3 Alternatives Considered

This chapter discusses the process used to develop and evaluate transportation solutions to arrive at the range of reasonable alternatives that were considered in this Tier 1 EIS. It describes the steps that were followed to identify the type and location of transportation improvements that will meet the purpose and need identified in Chapter 2, Purpose and Need.

The alternatives development process (i.e., screening process) involved CDOT, FHWA, the public, communities along U.S. 50, and various local, state, and federal agencies. A number of potential transportation solutions were screened based on a variety of criteria that relate to the purpose and need. Solutions were screened primarily on their ability to meet the project purpose and need, as well as construction feasibility and other criteria. The remaining solutions formed the range of reasonable alternatives that were retained for additional evaluation and consideration.

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 of pavement and bridges on the existing U.S. 50 alignment 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. Consequently, it has not been described throughout all steps of the screening process discussed in this chapter. However, the No-Build Alternative has been carried forward in this document to provide a baseline for analyzing the impacts of the Build Alternatives (see Chapter 4, Affected Environment, Environmental Consequences, and Mitigation).

3.1 PROCESS OVERVIEW

The alternatives development process involved using transportation, engineering, and environmental criteria to evaluate potential transportation solutions. Each of the criteria was directly related to the purpose and need of the project. This process followed four steps to arrive at the range of reasonable alternatives (Figure 3-1), which are outlined through the following questions:

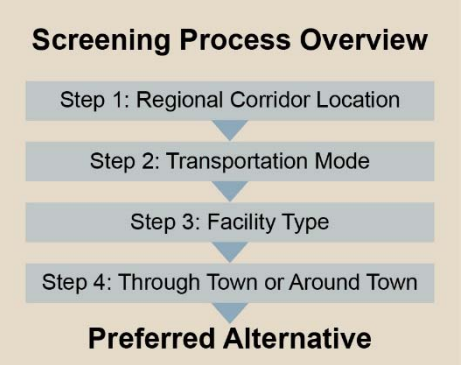


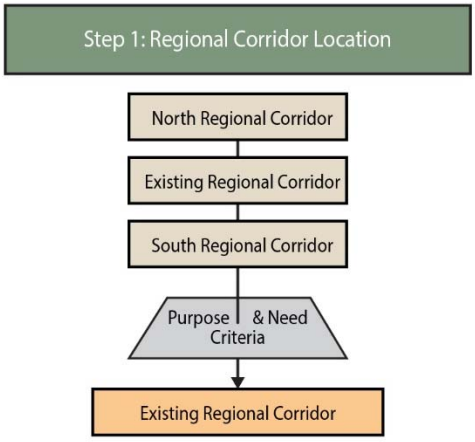
Figure 3-1. Screening Approach Used to Develop the Range of Reasonable Alternatives

- **Step 1: Regional Corridor Location.** At a regional level, where would transportation improvements be made?
- **Step 2: Transportation Mode.** What type(s) or mode(s) of transportation improvements would meet the needs of the corridor (e.g., highway, rail, transit, pedestrian, bicycle)?
- **Step 3: Facility Type.** What type of facility/facilities would meet the needs of the corridor?
- **Step 4: Through Town or Around Town.** Would transportation improvements be made through communities along the corridor or around them?

Two of these questions focus on what type of transportation action is needed, while the other two focus on where the corridor would be located. Each of these steps in the alternatives development process is discussed in more detail in the following sections.

3.2 REGIONAL CORRIDOR LOCATION

At a regional level, where would transportation improvements be made?



This document was preceded by CDOT's *Corridor Selected Study: A Plan for U.S. 50* (CDOT 2003a), which focused on where transportation improvements would be made. Using this study, and working with the public and with the communities of the Lower Arkansas Valley, CDOT developed and evaluated three regional locations for a transportation corridor to address U.S. 50 needs. These locations included a north regional corridor, an existing regional corridor, and a south regional corridor. Each corridor is described and shown in Figure 3-2.

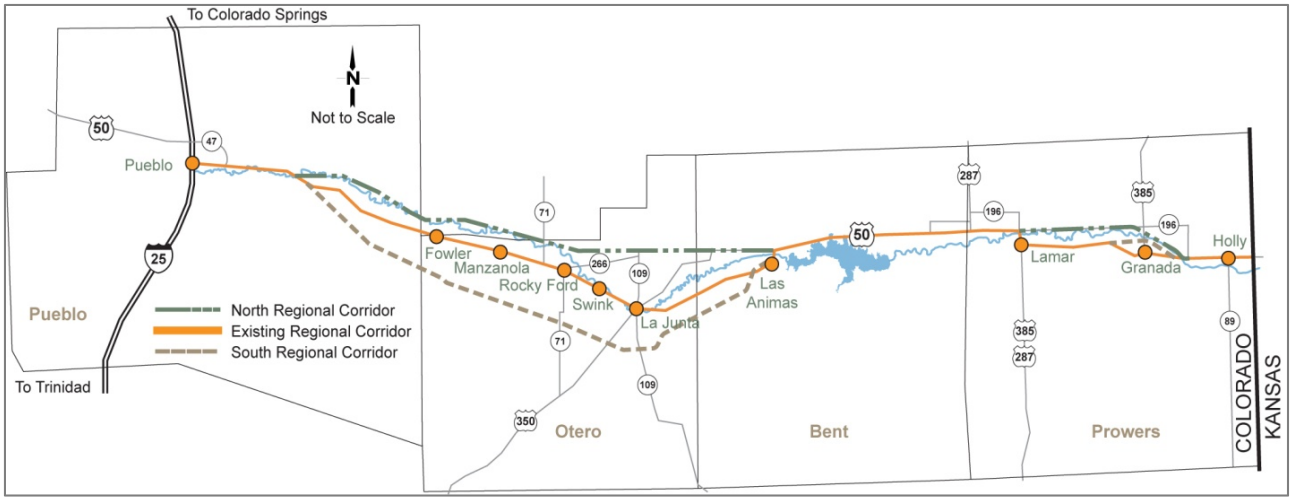


Figure 3-2. Location of the Regional Corridors Considered

3.2.1 Descriptions of Regional Corridor Locations

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. Currently, 90 miles of U.S. 50 are located south of the river, as are all of the communities along the U.S. 50 corridor, except for portions of Pueblo and Holly. With this alignment, the existing U.S. 50 facility would remain in place and would be relinquished to the city or county. As documented in the 2003 CDOT planning study, public preference for this corridor was supportive, but was not as favorable as it was for the existing regional corridor.

Existing Regional Corridor

The existing regional corridor would be on or near U.S. 50, generally on the existing alignment or within one mile of the existing alignment. During the 2003 CDOT planning study, a regional corridor location on or near the existing U.S. 50 received very strong support (76 percent of citizens participating in public meetings).

South Regional Corridor

The south regional corridor would be located one to 10 miles south of the existing U.S. 50 alignment. 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 the existing U.S. 50 alignment 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 vicinity of the Colorado-Kansas state line, the south regional corridor would again follow the existing U.S. 50 highway. Similar to the North Regional Corridor, the existing U.S. 50 facility would remain in place and would be relinquished to the city or county. As documented in the 2003 CDOT planning study, public preference for this corridor was supportive, but not as favorable as it was for the existing regional corridor.

3.2.2 Screening of Regional Corridor Locations

The three regional corridor locations were evaluated to determine how well each would meet the project's purpose and need for local, regional, and long-distance highway users. The following screening criteria were used and are discussed with the results of the screening.

*Screening results are **summarized** in this chapter. Greater detail is provided in the* Range of Alternatives Technical Memorandum *in **Appendix B.***

How Well Each Corridor Location Addresses U.S. 50 Safety Issues

Addressing U.S. 50 safety issues would include:

- Improving passing opportunities
- Creating adequate clear zones
- Reducing design inconsistencies
- Reducing the number of access points

A new regional corridor to the north or south would be built to current safety standards, addressing all four safety criteria, but would leave the deficiencies on the existing U.S. 50. Transportation improvements in the existing regional corridor would eliminate the existing design deficiencies and address all four safety criteria.

How Well Each Corridor Location Improves Mobility for Local Users

Most of the local users of U.S. 50 are accessing homes and businesses located along or near the existing highway; therefore, a new regional corridor to the north or south would pull most through-traffic off the existing highway and would result in more out-of-direction travel for local users. However, a new regional corridor may improve mobility for local users by reducing traffic on local roadways. Comparatively, transportation improvements to the existing corridor would address mobility for local users because it is closest to where local users live and work and would positively affect their mobility for some local trips.

How Well Each Corridor Location Improves Mobility for Regional Users

A new regional corridor to the north or south of the existing roadway would require U.S. 50 users to travel a few miles north or south to the new corridor and then back again to U.S. 50. For short regional trips between nearby communities on the U.S. 50 corridor, it would be faster to stay on the existing highway rather than using the new corridor and users would face the same mobility issues that they face currently. The primary benefit from the around-town alternatives to these regional users would be the reduction in traffic along the existing corridor. Improving U.S. 50 at its current location would give greater benefit to regional travelers making intercity trips, but also may impede local trips by limiting highway crossing locations.

How Well Each Corridor Location Improves Mobility for Long-Distance Users

The in-town alternative would provide some benefits to long-distance users by increasing the average speed through urban areas and reducing the number of intersections. However, a north or south realignment of the highway would provide greater benefits in speed and conflict reduction. This would be achieved primarily by removing the interactions between local users and regional and long distance users, and reducing the number of intersections along the highway.

How Well Each Corridor Location Balances Mobility and Access for All Users

Because there would be fewer access points by avoiding existing towns—which would allow for more consistent travel speeds—a new north or south regional corridor would primarily benefit long-distance users and some regional users. Local users would gain peripheral benefits from the reduction in conflicts with regional and long-distance traffic on local roads. Alternatively, choosing the in-town option would provide moderate benefits to regional and long-distance users, but also would adversely affect local users by reducing local connectivity and increasing the barrier between sides of the highway. All corridor alignment alternatives would balance mobility and access for users by each providing a high-speed facility with the more consistent travel speeds desired by long-distance and regional users while maintaining access for local users.

How Well Each Corridor Location Provides Flexibility to Address Future Travel Needs

All three regional corridors could be modified in the future to meet newly emerging needs for highway modes. The results of this screening evaluation of the regional corridors are summarized in Table 3-1.

Table 3-1. Regional Corridor Location Screening Results Summary

Screening Criteria	North Regional Corridor	South Regional Corridor	Existing Regional Corridor
Addresses U.S. 50 safety issues	●	●	●
Improves mobility for local users	◒	◒	●
Improves mobility for regional users	◒	◒	●
Improves mobility for long-distance users	●	●	●
Balances mobility and access for all users	●	●	●
Provides flexibility to address future traffic needs	●	●	●

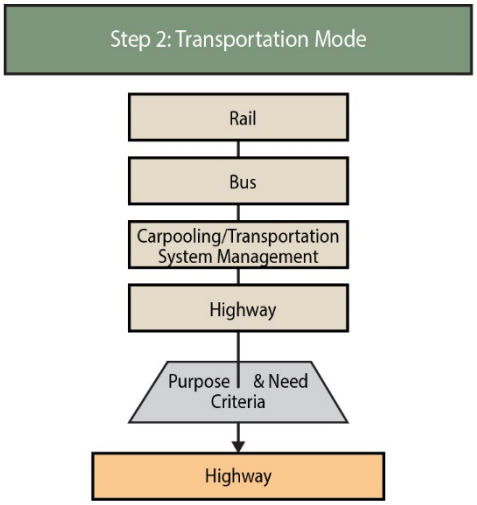
Key: ○ = does not address the need ◒ = partially addresses the need ● = fully addresses the need

3.2.3 Decision Regarding Regional Corridor Location

As indicated in Table 3-1, the north and south regional corridors only partially address mobility for the various user groups, and, therefore, would not fully meet the project's purpose and need. For this reason, they were eliminated from further consideration. Only the existing regional corridor (on or near U.S. 50) was carried forward for further consideration because it fully met each screening criterion.

3.3 TRANSPORTATION MODE

What type(s) or mode(s) of transportation improvements would meet the needs of the corridor?



There are a number of ways to improve the movement of people and goods within and through the existing regional corridor. These include a variety of modes (e.g., rail, bus, and highway improvements), as well as strategies such as carpooling and transportation system management (TSM), that make more efficient use of existing transportation systems. These modes and strategies are described below. Pedestrian and bicycle improvements were not analyzed as a standalone transportation mode, as these improvements alone would not meet the purpose and need of the project. However, in keeping with CDOT's policy directive 1602.0, none of the modes assessed would preclude improvements to pedestrian and bicycle facilities within the project area.

3.3.1 Descriptions of Transportation Modes

Rail

Most of the communities along U.S. 50 originally were established as stops along the railroad, serving passengers as well as freight. Today, railroad lines still pass through these communities and extend through the full length of the project area. Railways carry freight and serve part of the corridor with Amtrak passenger service, with stations in La Junta and Lamar, as shown in Figure 3-3.

It is possible that passenger rail service could be re-established along the corridor; however, the characteristics that make passenger rail service economically feasible—including large populations, high population densities, and major destinations—are not present along the U.S. 50 corridor. Therefore, current demand is not sufficient.

Rail freight is carried through the Lower Arkansas Valley on the Burlington Northern Santa Fe Railway (BNSF) (formerly the Atchison, Topeka, and Santa Fe Railway) tracks that closely parallel U.S. 50. Key factors that decide whether freight travels by truck or rail include the value and perishable nature of the freight, the weight and bulk of the shipment, and the trip distance. By the time freight reaches the U.S. 50 corridor from elsewhere, the transportation mode decision has already been made by the shipper.

