

3.14 Section 4(f) Discussion

3.14.1 What is Section 4(f)?

Section 4(f) refers to a portion of a law that only applies to actions of United States (U.S.) Department of Transportation agencies. It protects the following resources:

- Publicly-owned park and recreation areas of national, state, or local significance, both existing and planned.
- Historic sites either on the National Register of Historic Places, eligible to be on the National Register of Historic Places, or in some cases, of state or local significance.
- Publicly-owned wildlife and waterfowl refuges of national, state, or local significance.

These protected resources are referred to as “Section 4(f) properties.”

The law requires that before a U.S. Department of Transportation agency may use all or a portion of any of these Section 4(f) properties, the agency must prove that there is no feasible and prudent alternative to using any of these resources, and that the agency has included all possible planning to minimize harm to the resources.

Section 4(f) “Use”

As defined in 23 Code of Federal Regulations, part 774.17, the “use” of a protected Section 4(f) property occurs when

- Land is permanently incorporated into a transportation facility;
- There is a temporary occupancy of land that is adverse in terms of the statute’s preservation purpose; or
- There is no permanent incorporation of land from a Section 4(f) property, but the project’s proximity impacts are so severe that the protected activities, features, or attributes that qualify the property for protection are substantially impaired (i.e., “constructive use”).

These uses and how they apply to this discussion are further defined below.

Direct Use

A direct use of a Section 4(f) property takes place when there is a direct physical impact to the resource or the land from the resource is obtained for a transportation project. A direct use occurs when land is permanently incorporated into a transportation facility. Land is considered permanently incorporated into a transportation project when it has been purchased as right-of-way or a permanent easement, or similar permanent usage agreement has been made. Temporary uses are direct uses that occur when there is a brief use of a Section 4(f) property considered adverse in terms of the preservationist purposes of the

What is Section 4(f)?

Section 4(f) of the U.S. Department of Transportation Act of 1966, as amended, and codified in 49 United States Code § 303, declares that “[i]t is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites.”

Section 4(f) specifies that:

“The Administration may not approve the use of a Section 4(f) property unless it makes a determination that:

- 1) there is no feasible and prudent avoidance alternative to the use of land from the property; and*
- 2) the action includes all possible planning to minimize harm to the property resulting from such use.”*

This Section 4(f) discussion has been prepared in accordance with the joint Federal Highway Administration (FHWA)/Federal Transit Administration regulations for Section 4(f) compliance codified at 23 Code of Federal Regulations §774, et seq. Additional guidance has been obtained from the FHWA Technical Advisory T 6640.8A (1987) and the revised FHWA Section 4(f) Policy Paper (2005).

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Section 4(f) statute. A *de minimis* use is also direct but is so minor that it results in no adverse effect to an historic property in accordance with 36 Code of Federal Regulations 800, and does not adversely affect the features, attributes, or activities that qualify parks, recreation, and wildlife and waterfowl refuges for protection under Section 4(f).

Direct uses in this evaluation are considered to be “potential” uses because this Section 4(f) discussion is based on broad-scale information related to a first tier Environmental Impact Statement (EIS). The information is considered to be broad in this study because it addresses location, mode, and capacity improvements for the I-70 Mountain Corridor, but does not include design details for projects in specific areas or identify specific uses of each Section 4(f) property. Direct uses are treated as “potential uses” for all identified Section 4(f) properties in this evaluation.

What does Section 4(f) cover at the first tier?

A Section 4(f) discussion is based on the information available. A first tier level of detail may not have the information available to make final approvals on uses of protected resources. Therefore, this discussion focuses on “potential” uses of these properties. Final decisions on specific location and design will be made in Tier 2 processes as more detailed information is available and specific properties can be evaluated.

Constructive Use

Constructive use occurs when the transportation project does not incorporate land from a Section 4(f) property, but the project’s proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired. This type of use is not determined in this discussion because the information needed to make this determination is not available. For example, as described in the Section 106 Programmatic Agreement, effects to historic properties and whether they are adverse will be undertaken during Tier 2 processes. Because this information is not available until Tier 2 processes are undertaken, the indirect impacts and mitigation for specific Section 4(f) properties are not known until that time.

Although constructive use determinations are not part of this discussion, the Tier 1 analysis considers potential uses (as expressed through noise, visual, or access impacts) by adding an additional buffer of 15 feet to alternative footprints. Tier 2 processes will include detailed noise analysis, visual impact analysis, and access restrictions, if any, that could result in constructive uses. Any use will be evaluated during Tier 2 processes once sufficient design and operational information about improvements is developed. The process to identify constructive uses during Tier 2 processes, as described further in **Section 3.14.13**, recognizes that the 30-foot buffer zone does not limit the Section 4(f) evaluation at Tier 2.

3.14.2 What process was followed for this first tier Section 4(f) Discussion?

This Section 4(f) discussion addresses potential impacts of the proposed action and other alternatives to Section 4(f) properties. It describes whether there are prudent and feasible avoidance alternatives based on location, mode, and capacity. It includes the number and type of Section 4(f) properties potentially used by each alternative, explains the constraints and opportunities to avoid or minimize impacts to the 4(f) properties and compares the alternatives. It includes all possible planning to minimize harm, identifies what has been done to consult with the Officials with Jurisdiction, and describes what will be done during Tier 2 processes.

What are considered to be Section 4(f) properties in this discussion?

As described in **Section 3.14.1**, Section 4(f) properties include significant publicly-owned parks and recreation areas, historic sites, and publicly-owned wildlife and waterfowl refuges. This Section 4(f) discussion broadly considers what is included as a Section 4(f) property because the exact status of the resource is not determined at this first tier. This first tier takes an inclusive approach to resources treated as Section 4(f) properties and includes:

- Historic properties with unknown eligibility
- All archaeological properties
- Historic properties already included in the National Register of Historic Places
- Nationally significant Interstate highway features
- Properties Officially determined eligible for inclusion in the National Register of Historic Places
- Existing parks with assumed boundaries taken from Geographic Information System mapping
- Future parks with assumed boundaries taken from local jurisdiction planning materials
- Existing and future trails
- Existing open space areas that are used as parks or recreation areas or wildlife refuges
- Wildlife and waterfowl refuge properties with assumed boundaries

At the first tier, based on the data that is available, the exact status of all of these potential Section 4(f) properties is unknown. It will be fully determined during Tier 2 processes. An inclusive approach is taken at this first tier; Tier 2 processes will specifically evaluate properties to determine if resources meet Section 4(f) definitions.

Why are Section 4(f) uses referred to as potential Section 4(f) uses?

The use of the term “potential” Section 4(f) uses acknowledges the broad level of analysis at this first tier. As with “potential” Section 4(f) properties, the term “potential” uses reflects an inclusive approach at this level. Detailed design information is not available to fully characterize the type of use or the extent or size of the use. No attempt is made to differentiate potential permanent uses from potential temporary or constructive uses or occupancies. No attempt is made to identify uses that may be classified as *de minimis* impacts. For these reasons, the term “potential” Section 4(f) uses is used in this Section 4(f) discussion.

Is FHWA making a Section 4(f) approval for use of Section 4(f) properties?

No, FHWA has not approved the use of any property. The Federal Highway Administration cannot make a Section 4(f) approval at Tier 1 because the information available for this broad Tier 1 decision is not detailed enough to support an approval. However, the Tier 1 information shows that the Preferred Alternative appears to result in the least harm of Section 4(f) resources among alternatives that meet the 2050 purpose and need. Although single mode alternatives and the Minimal Action Alternative may use fewer Section 4(f) properties, they do not meet the 2050 purpose and need. In addition, given the adaptive nature of the Preferred Alternative, it offers the greatest opportunities to minimize impacts to Section 4(f) resources. The discussion below provides supporting detail for these conclusions.

For this Section 4(f) discussion, prudent and feasible avoidance alternatives are evaluated, potential uses are identified, the alternatives are compared, and Officials with Jurisdiction have been consulted. Additionally, the Section 4(f) discussion includes all possible planning to minimize harm to the extent that the level of detail available for this Programmatic EIS allows. Based on this discussion, there are no prudent and feasible alternatives at the Corridor level that avoid use of Section 4(f) properties. However, the Advanced Guideway System component of the Preferred Alternative represents a clear opportunity to mitigate some of these potential uses, because of it is capable of being elevated, creating a narrower footprint, and has the ability to move from side to side or in the median of the Corridor to avoid Section 4(f) properties.

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How are potential uses identified?

Potential uses are identified by overlaying a project footprint of each alternative on a Geographic Information System (GIS) containing locations and/or boundaries of historic properties, parks, recreation areas, and wildlife and waterfowl refuges. The project footprint includes the physical footprint of the alternatives plus an additional 30 feet on each side. The 30 feet includes a 15-foot construction disturbance zone and an additional 15-foot sensitivity zone. The construction disturbance zone is the expected limit of cuts into slopes, fills of material, toes of slopes, retaining walls, and other highway improvements related to construction of the project. If any portion of an identified Section 4(f) property intersected with the project footprint of an alternative, that property was treated as having a potential use. Because the exact alignment of the alternatives is not known in this first tier study, use of Section 4(f) properties for the selected alternative will be refined during Tier 2 processes.

All of the inventory information used to identify potential Section 4(f) properties was updated in 2009 and 2010.

3.14.3 What is the project's purpose and need?

The purpose for the transportation improvements in the Corridor is to increase capacity, improve accessibility and mobility, and decrease congestion for projected travel demand to destinations along the Corridor as well as for interstate travel. Alternatives must be developed in a manner that also provides for and accommodates environmental sensitivity, respect for community values, safety, and ability to implement. More details are contained in **Chapter 1, Purpose and Need** of this document.

3.14.4 What alternatives are being considered in the PEIS?

Chapter 2, Summary and Comparison of Alternatives of this document describes the No Action Alternative and the 21 Action Alternatives including the Preferred Alternative being considered under the National Environmental Policy Act (NEPA). These alternatives are fully evaluated in **Chapter 3, Affected Environment and Environmental Consequences** and **Chapter 4, Cumulative Impacts Analysis** of this document. Although this Section 4(f) discussion focuses on the alternatives that meet the purpose and need for the project, as described in **Section 3.14.7** and **Section 2.8 “How do the Alternatives Compare?”**, the following description of alternatives includes all 22 alternatives to be consistent with the other chapters of this document.

No Action Alternative

The No Action Alternative consists of ongoing highway maintenance and projects that have a committed source of funding within the fiscally constrained plan.

Minimal Action Alternative

The Minimal Action Alternative includes localized highway improvements (interchange modifications, auxiliary lanes, and curve safety modifications) along with Corridorwide Transportation System Management, Transportation Demand Management, and Intelligent Transportation System programs, in addition to high frequency bus service in mixed traffic and sediment control programs.

Single Mode Alternatives

The single mode alternatives considered in the NEPA process and evaluated in this Section 4(f) evaluation include:

- **Rail with Intermountain Connection Alternative**—The Rail with Intermountain Connection Alternative would provide rail transit service between the Eagle County Regional Airport and the Regional Transportation District's West Corridor Jeffco Government Center light rail station. Between Vail and the Jeffco Government Center station, the rail would be primarily at-grade

running adjacent to the I-70 highway. The segment between Vail and the Eagle County Airport would be constructed within the existing Union Pacific Railroad right-of-way. New track would be constructed between Vail and Minturn to complete the connection between the diesel and electric trains. This alternative includes elements of the Minimal Action Alternative, including auxiliary lane improvements at eastbound Eisenhower-Johnson Memorial Tunnels to Herman Gulch and westbound Downieville to Empire and all other Minimal Action Alternative elements except for curve safety modifications at Dowd Canyon, buses in mixed traffic, and other auxiliary lane improvements.

