

6 Identification of Preferred Alternative and Summary of Impacts

Chapter 4, Affected Environment, Environmental Consequences, and Mitigation, discusses the affected environment, environmental consequences, and mitigation strategies associated with the resources evaluated for this US 50 Tier 1 EIS. This chapter further screens the Build Alternatives to identify a preferred alternative, and it summarizes the resource impacts for that alternative by resource category.

6.1 PREFERRED ALTERNATIVE IDENTIFICATION

Chapter 3, Range of Alternatives, describes the process used to identify and evaluate the regional corridor locations, the transportation modes, facility types, and through-town and around-town options for US 50. To identify a preferred alternative, the Build Alternatives around communities, including the proposed realignment between Pueblo and Fowler, were further screened. For most communities, two around-town alternatives (one to the north and one to the south) were identified during the alternatives development process. This happened by involving community members, agency stakeholders, and others in the decision making, while also considering the alternative's ability to meet the purpose and need of the project as well as socioeconomic and environmental constraints. These locations then were evaluated based on criteria consistent with a Tier 1 level of analysis. This evaluation focused on three broad purpose and need-related categories that considered effects to the following environment categories:

- Rural and agricultural environment
- Natural environment
- Community and built environment

6.1.1 Evaluation of Build Alternatives (Around-Town Corridors)

Criteria to screen around-town Build Alternatives were developed based on comments received from agencies and the public, as well as regulatory requirements.

Public workshops were held in each of the 10 communities along the US 50 corridor to determine what resources were important to the local economy and quality of life (see Chapter 7, Community Outreach and Agency Involvement, and Appendix C, Agency and Public Involvement). One important local concern was that the US 50 corridor location should not be too far away from the communities and it should support the idea of creating a gateway into the community. The purpose of the gateway is to attract through-traffic to visit local businesses, which can be achieved by improved access and mobility.



Effects to agriculture also were a concern to community members (due to the region's economic dependence on agriculture), especially those effects that might impact highly productive, irrigated lands.

Federal regulations protect certain resources, such as agricultural land uses, threatened and endangered species, wetlands, waterways, historic resources, parks, and recreational facilities. Evaluation criteria were developed to assess impacts to these resources, in addition to those concerns identified as important to the affected communities. Resources specific to each community—whether because of their presence within or near the community or because of their importance to the community—generally are identified in the screening criteria tables throughout this chapter.

To understand the relationship between the affected resources and community concerns, the screening criteria were grouped together by their potential effects on the rural and agricultural environment, the natural environment, and the community and built environment. These three criteria groups are presented in Table 6-1, Table 6-2, and Table 6-3, respectively. A detailed analysis of the screening criteria results can be found in the Range of Alternatives Technical Memorandum located in Appendix B.

Table 6-1. Rural and Agricultural Environment Screening Criteria

Resource	Importance	How Assessed
Agricultural land	Agriculture is the foundation of the regional and local economies.	Quantity and quality of farmland and ranch lands within the corridor
Agricultural operations	Productivity and economies of scale depend on the ability to efficiently irrigate fields and move equipment and livestock, typically on larger, unfragmented parcels of land.	Qualitative determination



Table 6-2. Natural Environment Screening Criteria

Resource	Importance	How Assessed
Wetland/riparian areas	Wetlands are highly beneficial to the ecology and are protected by federal law and presidential Executive Order 11990.	Quantity and quality (number of acres and functional value) of wetland/riparian areas in the corridor
Waterways	The Arkansas River and its associated floodplain sustain wetlands and riparian vegetation, wildlife habitat, and movement corridors, and provide a vital water source.	Number of new bridge crossings needed
Wildlife	Threatened and endangered species and their habitat are protected by federal and state laws. Other species also are important to the health of the ecosystem. Hunting, fishing, and bird-watching are important recreational activities in the region.	Potential for occurrence of threatened and endangered species habitats in the corridor; effects to State Wildlife Areas; proximity to the Arkansas River; qualitative assessment of habitat fragmentation

Table 6-3. Community and Built Environment Screening Criteria

Resource	Importance	How Assessed
Historic resources	Historic resources are protected by federal law. Effects to historic properties must be considered under federal regulations. Historic resources are important to the culture of the area and have the potential to encourage "heritage tourism."	Number of historic resources within the corridor; number of times a linear historic resource (such as railroads, irrigation canals, and the Santa Fe Trail) is crossed
Homes and businesses	Communities along the US 50 corridor are relatively small and stable, so loss of homes and businesses can disrupt the local economy.	Number of homes and businesses within the corridor
Public parklands and recreation areas	These amenities are important to communities along the US 50 corridor and also are federally protected.	Number of parklands and recreation facilities affected within the corridor
Visibility of town from the roadway	If the town is not visible from the corridor, through-travelers may be less inclined to stop for goods/services.	Distance from existing US 50 to the new corridor
Compatibility with local land use	The corridor has potential to impact local land use or change existing economic development patterns	Qualitative determination
Air quality	Transportation activities can impact air quality in a manner that may be harmful to people and the environment.	Qualitative determination
Noise	Changes to US 50 will affect the way the noise originating from the roadway impacts the community.	Number of noise-sensitive receptors (e.g., residences) within the 1,000-foot-wide corridor and within 300 feet of the corridor
Other concerns	In some communities, issues were identified in community workshops.	Qualitative determination



Most of the screening criteria involve counting the number of units of the resource potentially affected in the corridor (acres of wetland/riparian zones or number of historic properties). However, considering only the quantity of certain resources, but not the quality, could misrepresent the significance of the impact. Therefore, the quality of these resources also is considered in the assessment.

The following paragraphs describe the Build Alternatives around each community and, in one instance, between communities. Key differences between the alternatives are discussed and summarized in a table to show which Build Alternative would have the least potential effects to the rural and agricultural environment, the natural environment, and the community and built environment. In addition, while all Build Alternatives meet the project purpose and need, the ability of the individual alternatives to meet the project purpose and need is discussed where alternatives differ.

Tradeoffs

For most communities along the US 50 corridor, the Build Alternative going around town to the north (closer to the Arkansas River) would include comparatively more wetlands, while the Build Alternative going around town to the south would include more farm/ranch lands.

At the end of each discussion, recommendations for corridor locations around each community are presented. These results identify locations that are identified as the Preferred Alternative.

A more detailed look at all the screening results for each community is provided in the Appendix B, Range of Alternatives Technical Memorandum.

6.1.2 Screening of and Decisions Regarding Build Alternatives

Pueblo Build Alternatives

US 50 connects to I-25 within the city of Pueblo (the western terminus for this Tier 1 EIS). Unlike other Build Alternatives for communities along US 50 that include through-town and around-town options, two local corridor alignments were considered, as well as the existing US 50 alignment, as shown in Figure 6-1.

