

## Alternatives Considered

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Conflicts between local traffic and commercial truck traffic on U.S. 287/Main Street and U.S. 50/Olive Street in downtown Lamar have long been recognized by community leaders as transportation challenges. Two studies were performed prior to this EA. The first, titled *Proposal, Alternative Truck Route, U.S. 287 & 50* (City of Lamar, 1998), was prepared by the City of Lamar in 1998 in cooperation with Prowers County. This study identified a single proposed alternative route east of Lamar. The purpose of the proposed realignment was to provide an alternative route for the truck traffic that presently passes through the city along U.S. 287/Main Street.

Upon completion of this study, the city and county purchased right-of-way (ROW) east of Lamar and in 2000 constructed an approximately 5.5-mile portion of a two-lane gravel roadway (currently maintained by Prowers County) along the proposed alignment documented in the 1998 study. This route opened to traffic in 2000 and serves as the existing gravel Alternative Truck Route (see Figure 1-2). It connects with U.S. 287 just north of CR CC and skirts downtown Lamar by connecting to U.S. 50 east of CR 9. However, the city and county's construction project did not extend as far north as envisioned, and the roadway terminates at its intersection with U.S. 50. This existing gravel Alternative Truck Route for U.S. 287 east of Lamar should not be confused with the paved, in-town alternate truck route for U.S. 50 within the city described in Section 1.2.3 and shown in Figure 1-3 of this EA.

CDOT hosted a public meeting on July 28, 1999 and published a study in June 2000 titled *U.S. 287 Lamar Alternative Truck Route – Design Concept Summary Report* (CDOT, 2000). When asked at the public meeting if there was a need for an alternative route for U.S. 287, 90 percent of respondents indicated there was a need to relocate U.S. 287 off of Main Street and around the city limits and 10 percent of respondents were against rerouting U.S. 287 away from Main Street. CDOT then evaluated the results of the city and county's 1998 *Alternative Truck Route* study and considered other alternative routes and public input, and summarized the findings in the June 2000 study. The corridors analyzed included the following:

- From U.S. 287 south of the city, generally following the same alignment to the east and north that was evaluated in the city and county study, and terminating at U.S. 50 (not illustrated on Figure 2-1).
- From U.S. 287 south of the city, generally following the same alignment to the east and north evaluated in the city and county study, continuing north of U.S. 50 via a grade separation with the BNSF Railway, and connecting back to north U.S. 287/Main Street at Crystal Street (see Alternative C on Figure 2-1).
- From U.S. 287 south of the city, generally following the same alignment to the east and north evaluated in the city and county study, continuing north of U.S. 50 via a grade

separation with the BNSF Railway, and constructing a new crossing of the Arkansas River to connect with CR 196 on the northern end (see Alternative B on Figure 2-1).

- Reconstructing U.S. 287 through Main Street in lieu of constructing a reliever route around Lamar (see Alternative A on Figure 2-1).

The 2000 CDOT study concluded that the preferred solution was the third option (Alternative B): extending the proposed realignment of U.S. 287 north to connect to CR 196 via a new crossing of the Arkansas River. Evaluation of the alternatives was based on design criteria developed during the study. The study focused on engineering considerations and design alternatives for the proposed route, and provided feasibility-level evaluations including estimated construction costs. However, the study did not address potential environmental impacts resulting from the preferred alternative. For further details on the alternatives evaluation process, please refer to the *U.S. 287 Lamar Alternative Truck Route – Design Concept Summary Report* (CDOT, 2000).

During planning and scoping for this EA, an objective evaluation of alternative corridor alignments was conducted to identify whether any possible alternative corridor alignments could meet the purpose and need for the project. Objectives included improving regional travel and travel conditions, accommodating future freight traffic on U.S. 287, reducing conflicts between local and through-traffic to improve safety, and minimizing social and environmental impacts. A two-step evaluation process was developed, and those alternatives that did not meet the project purpose and need were “screened out” and discontinued from further evaluation.

## 2.1 Corridor Evaluation of Alternatives

The corridor alternatives evaluation compared several conceptual corridors for a relocated U.S. 287 against criteria developed by the project team, which consisted of individuals from FHWA, CDOT, and the consultant team. The criteria were established to provide a qualitative measure of a given alternative corridor’s ability to meet the mobility and safety elements of the purpose and need and minimize social and environmental impacts. The criteria are provided in the sidebar.

The alternatives evaluation assessed three corridors that were considered and documented in the 2000 *U.S. 287 Lamar Alternative Truck Route – Design Concept Summary Report* (CDOT, 2000); one new corridor that was not previously identified in the CDOT 2000 study; and the No Action Alternative. The corridors evaluated in the CDOT 2000 study included a new corridor east of Lamar extending north to Crystal Street; a new corridor east of Lamar extending north to CR 196; and reconstructing U.S. 287 through Main Street. One additional corridor that was not previously identified or evaluated was added during the corridor screening process as part of the development of a reasonable range of alternatives: a new alignment west of the city (see Alternative D on Figure 2-1).