- **Advanced Guideway System Alternative**—The Advanced Guideway System Alternative would provide rail transit service between the Eagle County Regional Airport and the Jeffco Government Center station with a 24-foot-wide guideway system that is capable of being fully elevated throughout its length. The specific technology for the Advanced Guideway System has not been defined but is intended to represent a modern, “state of the art” transit system. For the purposes of analysis in this document, the advanced guideway technology is assumed to be an urban magnetic levitation (maglev) transit system. However, the actual technology would be identified during Tier 2 processes. This alternative also includes the same Minimal Action elements as described previously for the Rail with Intermountain Connection Alternative.
- **Dual-Mode Bus in Guideway Alternative**—This alternative includes a guideway located in the median of the I-70 highway with dual-mode buses providing transit service between the Eagle County Regional Airport and the Jeffco Government Center light rail station. This guideway would be 24 feet wide with 3-foot-high guiding barriers and would accommodate bidirectional travel. The barriers direct the movement of the bus and separate the guideway from general purpose traffic lanes. While traveling in the guideway, buses would use guidewheels to provide steering control, thus permitting a narrow guideway and providing safer operations. The buses use electric power in the guideway and diesel power when outside the guideway in general purpose lanes. This alternative also includes the same Minimal Action Alternative elements as described previously for the Rail with Intermountain Connection Alternative.
- **Diesel Bus in Guideway Alternative**—This includes all components of the Bus in Guideway (Dual Mode) Alternative except that the buses use diesel power at all times.
- **Six-Lane Highway 55 miles per hour (mph) Alternative**—This alternative includes six-lane highway widening in two locations: Dowd Canyon and the Eisenhower- Johnson Memorial Tunnels to Floyd Hill. It also includes auxiliary lane improvements in four locations: eastbound Avon to Post Boulevard, both directions on the west side of Vail Pass, eastbound Frisco to Silverthorne, and westbound Morrison to Chief Hosa. The alternative also includes all Minimal Action Alternative elements except for buses in mixed traffic and other auxiliary lane improvements.
- **Six-Lane Highway 65 mph Alternative**—This alternative is similar to the Six-lane Highway 55 mph Alternative; it includes the same locations for six-lane widening and all the Minimal Action Alternative elements except that the curve safety modification at Dowd Canyon is replaced by tunnels. The 65 mph design speed improves mobility better and addresses safety deficiencies in key locations such as Dowd Canyon and the Twin Tunnels. Both the 55 mph and the 65 mph design speed options are augmented by curve safety improvements, but the 65 mph design speed constructs tunnels in two of the locations: Dowd Canyon and Floyd Hill/Hidden Valley.
- **Reversible Lanes Alternative**—This alternative is a reversible lane facility accommodating high occupancy vehicles and high occupancy toll lanes. It changes traffic flow directions as needed to accommodate peak traffic demands. It includes two additional reversible traffic lanes from the west side of the Eisenhower-Johnson Memorial Tunnels to just east of Floyd Hill. From the Eisenhower-Johnson Memorial Tunnels to US 6, two lanes are built with one lane continuing to

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US 6 and the other lane to the east side of Floyd Hill. It also includes one additional lane in each direction at Dowd Canyon. This alternative includes the same Minimal Action Alternative Elements as the Six-Lane Highway 55 mph Alternative.

Combination Alternatives

- **Combination Rail with Intermountain Connection and Six-Lane Highway Alternative**—This includes only one of the auxiliary lane improvements (from Morrison to Chief Hosa westbound) but all of the rest of the components of the Minimal Action Alternative, the 55 mph six-lane highway widening between Floyd Hill and Eisenhower-Johnson Memorial Tunnels, and the Rail with Intermountain Connection transit components.
- **Combination Advanced Guideway System and Six-Lane Highway Alternative**—This includes the same Minimal Action Alternative elements as the Combination Rail with Intermountain Connection and Six-Lane Highway Alternative, the 55 mph six-lane highway widening between Floyd Hill and Eisenhower-Johnson Memorial Tunnels, and the Advanced Guideway System transit components.
- **Combination Bus in Guideway (Dual Mode) and Six-Lane Highway Alternative**—This includes the same Minimal Action Alternative components as the alternative in the first bullet above, the 55 mph six-lane highway widening between Floyd Hill and Eisenhower-Johnson Memorial Tunnels, and the bus in guideway transit components. The bus technology for this alternative is dual mode.
- **Combination Bus in Guideway (Diesel) and Six-Lane Highway Alternative**—This includes the same Minimal Action Alternative components as the alternative in the first bullet above, the 55 mph six-lane highway widening between Floyd Hill and Eisenhower-Johnson Memorial Tunnels, and the bus in guideway transit components. The bus technology for this alternative is diesel.
- **Combination Rail & Intermountain Connection and Preservation of Six-Lane Highway Alternative**—This alternative includes the Rail with Intermountain Connection Alternative and preserves space to construct the Six-Lane Highway 55 mph Alternative at a later point.
- **Combination Advanced Guideway System and Preservation of Six-Lane Highway Alternative**—This alternative includes the Advanced Guideway System Alternative and preserves space to construct the Six-Lane Highway 55 mph Alternative at a later point.
- **Combination Bus in Guideway (Dual Mode) and Preservation of Six-Lane Highway Alternative**—This alternative includes the Bus in Guideway (Dual Mode) Alternative and preserves space to construct the Six-Lane Highway 55mph Alternative at a later point.
- **Combination Bus in Guideway (Diesel) and Preservation of Six-Lane Highway Alternative**—This alternative includes the Bus in Guideway (Diesel) Alternative and preserves space to construct the Six-Lane Highway 55 mph Alternative at a later point.
- **Combination Preservation of Rail with Intermountain Connection and Six-Lane Highway Alternative**—This alternative includes the Six-Lane Highway 55 mph Alternative and preserves space to construct the Rail with Intermountain Connection Alternative at a later point.
- **Combination Preservation of Advanced Guideway System and Six-Lane Highway Alternative**—This alternative includes the Six-Lane Highway 55 mph Alternative and preserves space to construct the Advanced Guideway System Alternative at a later point.
- **Combination Preservation of Bus in Guideway (Dual Mode) and Six-Lane Highway Alternative**—This alternative includes the Six-Lane Highway 55 mph Alternative and preserves space to construct the Bus in Guideway (Dual Mode) Alternative at a later point.

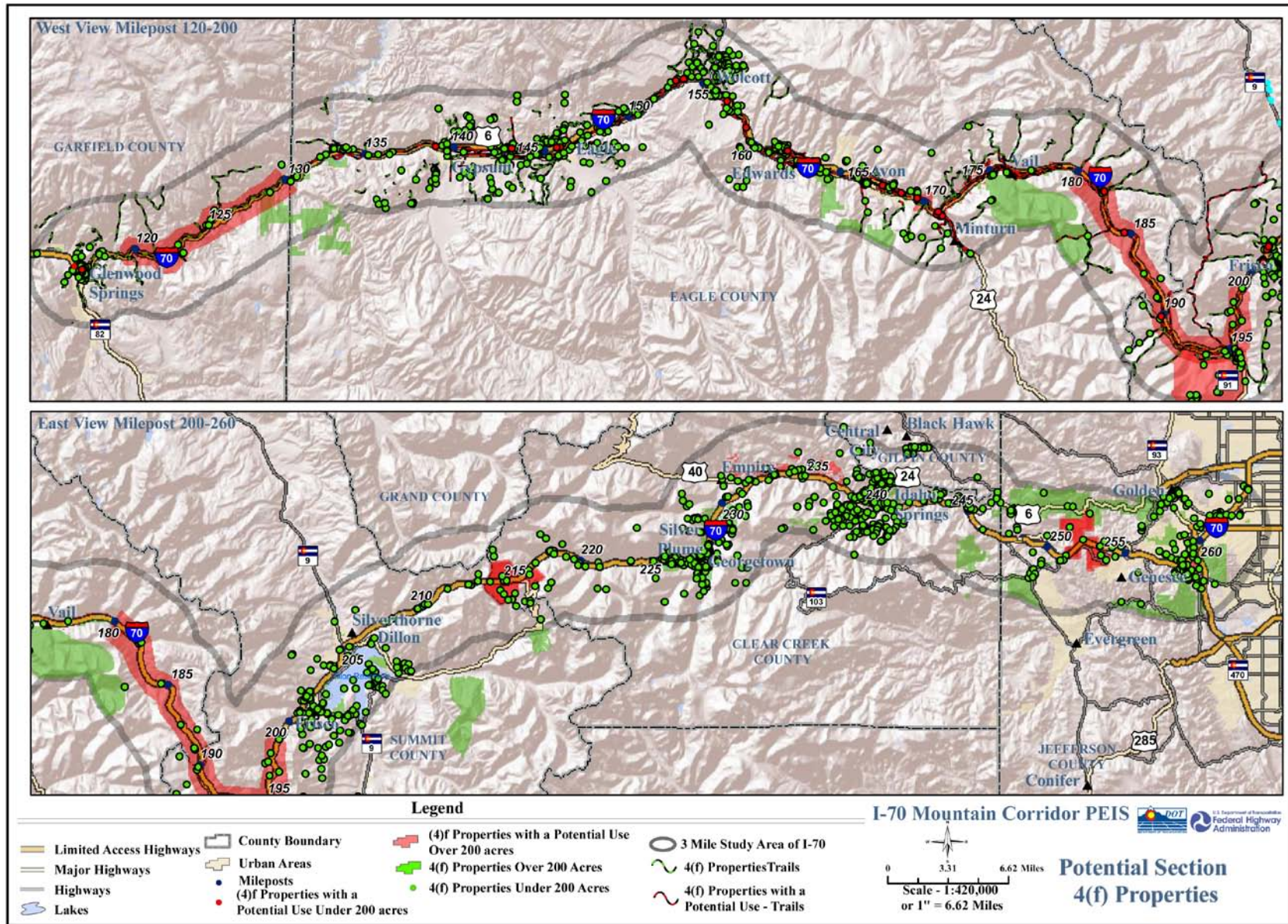
- **Combination Preservation of Bus in Guideway (Diesel) and Six-Lane Highway Alternative**—This alternative includes the Six-Lane Highway 55 mph Alternative and preserves space to construct the Bus in Guideway (Diesel) Alternative at a later point.
- **Preferred Alternative**—The Preferred Alternative provides for a range of improvements. The Minimum Program of Improvements includes non-infrastructure components, the Advanced Guideway System, specific highway improvements, and other highway improvements. The highway improvements for the Minimum Program generally include six-lane capacity between Floyd Hill through the Twin Tunnels and in the Dowd Canyon area, 6 locations of auxiliary lane improvements, 26 interchange modifications, new tunnel bores at the Twin Tunnels and Eisenhower-Johnson Memorial Tunnels, and other localized highway improvements. The Minimum Program of Improvements does not meet the 2050 purpose and need, and additional highway capacity is required to meet long-term needs. To be able to meet the 2050 travel demand, based on the information available today, all of the improvements in the Minimum Program are needed along with six-lane capacity from the Eisenhower-Johnson Memorial Tunnels to the Twin Tunnels, four additional interchange improvements in the Idaho Springs area, and one additional curve safety modification at Fall River Road in Clear Creek County. The Maximum Program of Improvements was developed with the condition that adding additional highway capacity requires consideration of “triggers” prior to taking action. Based on information available today, for the Preferred Alternative to be able to meet the 2050 purpose and need, all of the improvements identified in the Maximum Program of Improvements are needed.

3.14.5 What are the Section 4(f) properties that are potentially used by the alternatives advanced in the NEPA process?

Properties protected under Section 4(f) are categorized as historic properties, parks, recreation areas, and wildlife and waterfowl refuges. A summary by property type is provided below. **Figure 3.14-1** shows potential use of Section 4(f) properties in the Corridor.