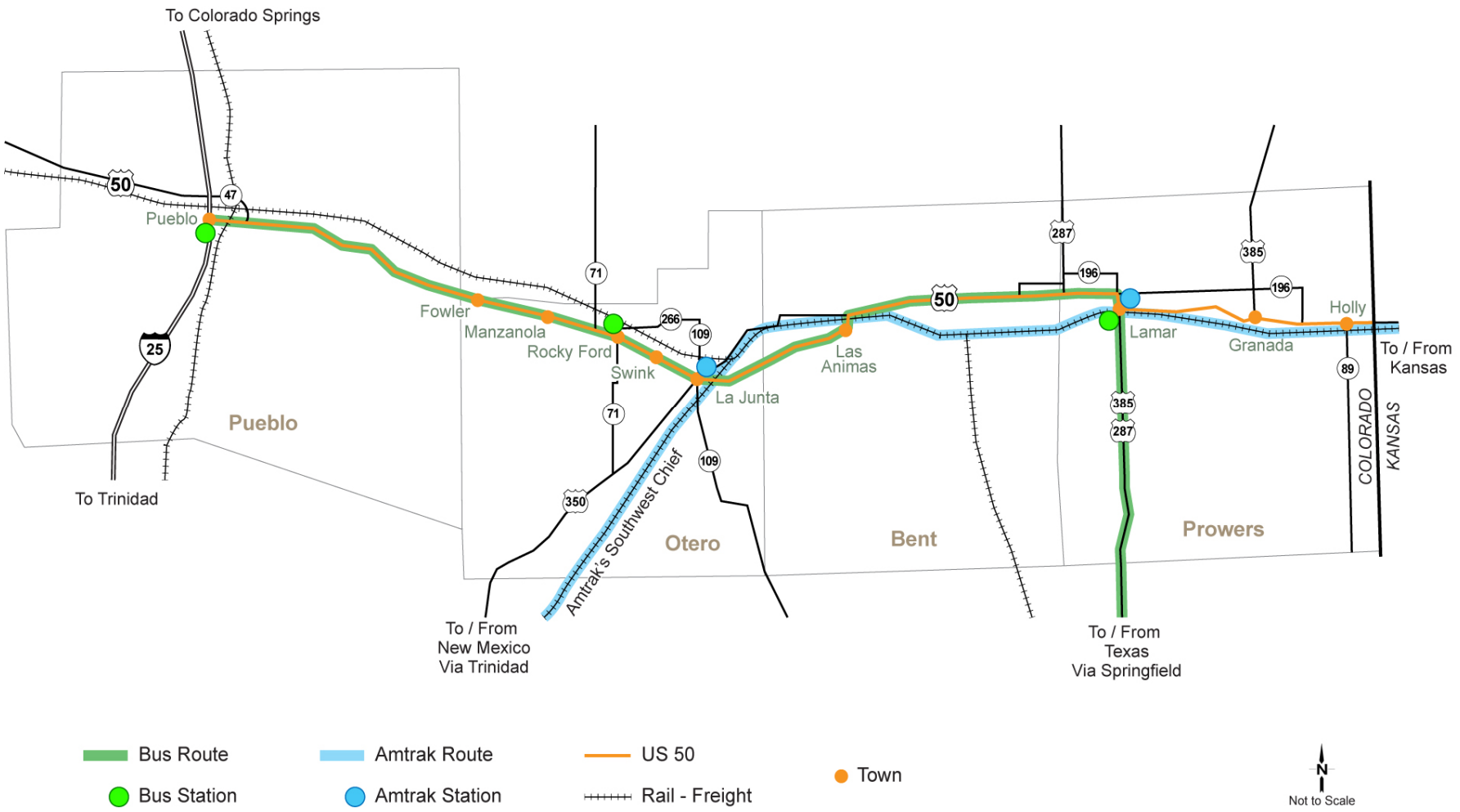


Figure 3-3. Passenger Rail, Freight Rail, and Bus Services Available within the U.S. 50 Corridor

Bus

Currently, Greyhound Lines offers twice-daily intercity bus service along the U.S. 50 corridor between Pueblo and Lamar with a stop in Rocky Ford, as part of a long-distance route connecting Denver and destinations in Texas. More stops or more frequent service could be added by Greyhound if there were sufficient demand from communities along the route; however, adding stops to the route would increase total trip time, making this mode less attractive for long-distance passengers. There is no regional bus transit service provided by either the private or public sectors serving all communities along U.S. 50. Local bus service is available in Lamar and Pueblo.

Carpooling/Transportation System Management

Carpooling programs, park-and-ride lots, and traffic signal synchronization are not a separate transportation mode, but instead are TSM strategies designed to get more efficient use out of existing roadways. These strategies often are used in metropolitan areas where roads are highly congested, with carpooling and park-and-ride lots generally serving the commuter community. In rural areas that lack a major central attraction zone, peak travel usually is multidirectional and highly dispersed across transportation corridors. TSM and carpooling programs provide few benefits in these places. Because the U.S. 50 corridor contains only 13 traffic signals spread across 150 miles and lacks major directional traffic flows, synchronizing the traffic signals or providing other TSM strategies would not make a significant difference in the overall corridor operations.

Highway

U.S. 50 is the most-used roadway serving east-west trips through the Lower Arkansas Valley. Typical 2011 traffic volumes on U.S. 50 were approximately 5,500 vehicles per day (vpd) (Swenka 2014). Truck volumes along the U.S. 50 corridor make up 10 percent of the overall corridor volume, including trucks that are typically used for local or regional deliveries and those larger tractor-trailers used for long-distance or regional deliveries (Swenka 2014). Highway use has been the dominant transportation mode in the region for decades, as it is well suited to the types of trips made and the low-density development patterns along the corridor.

3.3.2 Screening of Transportation Modes

The transportation modes and TSM strategies discussed above were screened to determine how well each would meet the project's purpose and need for local, regional, and long-distance users of the highway. The following screening criteria were used and they are discussed with the results of the screening.

How Well Each Transportation Mode Addresses U.S. 50 Safety Issues

Rail and bus transit, carpooling, and other TSM strategies may provide a small reduction in trips and, therefore, a reduction in conflicts; however, these minor conflict reductions would not be significant enough to eliminate the U.S. 50 safety issues, such as the need for improved passing opportunities, adequate clear zones, reduced design inconsistencies, and reduction in the number of access points. Only highway improvements could address these needs on U.S. 50.

How Well Each Transportation Mode Improves Mobility for Local Users

Rail and bus transit, with a station or stop at only one place in a community, would not serve any local trips. Similarly, carpooling and other TSM strategies would be of little benefit because local trips are so short in the small communities along U.S. 50. The highway mode currently serves these trips, and highway improvements have the potential to improve mobility for local users.

How Well Each Transportation Mode Improves Mobility for Regional Users

Regional trips are those traveling from one community along U.S. 50 to another. Bus and rail are good for regional trips, but not all commutes along U.S. 50 are served by regional bus and/or passenger rail. Where there is existing and planned bus or rail service, intervals would not be offered frequently enough to be convenient for most trips. TSM and carpooling would be excellent modes for regional trips due to the savings in vehicle operating costs available to the user. However, these transportation modes and strategies would be convenient only for a limited number of regional trips, thereby only partially meeting this need. Because it is available at all times of the day, with access to many more places, the highway mode has the potential to improve mobility for all regional users.

How Well Each Transportation Mode Improves Mobility for Long-Distance Users

The region is currently serviced by Greyhound buses and Amtrak long-distance rail service. There are Greyhound stations in the City of Pueblo and the City of Rocky Ford, and Amtrak stations in the City of Lamar and the City of La Junta. These services currently provide long-distance users with transit service to Denver, Santa Fe, Kansas City, and regions beyond. Adding long-distance transit service along the U.S. 50 corridor would duplicate these existing services. Additionally, TSM strategies would likely not have a significant impact on long-distance travelers because the major concerns of the corridor are not being caused by the roadway nearing or exceeding capacity. Highway improvements will have the largest benefit to long-distance users by increasing the average travel speeds across the corridor and reducing the conflicts with other user types.

How Well Each Transportation Mode Balances Mobility and Access for All Users

Rail and bus transit, carpooling, and TSM strategies primarily would benefit regional users of U.S. 50. However, these alternatives would not address the problem of excessive numbers of highway accesses, which impact mobility. Highway improvements would have the potential to benefit all users and address the access issue.

How Well Each Transportation Mode Provides Flexibility to Address Future Traffic Needs

Rail and bus transit, carpooling, and TSM strategies all have the ability to serve higher passenger volumes; however, due to the dispersed, rural land uses and lack of centralized trip generation nodes, such as a central business district or other major employment or recreation center, the effectiveness of mass transit, carpooling, and TSM would be limited. Their use would likely not reduce traffic volumes enough to provide major improvements in facility safety or efficiency. Additionally, transit, carpooling, and TSM would not have any effect on freight or agricultural vehicles currently using the highway. Therefore, transit, carpooling, and TSM strategies do not address the major conflicts between users. Highway improvements have the potential to serve both higher passenger vehicle volumes and reduce conflicts between private, commercial, and agricultural users.

The results of the transportation mode evaluation are summarized in Table 3-2.

Table 3-2. Transportation Mode Screening Results Summary

Screening Criteria	Rail/Bus Transit	Carpooling/ TSM Strategies	Highway
Addresses U.S. 50 safety issues	○	○	●
Improves mobility for local users	○	○	●
Improves mobility for regional users	◒	◒	●
Improves mobility for long-distance users	◒	○	●
Balances mobility and access for all users	○	○	●
Provides flexibility to address future traffic needs	◒	◒	●

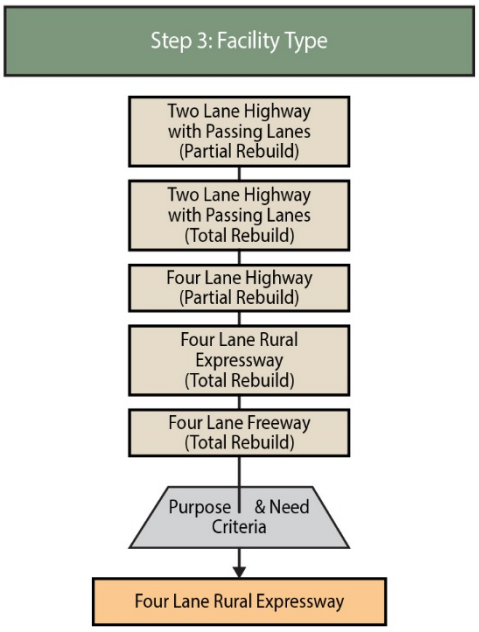
Key: ○ = does not address the need ◒ = partially addresses the need ● = fully addresses the need

3.3.3 Decision Regarding Transportation Mode

Rail, bus, and carpooling/TSM modes were eliminated from further consideration because they would not improve U.S. 50 corridor safety, improve mobility for local and long-distance users, or address access issues; therefore, they do not meet the purpose and need of the project. The highway mode was carried forward for further consideration because it would meet all of the identified needs along the corridor.

3.4 FACILITY TYPE

What type of facility would meet the needs of the corridor?



Projected traffic volumes along the U.S. 50 corridor would range from 2,500 vpd to 19,000 vpd by the year 2040. AADT for 2011 is in the range of 1,700 vpd to 13,500 vpd (Swenka 2014). Future volumes can be handled on a road with two to four through-lanes (varying by location), and would not require a six-lane highway; therefore, only two-lane and four-lane roadways were considered.

The following facility types are discussed in more detail below:

- Two-lane highway with passing lanes (partial rebuild)
- Two-lane highway with passing lanes (total rebuild)
- Four-lane highway (partial rebuild)
- Four-lane rural expressway (total rebuild)
- Four-lane freeway (total rebuild)

Note that in this screening level, the term “highway” generally is used to discuss a public roadway for purposes of vehicular travel. Distinctions between the terms expressway and freeway are made in the discussions below.

3.4.1 Description of Facility Types

Two-Lane Highway with Passing Lanes (Partial Rebuild)

The 96 miles where U.S. 50 is a two-lane highway would be reconstructed to add intermittent passing lanes. These lanes would be added for motorists to avoid having to follow a slow-moving vehicle for an extended time and distance. Extra-wide shoulders (10 to 12 feet) would be provided as well. In addition to making these improvements to the two-lane sections, safety improvements would be made at spot locations on existing four-lane sections in response to specific safety issues. Existing four-lane sections would remain four lanes. Speed limits would remain the same as they are currently, requiring vehicles to slow down as they approach urban areas and intersections. Figure 3-4 shows the roadway profile and the cross-section.

Partial Rebuild or Total Rebuild

The term "partial rebuild" means that only existing two-lane sections of U.S. 50 would be rebuilt to provide one additional passing lane or two additional through-lanes, resulting in a two-lane highway with passing lanes or a four-lane highway. This would improve 96 miles out of the total 150-mile corridor.

The term "total rebuild" means that the entire 150-mile corridor would be rebuilt with a consistent design that meets current safety standards.

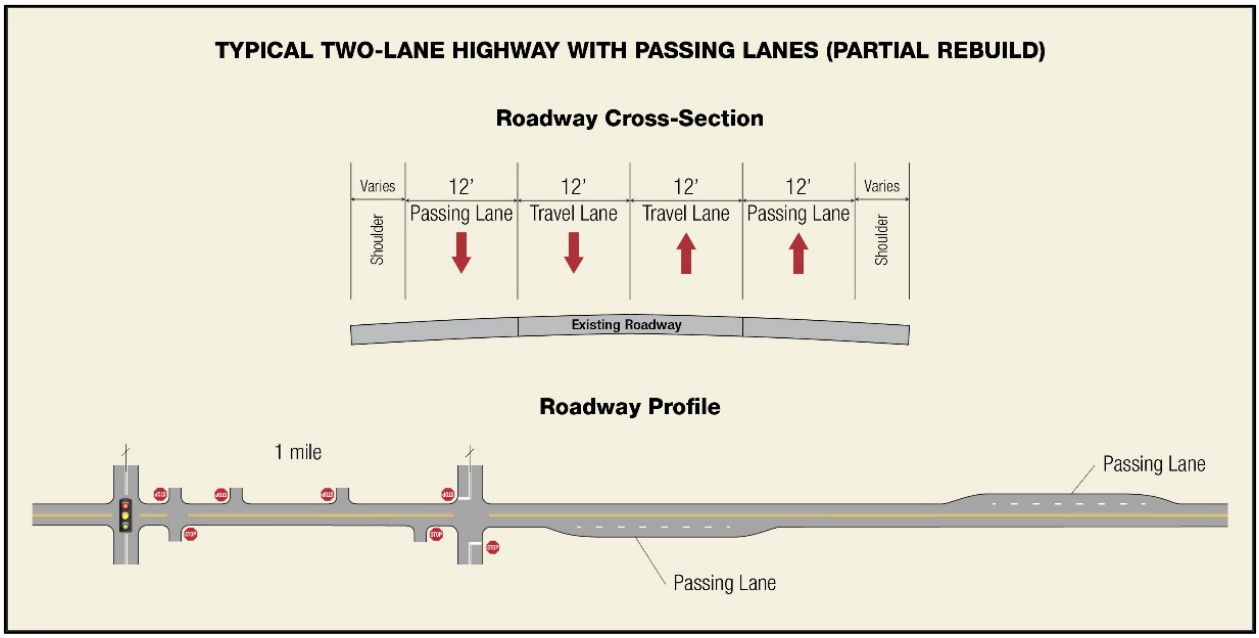


Figure 3-4. Typical Two-Lane Highway with Passing Lanes (Partial Rebuild) Roadway Profile and Cross-Section

Two-Lane Highway with Passing Lanes (Total Rebuild)

The entire 150-mile U.S. 50 corridor would be completely reconstructed as a two-lane highway with passing lanes and extra-wide shoulders. Existing four-lane sections of road would be rebuilt as a modern two-lane highway with passing lanes. The highway would be rebuilt in this way to avoid frequent roadway design changes that contribute to driver confusion. It would represent a decrease in the existing number of through-lanes for portions of the corridor between towns. Speed limits would remain the same as they are currently, requiring vehicles to slow down as they approach urban areas and intersections. Figure 3-5 shows the roadway profile and the cross-section.

