

Section 4(f) was created when the US DOT was formed in 1966. It was initially codified at 49 U.S.C. 1653(f) (Section 4(f) of the US DOT Act of 1966) and applies only to US DOT agencies. Later that year, 23 U.S.C. 138 was added with somewhat different language, which applied only to the highway program. In 1983, Section 1653(f) was reworded without substantive change and recodified at 49 U.S.C. 303. In their final forms, these two statutes have no real practical distinction and are still commonly referred to as Section 4(f):

"It is hereby declared to be the national policy 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. The Secretary of Transportation shall cooperate and consult with the Secretaries of the Interior, Housing and Urban Development, and Agriculture, and with the States in developing transportation plans and programs that include measures to maintain or enhance the natural beauty of the lands traversed. After the effective date of the Federal-Aid Highway Act of 1968, the Secretary shall not approve any program or project (other than any project for a park road or parkway under section 204 of this title) which requires the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance as determined by the Federal, State, or local officials having jurisdiction thereof, or any land from an historic site of national, State, or local significance as so determined by such officials unless (1) there is no feasible and prudent alternative to the use of such land, and (2) such program includes all possible planning to minimize harm to such park, recreational area, wildlife and waterfowl refuge, or historic site resulting from such use. In carrying out the national policy declared in this section the Secretary, in cooperation with the Secretary of the Interior and appropriate State and local officials, is authorized to conduct studies as to the most feasible Federal-aid routes for the movement of motor vehicular traffic through or around national parks so as to best serve the needs of the traveling public while preserving the natural beauty of these areas."

23 U.S.C. 138

This chapter describes the Section 4(f) properties in the US 160 corridor that would be impacted by the alternatives evaluated in the US 160 DEIS. The *Section 4(f) Policy Paper* (March 2005) was used as guidance in determining the applicability of Section 4(f) to various types of land and resources in the project corridor. The alternatives that would avoid the resources altogether were then evaluated. Where no prudent and feasible avoidance alternatives were identified, a least harm analysis was performed for the Section 4(f) use alternatives. All possible planning to minimize harm was included in the Section 4(f) evaluation.

5.1 PROJECT PURPOSE AND NEED

The purpose of this project is to improve the conditions for the traveling public along the US 160 corridor. The need for this project is based on the projected increase in travel demands on highway capacity and efficiency, and the existing substandard design that contributes to accidents associated with roadway deficiencies.

Specifically, the purpose of the project is to:

- Increase travel efficiency/capacity to meet current and future needs
- Improve safety for the traveling public by reducing the number and severity of accidents
- Control access

A more detailed description of the purpose and need for the project can be found in Chapter 1, Purpose and Need.

5.2 PROJECT ALTERNATIVES

Following is a list of project alternatives evaluated in detail in this FEIS. These Advanced Alternatives were carried through the EIS for detailed analysis and were considered to be reasonable alternatives. The Advanced Alternatives included in the Section 4(f) evaluation are described below. These alternatives are shown in Figures 2.5.3 through 2.5.44.

5.2.1 No Action Alternative

Under the No Action Alternative, construction of capacity improvements on US 160 would not be completed. The existing US 160 would be maintained as a four-lane highway between the west project limit and the SH 172/CR 234 intersection and as a two-lane, undivided rural highway with a third passing lane at three locations from the SH 172/CR 234 intersection to the east project limit. The existing US 550 would be maintained as a two-lane highway from CR 220 to the intersection with US 160.

5.2.2 Grandview Section

5.2.2.1 *Alternative G Modified (Preferred Alternative)*

From the west project limit to the US 160/US 550 (south) intersection, US 160 would be four lanes with an eastbound climbing lane and a westbound auxiliary lane. From the US 550 (south) intersection to the intersection with SH 172/CR 234, US 160 would be four lanes. There would be single-point urban interchanges at CR 233 (west) and SH 172/CR 234. US 160 would remain on the existing alignment except near the SH 172/CR 234 intersection, where it would be shifted north to avoid Crestview Memorial Gardens.

US 550 would be four lanes from CR 220 to the intersection with US 160. US 550 would be realigned to the east of the existing US 550 and skirt the western edge of the Florida Mesa before connecting to US 160 with a trumpet interchange approximately 0.6 mile east of the existing US 160/US 550 (south) intersection.

5.2.2.2 *Alternative F Modified*

From the west project limit to the US 160/US 550 (south) intersection, US 160 would be four lanes with an eastbound climbing lane and a westbound auxiliary lane. From the US 550 (south) intersection to the intersection with SH 172/CR 234, US 160 would be four lanes. There would be a single-point urban interchange at SH 172/CR 234. US 160 would remain on the existing

alignment except near the SH 172/CR 234 intersection, where it would be shifted north to avoid Crestview Memorial Gardens.

US 550 would be four lanes from CR 220 to the intersection with US 160. US 550 would be realigned to the east of the existing US 550 and cross the top of the Florida Mesa before connecting to US 160 with a single-point urban interchange at the existing US 160/CR 233 (west) intersection location.

5.2.3 Florida Mesa and Valley Section

5.2.3.1 *Alternative C (Preferred Alternative)*

US 160 would be four lanes and generally remain on the existing alignment, with slight shifts as necessary to avoid residential structures on the north side of US 160 and the Griffin Dairy Farm complex on the south side of US 160. Continuous access roads would be constructed both north and south of the highway. CR 222 and CR 223 would be realigned and connect to access roads on both sides of US 160. A new intersection with US 160 would be created approximately 4,500 feet east of the existing CR 222/CR 223 (west) intersection. Because this is on the east side of the Florida River, new roadway connections would be made to CR 510 on the south and CR 223 on the north.

5.2.3.2 *Alternative A*

US 160 would be four lanes and generally remain on the existing alignment, with slight shifts as necessary to avoid residential structures on the north side of US 160 and the Griffin Dairy Farm complex on the south side of US 160. Continuous access roads would be constructed both north and south of the highway. CR 222 and CR 223 would be realigned and connect to US 160 at a new intersection approximately 500 feet west of the existing CR 222/CR 223 (west) intersection with US 160.

5.2.4 Dry Creek and Gem Village Section

5.2.4.1 *Alternative H (Preferred Alternative)*

US 160 would be four lanes and generally remain on the existing alignment with improvements for curvature, grades, and sight distance from the CR 222/CR 223 (west) intersection to the CR 223 (east) intersection. CR 223 would be realigned and connect to US 160 approximately 1,500 feet west of the existing US 160/CR 223 (east) intersection. To reduce impacts to high quality wetlands, a 36-foot median would be used from MP 98 to MP 99 to separate opposing travel lanes. A 46-foot median would be used in all other areas. Access roads are provided on both sides of US 160 between MP 94 and MP 95 and on the north side of US 160 between MP 96 and MP 97 to consolidate direct highway access and reduce out-of-direction travel. East of the US 160/CR 223 (east) intersection, US 160 would be realigned and bypass Gem Village to the south. The realigned US 160 would leave the existing US 160 on the west side of Gem Village near MP 100 and rejoin it near MP 101. No access roads would be constructed, but access would be provided at the east end of Gem Village. A one-way slip ramp would provide access for westbound traffic at the west end of Gem Village.

5.2.4.2 Alternative C

US 160 would be four lanes and generally remain on the existing alignment with improvements for curvature, grades, and sight distance. CR 223 would be realigned and connect to US 160 approximately 1,500 feet west of the existing US 160/CR 223 (east) intersection. To reduce impacts to high quality wetlands, a 36-foot median would be used at this intersection to separate opposing travel lanes. A 46-foot median would be used in all other areas. Access roads are provided on both sides of US 160 between MP 94 and MP 95 and on the north side of US 160 between MP 96 and MP 97 to consolidate direct highway access and reduce out-of-direction travel. In Gem Village, US 160 would be widened to the south. Access roads would be constructed on both sides of US 160 and access would be provided at the west end of Gem Village.