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Figure 3.14-1. Potential Section 4(f) Properties



Historic Properties

Historic resources and resources that may be historic were identified through a review of existing literature, a file and records search, a “windshield” survey, and input from local communities. Section 4(f) applies to historic sites that are listed in, or eligible for listing in, the National Register of Historic Places and may include resources that are of local, state, or national significance as defined in 23 Code of Federal Regulations 774.17. Historic properties listed in or eligible for listing in the National Register of Historic Places and properties listed on the State Register of Historic Places were identified as part of this effort. Because this evaluation is based on information from a first tier EIS, properties with unknown eligibility status are treated as eligible to the National Register of Historic Places and therefore are identified as potential Section 4(f) properties. Additionally, Section 4(f) was applied to all archaeological sites that are assumed to be listed on or eligible for inclusion on the National Register of Historic Places. Overall, the properties include historic districts, archaeological and historic archaeological sites, linear resources, bridge structures, architectural properties, town sites, a ski area, as well as sites identified by local communities that have not been evaluated in the field and documented. For more information on these properties, please see the *I-70 Mountain Corridor PEIS Section 4(f) Evaluation Technical Report* (CDOT, March 2011) and the *I-70 Mountain Corridor PEIS Historic Properties and Native American Consultation Technical Report* (CDOT, March 2011).

There are 75 historic properties identified with the potential for use. Seven of these properties are listed in the National Register of Historic Places and five properties have been determined to be nationally significant features of the Interstate Highway System in Colorado. Of the remaining properties, 10 are eligible for the National Register of Historic Places, and 47 other properties are treated as eligible for the National Register of Historic Places. (One property listed in the State Register of Historic Places (the Charlie Tayler Waterwheel) is not eligible for the National Register of Historic Places and, therefore, is not an historic Section 4(f) resource. This property is, however, also associated with a park and is evaluated as a Section 4(f) recreational resource and is also included in the discussion of historic properties in **Section 3.13, Historic Properties and Native American Consultation.**)

The following section highlights examples of the known historic properties in the I-70 Mountain Corridor identified as potential Section 4(f) properties during the first tier analysis. This discussion provides additional information about the nature of some of the known historic properties and shows the different property types located along the Corridor.

Georgetown-Silver Plume National Historic Landmark District (see **Figure 3.14-2**)—This property is located in Clear Creek County. It was listed on the National Register of Historic Places and designated a National Historic Landmark in 1966. The district includes the entire commercial and residential areas of Georgetown and Silver Plume, and the Georgetown Loop Railroad that connects them. The district boundary also encompasses the nearby mountainsides that contribute to a larger mining landscape. It is significant under National Register of Historic Places Criterion A for its association with the development of gold and silver mining in the region. The property is also significant under National Register of Historic Places Criterion C for its intact examples of Victorian architecture in Georgetown and the simpler wood frame architecture of Silver Plume.

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Figure 3.14-2. Georgetown-Silver Plume National Historic Landmark District



Idaho Springs Downtown Commercial Historic District—The district is located in Idaho Springs. The district was listed in the National Register of Historic Places in 1984. It is significant under National Register of Historic Places Criterion A as the site of the first major discovery of placer gold in Colorado and as an important milling and supply center for mining, which contributed to the settlement of Colorado. Under Criterion C the district is important for its examples of Victorian architecture.

Eisenhower-Johnson Memorial Tunnels—These twin tunnels extend 1.7 miles through the Continental Divide and connect the Clear Creek Valley to the east with Straight Creek to the west. They extend through both Clear Creek and Summit counties. The east portals are located along the I-70 highway near the Loveland Ski Area. The west portals open west of the Divide as the I-70 highway extends into Silverthorne and Dillon. This property was determined officially eligible for the National Register of Historic Places in March 2006. Opened for traffic in 1973 (Eisenhower Tunnel) and 1979 (Johnson Tunnel), the property is significant under National Register of Historic Places Criterion C for engineering significance and Criterion Consideration G as a property that achieved significance within the past 50 years. The property is also on FHWA's *Final List of Nationally and Exceptionally Significant Features of the Federal Interstate Highway System*.

Glenwood Springs Viaduct—Built in 1953, the Glenwood Springs Viaduct carries SH 82 over the Colorado River into Glenwood Springs. The bridge is a steel plate deck girder with concrete abutments and spill-through piers. It features standard Colorado Department of Highways steel baluster guardrails. The bridge was determined eligible for the National Register of Historic Places as part of the 2000 Colorado Statewide Historic Bridge Inventory. It is significant under National Register of Historic Places Criterion A for its role in regional traffic and under Criterion C as a long-span example of its structural type.

Parks, Recreation Areas, and Wildlife and Waterfowl Refuges

Parks, recreation areas, and wildlife and waterfowl refuges were identified through searches of community maps, local planning documents, and extensive scoping with local jurisdictions and land management agencies. These properties are only considered to be Section 4(f) properties if they are publicly owned, the major purposes and functions are as a park, recreation, or refuge, and there is a potential use of the land. All park, recreation, and refuge properties that met these criteria were treated as being significant at the first tier in accordance with 23 Code of Federal Regulations 774.11(c) and are therefore considered Section 4(f) properties for Tier 1. The Tier 1 approach has been as inclusive as

possible so as not to miss any potential uses of potential Section 4(f) resources. As a result, more detailed analysis during Tier 2 processes may result in a determination that some properties identified as potential Section 4(f) properties at Tier 1 are not in fact Section 4(f) properties. These changes are unlikely to affect the relative comparison of Section 4(f) use among the Action Alternatives because of the similarity in footprint among many of the alternatives.

There are 92 individual park, recreation, or wildlife properties identified within the project footprint with the potential for use by the alternatives under consideration. Of these properties, 68 were identified as properties that already exist while the remainder were proposed through approved planning documents and/or funded for construction. For more information on these properties, please see the *I-70 Mountain Corridor PEIS Section 4(f) Evaluation Technical Report* (CDOT, March 2011) and the *I-70 Mountain Corridor PEIS Recreation Resources Technical Report* (CDOT, March 2011).

The properties are broken down into the following categories:

- Trails or associated facilities: 48 (30 existing)
- Nature preserve/wildlife area/open space (managed for wildlife): 5 (all existing)
- Park or recreation area, open space (managed for recreation): 22 (15 existing)
- River access points: 17 (all existing)

The following discussion highlights several representative parks, recreation areas, and wildlife refuges identified as potential Section 4(f) properties during this evaluation.

The Clear Creek County Greenway Plan

Within the Clear Creek County portion of the Corridor nearly all of the properties identified are various elements of the *Clear Creek County Greenway Plan* (Clear Creek County Open Space Commission, 2005). Jurisdiction over the properties falls among the county and the cities of Georgetown, Idaho Springs, and Silver Plume. The plan describes a system of parks, open space, recreation facilities, and other recreational opportunities that follow Clear Creek from the Jefferson County line to the Continental Divide. Certain elements of the Plan have been developed, while many others are proposed.

The Clear Creek County Greenway Plan states:

The development of a greenway for Clear Creek County's residents and visitors has become a priority of the Clear Creek County Open Space Program, and a focal point of its 2003 Open Space Plan. Running alongside Clear Creek between Jefferson County and the Continental Divide, a greenway is envisioned to serve as the backbone of the County. It will tie together communities with a string of parks, recreational facilities, open space and commercial recreational opportunities.

Much of the Greenway Plan trail and its facilities exist on, or are proposed to exist on, CDOT right-of-way or private lands. Section 4(f) protection is assumed for these properties at this Tier 1 level on the basis of maintaining the continuity of the physical trail and facilities and the overall concept of the Greenway Plan, and to comply with the inclusive approach taken to analyze properties for potential Section 4(f) protection. Properties identified include ten separate bridges, eight trail segments, and four trailheads that are either existing or proposed as elements of the Clear Creek Greenway Trail. The Greenway Plan also incorporates the *River Access Plan* from the *2030 Clear Creek County Master Plan* (Clear Creek County, 2004) consisting of seventeen identified river access points within the project footprint. Additionally, five separate open space parcels are identified as elements of the Greenway Plan. **Figure 3.14-3** highlights recreation activities in the Clear Creek County Greenway.

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Figure 3.14-3. Recreation Activities in Clear Creek County Greenway



Genesee Park

Located in western Jefferson County, Genesee Denver Mountain Park is the largest of the Denver Mountain Parks. It was the first to be established, with portions of the Park acquired in 1912 and a second portion acquired in 1937. Recreation activities include picnicking, hiking, wildlife viewing, and formal park developments such as volleyball and softball fields. Genesee Park is bisected by or directly adjacent to the Corridor for approximately two miles.

National Forest System Lands

Many of the lands adjacent to the I-70 highway within the study area are under the ownership of the federal government and managed by the U.S. Department of Agriculture. The White River National Forest is between Glenwood Springs and Dotsero and between Edwards and Vail Pass. The Arapaho and Roosevelt National Forests are located from Vail Pass east to Idaho Springs.

In these National Forests, only lands specifically managed for recreation are considered Section 4(f) properties. The United States Forest Service properties identified as potentially protected by Section 4(f) and located within the project footprint of the alternatives include:

- Loveland and Copper Mountain Ski Areas
- One proposed and six existing trails
- Two trailheads
- One existing park
- One proposed park
- Arapaho and Roosevelt National Forest Visitors Center in Idaho Springs

Wildlife and Waterfowl Refuges Managed by the Colorado Division of Wildlife

Three properties managed by the Colorado Division of Wildlife were identified as potential Section 4(f) properties within the project footprint of the alternatives:

- Gypsum Ponds State Wildlife Area is a 90-acre refuge managed for the benefit of deer and a variety of waterfowl species. This property is located on the south side of the Corridor east of the town of Gypsum in Eagle County. The property is open to the public year round for fishing, hunting, and wildlife observation.
- The Whiskey Creek State Land Board Property is located east of Avon in Eagle County on both side of the I-70 highway. The property is leased by Colorado Division of Wildlife and managed for the protection of wildlife habitat (elk winter range, calving) and hunting and fishing access. The property is open to the public September 1 to February 28 for the hunting of deer, elk, bears, blue grouse, rabbits, and coyotes. There are no other facilities on the property.
- The Vail Underpass Open Space Property is approximately 114 acres managed as critical wildlife habitat. It is the staging area for deer as they prepare to migrate under the highway at the Mud Springs deer underpass. The underpass was the first one built in Colorado and was created for the sole purpose of providing a safe passage for mule deer migration. There are no existing or planned facilities on the property. The property is closed to hunting entirely and is closed from November 1 to June 15 for all uses.

3.14.6 What are the potential uses of the Section 4(f) properties?

This evaluation focuses on the numbers of properties that will be potentially used but does not provide detailed information on the resources, the type of use, or the extent or size of the use. The actual number of Section 4(f) properties identified during Tier 2 processes could be higher or lower. Additional Section 4(f) properties may be identified during Tier 2 processes when intensive-level cultural resource surveys of specific project areas are conducted and when more detailed information is available. Alternatively, as more detailed studies are completed, some of the resources identified in this Section 4(f) may not be determined significant when more information is available, may be avoided, or impacts will be minor enough to be evaluated as *de minimis* in nature.

Potential Use of Section 4(f) Historic Properties by Alternative

Table 3.14-1 summarizes potential uses of historic properties by alternative. Based on the historic and potentially historic properties identified to date, 47 properties could be potentially used by the Minimal Action, the least of all alternatives. The Transit and Highway alternatives potentially use between 50 and 64 properties while the Combination alternatives potentially use 64 to 69 properties. A range of 56 to 66 properties may be used under the Preferred Alternative. Of the Combination alternatives, the Combination Bus Alternatives impact the greatest number of historic and potentially historic properties with a potential use of 69 properties due to their wider footprint. Overall, the single mode alternatives potentially use slightly fewer properties, while the Combination alternatives have a similar to slightly higher potential use of properties than the Preferred Alternative.

This table uses categories for type of historic properties. Definitions for these categories are:

- **National Register of Historic Places-Listed:** Properties listed in the National Register of Historic Places
- **Nationally Significant Interstate Features:** Features of the Interstate Highway System included on the Federal Highway Administration’s “Final List of Nationally and Exceptionally Significant Features of the Federal Interstate Highway System.”
- **Officially Eligible:** Properties that have been determined eligible for inclusion to the National Register of Historic Places in consultation with the State Historic Preservation Officer

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- **Treated as National Register of Historic Places Eligible:** Properties that are included in the Office of Archaeology and Historic Preservation database, were identified through windshield surveys, or suggested by consulting parties but have no official National Register of Historic Places eligibility status or unknown significance. May include archaeological properties, properties of local significance, or architectural properties.

