

5 Section 4(f) Evaluation

Section 4(f) of the U.S. Department of Transportation Act of 1966 declared 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 ...” (49 USC 303). To implement the Act, the FHWA adopted regulations to preserve and protect these resources. Any transportation projects that impact these resources are considered to “use” Section 4(f) resources.

A “use” of a Section 4(f) resource can occur in three ways:

- Land is permanently incorporated into a transportation facility, such as through right-of-way acquisition. This is a **direct use**.
- Land is temporarily occupied by a transportation project, such as by a construction easement, and the occupancy is adverse in terms of the Section 4(f) statute’s preservationist purposes. This is a **temporary use**.
- There is no permanent incorporation of land, but the proximity of the transportation project results in adverse effects (such as noise, access, and/or ecological effects) that are so severe that the activities, features, or attributes that qualify the resource for protection under Section 4(f) are substantially impaired. These types of effects are considered a **constructive use**.

Section 4(f) Resources that May Be Used by the Build Alternatives

Publicly owned parks and recreation areas:

- 2 public golf courses
- 5 State Wildlife Areas (used for hunting and other recreational activities, not including John Martin Reservoir)
- 1 state park
- 2 planned trails
- 1 school recreational facility

Wildlife and waterfowl refuges: none

Historic resources:*

Linear (23 to 27)

- 1 railroad
- 20 to 24 irrigation canals
- Arkansas River levee at Las Animas
- Santa Fe Trail

Non-linear (37 to 52)

- 14 to 17 U.S. 50 bridges
- 15 to 17 buildings associated with farms and ranches
- 6 to 16 other buildings or structures
- 1 historic neighborhood
- 1 segment of U.S. 50

Archeological resources:

- 9 archaeological sites

** Tier 1 analysis has identified sites that are known historic resources and sites that may be historic. Additional research will be needed during Tier 2 studies to determine whether a particular site is a Section 4(f) resource.*



In addition to these use categories, a *de minimis* finding can be applied if the use is minimal or one with little or no influence to the activities, features, and/or attributes of the Section 4(f) resource. Given the broad level of analysis for this Tier 1 EIS, uses identified in this Section 4(f) evaluation are considered “potential” uses. Therefore, temporary use, constructive use, and *de minimis* findings are not made in this document.

The Section 4(f) regulations require that land cannot be used from these resources for a transportation project or program unless the following circumstances exist:

- There is no prudent and feasible alternative to using the protected resource
- The program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from this use
- If there is no feasible or prudent alternative, FHWA must approve the alternative with the least overall harm

The regulations define that an alternative is not feasible if it cannot be built as a matter of sound engineering judgment. An alternative is not prudent if:

- It doesn't address the purpose and need of the project
- It results in unacceptable safety or operation problems
- Reasonable mitigation does not effectively address impacts
- It results in additional construction, maintenance, or operational costs of an extraordinary degree
- It causes other unique or unusual factors
- It involves multiple factors listed previously that, while individually minor, cumulatively cause unique problems or impacts of an extraordinary degree

The purpose and need for this project is described in detail in Chapter 2, Purpose and Need. Chapter 3, Alternatives Considered, discusses the alternatives that were carried forward for further consideration (i.e., the No-Build and Build Alternatives). The Build Alternatives were found to meet the purpose and need of the project; however, the No-Build Alternative would not. These content areas are summarized in Section 5.2 and Section 5.3.

Chapter 4, Affected Environment, Environmental Consequences, and Mitigation, discusses the social, economic, and environmental resources that could be affected by the Build Alternatives and the No-Build Alternative. Across the 150-mile U.S. 50 corridor, there are a number of public recreation lands, as well as designated historic sites and numerous other sites that may be historic. The State Wildlife Areas along



U.S. 50 are managed for and serve recreation purposes, such as hunting, and are not designated wildlife or waterfowl refuges. Some of the resources that may be affected could be protected under Section 4(f), as shown in the text box on the preceding page. Section 5.5 describes these resources and the potential of each Build Alternative to use them.

A key principle in Section 4(f) regulations is the requirement to avoid and minimize impacts to Section 4(f) resources. However, for a Tier 1 EIS, federal regulations recognize that the level of detail and information needed to demonstrate avoidance and minimization of impacts may not be available. Furthermore, at this level of analysis, it may not be possible to even accurately or adequately identify land and properties that are subject to Section 4(f) protection. As a result, decisions made during Tier 1 will focus on not precluding opportunities to minimize harm to these resources during Tier 2 studies. This approach to evaluating Section 4(f) properties reflects these concepts and provisions in the federal regulations. The approach used for this Tier 1 Section 4(f) evaluation is presented below in Section 5.1, Methodology for Section 4(f) Resources.

At the time Tier 2 studies are prepared, additional evaluations will be made of all feasible and prudent alternatives that avoid or minimize the use of Section 4(f) resources and reflect all possible planning to minimize harm to them.

The following sections summarize:

- The approach used in this Tier 1 Section 4(f) evaluation
- The purpose and need for the project
- The alternatives that were investigated to address that need
- The Build Alternatives
- The potential use the Build Alternatives may have on land and properties that likely are subject to the provisions of Section 4(f)
- Tier 1 avoidance and minimization measures
- Summary of the Tier 1 Section 4(f) Evaluation
- The next steps to be taken during Tier 2 studies

5.1 METHODOLOGY FOR SECTION 4(F) RESOURCES

Section 4(f) resources in the one- to four-mile-wide U.S. 50 project area were identified through a combination of agency coordination, field reconnaissance, and literature reviews. Two resource types protected under Section 4(f) are present in the area. These include publicly owned recreation areas and properties that are listed or may be eligible for listing on the NRHP. CPW manages State Wildlife Areas in southeast Colorado for hunting and preservation of species; however, since the State Wildlife Areas are not solely managed for preservation, CPW does not consider them a wildlife refuge (Black 2009). Because of this, there are no wildlife or waterfowl refuges present in the area.

Potential effects to historic resources and publicly owned recreation areas, which are considered Section 4(f) resources, are considered if any part of the resource was contained within a 1,000-foot-wide corridor (see Figure 5-1). This corridor width is used to evaluate most resources for this Tier 1 EIS, and is the area that could be directly affected by a Build Alternative.

There are three important limitations or qualifications regarding this Tier 1 Section 4(f) analysis that need to be recognized. These limitations in the analysis pertain to:

- The methodology used to identify resources that are or may be historic
- The degree of confidence that a resource would be affected by a Build Alternative
- The uncertainty that potentially affected land within a publicly owned multiple use area with recreation would be used for recreation

These limitations are discussed in the following subsections. These limitations do not allow for a detailed Section 4(f) evaluation; therefore, FHWA cannot approve the use of Section 4(f) resources at the Tier 1 level. Section 4(f) approvals will be made during subsequent Tier 2 studies.

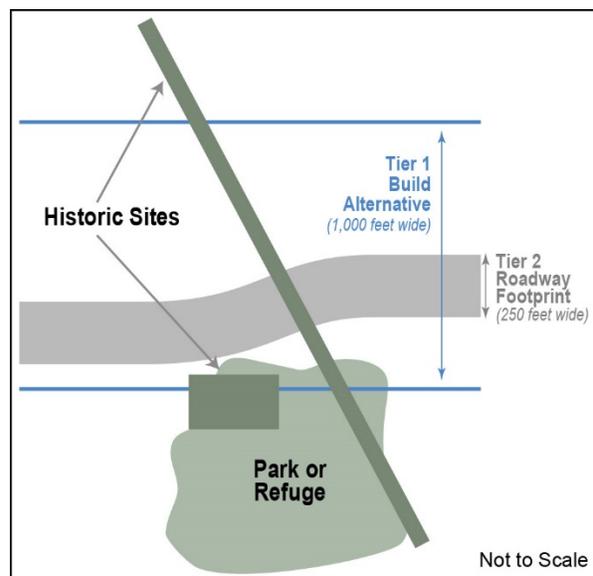


Figure 5-1. Corridor Widths Used to Consider Potential Use of Section 4(f) Resources



5.1.1 Methodology Used to Identify Resources that are or may be Eligible for Listing on the NRHP

A review of existing literature, a file and records search, and a “windshield” survey were used to identify known historic resources and resources that may be eligible for listing. This approach is adequate for the broad-scale Tier 1 transportation study of identifying a general corridor location. However, additional research in Tier 2 studies may determine that other historic sites exist or that some of the resources identified in Tier 1 are not eligible for listing. The conservative approach used in this document was to treat sites that may be eligible as if they are Section 4(f) resources. Additional resources also may become eligible for the NRHP by the time Tier 2 studies commence. These resources will be disclosed and analyzed at that time.

5.1.2 Degree of Confidence that a Resource would be Affected by a Build Alternative

Since the exact alignment of the proposed rural expressway is not known and will not be determined until Tier 2 studies, it cannot be said with certainty whether there would be any direct effects (e.g., right-of-way acquisition) to a particular resource that may constitute a use under Section 4(f).

5.1.3 Uncertainty that Potentially Affected Land within a Publicly Owned Multiple Use Area would be Used for Recreation

If it is determined in Tier 2 studies that land from a publicly owned multiple-use facility is needed for roadway improvements, it will be necessary to determine whether the specific land needed is actively managed for a recreation purpose. There are several State Wildlife Areas adjacent to the existing U.S. 50 that are publicly owned, managed for multiple uses, and may be used for recreation. Determining the specific use of land within State Wildlife Areas will be conducted in Tier 2 studies when roadway alignments and avoidance alternatives are evaluated. For purposes of this Section 4(f) evaluation, State Wildlife Areas are treated as Section 4(f) resources.

5.2 PURPOSE AND NEED FOR THE PROJECT

The purpose for undertaking transportation improvements in the U.S. 50 corridor from Pueblo, Colorado, to the vicinity of the Colorado-Kansas state line is to improve *safety* and *mobility* for local, regional, and long-distance users of U.S. 50 for present and future travel demand.



The need for improvements on U.S. 50 results from the combined effects of multiple safety and mobility issues. These inter-related issues are both directly and indirectly influenced by the differing needs of the road users, highway deficiencies, roadway geometrics, accessibility (the ability to enter, exit, or cross U.S. 50), numerous speed reduction zones, and lack of passing opportunities.

5.3 BUILD ALTERNATIVES

The Build Alternatives are described in greater detail in Chapter 3, Alternatives Considered, of this document. The Build Alternatives consist of constructing a four-lane expressway on or near the existing U.S. 50 from I-25 in Pueblo, Colorado, to approximately one mile east of Holly, Colorado. In Pueblo, three Build Alternatives are proposed that either improve U.S. 50 on its existing alignment and/or reroute it to the north to utilize SH 47. East of Pueblo, generally, there is one Build Alternative alignment between each of the communities along existing US 50 with a north and south around-town Build Alternative at each of the communities. The around-town alternatives propose relocating U.S. 50 from its current through-town route at Fowler, Manzanola, Rocky Ford, Swink, La Junta, Las Animas, Granada, and Holly. Figure 5-2 provides an overview of the Build Alternatives as proposed.