5.2.5 Bayfield Section

5.2.5.1 Alternative B (Preferred Alternative)

US 160 would be four lanes and generally remain on the existing alignment with improvements for curvature, grades, and sight distance. Three closely spaced intersections with US 160 [US 160B (west), CR 506, and CR 502] would be consolidated into a single unsignalized intersection. CR 502 would be realigned and connect to US 160 approximately 1,500 feet west of the existing US 160/CR 502 intersection. The realigned CR 502 would intersect CR 506 north of US 160 and continue south of US 160 to intersect with US 160B. This realignment would eliminate both of the existing US 160 intersections with CR 502 and CR 506. Access to US 160B would be maintained through an access road on the south side of US 160. The US 160/CR 501 intersection would remain a signalized intersection at its present location. The intersections of US 160B/CR 501 and US 160B/CR 521 would be reconstructed as a roundabout.

5.2.5.2 Alternative A

US 160 would be four lanes and generally remain on the existing alignment with improvements for curvature, grades, and sight distance. Three closely spaced intersections with US 160 [US 160B (west), CR 506, and CR 502] would be consolidated into a single unsignalized intersection. CR 502 would be realigned and connect to US 160 approximately 1,500 feet west of the existing US 160/CR 502 intersection. The realigned CR 502 would intersect CR 506 north of US 160 and continue south of US 160 to intersect with US 160B. This realignment would eliminate both of the existing US 160 intersections with CR 502 and CR 506. Access to US 160B would be maintained through an access road on the south side of US 160. CR 501 would be realigned and connect to US 160 approximately 800 feet west of the existing US 160/CR 501 intersection. This new intersection with US 160 would be a diamond interchange. From US 160 to the US 160B/CR 521 intersection, the existing CR 501 would be eliminated.

5.3 DESCRIPTION OF SECTION 4(f) PROPERTIES

Ten Section 4(f) properties were identified in the US 160 corridor. These properties were divided into two categories: (1) recreation areas, and (2) cultural resources. Each property was

evaluated to determine whether there is a proposed “use” of the resource that requires a Section 4(f) evaluation. A “use” occurs when:

- Land from a Section 4(f) site 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.
- There is a constructive use of the land. Constructive use of the land occurs where the transportation project’s proximity impacts on the Section 4(f) site, without acquisition of land, are so severe that the protected activities, features, or attributes that qualify the resource for protection under Section 4(f) are substantially impaired (i.e., constructive use impacts).

Section 4(f) properties where use has been avoided were not analyzed further in this evaluation. Section 4(f) properties for which there was an identified use were analyzed for prudent and feasible avoidance alternatives. Where no prudent and feasible avoidance alternatives were found, a least harm analysis was performed. All possible planning to minimize harm was included in the least harm analysis.

5.3.1 Recreation Areas

A park, recreation area, or wildlife or waterfowl refuge is considered to be a Section 4(f) resource if:

- The land is publicly owned
- The land has been officially designated as a park, recreation area, or refuge, or if federal, state, or local officials having jurisdiction over the land determine that one of its major functions is for one or more of these purposes.

According to these definitions, there is one recreation Section 4(f) property along the US 160 project corridor. The Little Pine River Park is located immediately east of the Los Pinos River and adjacent to US 160 on the south. The park is owned by the town of Bayfield and occupies approximately 16 acres. Developed facilities include a Chamber of Commerce outpost building, graveled trails, two unpaved parking lots, a pedestrian bridge over the Los Pinos River, and several picnic tables. There are two entrances to the park, with the eastern entrance leading to a smaller parking area and a picnic table and a western entrance leading to a Chamber of Commerce building and restrooms. A pedestrian trail and bridge provide access between the two parking areas. The public can use the park as a rest stop and picnic area while also enjoying a natural resources observation area. Reasonable access to the Little Pine River Park will be maintained under the no action and build alternatives. The type of access will be evaluated during final design and ranges from full movement access at both the eastern and western entrance areas to right-in/right-out only at the eastern entrance. In coordination with the town of Bayfield, the following order of access movements will be considered pending access control and safety requirements in conformance with the State Highway Access Code, State Highway Access Law, and Freeway Statutes:

- Full movement at both the eastern and western entrances
- Full movement at the eastern entrance and three-quarter movement at the western entrance
- Full movement at the eastern entrance and right-in/right-out at the western entrance

- Three-quarter movement at the eastern entrance and right-in/right-out at the western entrance
- Right-in/right-out at both entrances
- Right-in/right-out only at the east entrance

Under all scenarios, adequate parking at Little Pine River Park would continue to be available, and access to US 160 from the park will be maintained.

There is no proposed use of the Little Pine River Park under either of the build alternatives. Both alternatives expand US 160 to the north, away from the park, and do not require any acquisition of land from the park. Therefore, there is no permanent incorporation of the Section 4(f) resource into the project. In addition, CDOT will not put staging areas in the park location and will maintain access to the park during construction so there will be no temporary occupancy that could cause adverse impacts. The modification of the access does not change the use of the park, nor substantially diminish or impair the function of the park because adequate parking and access will be maintained. Therefore, closing or changing one of the access points does not constitute a constructive use. Because there is no permanent, temporary, or constructive use of the Little Pine River Park, it was not carried further for Section 4(f) evaluation.

5.3.2 Cultural Resources

Section 4(f) is applicable to historic properties (historic, historic and prehistoric archaeological, and Native American traditional cultural properties) when the property is included on, or eligible for, the NRHP [23 CFR 771.135(e)].

The inventory listed in Table 5.3.1, Historic Section 4(f) Properties, identifies the historic Section 4(f) properties that are located within the project corridor. These properties are shown in Figures 5.3.1 through 5.3.4. The nine historic properties qualify as Section 4(f) properties and have been carried forward for further discussion because they would be impacted by the project, thereby constituting a use of these properties.

**Table 5.3.1
Historic Section 4(f) Properties**

Site Number	Site Type	NRHP Register Eligibility Criteria*
5LP1131.8	Denver & Rio Grande Railroad	A
5LP5658	King Ditch	A
5LP5659	Thompson-Epperson Ditch	A
5LP5661	Florida Farmers' Ditch	A
5LP5662	Florida Canal	A
5LP5663	McCluer-Murray Ditch	A
5LP5664	Pioneer Ditch	A
5LP5665	Schroder Irrigating Ditch	A
5LP5666	Los Pinos Irrigating Ditch	A

Source: National Register of Historic Places, 36 CFR 60.4.

*See Section 3.13, Historic Preservation, for an explanation on eligibility criteria.

Section 4(f) also applies to undiscovered archaeological sites that may be revealed during construction and could be eligible for the NRHP [23 CFR 771.135(g)(1)]. If an unanticipated discovery of an NRHP-eligible archaeological site occurs during construction, the need to complete a Section 4(f) evaluation would be determined at that time.

One archaeological site (5LP5677), which at this time is not considered to be a Section 4(f) property, is located along the project corridor. This site is a sparse scatter of lithic artifacts covering an area slightly less than 1 acre. It is located on a low ridge immediately south of and overlooking US 160. Artifacts found on the site include about two dozen flakes, a biface fragment, and an unnotched projectile point base. The point base is similar to those assigned to the Archaic period in southwestern Colorado [ca. 8500-2000 before present (BP)]. A road cut revealed deep soils and a buried artifact. Additional data obtained from small-scale test excavations are needed to complete a comprehensive NRHP evaluation. However, the landowner has refused access to the property for this purpose. Available information indicates that 5LP5677 is similar to four other prehistoric sites in the corridor (5LP5674, 5LP5678, 5LP681, and 5LP6490), all of which were determined not eligible for the NRHP subsequent to testing. Based on the results of archaeological investigations at comparable localities in southwestern Colorado, if this site were determined NRHP-eligible it would likely be important chiefly because of what can be learned by data recovery and has minimal value for preservation in place. Section 4(f) would not apply [23 CFR 771.135(g)(2)] under this condition. However, if Section 4(f) was found to apply to 5LP5677, a separate Section 4(f) evaluation of the site may be required [23 CFR 771.135(m)].

