

STATE HIGHWAY 82  
***ENTRANCE TO ASPEN***

**RECORD OF DECISION**



COLORADO DEPARTMENT OF TRANSPORTATION

AUGUST 1998

*City Manager's Copy*

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COLORADO DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

RECORD OF DECISION

Project STA 082A-008

State Highway 82 - Entrance to Aspen  
Pitkin County, Colorado

**I. DECISION**

The purpose of this Record of Decision (ROD) is to document the Federal Highway Administration's (FHWA) decision on the State Highway 82 Entrance to Aspen project. This Record of Decision has been prepared in compliance with FHWA Regulation 23 CFR 771 and Council on Environmental Quality (CEQ) Regulation 40 CFR 1500-1508. The ROD documents the FHWA decision on the State Highway 82 Entrance to Aspen project based upon the requirements of The National Environmental Policy Act of 1970 (NEPA), the Department of Transportation Act of 1966, as amended (DOT Act), the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), the 1990 Clean Air Act Amendments, project data, alternatives considered, public and other agency input (including comments received following publication of the Entrance to Aspen Final Environmental Impact Statement [FEIS] in August 1997), agreements with the City of Aspen and Pitkin County and outlined mitigation measures. FHWA and the Colorado Department of Transportation (CDOT) have made the decision to construct a variation of the Modified Direct Alternative as described in the Draft Supplemental Environmental Impact Statement (DSEIS) dated July of 1996.

The Preferred Alternative is a combination of highway and intersection improvements, a transit system, and an incremental transportation management (TM) program. The highway component will consist of a two-lane parkway that generally follows the existing alignment, except at the Maroon Creek crossing and across the Marolt-Thomas Property. The highway alignment at Maroon Creek will be north of the existing crossing with the light rail transit (LRT) alignment on the existing bridge. The Modified Direct Alignment (as described in the DSEIS) is across the Marolt-Thomas Property. A connection to Main Street occurs at 7<sup>th</sup> Street. The transit component includes an LRT system that, if local support and/or funding are not available, will be developed initially as exclusive bus lanes. The transit platform (which will follow the proposed highway alignment) is of adequate width to allow the exclusive bus lanes to continue in operation during the construction of the LRT (see Table 1). The Preferred Alternative will include multi-modal facilities at the Pitkin County Airport and Buttermilk Ski Area as part of the locally funded light rail transit component, a new Maroon Creek Bridge crossing north of the existing bridge, a roundabout at Maroon Creek Road, and a cut and cover tunnel of no less than 122 meters (400 feet) in length across the Marolt-Thomas Property. A more detailed description of the Preferred Alternative is given in Section II, Description of the Preferred Alternative.

**Table 1**  
**Platform Widths**

<i>Corridor Section</i>	<i>Maximum Platform Width<sup>1</sup></i>	<i>Maximum Total Right-of-Way Width</i>
Buttermilk to the Maroon Creek Bridge	34 meters (112 feet)	82 meters (270 feet) <sup>2</sup>
Maroon Creek Bridge	22 meters (73 feet)	27 meters (90 feet)
Maroon Creek Bridge to Maroon Creek Road	31 meters (101 feet)	40 meters (130 feet)
Castle Creek Bridge	22 meters (73 feet)	27 meters (90 feet)
Maroon Creek Road to 7 <sup>th</sup> and Main (excluding Cut and Cover Tunnel)	28 meters (93.5 feet)	40 meters (130 feet)
Cut and Cover Tunnel	24 meters (78.5 feet) <sup>3</sup>	61 meters (200 feet)

<sup>1</sup> Platform width is defined as the distance between the outside edges of the curb and/or barriers. The platform widths are from the Joint Resolution #1 (Series of 1997) passed by the City of Aspen, Pitkin County, and the Town of Snowmass Village.

<sup>2</sup> The right-of-way for the Buttermilk to Maroon Creek Bridge segment is significantly larger than other segments. This is because the LRT veers slightly south near the Buttermilk Ski Area to go into the LRT station. This results in a larger area of right-of-way being needed. For more information on the variation of platform and right-of-way widths, please see the technical memorandum *Platform and Right-of-Way Width*.

<sup>3</sup> The platform width for the cut and cover tunnel was originally 22 meters (73 feet) for the Phased Modified Direct Alternative in the DSEIS. The updated Phased Alternative requires a platform width of 24 meters (78.5 feet) for a maintenance access adjacent to the LRT and to provide lanes of adequate width for buses during phasing.

The NEPA process for the Entrance to Aspen started in January 1994 to fulfill a commitment made in the Record of Decision (ROD) for project number FC 082-1 (14), State Highway 82 East of Basalt to Buttermilk Ski Area, dated 12/21/93. Following initial public meetings, scoping, and public information activities, the State Highway 82 Entrance to Aspen Draft Environmental Impact Statement (DEIS) was released in August of 1995. The DEIS evaluated three alternatives between the Buttermilk Ski Area and Maroon Creek Road, and seven alternatives between Maroon Creek Road and the intersection of 7<sup>th</sup> Street and Main Street. On August 24, 1995 the official DEIS Public Hearing Open House was conducted in Aspen.

Following the release of the DEIS, new alternatives were presented by the City of Aspen and local citizens for improvements to State Highway 82. According to Federal Regulations, a Draft Supplemental Environmental Impact Statement (DSEIS) is required if the FHWA determines there are changes in the proposed action or new information or circumstances relevant to environmental concerns and bearings on the proposed action (or its impacts) that could result in significant environmental impacts not evaluated in the DEIS. The DSEIS evaluated four additional alternatives between the Pitkin County Airport and Rubey Park (located in downtown Aspen). The alternatives evaluated in the DSEIS received the same comparative level of analysis as the alternatives in the DEIS. The State Highway 82 Entrance to Aspen DSEIS was released in July of 1996. The official DSEIS Public Hearing Open House was held on August 29, 1996 in Aspen.

Following the official public comment period for the DSEIS, preparation of the State Highway 82 Entrance to Aspen Final Environmental Impact Statement began. In August of 1997 the FEIS was released and the official public comment period, which was extended twice, was open until November 6, 1997. The official Public Hearing Open House was conducted on August 20, 1997 in Aspen. There were more than 950 comment letters received on the FEIS. These comment letters and responses are included as Appendix C. Only one copy of each form letter is included.

## **II. THE PREFERRED ALTERNATIVE**

The Preferred Alternative for the ROD is a variation of the Modified Direct Alternative evaluated in the DSEIS and of the Preferred Alternative described in the FEIS. The Preferred Alternative is a combination of highway and intersection improvements, a transit system, and an incremental transportation management (TM) program. Each of these elements are described below. Figure 1a and Figure 1b show a schematic of the Preferred Alternative alignment.

### **Highway and Intersection Improvements**

The highway component alignment consists of a two-lane parkway that follows the existing State Highway 82 alignment from Buttermilk Ski Area to the vicinity of Maroon Creek Bridge, where the alignment shifts to the north. The highway crosses Maroon Creek on a new bridge, north of the existing bridge. The highway then returns to the existing alignment and continues east to a roundabout located at the Maroon Creek Road intersection. After the roundabout, the highway shifts to the southeast across the Marolt-Thomas Property and through a cut and cover tunnel 122 meters (400 feet) in length to connect with the intersection of 7th Street and Main Street. The alignment crosses a new Castle Creek Bridge between the cut and cover tunnel and Main Street. The proposed Main Street alignment consists of two travel lanes in each direction with an LRT system on the south side. The proposed Main Street cross section is within the existing curb lines. The Preferred Alternative also includes relocating existing Owl Creek Road and West Buttermilk Road to create a new combined intersection with State Highway 82 near the Buttermilk Ski Area.

### **Transit System**

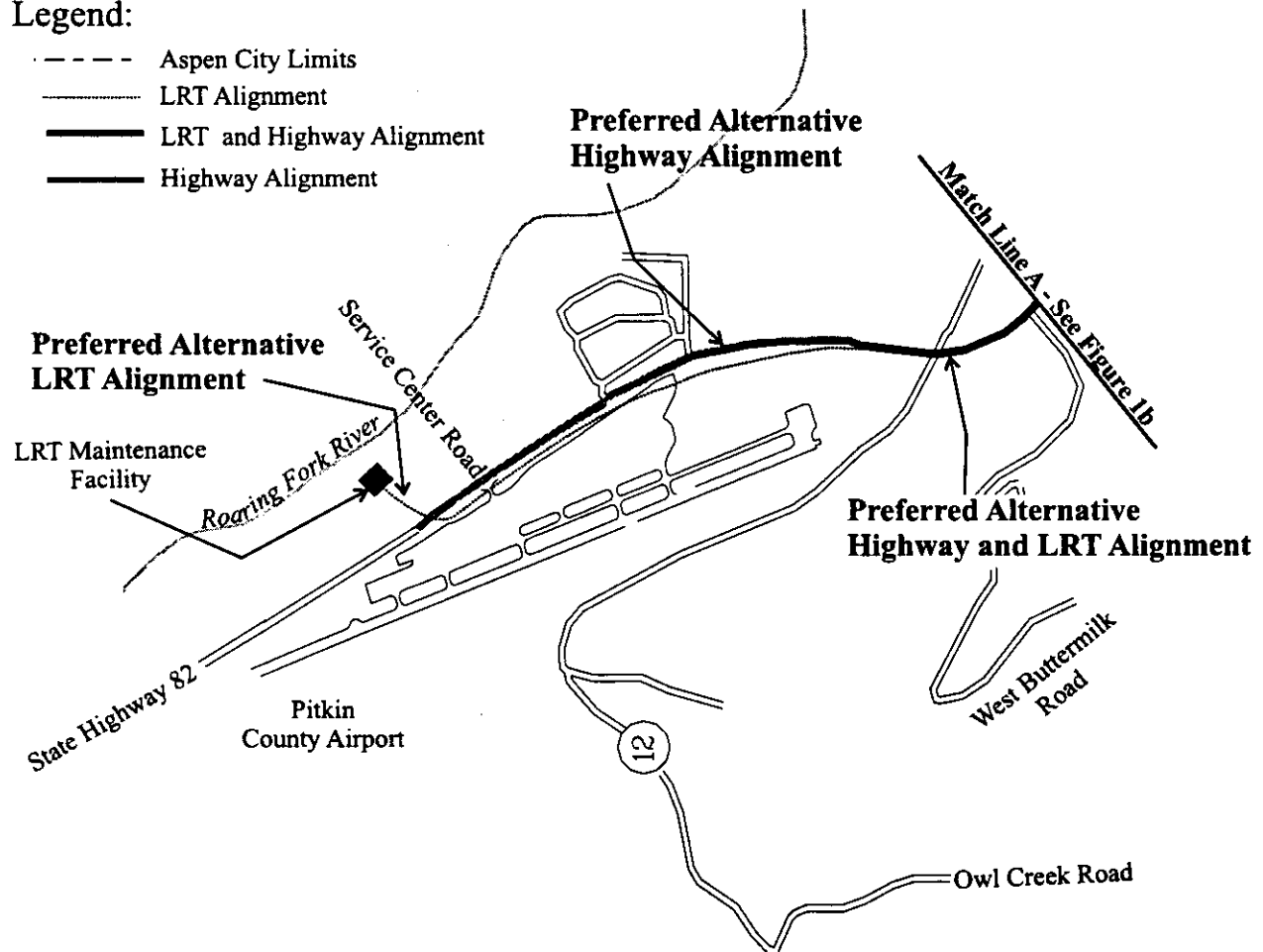
The transit system for the Preferred Alternative includes a LRT system from a new LRT Maintenance Facility near Service Center Road to Rubey Park in downtown Aspen. However, the LRT system will be developed initially as exclusive bus lanes if local support and/or funding are not available. The platform is of adequate width to allow the exclusive bus lanes to continue in operation during the construction of the LRT.