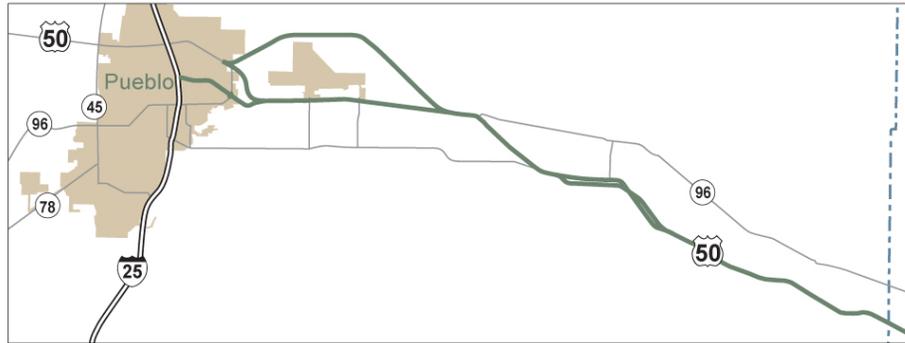


Legend

- Build Alternatives
- Existing U.S. 50
- City / Town
- County



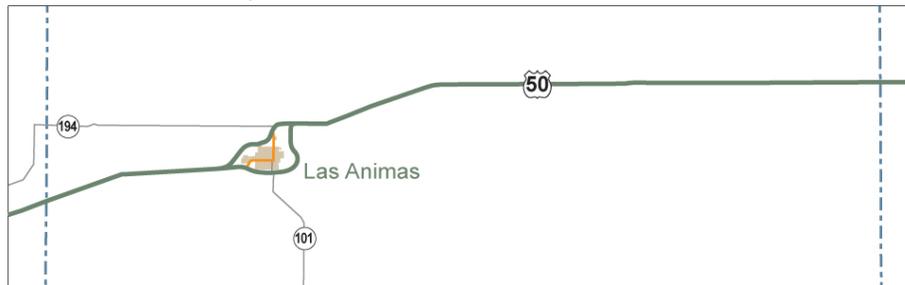
Pueblo County



Otero County



Bent County



Prowers County

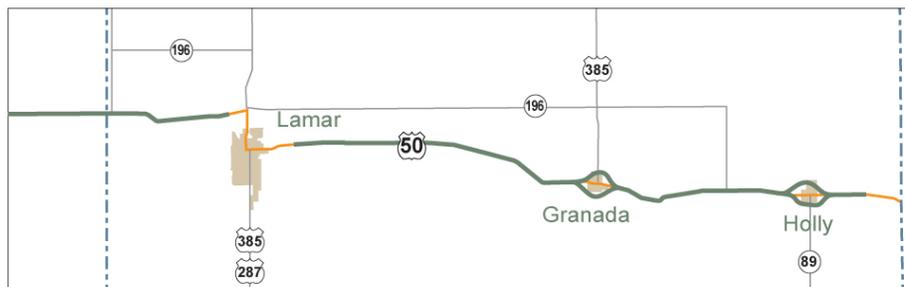


Figure 5-2. Build Alternatives Overview



5.4 SECTION 4(F) RESOURCES AND POTENTIAL USE

The project area contains 89 parkland and recreational resources, 433 historic resources, and 17 archaeological resources, all of which are or may be considered Section 4(f) resources. The APE was used to assess historic properties. As previously discussed, there are no wildlife or waterfowl refuges within the project area.

Section 4(f) resources that the Build Alternatives may potentially use include 11 publicly owned parkland and recreational resources and 60 to 79 historic resources and nine archaeological resources that are listed, or may be eligible for listing, on the NRHP. Please refer to Figure 5-10 through Figure 5-13 (located in Section 5.5.3) for an overview of Section 4(f) resources potentially subject to a use.

Preliminary approval of any Section 4(f) use is not possible in this Tier 1 EIS because project details (the ultimate 250-foot-wide highway right of way) within each 1,000-foot-wide corridor will not be defined until Tier 2 studies.

Tier 2 study efforts will need to: (1) determine which of these resources would qualify as Section 4(f) resources, and (2) identify specifically how the Section 4(f) resources would be affected, or used, by each alternative. It may be possible in Tier 2 studies to avoid the use of many of these resources. Discussed below at the conceptual level are potential uses of the two Section 4(f) resource types that are present: parkland and recreational resources and historic and archaeological resources.

5.4.1 Parkland and Recreational Resources

There are 11 parkland and recreational resources in the project area that may incur a potential use by the Build Alternatives. For this evaluation, officials with jurisdiction over the recreation areas in the U.S. 50 project area have been contacted and are a part of the Agency Working Group for this Tier 1 EIS. However, no official determinations of significance of their properties have been requested and, therefore, each resource with a potential use was assumed to be of state or local significance. Coordination regarding significance would occur during Tier 2 studies. In addition, during Tier 2 studies, more detailed information on property boundaries and the functions and use of these properties will be obtained.

Table 5-1 lists the public recreational resources that are found within the 1,000-foot width of the Build Alternatives. Listed are two public golf courses, one state park, five Colorado State Wildlife Areas, two planned trails in Prowers County, and a school recreational facility. Corridor sections not shown in the table contain no identified parkland or recreational resources that would require a use by the respective Build Alternative or Build Alternatives in those sections.

**Table 5-1. Parkland and Recreational Resources with a Potential Use by the Build Alternatives**

Section	Build Alternatives (if more than one)	Parkland and Recreational Resources
Section 3: Fowler	Alternative 1: Fowler North	Cottonwood Links Golf Course
Section 12: Las Animas	Alternative 2: Las Animas South	Las Animas Municipal Golf Course
Section 13: Las Animas to Lamar	—	Karney Ranch State Wildlife Area and John Martin Reservoir State Park and State Wildlife Area
Section 14: Lamar to Granada	—	Mike Higbee State Wildlife Area
Section 15: Granada	Alternative 1: Granada North	Granada State Wildlife Area
	Alternative 2: Granada South	Prowers County planned trail and Granada School District recreational facility
Section 16: Granada to Holly	—	Granada State Wildlife Area
Section 17: Holly	Alternative 1: Holly North	Holly State Wildlife Area, and Prowers County planned trail
	Alternative 2: Holly South	Holly State Wildlife Area, and Prowers County planned trail

The ultimate assessment of Tier 2 impacts, and thereby the determination of potential Section 4(f) uses, would depend on the specific location of the parkland or recreational facility property lines in relation to the proposed highway right of way, the functions and use of the property, and the extent and type of encroachment on each property. During Tier 2 studies, methods to avoid and minimize impacts will be evaluated. Based on the 1,000-foot-wide corridors evaluated in Tier 1, the potential may exist to avoid the use of some of these resources, such as the State Wildlife Areas. The following discussion describes the use of each of the parkland and recreational resources. For more information on these resources, see Section 4.3.5, Parklands and Recreational Resources.

Public Golf Courses

The Cottonwood Links Golf Course is located in Fowler and is owned and operated by the town. Alternative 1: Fowler North has the potential to affect the golf course by acquiring a portion of the property currently used for holes 6, 7, 8, and 9, which would constitute a direct use of the resource (see Figure 5-3). The clubhouse, which also is used to hold some town meetings, would not be affected. Fowler's land use plan comments on the possible future realignment of U.S. 50 by stating that the "[t]own of Fowler is more supportive of the northern alignment" (Town of Fowler 2009). The same plan also shows this golf course at its current location, however. The potential use of the golf course could affect the alternative chosen at this location. Given that Alternative 1: Fowler North is situated tightly between the Arkansas River and the golf course, there is only limited room to avoid the golf course. However, there is the potential to align the ultimate 250-foot highway to the very north beyond the identified 1,000-foot-wide corridor of the alternative during Tier 2 studies, which could avoid a direct use.

The Las Animas Municipal Golf Course is located in Las Animas on the northeast side of the community and is owned and operated by the town. As shown in Figure 5-4, Alternative 2: Las Animas South could acquire a small portion of right of way on the far eastern property line of the golf course, which would constitute a direct use of the property. At this time, it does not appear that any holes would be affected. The potential to use the golf course could affect the alternative chosen in these locations; however, it is likely that the Las Animas Municipal Golf Course could be avoided during Tier 2 studies. However, since each alternative is a 1,000-foot corridor, each golf course could likely be avoided during Tier 2 studies. Therefore, it is not anticipated to affect the overall decisions made at Tier 1.

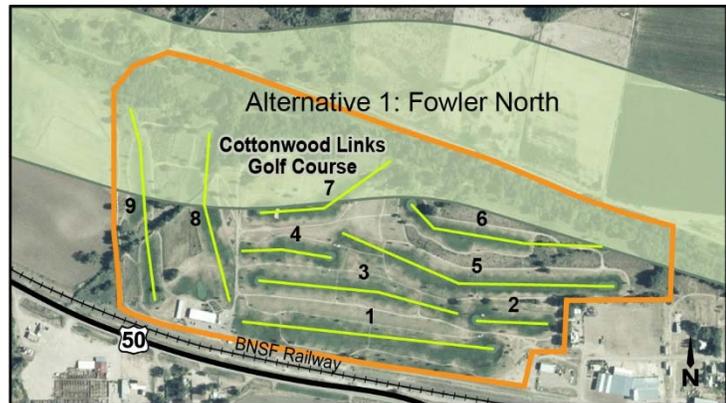


Figure 5-3. Cottonwood Links Golf Course Potential Use



Figure 5-4. Las Animas Municipal Golf Course Potential Use



State Park

The John Martin Reservoir State Park, shown in Figure 5-5, is located between Las Animas and Lamar, adjacent to the John Martin Reservoir State Wildlife Area. In this area, the Las Animas to Lamar Build Alternative is located along the existing two-lane U.S. 50 facility, therefore does not cross the park. However, the primary entrance to the park is located at the junction of U.S. 50 and CR 24 near Hasty (known locally as School Street). The CPW website lists this route as the only suggested way to access the park (Colorado State Parks 2007). Construction activities at the junction could result in a temporary restriction of access to the John Martin Reservoir Park. Detours are likely to be provided during construction, therefore avoiding a temporary restriction of access. However, further evaluation will be completed during Tier 2 studies.

State Wildlife Areas

Five Colorado State Wildlife Areas are located along the existing U.S. 50 corridor Karney Ranch State Wildlife Area, John Martin Reservoir State Wildlife Area, Mike Higbee State Wildlife Area, Granada State Wildlife Area, and Holly State Wildlife Area. These multi-use State Wildlife Areas offer recreational uses that include hunting of wildlife and waterfowl, fishing, and camping, but are not considered wildlife or waterfowl refuges by CPW (Black 2009). The Karney Ranch State Wildlife Area is located to the north of U.S. 50, adjacent to the John Martin Reservoir State Wildlife Area, located to the south of U.S. 50, near milepost 408 (see Figure 5-5). U.S. 50 currently crosses the Karney Ranch State Wildlife Area in one location between milepost 408 and 409, and crosses the John Martin Reservoir State Wildlife Area in two locations at mileposts 408 and 410. At these locations, the Build Alternative would expand the highway to a four-lane rural expressway. As a result, a direct use of the properties may occur by acquiring small amounts of land adjacent to the existing highway facility. Because the existing U.S. 50 facility traverses a portions of these two State Wildlife Areas, it is likely that use of the property will be unavoidable to facilitate highway improvements; however, additional minimization measures will be evaluated in Tier 2 studies.

