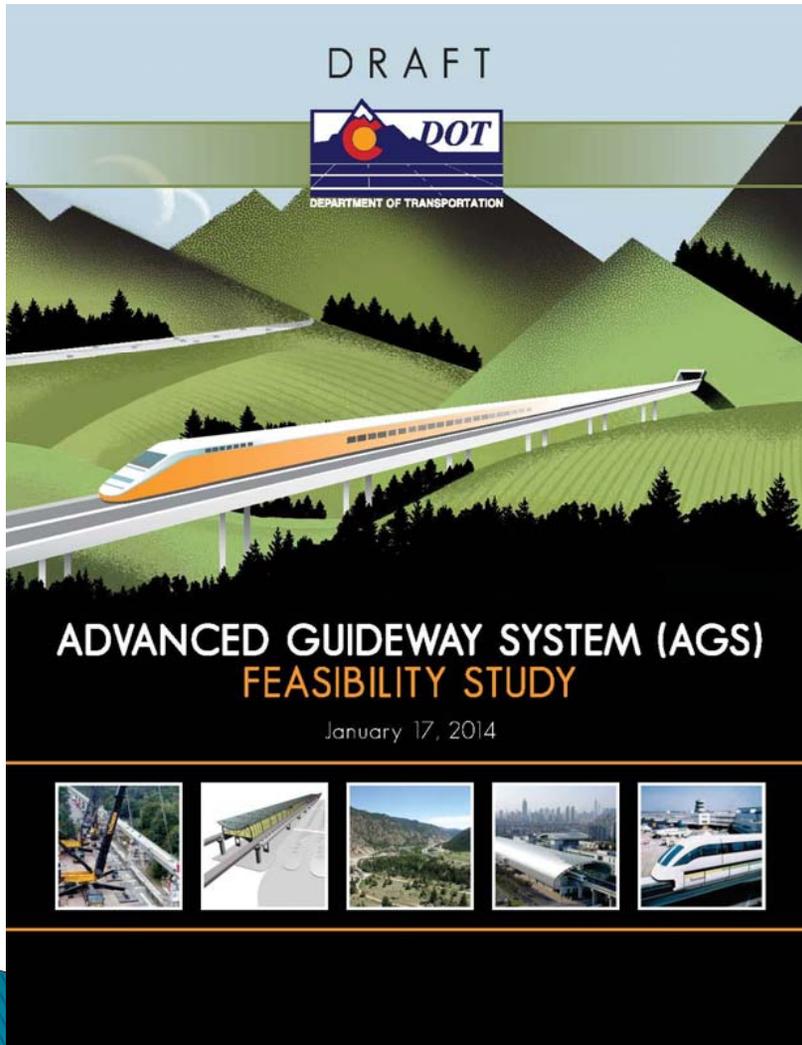
- ▶ Comments on PLT Meeting #15 Meeting Notes?
- ▶ Website Update
- ▶ Media Outreach

Public Comment

- ▶ The public is invited to comment



Draft AGS Feasibility Study Report



- ▶ Draft report provided to PLT on January 17, 2014
- ▶ Written comments due to David Krutsinger by January 31, 2014
- ▶ Publish Draft Study to Public on February 10, 2014

ADVANCED GUIDEWAY SYSTEM (AGS) FEASIBILITY STUDY



Draft AGS Feasibility Study Report

- ▶ Nine Chapters + Executive Summary & Appendices

Chapter 1 - Project Overview

Chapter 2 - Technology Evaluation

Chapter 3 - Development of Alignments

Chapter 4 - Cost Estimation

Chapter 5 - Estimation of Benefits

Chapter 6 - Benefit to Cost Analysis

Chapter 7 - Funding & Financial Analysis

Chapter 8 - Stakeholder Involvement

Chapter 9 - Conclusions and Recommendations

Draft AGS Feasibility Study Report

▶ 12 Appendices

Appendix A - Final System Performance Operational Criteria

Appendix B - AGS RFSOTI

Appendix C - RFSOTI Evaluation Manual

Appendix D - Capital Cost Estimates for Four Alignment-Technology Pairs

Appendix E-1 - High Speed Rail Alignment

Appendix E-2 - High Speed Maglev Alignment

Appendix E-3 - Hybrid Alignment

Appendix F - Capital Cost Estimation

Appendix G - Operations & Maintenance Cost Estimate Model

Appendix H - AGS Review of ICS Ridership Modeling

Appendix I - RFSOTI

Appendix J - Summary of SOFI Responses

Chapter 5 - Estimation of Benefits

- ▶ Introduction
- ▶ Ridership and Farebox Revenue
- ▶ Reductions in Vehicle Hours Traveled
- ▶ Air Quality Savings
- ▶ Benefit of Travel Time Savings
- ▶ Benefit of Stations
- ▶ Conclusions