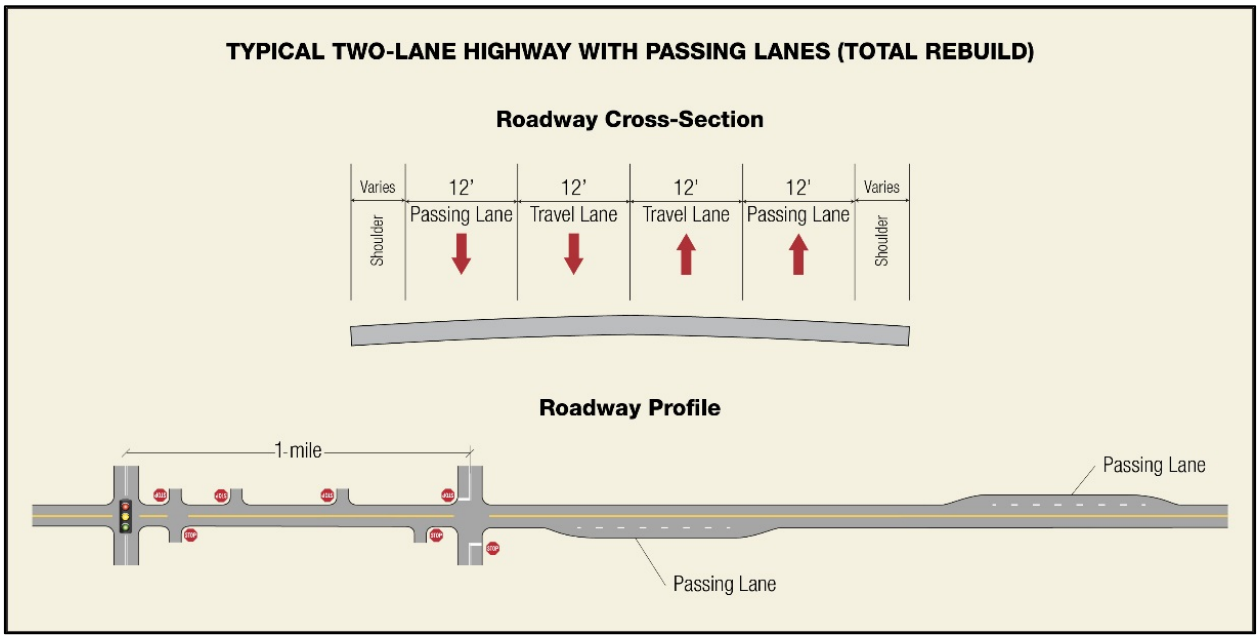


Figure 3-5. Typical Two-Lane Highway with Passing Lanes (Total Rebuild) Roadway Profile and Cross-Section

Four-Lane Highway (Partial Rebuild)

On the 96 miles of U.S. 50 where the highway is currently two lanes, the highway would be widened to four through-lanes, two in each direction. With the exception of at crossing locations, median types would vary from narrow, paved medians to wider, grassy medians depending on location, terrain, and other factors. The highway would have at-grade intersections, not grade-separated interchanges. On rebuilt portions, the posted speed limit typically would be 65 mph, and access to the highway generally would be available at intervals no closer than one-half mile apart.

Compliance with modern design standards generally would require a much wider cross-section than the existing CDOT right of way along the corridor. U.S. 50 and all intersecting roadways would meet at-

grade, requiring signalized intersections where warranted by traffic volumes. Figure 3-6 shows the roadway profile and the cross-section.

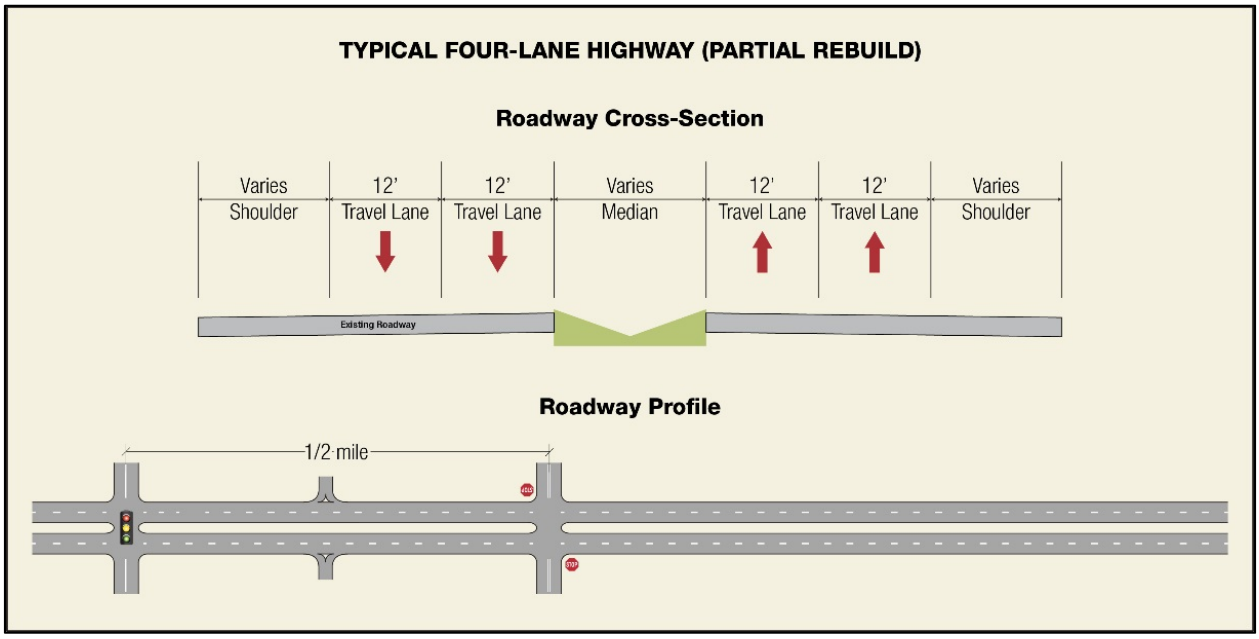


Figure 3-6. Typical Four-Lane Highway (Partial Rebuild) Roadway Profile and Cross-Section

Four-Lane Rural Expressway (Total Rebuild)

An expressway is a divided highway with partial access control. In this scenario, U.S. 50 would be reconstructed as an expressway with a wide median and access provided at a minimum of one-half mile spacing. The resulting elimination of numerous existing access points would require that some local trips use other roadways—and, in some cases, frontage roads—to reach U.S. 50. An expressway would maintain a posted speed limit of 65 mph in most locations, dropping to 50 mph for approaches to signalized intersections.

Grade separations would be provided to minimize the number of signalized intersections needed. Access to the highway would be available at intervals not closer than one-half mile apart and access into communities would be maintained. At locations with at-grade access, but not enough traffic to warrant a signalized intersection, unsignalized intersections would be provided. If an intersection is not signalized, there would be sufficient room in the median for a vehicle to cross one direction of traffic, then wait at a stop sign before crossing the other highway lanes or making a left turn onto the highway. Figure 3-7 shows the roadway profile and the cross-section.

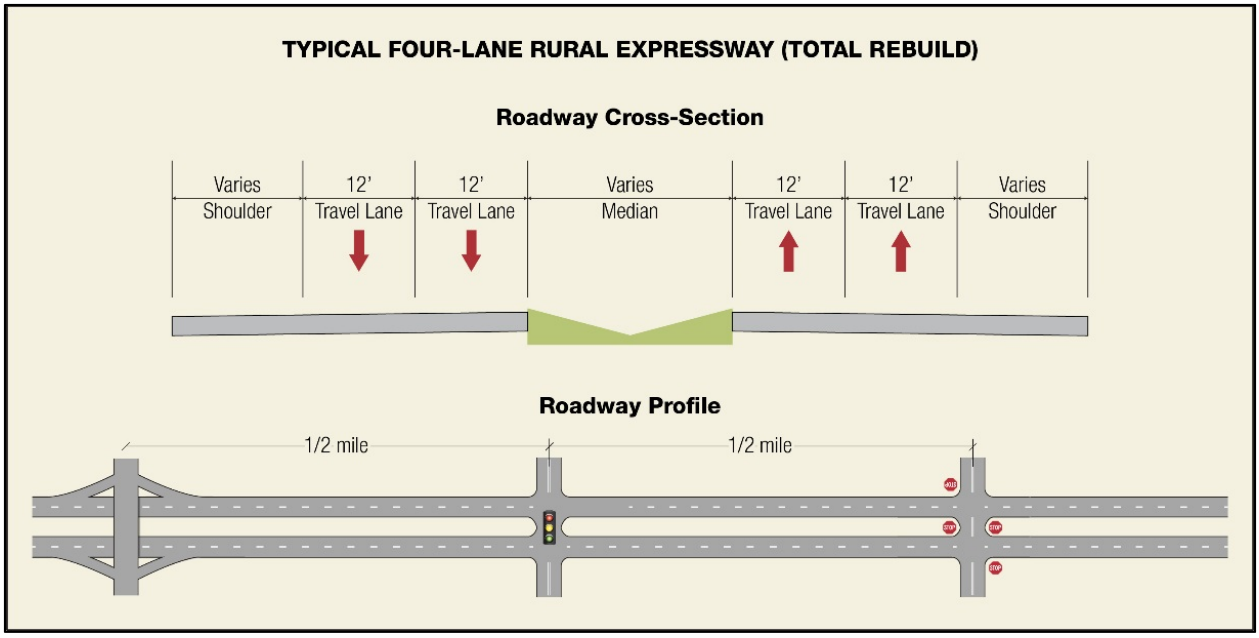


Figure 3-7. Typical Four-Lane Rural Expressway (Total Rebuild) Roadway Profile and Cross-Section

Four-Lane Freeway (Total Rebuild)

A freeway is a divided highway with full access control. Under the total rebuild, all 150 miles of U.S. 50 would be completely reconstructed as a freeway, with no at-grade access and with interchanges typically no closer than three miles or more apart. The posted speed limit would be 65 mph. To make local trips, motorists would have to use other local streets to reach a grade-separated interchange where U.S. 50 could be accessed or crossed. Figure 3-8 shows the roadway profile and the cross-section.

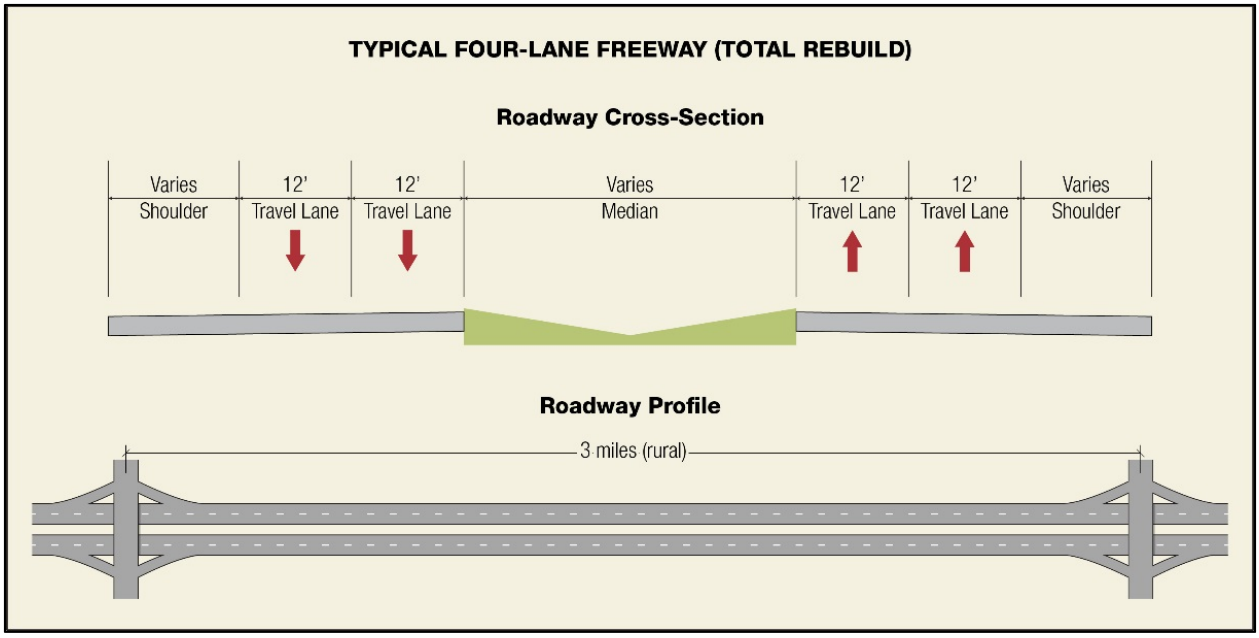


Figure 3-8. Typical Four-Lane Freeway (Total Rebuild) Roadway Profile and Cross-Section

3.4.2 Screening of Facility Types

The facility types described above were evaluated to determine how well each would meet the project's purpose and need for safety, mobility, and access by local, regional, and long-distance users of the highway. The criteria and results of this evaluation follow.

How Well Each Facility Type Addresses U.S. 50 Safety Issues

All five highway facility types would address U.S. 50 safety issues, but to different degrees. The differences are based on the idea that passing lanes allow slow-moving traffic to be passed safely—thereby reducing the number of accidents attributable to speed differentials. For example, alternatives providing a two-lane highway with intermittent passing lanes would not be as safe as four-lane alternatives because they would provide fewer opportunities to pass. Among the four-lane alternatives, improving the entire 150-mile corridor would address safety on a corridor-wide basis by providing uninterrupted opportunities to safely overtake slow-moving vehicles. Adequate clear zones would be provided in rebuilt sections of the corridor; therefore, total rebuild scenarios would better address roadside hazards because areas not proposed for reconstruction under partial rebuilds would only consist of safety improvements at spot locations on existing four-lane sections.