The LRT alignment leaves the maintenance facility and crosses State Highway 82 west of Service Center Road, then turns east toward the Aspen Airport, heading into the Airport Terminal LRT Station. The LRT at this point, is parallel to and on the south side of State Highway 82. The LRT leaves the parallel alignment from State Highway 82 near Owl Creek Road to enter the Buttermilk LRT Station and multimodal facility. The LRT alignment then returns to the south side and parallel to State Highway 82, crossing Maroon Creek on the existing bridge. As the alignment approaches the Maroon Creek Road roundabout it shifts to the south, bypassing the intersection and crossing Maroon Creek Road and Castle Creek Road. It then returns to the south side alignment. The LRT alignment parallels the proposed highway alignment across the Marolt-Thomas Property, through the cut and cover tunnel, to the intersection of 7th Street and Main Street. The LRT alignment runs along the south side of Main Street to Monarch Street, turning south onto the east side of Monarch Street. At Durant Avenue, the LRT turns east along the north side of Durant Avenue and ends at Rubey Park.

### Figure 1a State Highway 82 Entrance to Aspen ROD Preferred Alternative Alignment

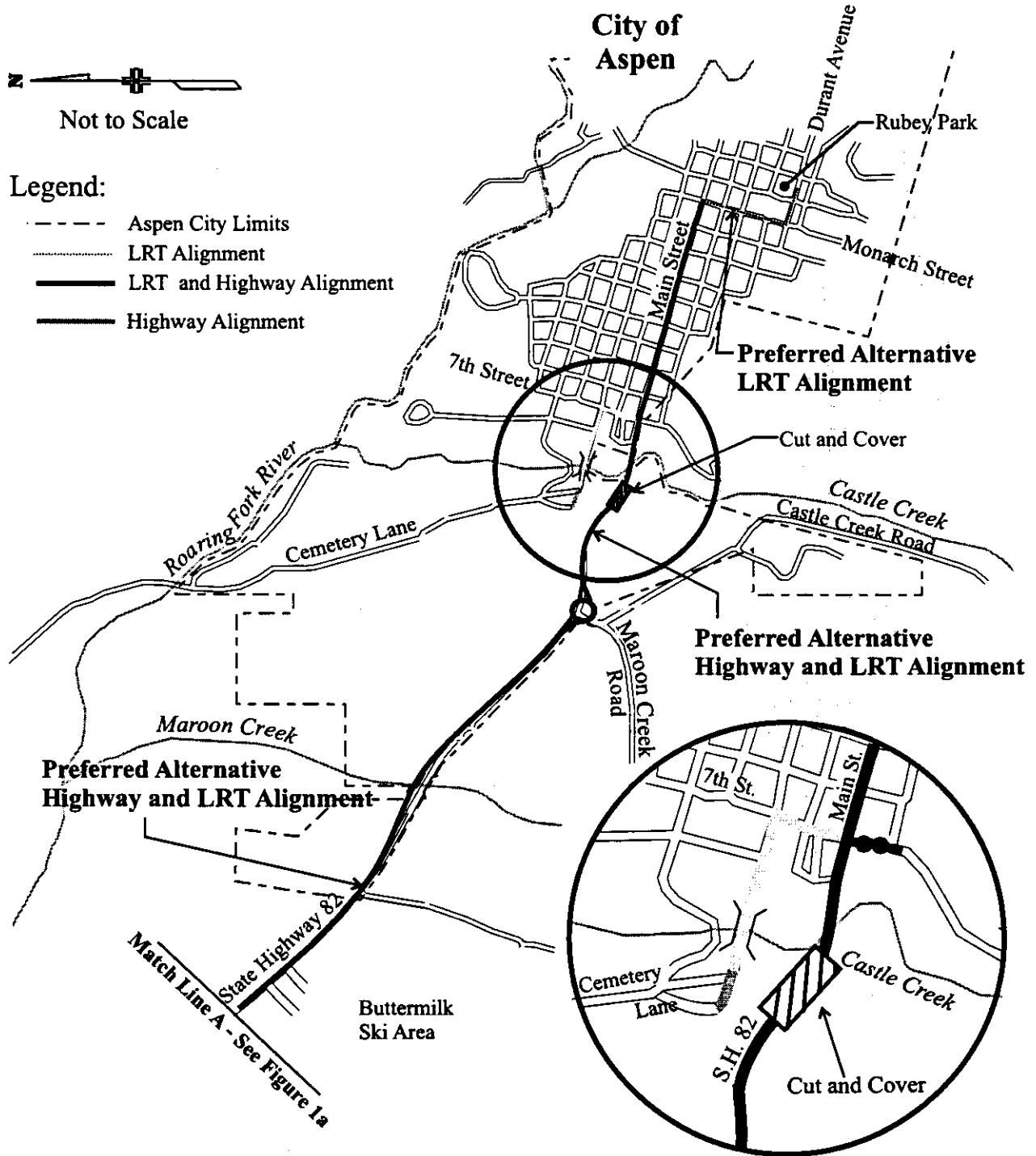
**Legend:**

- - - - Aspen City Limits
- ..... LRT Alignment
- ==== LRT and Highway Alignment
- ==== Highway Alignment



Not to Scale

**Figure 1b**  
**State Highway 82 Entrance to Aspen ROD**  
**Preferred Alternative Alignment**





For purposes of evaluation in the FEIS, the LRT line consists of double track except for the six areas of single track identified below:

- LRT Maintenance Facility to the Pitkin County Airport
- Maroon Creek Bridge
- Just west of the cut and cover tunnel to the intersection of 7th Street and Main Street
- 7th Street LRT Station
- 3rd Street LRT Station
- Intersection of Monarch Street and Main Street to Rubey Park

LRT transit stations are located at the Airport Terminal, Buttermilk Ski Area, Moore Property, 7th Street, 3rd Street, Monarch Street, and Rubey Park.

### **Incremental Transportation Management Program**

In addition to the highway and intersection improvements and the transit system, the Preferred Alternative includes an incremental TM program. This program is designed to help achieve the city and community goal of maintaining 1993 traffic volumes in the year 2015. The Preferred Alternative incremental TM program consists of incentives, disincentives, and supporting measures to encourage use of transit, carpools, bicycles, and walking. Currently, the City of Aspen is using TM measures such as increased transit service (incentive), paid parking (disincentive), and information programs (supporting).

The incremental TM program consists of monitoring the traffic volumes to verify that the goal of maintaining 1993 levels of traffic is being met. If the traffic volumes are at or below the 1993 levels then no action is taken. If the traffic volumes exceed the 1993 levels then one or more TM measures are implemented. The degree to which the traffic volumes exceed the 1993 levels determines the level of TM required to meet the zero-growth target. The three levels of TM, in addition to other supporting actions, are shown below. A more detailed list of possible TM measures is included in the FEIS technical report entitled *Transportation Management (TM) Measures*.

Level 1 - The measures in this level of TM are starter level actions that are implemented when the zero-growth level is first exceeded. If the zero-growth target is exceeded after Level 1 is implemented, then the next level of TM is added. Examples include ridematching programs, trip planning programs, transit literature, etc.

Level 2 - This level of TM is implemented when the traffic volumes exceed the zero-growth target between 0 and 5 percent or if Level 1 measures do not reduce traffic volume to below the zero-growth target. Examples include improved transit system (shorter headways, increased subsidies), demand responsive transit, minor increases in internal parking rates, etc.

Level 3 - This level of TM is implemented when the traffic volumes exceed the zero-growth target between 5 and 10 percent. Examples include limiting the number of internal parking spaces, auto-free zones, major increases in internal parking rates, etc.

Supporting Actions - These refer to actions that, by themselves, are not expected to cause a mode shift, but rather enhance other actions. Examples include guaranteed ride home program, park and ride lots to meet demand, bicycle and pedestrian facilities, etc.

Figure 2 is a flow chart of how an incremental program could work.

The Preferred Alternative includes two parking facilities: the airport multimodal center and the Buttermilk multimodal center. These facilities are designed for the parking demand based on the zero-growth policy and a summer high-growth transportation demand modeling scenario. To meet the projected 2015 summer high growth demand (assuming no downvalley extension of the light rail system), approximately 3,600 spaces are required at the airport multimodal center, and approximately 750 spaces are required at the Buttermilk multimodal center. Initially, the construction of these multimodal facilities would not need to provide for maximum capacity. Instead, the number of parking spaces at the multimodal facilities could be developed as the parking need arises. This is especially true at the airport where the planned facility could eventually have 3,600 parking spaces under the worst-case growth assumptions outlined above.

### Meeting Project Purpose and Need

CDOT and FHWA have chosen the Preferred Alternative because it best meets the local communities' needs and desires, fulfills the project objectives, and provides flexibility in future design decisions. A short description of how the Preferred Alternative meets the project objectives (shown in italics) follows.

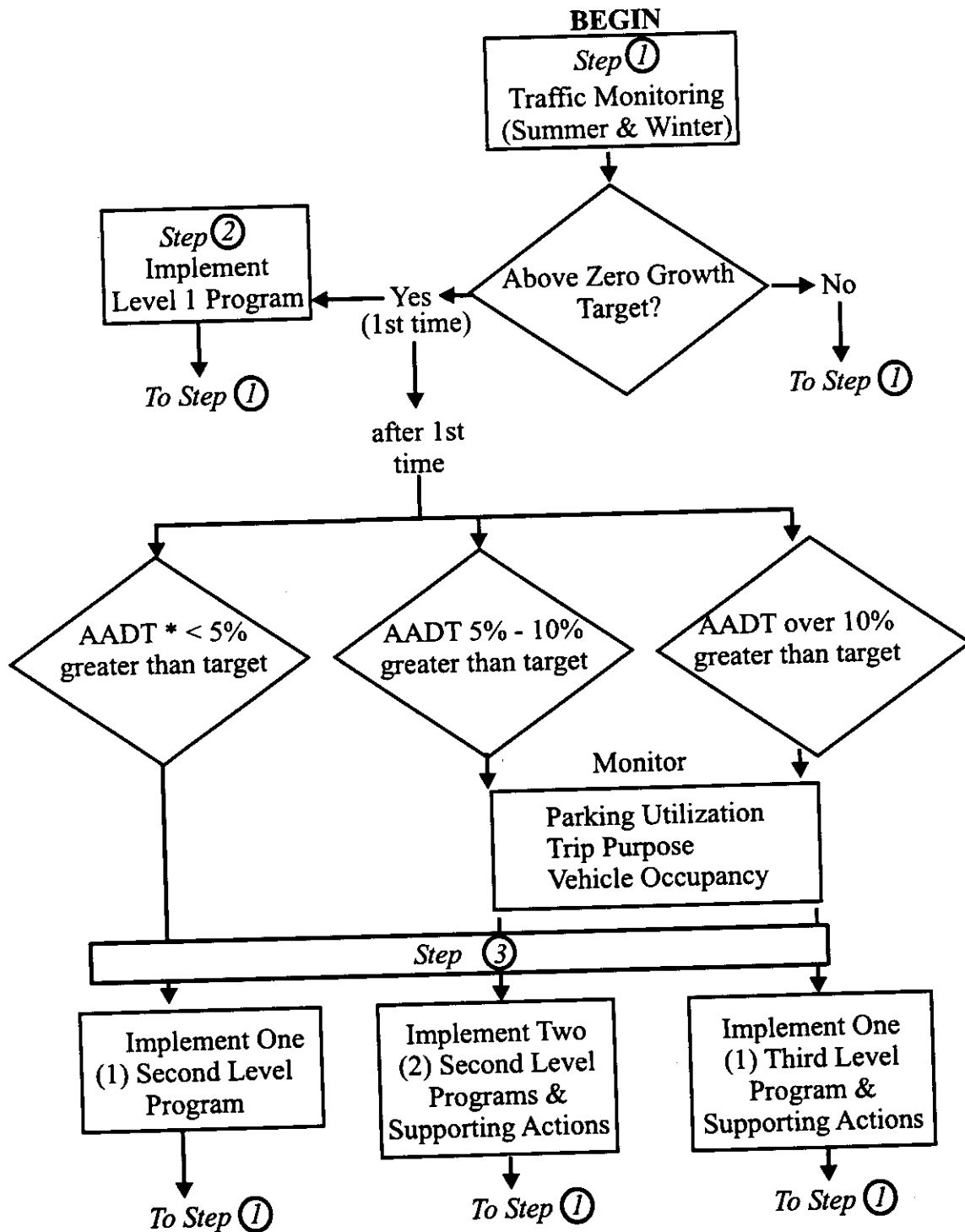
1. ***Community Based Planning.*** *Provide a process which is responsive to local community-based planning efforts, including the Aspen to Snowmass Transportation Project and the Aspen Area Community Plan, with special attention focused on limiting vehicle trips into Aspen to create a less congested downtown core.*

The Preferred Alternative has been developed through an extensive and continuous public involvement process with both local citizens and elected officials. The adoption of the incremental TM program as an integrated part of the Preferred Alternative provides for the goal of limiting future vehicle trips to existing levels while providing flexibility in the adoption of stronger incentives and disincentives.

