



## Public Transportation/Alternative Modes



## EARLY ACTION PROJECT SET

## PUBLIC TRANSPORTATION/ALTERNATIVE MODES

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### PROJECT IDENTIFICATION:

PTAM-1

### PROJECT NAME:

Summit Stage Transfer Center APTS/ATIS Operational Test

### PROJECT DESCRIPTION:

The Summit Stage, the public transportation operator for Summit County, operates a hub-and-spoke, fixed-route, year-round bus system serving the Breckenridge, Copper Mountain, and Keystone resort areas and the towns of Dillon, Frisco, and Silverthorne. This public transportation system offers an ideal chance to test and evaluate integration of an Advanced Public Transportation System with an Advanced Traveler Information System (ATIS) serving the eastern segment of the I-70 West Corridor. The opportunity exists to develop this system through a request for funding through FHWA as an IVHS Operational Test.

The APTS/ATIS strategy would include development of an inter-modal transfer center in the Frisco area, designed to accommodate multi-modal regional trips along I-70 and local county trips via SOV, bus, van, carpool, bicycle, and pedestrian modes. As an intercept station, the Summit Stage Transfer Center (SSTC) is expected to serve as a regional destination/collection point for redistribution of travelers onto the Summit Stage to reach local destinations. The SSTC would support an ATIS center, providing direct information links to the Denver Metro, Eisenhower, and Hanging Lake TOCs where real-time travel information from DIA, the Denver metropolitan area, and the I-70 West Corridor would be processed and disseminated. Establishing an ATIS at DIA will be an integral part of this system.

Summit Stage buses and participating private transit operations vans would be equipped with AVL/GPS technology to track vehicle progression and monitor schedule adherence. This information would be transmitted back to the ATIS so that riders would know exact arrival/departure times. The vehicle tracking system would allow automated scheduling, maintenance, service, and system administration and management capabilities. Other area public transportation providers (Breckenridge Trolley, Frisco Flyer, and the Keystone, Breckenridge, and Copper Mountain resort shuttles) can be readily added to integrate all local transit systems.

A diligent marketing campaign would be initiated to encourage use of the system. The ATIS kiosk at DIA would be equipped with a service-specific module to inform and influence arriving passengers to take a participating private transit shuttle to the Summit County resort facilities. Special recreational packages would be developed through travel agents as a nationwide marketing tool. The tracking system would be billed as a prototype for improving rural transit management and operations.

Incentive programs to encourage system use would be implemented (discounted lift tickets, accommodations, and transportation or combination packages thereof). These discounts would have to be validated by the transit service driver to be accepted at the resorts. As a further incentive to encourage commuter use, local roadways (SH 9 between Frisco and Breckenridge and US 6 between Frisco and Keystone) could be congestion priced during peak hours, SOVs paying a toll while HOVs (3 or more occupants per vehicle) use the facilities free of charge.

### PROBLEM RESOLUTION:

- Lack of a true inter-modal transfer/information center in Summit County.
- Inadequate financial resources.



**EARLY ACTION PROJECT SET**

**PUBLIC TRANSPORTATION/ALTERNATIVE MODES**

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**PROJECT IDENTIFICATION:**

PTAM- 1 (continued)

**PROJECT NAME:**

Summit Stage Transfer Center APT/ATIS Operational Test

**USER BENEFIT:**

- Encourages public transportation use.
- Potential reduction in the number of vehicles travelling I-70 and other local corridors during peak periods and/or spreading of peak period to reduce congestion.
- Potential air quality improvements.
- Improved management/scheduling for Summit Stage and other Summit County public transportation providers.
- Integration of Summit County public transportation systems.
- Real-time/comprehensive information access.
- Coordinated/cooperative effort between agencies.
- Improved relationships between state and local governments.

**APPROXIMATE COST:**

\$3,000,000

**PARTICIPATING AGENCIES:**

Colorado Department of Transportation  
Summit County/Summit Stage  
Frisco/Breckenridge/Dillon/Silverthorne  
Public/Private Transit Operators  
Ski/Resort Area Operators

**EARLY ACTION PROJECT SET****PUBLIC TRANSPORTATION/ALTERNATIVE MODES****PROJECT IDENTIFICATION:**

PTAM-2

**PROJECT NAME:**

Transit Incentives Promotional Program

**PROJECT DESCRIPTION:**

Incentives to use transit, such as discounted packages for travel/accommodations/special event tickets, would encourage people away from their personal vehicles for trips into the mountains via I-70. Special tour programs would be sponsored by participating agencies/organizations to provide an alternate method for sight-seeing in the high country during the fall and spring color change seasons. Each of these special incentives would be subsidized by the participating organizations. Substantial promotional campaigns would be launched to encourage use and enhance public agency image.