Potential use of the Georgetown-Silver Plume National Historic Landmark District is particularly challenging because the Corridor extends through and bisects the National Historic Landmark boundary. **Figure 3.14-4** highlights the difficulty in avoiding properties protected by Section 4(f) in this area. Two contributing elements of the National Historic Landmark, the Dunderberg Mine and the Mendota Mine, as well as the Toll House are located in the existing Corridor right-of-way. All the Combination alternatives in this area will, at a minimum, potentially use a strip of land from the Georgetown-Silver Plume National Historic Landmark District and the Toll House. Avoidance of these properties may not be possible; however, there may be opportunities for minimization during Tier 2 processes.

Another area with a high density of potential Section 4(f) properties is in Idaho Springs. This area contains the National Register of Historic Places-Listed Idaho Springs Commercial District and numerous other Section 4(f) properties (see **Figure 3.14-5**). Avoiding use of Section 4(f) properties in this area is challenging due to the proximity of the Corridor to these potential properties. Opportunities to minimize impacts to Section 4(f) properties will be evaluated during Tier 2 processes and will include incorporation of I-70 Mountain Corridor Context Sensitive Solutions procedures as well as those defined in the Section 106 Programmatic Agreement.

Two interstate features might be used by all Action Alternatives. These interstate features are the Twin Tunnels and Vail Pass.

Table 3.14-1. Potential for Use of Historic Properties by Alternative

Category	Minimal Action	Transit			Highway			Combination			Preferred Alternative
		Rail	Advanced Guideway System	Bus	55 mph	65 mph	Reverse	Highway Rail	Highway Advanced Guideway System	Highway Bus	
National Register-Listed	2	4	2	3	4	4	4	7	5	6	2 to 5
Nationally Significant Interstate Features	3	3	3	4	4	4	4	4	4	4	4
Officially Eligible	9	8	9	9	9	8	9	9	10	10	9 to 10
Treated as National Register-Eligible	33	37	41	48	37	34	38	44	47	49	40 to 47
Total	47	52	55	64	54	50	55	64	66	69	56 to 66

Notes:

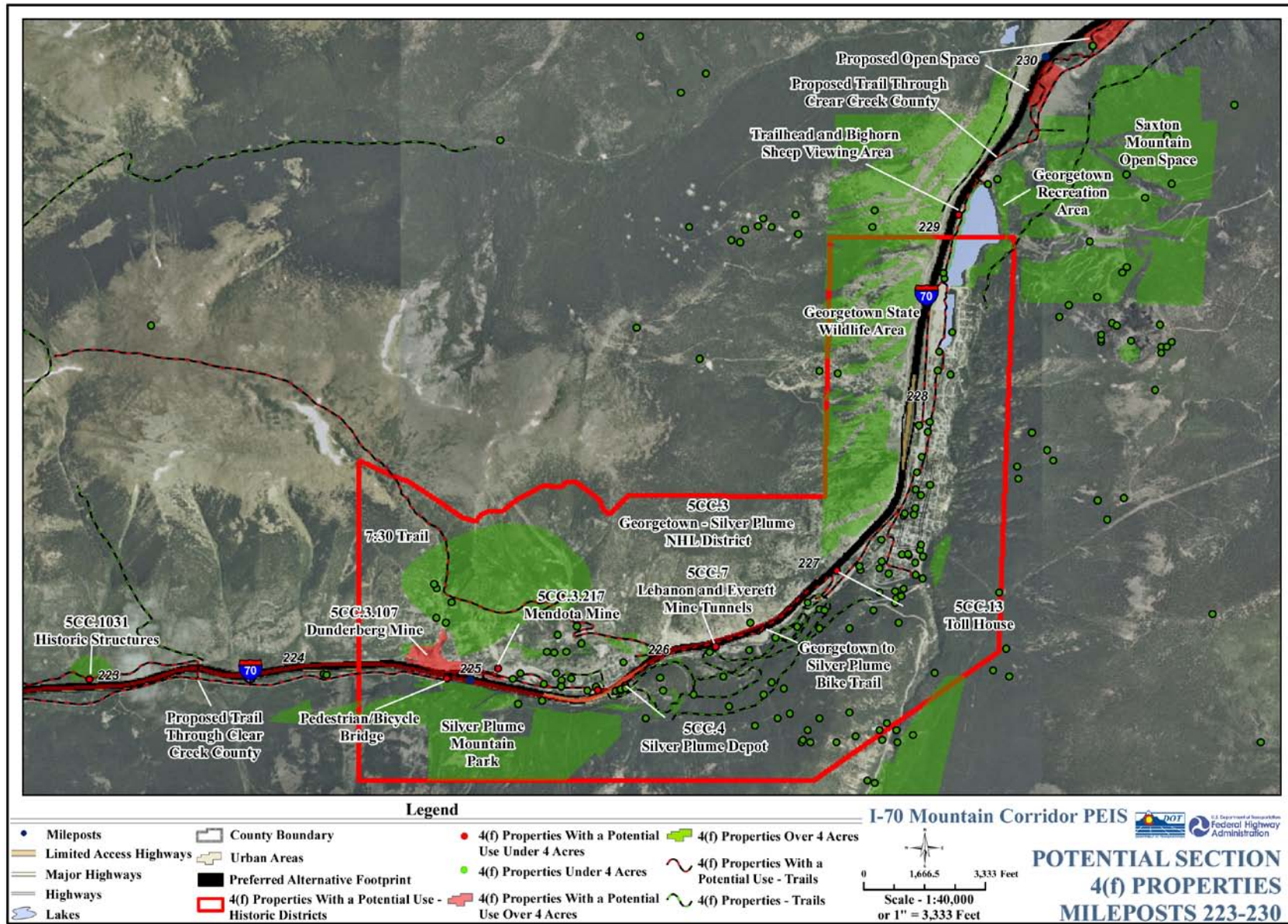
1. The Rail Combination Alternative represents the Combination Rail with Intermountain Connection and Six-Lane Highway Alternative, the Combination Rail with Intermountain Connection and Preservation of Six-Lane Highway Alternative, and the Combination Preservation of Rail with Intermountain Connection and Six-Lane Highway Alternative.
2. The Advanced Guideway System Combination Alternative represents the Combination Advanced Guideway System and Six-Lane Highway Alternative, the Combination Advanced Guideway System and Preservation of Six-Lane Highway Alternative, and the Combination Preservation of Advanced Guideway System and Six-Lane Highway Alternative.
3. The Bus Combination Alternative represents the Combination Bus in Guideway (Dual-Mode) and Six-Lane Highway Alternative, the Combination Bus in Guideway (Diesel) and Six-Lane Highway Alternative, the Combination Bus in Guideway (Dual-Mode) and Preservation of Six-Lane Highway Alternative, the Combination Bus in Guideway (Diesel) and Preservation of Six-Lane Highway Alternative, the Combination Preservation of Bus in Guideway (Dual Mode) and Six-Lane Highway Alternative, and the Combination Preservation of Bus in Guideway (Diesel) and Six-Lane Highway Alternative.
4. Total quantities in the table are generally identical between the Advanced Guideway System Combination Alternative and the Preferred Alternative Maximum Program of Improvements except the Preferred Alternative Maximum Program is at the 65 mph scenario and the Combination Six-Lane Highway Alternative with Advanced Guideway System is at 55 mph, so there are minor differences in potential use between those two alternatives.

Key to Abbreviations/Acronyms

mph = miles per hour

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Figure 3.14-4. Potential 4(f) Properties (Mileposts 223-230)



Potential Use of Section 4(f) Parks, Recreation Areas, and Wildlife Refuges by Alternative

Table 3.14-2 outlines the potential use of parks, recreation areas, and wildlife refuges by alternative. All of the alternatives potentially use Section 4(f) parks, recreation areas, and wildlife refuges. Based on the park, recreation area, and wildlife refuge properties identified to date, 49 properties could be potentially used by the Minimal Action, the least of all alternatives. The Transit and Highway Alternatives potentially use between 64 and 75 properties while the Combination Alternatives potentially use 83 to 85 properties. A range of 60 to 83 properties may be used under the Preferred Alternative. Of the Combination alternatives, the Combination Bus Alternatives impact the greatest number of park, recreation area, and wildlife refuge properties with a potential use of 85 properties due to their wider footprint. Overall, the single mode alternatives potentially use slightly less properties while the Combination alternatives have a similar to slightly higher potential use of properties than the Preferred Alternative.

All identified Section 4(f) properties are considered significant at the first tier; however, the Clear Creek Greenway Plan is highlighted as an example of the difficulty in avoiding Section 4(f) properties in the Corridor. There are 46 identified Section 4(f) properties described as elements in the Clear Creek Greenway Plan. The Combination alternatives potentially use 44 of the 46 elements in the Clear Creek Greenway Plan. Potential uses for the Preferred Alternative range from 29 to 44. Avoiding use of Section 4(f) properties may not be possible in the area of the Clear Creek corridor, as highlighted in **Figure 3.14-4** and **Figure 3.14-5**; however, there may be opportunities for minimization during Tier 2 processes. In addition, because many of these properties are early in the planning process there may be opportunities to work with Clear Creek County to accomplish joint planning.

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Table 3.14-2. Potential Use of Section 4(f) Parks, Recreation Areas, and Wildlife Refuges

Category	Minimal Action	Transit			Highway			Combination			Preferred Alternative
		Rail	Advanced Guideway System	Bus	55 mph	65 mph	Reverse	Highway Rail	Highway Advanced Guideway System	Highway Bus	
Trails and Associated Features	27	33	32	37	37	35	38	44	45	46	31 to 45
Nature Preserve / Wildlife Refuge / Open Space (managed for wildlife)	2	4	3	2	3	4	3	4	3	4	1 to 4
Park or Recreation Area / Open Space (managed for recreation)	12	16	15	16	18	19	20	20	20	20	14 to 21
River Access Points	8	14	14	12	13	13	14	15	15	15	14 to 15
Total	49	67	64	67	71	71	75	83	83	85	60 to 83

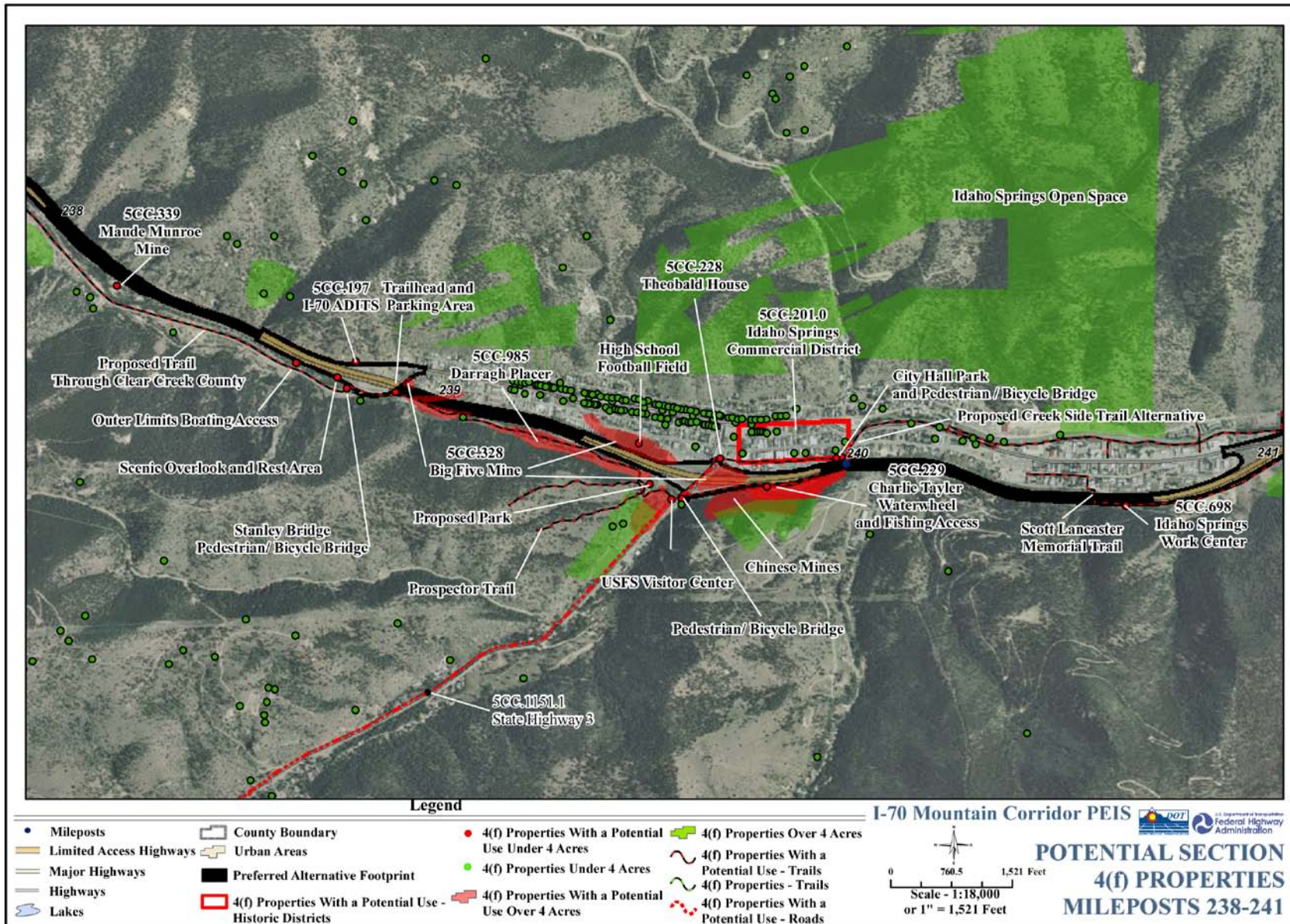
Notes:

- 1. The Rail Combination Alternative represents the Combination Rail with Intermountain Connection and Six-Lane Highway Alternative, the Combination Rail with Intermountain Connection and Preservation of Six-Lane Highway Alternative, and the Combination Preservation of Rail with Intermountain Connection and Six-Lane Highway Alternative.*
- 2. The Advanced Guideway System Combination Alternative represents the Combination Advanced Guideway System and Six-Lane Highway Alternative, the Combination Advanced Guideway System and Preservation of Six-Lane Highway Alternative, and the Combination Preservation of Advanced Guideway System and Six-Lane Highway Alternative.*
- 3. The Bus Combination Alternative represents the Combination Bus in Guideway (Dual-Mode) and Six-Lane Highway Alternative, the Combination Bus in Guideway (Diesel) and Six-Lane Highway Alternative, the Combination Bus in Guideway (Dual-Mode) and Preservation of Six-Lane Highway Alternative, the Combination Bus in Guideway (Diesel) and Preservation of Six-Lane Highway Alternative, the Combination Preservation of Bus in Guideway (Dual Mode) and Six-Lane Highway Alternative, and the Combination Preservation of Bus in Guideway (Diesel) and Six-Lane Highway Alternative.*
- 4. Total quantities in the table are generally identical between the Advanced Guideway System Combination Alternative and the Preferred Alternative Maximum Program of Improvements except the Preferred Alternative Maximum Program is at the 65 mph scenario and the Combination Six-Lane Highway Alternative with Advanced Guideway System is at 55 mph, so there are minor differences in potential use between those two alternatives.*

Key to Abbreviations/Acronyms

mph = miles per hour

Figure 3.14-5. Potential Section 4(f) Properties (Mileposts 238-241)



3.14. Section 4(f) Discussion

3.14.7 What alternatives were considered that potentially avoid Section 4(f) properties in the Corridor?

Seventy five historic or potentially historic properties and 92 parks, recreation areas, and wildlife refuges have potential for use by alternatives being considered. The requirement of Section 4(f) is to avoid use of these properties unless there is no feasible and prudent alternative to the use of such land. Therefore, the first step is to determine whether there are feasible and prudent alternatives that avoid these properties. According to 23 Code of Federal Regulations 774.17, an alternative is not feasible if it cannot be built as a matter of sound engineering judgment. An alternative is not prudent if:

- It compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need;
- It results in unacceptable safety or operational problems;
- After reasonable mitigation, it still causes:
 - Severe social, economic, or environmental impacts;
 - Severe disruption to established communities;
 - Severe disproportionate impacts to minority or low-income populations; or
 - Severe impacts to environmental resources protected under other Federal statutes.
- It results in additional construction, maintenance, or operational costs of an extraordinary magnitude;
- It causes other unique problems or unusual factors; or
- It involves multiple factors (listed above) that while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude.

Avoidance alternatives were evaluated throughout the screening process. If there is an avoidance alternative that is prudent and feasible, it must be selected. If an alternative is not feasible and prudent, it is not carried further in the Section 4(f) discussion.

Corridorwide avoidance alternatives and whether they are feasible and prudent are described below for the different NEPA screening levels including the alternative element families, specific alternative elements within the families, and the alternatives that were evaluated in detail in the NEPA process. Alternatives advanced in the NEPA process including the Preferred Alternative and the No Action Alternative are evaluated against prudent and feasible alternatives that avoid use of Section 4(f) properties in the Corridor.

Alternative Element Families

The alternative element families defined in detail in **Section 2.5 “Which alternative elements were eliminated and why?”** of this document include:

- Transportation Management
- Localized Highway Improvements
- Fixed Guideway Transit
- Rubber Tired Transit
- Highway
- Alternate Routes
- Aviation

Alternative element families that avoid potential use of Section 4(f) properties in the Corridor include Aviation and Alternate Routes. These alternative element families avoid Section 4(f) properties in the Corridor but are not feasible and prudent avoidance alternatives for the reasons described below. The remaining five families were carried forward for further analysis and include transportation management, localized highway improvements, fixed guideway transit, rubber tired transit, and highway.

Aviation

Six aviation alternative elements were considered that avoid use of Section 4(f) properties in the Corridor. These elements include new airports, new heliport and short take-off and landing (STOL) facilities, a regional airport hub at Grand Junction Regional Airport, improving existing commercial aviation airports, improvement of existing general aviation facilities to accommodate commercial operations combined with improvement of existing commercial service aviation facilities and system management and subsidy programs. None of the aviation alternative elements meet the project purpose and need due to the absence of demand for greater airport capacity and lack of ability to reduce congestion or improve mobility and accessibility in the Corridor during peak-period travel. See the *I-70 Mountain Corridor PEIS Alternatives Development and Screening Technical Report* (CDOT, March 2011) for more detailed information. These six alternatives do not satisfy the purpose and need for improvements to the Corridor and are not prudent and feasible alternatives.

Alternate Routes

Seventeen alternate corridors were developed during the screening process. The details of the alternate corridors are described in **Appendix I** of the *I-70 Mountain Corridor PEIS Alternatives Development and Screening Technical Report* (CDOT, March 2011). All 17 corridors avoid potential use of the Section 4(f) properties located along the I-70 Mountain Corridor. Fifteen of the corridors were eliminated from further consideration in the first-level screening step because they had substantially longer travel times or were located too far away from the primary origination of travel and therefore did not improve mobility or reduce congestion in the Corridor.

Two of the alternate routes were carried into the second-level screening for further analysis. The alternate route from Golden to Winter Park via a new tunnel was eliminated because it had much larger capital costs and noticeably longer travel times and therefore did not improve mobility or reduce congestion in the Corridor. The alternate route from Denver to Copper Mountain via a new tunnel under Georgia Pass was eliminated because, even after reasonable mitigation, this route would result in severe environmental impacts to environmental resources, some of which are protected by the Endangered Species Act or the Clean Water Act, including wetlands, streams, historic properties, state wildlife areas, and lynx habitat. Because none of the 17 alternate corridors satisfies the purpose and need for the improvements to the I-70 Corridor, or because they have severe environmental impacts, none are considered prudent and feasible.

Specific Elements within Alternative Families

The remaining five families include transportation management, localized highway improvements, fixed guideway transit, rubber tired transit, and highway. Some alternative elements within these families may avoid Section 4(f) properties while others are expected to potentially use Section 4(f) properties. Some of these specific elements were not prudent and feasible for the reasons described below.

Transportation Management

Transportation Management is a strategy that reduces the severity and duration of congestion and improves mobility by balancing the demand with capacity of the highway to handle the traffic. Three Transportation Management elements are not prudent and feasible because they do not have the capability to meet to the purpose and need. These three strategies are described in detail in **Section 2.5.1** of this document and include bicycle improvements, frontage road transit in Clear Creek County, and the Winter Park ski train. Since bicycle improvements, at most, result in a one percent mode share [*Bicycling and*

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Walking in the U.S.: 2010 Benchmarking Report (Alliance for Biking and Walking, 2010)], they do not remove substantial traffic from the highway and therefore by themselves will not meet the purpose and need requirement to improve mobility. Frontage roads could not be limited to transit because state and federal highways cannot be restricted to a particular vehicle type. Transit on these roads does not meet the purpose and need of improving mobility and accessibility for the entire Corridor as it serves only Clear Creek County. The Winter Park ski train is not a prudent and feasible alternative because it does not remove a substantial amount of traffic from the highway, and thereby does not reduce congestion or improve mobility. The volume of freight trains through the Moffat Tunnel allows for a maximum of two round-trip Winter Park ski trains to run each day, which does not improve mobility and accessibility in the Corridor.

Other Transportation Management strategies, such as Transportation Demand Management and Intelligent Transportation Systems, have been included in the Action Alternatives, including the Preferred Alternative.

All Transportation Management strategies are described in greater detail in the *I-70 Mountain Corridor PEIS Alternatives Development and Screening Technical Report* (CDOT, March 2011).

Localized Highway Improvements

Curve safety modifications, auxiliary lanes, and interchange modifications at other locations in the Corridor are retained as part of the Action Alternatives as described in **Chapter 2, Summary and Comparison of Alternatives** of this document. These components are analyzed as part of the Action Alternatives below to determine whether they are feasible and prudent avoidance alternatives.

Fixed Guideway Transit

Fixed guideway transit includes four modes: Automated Guideway Transit, Rail (light rail transit and heavy rail transit), Passenger Railroad, and Advanced Guideway System (maglev). Forty-three variations of fixed guideway transit were evaluated. Some of these alternative elements may avoid Section 4(f) properties while others are expected to potentially use Section 4(f) properties.

Fixed guideway transit options are not considered to be prudent and feasible alternatives if they do not meet the purpose and need for the project. Several criteria were used to determine whether the fixed guideway transit options meet the purpose and need.

- Potential systems must traverse 127 miles from C-470 to Dotsero in less than 3.5 hours to meet the mobility requirement of the purpose and need. This criterion equates to an average speed of 35 mph and is considered to be the maximum time that is reasonably comparable to automobile travel time. In order to improve Corridor accessibility and mobility, transit options must be competitive with automobile travel time so that transit ridership actually removes automobiles from the highway. See the *I-70 Mountain Corridor PEIS Alternatives Development and Screening Report* (CDOT, March 2011) for details.
- Fixed guideway transit options have to accommodate a peak-hour, peak direction flow of 4,900 passengers. This number equates to 25 percent of person-trips in 2035 in the peak-hour peak direction and is based on ridership surveys and the travel demand model. This criterion is the minimum needed to provide adequate transit service and meaningfully reduce highway congestion in the peak hours and in the peak direction, thus meeting the mobility and capacity requirement for the purpose and need.
- Some of the transit options did not have sufficient power or brakes to operate on the grades in the Corridor. These alternatives are not prudent and feasible because they do not meet the mobility and capacity requirement for the purpose and need because of insufficient travel times.

Alternatives were not feasible and prudent based on other factors such as severe environmental impacts even after reasonable mitigation, having additional construction, maintenance, or operational costs of an extraordinary magnitude, creating an unacceptable safety problem, or not feasible to build as a matter of sound engineering judgment. Most of the fixed guideway transit options are not prudent and feasible based on the factors described below.