A new corridor east of Lamar extending north to U.S. 50 was screened out early in the process because it did not meet the purpose and need for the project. For this reason, it is not shown on Figure 2-1. The alignment east of Lamar extending north to U.S. 50 would provide only a partial reliever route for through-travel in Lamar, as northbound traffic on U.S. 287 would be required to turn west on U.S. 50 and then north on U.S. 287/Main Street

through central Lamar. As a result, the alternative would not completely remove trucks from downtown Lamar; trucks would still be required to travel on U.S. 287/Main Street north of U.S. 50. In addition, the geometry of the U.S. 287/U.S. 50 intersection makes it difficult for large trucks to turn right onto U.S. 287/Main Street without crossing several lanes of traffic.

The remaining four alternatives, plus the No Action Alternative, were carried forward into the alternatives evaluation process. Figure 2-1 shows the location of each of the corridors evaluated in the alternatives evaluation process, and Sections 2.1.1 through 2.1.5 present a description of each alternative. A graphical representation of each alternative's comparative performance against the evaluation criteria, as determined by the professional judgment of the project team, is shown in Figure 2-2.

### Evaluation Criteria

#### Mobility

- **Operations** – Improve regional travel conditions and travel times for through-trips; improve local operations along Main Street
- **Improved Convenience** – Reduce conflicts between through-traffic and local traffic
- **Future Improvements** – Accommodate future growth of freight traffic along the Ports-to-Plains Corridor

#### Safety

- Improve traffic and pedestrian safety in downtown by reducing conflicts between local traffic and truck and through-traffic