5.4 SECTION 4(f) ANALYSIS

Nine historic properties have been included for detailed analysis as required under Section 4(f). The intent of Section 4(f) is to avoid use of public parks, recreation areas, refuges, and historic sites unless there is no feasible and prudent alternative to the use of such land. In this FEIS, several screening levels were used to arrive at the Advanced Alternatives including a Corridor Alternative screening level, a Feasibility Alternative screening level, and a Preliminary Alternative screening level. A discussion of the avoidance alternatives for each screening level and whether they are feasible and prudent is provided in Section 5.4.1. Section 5.4.2 describes the use of the Section 4(f) resources. A resource-specific Section 4(f) analysis is provided in Section 5.4.3. The resource-specific Section 4(f) analysis includes a description of each Section 4(f) resource, the identified use, the avoidance alternatives for each specific Section 4(f) resource, and where there are no prudent and feasible avoidance alternatives, a least harm analysis. The Advanced Alternatives were evaluated for each Section 4(f) resource as part of the resource-specific Section 4(f) analysis.

5.4.1 Avoidance Alternatives

Avoidance alternatives and whether they are prudent and feasible are described below for the different screening levels including Corridor Alternatives, Feasibility Alternatives, and Preliminary Alternatives.

5.4.1.1 Corridor Alternatives

Corridor alternatives that avoid use of the Section 4(f) properties include the No Action alternative, TSM alternatives, TDM alternatives, and major shifts of the alignment to avoid the resources.

No Action Alternative

The No Action avoidance alternative makes no improvements to the current US 160 highway and maintains the current alignment and lanes as they exist now. Because this alternative does not meet the purpose and need of the project to increase travel capacity, to improve safety for the traveling public by reducing the number and severity of accidents, and to control access, it is not a feasible and prudent alternative for avoiding the impacted Section 4(f) properties in the project corridor.

TSM Alternatives

TSM alternatives incorporate strategies to smooth traffic flow and make efficient use of existing transportation facilities, such as signal coordination, intersection improvements, and access control. Along the US 160 corridor there would be five signalized intersections in 16.2 miles. Due to the large distance between these intersections, it was determined that signal coordination would have little or no impact on traffic flow, and therefore would not meet purpose and need. Intersection improvements fail to satisfy purpose and need because there would be no capacity improvements. Safety and access improvement projects would not address corridor-length deficiencies, such as narrow shoulders, insufficient clear zones, poor sight distance, or steep grades. TSM strategies will not meet the purpose and need for the project and therefore are not considered to be prudent alternatives for this corridor.

TDM Alternatives

TDM incorporates strategies to reduce the peak hour demand on the roadway by altering the time or means by which trips occur. These strategies include promoting transit and rideshare programs, creating multi-modal routes, encouraging staggered work hours, and creating HOV express lanes. The transit alternative fails to satisfy purpose and need because there would be no safety or access improvements, and reduction of capacity demand would not be sufficient to eliminate the need for capacity improvements. Rideshare programs promote car and van pooling by providing means for potential rideshare participants to meet, promoting ridesharing through incentives for employers and individuals, and providing parking locations for rideshare participants. The rideshare alternative fails to satisfy purpose and need because there would be no safety or access improvements, and reduction of capacity demand would not be sufficient to eliminate the need for capacity improvements. Because TDM strategies do not meet the purpose and need for the project, they are not considered to be prudent alternatives.

Corridor Alignment Alternatives

This avoidance alternative would relocate the existing US 160 roadway from its current alignment to a new location to avoid the use of the Section 4(f) properties. Generally, the relocation of US 160 would be to the north or south of the existing alignment as the roadway trends in an east-west direction. A north or south shift of the US 160 alignment to avoid the Section 4(f) resources are feasible alternatives, but are not considered to be prudent because they do not meet the project purpose and need. These alternatives do not meet the purpose and need

because the existing US 160 roadway would have to be maintained and the safety and access issues would remain. In addition, most of the Section 4(f) properties are ditches that trend to the north and south and are perpendicular to the east-west trending highway. A north or south shift to avoid these resources would add miles of out-of-direction travel and result in unacceptable and severe environmental impacts. For these reasons, the general alignment shift of the highway to avoid the Section 4(f) resources was not considered to be prudent.

5.4.1.2 Feasibility Alternatives

The Feasibility Alternatives were developed during the Feasibility Study and EA. The project corridor was divided into 12 numbered sections due to the wide range of conditions that exist along the US 160 project corridor. Section 1 included US 550 from CR 220 and the intersection of US 550 with US 160. Eight feasibility alternatives were considered in this section. Two Section 4(f) properties, the Florida Farmers' Ditch and the Denver & Rio Grande Railroad, are located in this section. Avoidance alternatives for the Florida Farmers' Ditch include 1A, 1B, 1C, 1D, and 1G Modified. An avoidance alternative for the Denver & Rio Grande Railroad is 1B. Feasibility Alternative 1B was not considered to be prudent because it does not meet the capacity need. Feasibility Alternatives 1C, 1D, and 1F were not considered prudent as they did not meet the safety need. Feasibility Alternatives 1A, 1F Modified, and 1G Modified were carried forward into the Preliminary Alternative screening.

Section 2 is located on US 160 from MP 87.5 to MP 89.4. Two feasibility alternatives were considered in this section. The only Section 4(f) property in this section is the Denver & Rio Grande Railroad. Feasibility Alternative 2D would remain on the existing alignment and is the only avoidance alternative in Section 2. It was carried forward into the Preliminary Alternative screening. ~~Feasibility Alternative 2E is not an avoidance alternative as it would impact the Denver & Rio Grande Railroad. It was not considered to be prudent because of its severe, adverse social impacts to Mercy Medical Center, the associated medical office complex, and Three Springs Development. The new alignment for Alternative 2E is also not prudent based on greater wetland impacts to high value wetlands associated with Wilson Gulch.~~

Section 3 is from MP 89.4 to MP 91.2. Nine Feasibility Alternatives were considered in this section. The only Section 4(f) property in this section is the Denver & Rio Grande Railroad. All alternatives in this section would impact the Denver & Rio Grande Railroad as the railroad trends north-south in this section and the corridor is aligned east-west. The majority of the alternatives in this section were eliminated as not prudent because they do not meet the capacity need. Feasibility Alternatives eliminated for not meeting the capacity need, and therefore rejected as not prudent include 3A, 3B, 3C, 3D, 3E, 3F, 3G, and 3H. Feasibility Alternative 3I, along the existing alignment, was carried forward into the Preliminary Alternative screening.

Section 4 is the intersection of US 160 and SH 172/CR 234. Seven Feasibility Alternatives were considered at the intersection. The only Section 4(f) property in this section is the Florida Farmers' Ditch. All alternatives in this section would impact the Florida Farmers' Ditch as the ditch trends north-south in this section and the corridor is aligned east-west. The avoidance alternative in this section, a north or south shift of US 160, would add miles of out-of-direction travel and result in unacceptable and severe environmental impacts. It also would not meet the project purpose and need as the existing US 160 roadway would have to be maintained and the safety and access issues would remain. For these reasons, the avoidance alternative in this

section was not considered to be prudent. Feasibility Alternatives 4A, 4D, 4E, 4F, and 4G do not meet the project capacity need as they would operate at an LOS F. These alternatives were therefore not considered to be prudent. Feasibility Alternatives 4C, a diamond interchange, and 4H, a single-point urban interchange, meet the project purpose and need and have the same impact to the Florida Farmers' Ditch. Feasibility Alternative 4H, however, was considered to be the more prudent alternative with less harm compared to 4C as it operates better than 4C and has the same or less environmental impacts. Feasibility Alternative 4H was carried forward into the Preliminary Alternative screening.