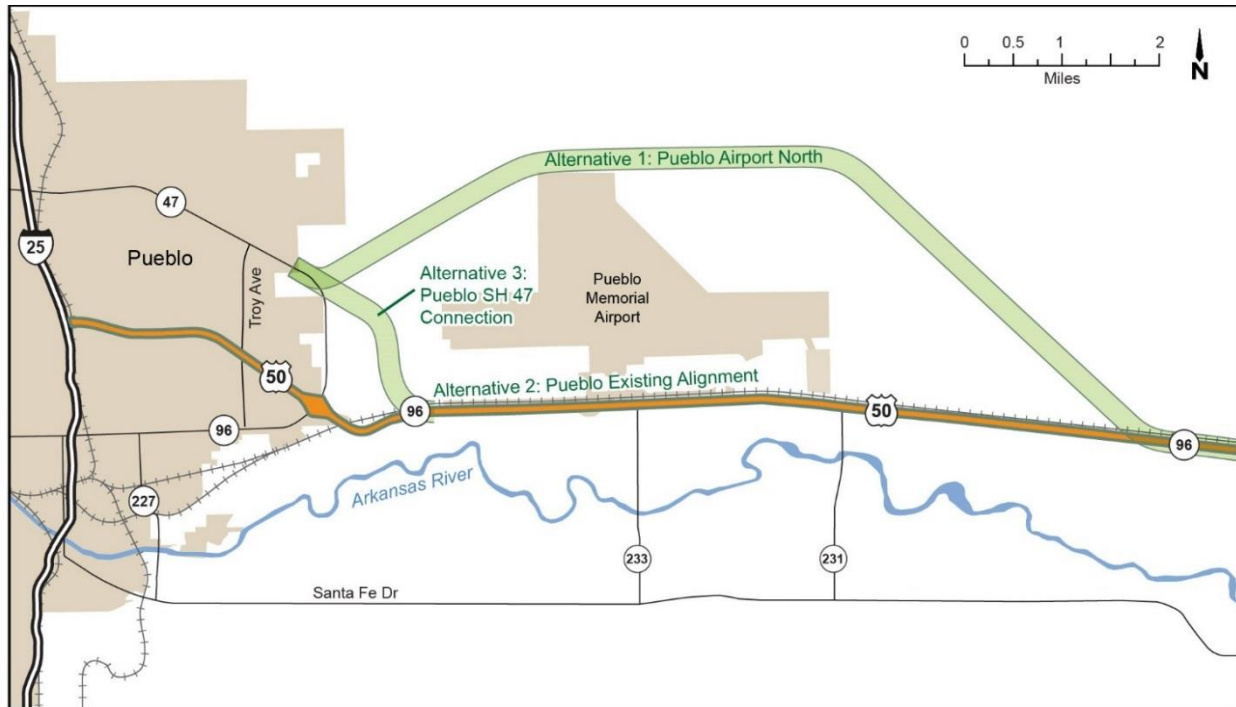


Figure 6-1. Pueblo Build Alternatives

A relocation of US 50 around the north side of the Pueblo Memorial Airport (Alternative 1: Pueblo Airport North in Figure 6-1) was proposed by local officials and included in the region’s 2035 Long-Range Transportation Plan. This approximately 12-mile corridor would tie into SH 47 approximately 1.5 miles north of US 50 and 4.5 miles east of I-25. This local proposal would redesignate a portion of SH 47 as US 50. Also, as part of the proposal, US 50 would remain in use under its secondary designation of SH 96.

Another corridor location that could be completed without building a new road was identified by using the existing US 50 corridor (Alternative 2: Pueblo Existing Alignment), which is already a divided, four-lane expressway.

Alternative 1: Pueblo Airport North and a shorter new roadway that would connect US 50 to SH 47 west of the airport (Alternative 3: Pueblo SH 47 Connection) were considered in the CDOT 2003 planning study for US 50. Alternative 3: Pueblo SH 47 Connection comprises about two miles of new roadway to tie into SH 47, with the remaining roughly nine miles consisting of minor safety improvements along the existing US 50 alignment.



Evaluation of the resources and issues associated with the Build Alternatives in Pueblo resulted in the findings summarized in Table 6-4. For a detailed analysis, which steps through the resources and/or considerations that make up the criteria category in the table, please refer to Appendix B, Range of Alternatives Technical Memorandum.

Table 6-4. Pueblo Build Alternatives Comparison

Criteria Category	Build Alternative(s) with Fewer Potential Impacts (indicated by checkmark)			Key Differences
	Alternative 1: Pueblo Airport North	Alternative 2: Pueblo Existing Alignment	Alternative 3: Pueblo SH 47 Connection	
Rural and Agricultural Environment		✓	✓	Alternative 2 and Alternative 3 would take less farmland and ranch lands (131 and 103 acres for Alternative 2 and Alternative 3, respectively, compared with 352 acres for Alternative 1) or alter fewer agricultural operations as compared to Alternative 1, which would fragment existing grazing land.
Natural Environment		✓		The existing US 50 (Alternative 2) is already a developed transportation corridor. The other corridors would consume and fragment prairie habitat, with two to nine miles of new roadway.
Community and Built Environment		✓		The existing US 50 corridor (Alternative 2) is already fully integrated with the Pueblo area road network. The other corridors would increase traffic, noise, and vehicular emissions in existing neighborhoods by diverting US 50 traffic onto SH 47. Alternative 1 is the preferred corridor in the 2035 long-range plan, but it is not funded and is anticipated to have a notable impact on existing land use by converting agricultural land to a transportation use.

Alternative 2: Pueblo Existing Alignment has the fewest potential environmental effects to the natural environment and community and built environment because it would not construct new roadway segments, which reduces the potential for effects. In addition, since it is already a divided, four-lane expressway, Alternative 2 would need minimal improvements. For these reasons, it is identified as the Preferred Alternative in Pueblo. The two other Build Alternatives are not preferred because of greater environmental effects resulting from construction of new roadway to connect US 50 and SH 47. In addition, Alternative 1 would result in greater out-of-direction travel for local and regional users, which would not improve mobility to the same extent that Alternatives 2 or 3 would.

Pueblo to Fowler Build Alternatives

The two Build Alternatives under consideration in this section are largely the same; however, Alternative 2: Fort Reynolds Realignment has been proposed to provide additional safety improvements by realigning the road to minimize potential impacts (see Figure 6-2). Improvements to meet design standards for a four-lane rural expressway along the existing alignment (Alternative 1: Fort Reynolds Existing Alignment) in the unincorporated town of Fort Reynolds would result in numerous home acquisitions in the immediate area and removal of the historic Huerfano bridge. The realignment has the potential to minimize or avoid impacts to residences and the bridge.

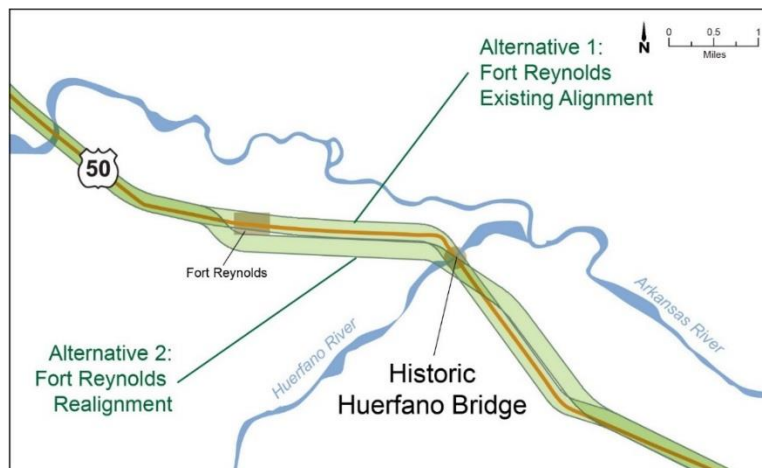


Figure 6-2. Pueblo to Fowler Build Alternatives

Evaluation of the resources and issues associated with the Build Alternatives between Pueblo and Fowler resulted in the findings summarized in Table 6-5. For a detailed analysis, which steps through the resources and/or considerations that make up the criteria category in the table, please refer to Appendix B, Range of Alternatives Technical Memorandum.