Chapter 5 - Estimation of Benefits

▶ Ridership in Context

- 2035 = 12.41 million vehicles through EJMT
Assume average annual vehicle occupancy is 2.42 persons = **30 million person trips through EJMT**
- Truck and through trips = about 20% of trips
- **24 million person trips** through the Tunnel in 2035 that could potentially divert to the AGS
- **1.54 million passengers per year** (120 mph Maglev MOS, Breckenridge to Golden) = **6.4% diversion from autos to AGS**

Chapter 5 - Estimation of Benefits

- ▶ Ridership in Context
 - **2.9 to 3.6 million passengers per year** (Full System/High Speed Maglev with or without the ICS System on the Front Range, I-70/I-76 alignment through Denver, Eagle County Regional Airport to DIA) = **12 to 15% diversion from autos to AGS**
 - **6.2 million passengers per year** (High Speed Maglev, Full System with ICS on the Front Range on the C470/E470 alignment) = **26% diversion from autos to AGS**

Chapter 5 Conclusions

- ▶ High Speed Maglev has shorter travel times than the slower Hybrid/120 mph Maglev.
- ▶ Standalone system (no connection to the ICS System) has weaker ridership
- ▶ Ridership for the MOS is also weaker even with MOS from DIA to Breckenridge

Chapter 5 Conclusions

- ▶ Combined with ICS, ridership on the AGS in both Full System and MOS to Breckenridge increases to a point where it becomes more viable
- ▶ To be viable AGS needs to be linked to the ICS System via a direct route or via transfers at DIA or the Golden West Suburban station

Chapter 6 - Benefit to Cost Analysis

- ▶ Introduction
- ▶ Methodology
 - Operating Ratio (OR)
 - B/C Ratio
- ▶ Benefit/Cost Analysis
 - Assumptions
 - Benefit/Cost Analysis Results
 - Operating Ratio Results
- ▶ Conclusion

Chapter 6 – Benefit to Cost Analysis

| Benefit to Cost Ratios | | | |
|------------------------|---|--------------------|-----------|
| Technology | Alignment/Technology | Fare (\$ per Mile) | B/C Ratio |
| High Speed Maglev | Full System, ICS System + AGS, I-76 | 0.26 | 1.94 |
| | Full System, ICS System + AGS, C470/E470 | 0.26 | 2.04 |
| | DIA to Eagle County Regional Airport, I-76 | 0.26 | 1.85 |
| | West Suburban to Breckenridge | 0.26 | 1.81 |
| | DIA to Breckenridge, ICS System + AGS, I-76 | 0.26 | 1.87 |
| | DIA to Breckenridge, No ICS System, I-76 | 0.26 | 1.81 |
| 120 mph Maglev | West Suburban to Breckenridge | 0.26 | 1.83 |
| | DIA to Breckenridge, ICS System + AGS, I-76 | 0.26 | 1.81 |
| High Speed Rail | Full System, ICS + AGS System, C470/E470 | 0.26 | 1.79 |
| | DIA to Breckenridge, ICS System + AGS, I-76 | 0.26 | 1.69 |

Chapter 6 - Benefit to Cost Analysis

▶ Conclusions

- If federal grants cover at least 20% of capital costs, benefits of the AGS to Colorado outweigh costs
- Increased federal grant levels increase the benefit
- Full System scenarios generate farebox revenue to cover O&M costs with surplus revenues that could be used to finance the capital costs
- MOS scenarios, while having capital side B/C ratio of greater than 1.0, do not generate sufficient farebox revenue to cover O&M costs and additional subsidies would be required

Chapter 7 - Funding & Financial Analysis

- ▶ Approach
- ▶ Capital Cost Requirements
- ▶ Debt Service Requirements
- ▶ Potential Funding Sources
- ▶ Local Funding Sources
- ▶ State Funding
- ▶ Federal Funding
- ▶ Industry Outreach and Involvement
- ▶ Financing Analysis
- ▶ Key Considerations for Financing AGS
- ▶ Conclusions