**PROBLEM RESOLUTION:**

- Vehicle trips during peak travel periods create traffic congestion.

**USER BENEFIT:**

- Reduced SOV use of I-70 West Corridor during peak travel periods.
- Potential improvements to air quality.
- Encourages transit ridership (increases revenues for private companies).
- Promotes resort area commitment to a healthier environment.
- Enhances CDOT public image.

**APPROXIMATE COST:**

\$25,000 to \$50,000 Per Annum

**PARTICIPATING AGENCIES:**

Colorado Department of Transportation  
Colorado Ski Country USA  
Resort/Recreational Area Operators  
Public/Private Transit Operators

**EARLY ACTION PROJECT SET****PUBLIC TRANSPORTATION/ALTERIVE MODES****PROJECT IDENTIFICATION:**

PTAM-3

**PROJECT NAME:**

Multi-Modal Transfer Center Phase II

**PROJECT DESCRIPTION:**

Phase I for the Hogback Multi-Modal Transfer Center Operational Test supports limited facilities, including a telephone booth-style information kiosk, some landscaping and lighting security, and minor improvements to parking and bus staging areas. The ATIS will provide static tourist and travel information and RTD real-time bus schedule data. Following evaluation and success determination, Phase II would enhance the facility to provide additional parking and public transportation service accommodations, improved service facilities (rest rooms, bicycle lockers, additional security systems), adjacent roadway traffic operations improvements, and park-like site amenities.

Private investors have proposed financial backing to encourage early deployment of Phase II. They are offering development of a full-service retail facility, including restaurants, shops, banking services, gasoline and auto repair, and resort area ticketing services. The ATIS would be enhanced to include additional real-time road, traffic, and weather information as communications links are improved. The system would be housed in a permanent structure that would allow component expansion. The ATIS would be linked to the Denver Metro, Eisenhower, and Hanging Lake TOCs for comprehensive integration of travel information from all areas of the I-70 West Corridor as well as DIA and the Denver metropolitan area. Private and public transit operators would be encouraged to use the facility as a pick up/drop off point. Additional APTS, such as vehicle tracking systems, could be expanded to include transit service providers using the facility.

**PROBLEM RESOLUTION:**

- Enhancing the Hogback ATIS into a more pleasant and better equipped traveler information center and multi-modal transfer operation.

**USER BENEFIT:**

- Enhanced transit center use.
- Fully integrated ATIS/APTS .
- Resort area promotion.
- Full-service, one-stop shopping.
- Potential local increases in transit ridership.
- Establishes a public/private partnership.

**APPROXIMATE COST:****\$750,000 to \$5,000,000****PARTICIPATING AGENCIES:**

Colorado Department of Transportation  
Colorado Ski Country USA  
Private Resorts  
Private Transit Companies  
Regional Transportation District

**EARLY ACTION PROJECT SET****PUBLIC TRANSPORTATION/ALTERNATIVE MODES****PROJECT IDENTIFICATION:**

PTAM-4

**PROJECT NAME:**

Vail/Gypsum Multi-Modal Transit Center

**PROJECT DESCRIPTION:**

Upon evaluation and successful deployment of the Summit State Transfer Center ATIS/APTS Operational Test (EAP PTAM-1), a similar multi-modal transit center would be deployed in the Vail/Gypsum area.

The APTS/ATIS strategy would include development of an intermodal transfer center in the Gypsum area, designed to accommodate multi-modal regional trips along I-70 and local inter-County (Eagle, Garfield, Pitkin) trips via SOV, bus, van, cat-pool, bicycle, and pedestrian modes. As an intercept station, the Vail/Gypsum Transfer Center (VGTC) would encourage trip ends at the VGTC and redistribution of travelers to local destinations via the Vail Transit System and Roaring Fork Transit Agency operations. The VGTC would support an ATIS center, providing direct information links to the Denver Metro, Eisenhower, and Hanging Lake TOCs where real-time travel information from DIA, the Denver metropolitan area, and the I-70 West Corridor would be processed and disseminated.

Vail and Roaring Fork Transit buses and new private transit operations participants would be equipped with AVL/GPS technology to track vehicle progression and monitor schedule adherence. The system would calculate link travel times based on vehicle progress. This information would be transmitted back to the ATIS so that riders would know exact arrival/departure times. The vehicle tracking system would allow automated scheduling, maintenance, service, and system administration and management capabilities. These transit systems would be integrated with the Summit Stage system to create a coordinated western I-70 region public transportation system.