- Twenty-two alternative elements do not have the ability to meet the peak-hour peak direction flow of 4,900 passengers. These alternative elements include all of the Light Rail Transit, all of the single-track elements, and two of the Passenger Railroad elements. These alternatives were modeled using the RAILSIM7® Train Performance Calculator that included estimates of the number of passengers per hour in the peak direction. Details on these estimates and other performance criteria are provided in the *I-70 Mountain Corridor PEIS Alternatives Development and Screening Technical Report* (CDOT, March 2011). Because these alternatives do not meet the capacity requirement of the purpose and need, they are not prudent and feasible alternatives.
- Three of the fixed guideway transit options do not meet the travel time criteria based on having average speeds of less than 35 mph. These alternative elements include the six percent grade diesel Heavy Rail Transit double tracks, the Passenger Railroad Winter Park Ski Train, and the Passenger Railroad Glenwood Springs Service Track. Details on the estimated speeds and travel times for these alternatives are provided in the *I-70 Mountain Corridor PEIS Alternatives Development and Screening Report* (CDOT, March 2011). These fixed guideway transit options do not meet the mobility requirement of the purpose and need because it takes more than 3.5 hours to travel from C-470 to Dotsero. For this reason, these options are not prudent and feasible alternatives.
- Four alternative elements do not have sufficient power or brakes to operate on the grades in the Corridor. These options include the four percent and six percent grade diesel Passenger Railroad single- and double-track locomotive hauled alternative elements. The limitations of these alternatives based on having insufficient power or brakes means that they do not meet travel times and requirements for the purpose and need and have unacceptable safety problems. These alternatives are not prudent and feasible alternatives.
- Any fixed guideway transit options operating on a four percent or six percent grade are not considered to be prudent and feasible alternatives because of severe environmental impacts, extraordinary costs, and possible constructability issues. The alignment for these alternatives is outside the right-of-way for at least 25 percent of its length. These alternatives could result in a disturbance of at least 300 acres of previously undisturbed land, which are not impacted by other alternatives along the highway alignment. This undisturbed land is used as wildlife habitat, including lynx habitat. Other environmental resources affected include 90 acres of wetlands, local fen disturbance (0.1 acre), 7.5 miles of streams, and approximately 500 parcels of private land. (These quantities are for the six percent alignment. Quantities for the four percent alignment are higher.) These resources are protected under other Federal statutes including the Clean Water Act, Endangered Species Act, and the Migratory Bird Treaty Act. Even after reasonable mitigation, these alternatives cause severe environmental impacts because of the amount of new disturbance. Because of the severe impacts to environmental resources protected by other Federal statutes, the alternatives on a four percent or six percent grade are not prudent and feasible alternatives.

In addition, fixed guideway transit options on four percent or six percent grades require substantial amounts of tunneling. As much as 22 percent of the 118-mile transit corridor would need to be in a tunnel. It is difficult to construct tunnels and new alignments in mountainous terrain where there are steep unstable slopes, cliffs, and rivers. Tunnel costs are expected to be more than seven times (\$2.7 billion) the cost of keeping the alternatives along the current highway grade (\$350 million). These alternatives result in additional construction costs of an

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extraordinary magnitude compared to the highway alignment alternatives and in some places, may be difficult to build. For these reasons, the four percent and six percent grade fixed guideway transit options are not feasible and prudent alternatives.

- One alternative element, the automated guideway transit, creates unacceptable safety problems. This alternative element functions without an operator at the controls and is intended to operate in environments where emergency assistance could be available on short notice. Because the I-70 Mountain Corridor has physical constraints and remote areas, emergency assistance is unavailable on short notice in certain areas. This element is not safe for passengers and therefore is not a prudent and feasible alternative.

Three alternative elements were retained for the Action Alternatives. These alternative elements include the Advanced Guideway System electric power on the existing alignment, the Heavy Rail Transit with double-track on the existing alignment, and the Intermountain Connection on the existing rail facility. These alternative elements were incorporated into the Action Alternatives.

Rubber Tire Transit

Rubber tire transit elements are categorized by propulsion type (diesel, electric, and dual mode), facility use (in mixed traffic or separate guideway or transitway), and alignment grade capabilities. Some of these alternative elements may avoid Section 4(f) properties, while others are expected to use Section 4(f) properties. Fifteen variations of rubber tire transit were evaluated. Five of these alternative elements are not considered to be prudent and feasible for the following reasons.

- **The bus in mixed traffic element** has low average speeds and low capacity. As described in the *I-70 Mountain Corridor PEIS Alternatives Development and Screening Technical Report* (CDOT, March 2011), the high-frequency bus service has a maximum theoretical capacity of 2,500 passengers per hour in the peak direction. This compares to other alternatives with 41,700 to 78,800 passengers per hour in the peak direction. Because it has such low capacity, it does not decrease highway congestion, which is part of the purpose and need for the project. Because this alternative element does not meet the purpose and need for the project, it is not a prudent and feasible alternative.
- **Bus in HOV (High Occupancy Vehicle) lanes** has low transit capacity and low demand for ridership because it is not an exclusive guideway. Because it has low transit capacity and low ridership, it does not accommodate the current and projected demand for person trips in the Corridor and does not meet the project need for increased capacity. Because it does not meet the purpose and need for the Corridor, it is not a prudent and feasible alternative. This alternative element can be combined with the highway/HOV alternative element considered under highway.
- **Electric bus in transitway and guideway** was eliminated due to accessibility problems. This option requires two separate transfers for passengers because electric bus, operating by power provided from an overhead wire infrastructure, cannot operate more than short distances off the Corridor and is not considered a suitable technology because it cannot access destinations served by the Corridor. This alternative did not meet the accessibility criterion for meeting purpose and need and is not a prudent and feasible alternative.
- **Peak-direction-only diesel and dual-mode bus in guideway and peak-direction-only bus in transitway** alternative elements were eliminated because they do not meet the mobility criterion due to lack of off-peak schedule dependability. Buses traveling in the off-peak direction are not on the guideway and are operating in mixed traffic, subject to highway congestion, and cannot provide reliable off-peak service. Because these alternative elements do not meet purpose and need, they are not prudent and feasible alternatives.

Some of the rubber tire transit alternative elements that were forwarded in transitway or guideway have relatively minor footprint and operational differences. The Bus in Guideway Alternatives are considered to be representative of all of these options because they move a similar number of people, minimize impacts to resources including Section 4(f) properties, and have the potential to meet the 2050 travel demand when combined with the highway alternatives. If the bus mode is selected in the first tier Record of Decision, these alternative elements, and possibly other specific bus technologies, need further evaluation during Tier 2 processes. The rubber tire transit alternatives considered similar to the Bus in Guideway Alternatives include diesel or dual mode bus in transitway—both directions and diesel or dual mode bus in either transitway or guideway—both directions, using on-line stations. For purposes of this evaluation, a system with on-line stations (stations on the guideway or transitway) is defined as bus rapid transit.

Highway Alternative Elements

Six primary highway improvement options were considered by Corridor segment or location. Within each segment, all or some of the improvement options were considered and evaluated based on the conditions and constraints within that segment. Some of these alternative elements may avoid Section 4(f) properties in certain Corridor segments or locations, while others are expected to use Section 4(f) properties. The following improvement options are not prudent and feasible alternatives and have been eliminated.

- **Flex lanes** offer a narrower roadway of 90 feet by using a 16-foot flex lane shoulder with a 12-foot-wide travel lane and a 4-foot shoulder during peak volumes in the peak direction, and as a wide shoulder at other times. A control device such as a lane closure gate and message signing is used during peak hours when the lane functions as a standard travel lane. Flex lanes create safety issues because of the inconsistency in lane balance for sections of the highway on either side of the flex lane section. The 4-foot shoulder width (compared to 8 feet for the Preferred Alternative configuration) does not meet design standards and is incompatible with CDOT's *Incident Management Plan* (CDOT, 2000), which requires sufficient shoulder width to operate emergency vehicles. A 4-foot-wide shoulder does not allow broken-down vehicles to leave the flow of traffic, which is a concern especially for commercial trucks. Unsafe conditions may cause crashes that affect the flow of traffic and therefore increase congestion. This alternative results in unacceptable safety problems and does not meet the purpose and need to reduce congestion. For these reasons, this highway improvement option is not a prudent and feasible alternative.
- **Movable median** uses a five-lane highway with the third lane reversing by use of a movable median between Empire and Floyd Hill. A specially-equipped vehicle lifts portable barrier segments and shifts them laterally to produce a new lane configuration. This option does not meet the 2050 purpose and need requirement to improve mobility and accessibility because of loss in the travel time it takes to clear the traffic lanes and move the median. For these reasons, this alternative is not a prudent and feasible alternative for avoiding Section 4(f) properties.
- Parallel route north of Idaho Springs between Fall River Road and the Hidden Valley interchange (a two-lane multipurpose roadway) was eliminated because it does not meet the need criterion of reducing congestion between the Eisenhower-Johnson Memorial Tunnels and Floyd Hill and because it is impossible to continue west of Idaho Springs due to steep terrain at the Fall River Road area. For these reasons, this alternative is not a prudent and feasible alternative because it does not meet purpose and need.
- Silverthorne Tunnel was considered between Silverthorne and Empire Junction. At a proposed length of 25 miles, this tunnel is longer than any tunnel ever constructed. It was eliminated because it is unlikely to be built as a matter of sound engineering judgment and because of its lack of access to Corridor communities, thus not meeting the accessibility criterion of purpose and need. For these reasons, this alternative is not a prudent and feasible alternative.

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Alternatives Advanced and Fully Evaluated in the NEPA Process

The Action Alternatives fully analyzed in the NEPA process include a Minimal Action Alternative and 21 Action Alternatives, including the Preferred Alternative, that include various combinations of either highway components alone, transit components alone, and various Combination alternatives. The No Action Alternative was also fully evaluated in the NEPA process and Section 4(f) discussion. None of the Action Alternatives in the Corridor completely avoid potential use of all Section 4(f) properties. The No Action Alternative, the Minimal Action Alternative, and the single mode alternatives are not prudent and feasible for the reasons described below.

No Action Alternative

This alternative avoids use of Section 4(f) properties. Because it does not satisfy the need to improve capacity, mobility, accessibility and decrease congestion, it is not a feasible and prudent alternative for avoiding potentially used Section 4(f) properties in the I-70 Mountain Corridor.

Minimal Action Alternative

Although not a true avoidance alternative, the Minimal Action is not a prudent and feasible alternative for the following reasons. As described in the *I-70 Mountain Corridor PEIS Alternatives Development and Screening Technical Report* (CDOT, March 2011), the high-frequency bus service is only expected to carry approximately four percent of travelers during peak hours. Buses are not be able to go faster than autos and do not attract additional ridership because of congestion. This alternative does not increase capacity or decrease congestion and does not meet the purpose and need for the project. See **Sections 2.8.1, 2.8.2, and 2.8.3** for information on the inability of the Minimal Action Alternative to meet the project purpose and need. For these reasons, this alternative is not a prudent and feasible alternative.

Single Mode Alternatives

Single mode alternatives are those that include highway, fixed guideway, or rubber tire transit components as the only type of transportation improvement that expands capacity. These single mode alternatives, while not avoidance alternatives, are not able to accommodate the 2050 travel demand, as measured by the year network capacity is reached and described in **Section 2.8.1** under “**Year Network Capacity is Reached**” of this document. Network capacity is a measure of congestion tolerance and is generally defined as the capacity when average travel speed in the Corridor drops to 30 mph.

The single mode alternatives cannot achieve speeds greater than 30 mph in 2050. All single mode alternatives reach network capacity between 2030 and 2040 while the Combination alternatives provide network capacity to 2050, if both highway and transit elements are constructed. See the *I-70 Mountain Corridor PEIS Alternatives Development and Screening Technical Report* (CDOT, March 2011) for more detailed information.

At speeds less than 30 mph, the purpose and need criterion of improving mobility is not met, nor is congestion relieved. **Section 2.8.2** of this document provides information that illustrates the higher total hours of congestion in 2035 for both peak direction weekend and weekday conditions for the single mode alternatives compared to the Combination alternatives. These conditions become more obvious by 2050, thus the resulting finding that the single mode alternatives are not able to operate at speeds over 30 mph and thus not able to improve Corridor mobility nor relieve congestion. For these reasons, these alternatives are not prudent and feasible alternatives.