2. ***Transportation Capacity.*** *Provide needed transportation capacity for the forecasted person trips in the year 2015. In doing this, this project will identify a combination of travel modes, alignments and transportation management actions to seek to achieve the stated community goal of limiting the number of vehicles in the year 2015 to levels at or below those in 1994.*

With the incorporation of the incremental TM program, the Preferred Alternative will provide for future transportation capacity. Though the highway system will operate under congestion, this congestion is considered part of the disincentive for single occupancy vehicle (SOV) travel and will increase transit usage. This objective sets the goal of limiting year 2015 traffic volumes to levels at or below those in 1994. However, throughout this document the traffic volumes are referred to as levels at or below those in 1993. Levels are set at 1993 because the traffic model for

**Figure 2**  
**Incremental TM Program**  
**Monitoring and Implementation**



\* AADT - Average Annual Daily Traffic

the Entrance to Aspen EIS was based on 1993 traffic volumes. The difference between 1993 and 1994 traffic volumes is minimal.

3. **Safety.** *Reduce the high accident rate on State Highway 82 and the existing S-curves at State Highway 82/7th Street/Main Street and provide safety improvements for bicyclists and pedestrians. Provide safe access at all intersections for all movements.*

The removal of non-local traffic from the substandard S-curves and the addition of a landscaped median separating inbound and outbound traffic will reduce the high accident rate on State Highway 82.

4. **Environmentally Sound Alternative.** *Develop an alternative which minimizes and mitigates adverse impacts. A process will be used which follows the National Environmental Policy Act (NEPA), the 1990 Clean Air Act Amendments (CAAA), the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA), and all pertinent legislation.*

The Preferred Alternative minimizes and mitigates adverse environmental impacts. The Preferred Alternative exceeds the requirements of the CAAA and is one of the least harmful alternatives evaluated in the EIS. The Preferred Alternative mitigates the Section 4(f) resources impacts with the cut and cover tunnel, relocates all trails that are impacted, avoids impacts to the Holden Smelting and Milling Complex, and compensates for impacts by returning some existing highway right-of-way to the City of Aspen.

5. **Community Acceptability.** *Develop an alternative which fits the character of the community and is aesthetically acceptable to the public.*

The Preferred Alternative reflects the agreements reached to date between the communities while accommodating future decisions based on local discussions and elections.

6. **Financial Limitations.** *Develop an alternative that is financially realistic with respect to current and expected funding levels and programs, while being responsive to both the community's character and prudent expenditures of public funds.*

The Preferred Alternative is financially realistic, sensible, and responsible with respect to the current and expected funding levels and programs as determined by the City of Aspen and Pitkin County.

7. **Clean Air Act Requirements.** *Since the Aspen area is a PM<sub>10</sub> air quality non-attainment area, the Preferred Alternative must meet the requirements of the CAAA by demonstrating project conformity.*

The Preferred Alternative exceeds the requirements of the CAAA.

8. **Emergency Access.** *Respond to the need for an alternate route for emergency response to incidents inside and outside of Aspen.*

The Preferred Alternative improves emergency access by providing an additional bridge across Castle Creek. The existing State Highway 82 right-of-way could be used as an emergency access route to and from the existing bridge if the new bridge becomes inaccessible.

9. **Liveable Communities.** *Provide a system which reflects the small town character and scale of the Aspen community and which enhances the quality of life for residents and visitors. The system shall provide more accessible transportation which increases the mobility of the community and therefore provides for a more livable community.*

The Preferred Alternative is consistent with the goals of maintaining a small town character and enhances the quality of life for the residences and visitors by limiting vehicle traffic to 1993 levels. The provision of an improved, efficient LRT system further enhances the livability and mobility of the community.

10. **Phasing.** *Provide an alternative which allows for future transit options and upgrades.*

The Aspen community has long expressed a desire for the high quality transit system that is included in the Preferred Alternative. The ultimate goal of the Roaring Fork Valley is to develop a fixed guideway system that connects Glenwood Springs to Aspen. The Entrance to Aspen LRT system may be the first step towards a realization of this goal.

### **Meeting Project Need and Intent**

The Preferred Alternative fulfills the agreed-upon project need and intent statements in the following manner:

- In concert with the incremental TM program, the Preferred Alternative provides the needed person trip capacity for all foreseeable growth in the number of trips to and from Aspen through the year 2015. This is accomplished through highway improvements combined with a safe, high-quality, fast, and frequent transit system that will enhance the visitor's experience, expedite commuting, and preserve the residents' quality of life.
- It is a balanced transportation system that integrates highway, transit, and transportation management solutions to reduce congestion and pollution.
- It reflects the character and scale of the Aspen community by minimizing the number and width of the needed highway lanes while meeting person trip capacity needs with an LRT system.
- It is responsive to community-based planning in fully considering community, elected official, and project team comments and concerns. The Preferred Alternative was initially conceived during the public comment period following the release of the DEIS in August 1995. The Preferred Alternative has the least impact of any build alternative on open space, historic structures, and residences. Impacts can be mitigated through a commitment to design excellence and high-quality construction materials and methods.

- It is a flexible system designed to meet both the short- and long-term goals of community compatibility, safety, environmental preservation, clean air, quality of life, and transportation capacity.
- It is entirely consistent with the City of Aspen, Town of Snowmass Village, and Pitkin County goal of limiting traffic in 2015 to levels at or below 1993 levels. The Preferred Alternative's proactive approach of integrating an attractive, high quality transit system with a goal-responsive package of adjustable transportation demand management measures offers an opportunity for the Aspen community to reduce the attractiveness of the personal auto while fully accommodating the mobility needs of residents, visitors, and commuters.
- The Preferred Alternative is consistent with the goals of maintaining a small town character and enhancing the quality of life for the residents and visitors by limiting vehicle traffic to existing levels. The provision of an improved, efficient LRT system further enhances the livability and mobility of the community.

### **III. ALTERNATIVES CONSIDERED**

The FEIS discusses alignment options and modal options (see pages II-4 through II-23 of the FEIS) in addition to the No-Action Alternative. A screening process was used throughout the EIS process to determine alternatives that were to receive detailed evaluation (see Figure 3).

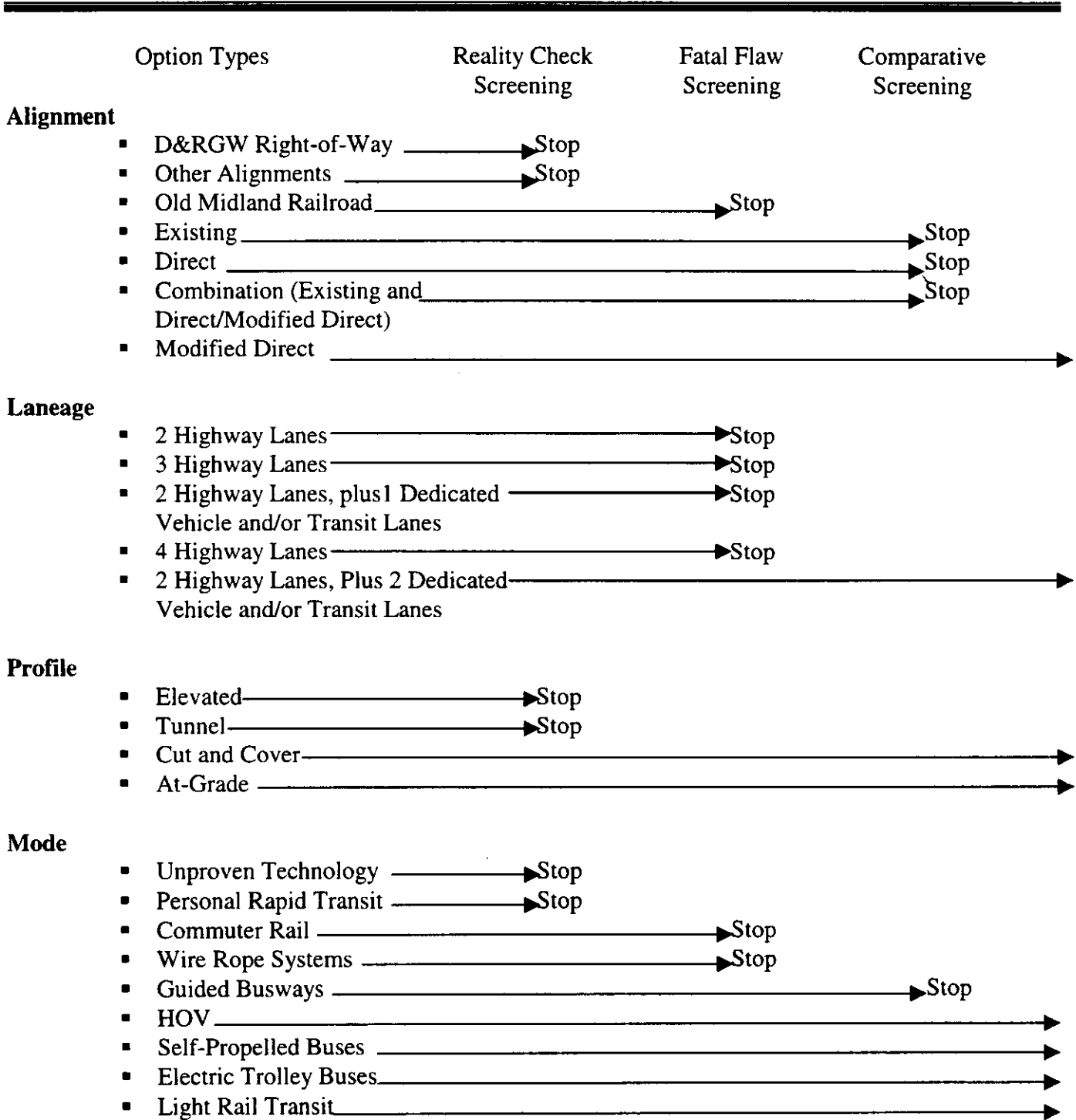
The screening process used applied progressively more demanding criteria to the range of potential options through a series of three screening levels. At each screening level, options that did not meet the respective criteria for that screening level were eliminated from further evaluation. The screening levels included a reality check, a fatal flaw screening, and a comparative evaluation. The reality check was qualitative and eliminated options that were clearly unrealistic, inappropriate, or unreasonable. The fatal flaw screening eliminated options that did not meet one or more of the community-established project objectives (ten objectives were identified). The comparative evaluation eliminated alternatives that were not logical when compared to other available alternatives. The remaining alternatives were brought ahead for full evaluation.

Alignment alternatives were studied to determine the environmental impacts and associated mitigation within the corridor. The modal alternatives, in addition to the environmental impacts and associated mitigation within the corridor, are critical to determining both the air quality impacts within the Aspen PM-10 non-attainment area and their ability to meet the objective of limiting year 2015 traffic volumes to levels at or below those in 1993.

#### **The No-Action Alternative**

The No-Action Alternative for the State Highway 82 Entrance to Aspen project corridor includes only minor, short-term safety and maintenance improvements. It does not significantly improve safety or substantially increase the capacity of the highway. This alternative does not satisfy the project objectives. It also constrains implementation of transit improvements to help control growth of Vehicle Miles Traveled (VMT).

**Figure 3  
 Screening Analysis**



The No-Action Alternative was the environmentally preferable alternative and caused the least overall impact to the physical, biological, and social environment. However, the No-Action Alternative does not meet the project's purpose and need or the project's stated need and intent statements.