Table 6-5. Pueblo to Fowler Build Alternatives Comparison

Criteria Category	Build Alternative(s) with Fewer Potential Impacts (indicated by checkmark)		Key Differences
	Alternative 1: Fort Reynolds Existing Alignment	Alternative 2: Fort Reynolds Realignment	
Rural and Agricultural Environment	✓	✓	The Build Alternatives would have similar impacts to farmland, the realignment option having a slightly higher impact to agricultural productivity due to potential alignment through alfalfa/corn-producing farmlands.
Natural Environment	✓	✓	Both Build Alternatives would require crossing the Arkansas River; Alternative 1 would replace the existing structure and Alternative 2 would require a new crossing. Both have comparable potential to affect wetland and riparian resources, and Alternative 2 has a slightly higher potential for wildlife impacts due to additional ground disturbance for the realignment. However, there are no key differences between the two options.
Community and Built Environment		✓	Alternative 2 would improve safety while also minimizing potential impacts to the community and built environment by having greater opportunity to avoid the acquisition of homes and businesses, shift traffic away from noise-sensitive receptors, and avoid adversely affecting the historic Huerfano bridge.

The two Build Alternatives in this section of the corridor do not differ greatly because they generally follow the same alignment until near the Fort Reynolds area. Both alternatives meet the purpose and need, however, Alternative 2: Fort Reynolds Realignment is better suited to minimize impacts to the community and built environment. Therefore, it is identified as the Preferred Alternative at this location.

Fowler Build Alternatives

The two Build Alternatives considered around Fowler are shown in Figure 6-3. Alternative 1: Fowler North is 3.4 miles long and would be located between the BNSF Railway tracks and the Arkansas River.

Alternative 2: Fowler South is slightly less than five miles long, extending nearly one mile south of town to minimize effects to land irrigated by the Oxford Farmers Ditch, a major irrigation canal. Alternative 2 provides for additional development opportunities.

Both alternatives were developed with community input during the previous CDOT US 50 planning study and have been refined during this study.

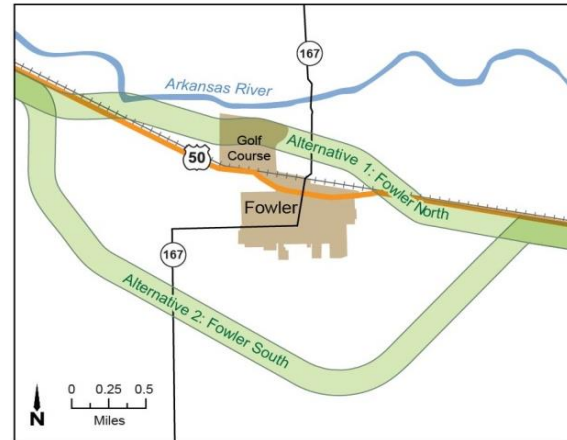


Figure 6-3. Fowler Build Alternatives

Because Alternative 1: Fowler North is closer to town, it would provide a convenient and visible gateway into town. In a community workshop, Fowler residents indicated that they would like the corridor to go north, through floodplains with limited development potential, rather than go south, which would result in a loss of highly productive farmland and ranch lands. However; because Alternative 1 is located close to the Arkansas River, there would be much greater impacts to wetland/riparian areas, amounting to approximately 25 acres. Alternative 1 crosses through a 100-year floodplain, which would increase the risk of flooding of the road and surrounding resources such as residences. Additionally, Alternative 1 would be situated to cross through the Cottonwood Links Golf Course. The public and Fowler town officials were aware of possible effects to the nine-hole, publicly owned Cottonwood Links Golf Course and suggested modifications to the course that would accommodate the north corridor.

Alternative 2: Fowler South would have less potential effect to wetland/riparian areas, but it would affect more farmland and ranch lands than the north corridor because it is nearly 1.5 miles longer. Also, the quality of the farmland and ranch lands is better south of town than it is to the north. Alternative 2 would potentially impact almost twice as much agricultural land as Alternative 1. Because the southern alternative is much farther from the business district and center of town, it would not provide as convenient a gateway into town.



Evaluation of the resources and issues identified for these Build Alternatives in Fowler resulted in the findings summarized in Table 6-6. For a detailed analysis, which steps through the resources and/or considerations that make up the criteria category in the table, please refer to Appendix B, Range of Alternatives Technical Memorandum.

Table 6-6. Fowler Build Alternatives Comparison

Criteria Category	Build Alternative(s) with Fewer Potential Impacts (indicated by checkmark)		Key Differences
	Alternative 1: Fowler North	Alternative 2: Fowler South	
Rural and Agricultural Environment	✓		Alternative 1 would affect fewer acres of farmland and ranch lands (89 acres, compared with 146 acres in the south) and is less likely to interfere with agricultural operations.
Natural Environment		✓	Alternative 2 has fewer acres of wetland/riparian area (approximately 1 acre, compared with 25 acres in Alternative 1), and this acreage is of lesser ecological value than the acreage in the north corridor, which is very close to the Arkansas River. Alternative 1 is located in a 100-year floodplain, whereas Alternative 2 is not.
Community and Built Environment	✓	✓	Alternative 1 is much closer and more visible to town, providing a better gateway. Alternative 2 avoids effects to the publicly owned golf course, as well as the need for two costly bridges over the historic railroad tracks.

Alternative 1: Fowler North would have fewer adverse impacts on agriculture, while Alternative 2: Fowler South would have fewer effects on the natural environment. The two alternatives are comparable in their effects on the community and built environment, as well as their ability to meet the purpose and need of the project. As each Build Alternative has its tradeoffs in the three categories, no Preferred Alternative could be identified at this location and both Build Alternatives for Fowler are carried forward for Tier 2 analysis.

Manzanola Build Alternatives

The two Build Alternatives considered around Manzanola are shown in Figure 6-4. Alternative 1: Manzanola North would require a new railroad crossing west of town and remain north of the railroad tracks. Alternative 2: Manzanola South would remain south of the tracks until crossing them east of town, as US 50 does today.

Both alternatives generally are of comparable length and comparable distance from the existing highway.

Both alternatives also increase the traveling distance from the existing alignment by slightly more than one-quarter mile through the area.

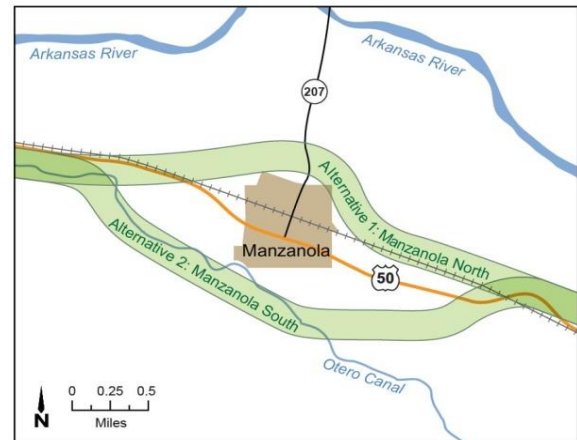


Figure 6-4. Manzanola Build Alternatives

Manzanola is a small town with approximately 214 homes. Eighteen of these homes (i.e., 9 percent of the total) are located within Alternative 2: Manzanola South, compared with nine homes (4 percent) in Alternative 1: Manzanola North. The acreage of potentially affected farmland and ranch lands and riparian/wetland area is comparable for the two Build Alternatives, but the resources in the southern alternative are of slightly higher quality. While Alternative 1 consists of alfalfa/corn and ranch lands, Alternative 2 potentially would impact vegetable farms, which have a much higher productive value.