Combination Alternatives

The Combination alternatives also are not avoidance alternatives but they are the only alternatives that meet the 2050 purpose and need. These alternatives are summarized in **Section 3.14.4** and described in detail in **Chapter 2, Summary and Comparison of Alternatives**. These alternatives include components of both the Transit and Highway alternatives. **Section 3.14.8** describes opportunities to avoid and

minimize potential uses of Section 4(f) properties and constraints associated with these alternatives. **Section 3.14.8** compares these alternatives based on their potential to use Section 4(f) properties as well as least harm factors.

3.14.8 What are constraints and opportunities to avoid Section 4(f) properties associated with the Combination Alternatives?

Avoidance opportunities were also evaluated at a more localized level, and the potential to avoid Section 4(f) properties was a major consideration during the Level 3 alternatives development process.

Corridor Constraints

The distribution and density of known Section 4(f) properties along the Corridor limits the opportunity to avoid all potential properties. In locations like Clear Creek County (and in particular the general Idaho Springs area and in the Silver Plume/Georgetown area), Silverthorne, and Dillon Reservoir, there are numerous historic and recreational properties that, even if an alignment could be designed to avoid one Section 4(f) property, it is highly likely that other Section 4(f) properties will be used.

Other obstacles to avoidance of Section 4(f) properties include the limitations of the mountainous terrain. Physical terrain features such as rock walls, steep unstable slopes, and rivers, along with already built up commercial and residential development limit the transportation improvements.

Constraints and Opportunities Associated with Highway Components

Highway improvements are limited by existing grades in some places. Vail Pass and the area located along Straight Creek between Silverthorne and the West Portal of the Eisenhower-Johnson Memorial Tunnels and on Floyd Hill already exceed the American Association of State Highway and Transportation Officials recommended maximum grades of 6 percent (for mountainous or hilly terrain on interstate highways). The need to provide a space for recovery from errant vehicles results in a wider cross section. Existing highway interchanges provide access to already existing developed areas and limit the ability to avoid use of Section 4(f) properties that may be located adjacent to the existing interchanges.

To demonstrate that there is no feasible and prudent avoidance alternative, a Section 4(f) analysis addresses:

- Location alternatives and
- Design shifts.

This Section 4(f) discussion is based on available information for a broad decision at the first tier of analysis. It addresses general location alternatives. Constraints and opportunities are discussed. Specific locations and design shifts to avoid specific Section 4(f) properties are deferred to Tier 2 processes.

As alternatives were defined in more detail in Level 3 screening, their relative ability to avoid Section 4(f) properties was included in their definition. The two Six-Lane Highway alternatives and the reversible HOV/HOT lane alternative were both developed to avoid key Section 4(f) properties. Several highway alignments were considered near Silver Plume to attempt to avoid encroachment on sensitive historic properties and on Clear Creek. One alternative improves the safety of the westbound on-ramp without moving the ramp but it requires lengthening the ramp into the town of Silver Plume, resulting in severe disruption to an established community. For this reason, this alternative is not a prudent and feasible alternative.

The highway components incorporate such features as structured lanes in the Twin Tunnels and Idaho Springs area and reduced width of the outside shoulder from twelve to eight feet to minimize potential Section 4(f) uses. In other locations, vertical widening such as structured or tunneled lanes or horizontal widening such as Smart Widening can be considered as a means to avoid or minimize use of a Section 4(f) property. These design refinements can be considered during Tier 2 processes.

3.14. Section 4(f) Discussion

Constraints and Opportunities Associated with Transit Components

Rail and Advanced Guideway System transit require certain grades based on the technological capabilities of the system. Traditional high speed rail is limited to four percent and Advanced Guideway System is limited to about seven percent. Curvature of the tracks is limited by transit speeds, which were chosen to be competitive with free flow highway travel. Because of transit stops, transit operating speeds need to be faster than highway speeds requiring flatter curves. These design requirements limit the ability of the Rail and Advanced Guideway System Alternatives to avoid Section 4(f) properties. Its relatively narrower footprint of 26 to 34 feet for a double guideway system (compared to a much wider footprint for the Six-Lane Highway Alternative configurations because of the need to allow for space for errant vehicles) helps to compensate for the other design requirements. In addition, the alignment of rail and Advanced Guideway System can move from north of the highway to south of the highway based on the proximity of sensitive features. Station locations are not definitively set at the first tier, so that they can potentially be placed to avoid Section 4(f) properties.

One localized transit alignment was considered. An Advanced Guideway System alternative alignment called the Snake Creek (located in Summit County between the top of Loveland Pass, through Keystone and into Dillon) Alternative deviated from the Corridor and traveled along the Snake Creek watershed rather than the Straight Creek (located along the I-70 highway between the Eisenhower-Johnson Memorial Tunnels and Silverthorne) watershed. It avoided potential uses of the Eisenhower-Johnson Memorial Tunnels but created potentially more substantial uses of other Section 4(f) properties including sensitive natural and recreational areas and trails outside the I-70 Mountain Corridor. Constructing the new tunnel requires steep grades to access both of the new portals. This results in unacceptable operational problems. Severe impacts might occur to numerous environmental and socioeconomic resources (including impacts to National Forest System lands, creating major conflicts with central operations of the Loveland Ski Area, which might result in likely removal of all ski area operations, and substantial new impacts to the Snake Creek watershed) due to construction of a new transportation corridor located over the Continental Divide. For these reasons, this is not a feasible and prudent alternative.

The transit components incorporated various design components reducing the potential use of Section 4(f) properties. The Advanced Guideway System is capable of being fully elevated, other rail alternatives can be elevated in sensitive areas, the bus in guideway was located primarily in the median of the highway, and the alignment of the Rail with Intermountain Connection and Advanced Guideway System alternatives was adjusted to the south side of Idaho Springs to avoid the potential use of Section 4(f) resources north of the highway.

Additional Opportunities to Avoid and/or Minimize Harm during Tier 2 Processes

Design refinements to avoid specific Section 4(f) properties and/or to minimize harm will be addressed during Tier 2 processes. In addition, Tier 2 processes will complete the Section 106 process, following the agreement in the I-70 Mountain Corridor Programmatic Agreement. The Programmatic Agreement outlines each step of the Section 106 process, from identification of the Area of Potential Effect (APE) through resolving adverse effects. In most cases, Tier 2 processes will include agreement on an APE for the individual project, a survey of historic resources within the APE, determination of effects including visual and noise effects of the project, and agreement on resolving adverse effects with the consulting parties.

3.14.9 How do the alternatives compare?

All the Combination alternatives have a potential to use Section 4(f) properties. Potential Section 4(f) uses of historic properties range from 56 at the lower range of the Preferred Alternative to 69 with the Combination Bus Alternative. Potential Section 4(f) uses of the parks, recreation areas, or wildlife refuges

range from 60 at the lower range of the Preferred Alternative to 85 with the Combination Bus Alternative. Therefore, the total is 116 potential uses for the lower range of the Preferred Alternative, up to 154 potential uses with the Combination Bus Alternative. The Preferred Alternative has a range of potential uses from 116 to 149, which has a slightly lower to similar potential for use of Section 4(f) properties compared to the other Combination alternatives that meet the 2050 purpose and need.

Because none of the Combination alternatives in the I-70 Mountain Corridor completely avoids use of all Section 4(f) properties, the alternatives were compared based not only on their potential use of the Section 4(f) properties but also on other factors. These factors include the ability to mitigate the use during Tier 2 processes, the views of the Officials with Jurisdiction, the responsiveness of the alternative to the purpose and need, cost, and the impact to other environmental resources.

One factor that was considered is the ability to mitigate the use during Tier 2 processes. The alternatives that include Advanced Guideway System as an alternative component (the Preferred Alternative and the Advanced Guideway System Combination Alternative) have an opportunity to mitigate potential uses because the Advanced Guideway System is flexible in its exact location, has a noticeably smaller footprint, and is capable of being fully elevated. It can be placed so it cantilevers over the roadway shoulder. Visual impacts related to the Advanced Guideway System are identified in **Section 3.11, Visual Resources** of this document and will be evaluated in more detail during Tier 2 processes.

All Section 4(f) properties are treated as significant at the first tier so there is no recognized difference among alternatives in terms of the relative significance of the properties being used. The relative severity of remaining harm is similarly not identified at this level and will be addressed during Tier 2 processes.

The views of the Officials with Jurisdiction over the resource have been considered. In general, the Officials with Jurisdiction are less supportive of alternatives that include highway widening because of the overall width of the footprint and the effects of that widening to the setting of historic properties. Highway traffic noise, especially truck traffic, has the potential to affect historic properties. The Officials with Jurisdiction are in general more supportive of alternatives that include the Advanced Guideway System because it has a better potential to avoid Section 4(f) properties and is expected to be quieter than additional traffic on the highway. The United States Forest Service, one of the Officials with Jurisdiction, is more supportive of the transit component of the Combination alternatives because of their consistency with future plans to manage future access to National Forest System recreational areas. Letters from the United States Forest Service and Clear Creek County provide more detail about these opinions. See the *I-70 Mountain Corridor PEIS Recreation Resources Technical Report* (CDOT, March 2011) for examples.

Each of the considered alternatives is more or less responsive to purpose and need. The Preferred Alternative, if it is fully implemented, and the Advanced Guideway System Combination Alternative result in the fastest weekend highway travel time in the future. The Preferred Alternative Minimum Program of Improvements provides the most noticeable transit travel time advantage over highway travel time, and all of the Combination alternatives provide an option for travelers to avoid highway congestion, potentially serving as a mechanism for changes in traveler behavior over time. See **Chapter 2, Summary and Comparison of Alternatives** for more information on alternatives and how well they meet the purpose and need. It is important to note that for the Preferred Alternative to meet the 2050 purpose and need, the Maximum Program of Improvements is required, based on the information currently available today.

Chapter 3, Affected Environment and Environmental Consequences of this document describes the impact of the Action Alternatives to other environmental resources. Analyses show that for several resources (biological, threatened and endangered species, water resources, and wetlands) the Rail with Intermountain Connection Combination Alternative and the Bus Combination Alternative result in the greatest impacts. These effects can be mitigated in many cases. Effects that are more difficult to mitigate

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include: effects to climate and air quality, operational energy consumption, and cumulative effects caused by induced growth. The Preferred Alternative has potential to have the least effect to these resources because of the adaptive management approach to phasing the improvements.

The Preferred Alternative provides an opportunity to monitor conditions over time and adapt future improvements to changes in technology, demographics, or other global, regional, or local trends. This characteristic could result in reductions of the environmental impacts predicted in this document.

The anticipated capital costs of construction were evaluated. Of the Combination alternatives, the Preferred Alternative and the Advanced Guideway System Combination Alternative were the most costly. More information on costs is found in **Section 2.8.3**.

To summarize, the Preferred Alternative is anticipated to result in a range of potential uses of Section 4(f) properties (from 116 to 149). This alternative has a slightly lower to similar potential use compared to the other Combination alternatives. The inclusion of the Advanced Guideway System component represents a clear opportunity to mitigate some of these potential uses because it is able to move from one side of the Corridor to another or to be located in the median. The Preferred Alternative is anticipated to result in a range of potential impacts to other environmental resources, but many of these impacts can be mitigated. It is likely to result in the greatest amount of induced growth and development, but that can also be guided and thus mitigated through effective actions of local governments. The Preferred Alternative and the Combined Highway Advanced Guideway System are effective at responding to the purpose and need of reducing highway congestion and minimizing highway travel time. They provide a clear transit travel time advantage for the user, avoiding highway congestion. The adaptive nature of the Preferred Alternative over time is the most responsive to anticipated future technological, global, and regional changes. Also, during Tier 2 processes, there are numerous opportunities to minimize harm to the remaining Section 4(f) properties that may result from the potential uses that are defined in this evaluation.