How Well Each Facility Type Improves Mobility for Local Users

A two-lane highway with passing lanes would degrade the ability of local users to cross the highway or to make left turns onto the highway. This would occur because users would need to cross an extra lane (the

passing lane) to make these maneuvers. Similarly, it would be difficult to make left turns onto a four-lane highway with no median refuge. The four-lane expressway offers a median refuge, which would make these crossings and left turns easier because the motorist would only have to contend with one direction of traffic at a time. With a four-lane freeway facility, however, crossings and left turns would be allowed only at grade-separated interchanges, spaced three miles or greater apart, thereby reducing the opportunities for local users to cross or access the highway. This also creates more out-of-direction travel for the local users.

How Well Each Facility Type Improves Mobility for Regional Users

Two-lane facilities with passing lanes and wide shoulders would offer some improvement, but four-lane facilities would allow opportunities to pass along the length of the corridor, providing a more consistent flow of travel to regional U.S. 50 users.

How Well Each Facility Type Improves Mobility for Long-Distance Users

Adding passing lanes would improve travel times over existing conditions, but four-lane facilities would be more effective at separating fast-moving and slow-moving vehicles on a corridor-wide basis by providing more consistent and higher average travel speeds for long-distance users of U.S. 50. Constructing a full, grade-separated, free flowing freeway facility would provide the best service to long-distance users.

How Well Each Facility Type Balances Mobility and Access for All Users

A two-lane highway with intermittent passing lanes would reduce the ability of local users to cross the highway or to make left turns onto the highway. Local users would need to cross an extra lane (the passing lane) to make these maneuvers. Likewise, it would be difficult to make left turns onto a four-lane highway with no median refuge. By offering a median refuge, the four-lane expressway would make these crossings and left turns easier since motorists would only have to contend with one direction of traffic at a time. With a freeway, however, crossings and left turns would be allowed only at grade-separated interchanges, spaced no less than three miles apart, thereby reducing the opportunities for local users to cross or access the highway. Therefore, the freeway would not balance mobility and access for all users.

How Well Each Facility Type Provides Flexibility to Address Future Travel Needs

The limited passing opportunities of a two-lane highway would not reduce the conflicts between local, regional, and long-distance traffic on U.S. 50 and would have limited flexibility for future travel changes

in the corridor. A partial rebuild to a four-lane highway would offer some improvement in the 96 miles of two-lane sections that would be widened, but it would leave 54 miles of existing four-lane roadway with design deficiencies. Corridor-wide reconstruction to a four-lane expressway, freeway, or highway would improve passing opportunities and maximize the corridor's ability to handle all types of users regardless of long-term variations in travel or land use.

The results of the facility type screening are summarized in Table 3-3.

Table 3-3. Summary of Facility Type Screening Results

Screening Criteria	Two-Lane Highway with Passing Lanes		Four-Lane Highway	Four-Lane Expressway	Four-Lane Freeway
	Partial Rebuild	Total Rebuild	Partial Rebuild	Total Rebuild	Total Rebuild
Addresses U.S. 50 safety issues	◒	◒	◒	●	●
Improves mobility for local users	◒	◒	●	●	○
Improves mobility for regional users	◒	◒	●	●	●
Improves mobility for long-distance users	◒	◒	●	●	●
Balances mobility and access for all users	○	○	○	●	○
Provides flexibility to address future traffic needs	○	○	◒	●	●

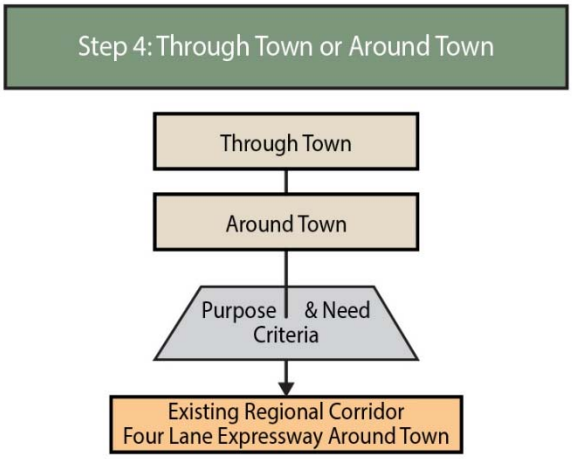
Key: ○ = does not address the need ◒ = partially addresses the need ● = fully addresses the need

3.4.3 Decision Regarding Facility Type

As shown in Table 3-3, a four-lane expressway provides the most improvement for the issues identified in the project's purpose and need. Facility types without a median refuge (two-lane alternatives and the four-lane highway option) would not improve the ability of local users to cross or turn left onto the highway. A freeway would severely limit the number of locations where crossing or local access could be accomplished. Therefore, it was determined that the two-lane highway, four-lane highway (partial rebuild), and four-lane freeway would not meet the purpose and need of the project. The four-lane expressway was identified as the preferred facility type to be carried forward for further consideration in the alternatives development process because it met all the needs identified along the corridor.

3.5 THROUGH TOWN OR AROUND TOWN (BYPASS)

Would transportation improvements be made through communities along the corridor or around them?



Corridors through communities and those around them were considered and evaluated, and the results are summarized in this document. This question was critical for a number of reasons. First, in all of the communities east of Pueblo, U.S. 50 is lined with homes and businesses, including many recognized historic sites and other important community resources that could be adversely affected. Second, along the existing corridor, CDOT-owned right of way through most of the communities is typically not wide enough to accommodate a highway built to current AASHTO safety standards. Third, U.S. 50 functions as Main Street in many of these communities. The highway is intersected by numerous cross streets and driveways and even has roadside parking for businesses. Highway improvements through the towns would change local access and traffic circulation patterns. Furthermore, with increased traffic in the future, the highway will become even more of a barrier, separating one side of town from the other. Additionally, moving the highway outside of the town centers would reduce the number of intersections and traffic signals, thus reducing delays and speed reductions. This would be especially beneficial to regional and long-distance travelers. These tradeoffs were recognized in the 2003 U.S. 50 planning study; and CDOT worked with the potentially affected communities to identify issues and concerns with through-town corridors, and to identify potential around-town corridors.

It should be noted that, at Pueblo, alignment alternatives—including the existing alignment—are technically within the city of Pueblo; therefore, it is partially inaccurate to define the alternatives at that location as “around town.” For this reason, the existing alignment was retained as a Build Alternative regardless of the outcome of the screening process for through-town versus around-town corridors.

It also should be noted that, between communities along the U.S. 50 corridor, the highway generally would remain in its current location, with the exception of the merger to a new alignment around towns and correction of one substandard curve, as discussed further in Section 3.6.2.

3.5.1 Descriptions of Through-Town and Around-Town Corridors

Through-Town Corridors

Planners and designers examined potential through-town corridors that used the existing U.S. 50 right of way plus adjacent land on its north side or south side in each town. CDOT's existing right of way through towns varies from 60 feet to 80 feet. Based on modern highway design, a minimum of 130 feet would be needed to accommodate through-traffic lanes, a center median, turn lanes, outside shoulders, sidewalks, and clear zones for vehicles to recover. Existing non-signalized intersections would be eliminated and the side roads turned into cul-de-sacs or connected together to form loops. No on-street parking would be allowed along the highway. The highway would be designed to carry traffic at posted speed limits of 50 mph.

A diagram depicting a 130-foot-wide right of way through a typical town setting is shown in Figure 3-9. Figure 3-10 shows that homes, businesses, historic resources, and other community assets would be displaced by a through-town corridor location.

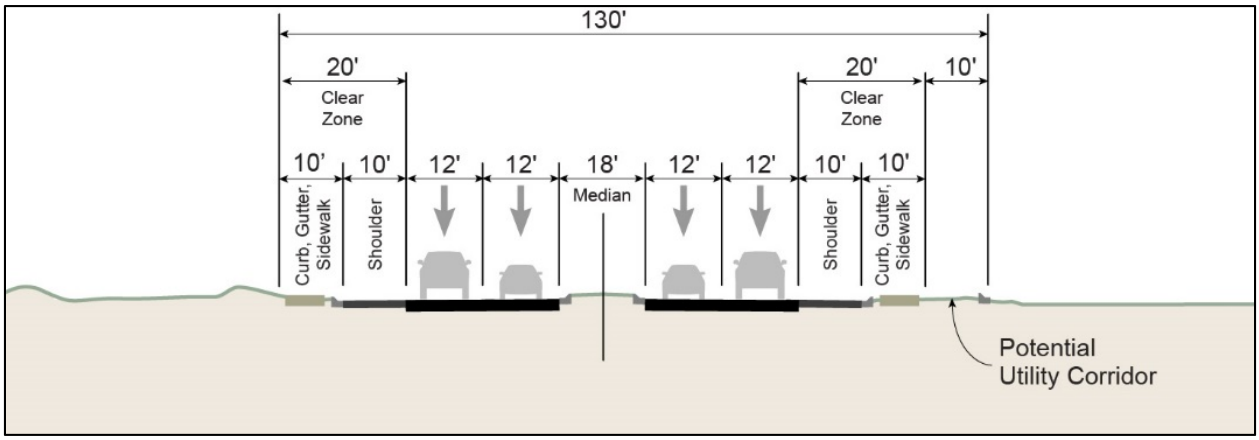
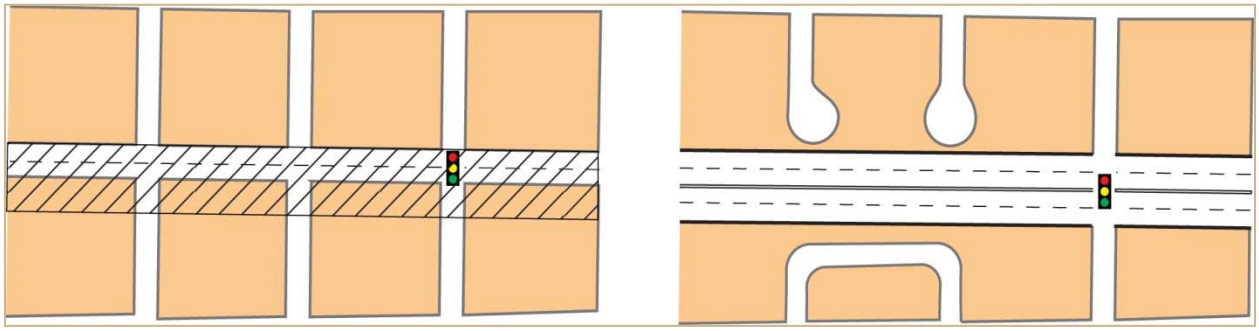


Figure 3-9. Ideal Through-Town Typical Section



The orange areas represent existing properties along U.S. 50. The cross-hatched area shows right of way needed for a higher-speed (50 mph), access-controlled highway designed to meet modern safety standards.

The orange areas show how connections between U.S. 50 and cross streets would be modified on either side of the highway to bring U.S. 50 up to modern safety standards.

Figure 3-10. Typical Right of Way and Access Effects for a Four-Lane Corridor through a Community

Intersections with U.S. 50 would be limited to other connecting state highways and other major roads, generally no closer together than one-half mile, and signalized where warranted. This would greatly reduce the number of places where people could cross U.S. 50 on foot, by bicycle, or even while driving. Since streets crossing U.S. 50 generally would be one-half mile apart, local residents would need to travel out of their way to cross the highway.

Based on public involvement, residents were concerned about the potential for community disruptions. Because of these concerns, impacts to communities were considered when analyzing through-town corridors. Depending on the corridors selected, through-town alternatives would unavoidably require removing at least 225 homes and businesses—and possibly as many as 445. Removing any homes or businesses within such small, rural communities could result in substantial effects to the communities. In addition, many homes, businesses, or public buildings that are important to the history of communities along U.S. 50 are located immediately adjacent to the highway. Shifting the highway to one side to avoid a particular historic site, for example, would likely result in affecting another historic site on the other side of the road.

Crossing the Highway

In most communities along the U.S. 50 corridor, residents have to cross the highway every day to work, shop, attend school, or use community services. The highway currently divides towns, and crossing it safely can be difficult. In Fowler, for example, children walk or bike from their homes south of U.S. 50 to reach the public swimming pool on the north side.

Table 3-4 shows the potential effects of the through-town corridors on homes, businesses, and historic sites that are listed or eligible for listing on the NRHP.

Table 3-4. Homes, Businesses, and Historic Resources Potentially Affected by Through-Town Corridors

Attribute	Through-Town Corridors[a]
Ideal right of way needed	130 feet (within the 1,000-foot-wide study area corridor)
Number of homes and businesses within the corridor[a]	225 to 445[b]
Number of historic resources within the corridor	150[b]

[a] Ranges reflect best-case and worst-case corridors through town.
[b] Resources mostly cannot be avoided because the existing highway is surrounded by homes and businesses, many of them historic.

Around-Town Corridors

Due to the community disruption of through-town corridors, CDOT explored potential around-town corridors in consultation with local communities. Around-town corridors—or bypasses, as they are technically known—were developed initially in the U.S. 50 planning study and refined during this Tier 1 EIS. Corridor alignments going around the north and the south sides of the communities were sketched onto aerial maps, attempting to avoid impacts to community and ecological resources. At the request of the communities, these corridors were kept as close to the current U.S. 50 alignment as possible, but moved just far enough around the towns to avoid impacting key resources. Because U.S. 50 connects to I-25 within the city of Pueblo (the western terminus for this Tier I EIS), an around-town corridor alternative was not developed for Pueblo.

The right of way needed for around-town corridors would be up to 250 feet to provide a wide enough median (typically 100 feet) to serve as a refuge for trucks and farm equipment crossing U.S. 50 (see Figure 3-11). To accommodate a wider median, this right-of-way width is greater than what was described for the through-town corridor. No sidewalks would be provided in these areas outside of the communities. Around-town corridors would have a posted travel speed of 65 mph to match posted speeds present between towns. Around-town corridors would allow access only from crossroads no closer than one-half mile apart. Generally, no direct access would be provided for driveways and field roads.