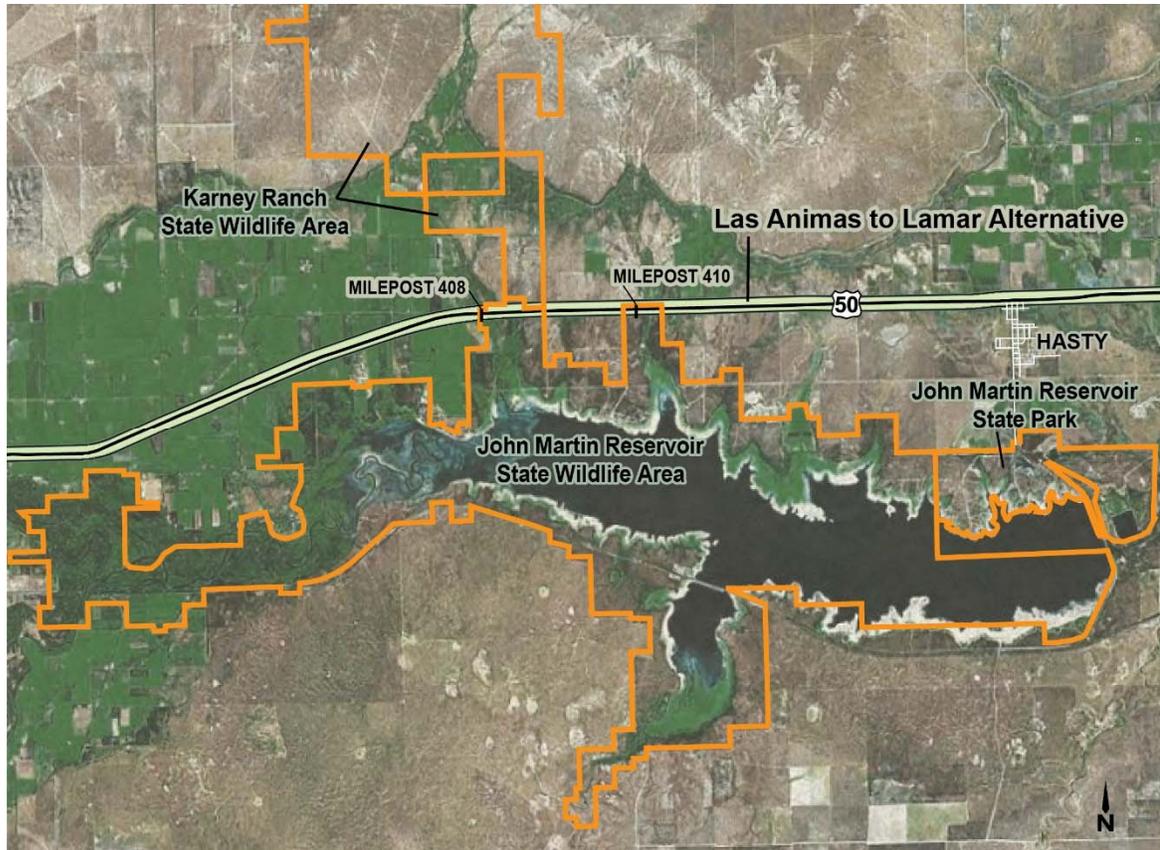


Figure 5-5. Karney Ranch and John Martin Reservoir State Wildlife Areas Potential Use

The Mike Higbee State Wildlife Area is located between Lamar and Granada (see Figure 5-6). In this section of the corridor, the existing U.S. 50 facility is two lanes and the Build Alternative proposes to expand the highway to a four-lane rural expressway. As a result of this expansion, it is anticipated the Build Alternative would acquire a small amount of additional right of way adjacent to the existing highway facility, which constitutes a direct use under Section 4(f).



Figure 5-6. Mike Higbee State Wildlife Area Potential Use

Similarly, the Granada State Wildlife Area is located on both sides of the existing two-lane U.S. 50 facility between Granada and Holly (see Figure 5-7). In this location, the Granada to Holly Build Alternative would expand the highway to four lanes and could require additional right of way from the resource, which would be a direct use. Because both of these State Wildlife Areas are located directly adjacent to the existing



Figure 5-7. Granada State Wildlife Area Potential Use

U.S. 50 in these locations, it is expected that avoidance of these resources is unlikely.

In addition, a portion of the Granada State Wildlife Area is located just east of the Granada town limits. In this location, Alternative 1: Granada North would traverse a portion of the State Wildlife Area and would require new right-of-way acquisition from the property, which also would be a direct use under Section 4(f). With the alignment of Alternative 1: Granada North, the Granada State Wildlife Area cannot be avoided during Tier 2 studies; therefore, the potential use of the Granada State Wildlife Area is likely to affect the alternative chosen at this location.

In the case of the Holly State Wildlife Area, Alternative 1: Holly North and Alternative 2: Holly South could cross the property in three separate locations, as shown in Figure 5-8. Alternative 1: Holly North would require one new crossing of the State Wildlife Area and right-of-way acquisition, which would be a direct use under Section 4(f). West of Holly, Alternative 2: Holly South

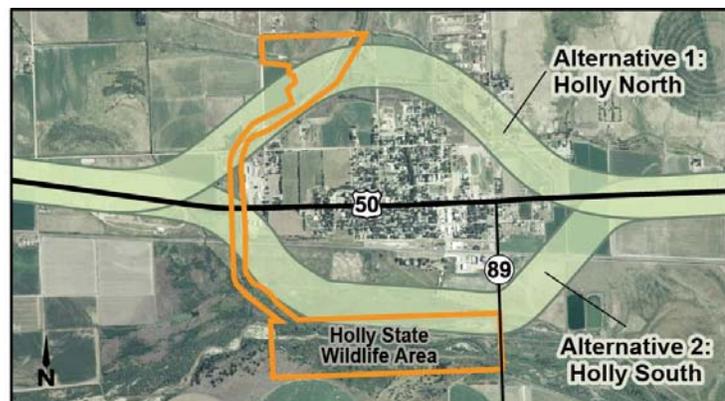


Figure 5-8. Holly State Wildlife Area Potential Use

would cross the wildlife area in the same general location as the existing U.S. 50 crossing. In this area, the existing U.S. 50 facility is two lanes and Alternative 2: Holly South would require right-of-way acquisition to expand the facility to a four-lane expressway. In addition, Alternative 2 could require a new crossing of—and, therefore, new right-of-way acquisition from—the portion of the wildlife area south of



Holly. However, because the alternative is a 1,000-foot-wide corridor, it is possible that in this area Alternative 2 could avoid a new crossing of the Holly State Wildlife Area during Tier 2 studies. Because there is the opportunity to minimize the potential use of the Holly State Wildlife Area with Alternative 2, while Alternative 1 has unavoidable impacts, the potential use of the Section 4(f) resource is likely to affect Tier 1 decisions in this location.

It has been determined that the State Wildlife Areas in the project area do not serve the primary purpose of being a wildlife refuge; therefore, the Section 4(f) status for each cannot be determined by that criteria. If it is determined that land from a State Wildlife Area would be needed during Tier 2 studies, it will be necessary to determine whether that specific land is used for recreation. CPW, the agency with jurisdiction over State Wildlife Areas, will be consulted to make this determination. If it is not used for recreation, then the property does not qualify as a Section 4(f) resource and no use under Section 4(f) would occur. Since these details will not be known until Tier 2 studies, this Tier 1 Section 4(f) evaluation includes these State Wildlife Areas in this discussion.

Trails

The Prowers County planned trail system traverses both Granada and Holly. In Granada, the planned trail would extend south from Two Buttes Trail and run along CR 25 and also extend east and west along West Amache Road. This alignment would require two crossings by Alternative 2: Granada South. In Holly, the planned trail follows the existing north-south SH 385 and local roadways throughout the town. Neither Alternative 1: Holly North nor Alternative 2: Holly South could avoid a potential direct use of the planned trail. Many of these locations require additional coordination with the county to determine how the Build Alternatives could affect them. If these planned trails are developed by the time Tier 2 studies begin, effects to and potential use of them would be evaluated in more detail.

The four existing Colorado birding trails in the study area are trails on the existing right of way of U.S. 50 and roadways connecting to U.S. 50 within the project area. These trails are the Prairie Canyons, Plover, Two Buttes, and Pronghorn trails. Descriptions and maps of these trails can be found at [http://coloradobirdingtrail.com//field guide/CBT-Field-Guide-SE.pdf](http://coloradobirdingtrail.com//field%20guide/CBT-Field-Guide-SE.pdf).

According to 23 CFR 774.13, there are exceptions to the requirement for Section 4(f) approvals. If a trail or path occupies a transportation facility without a specific location within the right-of-way, which is the case of these four birding trails, there is no requirement for Section 4(f) approval. Future improvements to U.S. 50 would not substantially impair the continuity of these bird trails and they would continue to

generally occur in the highway and roadways in the project area, therefore, these four trails are consistent with Section 4(f) exceptions under 23 CFR 774.13(f).

School Recreational Facilities

The Granada School District Re-1, which is located within Granada, contains a recreational facility just south of the existing U.S. 50 alignment. Alternative 2: Granada South could have a direct use of the property by acquiring a small amount of land from its extreme southeast corner (see Figure 5-9). However, because the alternative is a 1,000-foot-wide corridor,



Figure 5-9. Granada School District Property Potential Use

it is anticipated the school recreational facility could be avoided during Tier 2 studies. Therefore, the potential use of this property is not expected to influence Tier 1 decisions.

5.4.2 Historic and Archaeological Resources

Section 4(f) affords protection to sites that are eligible for or listed on the NRHP. Resources that may be historic were identified using methods that were discussed and agreed upon by CDOT, FHWA, and the State Historic Preservation Officer. These methods are documented in a PA signed by all three agencies (included in Appendix C, Public and Agency Involvement). Some historic and archaeological resources may not have been identified during this Tier 1 reconnaissance, and some of the resources that were assumed to be eligible for listing may not be. Official eligibility determinations will occur during Tier 2 studies, when specific properties are determined to be eligible and direct and indirect effects are identified. Historic and archaeological resources within the U.S. 50 corridor were identified as linear or non-linear, and are discussed further below. For more details on each resource, please refer to Section 4.3.1, Historic Resources, and Section 4.3.2, Archaeological Resources.

Linear Resources

Linear resources primarily include railroads, trails, and irrigation ditches and canals. Four types of linear resources are listed in Table 5-2. Resources that may be historic include the BNSF Railway, canals and ditches, and the Arkansas River Levee. The Santa Fe Trail is a known historic resource, and has been designated as a National Historic Trail.



The only railroad referred to in Table 5-2 is the actively used BNSF Railway line that was originally part of the Atchison, Topeka, and Santa Fe Railway. The fact that it is listed 15 times in the table indicates how closely U.S. 50 parallels the railroad tracks and must cross them. The existing U.S. 50 alignment crosses the railroad tracks seven times, and the following Build Alternatives have the potential to add new crossings:

- Alternative 1: Pueblo Airport North
- Alternative 1: Rocky Ford North
- Alternative 1: La Junta North
- Alternative 1: Las Animas North
- Alternative 2: Las Animas South
- Alternative 1: Granada North
- Alternative 2: Holly South

The total number of crossings is unlikely to approach 15. In locations where a crossing of the railroad may be avoidable because another Build Alternative would avoid the railroad, such as in Pueblo, the potential use of the resource may affect the alternatives chosen in these locations.