The Preferred Alternative balances the need to protect the environment with the need to provide a safe and efficient means of transportation in the project corridor. The environmentally preferable solution, the No-Action Alternative, requires some tradeoffs. As a result of the No-Action Alternative, the air quality in the Aspen non-attainment area would deteriorate because of the increased VMT and unmanaged congestion. Increasing traffic congestion without an alternative means of access to the Aspen area may create a loss of revenue for businesses in the project corridor. In addition, the No-Action Alternative will continue to be a cause of traffic accidents as aggressive driver behavior and frustration grow with increased travel delay.

For these reasons the No-Action Alternative was not selected for implementation.

### **Build Options Eliminated From Consideration**

Options were evaluated at each screening level (reality check, fatal flaw, comparative) for potential alignment, laneage, profile, and travel mode. The following paragraphs document the level where options were screened out and briefly describe the reasons for elimination. A complete screening evaluation is available in the technical report to the DEIS entitled *State Highway 82 Entrance to Aspen Alternatives Screening Analysis* and the technical memorandum to the DSEIS entitled *Entrance to Aspen DSEIS Alternatives Screening Report*.

### **Reality Check Screening**

The following options were screened out as unrealistic and unacceptable for the Entrance to Aspen project corridor:

- The Denver & Rio Grande Western (D&RGW) right-of-way alignment.
- Alignments west of Maroon Creek Road other than the existing alignment.
- An elevated roadway structure profile.
- Tunnel profiles greater than 215 meters (700 feet) long.
- Unproven transportation technologies.
- Personal Rapid Transit (PRT) systems technology.

In general, the options screened out at this level were either discontinuous to the project corridor, cost prohibitive, aesthetically obtrusive, unproven in service (no real world data on operation, cost, or impact), or disruptive to the existing development in the corridor.

### **Fatal Flaw Screening**

Options surviving the reality check screening were evaluated against the project objectives and checked for fatal flaws. An option screened out at this level indicated that it did not meet one or more of the project objectives. The following options were eliminated at the fatal flaw screening level:



Old Colorado Midland Railroad Alignment Along Shadow Mountain

This alignment was not within an existing transportation corridor and would have required extensive disruption to existing residential areas along Shadow Mountain and within the Aspen downtown area. The Midland alignment was eliminated because of financial constraints (excessive mitigation and property acquisition costs) and the negative impacts on the surrounding community. Additionally, as a transit alignment, the Midland corridor was not adjacent to major destinations in Aspen and would not have attracted the ridership necessary for proper function of the transit system since it would not have provided the necessary station opportunities between 7<sup>th</sup> Street and Rubey Park. The Midland alignment would not have reduced the number of buses on Main Street to the extent that a Main Street LRT alignment would, nor would it have helped to revitalize Main Street as a business corridor.

Two Highway Lanes

This laneage option was screened out because, by itself, it did not meet the capacity requirements for future traffic demand. Only if TM Programs and significant transit improvements had been implemented would this option have met the capacity screening criteria. The two-lane option on the existing alignment also did not meet the emergency access objective. By itself, the two-lane highway option also would not have provided for future transit options and upgrades that are part of Aspen's Community Plan.

Three Highway Lanes

Because the peak-hour distribution of the highway is approximately 50/50, a reversible lane would not have provided the needed future traffic capacity for both directions of State Highway 82. This laneage option did not meet the phasing objective.

Two Highway Lanes and One Dedicated Vehicle and/or Transit Lane

This laneage option was eliminated for the same reasons the three-lane highway option was eliminated.

Four Highway Lanes

This laneage option did not provide the incentive for transit or carpool use that is essential if the traffic growth on State Highway 82 is to be controlled. Four lanes of unrestricted traffic would not be consistent with community-based planning goals.

Commuter Rail

Commuter rail is a mode that requires a fixed-guideway system and a separate right-of-way. A typical commuter rail system consists of one locomotive train car and several passenger train cars. Because of the inability of commuter rail to operate efficiently in mixed-flow traffic conditions, this mode option did not meet the capacity objective or the limited resources objective. Also, diesel locomotives entering the City of Aspen would not be consistent with local planning objectives and community character.

Wire Rope Systems

Wire rope systems are similar to gondolas and chair-lift systems, requiring overhead cables and pole supports. The capacity and trips that can be served by this technology are limited. This mode was screened

out because it was not acceptable to the Elected Officials Transportation Committee (EOTC) as an in-town transit system visually, operationally, or financially.

## Comparative Screening

At this screening level, options that passed the fatal flaw analysis were combined to form alternatives. These alternatives were compared against each other to determine the most reasonable alternatives for full evaluation. The comparison was made using five factors that affect the options: operations, cost, safety, environmental considerations, and community acceptability.

The remaining alignment options for comparison are listed below. Each option generally followed the existing alignment between Buttermilk Ski Area and Maroon Creek Road. The differences occurred between Maroon Creek Road and 7<sup>th</sup> Street and Main Street.

- Existing      This alignment follows the existing State Highway 82 alignment.
- Direct        This alignment provided a direct connection between Maroon Creek Road and State Highway 82 across the Marolt-Thomas Property. The alignment first followed the Old Midland right-of-way, then curved across the Marolt-Thomas Property and connected with 7<sup>th</sup> Street and Main Street.
- Modified  
  Direct        This alignment was a variation on the Direct Alignment. Instead of following the Old Midland grade, this alignment continued on existing State Highway 82 to a point approximately halfway between Maroon Creek Road and Cemetery Lane. It then turned southeast to cross the Marolt-Thomas Property, and finally east to connect with 7th Street and Main Street.
- Combination   This couplet alignment was a combination of the existing and either the Direct or Modified Direct options. Westbound traffic used the Existing Alignment, while eastbound traffic used either the Direct or Modified Direct Alignment.

These remaining alignment options for comparison were combined with the remaining laneage option and evaluated as either at-grade across the Marolt-Thomas Property or as a depressed cut and cover tunnel. The only remaining laneage option consisted of two general highway lanes and two dedicated vehicle and/or transit lanes. The two general highway lanes were unrestricted and available for use by any driver with any vehicle occupancy. The two dedicated vehicle and/or transit lanes were reserved strictly for use by the mode and technology options surviving the screening process. This laneage option was assumed for all alternatives in the comparative screening.

The remaining profile options were the at-grade and the cut and cover tunnel. With the at-grade option, the roadway followed the vertical profile of the existing landscape to the extent possible. The cut and cover tunnel option was located on the Marolt-Thomas Property. The roadway dropped below the surface of the existing landscape and into a short tunnel approximately 122 meters (400 feet) long. The cut and cover tunnel option was combined with only the direct and modified direct alignments in the comparative evaluation.

The comparative screening analysis of the alignment, profile, and laneage combinations eliminated the following options:

Existing

The existing alignment between Maroon Creek Road and the intersection of 7<sup>th</sup> Street and Main Street was screened out on the basis of safety and community acceptability issues as compared to other alignment options. The safety of the existing State Highway 82 alignment would not have been significantly improved because of the S-curves. Compared to the alignments across the Marolt-Thomas Property, the S-curves were expected to have a higher accident rate even with improvements to the roadway. The existing alignment also did not address the need for an alternative emergency access route in and out of Aspen. In a public survey of alignment preferences (September 1994 Public Open House), the existing alignment was chosen as the least favorable in comparison to other alignments.

Direct Connection

The cost and safety issues of the direct alignment were similar to those of the modified direct alignment. Both alignments would have had an impact on the Marolt Open Space Property and the Thomas Property acquired by the City of Aspen for transportation purposes. The direct alignment would have bisected the Marolt-Thomas Property and impacted several key open space areas, including the community garden and the landing field for hang-gliders. These areas would not be affected by the modified direct alignment. Additionally, the direct alignment would not have the community acceptability of the modified direct alignment. A survey conducted in fall 1994 indicated that the most desired alignment between the two was the modified direct alignment.

Because of the more significant impacts to open space (as compared to the modified direct alignment) and the lack of community support, the direct alignment was not carried forward for additional evaluation in the DEIS.

Combination (Existing plus Direct/Modified Direct)

The couplet (one-way pair) and the split alignment (two-way pair) were both defined as a combination of the existing alignment and either the direct or modified direct alignments. Traffic flow on the couplet would have been one-way to the west on the existing alignment and in the opposite direction on the Marolt-Thomas alignment (Direct or Modified Direct). The couplet would have created significant operational problems for Cemetery Lane traffic wanting to head east on State Highway 82. This traffic would first have had to head west on State Highway 82 and U-turn where the two one-way roads merge together into a two-way road. This would have created a dangerous turning movement on the highway facility.

The split alignment, or two-way pair, was similar to the geometry of the couplet, but the traffic on both the existing alignment and Marolt-Thomas alignment would have flowed two ways. This would have created significant operational problems where the direct/modified direct alignment and the existing alignment separate, and at the intersection of 7<sup>th</sup> Street and Main Street where the two alignments come back together. With the split alignment, general traffic would have been restricted to the existing alignment between Maroon Creek Road and Main Street. The dedicated vehicle and/or transit traffic would have been routed across the Marolt-Thomas Property. Operational problems could have occurred when traffic had to be separated and directed into appropriate lanes at the intersection of 7<sup>th</sup> Street and Main Street.

## **Alternatives Eliminated After Full Evaluation**

Additional analysis was conducted to determine the most appropriate and supportable transportation solution for the Aspen area. Alternatives passing the comparative screening analysis were brought into the EIS process for full evaluation. At the request of the Aspen City Council and the Elected Officials Transportation Committee (EOTC), several alternatives that were screened out were also carried into the full evaluation, including Alternative B and Alternative G. The alternatives discussed in this section were eliminated from further consideration after the full evaluation in the DEIS and the DSEIS.

### **Alternatives Evaluated in the DEIS**

Table 2 summarizes the alternatives evaluated in the DEIS. Initially, the alternatives in the DEIS were separated into two corridor sections. Alternative 1 (the No-Action Alternative), Alternative 2, and Alternative 3 were in the Buttermilk Ski Area to Maroon Creek Road corridor section. These alternatives generally followed the existing alignment to a point just west of the Maroon Creek Bridge. At this location, the highway would have been realigned north of the old bridge to a new bridge crossing Maroon Creek. The alignment then would tie back into the existing alignment near the Aspen Golf Course and follow the existing alignment to Maroon Creek Road. The difference between Alternative 2 and Alternative 3 was the separate transit envelope provided in Alternative 3.

Alternative A (the No-Action Alternative) and Alternatives B, C, D, E, F, and G were in the Maroon Creek Road to 7<sup>th</sup> Street and Main Street corridor section. Alternatives C, D, E, and F followed the modified direct alignment across the Marolt-Thomas Property. Additionally, Alternatives E and F consisted of a cut and cover tunnel section and Alternatives D and F included a separate transit envelope. Alternative B followed the existing alignment and Alternative G followed the couplet alignment.

All alternatives in the DEIS included two general highway lanes and two dedicated vehicle and/or transit lanes. The exception was Alternative G, which would not have included the use of carpools in the dedicated vehicle and/or transit lanes. The mode options considered for the DEIS alternatives included self-propelled buses, electric trolley buses, high occupancy vehicles, and light rail transit.

Community support is a major factor in the NEPA process. The alternatives in the DEIS were eliminated from further consideration because of a lack of support from the community and the EOTC. The laneage option for the DEIS alternatives provided two dedicated vehicle and/or transit lanes for any of the mode options, including light rail. Although the DEIS alternatives considered the future operations of light rail, they did not provide a detailed analysis of a light rail system. The consensus of the community and the EOTC was that further analysis of a light rail system was necessary. The absence of a detailed light rail analysis contributed to the elimination of the DEIS alternatives.

### **Alternatives Evaluated in the DSEIS**

After the release of the DEIS, the Aspen City Council presented a new alternative (interim Alternative H) for evaluation. From the concept of this alternative, four separate alternatives were

developed for full evaluation in the DSEIS. The four alternatives included light rail as the ultimate transit system in the project corridor. Because of the extent of the light rail system, the EIS project corridor was extended west to include the airport area and extended east to Rubey Park in Aspen. Table 3 summarizes the alternatives evaluated in the DSEIS.