#### Right-of-way

- Minimize residential and business property acquisitions

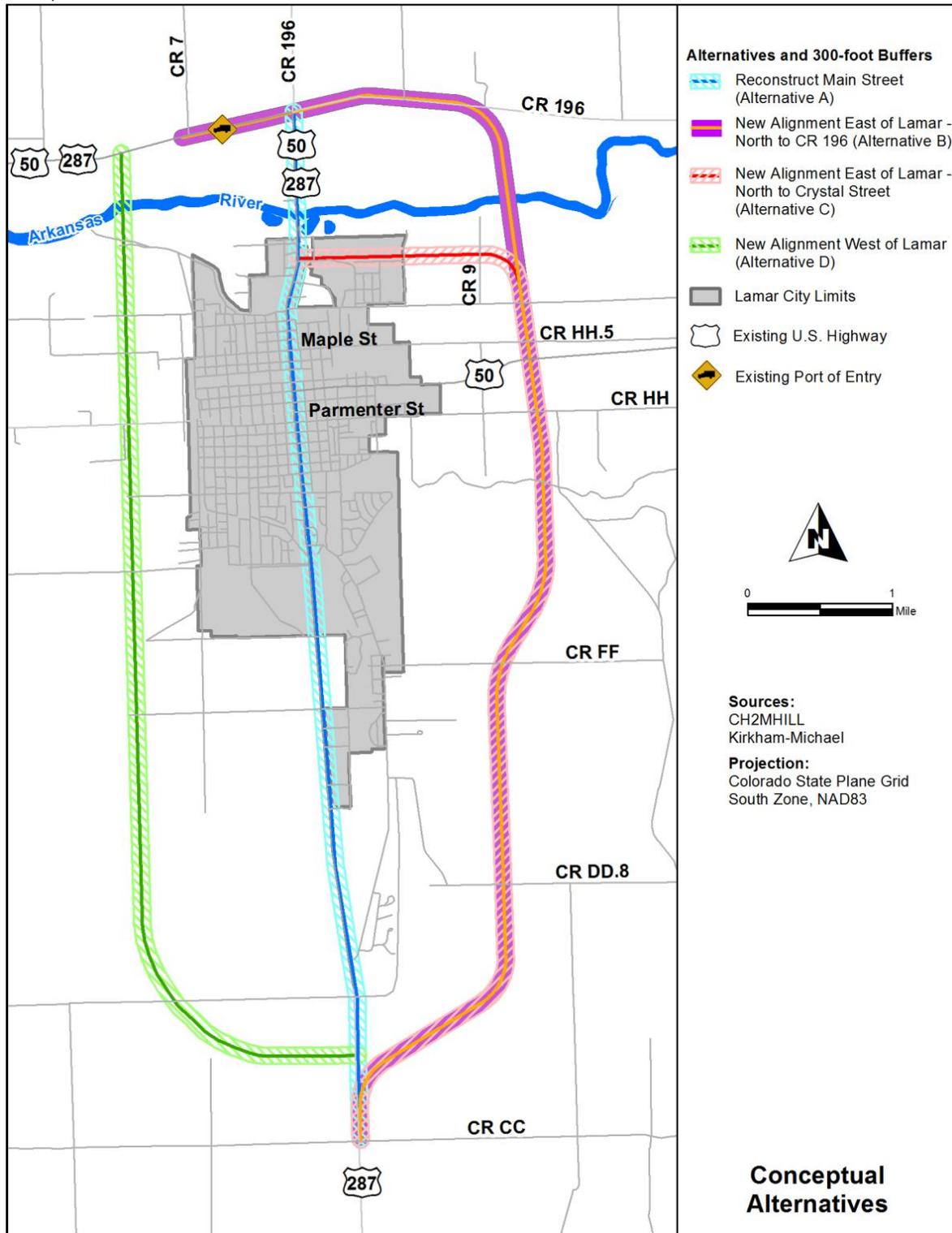
#### Economics

- Minimize impacts to businesses resulting from construction and operations

#### Environment

- Avoid or minimize impacts to environmental resources

**FIGURE 2-1**  
Conceptual Alternatives



**FIGURE 2-2**  
Corridor Evaluation Matrix

Criteria	Performance Measures (Qualitative)	No Action	A	B	C	D
			Reconstruct Main St.	New Corridor on East - North to 196	New Corridor on East - to Crystal	New Corridor on West - North to US 50
Operations	Reduces congestion and improves operations along mainstreet, improves operating speed					
Improved Convenience	Reduce conflicts between through and local traffic					
Safety	Improve traffic safety in downtown by reducing volume of trucks					
Right of Way	Minimize residential and business property acquisitions					
Economics	Minimize impacts to businesses resulting from construction and operations					
Future Improvements	Accommodates future improvements/traffic increases along US 287					
Environment	Alternative may impact environmental resources					

\* This matrix depicts the findings of the corridor evaluation. The higher the percentage of green in the box the better the alternative meets the need of the criteria. The shading indicates the alternative that best meets the criteria, Alternative B.

### 2.1.1 No Action Alternative

Under the No Action Alternative, U.S. 287 would remain along the Main Street alignment, and U.S. 50 would continue to utilize the Olive Street and Main Street alignments through the city. High volumes of truck traffic would continue to travel through downtown using U.S. 287/Main Street and U.S. 50/Olive Street, and northbound trucks would continue having to make a tight, right turn at the Main Street/Olive Street intersection or use the paved, in-town alternate truck route for U.S. 50 through downtown. Travel conditions and travel times for through-trips would not improve, and conflicts between through-traffic and local traffic would remain.

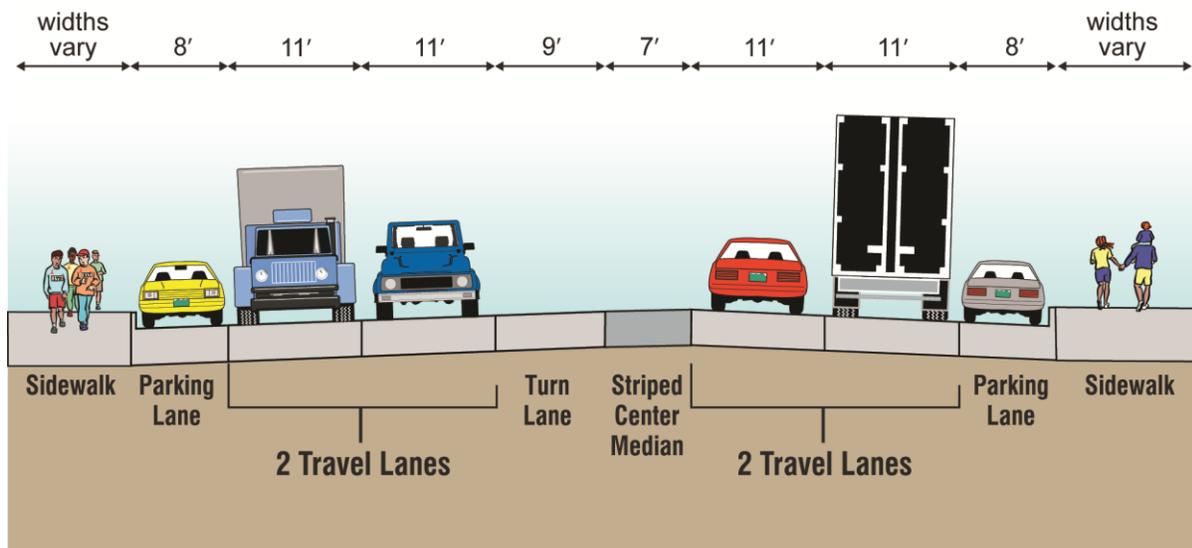
This alternative assumes that the existing 11-foot travel lane widths, 9-foot turn lane widths, 8-foot parallel parking, and the intersection configurations and signal locations would remain unchanged from current conditions (see Figure 2-3). Truck traffic would continue to present safety risks to pedestrians crossing the street because they cannot stop quickly in an

emergency. Pedestrian mobility across U.S. 287/Main Street would remain difficult because of the amount of truck and through-traffic traveling on the road.