Table 5-2. Linear Resources that May be Historic and Could be Used by the Build Alternatives

Section	Build Alternatives (if more than one)	Linear Resources that May be Historic			
		BNSF Railway ¹	Canals and Ditches ²	Santa Fe Trail ³	Arkansas River Levee
Section 1: Pueblo	Alternative 1: Pueblo Airport North	1	1	—	—
	Alternative 2: Pueblo Existing Alignment	1	—	—	—
	Alternative 3: Pueblo SH 47 Connection	1	—	—	—
Section 2: Pueblo to Fowler	Alternative 1: Fort Reynolds Existing Alignment	1	3	—	—
	Alternative 2: Fort Reynolds Realignment	1	3	—	—
Section 3: Fowler	Alternative 1: Fowler North	1	1	—	—
	Alternative 2: Fowler South	—	2	—	—



Table 5-2. Linear Resources that May be Historic and Could be Used by the Build Alternatives (continued)

Section	Build Alternatives (if more than one)	Linear Resources that May be Historic			
		BNSF Railway ¹	Canals and Ditches ²	Santa Fe Trail ³	Arkansas River Levee
Section 4: Fowler to Manzanola	—	1	2	—	—
Section 5: Manzanola	Alternative 1: Manzanola North	1	2	—	—
	Alternative 2: Manzanola South	—	2	—	—
Section 6: Manzanola to Rocky Ford	—	1	1	—	—
Section 7: Rocky Ford	Alternative 1: Rocky Ford North	1	2	—	—
	Alternative 2: Rocky Ford South	1	4	—	—
Section 8: Rocky Ford to Swink	—	1	—	—	—
Section 9: Swink	Alternative 1: Swink North	1	—	—	—
	Alternative 2: Swink South	1	—	—	—
Section 10: La Junta	Alternative 1: La Junta North	1	1	1	—
	Alternative 2: La Junta South	1	1	1	—
	Alternative 3: La Junta South	1	1	1	—
	Alternative 4: La Junta South	1	1	1	—
Section 11: La Junta to Las Animas	—	1	2	—	—
Section 12: Las Animas	Alternative 1: Las Animas North	1	2	1	1
	Alternative 2: Las Animas South	1	1	—	1
Section 13: Las Animas to Lamar	—	—	7	1	—
Section 14: Lamar to Granada	—	—	2	—	—



Table 5-2. Linear Resources that May be Historic and Could be Used by the Build Alternatives (continued)

Section	Build Alternatives (if more than one)	Linear Resources that May be Historic			
		BNSF Railway ¹	Canals and Ditches ²	Santa Fe Trail ³	Arkansas River Levee
Section 15: Granada	Alternative 1: Granada North	1	2	—	—
	Alternative 2: Granada South	—	1	—	—
Section 16: Granada to Holly	—	1	2	—	—
Section 17: Holly	Alternative 1: Holly North	—	2	1	—
	Alternative 2: Holly South	1	—	—	—
Section 18: Holly transition	—	—	2	1	—

Note: Existing U.S. 50 already crosses the railroad, trail, and most of the ditches and canals referenced here multiple times. Known historic resources include the Huerfano Bridge, Rocky Ford Highline Canal bridge, and the Santa Fe Trail. Both bridges are located on U.S. 50 between Pueblo and Fowler.

¹All impacts would be to the same railroad, crossed multiple times.

²Up to 24 irrigation canals and ditches may be crossed, some of them multiple times.

³Trail location is only approximately known; few distinguishable segments remain.

An extensive interconnected system of irrigation canals and ditches is found along U.S. 50 carrying water from the Arkansas River to the highly productive agricultural lands of the Lower Arkansas Valley. The existing U.S. 50 alignment crosses many of these canals. Improvements on the existing U.S. 50 alignment would affect these canals, and realignment alternatives around communities along the corridor could result in crossings of additional canals (see Figure 5-10). A total of 24 canals could be crossed by the Build Alternatives, and many of these could be crossed more than once. These crossings could result in a direct use of the canals and ditches. For more information on the irrigation canals and ditches, please refer to Section 4.1, Rural and Agricultural Environment. Because of the extensive and linear nature of these canals and ditches, crossing these resources is primarily unavoidable and, therefore, it is unlikely to have a bearing on the decisions made in Tier 1.

The following resources are examples of known historic properties that could have a use under the Build Alternatives.



The Santa Fe Trail (5BN.391) was a major travel route that contributed to the expansion of America's western frontier. It has been designated as a National Historic Trail by the NPA. As most of the land where the trail was once traveled has been in private use for more than 100 years, there is little physical evidence of where the trail existed. Maps indicate the approximate location of the trail, and wagon ruts and other features can be found on the ground in a few locations. Based on these maps, it is reasonably certain that the existing U.S. 50 crosses the Santa Fe Trail in at least four locations, and three Build Alternatives (Alternative 2: La Junta South, Alternative 3: La Junta South, and Alternative 4 La Junta South) would result in at least one new crossing south of La Junta. Crossing of the trail could result in a direct use under Section 4(f).

Extensive field investigation will be needed in Tier 2 studies to determine whether there is any physical remnant of the trail in the location(s) where Build Alternatives would cross it. Because of the linear nature of the resource, avoidance in areas of proposed crossings does not appear to be feasible. However, in locations such as Las Animas and Holly, where at least one Build Alternative in each location would avoid the use of the trail, the potential use of the trail could have a bearing on the alternative chosen in these locations.

The Arkansas River levee is a flood-control levee along the north side of the city of Las Animas. A major bridge carries U.S. 50 from Las Animas over the levee to the north side of the river. The Build Alternative would do so, as well. Unlike the other linear resources listed in the table, the Build Alternative would cross the levee at only one location—Las Animas. The effects to the levee would be determined during Tier 2 studies; however, crossing the levee could result in a direct use of the resource. Because neither Alternative 1: Las Animas North or Alternative 2: Las Animas South could avoid the east-west alignment of the levee, it is unlikely to have a bearing on decisions made in this section of the project corridor.

Non-Linear Resources

Non-linear resources in the project area are represented by bridges, buildings, farm and ranch complexes, and archaeological resources. The effects to each of these resources, if any, could constitute a direct use under Section 4(f).

There are 14 to 17 bridges along U.S. 50 that may be historic. One of these, in fact, is already listed in the NRHP—the U.S. 50 bridge over the Huerfano River (5PE.813), located in eastern Pueblo County. The other U.S. 50 bridges will need to be evaluated in Tier 2 studies to determine whether they would qualify for listing in the NRHP. All of these bridges are part of U.S. 50 today, and are located between communities. The majority of these bridges cannot be avoided, since they are on the existing U.S. 50



alignment, and therefore are not expected to affect Tier 1 decisions. However, the Huerfano River bridge could be avoided by Alternative 2: Fort Reynolds Realignment if the existing U.S. 50 facility were used as a frontage road in this location.

The Build Alternative could affect between 15 and 18 buildings associated with farms or ranches. Because building complexes and surrounding associated land can be considered historic, the evaluation of the potential use of farm and ranch complexes under Section 4(f) can be challenging. Some farms and ranches are very extensive, encompassing hundreds or even thousands of acres. For this reason, it may be more difficult to avoid the use of a farm or ranch than to other non-linear resources that involve a specific structure that does not depend on surrounding acreage for its historical significance. The Build Alternatives between communities have less potential for avoidance of these buildings, since most of them are directly adjacent to the existing U.S. 50 alignment. However, around-town Build Alternatives have a greater potential for avoidance of buildings because it would be on a new alignment and the 1,000-foot-wide corridor would allow for avoidance or minimization measures during Tier 2 studies.

Other resources along the corridor include, but are not limited to, a Pueblo neighborhood, a produce stand, and a former horse racing track. Other than the Belmont neighborhood in Pueblo, which would not be directly affected by any of the Pueblo Build Alternatives, these resources tend to be smaller in size than farms or ranches. Because they are smaller, they may be more easily avoidable in Tier 2 studies. Unlike U.S. 50 bridges, these other resources are not part of the existing highway and also may be more avoidable.

Up to nine known archaeological sites that exist along the U.S. 50 corridor have the potential to be used by the Build Alternatives. Due to the sensitive nature of these sites, their locations are not disclosed in this document. Section 4(f) applies to all archaeological sites that are on or eligible for inclusion in the NRHP and that warrant preservation in place. An example of an archaeological resource that exhibits preservation in place is Mesa Verde National Park in southwest Colorado. Section 4(f) does not apply if FHWA, after consultation with the State Historic Preservation Officer or a Tribal Historic Preservation Officer, determines that the archaeological resource is important chiefly because of what can be learned by data recovery (even if it is agreed not to recover the data) and has minimal value for preservation in place [23 CFR 774.13(b(1))]. These decisions cannot be made in Tier 1, but will be made in Tier 2 studies.



Also, while known archaeological resources were identified in Tier 1, additional sites may be discovered during Tier 2 studies and would be evaluated at that time. Table 5-3 summarizes the potential use of non-linear historic resources, with the exception of archaeological sites due to their sensitivity to disturbance. The table also addresses the potential use of these resources to have a bearing on decisions made during Tier 1. Given the limited information available regarding the resources, as well as not having a specific roadway alignment at Tier 1, the potential effect these uses could have on Tier 1 decisions are primarily related to identification of a preferred alternative.



Table 5-3. Non-Linear Resources that May be Historic and Have the Potential to Affect Tier 1 Decisions

Section	Build Alternatives (if more than one)	Resources that May be Historic	NRHP Eligibility ¹	Figure 5-10 through Figure 5-13 ID	Potential to Affect Tier 1 Decisions (Y/N)	Reasoning
Section 1: Pueblo	Alternative 1: Pueblo Airport North	—	N/A	N/A	N/A	N/A
	Alternative 2: Pueblo Existing Alignment	Belmont Neighborhood Post WW-II subdivision	FE	H-1	N	At this location, the highway is a four-lane expressway. No direct use of the district is anticipated because no houses were identified as potentially impacted.
		U.S. 50 bridge over Dry Creek (eastbound)	FE	H-2	N	The bridge is on the existing U.S. 50 alignment. At this location, the highway is a four-lane expressway, so there may be no direct use of the bridge.
		U.S. 50 bridge over Dry Creek (westbound)	FE	H-3	N	The bridge is on the existing U.S. 50 alignment. At this location, the highway is a four-lane expressway, so there may be no direct use of the bridge.
	Alternative 3: Pueblo SH 47 Connection	—	N/A	N/A	N/A	N/A
Section 2: Pueblo to Fowler	Alternative 1: Fort Reynolds Existing Alignment	U.S. 50 bridge over Chico Creek (westbound)	FE	H-4	N	The bridge is on the existing U.S. 50 alignment and would need to be crossed regardless of alternative. However, the highway is already a four-lane highway, reducing the potential for adverse impacts to the bridge.
		U.S. 50 bridge over Chico Creek (eastbound)	FE	H-5	N	The bridge is on the existing U.S. 50 alignment and would need to be crossed regardless of alternative. However, the highway is already a four-lane highway. Reduce the potential for adverse impacts.



Table 5-3. Non-Linear Resources that May be Historic and Have the Potential to Affect Tier 1 Decisions (continued)

Section	Build Alternatives (if more than one)	Resources that May be Historic	NRHP Eligibility ¹	Figure 5-10 through Figure 5-13 ID	Potential to Affect Tier 1 Decisions (Y/N)	Reasoning
Section 2: Pueblo to Fowler (cont.)	Alternative 1: Fort Reynolds Existing Alignment (cont.)	U.S. 50 underpass, Ordnance Depot Road interchange	FE	H-6	N	The bridge is on the existing U.S. 50 alignment, which is a two-lane section at this location. Effects are likely unavoidable regardless of the alternative.
		Farm	FE	H-7	Y	The farm is adjacent to the existing U.S. 50 alignment, which would be improved to a four-lane expressway, resulting in a direct use of the property. However, avoidance is possible with Alternative 2 affecting the identification of a preferred alternative.
		Farm	FE	H-8	Y	The farm is adjacent to the existing U.S. 50 alignment, which would be improved to a four-lane expressway resulting in a direct use of the property. However, avoidance is possible with Alternative 2 affecting the identification of a preferred alternative.
		U.S. 50 bridge over Huerfano River	NR	H-9	Y	The bridge is on the existing U.S. 50 alignment. The bridge would need to be replaced to accommodate the four-lane expressway. However, avoidance is possible with Alternative 2 in this section if the bridge could be preserved in place as a frontage road, affecting the identification of a preferred alternative.
		Rocky Ford Highline Canal Bridge	OE	H-10	N	The bridge is on the existing U.S. 50 alignment, which is a two-lane section at this location. Effects are likely unavoidable regardless of the alternative.