Incentive programs to encourage system use would be implemented (discounted lift tickets, accommodations, and transportation or combination packages thereof). These discounts would have to be validated by the transit service driver to be accepted at the resorts. As a further incentive to encourage commuter use, local roadways (SH 82 between Glenwood Springs and Aspen and Brush Creek Road between Eagle and Adams Rib) could be congestion priced during peak hours, SOVs paying a toll while HOVs (3 or more occupants per vehicle) use the facilities free of charge.

**PROBLEM RESOLUTION:**

- Many work commute trips to the Vail and Aspen areas originate in the Gypsum/Eagle area, resulting in urban-like traffic congestion on I-70 during weekday peak hours.



**EARLY ACTION PROJECT SET**

**PUBLIC TRANSPORTATION/ALTERNATIVE MODES**

**PROJECT IDENTIFICATION:**

**PTAM-4** (continued)

**PROJECT NAME:**

Vail/Gypsum Multi-Modal Transit Center

**USER BENEFIT:**

- **Traffic congestion relief.**
- Encourages public transportation use.
- Potential air quality improvements.
- Improved management/scheduling for Vail and Roaring Fork Transit.
- Integration of western I-70 region public transportation systems.
- Real-time/comprehensive information access.
- Coordinated/cooperative effort between agencies.
- Improved relationships between state and local governments.

**APPROXIMATE COST:**

\$750,000 to \$1,000,000

**PARTICIPATING AGENCIES:**

Colorado Department of Transportation  
Vail Transit System/Roaring Fork Transit Agency  
Eagle/Garfield/Pitkin Counties  
Vail/Avon/Gypsum/Eagle/Glenwood Springs  
Public/Private Transit Operators  
Ski/Resort Area Operators

**EARLY ACTION PROJECT SET****PUBLIC TRANSPORTATION/ALTERNATIVE MODES****PROJECT IDENTIFICATION:**

PTAM-5

**PROJECT NAME:**

Public Transit System Cooperative Management Program

**PROJECT DESCRIPTION:**

An I-70 West Corridor public transportation cooperative management program would allow increased market penetration and provide superior transit services between the communities within the Corridor. A Steering Committee, composed of a representative from each participating transit agency, would establish the management, administrative, and organizational structure, identifying each agency's responsibilities and service areas. An advanced database management system would be developed to provide resource and service area program control. This could be incorporated into a GIS to link database information to automated mapping capabilities and provide spatial querying capabilities for "what if" analyses for alternative ridership and service area scenarios.

**PROBLEM RESOLUTION:**

- Several overlapping/uncoordinated transit services create inefficient use of revenues.

**USER BENEFIT:**

- Effective use of tax dollars.
- Management and administrative efficiency.
- Improved ridership services.
- Enhanced inter-agency communications.

**APPROXIMATE COST:**

\$25,000 to \$40,000 Start-Up  
\$10,000 Per Annum Operations

**PARTICIPATING AGENCIES:**

Summit Stage  
Breckenridge Trolley  
Frisco Flyer  
Vail Transit System  
Avon/Beaver Creek Transit Service  
Roaring Fork Transit Agency

**PROJECT IDENTIFICATION:**

PTAM-6

**PROJECT NAME:**

Intelligent Bicycle System

**PROJECT DESCRIPTION:**

The Intelligent Bicycle System would use advanced technologies that have been implemented successfully and effectively on motorized vehicle facilities. The concept would provide a high-tech, tolled travel way for high-speed bicycle touring and training, adjacent to a recreational trail. The parallel facilities would share common information/rest centers, located at 1 to 2 mile intervals along the facility. At each trail head, an information center would be equipped with an ATIS that provides information on regional and local recreational facilities, and is linked to other ATIS centers for dissemination of regional travel information. The information center would house restroom facilities and bike lockers. It would also provide rental or purchase of a bicycle-mounted "Smart Box," housing AVI/AVL/GPS and sensing/detection receivers for automatic entrance onto the high-tech travel way; wayfinding/location identification if users get lost; and trip information display. "Smart Box" rental proceeds could pay for system maintenance and, if usage is high, pay back construction and equipment costs.