3.14.10 What planning to minimize harm has been incorporated?

Actions taken at this first tier ensure that opportunities to minimize harm are not precluded in subsequent Tier 2 processes. These actions include following the *Section 106 Programmatic Agreement* for complying with the National Historic Preservation Act and development of the I-70 Mountain Corridor Context Sensitive Solutions process described in more detail in **Chapter 6, Public and Agency Involvement** and in **Appendix A, I-70 Mountain Corridor PEIS Context Sensitive Solutions**.

The *Section 106 Programmatic Agreement* identifies considerations for minimizing harm to historic properties including variances from CDOT's design standards, use of modern explosive techniques, protection of archaeological and historic archaeological properties, noise abatement and minimization measures, visual impact minimization, and measures to minimize and mitigate economic impacts on heritage tourism.

The I-70 Mountain Corridor Context Sensitive Solutions process emphasizes development of alternatives and options during Tier 2 processes consistent with the core values of sustainability, open decision making, enhancing safety, providing a healthy environment, respecting the Corridor's historic context, protecting communities, addressing mobility and accessibility, and enhancing the Corridor's aesthetics. Specific I-70 Mountain Corridor Context Sensitive Solutions actions may be implemented during Tier 2 processes to minimize harm to Section 4(f) properties and include such features as retaining walls, cantilevered highway sections, alignment shifts, interchange design refinements, and tunnels.

For the many future Section 4(f) properties planned in the Corridor, another opportunity to minimize harm exists by conducting joint planning/joint development of improvements in the Corridor along with the future recreational properties, pursuant to 23 Code of Federal Regulations 774.111 (i).

Other opportunities to minimize harm that have been identified in first tier but may be more refined during Tier 2 processes include: narrowing outside shoulders for the highway, potentially fully elevating the Advanced Guideway System guideway, implementing structured or tunneled highway lanes, elevating other rail alternatives in sensitive areas, locating the bus in guideway in the median of the highway, and adjusting the alignment of the Rail with Intermountain Connection and Advanced Guideway System Alternatives to the south side of Idaho Springs to avoid the potential use of Section 4(f) properties north of the highway.

3.14.11 What agencies have CDOT and FHWA coordinated with?

Agency coordination regarding potential Section 4(f) properties has been ongoing and comprehensive. This effort was coordinated through a Section 4(f) Ad Hoc Committee composed of members from FHWA, CDOT, National Park Service, United States Forest Service, Bureau of Land Management, Advisory Council on Historic Preservation, the State Historic Preservation Officer, and the Colorado Commission of Indian Affairs. This Committee identified and inventoried Section 4(f) properties within the Corridor to provide guidance on the level of detail appropriate for this evaluation. This effort provided the basis for determining alternative impacts on a protected site to ensure that there are no other feasible or prudent alternatives that have less impact and that all measures to minimize harm were considered.

Agency coordination for Section 4(f) historic properties is closely tied to the Section 106 process. Coordination for parks, recreation, and wildlife and waterfowl refuges was initiated with local municipalities, counties, and various land management agencies through the Mountain Corridor Advisory Committee and with individual agencies since 2001. The following sections describe the agency coordination process for the Section 4(f) property categories.

Parks, Recreation Areas, and Wildlife and Waterfowl Refuges

Participation in the Mountain Corridor Advisory Committee and ongoing stakeholder groups provided agencies the first opportunity to offer opinions regarding Section 4(f) properties. Additionally scoping letters were sent out to all local municipalities, counties, and land management agencies soliciting information on potential Section 4(f) properties. Agencies that CDOT and FHWA coordinated with include:

Federal:

- U.S. Department of the Interior, Bureau of Land Management
- United States Forest Service, White River National Forest
- United States Forest Service, Arapaho and Roosevelt National Forests and Pawnee National Grassland
- U.S. Department of the Interior, National Park Service
- U.S. Department of the Interior, Fish and Wildlife Service

State:

- Colorado State Parks
- Colorado Division of Wildlife

County:

- Garfield County
- Eagle County
- Clear Creek County
- Jefferson County
- Summit County
- Western Eagle County Metropolitan Recreation District

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Municipal:

- Eagle-Vail Metro District
- Town of Frisco
- Town of Silverthorne
- Town of Georgetown
- City of Idaho Springs
- Vail
- Eagle
- Minturn
- Gypsum
- Glenwood Springs
- Golden
- Empire
- Dillon
- Breckenridge
- Avon
- Silver Plume

Historic Properties

Agency coordination on historic properties at the first tier has been ongoing since 2001. The initial effort was facilitated through a series of meetings between 2001 and 2009 starting with the Section 4(f) and 6(f) Ad Hoc Committee that included representatives from the Colorado Office of Archaeology and Historic Preservation, the Advisory Council on Historic Preservation, Department of Interior, National Park Service, and the Colorado Commission of Indian Affairs. This committee identified historic properties and provided guidance on the level of detail appropriate for the first tier Section 4(f) effort.

Opinions of Officials with Jurisdiction and other Parties

During the process, concerns were raised by the Officials with Jurisdiction. The following sections summarize the concerns expressed by the Officials with Jurisdiction and other parties and indicate how those concerns are addressed.

Parks, Recreation Areas, and Wildlife and Waterfowl Refuges

Officials voiced concerns that some properties potentially impacted were not identified. Clear Creek County and local municipalities were particularly concerned about resources associated with the *Clear Creek County Greenway Plan* (Clear Creek County Open Space Commission, 2005). Continued consultation with the county resulted in the addition of all elements of this proposed and partially existing resource and potential uses of these properties are recognized. (Concerns raised about how constructive use is analyzed with regard to potential Section 4(f) impacts will be addressed during Tier 2 processes when constructive use can be fully evaluated.) Communities and agencies felt that postponing this analysis to Tier 2 results in additional Section 4(f) properties not identified in this document being impacted by Tier 2 processes. Although constructive and temporary use determinations are not a part of this study because the level of detail of design and understanding of the alternatives is not available, an additional 15 foot buffer was added to the alternative footprints to account for potential uses (as expressed through noise, visual, or access impacts). Tier 2 processes will include detailed noise analysis, visual impact analysis, and access restrictions, if any, and more explicitly look at indirect impact effects to Section 4(f) properties.

A second round of agency scoping was initiated in early 2009 to ensure up to date information in this document, formalizing an extensive involvement process with Corridor communities that occurred between 2004 and 2009. Scoping letters were sent out to the Officials with Jurisdiction. Additional properties identified in this recent agency coordination were researched and included in this document and the *I-70 Mountain Corridor PEIS Section 4(f) Evaluation Technical Report* (CDOT, March 2011), or dismissed from inclusion as indicated in the Technical Report. Furthermore, during the 2009 scoping, agencies were given another opportunity to identify properties to include. The complete property list was evaluated following the 2009 scoping effort with an emphasis on being overly inclusive ensuring that no properties that should be included on this list were missed.

Historic Properties

Concerns regarding missed properties, inadequate effects analysis, and constructive use were raised many times throughout this process. The Colorado Department of Transportation performed an additional file search of the Colorado Office of Archaeology and Historic Preservation Compass database in 2009 to identify properties documented or added to the database since the 2003 file search resulting in a more robust list of properties. In addition, the methodology for identifying possible Section 4(f) properties was modified and resulted in a more inclusive list of properties officially listed, officially eligible, and potentially eligible to determine where a potential use of property may occur. Concerns about inadequate effects analysis will be addressed during Tier 2 processes when there is enough detailed information to be able to assess effects and Section 4(f) use.

3.14.12 What can we conclude from this Discussion?

Although we cannot make a Section 4(f) decision because the information available for this broad Tier 1 study is not detailed enough to support it, the Tier 1 information shows that the Preferred Alternative appears to have the least harm to Section 4(f) resources among alternatives that meet the 2050 purpose and need.

For this Section 4(f) discussion, prudent and feasible avoidance alternatives are evaluated, potential uses are identified, the alternatives are compared, and Officials with Jurisdiction have been consulted. Additionally, the Section 4(f) discussion includes all possible planning to minimize harm to the extent that the level of detail available for this PEIS allows. Based on this discussion, there are no prudent and feasible alternatives at the Corridor level that avoid use of Section 4(f) properties. The single mode alternatives and the Minimal Action Alternative may use fewer Section 4(f) resources than the Preferred Alternative, but they do not meet the 2050 purpose and need. In addition, given the adaptive nature of the Preferred Alternative, it offers the greatest opportunities to minimize impacts to Section 4(f) resources. The discussion below provides supporting detail for these conclusions.

The Preferred Alternative is anticipated to result in a range of potential impacts to other environmental resources, but many of these impacts can be mitigated. It, along with the Advanced Guideway System Combination Alternative and the Rail with Intermountain Connection Combination Alternative, may result in the greatest amount of induced growth and development; however, the Preferred Alternative, with its adaptive nature, provides the best opportunity for local governments to guide induced growth and development to mitigate any effects of this.

The Preferred Alternative and Combined Highway Advanced Guideway Alternative are the most effective of all of the alternatives at responding to the purpose and need of reducing highway congestion and minimizing highway travel time. They provide a clear transit travel time advantage for the user, avoiding highway congestion. The adaptive nature of the Preferred Alternative over time is the most responsive to anticipated future technological, global, and regional changes. For these reasons, the Preferred Alternative has a greater potential to avoid Section 4(f) properties and minimize harm to Section 4(f) properties and other resources.

3.14.13 What will be addressed in Tier 2 processes?

Section 4(f) evaluations for projects in the Corridor will be completed during Tier 2 processes when sufficient design and operational information about improvements are developed to determine Section 4(f) use. For Section 4(f) compliance during Tier 2 processes, further study of feasible and prudent avoidance alternatives and a least overall harm assessment according to 23 Code of Federal Regulations 774.3(c)(1) will be required for subsequent projects. This will include the following steps:

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- **Step 1: Conduct continued coordination with the Officials with Jurisdiction.** This will be done to confirm the properties, confirm property boundaries, obtain input on the effects of the project and proposed mitigation, and if a *de minimis* impact is anticipated, obtain concurrence from Officials with Jurisdiction that the impact is indeed *de minimis*. Coordination with the State Historic Preservation Officer will also be done to obtain concurrence with eligibility of a property, with determination of effects, and with proposed mitigation. If a “no adverse effect” determination is proposed that will be used to determine a *de minimis* impact, the State Historic Preservation Officer will be notified of this intention on the part of CDOT and FHWA.
- **Step 2: Identify properties.** Tier 2 processes will include a step to confirm the eligibility of assumed Section 4(f) properties, including ownership details, property boundaries, and National Register of Historic Places eligibility if the property is a historic property and property management practice details from resource management plans for refuges, parks, and recreational properties.
- **Step 3: Collect information needed to determine detailed use by alternative.** This step will include laying the edges of physical disturbance and future right-of-way over the mapping of the property boundaries. This information will then be used to determine whether or not the anticipated use could be avoided or evaluated as a *de minimis* impact. Combining this information with the findings of noise analysis, access analysis, and visual analysis will be used to determine whether or not an alternative could result in a constructive use. Indirect impacts will be examined to determine if there is a constructive use of the property. Analysis of temporary impacts will be done as well to determine if the conditions for temporary occupancy are met, as defined in 23 Code of Federal Regulations 774.13 (d).
- **Step 4: Conduct Section 4(f) evaluations to determine if a prudent and feasible alternative that avoids the Section 4(f) properties exists.** This evaluation will include the I-70 Mountain Corridor Context Sensitive Solutions measures, alignment shifts, use of tunnels, use of design variances, and other design related measures. Uses of the properties will be considered and compared to the Tier 1 alternatives and this evaluation. If there is a substantial change in properties used, or in the significance of the use, a determination will be made of the need to revisit the Tier 1 decision. This determination will take into account the adaptive nature of implementing the Preferred Alternative.
- **Step 5: Identification of all possible planning to minimize harm.** This step will include development of full mitigation measures as well as other measures to minimize harm.
- **Step 6: Development of least harm analysis.** If no prudent and feasible avoidance alternative exists, more than one alternative is developed for Tier 2 processes, and both use Section 4(f) properties, a least harm analysis will be conducted to determine which alternative causes the least overall harm in light of the statute’s preservation purpose.