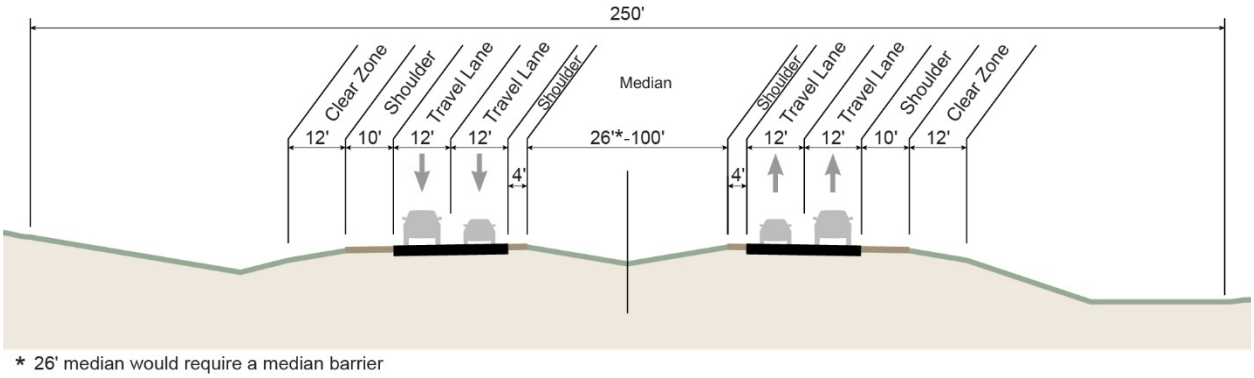


Figure 3-11. Ideal Around-Town Typical Section

Table 3-5 shows the potential effects of the around-town corridors on homes, businesses, and historic sites, including those that are listed or eligible for listing on the NRHP.

Table 3-5. Homes, Businesses, and Historic Resources Potentially Affected by Around-Town Corridors

Attribute	Around-Town Corridors[a]
Ideal right of way needed	250 feet (within the 1,000-foot-wide study area corridor)[b]
Number of homes and businesses within the corridor[a]	95 to 215[c]
Number of historic resources within the corridor[a]	60 to 79[c]

[a]Ranges reflect best-case and worst-case corridors around town.

[b]Right of way required is greater than that of the through-town corridor to accommodate a wider median.

[c]Resources are probably avoidable to a large degree since they were counted within a 1,000-foot-wide corridor, of which only 250 feet actually will be needed for right of way.

3.5.2 Evaluation of Through-Town and Around-Town Corridors

Through-town and around-town concepts for corridor locations were screened to determine how well each would meet the project's purpose and need for local, regional, and long-distance users of the highway. In addition to the six purpose-and-need-related criteria that were used in the earlier screening steps, a seventh criterion was used here to evaluate alternatives because of public concerns about potential community disruption. The seventh criterion addresses how well a through-town or around-town corridor would minimize community impacts. The following screening criteria were used and are discussed with the results.

How Well Each Alignment Addresses U.S. 50 Safety Issues

Highway improvements could be designed to address safety issues regardless of whether the corridor went through towns or around them.

How Well Each Alignment Improves Mobility for Local Users

Reconstructing the highway through towns with a design speed of 50 mph would require the elimination of most access from cross streets. This would substantially impede local travelers by adding out-of-direction travel as they access crossing points. Rerouting the highway to the north or south of the urban areas would provide half-mile spacing of access points around towns and would not be as disruptive to local users because it would maintain local connections along the existing U.S. 50 alignment through town. It is expected that some local roads would change to accommodate access to an around-town alignment. This may impact local mobility at certain highway access locations.

How Well Each Alignment Improves Mobility for Regional Users

The in-town alternative would moderately improve regional traveler mobility by increasing the in-town speeds and reducing intersections. However, this alternative would still require users to slow down as compared to the non-urban segments. Moving the highway to an around-town alternative would allow regional users to bypass towns and improve their mobility. However, they would be inconvenienced by the access restrictions in the communities where their trips begin or end, where there is the potential to add out-of-direction travel.

How Well Each Alignment Improves Mobility for Long-Distance Users

Mobility for long-distance users would improve due to maintaining 50 mph speeds through towns, but they still would encounter local traffic. Mobility would be better if U.S. 50 long-distance traffic could go around towns at 65 mph and avoid mixing with local traffic.

How Well Each Alignment Balances Mobility and Access for All Users

The through-town corridors would not improve mobility and access for local users; but they would partially benefit regional and long-distance users due to speed reductions and stoplights. Around-town corridors would improve mobility for regional and long-distance users, and would not impair local user access in town.

How Well Each Alignment Provides Flexibility to Address Future Travel Needs

Through-town routes would be surrounded by homes, businesses, historic sites, and other community resources, making it very difficult to modify or expand the roadway to address future needs. Around-town corridors would be located primarily in agricultural areas where there would be more flexibility for future modifications.

How Well Each Alignment Minimizes Community Impacts

Through-town corridors would require acquisition and removal of a large number of homes, businesses, historic sites, and other important community resources, while also impairing the ability to cross U.S. 50 safely. This option would substantially affect local traffic circulation patterns. Around-town corridors would require the removal of far fewer structures, although they would consume and bisect farmland and ranch lands that are important to local economies. Around-town corridors would reduce traffic volume through town, making the existing U.S. 50 easier to use or cross within the communities. However, a bypass also could negatively affect the local economy if it diverts traffic far from town. Fewer regional travelers passing through small town business districts could result in reduced retail sales for travel-related businesses, such as hotels/motels, restaurants/bars, convenience stores, grocery stores, gas stations, etc. This criterion is included because of its importance to the public.

The results of the through-town or around-town screening are summarized in Table 3-6.

Table 3-6.Through-Town or Around-Town Screening Results Summary

Screening Criteria	Through Town	Around Town
Addresses U.S. 50 safety issues	●	●
Improves mobility for local users	○	●
Improves mobility for regional users	◒	●
Improves mobility for long-distance users	◒	●
Balances mobility and access for all users	○	●
Provides flexibility to address future traffic needs	○	●
Minimizes community impacts	○	◒

Key: ○ = does not address the need ◒ = partially addresses the need ● = fully addresses the need

3.5.3 Decision Regarding Through-Town or Around-Town Corridors

The through-town corridors were eliminated from consideration because they would adversely affect local mobility (limiting access and continued traffic), do not balance mobility and access for all users of U.S. 50, and would not allow for flexibility to address future traffic needs because of the restricted setting within towns. Therefore, they do not meet the purpose and need of the project. In addition, the through-town corridors directly impact community resources (through land and property acquisition), which was a concern for the members of the communities. In Pueblo, however, U.S. 50 already is an expressway, so the existing corridor location was not eliminated. More information on this topic is provided in Section 3.6.2.

The around-town corridors were carried forward for further consideration because they would better meet aspects of the purpose and need while also minimizing community impacts.

3.6 ALTERNATIVES CARRIED FORWARD FOR FURTHER CONSIDERATION

The alternatives development process described previously was undertaken to identify one or more alternative corridor alignments that would meet the project's purpose and need. This process considered:

- Regional corridor locations
- Transportation modes
- Facility types
- Through-town versus around-town corridor locations in communities

The results of this process are Build Alternatives that will configure a highway as a four-lane expressway located on or near the existing U.S. 50 between communities, and located around the communities east of Pueblo along the U.S. 50 corridor. The Build Alternatives were carried forward in this document for subsequent comparison to the No-Build Alternative. The No-Build and Build Alternatives are described below.

3.6.1 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. The No-Build Alternative includes ongoing maintenance of pavement and bridges on the existing U.S. 50 alignment. It also includes ongoing or planned minor safety improvements, provision of passing-lane sections, routine pavement overlays, and repair of any weather- or crash-related damage. The No-Build Alternative also would accommodate local agency improvements to the U.S. 50 corridor.

3.6.2 Build Alternatives

The decisions described previously determined that a four-lane expressway on or near the existing U.S. 50 alignment and going around each community, except in Pueblo, would meet the project's purpose and need. Therefore, the Build Alternatives consist of constructing a four-lane expressway on the existing U.S. 50 between I-25 in Pueblo (milepost 316) to approximately one mile east of Holly (milepost 466).

Access will be restricted by placing access points at least one-half-mile apart. The resulting elimination of numerous existing access points would require that some local travelers use other roadways, and in some cases frontage roads will be added to reach U.S. 50. The access locations will not be determined until the

completion of the Tier 2 studies. State highways and major regional roads will take priority as access points to U.S. 50. For example, if multiple access points exist within a one-half-mile segment, access to and from prioritized roads would be retained, while lower-priority access points would be eliminated. Portions of the existing highway that go through communities will remain in place to serve local needs, but will no longer serve as U.S. 50. For such roads, CDOT would negotiate relinquishing ownership to cities and/or counties, as discussed below.

The Build Alternatives would maintain a posted speed limit of 65 mph in most locations, dropping to 50 mph for approaches to signalized intersections. Some grade-separated intersections (where one of the roads crosses over or under the other) would be provided to minimize the number of signalized intersections. At locations with at-grade access but not enough traffic to warrant a signalized intersection, unsignalized intersections would be provided. The Build Alternatives would include a wide median with sufficient room for a vehicle to cross one direction of traffic, then wait at a stop sign before crossing the other highway lanes or making a left turn onto the highway.

It should be noted that the Build Alternatives do not represent final roadway alignments. Instead, each alternative consists of a corridor measuring approximately 1,000 feet in width and encompassing the actual 250-foot or less roadway alignment (i.e., footprint), which will be identified during Tier 2 studies. Within this 1,000-foot-wide corridor, resources can be avoided or minimized during Tier 2 studies. The Build Alternatives consist of constructing a four-lane rural expressway of typical AASHTO standard widths located along or near the existing U.S. 50 highway between and around communities.

At each community east of Pueblo, there generally are two Build Alternatives that propose realigning U.S. 50 around the community. General corridor alignments around each community were developed based on the purpose and need of the project, socioeconomic and environmental constraints, engineering feasibility, and public input. Between communities, the corridor location generally is centered on the existing highway alignment, except between Pueblo and Fowler. For this portion of U.S. 50, a realignment option was developed to avoid property acquisitions and the demolition of the historic Huerfano Bridge. Figure 3-12 provides an overview of the Build Alternatives along the project corridor. As previously mentioned, the existing road and right-of-way alignments through each community would be relinquished to the city or county through a process negotiated and documented in an Inter-Governmental Agreement (IGA). Generally, the process would follow this sequence:

1. Complete U.S. 50 Tier 1 EIS
2. Complete U.S. 50 Tier 2 NEPA documents for each individual project

3. Coordinate with local jurisdiction
4. Develop IGA for right of way, maintenance, and operations
5. Finalize design
6. Formalize IGA and submit to CDOT, Transportation Commission
7. Execute IGA

The project corridor consists of 18 sections, which represent the Build Alternatives between communities and around communities. These 18 sections are discussed briefly below in relation to the Build Alternative(s) proposed in each section. Figure 3-13 reflects the location of each of these sections along the existing U.S. corridor.

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 U.S. 50 with a north and south around-town Build Alternative at each of the communities.

3.6.3 Identification of the Least Environmentally Damaging Practicable Alternative

Since this Tier 1analysis includes potential impacts to waters of the United States, including wetlands, it must include a resolution that the alternative screening process does not eliminate the Least Environmentally Damaging Practicable Alternative (LEDPA)(Section 404(b)(1) of the Clean Water Act). The U.S. Army Corps of Engineers has given concurrence, in a letter dated November 2, 2015 (see Appendix C), that screening processes documented in this document and the identification of Build Alternatives do not eliminate the LEDPA. During Tier 2 studies, further evaluation will be completed to make a determination that the LEDPA is not eliminated through those individual NEPA processes.

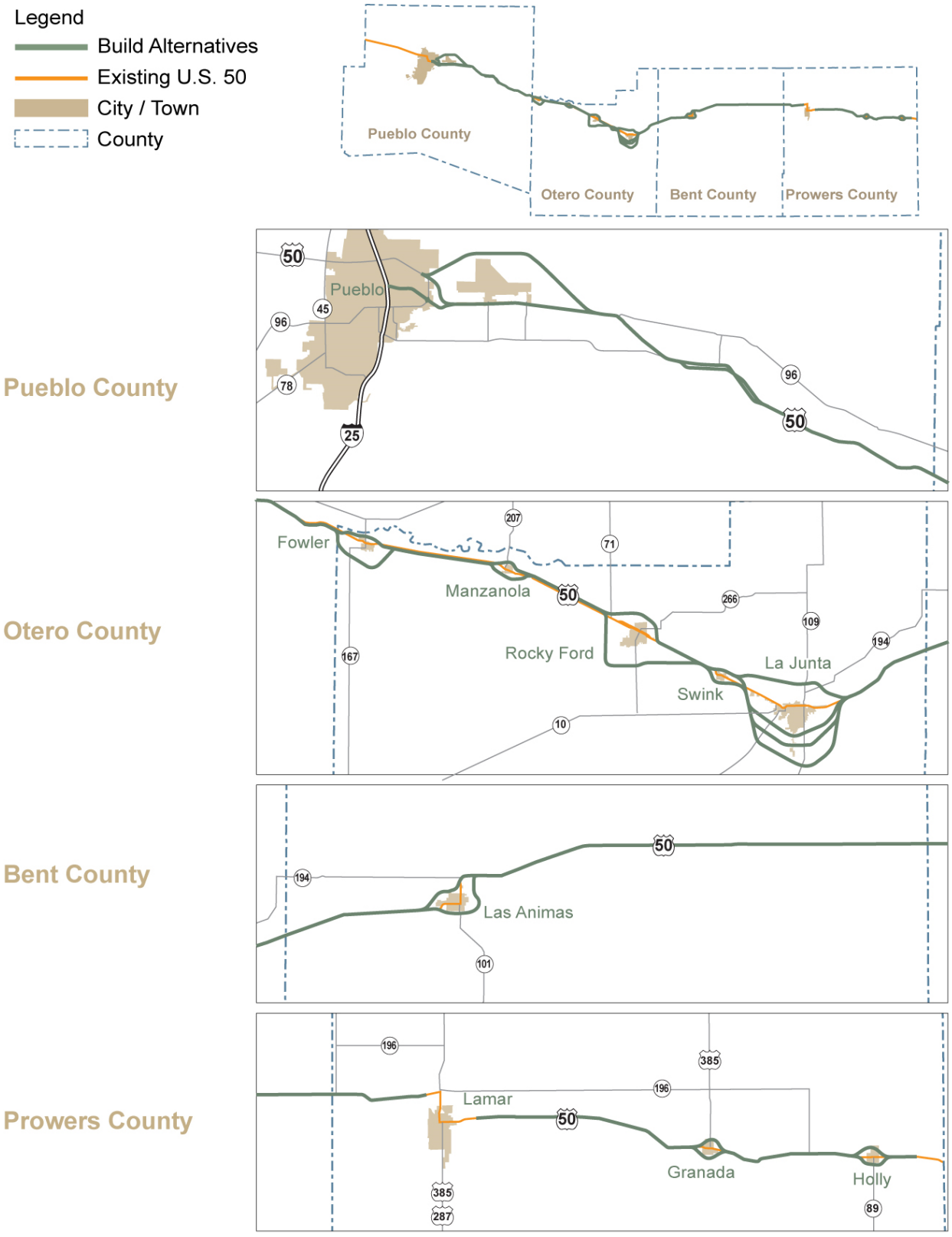


Figure 3-12. Build Alternatives Overview

No alternatives were developed for Lamar. Lamar was studied in a separate EA, titled *U.S. 287 at Lamar Reliever Route Environmental Assessment;* the FONSI for the project was signed November 10, 2014.