Evaluation of the resources and issues identified for these 1,000-foot-wide Build Alternatives in Manzanola resulted in the findings summarized in Table 6-7. For a detailed analysis, which steps through the resources and/or considerations that make up the criteria category in the table, please refer to Appendix B, Range of Alternatives Technical Memorandum.



Table 6-7. Manzanola Build Alternatives Comparison

Criteria Category	Build Alternative(s) with Fewer Potential Impacts (indicated by checkmark)		Key Differences
	Alternative 1: Manzanola North	Alternative 2: Manzanola South	
Rural and Agricultural Environment	✓		Both alternatives impact approximately the same amount of farmland and ranch land (about 78 acres), but the acreage in Alternative 1 is of lower quality than the acreage in Alternative 2. Farmland and ranch land in Alternative 1 includes no vegetable-quality land, and 28 percent of it is grazing quality, while Alternative 2 includes 14 acres of vegetable-quality land and only 6 percent is grazing quality.
Natural Environment	✓		Both alternatives have approximately the same amount of wetland/riparian area (5 acres in Alternative 1 and 4 acres in Alternative 2), but the acreage in Alternative 1 is of lesser ecological value than in Alternative 2. About 75 percent of the resource in Alternative 2 is Category I (best functional value), compared to 20 percent in Alternative 1.
Community and Built Environment	✓		Alternative 1 has fewer homes that would be impacted (nine, compared to 18 in Alternative 2). Alternative 1 also received more support at community meetings.

Differences between the Build Alternatives were slight; however, Alternative 1: Manzanola North has fewer potential effects to agricultural productivity and the community and built environment. Although both alternatives are comparable in their improvements to safety, Alternative 1 maintains flexibility to accommodate future travel, since it contains fewer homes and is less likely to be the direction of future town expansion. It also had greater public support. In a community workshop, Manzanola residents indicated that they would like the corridor to be located north, in part because they felt that the community’s potential future growth was likely to occur south of town. Therefore, Alternative 1: Manzanola North is identified as the Preferred Alternative at this location.

Rocky Ford Build Alternatives

The Build Alternatives considered around Rocky Ford are shown in Figure 6-5. Both options increase the travel distance through the area. Alternative 1: Rocky Ford North is between the city and the Arkansas River and is slightly less than seven miles in length. It is much closer to the community than Alternative 2: Rocky Ford South, which is located approximately one mile south of US 50 and creates a travel distance of approximately 8.5 miles. Alternative 2 follows existing county roads to minimize fragmentation of farmland and ranch lands.

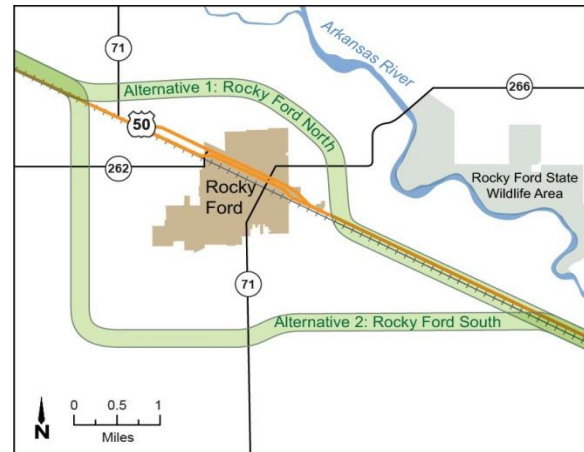


Figure 6-5. Rocky Ford Build Alternatives

The eastern junction of the existing US 50 and the proposed options vary substantially. The junction associated with Alternative 1: Rocky Ford North lies much closer to town than the associated junction for Alternative 2: Rocky Ford South. The city of Rocky Ford would be more visible for potential visits by through-travelers from the north corridor. Also, Alternative 1 would provide much better access to the Arkansas Valley Fairgrounds than Alternative 2, which is an important economic resource to the community. The amount of wetland/riparian acreage is comparable between the two Build Alternatives (10 acres versus 13 acres).

Alternative 1 also is adjacent to Arkansas River floodplains. However, the community has zoned several properties for light industrial use, out of the floodplain, in an effort to develop an industrial park.

Evaluation of the resources and issues identified for the Build Alternatives in Rocky Ford resulted in the findings summarized in Table 6-8. For a detailed analysis, which steps through the resources and/or considerations that make up the criteria category in the table, please refer to Appendix B, Range of Alternatives Technical Memorandum.

Table 6-8. Rocky Ford Build Alternatives Comparison

Criteria Category	Build Alternative(s) with Fewer Potential Impacts (indicated by checkmark)		Key Differences
	Alternative 1: Rocky Ford North	Alternative 2: Rocky Ford South	
Rural and Agricultural Environment	✓	✓	The Build Alternatives have comparable impacts to farmland and ranch lands. No key differences.
Natural Environment	✓	✓	Both alternatives have comparable wetland/riparian acreage and functional value, with Alternative 2 having three acres more of potential wetland/riparian impacts. Alternative 1 is closer to the Arkansas River (between 0.5 mile and 0.8 mile), but it is not close enough in proximity to affect the area.
Community and Built Environment	✓		Alternative 1 avoids multiple crossings of historic canals and railroads that would occur in Alternative 2. Alternative 1 is much closer to the city and provides better access to the fairgrounds and the city’s proposed industrial park.

The Build Alternatives at Rocky Ford generally were comparable when looking at the screening criteria, as well as in their ability to meet the project purpose and need, except when considering the community and built environment. Alternative 1: Rocky Ford North has a greater potential to minimize effects to historic resources and received greater community support. Having an alignment close to town was important for the community, both for having an effective “gateway” into the town and to provide adequate access to their fairgrounds and industrial park. Therefore, Alternative 1: Rocky Ford North is identified as the Preferred Alternative.

Swink Build Alternatives

The two Build Alternatives considered around Swink are shown in Figure 6-6. Both alternatives are located close to town. Alternative 1: Swink North is located close to the Arkansas River and is 2.4 miles long, while Alternative 2: Swink South traverses highly productive farmland and is approximately 2.5 miles long. The existing route through Swink is slightly longer than two miles.

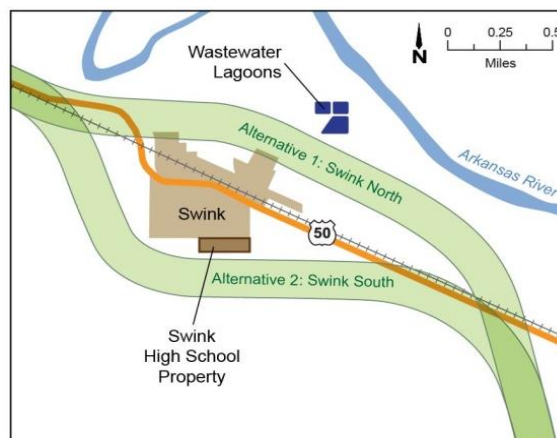


Figure 6-6. Swink Build Alternatives

Alternative 1: Swink North includes 14 of the town’s 286 homes or housing units, compared to six homes in Alternative 2: Swink South. However, Alternative 2 runs adjacent to the town’s school facilities, which



are key community assets. The school district also is a major employer in the town. Noise, air pollution, and traffic near the school grounds were noted as public concerns at a community meeting. The school site is one of two air quality-sensitive sites in the southern alternative, compared to none in the northern alternative. More farm/ranch land is included in Alternative 2, and its productivity is approximately three times higher than the farm/ranch land in Alternative 1.