Table 5-3. Non-Linear Resources that May be Historic and Have the Potential to Affect Tier 1 Decisions (continued)

Section	Build Alternatives (if more than one)	Resources that May be Historic	NRHP Eligibility ¹	Figure 5-10 through Figure 5-13 ID	Potential to Affect Tier 1 Decisions (Y/N)	Reasoning
Section 2: Pueblo to Fowler (cont.)	Alternative 1: Fort Reynolds Existing Alignment (cont.)	Ranch	FE	H-11	N	The ranch is adjacent to the existing U.S. 50 alignment. At this location, U.S. 50 is a two-lane highway and would be expanded to a four-lane expressway. Due to its proximity, impacts are likely unavoidable. However, impacts could be minimized during Tier 2 studies.
		Farm	FE	H-12	N	The farm is adjacent to the existing U.S. 50 alignment. At this location, U.S. 50 is a two-lane highway and would be expanded to a four-lane expressway. Due to its proximity, impacts are likely unavoidable. However, impacts could be minimized during Tier 2 studies.
		Farm	FE	H-13	N	The farm is adjacent to the existing U.S. 50 alignment. At this location, U.S. 50 is a two-lane highway and would be expanded to a four-lane expressway. Due to its proximity, impacts are likely. However, impacts could be minimized during Tier 2 studies.
		Farm	FE	H-14	N	The farm is adjacent to the existing U.S. 50 alignment. At this location, U.S. 50 is a two-lane highway and would be expanded to a four-lane expressway. Due to its proximity, impacts are likely unavoidable. However, impacts could be minimized during Tier 2 studies.



Table 5-3. Non-Linear Resources that May be Historic and Have the Potential to Affect Tier 1 Decisions (continued)

Section	Build Alternatives (if more than one)	Resources that May be Historic	NRHP Eligibility ¹	Figure 5-10 through Figure 5-13 ID	Potential to Affect Tier 1 Decisions (Y/N)	Reasoning
Section 2: Pueblo to Fowler (cont.)	Alternative 2: Fort Reynolds Realignment	U.S. 50 bridge over Chico Creek (westbound)	FE	H-4	N	The bridge is on the existing U.S. 50 alignment and would need to be crossed regardless of alternative. However, the highway is already a four-lane highway, reducing the potential for adverse impacts.
		U.S. 50 bridge over Chico Creek (eastbound)	FE	H-5	N	The bridge is on the existing U.S. 50 alignment and would need to be crossed regardless of alternative. However, the highway is already a four-lane highway, reducing the potential for adverse impacts.
		U.S. 50 underpass, Ordnance Depot Road interchange	FE	H-6	N	The bridge is on the existing U.S. 50 alignment, which is a two-lane section at this location. Effects are likely unavoidable since the bridge would need to be improved to a four-lane expressway regardless of the alternative.
		Rocky Ford Highline Canal Bridge	FE	H-10	N	The bridge is on the existing U.S. 50 alignment, which is a two-lane section at this location. Effects are likely unavoidable since the bridge would need to be improved to a four-lane expressway regardless of the alternative.
		Ranch	FE	H-11	N	The ranch is adjacent to the existing U.S. 50 alignment. At this location, U.S. 50 is a two-lane highway and would be expanded to a four-lane expressway. Due to its proximity, impacts are likely unavoidable. However, impacts could be minimized during Tier 2 studies.



Table 5-3. Non-Linear Resources that May be Historic and Have the Potential to Affect Tier 1 Decisions (continued)

Section	Build Alternatives (if more than one)	Resources that May be Historic	NRHP Eligibility ¹	Figure 5-10 through Figure 5-13 ID	Potential to Affect Tier 1 Decisions (Y/N)	Reasoning
Section 2: Pueblo to Fowler (cont.)	Alternative 2: Fort Reynolds Realignment (cont.)	Farm	FE	H-12	N	The farm is adjacent to the existing U.S. 50 alignment. At this location, U.S. 50 is a two-lane highway and would be expanded to a four-lane expressway. Due to its proximity, impacts are likely unavoidable. However, impacts could be minimized during Tier 2 studies.
		Farm	FE	H-13	N	The farm is adjacent to the existing U.S. 50 alignment. At this location, U.S. 50 is a two-lane highway and would be expanded to a four-lane expressway. Due to its proximity, impacts are likely unavoidable. However, impacts could be minimized during Tier 2 studies.
		Farm	FE	H-14	N	The farm is adjacent to the existing U.S. 50 alignment. At this location, U.S. 50 is a two-lane highway and would be expanded to a four-lane expressway. Due to its proximity, impacts are likely unavoidable. However, impacts could be minimized during Tier 2 studies.
Section 3: Fowler	Alternative 1: Fowler North	Montoya residence (house)	FE	H-15	N	The 1,000-foot-wide alternative allows for avoidance of this property during Tier 2 studies.
	Alternative 2: Fowler South	—	N/A	N/A	N/A	N/A
Section 4: Fowler to Manzanola	—	U.S. 50 bridge over the Otero Canal	FE	H-16	N	The bridge is on the existing U.S. 50 alignment, which is a two-lane section at this location. Effects are likely unavoidable since the bridge would need to be improved to a four-lane expressway.



Table 5-3. Non-Linear Resources that May be Historic and Have the Potential to Affect Tier 1 Decisions (continued)

Section	Build Alternatives (if more than one)	Resources that May be Historic	NRHP Eligibility ¹	Figure 5-10 through Figure 5-13 ID	Potential to Affect Tier 1 Decisions (Y/N)	Reasoning
Section 5: Manzanola	Alternative 1: Manzanola North	—	N/A	N/A	N/A	N/A
	Alternative 2: Manzanola South	—	N/A	N/A	N/A	N/A
Section 6: Manzanola to Rocky Ford	—	Building ruin	FE	H-17	N	The building ruin is located within a parcel adjacent to the existing U.S. 50 alignment and is more than 200 feet from the edge of the highway. At this location, U.S. 50 is already a four-lane highway; so there is potential to avoid or minimize effects to this resource in Tier 2 studies.
Section 7: Rocky Ford	Alternative 1: Rocky Ford North	—	N/A	N/A	N/A	N/A
	Alternative 2: Rocky Ford South	Barn	FE	H-18	N	The 1,000-foot-wide alternative allows for avoidance of this property during Tier 2 studies.
Canal (structure)		FE	H-19	Y	There is an alternative in this section that avoids potential use of the canal structure (Alternative 1: Rocky Ford North), affecting identification of the preferred alternative.	
Section 8: Rocky Ford to Swink	—	U.S. 50 bridge over Timpas Creek	FE	H-20	N	The bridge is on the existing U.S. 50 alignment and would need to be crossed regardless of alternative. However, the highway is already a four-lane highway, reducing the potential for adverse impacts.



Table 5-3. Non-Linear Resources that May be Historic and Have the Potential to Affect Tier 1 Decisions (continued)

Section	Build Alternatives (if more than one)	Resources that May be Historic	NRHP Eligibility ¹	Figure 5-10 through Figure 5-13 ID	Potential to Affect Tier 1 Decisions (Y/N)	Reasoning
Section 9: Swink	Alternative 1: Swink North	Migrant worker housing	FE	H-21	N	The 1,000-foot-wide alternative allows for avoidance of this property during Tier 2 studies.
		Mary's Fruit Stand	FE	H-23	N	The 1,000-foot-wide alternative allows for avoidance of this property during Tier 2 studies.
	Alternative 2: Swink South	Residence/ House	FE	H-22	N	The 1,000-foot-wide alternative allows for avoidance of this property during Tier 2 studies.
Section 10: La Junta	Alternative 1: La Junta North	—	N/A	N/A	N/A	N/A
	Alternative 2: La Junta South	—	N/A	N/A	N/A	N/A
	Alternative 3: La Junta South	Otero Ditch tunnel	FE	H-24	N	The 1,000-foot-wide alternative allows for avoidance of this resource during Tier 2 studies.
	Alternative 4: La Junta South	—	N/A	N/A	N/A	N/A
Section 11: La Junta to Las Animas	—	U.S. 50 bridge over Thompson Arroyo (westbound)	FE	H-25	N	The bridge is on the existing U.S. 50 alignment and would need to be crossed regardless of alternative. However, the highway is already a four-lane highway, reducing the potential for adverse impacts.
		U.S. 50 bridge over Thompson Arroyo (eastbound)	FE	H-26	N	The bridge is on the existing U.S. 50 alignment and would need to be crossed regardless of alternative. However, the highway is already a four-lane highway, reducing the potential for adverse impacts.



Table 5-3. Non-Linear Resources that May be Historic and Have the Potential to Affect Tier 1 Decisions (continued)

Section	Build Alternatives (if more than one)	Resources that May be Historic	NRHP Eligibility ¹	Figure 5-10 through Figure 5-13 ID	Potential to Affect Tier 1 Decisions (Y/N)	Reasoning
Section 12: Las Animas	Alternative 1: Las Animas North	—	N/A	N/A	N/A	N/A
	Alternative 2: Las Animas South	Old U.S. 50 segment	FE	H-27	Y	This is a part of the existing U.S. 50 and cannot be avoided to upgrade the highway to a four-lane expressway with Alternative 2: Las Animas South. However, the potential use of the resource could be avoided by Alternative 1: Las Animas North, affecting the preferred alternative identification.
		D-Arcangelis house	FE	H-28	N	The 1,000-foot-wide alternative allows for avoidance of this resource during Tier 2 studies.
Section 13: Las Animas to Lamar	—	Barn	FE	H-29	N	The barn is adjacent to the existing U.S. 50 alignment. However, the highway is four lanes so there may be potential to avoid or minimize effects to the barn during Tier 2 studies.
		Farmstead	FE	H-30	N	The farmstead is adjacent to the existing U.S. 50 alignment. However, the highway is four lanes so there may be potential to avoid or minimize effects to the barn during Tier 2 studies.
		Residence/ House	FE	H-31	N	The 1,000-foot-wide alternative allows for avoidance of this resource during Tier 2 studies.



Table 5-3. Non-Linear Resources that May be Historic and Have the Potential to Affect Tier 1 Decisions (continued)

Section	Build Alternatives (if more than one)	Resources that May be Historic	NRHP Eligibility ¹	Figure 5-10 through Figure 5-13 ID	Potential to Affect Tier 1 Decisions (Y/N)	Reasoning
Section 13: Las Animas to Lamar (cont.)	—	U.S. 50 bridge over McCrae Arroyo	FE	H-32	N	The bridge is on the existing U.S. 50 alignment, which is a two-lane section at this location. Effects are likely unavoidable since the bridge would need to be improved to a four-lane expressway.
		Higley Gems	FE	H-33	N	This resource is adjacent to the existing U.S. 50 alignment. At this location, U.S. 50 is a two-lane highway and would be expanded to a four-lane expressway. Due to its proximity, impacts are likely unavoidable. However, impacts could be minimized during Tier 2 studies.
		Clave Farmstead	FE	H-34	N	The 1,000-foot-wide alternative allows for avoidance of this resource during Tier 2 studies.
		Hasty post office/mercantile	FE	H-35	N	This resource is adjacent to the existing U.S. 50 alignment. At this location, U.S. 50 is a two-lane highway and would be expanded to a four-lane expressway. Due to its proximity, impacts are likely unavoidable. However, impacts could be minimized during Tier 2 studies.
		Farmstead	FE	H-36	N	This farmstead is adjacent to the existing U.S. 50 alignment. At this location, U.S. 50 is a two-lane highway and would be expanded to a four-lane expressway. Due to its proximity, impacts are likely unavoidable. However, impacts could be minimized during Tier 2.