Section 1: Pueblo

Section 2: Pueblo to Fowler

Section 3: Fowler

Section 4: Fowler to Manzanola

Section 5: Manzanola

Section 6: Manzanola to Rocky Ford

Section 7: Rocky Ford

Section 8: Rocky Ford to Swink

Section 9: Swink

Section 10: La Junta

Section 11: La Junta to Las Animas

Section 12: Las Animas

Section 13: Las Animas to Lamar

Section 14: Lamar to Granada

Section 15: Granada

Section 16: Granada to Holly

Section 17: Holly

Section 18: Holly Transition

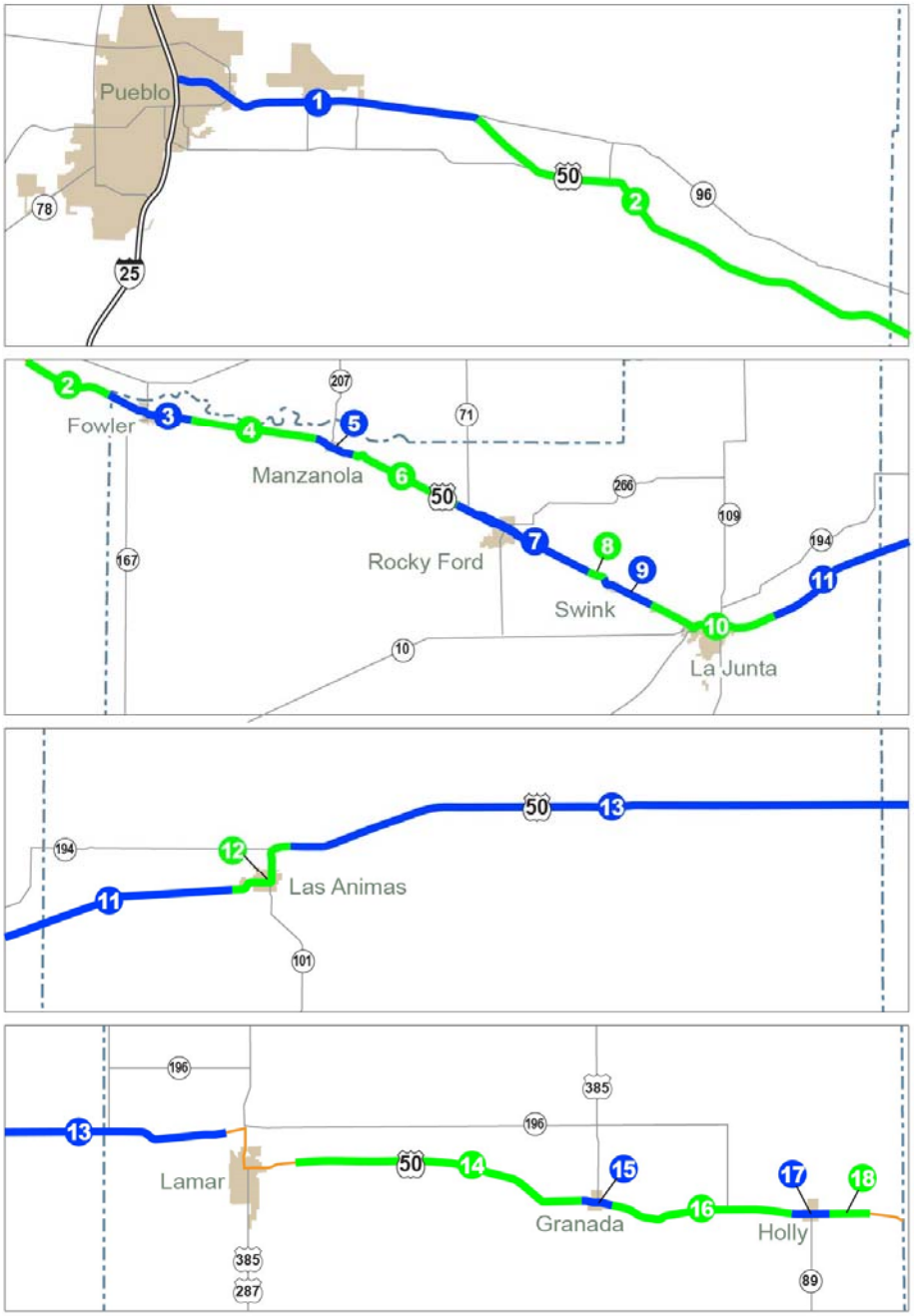


Figure 3-13. Project Corridor Sections

Section 1: Pueblo

Because U.S. 50 is already a four-lane expressway within Pueblo, an around-town Build Alternative was not developed. However, three Build Alternatives within Pueblo are under consideration:

- Alternative 1: Pueblo Airport North
- Alternative 2: Pueblo Existing Alignment
- Alternative 3: Pueblo SH 47 Connection

Figure 3-14 reflects these alternatives.

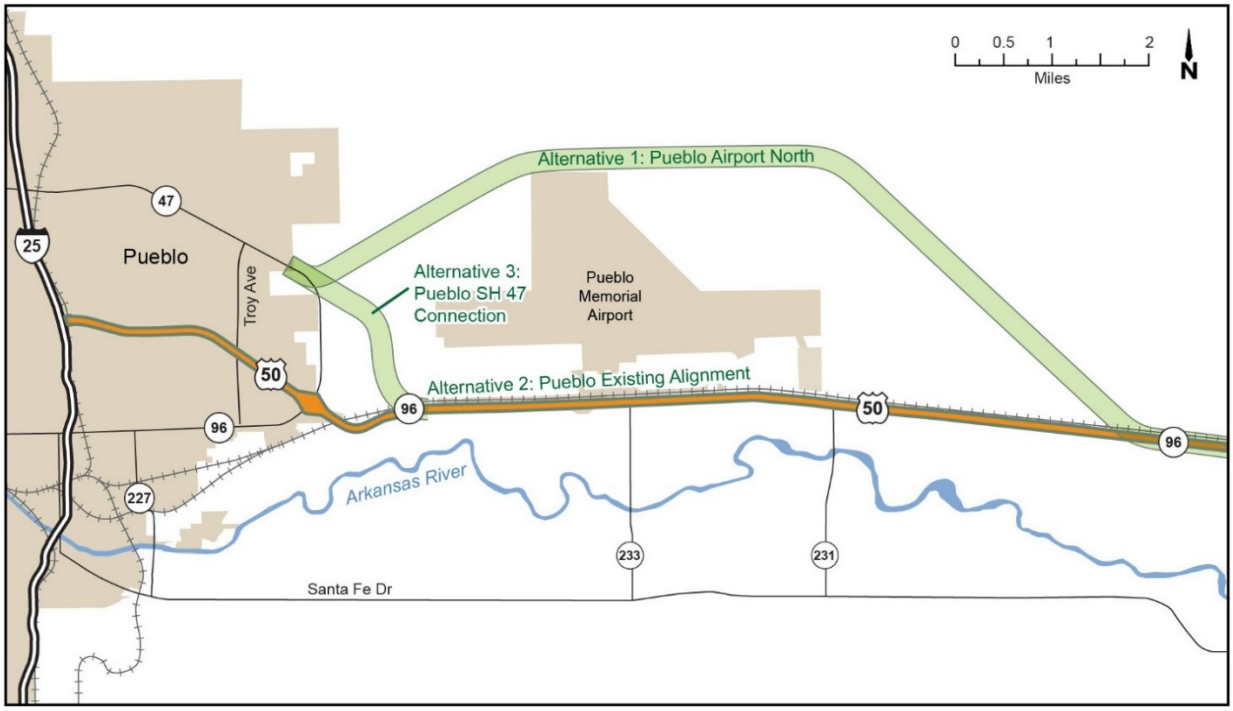


Figure 3-14. Pueblo Build Alternatives

Alternative 1: Pueblo Airport North consists of relocating U.S. 50 around the north side of the Pueblo Memorial Airport. This alternative was proposed by PACOG and is included in the Region's 2040 Long-Range Transportation Plan. The 7.9-mile corridor would tie into SH 47 approximately 1.5 miles north of U.S. 50 and 4.5 miles east of I-25. As part of this Build Alternative, a portion of SH 47 would be re-designated as U.S. 50. Also, the existing U.S. 50 would remain in use under its secondary designation of SH 96.

Alternative 2: Pueblo Existing Alignment is under consideration because U.S. 50 in the area of Pueblo is currently a divided, four-lane expressway. This Build Alternative would stay on the existing alignment, but would include some safety improvements to meet current design standards.

Alternative 3: Pueblo SH 47 Connection would include safety improvements like those under Alternative 2, but instead of staying on the existing alignment until the western terminus of the project, it would construct a new segment of highway to connect U.S. 50 to SH 47 west of the airport. This also was a local proposal considered in the CDOT 2003 planning study for U.S. 50.

It should be noted that Alternatives 1 and 3 would move the alignment to be consistent with U.S. 50 west of I-25.

Section 2: Pueblo to Fowler

Between Pueblo and Fowler, two Build Alternatives are under consideration (see Figure 3-15). Alternative 1: Fort Reynolds Existing Alignment consists of a 1,000-foot-wide corridor centered on the existing alignment. Alternative 2: Fort Reynolds Realignment is generally a 1,000-foot-wide corridor centered on the existing alignment, except between milepost 333 and milepost 339 near Fort Reynolds. Alternative 2 realigns the highway to the south in this area to minimize the potential acquisition of homes in the Fort Reynolds area. It also has the potential to avoid adverse effects to the historic Huerfano Bridge. The existing U.S. 50 could remain as a frontage road in this alternative, which would require the bridge to be left in place. This will be evaluated further during Tier 2 studies.

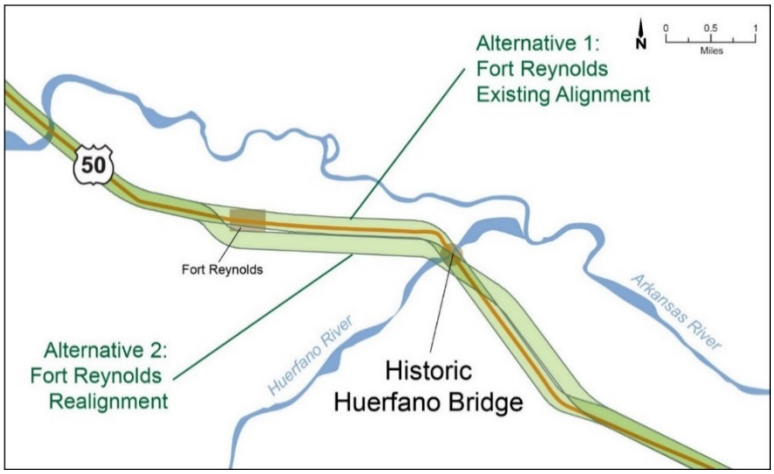


Figure 3-15. Pueblo to Fowler Build Alternatives

Section 3: Fowler

Two Build Alternatives are under consideration around Fowler, as shown in Figure 3-16. Alternative 1: Fowler North is 3.4 miles long and is aligned to minimize or avoid impacts to the BNSF Railway tracks and the Arkansas River. Alternative 2: Fowler South measures slightly less than five miles and extends nearly one mile south of town. This placement is meant to minimize effects to land irrigated by the Oxford Farmers Ditch, a major irrigation canal, and provide for additional development opportunities.

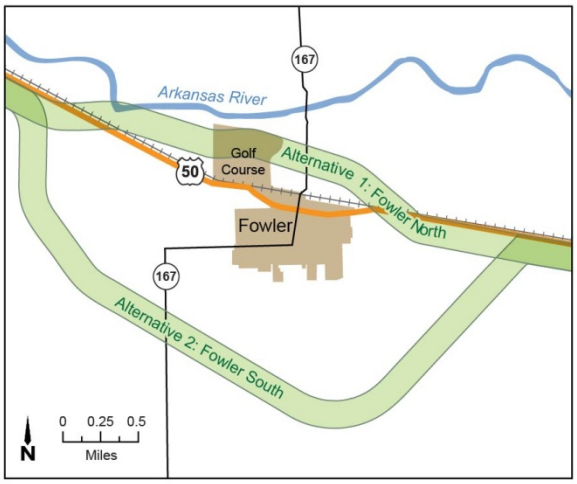


Figure 3-16. Fowler Build Alternatives

Section 4: Fowler to Manzanola

The Fowler to Manzanola Build Alternative is a 1,000-foot wide corridor on the existing alignment, as shown on Figure 3-17. The width of the corridor extends from the edge of highway right of way on the north side of U.S. 50 south 1,000 feet to avoid the railroad that parallels the highway to the north.