The Modified Direct and the Phased Modified Direct alternatives consisted of the modified direct alignment with a cut and cover tunnel. Alternative H and Phased Alternative H consisted of a couplet alignment. The phased DSEIS alternatives consisted of initially developing the system as phased exclusive bus lanes if local support and/or funding were not available for the LRT system. The Preferred Alternative in the DSEIS was the Phased Modified Direct alternative.

**Table 2**  
**Alternatives Evaluated in the DEIS**

Corridor Section	Number/Letter	Alternative
Buttermilk Ski Area to Maroon Creek Road	1	No-Action
	* 2	Existing Alignment
	* 3	Existing Alignment with Separate Transit Envelope
Maroon Creek Road to 7 <sup>th</sup> Street and Main Street	A	No-Action
	* B	Existing Alignment
	* C	Modified Direct Alignment, At-Grade
	* D	Modified Direct Alignment, At-Grade with Separate Transit Envelope
	* E	Modified Direct Alignment, Cut and Cover Tunnel
	* F	Modified Direct Alignment, Cut and Cover Tunnel, with Separate Transit Envelope
	**G	Two Improved Lanes on the Existing Alignment and Transitway on the Modified Direct Alignment, At-Grade

\* *These alternatives consist of two general highway lanes and two dedicated vehicle and/or transit lanes.*

\*\* *The transitway for Alternative G is for transit vehicles only and does not include carpools.*

**Table 3**  
**Alternatives Evaluated in the DSEIS**

<i>Alternative</i>	<i>Description</i>
Alternative H	No Phasing, Couplet Alignment, At-Grade
Modified Direct	No Phasing, Modified Direct Alignment, Cut and Cover Tunnel
Phased Alternative H	First Phase Bus, Couplet Alignment, At-Grade
Phased Modified Direct	First Phase Bus, Modified Direct Alignment, Cut and Cover Tunnel

Other alternatives considered in the development of DSEIS alternatives included the "Highway and Underground Transitway Solution (HUTS)" and an alignment along the old Denver and Rio Grande Western (D&RGW) railroad grade. These alternatives were evaluated through the NEPA process and were found to be unrealistic and inappropriate for this project. Both the HUTS alternative and the D&RGW alignment were eliminated at the reality check screening level of the screening process.

The Preferred Alternative identified in the DSEIS was the Phased Modified Direct. The alignment of Alternative H and Phased Alternative H were eliminated because of the greater Section 4(f) resource impacts (specifically the Marolt-Thomas Property). In addition, the couplet alignment (Alternative H) was originally screened out of consideration in the comparative screening evaluation.

### **Alternatives Evaluated in the FEIS**

The phased approach to light rail (as described in the DSEIS) was originally dismissed in the FEIS because of a lack of support from the community and the Aspen City Council. This approach initially added cost and unnecessary disruption to Section 4(f) resources as compared to non-phased alternatives. However, further development of the Modified Direct Alternative for the FEIS included the addition of a narrow, grassy median to create a parkway on State Highway 82. The addition of the median (at the request of the Aspen City Council) allowed room for the phased approach.

Several options were evaluated in the process of creating the FEIS Preferred Alternative. The options included single-track or double-track LRT, the location of the LRT right-of-way (center-running or side-running), Maroon Creek Bridge options, Maroon Creek Road intersection options, 7<sup>th</sup> Street and Main Street intersection options, LRT on Garmisch Street or Monarch Street, and lowering the vertical profile near 8th Street.

#### Single-track or double-track LRT

Both single-track and double track were considered for the LRT alignment. The Preferred Alternative would have been double-track (except where single-track is necessary) due to greater flexibility of the system (schedule changes, etc.). The single-track scenario allowed less flexibility in scheduling headway than the double track scenario. Under the single-track scenario, if schedules fell behind, an LRT vehicle may have had to wait at a double-track section for an oncoming LRT

vehicle to pass. However, the opportunity existed for the LRT line to open under the single-track scenario and expand to double-track if necessary. The capital construction cost for the double-track scenario would have been about \$35.3 million. The capital construction cost for the single-track scenario would have been about \$32.7 million.

Under the double-track scenario, the LRT line was double-track except in the following locations, which were single-track.

- LRT Maintenance Facility to the airport
- Maroon Creek Bridge
- A point just west of the cut and cover tunnel to the intersection of 7<sup>th</sup> Street and Main Street
- 7<sup>th</sup> Street LRT Station
- 3<sup>rd</sup> Street LRT Station
- Intersection of Monarch Street and Main Street to Rubey Park

Under the single-track scenario, the LRT line was single-track with double-track sections only where essential to maintain proper headways between trains. These double-track locations were identified as places where LRT trains moving in opposite directions meet. The passing sections needed to be about 120 meters (400 feet) long. The essential double-track areas for 15 minute and 30 minute headways were:

- Airport Terminal LRT Station
- Just west of Maroon Creek Bridge
- Just west of the cut and cover tunnel
- Main Street west of the 3rd Street LRT Station
- Rubey Park LRT Station

#### Center-running or Side-running LRT

In the FEIS Preferred Alternative, the alignment of the track on Main Street was shown to be center-running. This alignment was chosen because of concerns over the contra-flow situation on Main Street and business impacts (due to possible driveway closures) with the side running alignment. Because of the community's desire to minimize the visual impact of overhead wires for the LRT, the LRT alignment on Main Street has been moved to the south-side for the ROD Preferred Alternative. The change from center-running to side running was made after extensive community input into the Main Street street-scape plan indicated the change was desired.

Two options were considered for the location of the LRT alignment in the State Highway 82 cross section. The options included the LRT in the center of the State Highway 82 median (center-running) or on the south side of State Highway 82 in a separate right-of-way (side-running). An alignment with the LRT on the north side of the highway was eliminated early in the process. The north-side alignment would not have served the transit-oriented destinations on the south side of the highway.

The LRT envelope for the center-running option was in the center of State Highway 82. This alignment allowed unimpeded right-in/right-out access along the highway and would have required fewer LRT crossing gates than a side-running alignment. Left-turning vehicles on the highway would have been required to cross the LRT tracks at signalized intersections.

The side-running LRT alignment was in a separate right-of-way adjacent to the south side of the highway. This alignment provided better access to the LRT system for the transit destinations on the south side of State Highway 82. All accesses on the south side of the highway were either closed, or controlled with crossing gates.

The Preferred Alternative in the ROD will consist of a south side-running alignment from the airport to the intersection of 7<sup>th</sup> Street and Main Street, because it will serve the transit-oriented locations on the south side of State Highway 82. The south side alignment will also be the Preferred Alternative on Main Street for the ROD. The side-running alignment may require the closure of several streets and driveways on the south side of Main Street. This will provide better access to the north side of Main Street, allowing left turns at all intersections for inbound traffic. Also, the south side alignment will place stations at the curb, which will allow users to access the LRT from the south side without having to cross Main Street, and allows cross-platform transfers to buses at 7th Street. In the center-running option, users from either side of Main Street would have to cross into the center to reach the stations.

The south side alignment will cause the removal of trees that are greater than 25 centimeters (10 inches) in diameter and within 3 meters (10 feet) of Main Street. The depth of construction for the LRT will impact the root systems of the trees on the south side of Main Street. This decision has local support, due to the age and health of these trees.

The side-running alignment will require furnishings to prevent pedestrian/LRT conflicts. The furnishings may include a buffer zone with a post and chain between the LRT tracks and the sidewalk on the south side of Main Street. This type of furnishing helps to eliminate pedestrian crossings at unmarked locations.

#### Maroon Creek Bridge

Four options were evaluated for the Maroon Creek crossing. The preferred option is the side-running LRT on the existing bridge with a new highway bridge north of the existing bridge. The new bridge will be on the north side of the historic existing bridge and will not impact the private properties on the south side. In addition, a retaining wall will be constructed on the north side of the new bridge to preserve the existing Plum Tree Playing Field.

The other three options evaluated for the Maroon Creek crossing were:

1. *Center-running LRT with new bridge south of the existing bridge* — In this option, the cross section included a center-running LRT envelope. Both the highway and LRT would have crossed Maroon Creek on a new bridge south of the existing bridge. This option was eliminated because of adverse impacts to private property, a lack of public support, and because the center-running LRT option was previously eliminated.
2. *Center-running LRT with a split bridge alignment* — In this option, the center-running LRT tracks crossed Maroon Creek on the existing bridge, westbound State Highway 82 crossed on a new bridge north of the existing bridge, and eastbound State Highway 82 crossed on a new bridge south of the existing bridge. This option was eliminated because it would have required construction of two new bridges, impacted property on both the north and south sides of the existing bridge, and because the center-running LRT option was previously eliminated. In addition, the State Historic Preservation Officer (SHPO) determined that constructing a new



bridge on each side of the existing bridge would be an adverse impact on the historic Maroon Creek Bridge.

3. *Side-running LRT with new bridge south of the existing bridge* — In this option, the cross section included a side-running LRT envelope adjacent to the south side of State Highway 82. Both the highway and LRT crossed Maroon Creek on a new bridge south of the existing bridge. This option was eliminated because of unacceptable adverse impacts to private property and a lack of public support.

#### Maroon Creek Road Intersection

Four options were evaluated for the Maroon Creek Road intersection: center-running LRT or side-running LRT with either a signalized intersection or roundabout. The preferred option is a roundabout with side-running LRT. This roundabout will operate efficiently and experience less delay than the signalized options. It also will reduce the vehicle-LRT train conflict by moving the LRT tracks outside the roundabout. In addition, it will provide a more direct link between Castle Creek Road and State Highway 82 than would the signalized intersection. During the bus lanes phase, should this be necessary, buses will approach the roundabout in a dedicated bus lane, enter the roundabout in mixed flow conditions, and exit into a dedicated bus lane.

Because the Maroon Creek Road intersection is surrounded by open space and a golf course, every effort was made to preserve as much of each property as possible. The design and placement of the roundabout minimizes the amount of right-of-way taken from each property and balances the impact. Shifting the location of the roundabout to the north or east results in a greater impact to individual properties and a greater total right-of-way take for all properties.

The other three options evaluated for the Maroon Creek Road intersection were:

1. *Signalized with center-running LRT* — This option maintained the existing signalized intersection with the addition of light rail and a second left turn lane in the westbound direction. Although this intersection would have had acceptable operation, delays would have been longer than for the roundabout options (see Table 4). In addition, this option would not have provided a direct link between Castle Creek Road and State Highway 82. Currently, the link between State Highway 82 and Castle Creek Road is via Maroon Creek Road. This indirect link creates traffic flow problems at the intersection of Maroon Creek Road and Castle Creek Road. These problems also affect the signal at Maroon Creek Road and State Highway 82. Part of the goal for this EIS was to develop solutions that will improve the operations of the State Highway 82 transportation system. This option did not fully address the problem of the Castle Creek Road, Maroon Creek Road, and State Highway 82 intersection.
2. *Signalized with side-running LRT* — This option maintained the existing signalized intersection, with the addition of light rail and a second left turn lane in the westbound direction. Although this intersection would have had acceptable operation, delays would have been longer than for the roundabout options. In addition, this option would not have provided a direct link between Castle Creek Road and State Highway 82.
3. *Roundabout with center-running LRT* — In this option, an oval-shaped roundabout served as the intersection of Maroon Creek Road, Castle Creek Road, and State Highway 82. Two different radii would have been necessary to achieve the oval shape. The smaller radii (21

meters [70 feet] inside, 30 meters [100 feet] outside) would have been for the tighter curves, while the larger radii (82 meters [270 feet] inside, 91 meters [300 feet] outside) would have been for the flatter curves. Two-lane entrances would have been provided from all directions, two-lane exits would have been provided onto eastbound and westbound State Highway 82, and one-lane exits would have been provided onto Maroon Creek Road and Castle Creek Road. Traffic in the roundabout would have circulated at 25 km/h (15 mph). The LRT tracks would have crossed at-grade through the center of the roundabout.