Table 5-3. Non-Linear Resources that May be Historic and Have the Potential to Affect Tier 1 Decisions (continued)

Section	Build Alternatives (if more than one)	Resources that May be Historic	NRHP Eligibility ¹	Figure 5-10 through Figure 5-13 ID	Potential to Affect Tier 1 Decisions (Y/N)	Reasoning
Section 13: Las Animas to Lamar (cont.)	—	U.S. 50 bridge over a draw	FE	H-37	N	The bridge is on the existing U.S. 50 alignment, which is a two-lane section at this location. Effects are likely unavoidable since the bridge would need to be improved to a four-lane expressway.
		Barn	FE	H-38	N	The barn is adjacent to the existing U.S. 50 alignment. At this location, U.S. 50 is a two-lane highway and would be expanded to a four-lane expressway. Due to its proximity, impacts are likely unavoidable. However, impacts could be minimized during Tier 2 studies.
		U.S. 50 bridge over Limestone Creek	FE	H-39	N	The bridge is on the existing U.S. 50 alignment, which is a two-lane section at this location. Effects are likely unavoidable since the bridge would need to be improved to a four-lane expressway.
		Farmstead	FE	H-40	N	The farmstead is adjacent to the existing U.S. 50 alignment. At this location, U.S. 50 is a two-lane highway and would be expanded to a four-lane expressway. Due to its proximity, impacts are likely unavoidable. However, impacts could be minimized during Tier 2 studies.



Table 5-3. Non-Linear Resources that May be Historic and Have the Potential to Affect Tier 1 Decisions (continued)

Section	Build Alternatives (if more than one)	Resources that May be Historic	NRHP Eligibility ¹	Figure 5-10 through Figure 5-13 ID	Potential to Affect Tier 1 Decisions (Y/N)	Reasoning
Section 13: Las Animas to Lamar (cont.)	—	Barn	FE	H-41	N	The barn is adjacent to the existing U.S. 50 alignment. At this location, U.S. 50 is a two-lane highway and would be expanded to a four-lane expressway. Due to its proximity, impacts are likely unavoidable. However, impacts could be minimized during Tier 2 studies.
		Farmstead	FE	H-42	N	The farmstead is adjacent to the existing U.S. 50 alignment. At this location, U.S. 50 is a two-lane highway and would be expanded to a four-lane expressway. Due to its proximity, impacts are likely unavoidable. However, impacts could be minimized during Tier 2 studies.
		Building	FE	H-43	N	This resource is located directly adjacent to the existing U.S. 50 alignment. At this location, U.S. 50 is a two-lane highway and would be expanded to a four-lane expressway. Due to its proximity, impacts are likely unavoidable. However, impacts could be minimized during Tier 2 studies.



Table 5-3. Non-Linear Resources that May be Historic and Have the Potential to Affect Tier 1 Decisions (continued)

Section	Build Alternatives (if more than one)	Resources that May be Historic	NRHP Eligibility ¹	Figure 5-10 through Figure 5-13 ID	Potential to Affect Tier 1 Decisions (Y/N)	Reasoning
Section 14: Lamar to Granada	—	U.S. 50 bridge over Willow Creek overflow	FE	H-44	N	The bridge is on the existing U.S. 50 alignment, which is a two-lane section at this location. Effects are likely unavoidable since the bridge would need to be improved to a four-lane expressway.
		Farmhouse	FE	H-45	N	This resource is adjacent to the existing U.S. 50 alignment. At this location, U.S. 50 is a two-lane highway and would be expanded to a four-lane expressway. Due to its proximity, impacts are likely unavoidable. However, impacts could be minimized during Tier 2 studies.
Section 15: Granada	Alternative 1: Granada North	Residence/ House	FE	H-46	N	The 1,000-foot-wide alternative allows for avoidance of this resource during Tier 2 studies.
	Alternative 2: Granada South	—	N/A	N/A	N/A	N/A
Section 16: Granada to Holly	—	Residence/ House	FE	H-47	N	The 1,000-foot-wide alternative allows for avoidance of this resource during Tier 2 studies.
		U.S. 50 bridge over Granada Creek	FE	H-48	N	The bridge is on the existing U.S. 50 alignment, which is a two-lane section at this location. Effects are likely unavoidable since the bridge would need to be improved to a four-lane expressway.



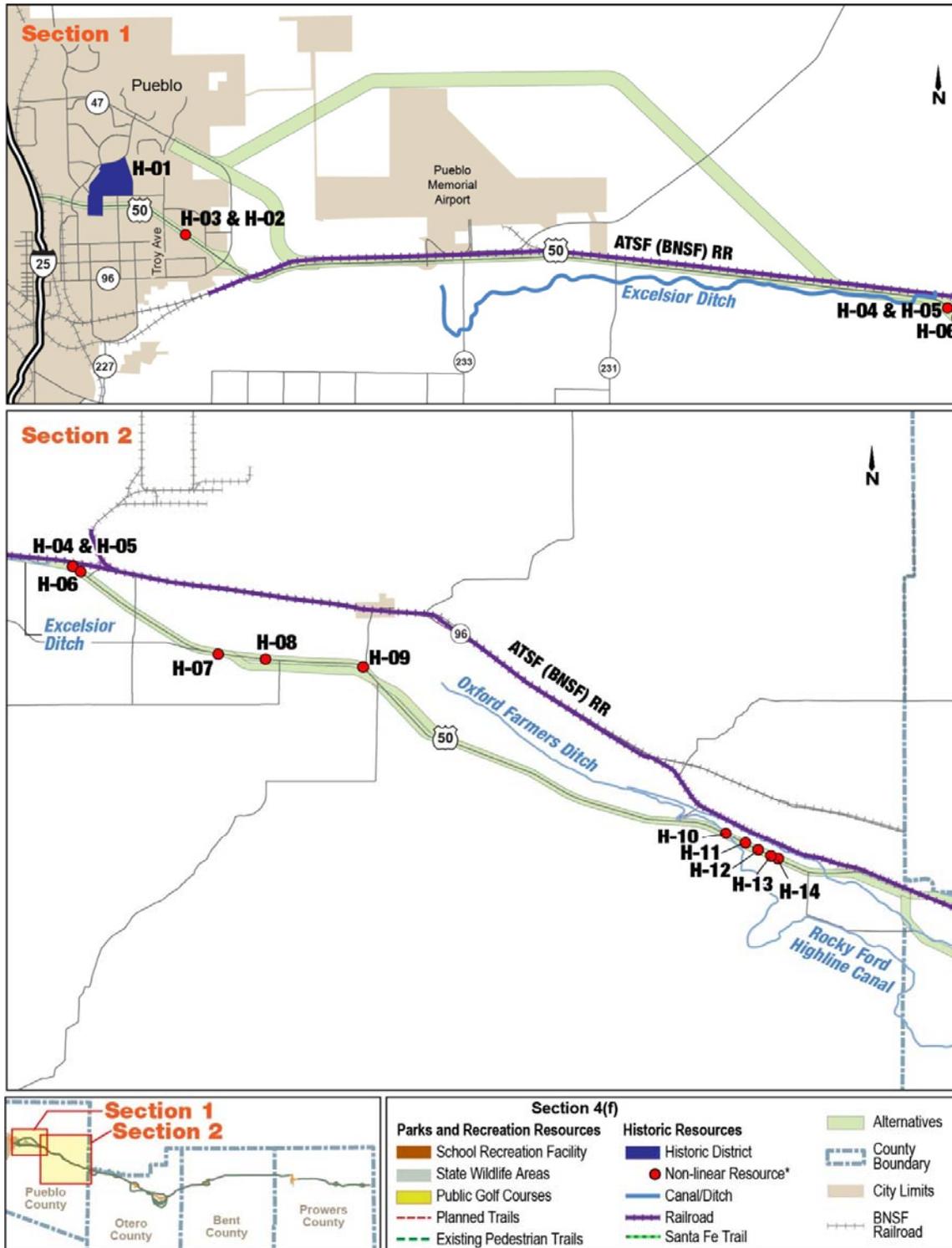
Table 5-3. Non-Linear Resources that May be Historic and Have the Potential to Affect Tier 1 Decisions (continued)

Section	Build Alternatives (if more than one)	Resources that May be Historic	NRHP Eligibility ¹	Figure 5-10 through Figure 5-13 ID	Potential to Affect Tier 1 Decisions (Y/N)	Reasoning
Section 16: Granada to Holly (cont.)	—	U.S. 50 overpass, BNSF Railway separation	FE	H-49	N	The bridge is on the existing U.S. 50 alignment, which is a two-lane section at this location. Effects are likely unavoidable since the bridge would need to be improved to a four-lane expressway.
		Gateway Downs	FE	H-50	N	The 1,000-foot-wide alternative allows for avoidance of this resource during Tier 2 studies.
Section 17: Holly	Alternative 1: Holly North	Horse ranch complex	FE	H-51	N	The 1,000-foot-wide alternative allows for avoidance of this resource during Tier 2 studies.
		Willett's house	FE	H-52	N	The 1,000-foot-wide alternative allows for avoidance of this resource during Tier 2 studies.
	Alternative 2: Holly South	—	N/A	N/A	N/A	N/A
Section 18: Holly transition	—	Holly Rest Area	FE	H-53	N	The 1,000-foot-wide alternative allows for avoidance of this resource during Tier 2 studies.

¹NRHP Eligibility: FE = Field Eligible, NR = Listed on NRHP, OE = Officially Determined Eligible

5.4.3 Location Maps of Section 4(f) Resources

The following figures show location maps of the Section 4(f) resources discussed previously in Table 5-3.



*Refer to Table 5-4 for resource description.