Section 5 is from MP 91.8 to MP 92.8. The three initial alternatives in this section, 5A, 5B, and 5C, were combined into the one feasibility alternative, 5A, considered in this section. The Section 4(f) properties in this section are the Florida Farmers' Ditch and the Florida Canal, which trend north-south across the east-west aligned US 160 corridor. Feasibility Alternative 5A, located along the existing corridor, would impact the Florida Farmers' Ditch and the Florida Canal. ~~It was the only Feasibility Alternative considered in this section.~~ The avoidance alternative in this section, a north or south shift of US 160, would add miles of out-of-direction travel and result in unacceptable and severe environmental impacts. It also would not meet the project purpose and need as the existing US 160 roadway would have to be maintained and the safety and access issues would remain. For these reasons, the avoidance alternative in this section was not considered to be prudent. Feasibility Alternative 5A, located along the existing corridor, was carried forward into the Preliminary Alternative screening.

Section 6 is from MP 92.8 west of the CR 222/223 (west) intersection with US 160 to east of the Florida River at MP 94.2. Five Feasibility Alternatives were considered in this section. The only Section 4(f) property in this section is the McCluer-Murray Ditch. All the Feasibility Alternatives in this section would impact the McCluer-Murray Ditch as the ditch trends north-south, and the corridor is aligned east-west. The avoidance alternative in this section, a north or south shift of US 160, would add miles of out-of-direction travel and result in unacceptable and severe environmental impacts. It also would not meet the project purpose and need as the existing US 160 roadway would have to be maintained and the safety and access issues would remain. For these reasons, the avoidance alternative in this section was not considered to be prudent. All the alternatives would require widening of the US 160 roadway across the ditch but several of the Feasibility Alternatives would locate the intersection away from the ditch and therefore have less use of the ditch. The alternatives that use the ditch less include Feasibility Alternatives A, B, and C. These alternatives were considered to have less harm to the ditch and were carried forward into the Preliminary Alternative screening.

Sections 7, 8, and 9 were analyzed as a single section from MP 94.2 to MP 99.8, with one feasibility alternative considered. The Section 4(f) property in this section is the Pioneer Ditch, which trends north-south with the corridor aligned east-west. Feasibility Alternative 7, 8, and 9A, located along the existing corridor, would impact the Pioneer Ditch. ~~It was the only Feasibility Alternative considered in this section.~~ The avoidance alternative in this section, a north or south shift of US 160, would add miles of out-of-direction travel and result in severe environmental impacts. It also would not meet the project purpose and need as the existing US 160 roadway would have to be maintained and the safety and access issues would remain. For these reasons, the avoidance alternative in this section was not considered to be prudent. The Feasibility Alternative in this section would remain along the existing corridor and was carried forward into the Preliminary Alternative screening.

Section 10 is located from MP 99.8 west of Gem Village to MP 101.6 near the US 160/US 160B (west) intersection. Eight Feasibility Alternatives were considered in Section 10. The only Section 4(f) property in this section is the King Ditch. All alternatives in this section would impact the King Ditch as the ditch trends north-south in this section and the corridor is aligned east-west. The avoidance alternative in this section, a north or south shift of US 160, would add miles of out-of-direction travel and result in unacceptable and severe environmental impacts. It also would not meet the project purpose and need as the existing US 160 roadway would have to be maintained and the safety and access issues would remain. For these reasons, the avoidance alternative in this section was not considered to be prudent. Alternatives 10F and 10G, which bypass Gem Village to the north, were rejected as prudent alternatives because they have severe adverse environmental impacts. These alternatives cross undisturbed land and have double the impacts to wetlands as compared to other Feasibility Alternatives in Gem Village. Feasibility Alternatives 10A, 10B, 10C, and 10E, which remain on the existing alignment with shifts to the north or south, were carried forward into the Preliminary Alternative screening. Feasibility Alternatives 10D and 10H which bypass Gem Village to the south, were carried forward into the Preliminary Alternative screening.

Section 11 is from MP 101.6 east of the US 160/US 160B (west) through the town of Bayfield to the east project limit at MP 104.2. One feasibility alternative was considered in this section. The Section 4(f) properties in this section include the King Ditch, the Thompson-Epperson Ditch, the Schroder Irrigation Ditch and the Los Pinos Irrigation Ditch. All of these ditches trend north-south with the corridor aligned east-west. The avoidance alternative in this section, a north or south shift of US 160, would add miles of out-of-direction travel and result in unacceptable and severe environmental impacts. It also would not meet the project purpose and need as the existing US 160 roadway would have to be maintained and the safety and access issues would remain. For these reasons, the avoidance alternative in this section was not considered to be prudent. The Feasibility Alternative in this section would consolidate three intersections [US 160B (west), CR 506 and CR 502] and would remain on the existing alignment. It was carried forward into the Preliminary Alternative screening.

Section 12 is the intersection in Bayfield of US 160 and CR 501. Two Feasibility Alternatives were considered in this section and carried forward into the Preliminary Alternative screening. There are no Section 4(f) properties impacted by the Feasibility Alternatives at this intersection.

5.4.1.3 Preliminary Alternatives

In the Preliminary Alternative screening, the 12 sections identified previously were grouped into four sections. The Feasibility Alternatives carried forward from the second screening were then combined in each of the four sections to create the Preliminary Alternatives. Alternatives within each section were assigned a letter designation (A, B, C, etc.) in conjunction with a section name (e.g., Grandview Alternative G, Bayfield Alternative B, etc.). The letter designation was retained from the Feasibility Alternative carried forward from the second screening. The four sections include: Grandview (Sections 1-4), Florida Mesa and Valley (Sections 5 and 6), Dry Creek and Gem Village (Sections 7-10) and Bayfield (Sections 11 and 12).

None of the Preliminary Alternatives eliminated were avoidance alternatives for the Section 4(f) properties in the four sections. All of the eliminated preliminary alternatives except one, had the same or greater use of the Section 4(f) properties compared to the Advanced Alternatives. The

preliminary alternative that has less use of one of the Section 4(f) properties is Alternative A in the Grandview section. This alternative is described as follows:

From the west project limit to the US 160/US 550 (south) intersection, US 160 would be four lanes with an eastbound climbing lane and a westbound auxiliary lane. From the US 550 (south) intersection to the intersection with SH 172/CR 234, US 160 would be four lanes. There would be single-point urban interchanges at CR 233 (west) and SH 172/CR 234. US 160 would remain on the existing alignment except near the SH 172/CR 234 intersection, where it would be shifted north to avoid Crestview Memorial Gardens. US 550 would be four lanes from CR 220 to the intersection with US 160. An interchange would be located at the current US 160/US 550 (south) intersection.

Grandview Preliminary Alternative A is included in the Resource-Specific 4(f) Analysis.

5.4.2 Use of Section 4(f) Properties

Impacts to Section 4(f) properties may occur to varying degrees during project implementation. All of the anticipated impacts to the nine historic Section 4(f) properties in the project corridor are direct uses which convert the existing use to a transportation use. None of the alternatives will substantially impair the current use of the property. For example, the ditches will still convey water and function for irrigation purposes. No constructive or temporary uses will occur as a result of this project.

All of the Section 4(f) properties (one railroad and eight ditches) are linear features that bisect the existing highway in at least one location. Table 5.4.1, Section 4(f) Property Uses, summarizes the Section 4(f) properties that would be impacted by the project. This summary includes the approximate length or acreage of the property and the estimated percentage of the total property that would be impacted.

All of the ditches have several things in common. They have all been determined eligible for the NRHP under criterion (a) for their associations with significant events – specifically, irrigation’s role in promoting agriculture and settlement in the region. They have all been in continuous use and subject to various undocumented upgrades and modifications, as well as the documented changes associated with the construction of the existing highway in the early 1960s. Only open unlined segments of ditch are crossed and no features other than those built in association with US 160 in the 1960s are impacted. Only small portions of relatively long linear properties would be affected.