Although this roundabout would have operated well and experienced shorter delays than the signalized options, it was eliminated in comparison to the roundabout with side-running LRT option. The side-running LRT option was preferred because it will reduce the vehicle-LRT conflict by moving the LRT tracks outside of the roundabout, and also because side-running LRT was determined to be the most desirable option.

**Table 4**  
**Maroon Creek Road Intersection Options**

**Approach Delay (Seconds)**

<i>Entrance Leg</i>	<b>Roundabout</b>		<b>Signalized</b>	
	<i>Center-Running</i>	<i>Side-running</i>	<i>Center-running</i>	<i>Side-running</i>
Eastbound State Highway 82	0.7	1.5	12.8	18.8
Westbound State Highway 82	2.0	1.7	24.6	24.7
Maroon Creek Road	3.6	3.1	24.8	24.7
Castle Creek Road	3.5	2.8	N/A	N/A

*Intersection of 7<sup>th</sup> Street and Main Street*

Two options were evaluated for the intersection of 7<sup>th</sup> Street and Main Street. The two options included a signal and a roundabout. The roundabout was eliminated because placing a well-designed roundabout at this intersection encroached significantly on nearby properties.

The preferred option was the signalized option. This option is the most feasible and does not significantly affect the surrounding property. Intersection channelization will be included at this intersection.

*LRT on Garmisch Street*

Two options were evaluated for the LRT alignment between Main Street and Rubey Park. The options were placing the LRT alignment on Garmisch Street or placing the LRT alignment on Monarch Street. The preferred option was placing the LRT alignment on Monarch Street. Monarch Street is centrally located in downtown Aspen, which provides LRT access to more transit destinations than Garmisch Street. The Monarch Street alignment also would impact

less property than Garmisch Street. In addition, Garmisch Street has a steeper grade than Monarch Street, and may have caused operation and maintenance problems for the LRT during the winter season.

#### Lowering Profile near 8<sup>th</sup> Street

In addition to the profile that was used for the Preferred Alternative, another profile was evaluated between the cut and cover tunnel and the intersection of 7<sup>th</sup> Street and Main Street. This option involved lowering the profile to reduce noise and visual impacts on surrounding structures. In this option, the profile was kept as low as possible across Castle Creek until it was required to come up to match existing ground at the intersection of 7<sup>th</sup> Street and Main Street. This option was not feasible because of the access impacts to the Berger Cabin. Under this option, retaining wall would have been required on both sides of State Highway 82 between Castle Creek Bridge and 7<sup>th</sup> Street. The retaining wall on the south side of State Highway 82 would have closed off the only access to the Berger Cabin from the highway and adversely impacted the Berger Cabin Property.

### IV. Other Key Elements

There are several other key elements to the FEIS Preferred Alternative that also apply to the ROD Preferred Alternative. These items include the relocation of Owl Creek Road and West Buttermilk Road, the multimodal facilities at the Aspen Airport and Buttermilk Ski Area, and the incremental transportation Management (TM) program.

#### Owl Creek Road

As part of the ROD Preferred Alternative existing Owl Creek Road will be relocated along with West Buttermilk Road. The new Owl Creek Road intersection will be combined with access to the Buttermilk Ski Area and moved approximately 300 meters (1000 feet) east of the existing location. The new alignment will follow the base of the valley to intersect West Buttermilk Road. At this point, the new alignment will turn north to intersect State Highway 82 at the new signalized, channelized intersection.

#### Multimodal Facilities

Multimodal facilities will be developed at two locations in the project corridor: the Pitkin County Airport and Buttermilk Ski Area. Each of the locations will accommodate a transit station (or stop) and parking facilities. The parking demand for each facility was determined based on the parking demand induced by the incremental TM program. The parking demand will range from 750 spaces at the Buttermilk Ski Area to 3,600 spaces at the airport. The facility at the Pitkin County Airport will be used primarily by commuters with an Aspen destination. The Buttermilk Ski Area Facility will primarily be used by day-skiers and other recreationalists. The size of the facilities may be reduced based on several factors including actual population and traffic growth experience, transit service, success of TM programs, linkages to other communities, and increased downvalley parking facilities. Construction of the parking spaces can be phased.

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### Incremental Transportation Management (TM) Program

The incremental TM program is designed to maintain future traffic volumes at 1993 traffic levels. The program will consist of incentives, disincentives, and supporting measures to encourage the use of transit, carpools, bicycling, and walking. The incremental TM program requires monitoring traffic volumes to verify the goal of maintaining 1993 levels. Depending on the degree to which the target traffic volume is being exceeded, varying TM measures will be utilized to reduce the volumes back to the target levels.

## **V. SECTION 4(f) RESOURCES**

The Section 4(f) Resources Evaluation included with the FEIS identified seventeen resources in the project corridor. These resources and their owners are identified below and it is indicated whether or not they are impacted by the ROD Preferred Alternative. Nine of these resources are unavoidably impacted by the Preferred Alternative. Seven of the impacted resources are owned by the City of Aspen, one property is owned by Pitkin County, and one is a privately owned historic property.

Appendix A is a Memorandum of Understanding among CDOT, FHWA and the City of Aspen to express and memorialize the understandings and agreements between these parties as related to these seven properties. Appendix B is a Memorandum of Understanding between CDOT, FHWA, and Pitkin County to express and memorialize the understandings and agreements between these parties as related to the County-owned Moore Open Space. Additional measures to minimize harm have been identified in the Section 4(f) evaluation, including review of design plans for portions of the preferred alternatives by the State Historic Preservation Office and the Aspen Historical Commission. The measures included in the Preferred Alternative are discussed in detail in the Section 4(f) evaluation and are identified below in the description of the Least Harm Alternative.

This project and all alternatives under consideration have been coordinated with all Section 4(f) resource owners within the State Highway 82 study corridor. All owners of Section 4(f) resources on this project are included on the project mailing list and have received copies of newsletters and invitations to participate in formal and informal public meetings. In addition to the public meetings, several smaller coordination meetings have been held with Pitkin County and the City of Aspen representatives to explain the project's alternatives and impacts in greater detail.

A least harm analysis has been performed to determine how to minimize overall harm to the affected Section 4(f) resources.

### **What Goes into the Least Harm Analysis?**

The intent of the Section 4(f) requirement is to avoid impacts to public parks, recreation areas, wildlife refuges, and historic sites, unless there is no "feasible and prudent alternative." The first step in the Section 4(f) evaluation is to determine whether there is a feasible and prudent alternative which would avoid impacts to the Section 4(f) resources. An avoidance alternative may not be "prudent and feasible" for any of the following reasons:

- Not meeting the project purpose and need.
- Excessive costs of construction.

- Severe operational or safety problems.
- Unacceptable adverse social, economic, or environmental impacts.
- Serious community disruption.
- An accumulation of a lesser magnitude of the foregoing types of factors.

If a Section 4(f) resource cannot be avoided, then a least harm analysis must be performed to determine how to minimize overall harm to the Section 4(f) resources. In performing this analysis the net harm (after mitigation) to the resources is the governing factor. The net harm should be determined in consultation with the agency (the SHPO in the case of historic sites) having jurisdiction over, or ownership of, the resource. The feasible and prudent alternative which does the least harm to the Section 4(f) resource must be selected for construction. Where there is little or no difference between alternatives in the overall harm to Section 4(f) resources, any of the alternatives may be selected.

### Discussion of Key Issues

The Section 4(f) resource analysis demonstrated that there were no feasible and prudent alternatives that completely avoided use of Section 4(f) resources that also met the purpose and need for this project. CDOT and FHWA have proposed a preferred alternative that meets the project purpose and need and minimizes harm to Section 4(f) resources, after considering mitigation and the relative impacts to the affected resources.

In the Section 4(f) Evaluation included with the FEIS, detailed information is provided that identifies the impacts of the various alternatives on the resources eligible for consideration under Section 4(f). The different alternatives affected the various Section 4(f) resources in different ways. As a result, the qualities and relative importance of the affected resources had to be considered in determining the alternative that met the purpose and need for the project with the least harm to Section 4(f) resources. Following are the primary issues and findings, derived from the detailed analysis described in Chapter II through Chapter VI of the FEIS, that have been balanced to comply with Section 4(f):

- a) An evaluation of all the build alternatives for the section of this project between the Pitkin County Airport and Maroon Creek Road revealed that the new Maroon Creek Bridge should be constructed on the north side of the existing structure thus avoiding impacts to privately owned property within this section of the project corridor. Placing the bridge on the north side of the existing bridge impacts approximately 0.6 hectares (1.5 acres) of the Zoline Property and 0.7 hectares (1.7 acres) of the Aspen Golf Course/Plum Tree Playing Field (including Maroon Creek Basin). An alignment on the south side of the existing bridge would have taken two homes and disrupted the site plan for a condominium complex.

Placement of the bridge on the south side of the current Maroon Creek Bridge has proven to be imprudent due to unacceptable adverse social impacts to properties on the south side of State Highway 82. The north side alignment was developed at the request of the City of Aspen (which owns and manages the Golf Course, Aspen Plum Tree Playing Field, and Zoline Property), Pitkin County, and in response to numerous public comments universally opposing the south alignment. Agreements have been reached between the City of Aspen and CDOT to permit the acquisition of a small portion of the Zoline Property and the Aspen Plum Tree Playing Field (golf course) for the purpose of the transportation corridor. With the north side alignment, the recreational qualities that qualify the Plum Tree Playing Field for Section 4(f) protection will not be lost.

- b) Evaluation of the alternatives in the Maroon Creek Bridge to Rubey Park section of the corridor revealed that effects to the Holden Smelting and Milling Complex would be avoided by keeping the alignment north a sufficient distance to avoid the historic district boundary. Berming will provide additional protection from any potential visual or noise impacts to this resource.
- c) Alternatives that include the modified direct alignment go through the Marolt-Thomas Property. A cut and cover tunnel has been designed for Alternatives E, F, Modified Direct, and the Preferred Alternative as a form of mitigation. The top of the cut and cover tunnel will be used as open space. These alternatives also convert a portion of existing State Highway 82 to open space uses; however, despite the return of some land to open space, there will likely be a residual impact to the qualities that make this property important that cannot be completely mitigated, such as residual noise impacts and visual impacts from the alignment.
- d) Alternative H resulted in a greater total take from Section 4(f) resources (Bugsy Barnard Park, Golf Course Property and Marolt-Thomas Open Space) than Alternatives E, F, the Modified Direct, and the Preferred Alternative after mitigation. The portion of the Golf Course impacted by Alternative H was a non-recreational portion that does not contribute to the recreational value of the property. Alternative H ran along the perimeter of the Marolt-Thomas Property which may have resulted in less of an imposition on the important qualities of the Marolt-Thomas Property and the Holden Property than the cut and cover tunnel alternatives. However, the view of the Marolt-Thomas Property and the Holden Smelting and Milling Complex from across Castle Creek may have been affected to a greater degree with this alternative than with Alternatives E, F, the Modified Direct, and the Preferred Alternative.
- e) The Preferred Alternative includes a parkway cross section (to the extent possible) across the Marolt-Thomas property. The median section was added to the Preferred Alternative in response to a request by the City of Aspen made in May 1997. A formal comment letter on the FEIS (dated November 3, 1997 from the City of Aspen) indicated the City's desire to have "two widely-separated traffic lanes with adequate emergency shoulders... and a double track rail platform." The median provided on the Marolt-Thomas Property varies in width from 3.6 meters (12 feet) with grass and landscaping to a textured concrete median 2.1 meters (7 feet) wide through the cut and cover tunnel to the Castle Creek Bridge.
- f) The Preferred Alternative will include a roundabout and an LRT station at the intersection of Maroon Creek Road and State Highway 82. During the public comment period and discussions that occurred after the distribution of the DSEIS, the City of Aspen proposed that a roundabout be evaluated at the State Highway 82 and Maroon Creek Road intersection. CDOT and FHWA have evaluated the roundabout in combination with a light rail transit (LRT) station proposed for this location. An LRT station will be necessary at this intersection to service the high transit demand on Maroon Creek Road and Castle Creek Road. The station will be located on the Moore Property for safer bus operations and transfers between the LRT and buses. The LRT will bypass the roundabout as it enters the station. The LRT station will take approximately 0.6 hectares (1.5 acres) of the Moore Property. This combination (roundabout intersection and LRT station on the Moore Property) best meets the purpose and need for the project as well as the stated community objectives. This alternative is acceptable for the exclusive bus lane phase. This combination is included in the Preferred Alternative.