Evaluation of the resources and issues identified for the Build Alternatives in Swink resulted in the findings summarized in Table 6-9. For a detailed analysis, which steps through the resources and/or considerations that make up the criteria category in the table, please refer to Appendix B, Range of Alternatives Technical Memorandum.

Table 6-9. Swink Build Alternatives Comparison

Criteria Category	Build Alternative(s) with Fewer Potential Impacts (indicated by checkmark)		Key Differences
	Alternative 1: Swink North	Alternative 2: Swink South	
Rural and Agricultural Environment	✓		Alternative 1 includes less and lower-quality farmland and ranch lands than Alternative 2 (15 acres difference). Alternative 1 would use land with limited development potential due to adjacent floodplains.
Natural Environment		✓	Alternative 2 has less wetland/riparian acreage than Alternative 1 (one acre versus seven acres) and most of the acreage in Alternative 1 has high functional value.
Community and Built Environment	✓	✓	Alternative 2 includes fewer homes and businesses (11 versus 21) than Alternative 1; however, Alternative 2 is adjacent to the town's school facilities. The school district is a major employer, and their facilities are key community assets.

Because each Build Alternative considered in Swink has advantages, and the alternatives are comparable in their ability to meet the purpose and need of the project, no Preferred Alternative is identified at this location. Therefore, both Build Alternatives are carried forward for Tier 2 analysis.

La Junta Build Alternatives

The four Build Alternatives considered around La Junta are shown in Figure 6-7. One of the alternatives crosses the Arkansas River to the north (Alternative 1: La Junta North), while the other three are located south of the city (Alternatives 2 through 4). Alternative 3: La Junta South was developed during public involvement efforts for the Tier 1 EIS, as a requested compromise between the other two southern alternatives, which had been identified in the 2003 US 50 planning study.

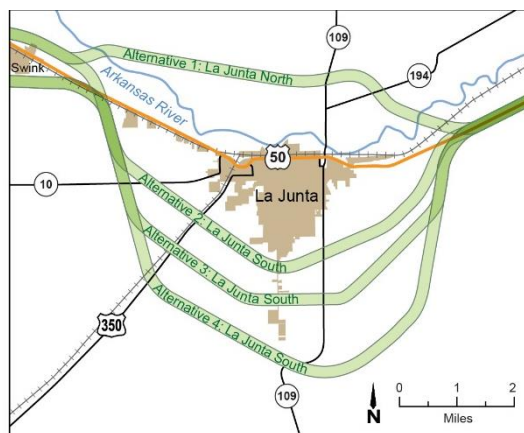


Figure 6-7. La Junta Build Alternatives

Alternative 1: La Junta North is the second shortest (8.9 miles length) of the four Build Alternatives around the city, and would have minimal effects on the La Junta Gardens residential area north of the Arkansas River. However, it would require the construction of two new bridges across the Arkansas River, which would be a major ecological drawback.

Alternative 1: La Junta North and Alternative 3: La Junta South have the greatest number of wetland/riparian acres (30 acres), but Alternative 1 would affect higher-functioning wetlands. In addition, some of the wetland/riparian acres in the southern alternatives may be avoided because they are isolated or are not perpendicular to the corridor. However, these opportunities for avoidance are not possible with Alternative 1 because it crosses the Arkansas River.

The most striking differences among the three southern alternatives are their comparative lengths and distances from the existing US 50 facility. Compared with the current trip on US 50 from west of Swink to the east side of La Junta, which is approximately six miles, the alternatives are as follows:

- Alternative 1: La Junta North is about 2.9 miles longer and 1.5 miles north.
- Alternative 2: La Junta South is about 2.5 miles longer and 2.0 miles south.
- Alternative 3: La Junta South is about 4.0 miles longer and 2.3 miles south.
- Alternative 4: La Junta South is about 6.0 miles longer and 3.3 miles south.



Alternative 4 would add six miles to the length of a regional or long-distance trip on US 50, and thus would be twice as long as the current route through the city. At 65 mph, this route would not save time compared to taking the existing US 50 through the city at lower speeds and stopping at a traffic signal. Instead, Alternative 4 would add two minutes of travel time to the trip. For this reason, Alternative 4 would be expected to draw minimal traffic, not fully providing the intended benefits. In comparison, Alternative 3 would be time-neutral, and Alternative 2 would save travel time.

Evaluation of the resources and issues identified for the Build Alternatives in La Junta resulted in the findings summarized in Table 6-10. For a detailed analysis, which steps through the resources and/or considerations that make up the criteria category in the table, please refer to Appendix B, Range of Alternatives Technical Memorandum.

Because Alternative 1 would be the most environmentally damaging route, requiring two bridges through a major floodplain, and since there is a general lack of major adverse impacts in the southern alternatives, Alternative 1 was not identified as preferred. In addition, Alternative 4 adds the greatest travel time to the corridor and has more out-of-direction travel, so it was not identified as preferred. Between Alternative 2 and Alternative 3, Alternative 2 is shorter, is closest to town, and compares favorably or equally with Alternative 3 in terms of potentially impacted resources. However, Alternative 3 has more impacts to farm/ranch lands and wetland/riparian areas because it is longer than Alternative 2. Alternative 2 has a better ability to meet the purpose and need of the project and has been carried forward for Tier 2 analysis.



Table 6-10. La Junta Build Alternatives Comparison

Criteria Category	Build Alternative(s) with Fewer Potential Impacts (indicated by checkmark)				Key Differences
	Alternative 1: La Junta North	Alternative 2: La Junta South	Alternative 3: La Junta South	Alternative 4: La Junta South	
Rural and Agricultural Environment	✓	✓			Alternative 3 and Alternative 4 would have the greatest impacts to agricultural lands, amounting to a loss of 65 and 48 acres of productive farmland (i.e., vegetables, corn, and alfalfa). Alternative 1 and Alternative 2 have fewer effects to agricultural land and productivity, totaling 23 and 42 acres of loss to productive farmland.
Natural Environment		✓	✓	✓	Alternatives 2–4 have comparable impacts, with Alternative 4 having the fewest potential impacts to wetland/ riparian areas (11 acres). They are the least harmful to the natural environment. Alternative 1’s two crossings of the Arkansas River and impacts to the associated wetlands/riparian area represent a major ecological impact that is avoidable by keeping the highway south of the river.
Community and Built Environment		✓	✓		Alternative 1 would not produce the east-west thoroughfare to the south that is desired. Alternative 4 would be twice as long as the current length of US 50 through La Junta (six miles compared to the current three miles). This additional length would add time to a trip through La Junta, instead of reducing it. Alternative 2 and Alternative 3 have comparable impacts, but Alternative 2 is located closer to the city than the other alternatives, providing a better “gateway” to the central business district.

Las Animas Build Alternatives

The two Build Alternatives considered around Las Animas are shown in Figure 6-8. US 50 crosses the Arkansas River north of the city, and either Build Alternative also would cross the river. Alternative 1: Las Animas North is located along a flood control levee for the Arkansas River and would cross the river on or near the existing US 50 bridge. Alternative 2: Las Animas South is located south of the BNSF Railway tracks, close to the City of Las Animas-Bent County Airport and the Bent County Correctional Facility. Alternative 2 would require construction of a new bridge across the Arkansas River on the northeast side of the city.