**Table 5.4.1
Section 4(f) Property Uses**

Site No.	Site Type (size of site in acres or linear miles in La Plata County)	Property Uses by Alternative ^{1,2}								
		No Action	Grandview Section Linear Feet (percent)		Florida Mesa & Valley Section Linear Feet (percent)		Dry Creek & Gem Village Section Linear Feet (percent)		Bayfield Section Linear Feet (percent)	
			G Mod.	F Mod.	C	A	H	C	B	A
5LP1131.8	Denver & Rio Grande Railroad (~6 miles)		4,902 (15.5)	2,879 (9.1)						
5LP5658	King Ditch (~7.5 miles)						463 (1.2)	276 (0.7)	675 (1.7)	675 (1.7)
5LP5659	Thompson-Epperson Ditch (~12 miles)								1,360 (2.1)	1,360 (2.1)
5LP5661	Florida Farmers' Ditch (~7 miles)		405 (1.1)	1,905 (5.2)	336 (1.4)	336 (1.4)				
5LP5662	Florida Canal (~16 miles)				462 (0.6)	462 (0.6)				
5LP5663	McCluer-Murray Ditch (~2.5 miles)				675 (5.1)	750 (5.7)				
5LP5664	Pioneer Ditch (~4.5 miles)						416 (1.8)	416 (1.8)		
5LP5665	Schroder Irrigating Ditch (~3.5 miles)								131 (0.7)	131 (0.7)
5LP5666	Los Pinos Irrigating Ditch (~5 miles)								209 (0.8)	209 (0.8)

¹Preferred Alternatives are shaded.

²An empty cell indicates the site is not impacted by an alternative.

It is anticipated that the following types of uses would occur to the ditches:

- New or widened crossings in areas where the ditch is currently crossed by the existing highway and where highway construction in the 1960s included substantial realignments of the ditches. This substantially altered the historic integrity of the ditches to the extent that these segments no longer support the eligibility of the overall resource.
- New or widened crossings in areas where the ditch is currently crossed by the existing highway and where highway construction in the 1960s did not include realignments of the ditches.
- Areas where a ditch would be crossed in a completely new location.
- Areas where a ditch parallels the highway and would be impacted by the toe of slopes from the highway.

The current crossings of the ditches by the existing highway were built in the 1960s during the construction of the present roadway. Where the existing road crosses the ditch and CDOT owns the right-of-way or has a permanent easement, there is no use. Where new or additional land from the historic property is incorporated into the transportation facility, there is a use.

5.4.3 Resource-Specific Section 4(f) Analysis

5.4.3.1 *Denver & Rio Grande Railroad (5LP1131.8)*

Description of Resource. Most of the original San Juan extension of the Denver & Rio Grande Railroad from Antonito, Colorado to Chama, New Mexico was constructed in 1880, and the line was completed to Durango in July 1881. The Durango train stopped hauling freight to parts of southern Colorado and northern New Mexico in 1969, and the line between Alamosa and Durango was abandoned. A continuous segment of the railroad grade, approximately 6 miles long, exists within the project study area. This 6-mile stretch is located in the Grandview section (Figure 5.3.1). It is considered eligible for the NRHP because it was important in the settlement of the Durango area and is associated with General William Jackson Palmer, an important figure in Colorado history. The railroad grade is considered eligible for the NRHP under criterion (a).

Description of Potential Use. Both Alternatives G Modified (Preferred Alternative) and F Modified in the Grandview section would use portions of this railroad grade, which extends for approximately 6 miles within La Plata County and for an undetermined distance outside of the county. Alternative F Modified would use approximately 9.1 percent of the resource, while Alternative G Modified (Preferred Alternative) would use approximately 15.5 percent. Alternative A, a preliminary alternative not considered to be reasonable, also would use approximately 12.9 percent of the resource. Although small sections (9.1 to 15.5 percent) of the railroad grade would be impacted, these impacts would not have a detrimental effect on the overall integrity of this resource.

Avoidance Alternatives. A north or south shift of the US 160 alignment to avoid the Denver & Rio Grande Railroad are feasible alternatives but are not considered to be prudent because they do not meet the project purpose and need. These alternatives do not meet the purpose and need because under either alternative, the existing US 160 roadway would have to be maintained and the safety and access issues would remain. In addition, to avoid the Denver & Rio Grande Railroad, the north shift would result in unacceptable and severe adverse social impacts as it would cause impacts to a 212,000-square-foot new regional hospital and a 155,000-square-foot medical office building currently being built in the Grandview area. This alternative would also impact proposed residential development and would cause extraordinary community disruptions. The south shift would cause unacceptable and severe environmental impacts as it would be constructed through a relatively undeveloped area that would cause the loss and segmentation of wildlife habitat. Therefore, the No Action Alternative, a north shift of the US 160 alignment to avoid impacts to the resource, and a south shift of the US 160 alignment to avoid impacts to the resource are not considered to be prudent and feasible.

Least Harm Analysis. The Grandview section Alternative G Modified (Preferred Alternative) and Alternative A would avoid creation of a new crossing over the Florida Farmers' Ditch but both of these alternatives would result in greater impacts to the Denver & Rio Grande abandoned railroad grade at the US 160/US 550 (south) interchange. Alternative A has less impact to the Denver & Rio Grande abandoned railroad than Alternative G Modified (Preferred Alternative) but has constructability problems, greater impacts to wetlands, poor geometry, and drainage and slope instabilities. The Grandview section Alternative F Modified would require a completely new crossing of a relatively long segment of the Florida Farmers' Ditch to accommodate the realigned US 550 but has less impacts to the abandoned railroad grade of the Denver & Rio

Grande Railroad. Although Alternative F Modified has the least harm to the Denver & Rio Grande Railroad, it has greater impacts to the Florida Farmers' Ditch and would result in more impacts to wetlands as compared to G Modified (Preferred Alternative). For these reasons, the Grandview section G Modified (Preferred Alternative) is considered to be the more prudent alternative with the least overall harm in this section.

5.4.3.2 King Ditch (5LP5658)

Description of Resource. The King Ditch crosses US 160 in three locations west of Bayfield within the project area. Formerly known as the Wood Ditch, the King Ditch was originally owned by William Worrall and its construction began May 1, 1881. The headgate is located on the west bank of the Los Pinos River, and the original length of the ditch was 13.5 miles. The King Ditch is considered eligible for the NRHP under criterion (a).

Description of Potential Use. Both build alternatives in the Dry Creek and Gem Village section and in the Bayfield section would use portions of this ditch, which extends for approximately 7.5 miles. In the Dry Creek and Gem Village section, Alternative C would use about 0.7 percent of the resource, while Alternative H (Preferred Alternative) would use approximately 1.2 percent of the resource. In the Bayfield section, both alternatives would use about 1.7 percent of the resource. US 160 currently crosses this ditch by means of a box culvert, which would be expanded under both alternatives. In addition, Alternative H (Preferred Alternative) in the Dry Creek and Gem Village section would require a second crossing of the ditch at a location where the ditch was realigned when the highway was originally constructed in the early 1960s. In all cases, the historic function of the ditch as a conveyance of water for irrigation would not be altered.

Avoidance Alternatives. The ditch is aligned perpendicular to the east-west trending highway. A north or south shift to avoid this resource would add miles of out-of-direction travel and result in unacceptable and severe environmental impacts. Therefore, this alternative is not prudent and feasible. Spanning the ditch with a structure that does not contact the ditch, rather than a box culvert placed in the channel, is another alternative. This alternative would require raised approaches that would change the vertical roadway profile and reduce the sight distance, potentially creating a safety issue. This alternative would also add substantially to the cost of each ditch crossing. For these reasons, this alternative is considered not to be prudent.