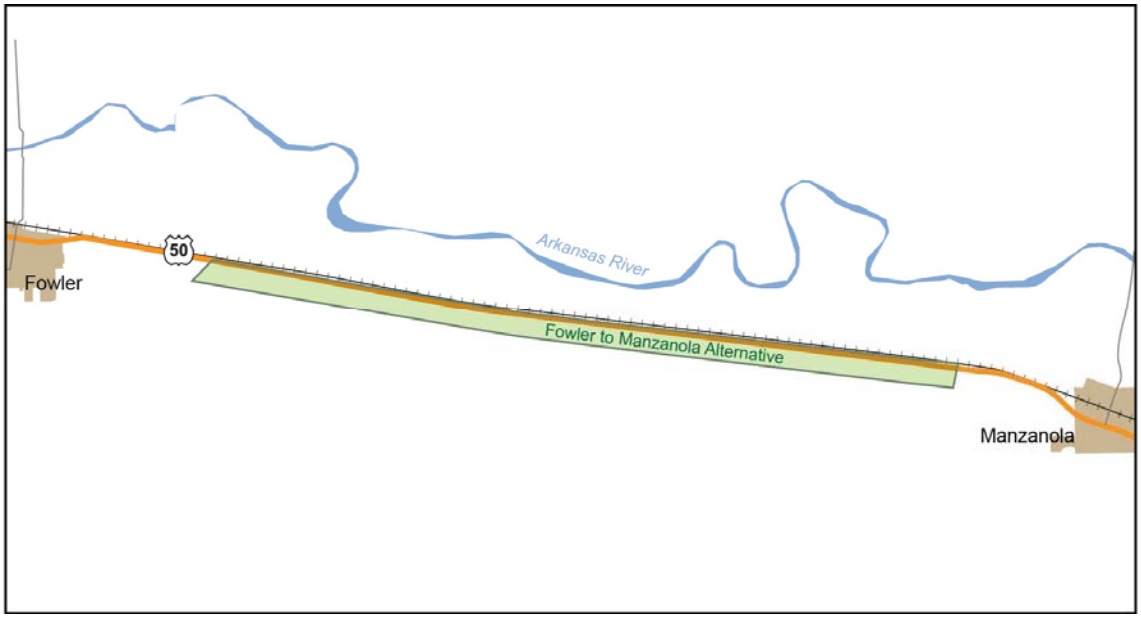


Figure 3-17. Fowler to Manzanola Build Alternative

Section 5: Manzanola

The two Build Alternatives considered around Manzanola are shown in Figure 3-18. Alternative 1: Manzanola North would require a new railroad crossing west of town and would remain north of the railroad. Alternative 2: Manzanola South would remain south of the tracks until crossing them east of town, as U.S. 50 does today. Each Build Alternative is a little more than 2.5 miles long and is situated to remain close to town. Alternative 1 was aligned to minimize impacts to agricultural land to the north. Similarly, Alternative 2 was developed to avoid bisecting major farmland and to border or minimize impacts to the Otero Canal.

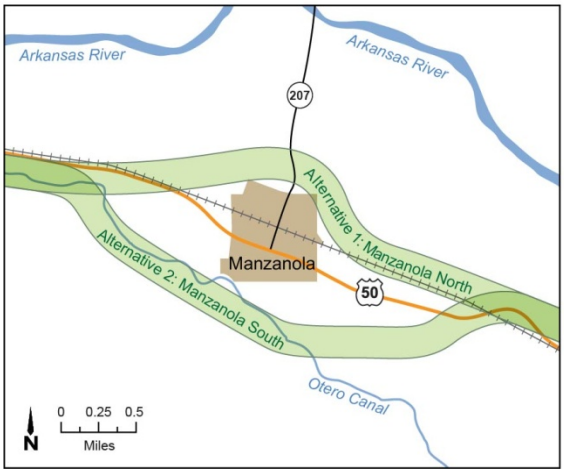


Figure 3-18. Manzanola Build Alternatives

Section 6: Manzanola to Rocky Ford

As shown in Figure 3-19, the Manzanola to Rocky Ford Build Alternative is a 1,000-foot-wide corridor on the existing alignment. The width of the corridor extends from the edge of the highway right of way on the south side of U.S. 50 north 1,000 feet to avoid the railroad that parallels the highway to the south.

Figure 3-19. Manzanola to Rocky Ford Build Alternative

Section 7: Rocky Ford

Figure 3-20 shows the two Build Alternatives considered around Rocky Ford. Alternative 1: Rocky Ford North is located between the city and the Arkansas River and measures slightly less than seven miles in length. Alternative 2: Rocky Ford South is located approximately one mile south of U.S. 50 and is approximately 8.2 miles long. Based on community input, Alternative 1 is intended to stay close to the city, while Alternative 2 was aligned further south to avoid potential development opportunities south of the city limits.

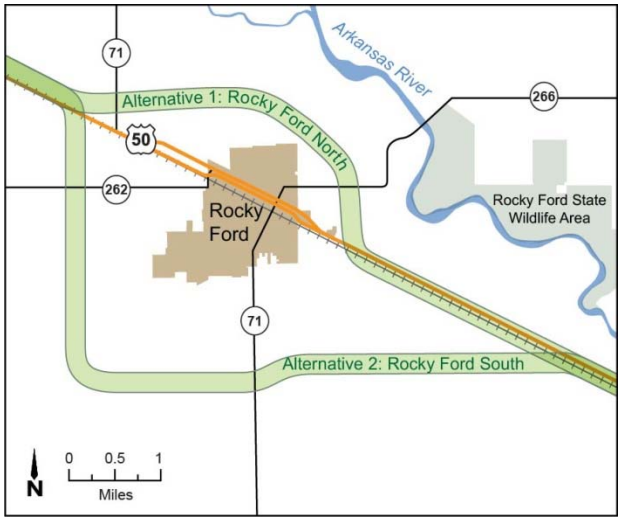


Figure 3-20. Rocky Ford Build Alternatives

Section 8: Rocky Ford to Swink

In this section, the existing U.S. 50 alignment parallels the railroad, which is located directly to the south of the highway. To avoid the railroad tracks in this area, the Rocky Ford to Swink Build Alternative extends 500 feet to the north of the railroad tracks (which extends along the existing U.S. 50 alignment) and 500 feet to the south of the railroad tracks (see Figure 3-21). The purpose of dividing the 1,000-foot-wide corridor in half was to generally avoid the railroad and associated right of way to the greatest extent possible. However, if the U.S. 50 alignment is shifted south of the tracks, a new crossing of the railroad could be required.

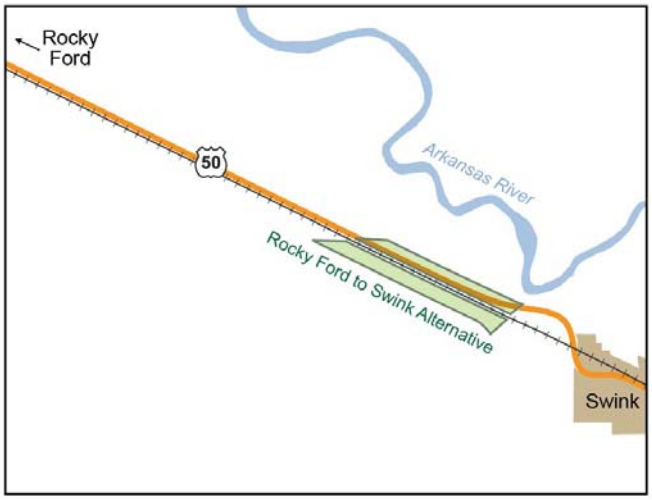


Figure 3-21. Rocky Ford to Swink Build Alternative

Section 9: Swink

Figure 3-22 shows the two Build Alternatives under consideration around Swink. Alternative 1: Swink North is located close to the Arkansas River and is 2.4 miles in length, while Alternative 2: Swink South is approximately 2.5 miles in length. Alternative 1 was aligned to avoid impacts to the Arkansas River and wastewater lagoons to the north. Alternative 2 was configured to avoid or minimize impacts to the Swink High School and a future area of development on the southern limits of town, while also remaining close to the town.

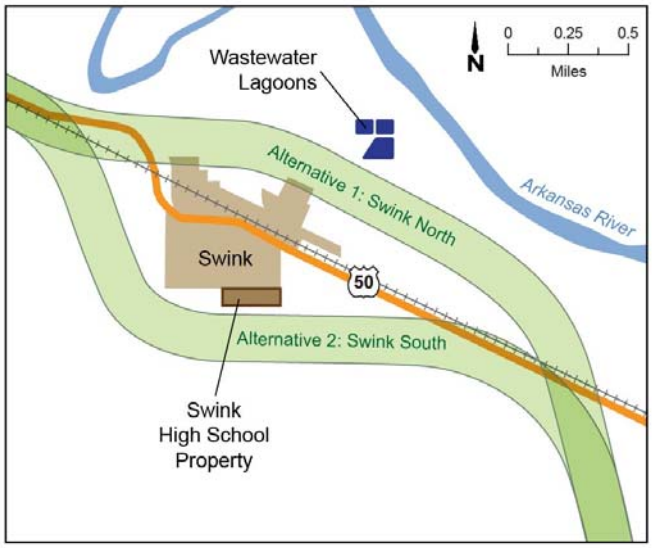


Figure 3-22. Swink Build Alternatives

Section 10: La Junta

Figure 3-23 shows the four Build Alternatives under consideration around La Junta. The southern alternatives primarily differ by length and proximity to the town. All La Junta Build Alternatives are summarized below:

- Alternative 1: La Junta North bypasses the town to the north and would construct two new bridges over the Arkansas River. It is 8.9 miles in length. This alternative is only viable if Section 9, Alternative 1: Swink North, is selected. An alignment tying to Section 9, Alternative 2: Swink South, was not developed due to having to cross the Fort Lyon Canal.
- Alternative 2: La Junta South is 8.5 miles in length and located approximately two miles south of the existing U.S. 50 alignment in La Junta.
- Alternative 3: La Junta South is 9.8 miles in length and located approximately 2.3 miles south of the existing U.S. 50 alignment in La Junta.
- Alternative 4: La Junta South is 11.9 miles in length and located approximately 3.3 miles south of the existing U.S. 50 alignment in La Junta.

Swink to La Junta

Because of the short distance between Swink and La Junta, and the length of the Build Alternatives around La Junta, the transition between the two communities was incorporated into the Build Alternatives for Section 10: La Junta.

Alternative 1 was developed to provide a northern route. Given the proximity of the Arkansas River to the city, the alignment was situated north of the river in a location to avoid existing development and the Fort Lyon Canal. Alternative 2 was developed to provide a southern route, but also remain close to the city limits. Alternative 3: La Junta South was developed during public involvement efforts for this document as a requested compromise between Alternative 2 and Alternative 4—a route closer to town, but farther from the city limits. The Alternative 4 alignment reflects a proposed trucking route identified in the La Junta Comprehensive Plan. It generally follows this alignment, with the exception of deviating to the west of La Junta to tie into Alternative 1: Swink North and Alternative 2: Swink South in Section 9 of the project corridor.

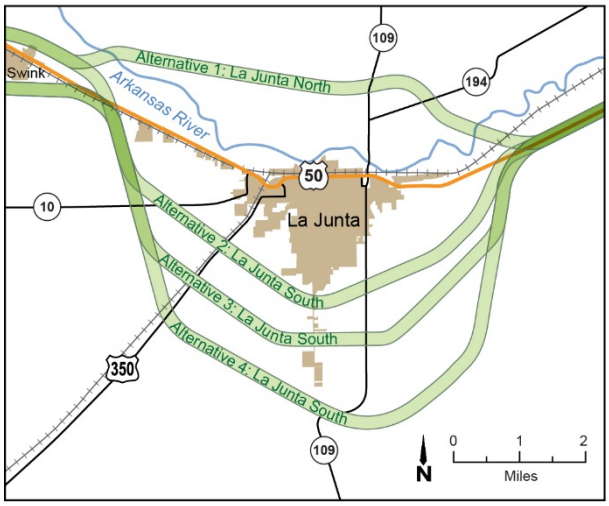


Figure 3-23. La Junta Build Alternatives

Section 11: La Junta to Las Animas

The La Junta to Las Animas Build Alternative consists of a 1,000-foot-wide corridor centered on the existing alignment, except in areas where the railroad parallels the highway to the north (see Figure 3-24). In these areas, the 1,000-foot corridor shifts to the south.

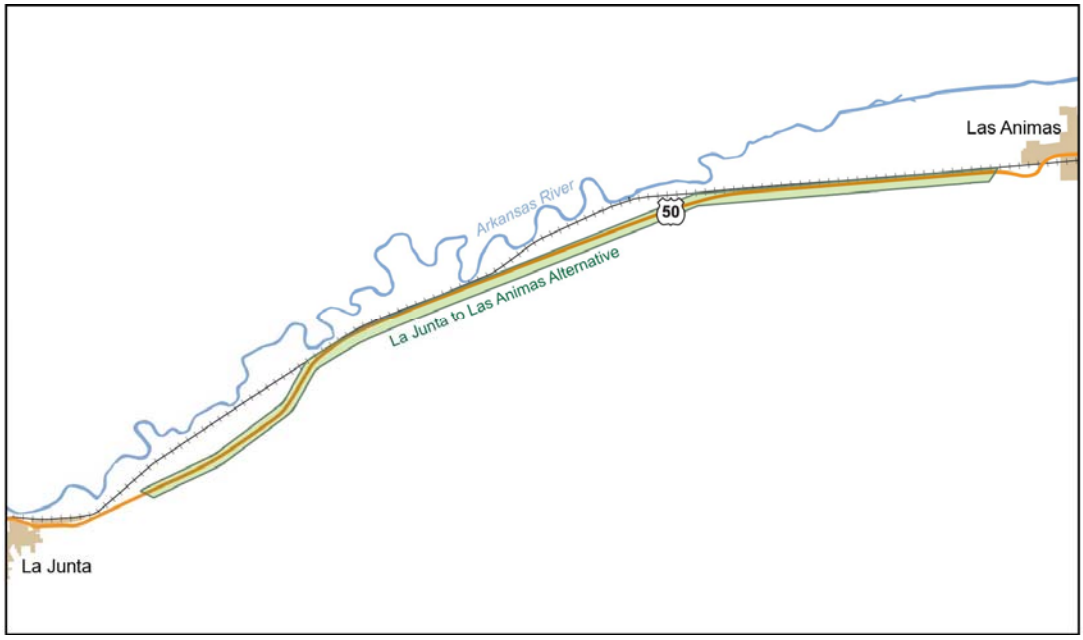


Figure 3-24. La Junta to Las Animas Build Alternative

Section 12: Las Animas

The two Build Alternatives considered around Las Animas are shown in Figure 3-25. U.S. 50 crosses the Arkansas River north of the city and both alternatives also would cross the river. Alternative 1: Las Animas North is approximately 3.5 miles long and would replace the existing bridge over the Arkansas River. The alignment is designed to avoid or minimize direct effects to community resources, including the Bent County jail and treatment facility, wastewater facilities, and Bent's Fort Inn (which is viewed as an important community gathering place), while using the existing U.S. 50 alignment to the greatest extent practicable. Alternative 2: Las Animas South is approximately 4.7 miles long and would include a new bridge crossing over the Arkansas River. This placement stays close to town, while avoiding direct effects to the fairgrounds—an important community resource—and the city and county airport.