Chapter 7 - Funding & Financial Analysis

▶ Conclusions

- AGS MOS cost currently has no identified funding
- Operating revenues are not sufficient to pay for O&M and provide material contributions towards financing the project
- Without establishing new funding sources, which would require a vote of the public in Colorado, there is no current ability to secure financing for the project

Chapter 7 - Funding & Financial Analysis

▶ Conclusions

- AGS MOS at estimated cost of \$5.3 to \$6.8 billion is challenging as a “starter project”
- The AGS is not financially feasible at this time, and only substantial growth of the Colorado population and economy and/or significant increases in Federal subsidies for intercity rail projects will change this circumstance

Chapter 8 - Stakeholder Involvement

- ▶ Introduction
- ▶ AGS Project Leadership Team (PLT)
- ▶ CSS Documents
- ▶ Technical Committees
- ▶ Public Meetings
- ▶ County Land Use/Station Meetings

Chapter 8 - Stakeholder Involvement

- ▶ The AGS Study followed the CSS Process (concurrent by FHWA)
- ▶ The AGS PLT fulfilled their primary roles:
 - Lead the Project
 - Champion CSS
 - Enable Decision-Making
- ▶ The Technical Committee and Local Agency staff also were important contributors

Chapter 9 - Conclusions

- ▶ Introduction
- ▶ Technology
- ▶ Alignments and Land Use
- ▶ Ridership
- ▶ Capital and Operation and Maintenance (O&M) Cost Estimates
- ▶ Funding and Financing
- ▶ Steps Forward
- ▶ Conclusions

Chapter 9 - Conclusions

- ✓ There are technologies that can meet the required system performance and operational criteria
- ✓ Alignments were identified for the technologies
- ✓ Station sites were identified for the each of the alignment/technology pairs
- ✓ Ridership estimates for the AGS range from 1.28 to 6.35 million passengers per year in 2035
- ✓ An AGS is expensive and does not have a current funding source for implementation

Chapter 9 - Conclusions

- ▶ The AGS is not financially feasible at this time
- ▶ Feasibility of the AGS would require:
 - Significant growth of the Colorado population and economy and
 - Significant increases in federal grants and/or subsidies for intercity transit projects

Chapter 9 - Conclusions

- ▶ Possible ways to raise revenue include:
 - \$0.25 increase in the state gas tax would generate about \$447 million per year
 - \$100 increase in the state vehicle registration fee would generate about \$393 million per year
 - 1% percent increase in county sales taxes in the 16 counties lying along the AGS and ICS corridors would generate about \$572 million per year
 - 1% increase in income tax for the four counties directly benefitting from the AGS would generate \$1.044 billion per year

Chapter 9 - Conclusions

- ▶ Additional possible ways that local counties, cities and towns could help fund the AGS include:
 - Capturing the value of station area development through tax-increment financing
 - Funding or paying for the stations
 - Local sales taxes or property taxes, in addition to any other taxes identified for the AGS

Chapter 9 - Conclusions

- ▶ For an AGS to be successful, it needs to be developed in conjunction with the ICS System alignments
- ▶ If developed as a stand-alone project, an alignment from West Suburban to Eagle County Regional Airport is the most feasible, based on B/C and OR analysis
- ▶ The MOS to Breckenridge would require additional funding to cover shortfalls between the farebox revenue and its operations and maintenance costs

Chapter 9 - Conclusions

- ▶ Under any scenario, the funding and financing analysis indicates that the AGS debt service is too large to be funded with existing revenues
- ▶ Currently, there are no additional federal, state, regional, or local funding sources available, nor are there any likely to be in the near future

Chapter 9 - Conclusions

- ▶ The AGS is not financially feasible at this time. Therefore, it must be concluded that only substantial growth of the Colorado population and economy and/or significant increases in federal subsidies for intercity rail projects will change this circumstance

Discussion

ADVANCED GUIDEWAY SYSTEM (AGS) FEASIBILITY STUDY



AGS Wrap Up

- ▶ January 17 – Draft AGS Study to PLT
- ▶ January 24 – PLT discussion on Draft Study
- ▶ January 31 – PLT comments due to David Krutsinger
- ▶ February 10 – Publish Draft Study to AGS Website with Press Release
- ▶ March–TC workshop/T&I Committee Meeting
 - Ask for Draft State Rail Plan "Amendment" that includes "acceptance" of the study reports in March
- ▶ April - TC Meeting
 - Take action on Amendment
- ▶ Spring – Collaborative Effort Meeting



Closing Remarks

ADVANCED GUIDEWAY SYSTEM (AGS) FEASIBILITY STUDY