Least Harm Analysis. In the Bayfield section, Alternative B (Preferred Alternative) and Alternative A would both use 675 feet of the approximately 7.5-mile King Ditch (or 1.7 percent) and therefore have the same overall harm to the resource. In the Dry Creek and Gem Village section, Alternative C has less impact on the King Ditch than Alternative H (Preferred Alternative). However, Alternative C in the Dry Creek and Gem Village section has unacceptable and severe social impacts, and would cause extraordinary community disruption. The Alternative C alignment follows the existing alignment through Gem Village, as opposed to Alternative H (Preferred Alternative), which bypasses the community. Alternative C would have 15 residential relocations and nine business relocations, as compared to eight residential relocations and no business relocations for Alternative H (Preferred Alternative). Community cohesion in Gem Village would be adversely impacted with Alternative C, as the majority of the community is centered around the existing US 160. Expansion of the roadway as part of Alternative C would require relocation of many of these businesses. Written comments received

at public meetings supported Alternative H (Preferred Alternative) because it has less community impacts than Alternative C. ~~For these reasons, Alternative H (Preferred Alternative) is considered to be a more prudent alternative and has the least overall harm.~~ For these reasons, Alternative C is not considered prudent and Alternative H (Preferred Alternative) is considered to have the least overall harm.

5.4.3.3 Thompson-Epperson Ditch (5LP5659)

Description of Resource. The Thompson-Epperson Ditch intersects the study area in four locations west of Bayfield. Herman O. Schutz, C.E. Stilwell, and Earl Smith were the original owners, and construction on the ditch started in the spring of 1877. The original headgate of the ditch is located on the west bank of the Los Pinos River, and its original length was 13 miles. It flows south until it separates into two branches: one branch runs west (Segments 1 and 4) and the second branch continues south (Segments 2 and 3). The Thompson-Epperson Ditch is considered eligible for the NRHP under criterion (a).

Description of Potential Use. Both build alternatives in the Bayfield section would use portions of this ditch, which extends for approximately 12 miles. Both alternatives would use about 2.1 percent of the resource. US 160 currently crosses this ditch by means of a box culvert, which would be expanded under both alternatives. In all cases, the historic function of the ditch as a conveyance of water for irrigation would not be altered.

The intersection consolidation of CR 502 and CR 506 for both alternatives would be located west of existing CR 506 and US 160 and would improve the safety of the traveling public. There are two branches of the Thompson-Epperson Ditch; one that is perpendicular to CR 506, and one that is parallel to CR 502. The ditches join north of US 160 to form one ditch perpendicular to the highway. The use would occur where CR 502 is realigned perpendicular to the ditch to join with CR 506. The existing crossing of CR 506 over the Thompson-Epperson Ditch would change minimally.

Avoidance Alternatives. The ditch is aligned perpendicular to the east-west trending highway. A north or south shift to avoid this resource would add miles of out-of-direction travel and result in unacceptable and severe environmental impacts. Therefore, this alternative is not prudent and feasible. Spanning the ditch with a structure that does not contact the ditch, rather than a box culvert placed in the channel, is another alternative. This alternative would require raised approaches that would change the vertical roadway profile and reduce the sight distance, potentially creating a safety issue. This alternative would also add substantially to the cost of each ditch crossing. For these reasons, this alternative is considered not to be prudent.

Maintaining the existing CR 502 is not prudent and feasible because the proximity of CR 502 and CR 506 creates access conflicts and does not meet the purpose and need. To avoid crossing the ditch would add miles of out-of-direction travel and result in unacceptable and severe environmental impacts. Therefore, this alternative is not prudent and feasible.

Least Harm Analysis. Both build alternatives impact 1,360 feet of the 12-mile Thompson-Epperson Ditch (or 2.1 percent) and, therefore, have the same overall harm to the resource. Both build alternatives would also have the same harm to three other Section 4(f) properties in the Bayfield section. These alternatives would impact 131 feet, or 0.7 percent, of the Schroder Irrigating Ditch; 209 feet, or 0.8 percent, of the Los Pinos Irrigating Ditch; and 675 feet, or

1.7 percent, of the King Ditch. The preferred alternative, Bayfield section Alternative B, has fewer environmental impacts to wetlands, wildlife habitat, and irrigated farmlands than Bayfield section Alternative A (Table 2.4.2, Summary of Preliminary Alternatives Screening). Bayfield section Alternative B (Preferred Alternative) is therefore considered to be the more prudent and feasible alternative with the least overall harm.

5.4.3.4 *Florida Farmers' Ditch (5LP5661)*

Description of Resource. The Florida Farmers' Ditch crosses the study area in three areas east of Grandview. From its intersection with the Florida Canal, approximately 1 mile north of US 160, the ditch splits into two branches. One branch flows southeast under US 160 (Segment 1), approximately 1.25 miles east of the SH 172/CR 234 intersection with US 160, until it reaches Lone Pine Gulch approximately 1 mile south of US 160. The other branch flows southwest and crosses under US 160 (Segment 2) approximately 0.25 mile west of the SH 172/CR 234 intersection with US 160. It veers west until it terminates in a field approximately 0.25 mile south of Grandview (Segment 3). Construction of the Florida Farmers' Ditch began in 1883, but various enlargements were made beginning in 1887. The Florida Farmers' Ditch is considered eligible for the NRHP under criterion (a).

Description of Potential Use. Both Alternatives G Modified (Preferred Alternative) and F Modified in the Grandview section and the build alternatives in the Florida Mesa and Valley section would use portions of this ditch, which extends for approximately 7 miles. In the Grandview section, Alternative F Modified would use about 5.2 percent of the resource, while Alternative G Modified (Preferred Alternative) would use approximately 1.1 percent of the resource. Alternative A, a preliminary alternative not considered to be reasonable, also would use approximately 1.1 percent of the resource. In the Florida Mesa and Valley section, both build alternatives would use about 1.4 percent of the resource. US 160 currently crosses this ditch by means of a box culvert, which would be expanded under both alternatives. In addition, Alternatives F Modified and G Modified (Preferred Alternative) would require a second crossing of the ditch at a location where the ditch was realigned when the highway was originally constructed in the early 1960s. Alternative F Modified would also require a third crossing in a new location that is some distance from the existing highway alignment. In all cases, the historic function of the ditch as a conveyance of water for irrigation will not be altered.

Avoidance Alternatives. The ditch is aligned perpendicular to the east-west trending highway. A north or south shift to avoid this resource would add miles of out-of-direction travel and result in unacceptable and severe environmental impacts. Therefore, this alternative is not prudent and feasible. Spanning the ditch with a structure that does not contact the ditch, rather than a box culvert placed in the channel, is another alternative. This alternative would require raised approaches that would change the vertical roadway profile and reduce the sight distance, potentially creating a safety issue. This alternative would also add substantially to the cost of each ditch crossing. For these reasons, this alternative is considered not to be prudent.

Least Harm Analysis. In the Grandview section, Alternative F Modified would impact approximately 5.2 percent of the resource, while Alternative G Modified (Preferred Alternative) would impact approximately 1.1 percent of the resource. Alternative A in the Grandview section, an alternative eliminated in the preliminary screening, would impact 1.1 percent of the resource. In the Florida Mesa and Valley section, both build alternatives would impact about

1.4 percent of the resource. Alternatives A and G Modified (Preferred Alternative) have the same overall harm to the resource. Alternative A, however, has constructability problems, greater impacts to wetlands, poor geometry, and drainage and slope instabilities. Alternative G Modified (Preferred Alternative) is therefore considered to be the more prudent alternative with the least overall harm.

5.4.3.5 Florida Canal (5LP5662)

Description of Resource. The Florida Canal crosses the study area approximately 0.33 mile east of the SH 172/CR 234 intersection with US 160. The Florida Canal was originally known as the Florida Mesa Ditch Company Ditch or the Florida Mesa Irrigation Company Ditch when construction began in 1888. The headgate was constructed on the west bank of the Florida River and ran approximately southwest from there. Originally built to a length of 8 miles, the ditch was enlarged several times through 1910. The Florida Canal is considered eligible for the NRHP under criterion (a).

