

STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION



DATE: January 3, 2013

TO: Transportation Commission/Transit & Intermodal Committee

FROM: Mark Imhoff, Director, Division of Transit & Rail

SUBJECT: Colorado High Speed Transit: Findings/ Conclusions from the AGS and ICS Studies

Purpose

The purpose of this memo is to give the Transit & Intermodal Committee a status of the Interregional Connectivity Study (ICS) and the I-70 Advanced Guideway System (AGS) Feasibility Study, and a preview of the integration and completion schedule.

Action Requested

This memo is for information only; no action.

Executive Summary

Both studies together form a long term vision for a high speed transit (HST) system in Colorado.

Background

CDOT completed its first State Passenger & Freight Rail Plan in Spring 2012. Two companion studies were undertaken to supplement the passenger transit element of the Plan.

The Interregional Connectivity Study (ICS) received a Federal Railroad Administration (FRA) planning grant to evaluate technologies, alignments and financial/funding options for potential high speed rail along the Front Range from Fort Collins to Pueblo, and the “connectivity” with RTD’s FasTracks system in the Denver metro area.

The I-70 Advanced Guideway System (AGS) Feasibility Study is a follow-on element of the I-70 Mountain Corridor Programmatic Environmental Impact Study (PEIS). The AGS evaluates high speed transit options between Eagle County Regional Airport and DIA. Like the front-range ICS, the AGS Feasibility Study also evaluates technologies, alignments, and financial funding options. The study is strongly coordinated with the ICS to provide an integrated statewide answer on high speed transit options.

Together the findings and recommendations of the ICS and AGS will serve as the foundation of the state high speed transit network vision, and will be used to update the State Passenger & Freight Rail Plan.

Details

By 2040, the population between Fort Collins and Pueblo is predicted to grow from 4 million today, to 6 million. In rough scale, that is as much developed land area as exists within Denver's C-470/E-470 beltway today, or about three more metropolitan areas the size of Colorado Springs (2012 Est. Pop: 668,353). High speed transit is one of many possible transportation investments that could be made to serve current and future travel needs of Colorado. In many parts of the world, high speed transit offers a solution to congested highways and congested airports. It can be part of a comprehensive approach to providing a high quality of life by maintaining good air quality; delivering business, recreation, and tourist transportation, and efficiently connecting urban areas.

High speed transit would offer travel options between destinations 20-100 miles apart, at speeds twice that of automobiles or bus systems. By Federal Railroad Administration definitions, high speed inter-city transit technologies are those traveling 90 mph or faster, up to 220 mph.

The ICS confirmed commercially available technologies and engineering techniques make high speed rail a feasible technology along the Front Range. For the I-70 Mountain Corridor, the AGS study considered existing and emerging technologies against a wide range of alignment options. In the Mountain Corridor, high speed rail would require approximately 60% of its alignment in tunnels to effectively respond to curves and hills; magnetic Levitation (maglev) and/or technologies with similar magnetic motors (linear synchronous or linear induction motors) are capable of climbing the I-70 steep grades at high speeds and reducing the need for tunnels by one-third to two-thirds. Fully-electrified double-track/guideway high speed transit, capable of speeds in excess of 150 mph, is estimated to average \$75 million per mile on the Front Range I-25 Corridor (rail) and maglev technology on the I-70 Mountain Corridor \$105 million per mile.

The high speed transit vision connects Fort Collins on the north, through the Denver metro area via DIA, to Pueblo on the south; and Eagle County Airport on the west to DIA. The 340 mile vision network is estimated at a capital cost of \$30.1 Billion (2013 dollars), \$198 Million per year to operate, and carry 18.3 Million riders per year in 2035. The most effective phasing of the system would begin along the Front Range.

There are no identified funding sources at this time for any element of the HST vision. Federal funding will be required, as will a new state/local revenue stream. The I-70 Mountain Corridor PEIS required an assessment of AGS financial feasibility by 2025. It is determined that AGS is not financially feasible at this time. If funding streams become available between now and 2025, this determination may change.

As the integration of the ICS and AGS efforts come to a close this winter, a priority HST corridor or project will be identified for federal funding pursuit. A goal is to have the priority corridor "pipeline ready" for further advancement through the federal process over the coming years.

Key Benefits

Updating Colorado's State Freight & Passenger Rail Plan with these findings will keep Colorado eligible for future federal funding should Colorado pursue high speed transit.

Next Steps

- Combine the studies and system integration into a long term high speed transit vision.
- Transportation Commission Workshop in February or March.
- Update the State Freight & Passenger Rail Plan with these findings, and at least once every five years to maintain FRA eligibility.
- Identify a priority corridor or project for further advancement through the federal process, and pursue subsequent, more detailed studies as warranted.
- Request inclusion of the HST vision in the fiscally unconstrained Regional Transportation Plans for NFRMPO, DRCOG, PPACG, PACOG, and the Intermountain TPR.