Figure 5-10. Location Maps of Section 4(f) Resources

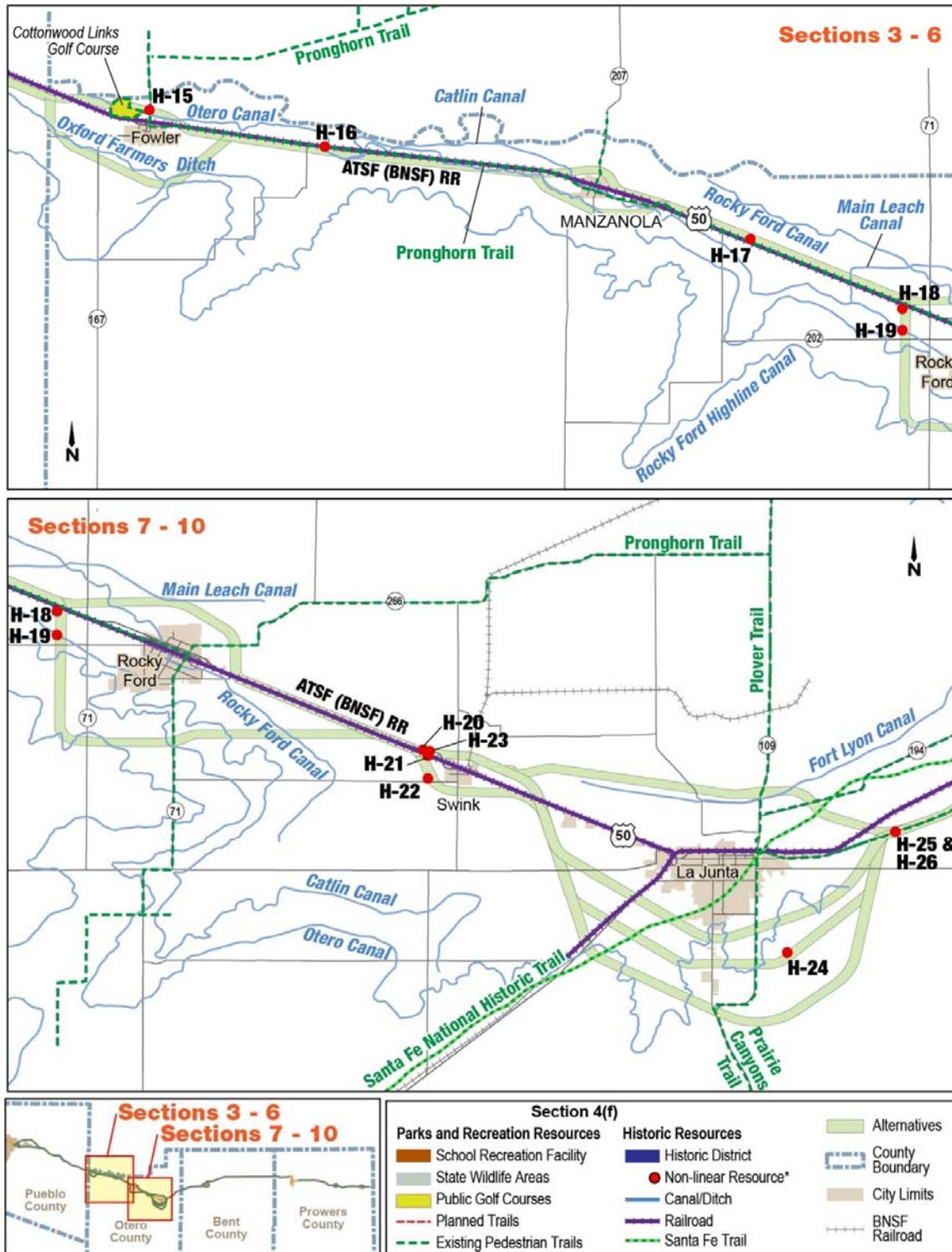
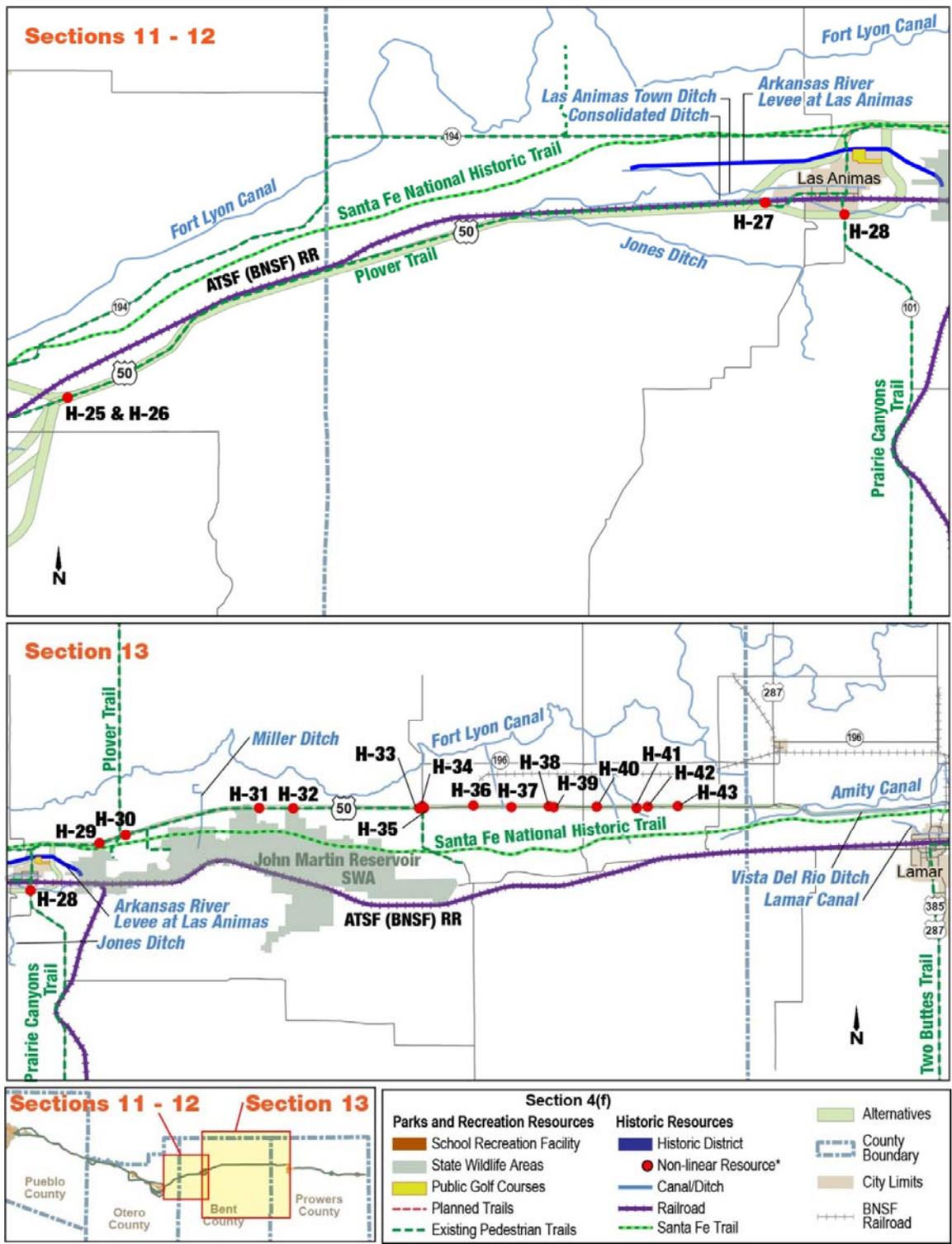
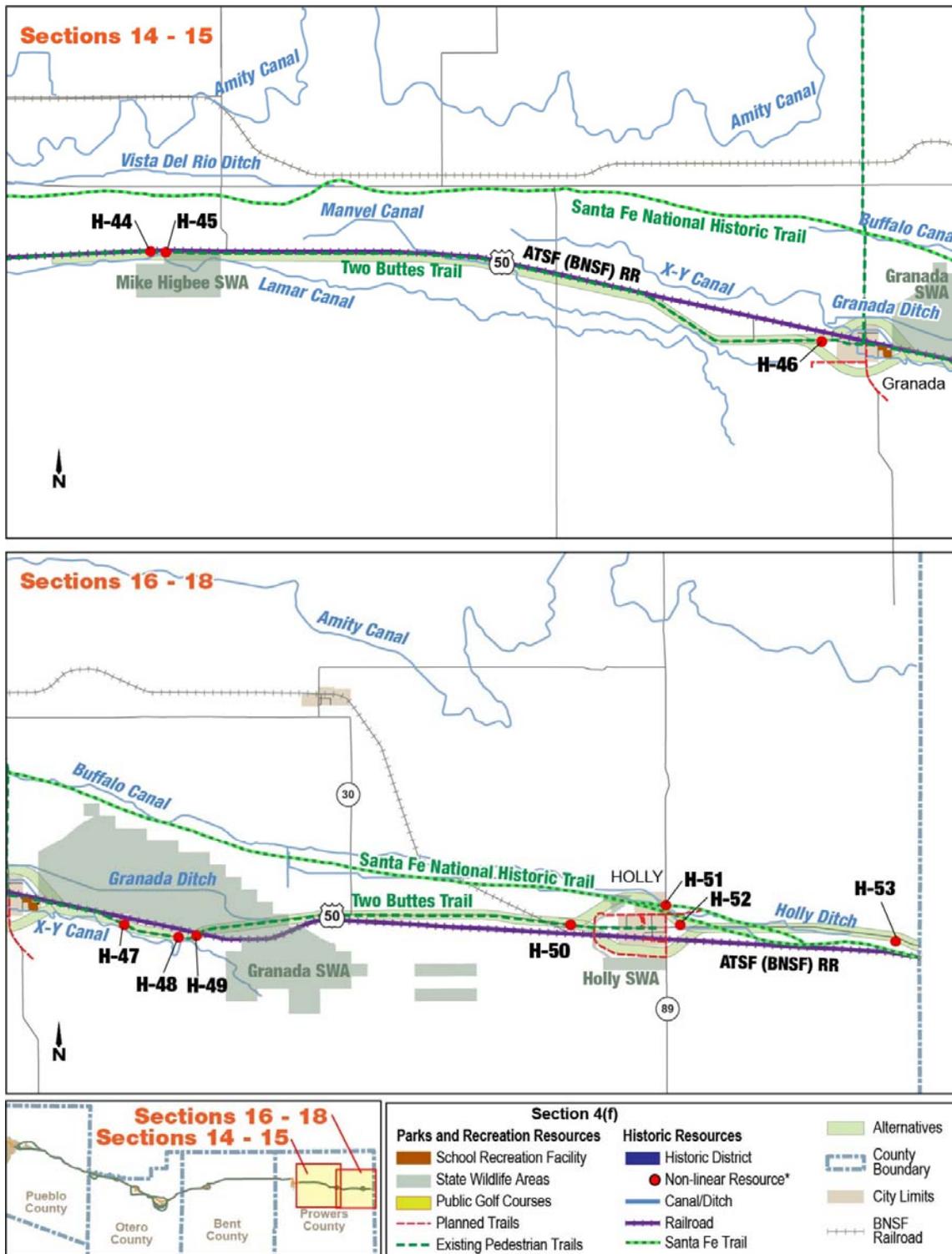


Figure 5-11. Location Maps of Section 4(f) Resources



*Refer to Table 5-4 for resource description.

Figure 5-12. Location Maps of Section 4(f) Resources



*Refer to Table 5-4 for resource description.

Figure 5-13. Location Maps of Section 4(f) Resources



5.4.4 Summary of Section 4(f) Resources and Potential Use

This chapter identifies potential Section 4(f) resources by category. Table 5-4 shows the number of potential resources used by the Build Alternatives in each corridor section. Since many of the resources summarized in the table may be avoidable during Tier 2 studies, the table reflects a conservative over-estimate of the project's potential use of resources under Section 4(f).

Based on environmental and social considerations, as well as public input, a preferred alternative has been identified, which is discussed in Chapter 6, Identification of Preferred Alternative and Summary of Impacts. This corridor-wide alternative was developed with the intent to avoid many of the Section 4(f) resources along the corridor, which consist of historic and archaeological resources and parkland and recreational resources. Alternatives highlighted in gray in Table 5-4 are identified as components of the identified Preferred Alternative. Because of the broad scale nature of this Tier 1 EIS, not enough information is known about the potential Section 4(f) resources or the potential use of these resources by the Build Alternatives. However, there is no feasible and prudent avoidance alternative, as described in the following section, and the remaining Build Alternatives under consideration have not precluded the least overall harm alternative. During Tier 2 studies, specific use of Section 4(f) resources will be assessed when project-specific information is available. At that time, coordination with officials with jurisdiction over Section 4(f) resources will be conducted, a complete Section 4(f) evaluation will determine if prudent and feasible alternatives to avoid the use of Section 4(f) resources exist, and planners and engineers will identify all possible planning to avoid Section 4(f) resources and to minimize harm.