Description of Potential Use. Both build alternatives in the Florida Mesa and Valley section would use portions of this canal, which extends for approximately 16 miles. Both Alternative A and Alternative C (Preferred Alternative) would use about 0.6 percent of the resource.

Avoidance Alternatives. The ditch is aligned perpendicular to the east-west trending highway. A north or south shift to avoid this resource would add miles of out-of-direction travel and result in unacceptable and severe environmental impacts. Therefore, this alternative is not prudent and feasible. Spanning the ditch with a structure that does not contact the ditch, rather than a box culvert placed in the channel, is another alternative. This alternative would require raised approaches that would change the vertical roadway profile and reduce the sight distance, potentially creating a safety issue. This alternative would also add substantially to the cost of the canal crossing. For these reasons, this alternative is considered not to be prudent.

Least Harm Analysis. Both Alternative C (Preferred Alternative) and Alternative A in the Florida Mesa and Valley section impact 462 feet of the 16-mile Florida Canal (or 0.6 percent) and therefore have the same overall harm to the Florida Canal. Both Alternatives A and C (Preferred Alternative) in the Florida Mesa and Valley section would impact 336 feet or 1.4 percent the Florida Farmers' Ditch and therefore have the same overall harm to the Florida Farmers' Ditch. However, Alternative C (Preferred Alternative) has fewer impacts to a third Section 4(f) property, the McCluer-Murray Ditch, as compared to Alternative A. Alternative C (Preferred Alternative) impacts 675 feet, or 5.1 percent, of the McCluer-Murray Ditch, as compared to Alternative A which impacts 750 feet, or 5.7 percent, of the ditch. Florida Mesa and Valley section Alternative C (Preferred Alternative) is therefore considered to be the more prudent alternative with the least overall harm when taking into account all three Section 4(f) resources impacted by the project.

5.4.3.6 McCluer-Murray Ditch (5LP5663)

Description of Resource. The McCluer-Murray Ditch crosses the study area approximately 2 miles east of the SH 172/CR 234 intersection with US 160. In 1878, T.J. McCluer and W.J. Forsythe began construction of the ditch, which was originally built to a length of 2 miles. The headgate is on the west bank of the Florida River. The ditch has been enlarged several times since 1881. The McCluer-Murray Ditch is considered eligible for the NRHP under criterion (a).

Description of Potential Use. Both build alternatives in the Florida Mesa and Valley section would use portions of this ditch, which extends for approximately 2.5 miles. Alternative A would use about 5.7 percent of the resource, while Alternative C (Preferred Alternative) would use about 5.1 percent.

Avoidance Alternatives. The ditch is aligned perpendicular to the east-west trending highway. A north or south shift to avoid this resource would add miles of out-of-direction travel and result in unacceptable and severe environmental impacts. Therefore, this alternative is not prudent and feasible. Spanning the ditch with a structure that does not contact the ditch, rather than a box culvert placed in the channel, is another alternative. This alternative would require raised approaches that would change the vertical roadway profile and reduce the sight distance, potentially creating a safety issue. This alternative would also add substantially to the cost of each ditch crossing. For these reasons, this alternative is considered not to be prudent.

Least Harm Analysis. Both Florida Mesa and Valley section Alternatives A and C (Preferred Alternative) are considered to be prudent and feasible alternatives. However, Alternative C (Preferred Alternative) impacts 675 feet, or 5.1 percent, of the McCluer-Murray Ditch as compared to Alternative A which impacts 750 feet, or 5.7 percent, of the ditch. Alternative C therefore has less overall harm to the ditch. Both build alternatives also have the same harm to two other Section 4(f) properties in the Florida Mesa and Valley section: the Florida Canal (462 feet, or 0.6 percent), and the Florida Farmers' Ditch (336 feet, or 1.4 percent). Florida Mesa and Valley section Alternative C (Preferred Alternative) is therefore the alternative considered to have least overall harm when taking into account the McCluer-Murray Ditch and the other Section 4(f) resources impacted by the project.

5.4.3.7 Pioneer Ditch (5LP5664)

Description of Resource. The Pioneer Ditch crosses the study area in one location approximately 3 miles east of the SH 172/CR 234 intersection with US 160. In 1877, T.J. McCluer, W.J. Forsythe, and John Conway began construction of the ditch, which was originally built to a length of 1.9 miles, with the headgate located on the east side of the Florida River. Beginning in 1904, various enlargements to the ditch were made. The Pioneer Ditch is considered eligible for the NRHP under criterion (a).

Description of Potential Use. Both build alternatives in the Dry Creek and Gem Village section would use portions of this ditch, which extends for approximately 4.5 miles. Both Alternative C and Alternative H (Preferred Alternative) would use about 1.8 percent of the resource.

Avoidance Alternatives. The ditch is aligned perpendicular to the east-west trending highway. A north or south shift to avoid this resource would add miles of out-of-direction travel and result in unacceptable and severe environmental impacts. Therefore, this alternative is not prudent and feasible. Spanning the ditch with a structure that does not contact the ditch, rather than a box culvert placed in the channel, is another alternative. This alternative would require raised approaches that would change the vertical roadway profile and reduce the sight distance, potentially creating a safety issue. This alternative would also add substantially to the cost of each ditch crossing. For these reasons, this alternative is considered not to be prudent.

Least Harm Analysis. Both Alternatives C and H (Preferred Alternative) in the Dry Creek and Gem Village section impact 416 feet of the 4.5-mile Pioneer Ditch (or 1.8 percent) and therefore

have the same overall harm to the resource. However, Alternative C in the Dry Creek and Gem Village section has unacceptable and severe social impacts and would cause extraordinary community disruption. The Alternative C alignment follows the existing alignment through Gem Village, as opposed to Alternative H (Preferred Alternative), which bypasses the community. Alternative C would have 15 residential relocations and nine business relocations, as compared to eight residential relocations and no business relocations for Alternative H (Preferred Alternative). Community cohesion in Gem Village would be adversely impacted with Alternative C, as the majority of the community is centered around the existing US 160. Expansion of the roadway as part of Alternative C would require relocation of many of these businesses and cause extraordinary community disruption. Written comments received at public meetings supported Alternative H (Preferred Alternative) because it has less community impacts than Alternative C. ~~Alternative H (Preferred Alternative) is therefore considered to be the more prudent alternative with the least overall harm.~~ For these reasons, Alternative C is not considered prudent and Alternative H (Preferred Alternative) is considered to have the least overall harm.

5.4.3.8 Schroder Irrigating Ditch (5LP5665)

Description of Resource. The Schroder Irrigating Ditch crosses the study area approximately 0.75 mile east of the US 160/CR 501 intersection. Beginning in 1881, the Schroder Irrigating Ditch Company constructed the ditch to a length of 4.25 miles, with the headgate located on the east bank of the Los Pinos River. The length of the ditch was more than doubled in 1913. The Schroder Irrigating Ditch is considered eligible for the NRHP under criterion (a).

Description of Potential Use. Both build alternatives in the Bayfield section would use portions of this ditch, which extends for approximately 3.5 miles. Both Alternative A and Alternative B (Preferred Alternative) would use about 0.7 percent of the resource.

Avoidance Alternatives. The ditch is aligned perpendicular to the east-west trending highway. A north or south shift to avoid this resource would add miles of out-of-direction travel and result in unacceptable and severe environmental impacts. Therefore, this alternative is not prudent and feasible. Spanning the ditch with a structure that does not contact the ditch, rather than a box culvert placed in the channel, is another alternative. This alternative would require raised approaches that would change the vertical roadway profile and reduce the sight distance, potentially creating a safety issue. This alternative would also add substantially to the cost of each ditch crossing. For these reasons, this alternative is considered not to be prudent.