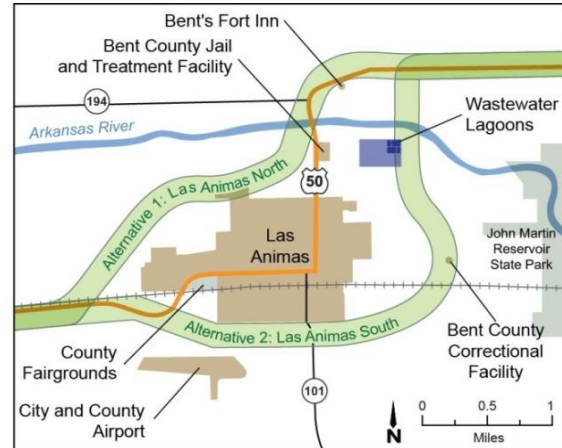


Figure 6-8. Las Animas Build Alternatives

Alternative 1 includes 14 more acres of wetland/riparian area than Alternative 2 and would include replacement of the existing US 50 bridge over the Arkansas River. However, it may be less ecologically disruptive than building a new bridge downstream for the southern alternative.

Alternative 1 includes acquiring a slightly greater number of homes than Alternative 2 (16 versus 9), but the difference is minimal in comparison with the city's total housing stock (1,214 homes). Alternative 1 would traverse land with higher development potential, including vacant land that has existing utility infrastructure. An important benefit of Alternative 1: Las Animas North is that it leads westbound traffic into the city toward the existing US 50, and thus provides a gateway into the downtown business district with minimal disruption to existing traffic patterns. By contrast, Alternative 2: Las Animas South does not lead conveniently to downtown and instead takes through-traffic past the correctional facility, which was expanded in 2008. This consideration favors Alternative 1.

Evaluation of the resources and issues identified for the Build Alternatives in Las Animas resulted in the findings summarized in Table 6-11. For a detailed analysis, which steps through the resources and/or considerations that make up the criteria category in the table, please refer to Appendix B, Range of Alternatives Technical Memorandum.



Table 6-11. Las Animas Build Alternatives Comparison

Criteria Category	Build Alternative(s) with Fewer Potential Impacts (indicated by checkmark)		Key Differences
	Alternative 1: Las Animas North	Alternative 2: Las Animas South	
Rural and Agricultural Environment	✓		Alternative 1 would impact 40 acres less and lower-quality farmland and ranch lands than Alternative 2.
Natural Environment	✓	✓	Alternative 2 has less wetland/riparian acreage than Alternative 1 (23 acres versus 40 acres), but Alternative 2 would require building a new bridge across the Arkansas River versus replacing an existing bridge over the river.
Community and Built Environment	✓		Having a convenient gateway into town is important to Las Animas, where many businesses and historic districts line the highway. Alternative 1 provides a convenient eastbound connection to downtown. Alternative 2 would not connect as well with the existing street system.

Alternative 1: Las Animas North has major access advantages that may alleviate potential socioeconomic effects of a bypass, and also received support from the City. In addition, Alternative 1 provides fewer access points that could disrupt highway traffic operations than Alternative 2. Therefore, Alternative 1 is identified as the Preferred Alternative in this location.

Granada Build Alternatives

The two Build Alternatives considered in Granada are shown in Figure 6-9. Alternative 1: Granada North would cross to the north side of the historic BNSF Railway tracks and back again, cut through the Granada State Wildlife Area, and run parallel to Wolf Creek, largely in floodplains. Alternative 2: Granada South would cross comparatively dry lands and pass just northeast of the Granada Relocation Center National Historic Landmark, also known as Camp Amache¹.

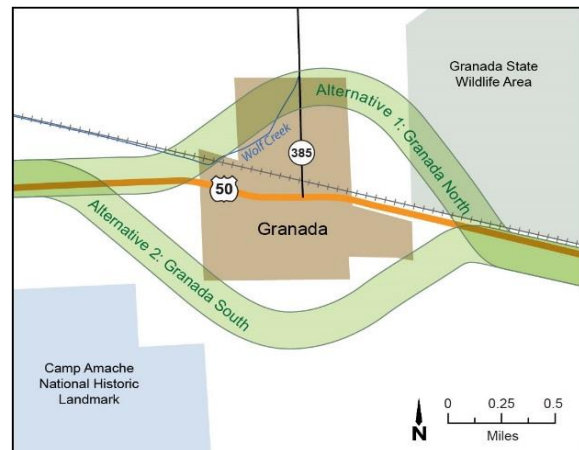


Figure 6-9. Granada Build Alternatives

Both alternatives at the Granada location would impact productive farmland; however, Alternative 2 (62 acres of impacts) would have a greater impact on farmland than Alternative 1 (48 acres of impacts).

Evaluation of the resources and issues identified for the Build Alternatives around Granada resulted in the findings summarized in Table 6-12. For a detailed analysis, which steps through the resources and/or considerations that make up the criteria category in the table, please refer to Appendix B, Range of Alternatives Technical Memorandum.

¹ Camp Amache was a relocation center where Japanese-Americans were held by the U.S. government during World War II. This is a noteworthy historic resource that is owned by the town of Granada with oversight by the NPS. A consultation meeting was conducted with the NPS to determine whether the indirect noise and visual impacts of a nearby south corridor would be acceptable to that agency. The result of this meeting was the determination that the corridor is feasible, provided that appropriate planning, coordination, and mitigation occur during Tier 2 studies.



Table 6-12. Granada Build Alternatives Comparison

Criteria Category	Build Alternative(s) with Fewer Potential Impacts (indicated by checkmark)		Key Differences
	Alternative 1: Granada North	Alternative 2: Granada South	
Rural and Agricultural Environment	✓		Alternative 2 impacts more farmland and ranch lands than Alternative 1 (62 acres, compared to 48 acres), and would affect land with higher productive value.
Natural Environment		✓	Both alternatives have comparable potential impacts to wetland/ riparian areas (5 acres with Alternative 1 and 2 acres with Alternative 2) and no key issues with the Arkansas River; however, Alternative 2 is preferable because of its avoidance of the Granada State Wildlife Area.
Community and Built Environment		✓	The numbers and differences are small, but Alternative 2 includes fewer historic resources and noise receptors than the north corridor, and would not require railroad crossings.

The Build Alternatives are comparable in meeting the purpose and need of the project; however, Alternative 2: Granada South has slightly fewer potential impacts to the natural and community and built environments, and input from a community meeting indicated local preference for the south corridor (see Appendix C, Public and Agency Involvement). Therefore, Alternative 2 is identified as the Preferred Alternative in this location.

Holly Build Alternatives

The two Build Alternatives considered around Holly are shown in Figure 6-10. Alternative 1: Holly North would cross through the northern part of the Holly incorporated area and also go through the Holly State Wildlife Area. Alternative 2: Holly South would pass to the south of the town, crossing the historic BNSF Railway tracks twice, and would pass through or run adjacent to a southern portion of the Holly State Wildlife Area along the north bank of the Arkansas River. Alternative 1: Holly North would pass through the northern portion of the Holly State Wildlife Area, which is used for dove, pheasant, and waterfowl hunting and for wildlife viewing. For safety reasons, hunting is not permitted in the immediate vicinity of US 50 (within 50 feet on either side of the center line).