Users carrying the "Smart Box" would enter the high-tech travel way through automatic gates that use AVI technology to identify the user. Along the route, the high tech travel way would be equipped with loop detectors and pavement sensors. Loop detectors would detect and count users for record keeping and system evaluation. Pavement sensors would collect data on pavement surface conditions (ice, snow, water depth at low spots). In conjunction with the AVL/GPS technology, the LED or LCD display on the "Smart Box" would provide travel time, speed, distance, pavement condition, safe stopping distance, and locational information each time the user passes the detectors and sensors.

At 2 mile intervals and connecting trail heads, information/rest stop stations would be situated between the high-tech and recreational trails. These facilities would house mini-information systems (connecting trails, locational maps, weather information), emergency call boxes, and potable water. The trail system would be equipped with video surveillance cameras to monitor user safety and detect unauthorized users. High-tech travel way delineation systems, such as the 3M Guidance Tube (EAP SW-4), would light the edges of pavement. Where the trails cross roadways, a signal pre-emption system, activated by the "Smart Box" would allow unimpeded (or less impeded) and safe crossing.

Variable message signs would be installed between the high tech path and recreational trail to provide travel advisories (weather, pavement, "traffic" conditions) and other pertinent information to all users. Weather stations would collect data on atmospheric conditions, and algorithms would translate that data into weather predictions for display via the "Smart Box," the mini-information centers, the ATIS/rental center, and VMS.

Summit County currently has an extensive trail system that bears extremely high use by recreationalists, bicyclists, hikers, and cross-country skiers. From a 1991 video survey, 212,000 users were logged on paved trails in the County. The plans for extension of the Blue River Bikeway (Summit County) to the north along the abandoned railroad right-of-way paralleling SH 9, from Silverthorne to Green Mountain Reservoir, provides an ideal opportunity for implementation and evaluation of the IBS.

**EARLY ACTION PROJECT SET****PUBLIC TRANSPORTATION/ALTERNATIVE MODES**

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**PROJECT IDENTIFICATION:**

PTAM-7

**PROJECT NAME:**

Transit Referral Service

**PROJECT DESCRIPTION:**

The Transit Referral Service would offer a toll-free call to a voice messaging service that would provide the caller with information about local public transportation service and private shuttle operations serving the I-70 West Corridor. Pick-up points, fares, and schedules would be announced. The caller could then select the service of his/her choice and the system would connect the caller to that participating transit operator to make reservations.

A full-scale advertising campaign would be initially implemented to "spread the word" about the service. A catchy access number, such as "1-800-I70-RIDE" (470-7433), would provide number recognition and retention. A media blitz to announce and promote the service would be executed throughout the Corridor. Brochures would be distributed. The service would be advertised and connected to all ATIS centers.

**PROBLEM RESOLUTION:**

- Traffic congestion during peak travel periods.
- Impaired drivers navigating the I-70 West Corridor and connected highways.
- Parking limitations at resort/gaming areas.

**USER BENEFIT:**

- Promote use of transit services.
- Potential to improve air quality.
- Enhanced traveler safety.
- Substantial public approval.

**APPROXIMATE COST:**

\$50,000 Start-Up  
\$15,000 Per Annum Operation

**PARTICIPATING AGENCIES:**

Colorado Department of Transportation  
Denver Regional Council of Governments  
Northwest Regional Council of Governments  
Public/Private Transit Operators

**EARLY ACTION PROJECT SET****PUBLIC TRANSPORTATION/ALTERNATIVE MODES****PROJECT IDENTIFICATION:**PTAM-6 (*continued*)**PROJECT NAME:**

Intelligent Bicycle System

There is potential to secure financial support through the Colorado Greenway Project and/or the State Trails Program, funded by Colorado Lottery revenues through the Colorado Division of Parks and Outdoor Recreation. TRBs IVHS-IDEA program offers another potential funding source.

**PROBLEM RESOLUTION:**

- Inadequate trail facilities to accommodate both the serious bicyclist and the recreational bicycle/pedestrian user.
- Pedestrian/bicycle congestion on Summit County trail system.

**USER BENEFIT:**

- User security/safety.
- Innovative use of advanced technologies.
- Separation of pedestrian/cross-country skiers/hikers/casual bicyclists from touring/training bicyclists.
- High-tech touring/training facility for professional bicyclists.
- Potential high user acceptance.
- Potential national interest.

**APPROXIMATE COST:****\$1,500,000 to \$3,500,000****PARTICIPATING AGENCIES:**

Colorado Department of Transportation  
Summit County  
Silverthorne/Frisco  
Colorado Division of Parks and Outdoor Recreation  
National Forest Service  
Local Businesses/Organizations