The roundabout intersection more clearly supports the following project objectives (refer to the FEIS for more details on the objectives) when compared to the signalized intersection. Only Objectives 1, 2, 3, 8, and 9, pertain to discussion on the roundabout.

Objective 1      *Community Based Planning* -The proposal for the roundabout was made by local city representatives through the community based planning effort associated with this project.

Objective 2      *Transportation Capacity* – The roundabout will increase the Level of Service (LOS) for this intersection over the previously proposed signalized intersection. The total delay will be decreased by approximately 90 percent versus the signalized intersection. The direct access for Castle Creek Road will reduce the congestion on Maroon Creek Road by eliminating the traffic volume added by Castle Creek Road accessing State Highway 82 via Maroon Creek Road.

Objective 3      *Safety* – Based on European studies, roundabouts are safer than signalized intersections. A roundabout is designed for entering vehicles to yield to circulating vehicles. The entering vehicles only have one direction of conflicting traffic, whereas at a signalized intersection there may be more than three directions of conflicting traffic. Upon approaching a roundabout intersection, the driver slows down and prepares to stop. At a signalized intersection, however, the driver decides whether to slow down or speed up depending upon the situation (each situation is different). The speed within a roundabout is low, the speed through a signalized intersection may be high if the driver did not have to stop. Based upon the above information, the accident rate and severity is expected to be less for a roundabout than the signalized intersection.

The Aspen Valley Hospital is located on Castle Creek Road. The roundabout will provide direct access to Castle Creek Road, whereas, a signalized intersection would have provided access to Castle Creek Road off Maroon Creek Road. A direct route (one intersection) will be safer than a non-direct route (two intersections).

A roundabout will serve as a better-designed intersection based on the layout of the three roads. The intersection of Castle Creek Road and Maroon Creek Road is located approximately 35 meters (110 feet) from the intersection of State Highway 82 and Maroon Creek Road. With a signalized intersection, traffic on Maroon Creek Road may block the Castle Creek Road intersection, creating delays. The roundabout will eliminate this conflict.

Access and operation of shuttle buses picking up and dropping off passengers at the LRT station will be safer with a roundabout intersection since the buses will travel through fewer traffic conflict points than a signalized intersection.

Objective 8      *Emergency Access* - Emergency access to and from the Aspen Valley Hospital will be improved by the roundabout. The hospital is located on Castle Creek Road. The congestion associated with a signalized intersection will slow

emergency access to and from the hospital.

Objective 9 *Livable Communities* - The City of Aspen and Pitkin County would like to provide a system which reflects small town character and scale. A roundabout more closely fits this objective than a traffic signal.

The proposed roundabout will use 0.53 hectares (1.3 acres) of Section 4(f) resources. The signalized intersection will take approximately 0.13 hectares (0.3 acres) of Section 4(f) resources (Aspen Golf Course and Old Midland Property). The portion of the Aspen Golf Course property that will be affected is not an active use area and does not contribute to the characteristics that qualify this property for Section 4(f) protection. CDOT and FHWA have committed to agreements with the City of Aspen (see Appendix A) to replace open space lands.

- g) The Preferred Alternative will include an intermodal transfer center located on the Moore Property. The center must be placed at this intersection to accommodate the high transit demand (schools, Aspen Valley Hospital, Aspen Highlands). The center must be placed on the south side of the highway for easy access for buses. The two feasible location options were either on the Moore Property or the Marolt-Thomas Property. Both are Section 4(f) resources. It would be easier to mitigate the Moore Property since currently there are natural berms/hills. Placing the station on the Marolt-Thomas Property instead of the Moore Property would impact the same amount of Section 4(f) resource, but would also create adverse social and traffic impacts. Buses and shuttles would be required to enter the roundabout and cross the LRT tracks when exiting the station. The terrain on the Marolt-Thomas Property is generally flat, which does not accommodate a berm. The operations of school buses and ski shuttles will be better with the center on the Moore Property. This is because the station access will be located on Maroon Creek Road, and the buses/shuttles will not have to enter the roundabout or cross the LRT tracks. The center will take approximately 0.6 hectares (1.5 acres). The Moore Property right-of-way impacts have been minimized from the previous alternatives' (1.6 hectares [3.9 acres]) layout by moving the highway and LRT alignment completely off the Moore Property, and by eliminating the parking from the intermodal transfer center.

### **Least Harm Alternative**

The No-Action Alternative was the only alternative that avoided impacts to all Section 4(f) resources; however, this alternative would not be feasible and prudent since would not meet the purpose and need of the project. Implementing the No-Action Alternative has severe operational and safety problems, and would not be responsive to planning efforts of the community. Although the Preferred Alternative did not have the fewest quantifiable impacts of all alternatives that were evaluated in the Section 4(f) Evaluation, this alternative imposed the least harm of all alternatives that also met the purpose and need, and objectives for the Entrance to Aspen project identified in the FEIS.

One of the primary objectives identified by the community was to hold future traffic volumes at existing (1993) levels. To accomplish this objective, all of the alternatives had to include transportation management (TM) measures. As a result, only those alternatives that combined single occupant vehicles (SOV), opportunities to park the vehicle and transfer to an alternative mode in an efficient fashion, and other incentives to use the alternative mode complied with the goals of the community. The Preferred



Alternative and the alternatives evaluated in the DSEIS are the only alternatives that complied with this objective and met the purpose and need of the project.

Subsequent to the release of the DSEIS, the alignment of the new Maroon Creek Bridge on the south side proved to be imprudent due to unacceptable adverse social impacts. The property owners of affected Section 4(f) resources supported the north-side alignment. The south-side alignment created adverse impacts to properties located on the south side of the existing State Highway 82. Based on these impacts and lack of community support, this alignment was eliminated from consideration. The alternatives evaluated in the FEIS consisted of the Maroon Creek Bridge north-side alignment.

The Preferred Alternative will use a combination of highway improvements, a transit system, and TM measures to meet the project purpose and need, and the project objectives. The Preferred Alternative balances meeting the purpose and need, and objectives of the project with the effort to minimize harm to Section 4(f) resources. The Preferred Alternative was chosen because it:

- a) Minimizes visual impacts to the Marolt-Thomas Property when viewed from Aspen near Castle Creek, the Aspen Golf Course, Buggy Barnard Park, and the remaining portion of existing State Highway 82 near Cemetery Lane.
- b) Returns a portion of existing State Highway 82 to open space use.
- c) Includes a cut and cover tunnel across the Marolt-Thomas Open Space.
- d) Minimizes Moore Property impacts from the necessary LRT Station by eliminating parking.
- e) Limits future vehicle trips to existing levels while providing for future capacity.
- f) Eliminates the dangerous S-curves from the existing State Highway 82 alignment.
- g) Exceeds the requirements of the Clean Air Act Amendments.
- h) Improves emergency access.

There are likely to be some remaining noise and visual impacts on the recreational qualities of the Marolt-Thomas Property and the Holden Smelting and Milling Complex even with the proposed cut and cover tunnel and berming mitigation identified below. These remaining impacts will not interfere to a significant degree with the qualities that make the resource valuable. These noise and visual impacts that remain after mitigation are more acceptable than the noise, visual, and area impacts that would occur with the DSEIS Alternatives.

The Preferred Alternative will include all possible planning to minimize harm, including the following:

- a) Relocation of the trail system where impacts cannot be avoided.
- b) Designing the Preferred Alternative with the least possible right-of-way width when impacts to Section 4(f) resources are unavoidable.
- c) Replacing any lost open space land or compensating the City of Aspen and Pitkin County for the reasonable cost of purchasing replacement open space land. Further details of this commitment are included in Appendices A and B.
- d) Incorporating a cut and cover tunnel and earthen berms to mitigate impacts to the Marolt-Thomas Open Space and the Holden Smelting and Milling Complex.
- e) Providing SHPO and the local Historic Preservation Committee (HPC) the opportunity to comment on the architectural compatibility and placement of the new bridge structures across Maroon Creek and Castle Creek.

- f) Having CDOT conduct a historic archaeological survey, excavation if necessary, and monitoring during construction in the vicinity of the Holden Smelting and Milling Complex and the Castle Creek Bridge.
- g) Shifting the alignment across the Marolt-Thomas Property as far north as feasible to avoid impacts to the Holden Smelting and Milling Complex.
- h) Providing SHPO and local HPC the opportunity to review and approve the berm design and landscaping plans in the vicinity of the Holden Smelting and Milling Complex.
- i) Providing SHPO and local HPC the opportunity to review and comment on street design and wiring plans in the vicinity of historic resources.
- j) Providing SHPO a photographic record, plans, and drawings of the Maroon Creek Bridge before and after modification.
- k) Minimizing LRT stations' footprints when impacts to Section 4(f) resources are unavoidable.
- l) Relocating the Berger Cabin back on the property and additional landscaping subject to SHPO review and approval.

## **VI. MEASURES TO MINIMIZE HARM**

This decision to select the ROD Preferred Alternative includes all practical measures to avoid or minimize harm to the environment. The following mitigation measures will be incorporated into the project and implemented before or concurrently with construction.

CDOT is committed to the general mitigation measures listed below for the State Highway 82 Entrance to Aspen Preferred Alternative.

### **A. Relocations**

The acquisition and relocation program for the State Highway 82 Entrance to Aspen Preferred Alternative will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (1989). Relocation resources will be available without discrimination to all residents and businesses that are required to relocate. No relocations are expected for the Preferred Alternative.

### **B. Recreational Access**

With respect to the multimodal approach of the EIS, a more friendly pedestrian/bicycle environment will be created in conjunction with the Preferred Alternative. CDOT will relocate, improve, and/or replace all existing trail/bike path facilities and sidewalks impacted by the Preferred Alternative.

### **C. Consistency with Local Plans**

Pitkin County's planning goal of complementing the rural character of lands currently undeveloped or developed at low density will be acknowledged wherever consistent with right-of-way requirements and local access requirements. This includes a narrow median serving as either a planting area or left-turn lane. Median design will be conducted to balance safety, aesthetics, and right-of-way width in the vicinity of open space and parklands.

In keeping with Aspen's desire to slow traffic entering the city, traffic calming techniques will be incorporated into the design of the Preferred Alternative. These techniques will include a landscaped

narrow median, narrow lanes on Main Street, and a cut and cover tunnel section of no less than 122 meters (400 feet) in length across the Marolt Open Space.

#### **D. Air Quality**

The air quality mitigation measures are in conformance with the PM<sub>10</sub> State Implementation Plan (SIP) for Aspen, the Clean Air Act Amendments (CAAA), and subsequent regulations. The City of Aspen, Pitkin County, and CDOT are committed to continuing implementation of current air quality measures that are included in the currently approved PM<sub>10</sub> SIP. Additional measures include use of clean sand for winter street sanding, frequent street sweeping on SH 82, minimizing construction activities during the critical winter pollution season, and pre-wetting cuts and fills, when necessary.

#### **E. Water Quality**

Construction impacts to water quality will be mitigated by the following:

- Adherence to the conditions described by the National Pollution Discharge Elimination System (NPDES) Stormwater Permit.
- Adherence to CDOT Best Management Practices (BMPs).
- The development and implementation of a water quality and stormwater management plan.
- Use of water quality control and erosion control specifications.
- The development and implementation of a spill prevention and emergency response plan.

The water quality management plan will include erosion control measures and water quality enhancement practices. The spill prevention and emergency response plan will consist of plans for storage, handling, and use of chemicals and a detailed plan for emergency response in the event a spill occurs.