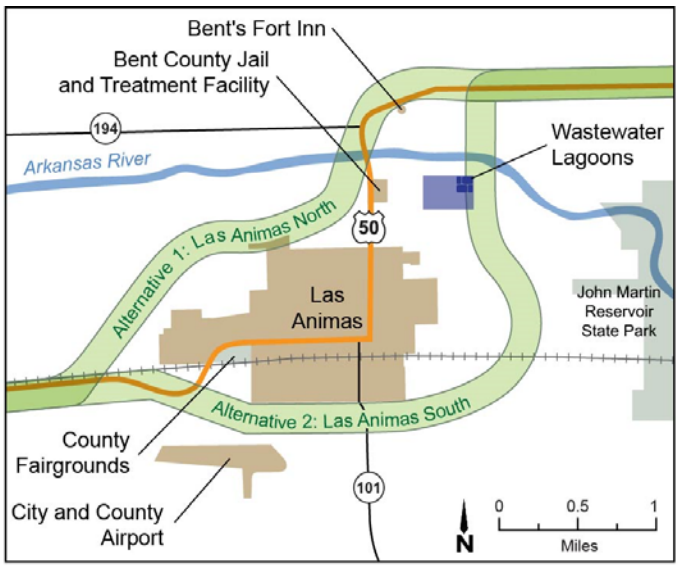


Figure 3-25. Las Animas Build Alternatives

Section 13: Las Animas to Lamar

As shown in Figure 3-26, the Las Animas to Lamar Build Alternative consists of a 1,000-foot-wide corridor centered on the existing alignment.

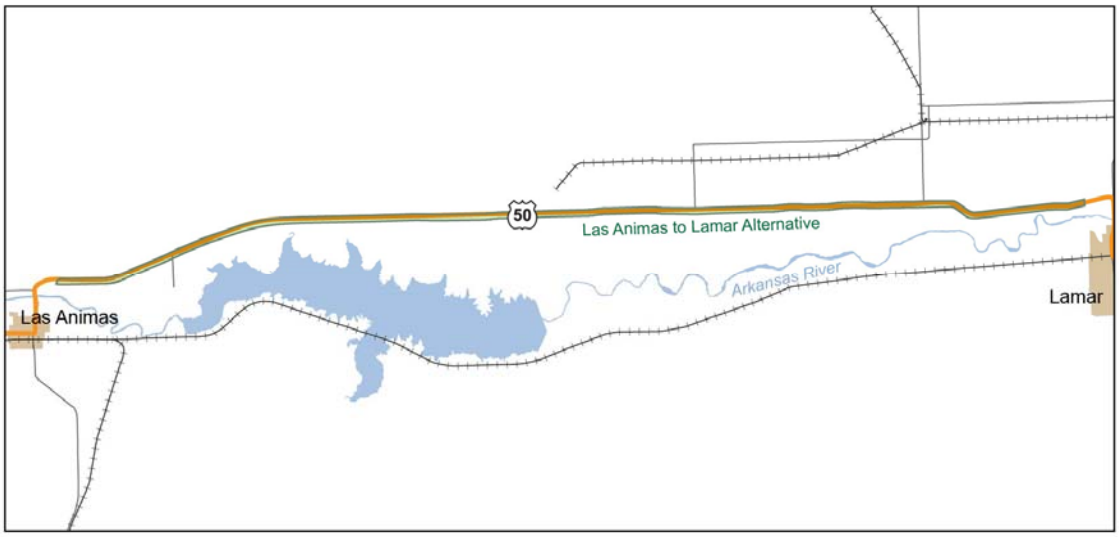


Figure 3-26. Las Animas to Lamar Build Alternative

Section 14: Lamar to Granada

The Lamar to Granada Build Alternative consists of 1,000 feet centered on the existing alignment, as shown in Figure 3-27. However, between Lamar and the U.S. 50 and CR GG.5 intersection, the corridor begins on the north edge of U.S. 50 and extends 1,000 feet south to avoid the railroad on the north side.

Lamar

The U.S. 287 at Lamar Reliever Route Environmental Assessment *studied Lamar to determine how U.S. 50 will go around this community because U.S. 50 and U.S. 287 share the same alignment for several miles in this area. Corridors around Lamar, therefore, were not considered in this document. For further details, please refer to the EA and FONSI located online at* http://www.coloradodot.info/projects/us287lamar/request-for-proposals-rfp/environmental-assessment.

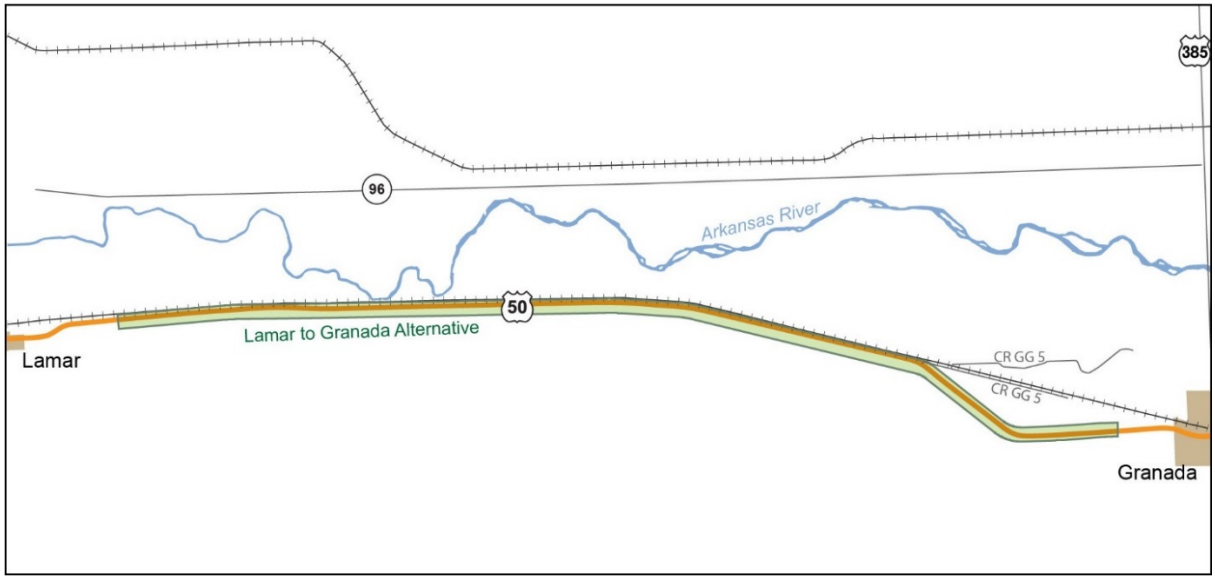


Figure 3-27. Lamar to Granada Build Alternative

Section 15: Granada

Figure 3-28 shows the two Build Alternatives under consideration around Granada. Alternative 1: Granada North is approximately 2.2 miles long, while Alternative 2: Granada South is 2.1 miles long. Both alternatives were intended to minimize or avoid potential effects to Camp Amache National Historic Landmark and/or the Granada State Wildlife Area.

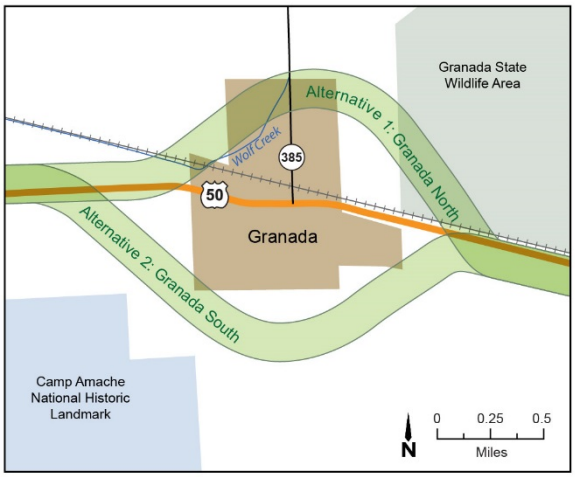


Figure 3-28. Granada Build Alternatives

Section 16: Granada to Holly

As shown in Figure 3-29, the Build Alternative between Granada and Holly is an alignment 1,000 feet wide centered on the existing roadway except where the corridor is near enough to the railroad to cause potential impacts. In these cases, the Build Alternative is shifted to the south or north along the existing U.S. 50 alignment.

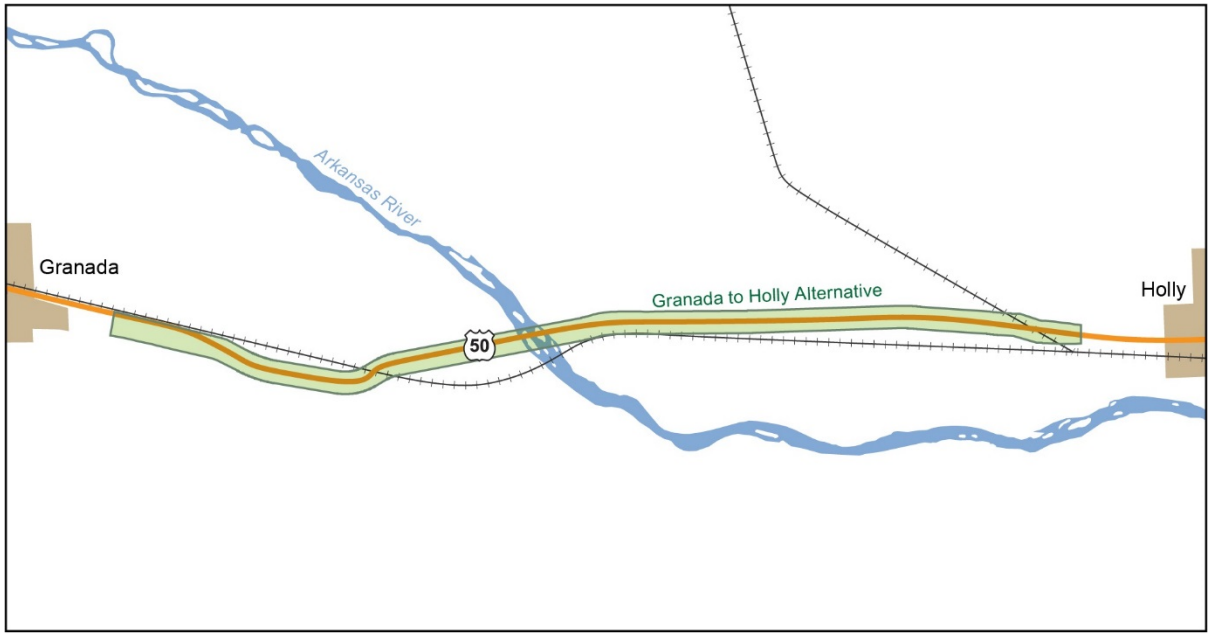


Figure 3-29. Granada to Holly Build Alternative

Section 17: Holly

The two Build Alternatives under consideration around Holly are shown in Figure 3-30. Both alternatives are approximately 2.1 miles long. Both Build Alternative alignments were intended to stay close to the existing city limits. Alternative 1 was aligned in a way to avoid potential development to the northwest of town, as well as potential housing development on the northeast of the existing town limits and the cemetery east of town. Community input also identified the best agricultural land as being north of town; keeping the northern alternative close to town was intended to minimize agricultural land impacts. Alternative 2 was

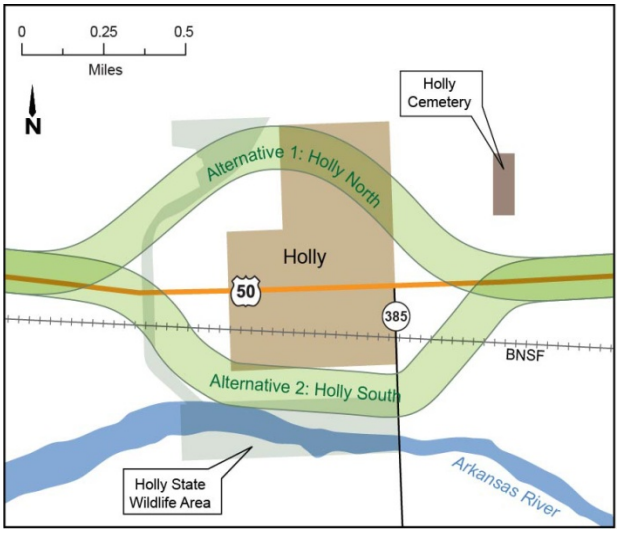


Figure 3-30. Holly Build Alternatives

aligned between the southern limits of town and the Arkansas River. This alternative has the potential to avoid the Holly State Wildlife Area while Alternative 1 would have unavoidable use of the wildlife area.

Section 18: Holly Transition

The Build Alternative in this section is 1,000 feet wide centered on the existing alignment, as shown on Figure 3-31. This section begins approximately one mile east of Holly and extends to the vicinity of the Colorado-Kansas state line. The limits of this section will be determined during Tier 2 studies.

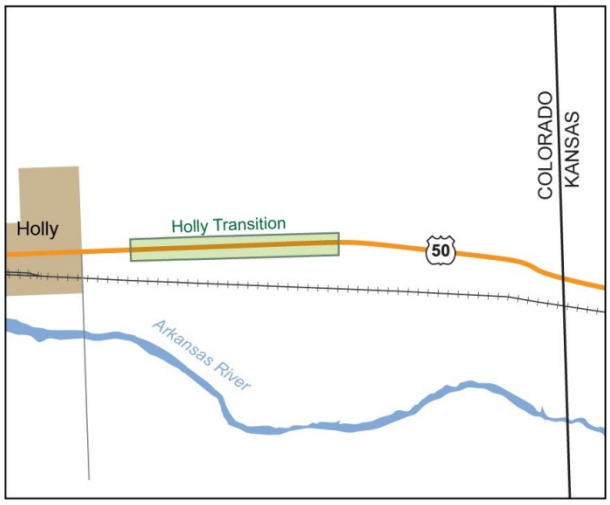


Figure 3-31. Holly Transition Build Alternative

3.6.4 Evaluation of Alternatives

The effects of the No-Build and Build Alternatives described above are evaluated in Chapter 4, Affected Environment, Environmental Consequences, and Mitigation. Chapter 4 addresses mobility and safety considerations, as well as impacts to resources from the Build Alternatives and the No-Build Alternative. Affected resources are discussed by appropriate resource groups, including the rural and agricultural environment, the natural environment, and the community and built environment. The identification of a preferred alternative, as well as a summary of its impacts, are provided in Chapter 6.