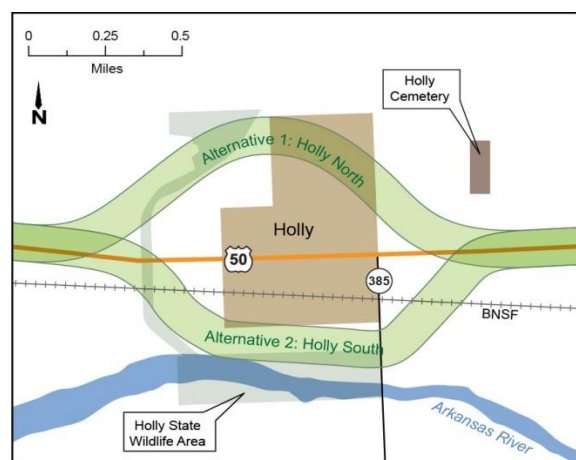


Figure 6-10. Holly Build Alternatives



The Horse Creek drainage that crosses under the existing US 50 facility on the west side of Holly is reported to contain the Arkansas darter. This fish species is threatened within the state of Colorado. Alternative 1: Holly North would be parallel and adjacent to Horse Creek, and thus would have potential adverse effects to this habitat. Alternative 2: Holly South also must cross this creek, but it crosses it perpendicularly, as US 50 does today. Alternative 1 also would include and follow the historic Santa Fe Trail and have potential impacts to its setting.

Evaluation of the resources and issues identified for the Build Alternatives around Holly resulted in the findings summarized in Table 6-13. For a detailed analysis, which steps through the resources and/or considerations that make up the criteria category in the table, please refer to Appendix B, Range of Alternatives Technical Memorandum.

Table 6-13. Holly Build Alternatives Comparison

Criteria Category	Build Alternative(s) with Fewer Potential Impacts (indicated by checkmark)		Key Differences
	Alternative 1: Holly North	Alternative 2: Holly South	
Rural and Agricultural Environment	✓	✓	No key differences. Alternative 2 has slightly more farmland and ranch lands than Alternative 1 (62 acres compared to 48 acres), but the north alternative has a slightly higher impact to farmland productivity.
Natural Environment		✓	Alternative 2 has slightly more acres of wetland/riparian area than Alternative 1 (20 acres compared to 16 acres), but wetlands in Alternative 1 are higher quality. Alternative 2 would avoid a new crossing of Horse Creek (which contains the Arkansas darter). Alternative 2 runs parallel to the Holly State Wildlife Area and could reduce hunting.
Community and Built Environment		✓	The numbers and differences are small, but Alternative 2 includes fewer historic resources (one compared to five, with greater potential effects to the Santa Fe Trail under Alternative 1) and fewer noise receptors than Alternative 1 (three compared to 21).

Alternative 2: Holly South was determined to have fewer potential impacts to the natural environment and community and built environment, as compared to Alternative 1: Holly North. Both alternatives are comparable in meeting the purpose and need of the project; however, Alternative 2 improves access from SH 89 to US 50 and vice versa, while also eliminating the need to go through Holly. For these reasons, Alternative 2: Holly South is identified as the Preferred Alternative at this location. The total and combined results of the evaluation process are presented in the next section.



6.1.3 Results of Build Alternative Screening

The result of the preceding analysis generally identified the Preferred Alternative as one around-town alternative for each project corridor section, except in Fowler and Swink. Table 6-14 summarizes the Preferred Alternative.

Table 6-14. Summary of the Preferred Alternative





Category	Preferred Alternative Components
Regional Corridor Location	Existing Regional Corridor
Transportation Mode	Highway
Facility Type	Four-Lane Rural Expressway
Build Alternatives	Pueblo—Alternative 2: Pueblo Existing Alignment
	Pueblo to Fowler—Alternative 2: Fort Reynolds Realignment
	Fowler—Alternative 1: Fowler North and Alternative 2: Fowler South
	Fowler to Manzanola Alternative (on or near existing alignment)
	Manzanola—Alternative 1: Manzanola North
	Manzanola to Rocky Ford Alternative (on or near existing alignment)
	Rocky Ford—Alternative 1: Rocky Ford North
	Rocky Ford to Swink Alternative (on or near existing alignment)
	Swink—Alternative 1: Swink North and Alternative 2: Swink South
	La Junta—Alternative 2: La Junta South
	La Junta to Las Animas Alternative (on or near existing alignment)
	Las Animas—Alternative 1: Las Animas North
	Las Animas to Lamar Alternative (on or near existing alignment)
	Lamar to Granada (on or near existing alignment)
	Granada—Alternative 2: Granada South
Granada to Holly Alternative (on or near existing alignment)	
Holly—Alternative 2: Holly South	

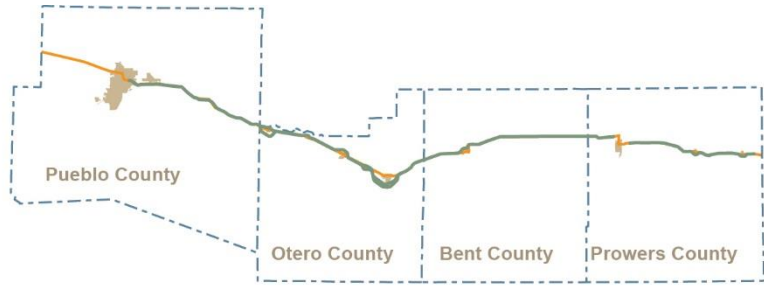
6.2 PREFERRED ALTERNATIVE ANALYSIS

Figure 6-11 provides an overview of the Preferred Alternative for the corridor as a whole. Table 6-15 summarizes the environmental effects for the Preferred Alternative. Ranges of impact are still provided, as applicable, because impacts are dependent on the alternative to be chosen in Fowler and Swink. For a summary of the Preferred Alternative impacts by location (i.e., by section of the US 50 corridor), please refer to Appendix F, Summary of Preferred Alternative Impacts by Location.

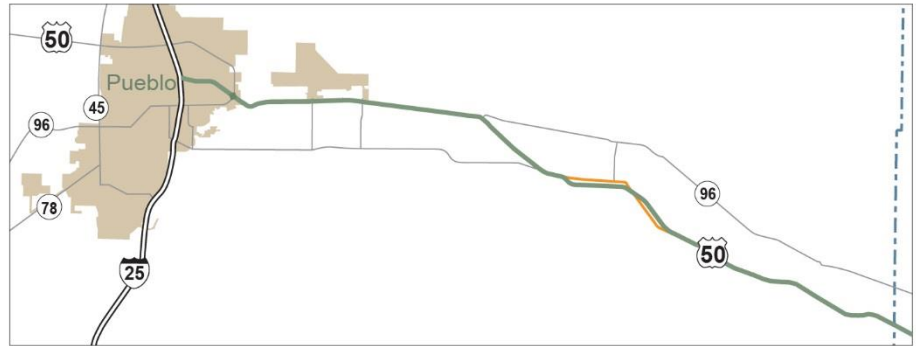


Legend

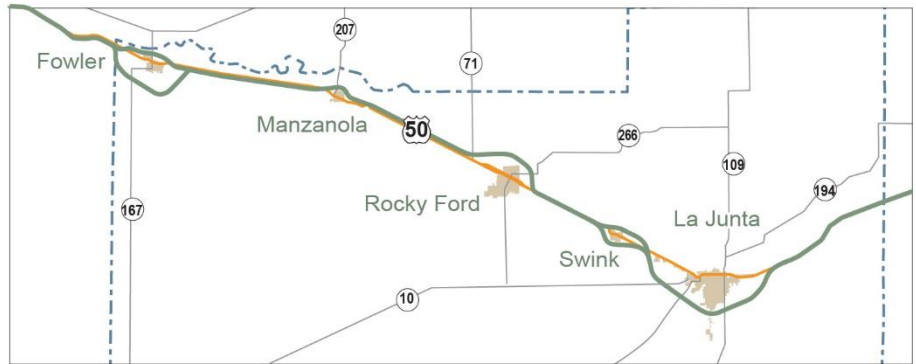
-  Preferred Alternative
-  Existing U.S. 50
-  City / Town
-  County