Water quality impacts from the operation and maintenance of the Preferred Alternative will be mitigated primarily by the design of the drainage system. This system includes long drainage pathways with wide bottoms. In the vicinity of river crossings, drainage will be directed away from the streambed. Vegetation will be planted and maintained in the drainageways to enhance natural constituent removals. Runoff from above the project area will be intercepted and carried under the highway where it will be combined with highway runoff to promote dilution. CDOT will continue using alternative de-icers on the State Highway 82 study corridor to minimize potential salt impacts.

#### **F. Upland and Floodplain Vegetation**

Impacts on upland and floodplain vegetation will be minimized by mitigation measures that include revegetation of disturbed upland areas with dryland shrubs and grasses similar to the species removed during construction. In riparian zones and wetlands, special seed mixes will be used that have been developed for riparian and wetland areas. Displaced trees and shrubs, which are transplantable, will be transplanted from disturbance areas to areas where construction is nearly completed. Riprap protection at bridge piers will be buried and topsoiled to the high water elevation, then naturally revegetated to repair construction damage.

#### **G. Wetlands**

Mitigation measures for wetland impacts will consist of:

- Avoiding wetland systems and riparian strips to the greatest practical and feasible extent.
- Minimizing loss of wetland acreage and trees.

- Using CDOT Standard Erosion Control Measures to stop sediment and pollutant influx into wetlands.
- No stockpiling of material or staging of equipment or supplies in wetland or riparian areas.
- Replacing wetlands on a one to one basis in suitable sites either along the highway corridor or in other locations.
- Temporary fencing to protect adjacent wetlands from accidental construction equipment encroachment.

#### **H. Fisheries**

Mitigation commitments for fisheries impacts include:

- Avoiding damage to or removal of shoreline vegetation.
- Revegetating according to CDOT Standard Erosion Control Measures.
- Avoiding channel restrictions and channel destabilization.
- Replacing pools and irregular bends where such existing features are lost.
- Filtering runoff in settlement ponds or through check dams (hay bales) wherever practical.
- Avoiding in-stream activities during fall months and early spring when resident fish are spawning.
- Avoiding removal or damage to gravel substrates which are critical to the survival of fish eggs.

#### **I. Wildlife**

CDOT will cooperate with the Colorado Division of Wildlife (CDOW) during design of the project. The CDOW will review preliminary highway design plans and specific wildlife mitigation measures will be addressed at that time.

#### **J. Floodplains**

To minimize impacts to floodplains, extensive longitudinal encroachments to channels will be avoided in the study corridor in the design of bridges and roadway embankments in accordance with 23 CFR 650A, Subchapter G, Subpart A. Buried riprap will be provided in design and construction phases to minimize erosion.

#### **K. Threatened and Endangered Species**

No threatened and endangered species have been identified in the State Highway 82 Entrance to Aspen corridor. The application of standard CDOT erosion and sediment control measures will ensure that long-distance impacts to federally-listed endangered fish, downstream in the Colorado River, will be avoided. No threatened and endangered species will be impacted in this project area.

#### **L. Historic Resources**

Mitigation measures for impacts to historic resources will consist of:

Maroon Creek Bridge: The HPC will be given the opportunity to comment on the architectural compatibility of the design and placement of the new bridge. Design plans, drawings, and a photo record will be provided to the SHPO before the existing bridge is modified in any way to accommodate transit use.

Holden Smelting and Milling Complex: The Preferred Alternative alignment is north of the Holden Smelting and Milling Complex property. The SHPO and HPC will review and approve the

landscaping and LRT overhead wire design in the vicinity of the Holden Smelting and Milling Complex.

Colorado Midland Railroad: Efforts to minimize harm to this resource include designing the Preferred Alternative with the least possible right-of-way width for the new State Highway 82.

734 W Main Street: CDOT commits to a photographic recordation of this locally designated historic resource if adverse effects cannot be avoided. Efforts to minimize harm to this resource include designing the Preferred Alternative with the least possible right-of-way width where possible.

Smith/Elisha House: The SHPO and HPC will review and approve the landscaping and LRT overhead wire design in the vicinity of the Smith/Elisha House. Efforts to minimize harm to this resource include designing the Preferred Alternative with the least possible right-of-way width where possible.

Thomas Hynes House: The SHPO and HPC will review and approve the landscaping and LRT overhead wire design in the vicinity of the Thomas Hynes House. Efforts to minimize harm to this resource include designing the Preferred Alternative with the least possible right-of-way width where possible.

Berger Cabin: Efforts will be taken to avoid the Berger Cabin in the Preferred Alternative. After consultation with the SHPO, the Berger Cabin may be moved away from the Preferred Alternative alignment, but remain on the existing property. The SHPO and HPC will review and approve the landscaping and LRT overhead wire design in the vicinity of the Berger Cabin.

#### **M. Archaeological Resources**

The Preferred Alternative has been compared to alignments studied previously by the CDOT staff archaeologist. If any inconsistencies between the previous survey and the final alignment become evident, on-the-ground reconnaissance will be conducted as necessary. The reconnaissance will document that the final highway alignment has been adequately evaluated and that no archaeological resources determined to be significant by the SHPO will be adversely affected. Should any evidence of archaeological resources be discovered during construction, the work will be stopped in that vicinity until the CDOT staff archaeologist and the SHPO representative fully evaluate the importance of the resources. A historic archeological inventory will be conducted on the Holden Property and in the vicinity of the Castle Creek Bridge prior to construction.

#### **N. Paleontological Resources**

If any paleontological resources are uncovered along the alignment corridor during construction, work in the immediate vicinity will cease. The CDOT staff paleontologist will be notified, and the material will be evaluated by a qualified paleontologist and coordinated with the SHPO.

#### **O. Section 4(f) Resources**

A discussion of mitigation measures for impacts to Section 4(f) resources is included in the discussion on Least Harm Alternatives. These measures are adopted as part of this decision.

### **P. Farmlands**

There are no prime and unique farmlands, valued agricultural lands, or farmlands of statewide significance in the State Highway 82 Entrance to Aspen study area. Existing irrigation systems impacted due to highway construction will be relocated and replaced.

### **Q. Noise and Vibration**

Residences and businesses in the downtown area will be impacted by noise when the LRT warning horn is used. This may be mitigated by using a quieter warning horn, or replacing the horn with flashing lights. A noise barrier has been modeled in the vicinity of the east landing of the Castle Creek Bridge to the intersection of 7th Street and Main Street. During final design, a noise analysis will be conducted. Any form of noise barrier will be approved by the area residents or business owners prior to construction.

Residences and businesses along the project corridor may be subject to construction noise. Construction noise will vary depending on the activities involved. The noise is anticipated to exceed 90 dBA for short durations in some instances. Two measures that will be taken to minimize the construction noise impacts include restricting noisy construction to the daylight hours and requiring appropriate/good condition mufflers on all equipment. These measures will eliminate construction noise during sensitive nighttime and early morning hours, and minimize it at other times.

No vibration impacts are created as a result of the Preferred Alternative and no vibration mitigation is necessary.

### **R. Visual**

Visual mitigation measures will include:

- A cut and cover tunnel across the Marolt-Thomas Property.
- A minimum-width landscaped median to visually separate the roadway lanes and lessen the feeling of an asphalt corridor.
- Revegetation of all disturbed areas with natural species to reduce soil erosion and minimize color contrasts caused by exposed soil surfaces.
- Adjusting the final roadway layout to save existing large trees and other significant groupings of vegetation.
- Creating slopes which approximately match the existing slopes.
- Using building materials which approximate the natural tones and textures of the area being traversed.
- Adjusting the alignment to provide enhanced views and vistas for highway users to minimize the effects of unavoidable impacts elsewhere.
- Using aesthetically pleasing poles, station designs, and embedded track pavement surfacing to reflect and enhance the landforms and character of the area where the LRT system is located.
- Providing landscaped or grass-covered sideslopes and medians where possible within the LRT right-of-way to soften the visual impact of the LRT tracks.

These mitigation measures will directly benefit the design quality of the Preferred Alternative. In addition to increased design quality through enhancement of the natural setting, sensitive roadway design and detailing could also enhance project design quality. Horizontal curvature and vertical profiles can be adjusted to provide visual interest for the highway user. Significant sections of retaining walls may be

enhanced by the wall layout, texture, color and vertical profile; this may integrate with the landscape or accent unique natural or historic features, as well as building types and features within the project area.

### **S. Hazardous Waste**

Further evaluation of potential hazardous waste sites will continue prior to property acquisition and during final highway design, along with coordination with the Environmental Protection Agency (EPA), Colorado Department of Public Health and Environment (CDPHE), CDOT, and local agencies. The Preferred Alternative avoids potentially contaminated areas whenever practical. However, where avoidance is not feasible, a detailed site investigation (DSI) will be conducted. Necessary cleanup plans will be coordinated with appropriate agencies and landowners.

The inclusion of environmental specifications in the construction bid package (such as Section 252 Fugitive Petroleum Product Management) may be necessary based on existing preliminary site investigation (PSI) data or based on any future investigative activities.

Partial acquisition at the Pitkin County Airport will require underground storage tank (UST) closure, with soil and/or groundwater remediation, if necessary. Acquisition of right-of-way at the Holden Smelting and Milling Complex requires a more comprehensive study of soil lead (Pb) and arsenic values and remediation if necessary.

### **T. Construction**

During the construction of the Preferred Alternative, CDOT will utilize appropriate traffic management techniques to minimize delays and inconvenience to the traveling public. This may be done by phased construction of the transportation improvements and by restricting the timing of construction activities and limiting traffic stoppages to off-peak traffic hours. Whenever feasible, provisions will be included to minimize the effects on Roaring Fork Transit Agency (RFTA) buses. Construction delays will be limited to 20 to 25 minutes duration whenever possible.

### **U. Project Sequencing**

CDOT will work cooperatively with local government to construct the following highway components of the Preferred Alternative as soon as funding, design, and right-of-way acquisition allows:

- Maroon Creek Bridge
- Maroon/Castle Creek Road and State Highway 82 Intersection
- Airport Business Center to Buttermilk Ski Area, including realignment of Owl Creek Road and the signalized, channelized intersection at State Highway 82 and Buttermilk

## **VII. MONITORING AND ENFORCEMENT**

Both FHWA and CDOT will monitor this project to ensure that mitigation measures contained in this ROD (and subsequent permits) are implemented. CDOT has made a strong commitment to provide continuity of staff through a project management approach that integrates planning, design, and construction.

Copies of this ROD will be provided to both responsible public agencies and CDOT project personnel. Commitments within this document will be implemented through the inclusion of these measures in the construction plans for projects in this area. CDOT will maintain information on the implementation to

inform the public or interested commenting agencies, upon request, of the progress in carrying out the adopted mitigation measures.

The decision-making process will continue during preliminary and final design. In partnership with local governments, the citizen involvement process will include a significant public outreach program, including the holding of Design Public Hearings where plans will be presented and comments received. As the design process continues, more detailed design decisions and more specific commitments will be made to minimize both environmental impacts and impacts to adjacent land owners.

### VIII. COMMENTS ON FINAL EIS

A 30-day public comment period on the FEIS ended on August 31, 1997. The comment period was extended twice by 30 days. Ultimately, the end of the comment period was November 6, 1997. Over 900 letters of comment were received.

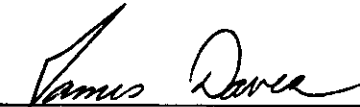
These letters, with responses to the comments, are included in this document as Appendix C.

Substantive comments have been addressed in this Record of Decision.

### IX. CONCLUSION

Based on information contained in the FEIS and Section 4(f) evaluation, results of the project reevaluation and this Record of Decision, I conclude that the decision reached on the State Highway 82, Entrance to Aspen area project is in the best overall public interest, uses all practicable means to restore and enhance the quality of the human environment and avoids or minimizes any possible adverse effects. Based on considerations identified in the Section 4(f) evaluation, I also conclude that there are no feasible and prudent alternatives to the use of Section 4(f) protected lands and that the proposed action includes all possible planning to minimize harm to the identified Section 4(f) properties resulting from such use.

8/3/98  
Date

  
James Daves  
Division Administrator, FHWA