Table 5-4. Summary of Section 4(f) Resources Potentially Used by Build Alternative in Each Corridor Section

Section	Build Alternatives (if more than one)	Number of Parkland and Recreational Resources that May be Used by the Build Alternatives	Number of Historic Resources that May be Used by the Build Alternatives ¹	
			Linear ²	Non-Linear
Section 1: Pueblo	Option 1: Pueblo Airport North	—	2	
	Option 2: Pueblo Existing Alignment	—	1	3
	Option 3: Pueblo SH 47 Connection	—	1	
Section 2: Pueblo to Fowler	Option 1: Fort Reynolds Existing Alignment	—	4	11
	Option 2: Fort Reynolds Realignment	—	4	9
Section 3: Fowler	Option 1: Fowler North	1	2	1
	Option 2: Fowler South	—	2	—
Section 4: Fowler to Manzanola	—	—	3	1
Section 5: Manzanola	Option 1: Manzanola North	—	3	—
	Option 2: Manzanola South	—	2	—
Section 6: Manzanola to Rocky Ford	—	—	2	1
Section 7: Rocky Ford	Option 1: Rocky Ford North	—	3	—
	Option 2: Rocky Ford South	—	5	2
Section 8: Rocky Ford to Swink	—	—	1	1
Section 9: Swink	Option 1: Swink North	—	1	2
	Option 2: Swink South	—	1	1



Table 5-4. Summary of Section 4(f) Resources Potentially Used by Build Alternative in Each Corridor Section (continued)

Section	Build Alternatives (if more than one)	Number of Parkland and Recreational Resources that May be Used by the Build Alternatives	Number of Historic Resources that May be Used by the Build Alternatives ¹	
			Linear ²	Non-Linear
Section 10: La Junta	Option 1: La Junta North	—	3	—
	<i>Option 2: La Junta South</i>	—	3	—
	<i>Option 3: La Junta South</i>	—	3	1
	Option 4: La Junta South	—	3	—
Section 11: La Junta to Las Animas	—	—	3	2
Section 12: Las Animas	<i>Option 1: Las Animas North</i>	—	5	—
	Option 2: Las Animas South	1	3	2
Section 13: Las Animas to Lamar	—	2	5	15
Section 14: Lamar to Granada	—	1	2	2
Section 15: Granada	Option 1: Granada North	1	3	1
	<i>Option 2: Granada South</i>	2	1	—
Section 16: Granada to Holly	—	1	3	4
Section 17: Holly	Option 1: Holly North	2	3	2
	<i>Option 2: Holly South</i>	2	1	—
Section 18: Holly transition	—	—	3	1

¹This total does not include archaeological resources.

²Linear resources include the BNSF Railway, 27 irrigation canals and ditches, the Arkansas River levee, and the Santa Fe Trail. All linear resources may be crossed, some of them multiple times in various locations.



5.5 AVOIDANCE ALTERNATIVES

Section 4(f) regulations refer to an alternative that would not require the use of any Section 4(f) property as an avoidance alternative. Section 4(f) requires a determination of: (1) whether there are feasible and prudent alternatives that avoid the use of Section 4(f) resources, and (2) that these alternatives do not cause severe issues of a magnitude that substantially outweighs the importance of protecting the Section 4(f) resource. An alternative may be removed from consideration after comparing the relative value of the resource to the preservation goal of the statute.

As stated in 23 CFR 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 does not address the purpose and need of the project.
- It results in unacceptable safety or operation problems.
- After reasonable mitigation it still causes severe impacts.
- It results in additional construction, maintenance, or operational costs of an extraordinary degree.
- It causes other unique or unusual factors.
- It involves multiple factors listed previously that, while individually minor, cumulatively cause unique problems or impacts of an extraordinary degree.

5.5.1 No-Build Alternative

In accordance with NEPA, a no-build alternative is included in this EIS to provide a basis for comparison with the build alternatives. Under the No-Build Alternative, routine maintenance, repairs, and bridge repair would be done, as necessary, to keep U.S. 50 in usable condition, but no efforts would be made to address corridor-wide transportation needs. As such, it was determined that the No-Build Alternative would not meet the purpose and need of the project because it would not improve safety and mobility for all users.

5.5.2 Regional Corridor Locations

In addition to the No-Build Alternative, two regional corridors were evaluated during the alternatives development process. As discussed in Chapter 3, Alternatives Considered, regional corridor alternatives were eliminated because they did not address the project purpose and need, goals, and objectives.



North Regional Corridor

The north regional corridor would be located one to 10 miles north of U.S. 50. It would use other existing roadway corridors, including SH 96, SH 266, and SH 196, as well as portions of U.S. 50. This corridor would remain entirely on the north side of the Arkansas River, including at the U.S. 287 junction. The north regional corridor only marginally addresses mobility for the various user groups, and, therefore, would not fully meet the project's purpose and need. For this reason, the alternative was not found to be a potential feasible and prudent avoidance alternative and was eliminated from further consideration.

South Regional Corridor

The south regional corridor would be located one to 10 miles south of U.S. 50. This corridor would follow existing power lines, which are located three to four miles south of U.S. 50 from eastern Pueblo County to La Junta. It would remain south of U.S. 50 to Las Animas. The south regional corridor would then turn north, crossing the Arkansas River to rejoin the existing U.S. 50 highway north of Las Animas. It would continue east on the existing U.S. 50 highway and then shift just north of Granada. From Granada to the Colorado-Kansas state line, the south regional corridor would again follow the existing U.S. 50 highway. The south regional corridor only marginally addresses mobility for the various user groups, and, therefore, would not fully meet the project's purpose and need. For this reason, the alternative was not found to be a potential feasible and prudent avoidance alternative and was eliminated from further consideration.

As discussed above, a reasonable range of feasible and prudent avoidance alternatives involving different alignments and including the No-Build Alternative were studied to avoid, and/or minimize the use of significant public parks, recreation areas, wildlife and waterfowl refuges and historic sites by the U.S. 50 project. Through analyses described in Chapter 3, Alternatives Considered, none of the avoidance alternatives were determined to be a prudent and feasible alternative because they would compromise the project to the degree that the project would no longer meet the purpose and need.

5.6 MEASURES TO MINIMIZE HARM

During the alternatives development process, alternatives were evaluated that would remain on the existing U.S. 50 alignment through towns east of Pueblo. Because it was determined a four-lane rural expressway would best meet the purpose and need of the project, each two-lane alignment through the communities would need to be substantially widened. The existing right of way through these communities varies from 60 feet to 80 feet. The ideal typical section for the four-lane expressway through the towns would require a 194-foot-wide right of way. These through-town alternatives would



unavoidably require taking of at least 150 resources that could be historic. In addition, 11 parkland and recreational resources would be impacted by the through-town alternatives. By eliminating the through-town alternatives during the alternatives development process, the use of nearly 200 Section 4(f) resources were avoided and overall potential Section 4(f) impacts minimized.

To minimize potential impacts in the around town alternatives, a 1,000-foot-wide corridor was identified for each Build Alternative in Tier 1. These 1,000-foot-wide corridors are intended to accommodate the ultimate 250-foot-wide highway right of way during Tier 2 studies. By identifying large corridors for each alternative, it allows for additional avoidance and minimization of the potential use of Section 4(f) resources during Tier 2 studies. Tier 2 study efforts also will include conceptual design for the proposed highway improvements, providing design opportunities to shrink the footprint of project impacts on a case-by-case basis, where needed. Therefore, the 1,000-foot-wide Build Alternatives would not preclude additional avoidance or minimization efforts during Tier 2 studies.

5.7 LEAST HARM

When all alternatives result in the use of a Section 4(f) resource and if there is no feasible and prudent avoidance alternative, an analysis must be completed to identify the alignment that results in the least overall harm to each Section 4(f) property. The ability to conduct this analysis during this Tier 1 EIS is limited because project details within each of the 1,000-foot-wide corridors around towns will not be defined until Tier 2 studies are conducted.

As preferred alternatives are advanced in Tier 2 studies, design details within the 250-foot-highway right of way will be refined to avoid and minimize impacts to Section 4(f) properties, where applicable. Guidance included in FHWA's Section 4(f) Policy Paper (FHWA 2012a) notes that during a tiered process, when sufficient information is unavailable during a first-tier stage, then the EIS may be completed without any preliminary Section 4(f) approvals. Planning during this Tier 1 EIS has been limited to ensuring that opportunities to minimize harm later in the development process have not been precluded by decisions made during this Tier 1 EIS.

5.8 SUMMARY OF TIER 1 SECTION 4(F) EVALUATION

The Section 4(f) evaluation presented in this chapter is based upon a level of detail consistent with Tier 1 analysis. It is intended to:

- Evaluate each Build Alternative’s potential use of Section 4(f) resources as those uses relate to the general corridor location decision to be made at Tier 1
- Ensure that opportunities to minimize harm to Section 4(f) resources in Tier 2 studies are not precluded by decisions

With regard to around-town alternatives, note that the number of Section 4(f) resources in one around-town Build Alternative versus another is not a definitive indication of relative Section 4(f) uses of the alternatives in that particular location. For example, suppose the northern alternative around a town includes three resources while the southern alternative contains two. These numbers do not tell the whole story because, in Tier 2 studies, a detailed analysis may show that the ultimate alignment could avoid the use of one or more of the resources in either corridor or that the significance of one resource is greater than another. This could change an apparent advantage from one corridor to the other.

A key objective of the Tier 1 Section 4(f) evaluation is to support the decisions made regarding the type and general corridor location of transportation improvements that meet the project’s purpose and need. Completing this limited evaluation at Tier 1 reduces the potential that decisions made in the Tier 1 EIS would need to be reconsidered during Tier 2 studies on the basis of Section 4(f) requirements.

5.9 AGENCY COORDINATION

The primary coordination with officials with jurisdiction has been through the Agency Working Group, which was developed for the Tier 1 EIS. The group is comprised of representatives from 13 federal, state, and local agencies. The Agency Working Group was not specifically developed for Section 4(f) resources. The roles of the group include facilitating corridor decisions regarding modal choice, identifying a preferred location and logical termini, providing the prioritization and design parameters for Tier 2 studies, and developing corridor-wide environmental mitigation strategies.



Information about certain Section 4(f) resources was obtained during consultations with the following agencies:

- CPW—to identify boundaries, uses, and potential effects to state wildlife areas
- NPS—to determine potential effects to the Santa Fe National Historic Trail (5BN.391)
- Bent’s Old Fort National Historic Site (5OT.149), and the Granada Relocation Center National Historic Landmark (i.e., Camp Amache) (5PW.48).

These consultations were documented using the Section 4(f) review form (see the Section 4(f) and Section 6(f) Resources Technical Memorandum in Appendix A).

For historic and archaeological resources, FHWA and CDOT developed a Programmatic Agreement (PA) with the SHPO (located in Appendix A: Resource Related Technical Reports titled, “Process and Agreements”) to outline the Section 106 process for the Tier 1 evaluation and to clarify processes for future Tier 2 studies. In fulfillment of the PA, the following stipulations have been met:

1. Consultation on APE with SHPO (November 2006)
2. Identification of consulting parties
3. Completion of Cultural Resources Reconnaissance Survey Report and Historic Context Overview (submitted to SHPO and consulting parties in August 2009 and included in Appendix A: Resources Related Technical Reports titled, “Historic and Archeological Resources”)

Consultation on eligibility and effect determinations will occur in the Tier 2 studies. A copy of the PA and associated correspondence is included in Appendix C.

Coordination and consultation with officials with jurisdiction over Section 4(f) resources is ongoing. More extensive coordination will be conducted during Tier 2 studies when roadway alignments have been identified.



5.10 NEXT STEPS: TIER 2 PROCESSES

Given the broad-scale nature of this Tier 1 EIS, FHWA cannot approve the use of any Section 4(f) resources at this time. However, Section 4(f) approvals will be made during Tier 2 studies. The following steps will be required at that time:

1. Identify Section 4(f) resources on a project-specific basis (i.e., each section of independent utility).
2. Continue coordination with officials with jurisdiction over Section 4(f) resources to determine eligibility of property, potential effects, and potential mitigation.
3. Identify the use of each identified Section 4(f) resource by the alternatives proposed during the Tier 2 study.
4. Complete a Section 4(f) evaluation to determine if prudent and feasible alternatives to avoid the use of Section 4(f) resources exist.
5. Identify all possible planning to minimize harm.
6. If no prudent or feasible avoidance alternatives are identified, conduct a least-harm analysis to determine which alternative causes the least overall harm. FHWA may approve only the alternative that causes the least overall harm.



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