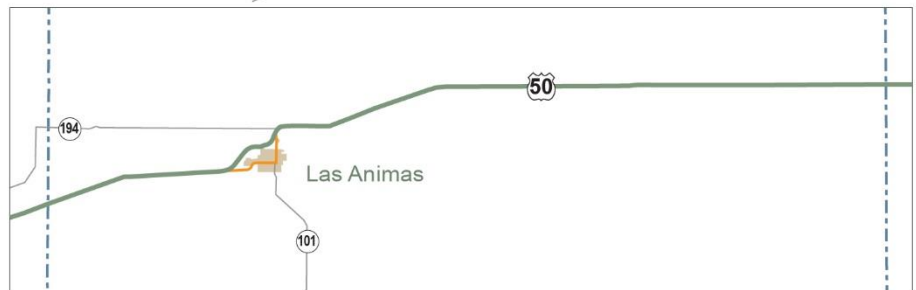
Pueblo County



Otero County



Bent County



Prowers County

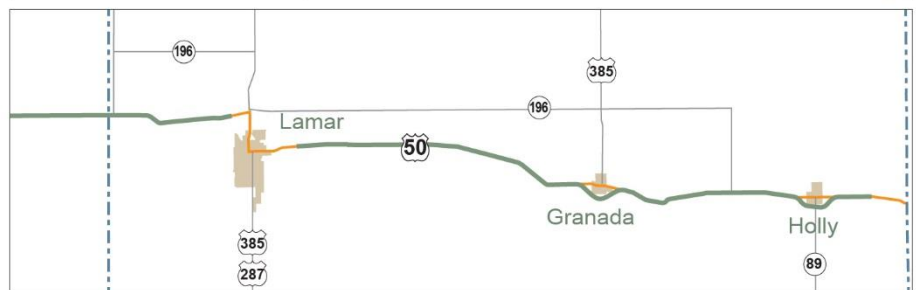


Figure 6-11. Preferred Alternative



Table 6-15. Summary of Preferred Alternative Effects

Category	Resources	Effects
Rural and Agricultural Environment	Agricultural resources	Affects 3,911 to 4,024 acres of agricultural land. May affect up to four feedlots, up to six permanent roadside produce markets, and up to 24 canals and ditches. None of the identified feedlot effects would prevent continued operation.
Natural Environment	Wetland and riparian resources	Affects 565 acres to 685 acres of wetland and riparian resources; most have low functionality (Category III or Category IV).
	Wildlife and habitat	<p>Affects 4,302 acres to 4,389 acres of habitat, although most of this acreage has been disturbed by human activity.</p> <p>Potential to affect up to 24 special-status species. Widens the roadway at 11 identified wildlife crossings (locations where wildlife frequently crosses the highway), which may increase the potential of animal-vehicle collisions.</p> <p>May remove existing noxious weeds, but also may increase the potential for noxious weed infestation through construction activities.</p>
	Water resources	Where US 50 adds crossings of surface water resources—primarily irrigation canals and ditches—the potential to degrade water quality exists. The increased paved surface also would increase the amount of stormwater runoff, although this is anticipated to be minimal.
	Geologic and paleontological (fossil) resources	Potential to affect up to three existing surface mining operations (geologic resources) and has potential to encounter paleontological (fossil) resources within six geologic formations. None of the 27 identified paleontological resources would be affected.
Community and Built Environment	Historic resources	Potential to affect 65-67 historic or potentially historic resources. Given the number and type of historic resources identified, effects by the Preferred Alternative are unlikely to change the overall historic character of the Lower Arkansas Valley or of any community.
	Archaeological resources	Potential to affect nine archaeological sites.
	Land use	<p>Potential to affect up to 13 conservation easements and 10 public properties. Right-of-way acquisition would be required primarily from agricultural lands.</p> <p>No substantial effect on land use within the project area is anticipated.</p>
	Parklands and recreational resources	Potential to affect up to 13 parkland and recreational resources, including Cottonwood Links Golf Course, Las Animas Municipal Golf Course, John Martin Reservoir State Park and State Wildlife Area, Granada School District recreational facility, Mike Higbee State Wildlife Area, Granada State Wildlife Area, Holly State Wildlife Area, and four existing and two planned pedestrian trails.

Table 6-15. Summary of Preferred Alternative Effects (continued)

Category	Resources	Effects
Community and Built Environment (continued)	Social and economic conditions	<p>Potential to positively affect social conditions in the project area overall. Moving traffic from US 50 through a town to a new around-town route would remove long-distance and regional traffic from US 50 Main Streets, making the existing highway easier to cross, especially for pedestrians. The following effects to local businesses are anticipated:</p> <ul style="list-style-type: none"> • Continuation of existing economic trends despite around-town US 50 routes • Conversion of agricultural land to roadway use, eliminating productive value to economy • Traveler-oriented businesses could be affected by reduction of pass-by traffic • Highway-dependent businesses such as truck stops or gas station convenient stores would benefit from improved highway conditions and ability to drive faster on new around-town US 50 routes • Downtown areas could benefit by restoring commercial districts to their original Main Street status with speeds less than 30 mph and pedestrian and bicycle-friendly, safe crossings.
	Environmental justice	<p>A higher percentage of minority and low-income residents live within the boundaries of the communities along the US 50 corridor when compared to averages for the state of Colorado. Specific effects to these communities cannot be identified at this time; however, further analysis will be conducted during Tier 2 studies.</p>
	Aesthetics and visual resources	<p>In areas where drivers' views from the highway would change, these changes would not alter the character of those views; therefore, no visual resources from US 50 would be affected.</p> <p>Visual resources from surrounding areas would be affected between communities, where the roadway footprint would be widened, and for residents living in areas where around-town routes are eventually selected. These visual resources would be negatively affected by increasing the existing visual intrusion or creating a visual intrusion (the highway) where one does not exist today.</p>
	Air quality issues	<p>No violations of federal pollutant standards are anticipated. Construction-related effects will be analyzed further in Tier 2 studies.</p>
	Traffic noise	<p>Potential to affect 1,402 to 1,456 noise-sensitive receptors. Given the modest existing and future traffic volumes, no substantial increase in traffic noise effects is expected.</p>



Table 6-15. Summary of Preferred Alternative Effects (continued)

Category	Resources	Effects
Other	Transportation	Anticipated to benefit overall transportation conditions. Expected to increase mobility for local, regional, and long-distance users. Anticipated to improve safety by increasing passing opportunities, providing adequate clear zones, and controlling access.
	Hazardous materials	Potential to encounter 146 to 156 hazardous materials sites. US 50 would remain a designated route for transporting hazardous materials. Improving the roadway, as well as re-routing around communities, is expected to improve safety for transport of hazardous cargo along the corridor.
	Section 4(f)	Potential section 4(f) resources include 15 publicly owned parkland and recreational resources, as much as 65 to 67 historic sites, and nine archaeological resources that are known to be listed or may be eligible for listing on the NRHP. Additional research will be needed during Tier 2 studies to determine whether a particular site is a Section 4(f) resource.
	Section 6(f) resources	No conversion of Section 6(f) resources was identified.
	Energy	Would result in a 2.8 percent to 5.6 percent increase in energy consumption in 2040; however, this increase is expected to be minor in the context of existing energy consumption along the corridor.
	Global climate change	Greenhouse gas (GHG) emissions would not result in reasonably foreseeable future adverse impacts on the human environment. GHG emissions would be insignificant.