Least Harm Analysis. Both build alternatives impact 131 feet of the 3.5-mile Shroder Irrigating Ditch (or 0.7 percent) and therefore have the same overall harm to the resource. Both build alternatives also have the same use to three other Section 4(f) properties in the Bayfield section. Both build alternatives would impact 675 feet, or 1.7 percent, of the 7.5-mile King Ditch; 1,360 feet, or 2.1 percent, of the Thompson-Epperson Ditch; and 209 feet, or 0.8 percent, of the Los Pinos Irrigating Ditch. The Bayfield section Alternative B (Preferred Alternative), however, has fewer environmental impacts to wetlands, wildlife habitat, and irrigated farmlands than Bayfield section Alternative A (Table 2.4.2, Summary of Preliminary Alternatives Screening). Bayfield section Alternative B (Preferred Alternative) is therefore the more prudent alternative with the least overall harm.

5.4.3.9 *Los Pinos Irrigating Ditch (5LP5666)*

Description of Resource. The Los Pinos Irrigating Ditch crosses the study area approximately 1 mile east of the US 160/CR 501 intersection. Construction of the ditch originally began in 1878 to a length of 5.25 miles, with the headgate located on the east bank of the Los Pinos River. No enlargements have been recorded. The Los Pinos Irrigating Ditch is considered eligible for the NRHP under criterion (a).

Description of Potential Use. Both build alternatives in the Bayfield section would use portions of this ditch, which extends for approximately 5 miles. Both Alternative A and Alternative B would use about 0.8 percent of the resource.

Avoidance Alternatives. The ditch is aligned perpendicular to the east-west trending highway. A north or south shift to avoid this resource would add miles of out-of-direction travel and result in unacceptable and severe environmental impacts. Therefore, this alternative is not prudent and feasible. Spanning the ditch with a structure that does not contact the ditch, rather than a box culvert placed in the channel, is another alternative. This alternative would require raised approaches that would change the vertical roadway profile and reduce the sight distance, potentially creating a safety issue. This alternative would also add substantially to the cost of each ditch crossing. For these reasons, this alternative is considered not to be prudent.

Least Harm Analysis. Both build alternatives impact 209 feet of the 5-mile Los Pinos Irrigating Ditch (or 0.8 percent) and therefore have the same overall harm to the resource. Both build alternatives also have the same harm to three other Section 4(f) properties in the Bayfield section. Both build alternatives would impact 675 feet, or 1.7 percent, of the 7.5-mile King Ditch; 1,360 feet, or 2.1 percent, of the Thompson-Epperson Ditch; and 131 feet, or 0.7 percent, of the Shroder Irrigating Ditch. The Bayfield section Alternative B (Preferred Alternative), however, has fewer environmental impacts to wetlands, wildlife habitat, and irrigated farmlands than Bayfield section Alternative A (Table 2.4.2, Summary of Preliminary Alternatives Screening). Bayfield section Alternative B (Preferred Alternative) is therefore considered to be the more prudent alternative with the least overall harm.

5.5 MINIMIZATION OF HARM

The conceptual design for the alternatives examined in this FEIS include all possible planning to minimize harm to the nine historic Section 4(f) properties that would be impacted by the proposed project. Additional design options such as narrower roadway width, retaining walls, culvert design, and steeper slopes will be considered during final design of the roadway. Some of these sections may not be designed and constructed for many years. CDOT has consulted with SHPO and determined the effects of the project. SHPO has concurred with CDOT on the following mitigation measures to minimize impacts:

- Although minimal use of the historic ditches would occur through roadway expansion, the actual use of the ditches would not change. Under Section 106, these impacts have no adverse effect. To mitigate these impacts in general, a Public Information Notice will be published. This would consist of a one-page, tri-fold interpretive brochure that includes a description of the role of irrigation in the settlement of the region, a map showing the irrigation ditches crossed by the highway, and a brief history of each ditch.

- Ditch segment 5LP5661.X (Grandview section Alternative F Modified), part of segment 5LP5661.2 (Grandview section Alternative F Modified and Alternative G Modified), part of segment 5LP5658.3 (Dry Creek and Gem Village section Alternative H), and segments 5LP5659.3 and 5LP5659.4 (Bayfield section Alternative A and Alternative B) would be crossed by completely new roadway crossings adjacent to existing roadways. To mitigate these impacts, these ditch segments will be recorded before construction so a permanent record of their present appearance and history can be made. Recording will consist of Colorado SHPO Level II documentation, which includes black-and-white, medium-format photographs and a brief narrative history of the ditches. SHPO will be provided with an opportunity to review design plans for the new ditch crossings.
- The proposed project would have a moderate (Dry Creek and Gem Village section Alternative C) to severe (Dry Creek and Gem Village section Alternative H) impact upon site 5LP5677, an archaeological site not considered a Section 4(f) property at the time of this publication. Systematic testing will be conducted before construction begins so the nature and extent of buried cultural materials can be determined. Methods for testing are already established under the excavation permitting system administered by SHPO. If evaluative testing is warranted based on eligibility, a Memorandum of Agreement between SHPO and CDOT will be developed as specified in the ROD. If such remains are considered eligible for the NRHP under criterion (d), then the impacts will be treated through data recovery upon completion of Section 106 consultation with the tribes, SHPO, and the ACHP. An expedited review will be requested from SHPO, and FHWA will seek concurrence that in-place preservation was not warranted, in which case, Section 4(f) would not apply.
- Final design will take into consideration the use of retaining walls and other measures to minimize the impact to the abandoned railroad grade (5LP1131.8) in the Grandview section. Use of retaining walls and other design options will be examined at locations where ditches are crossed by the project to minimize property easements or right-of-way purchases.
- In the event that previously unknown cultural deposits are discovered during construction, work will cease in the area of discovery and the CDOT archaeologist will be notified. The CDOT archaeologist, or a designated representative, will evaluate any such discovery, and in consultation with SHPO, will complete appropriate mitigation measures before construction activities resume. Further, the construction contractor will be responsible for informing all persons associated with this project that they would be subject to prosecution for knowingly disturbing any historic properties or for collecting artifacts.

5.6 COORDINATION

Coordination with the appropriate agencies, including SHPO, has taken place with respect to the nine historic Section 4(f) properties. Coordination with the local government related to one recreation Section 4(f) property (Little Pine River Park) has occurred and will be ongoing throughout the project development. Coordination efforts are described below.

- Historic Properties Inventories documenting historic properties and archaeological properties for the US 160 project corridor were completed in 1999 and 2000, respectively (URSGWC, 2000a, 2000b). These inventories were submitted to and reviewed by SHPO.

- Written concurrence from SHPO was received on July 20, 2000, and July 29, 2003, regarding the NRHP-eligibility status of historic and archaeological properties as documented in the Historic Properties Inventories.
- Written concurrence from SHPO regarding project impacts and proposed mitigation measures has been obtained (see letter dated December 6, 2001, included in Appendix E, Historic Preservation Correspondence).
- Consultation with the tribes occurred, and will continue when access to site 5LP5677 is authorized, or ROW purchased.
- Meeting with the town of Bayfield staff on August 10, 2005 regarding the Little Pine River Park and access considerations.
- Written concurrence from DOI regarding project impacts and proposed mitigation measures has been obtained (see letter dated January 18, 2006 included in Addendum to Appendix E, Historic Preservation Correspondence).
- A public hearing on the US 160 project, including Section 4(f) impacts, was held on October 13, 2005 in Durango, Colorado. A comment regarding the Little Pine River Park was received from the Town of Bayfield. The comment requested that access to the park be maintained (see response to comment 7F in Appendix G, DEIS Public Hearing). This access is being maintained and there is no permanent, temporary, or constructive use of the Little Pine River Park (see Section 5.3.1, Recreation Areas).

5.7 SECTION 4(f) DETERMINATION

Based upon the above considerations, there is no feasible and prudent alternative to the use of the land from the abandoned Denver and Rio Grande Railroad or the eight irrigation ditches. The proposed action has the least harm to the Section 4(f) resources and includes all possible planning to minimize harm to the Section 4(f) property resulting from such use.