Maintenance activities and surface treatment of U.S. 287 would continue in the future under the No Action Alternative. CDOT would continue to maintain the U.S. 287/Main Street and U.S. 50/Olive Street roadways between the existing curbs. The areas beyond the curbs would continue to be maintained by the city. The existing gravel Alternative Truck Route would continue to be maintained by the county. The No Action Alternative would not have any future improvements to address safety or mobility issues. Existing traffic conditions would remain. Because the No Action Alternative does not include any route changes, it is not shown in Figure 2-1, Conceptual Alternatives.

The No Action Alternative would not have ROW or environmental impacts. However, downtown business customers would continue to experience difficult travel and parking conditions due to conflicts between local, truck, and through-traffic downtown, compared to the other alternatives (see Figure 2-2). The corridor screening analysis eliminated the No Action Alternative because it failed to meet the purpose and need by failing to improve local or regional travel and safety conditions. The No Action Alternative is carried forward as a baseline to provide a comparison of potential environmental impacts.

**FIGURE 2-3**  
No Action Alternative



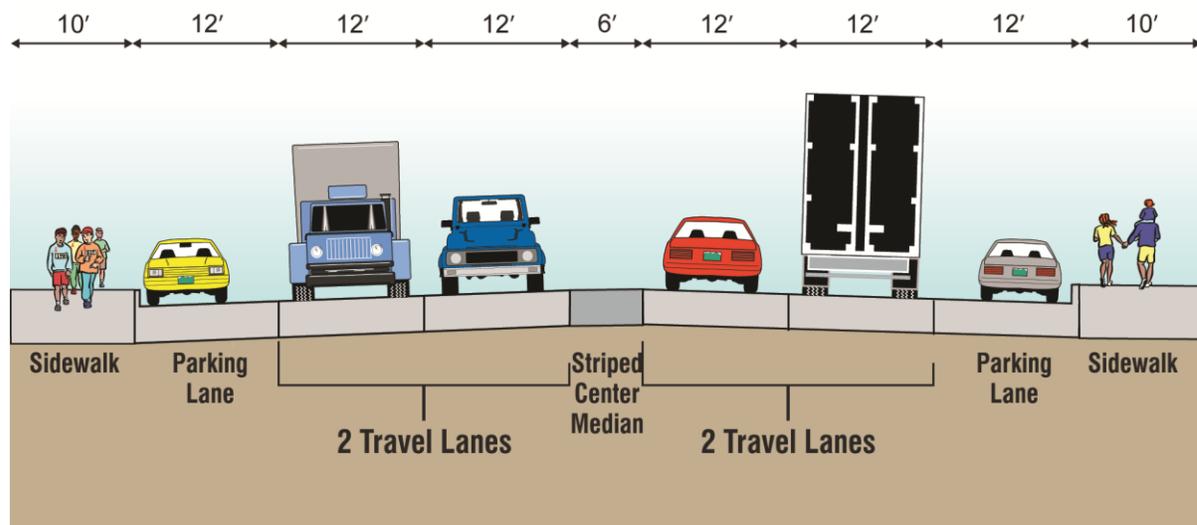
### 2.1.2 Alternative A: Reconstruct Main Street

This conceptual alternative corridor, shown as Alternative A in Figure 2-1, maintains U.S. 287 through the city using the Main Street alignment but consists of a widened cross-section for U.S. 287/Main Street with 12-foot travel lanes, 10-foot shoulders or 12-foot parking lanes, 10-foot sidewalks, and concrete paving (see Figure 2-4). This alternative would reconstruct U.S. 287/Main Street down to the road base to better carry the volumes and heavy loads of freight and commercial traffic. The median would be striped and would vary in width. This alternative assumed all existing signalized intersections would remain for safe traffic operations. Some minor reconstruction of U.S. 50/Olive Street would be required in order to match profiles of the two roads. This alternative would create minimal

ROW and environmental impacts by remaining within existing ROW. However, compared to the other alternatives, downtown business customers would continue to experience difficult travel and parking conditions due to conflicts between local and truck and through-traffic downtown (see Figure 2-2).

Though public input for this alternative was demonstrated at the public meeting held on July 28, 1999, this alternative was not identified as the Proposed Action because it did not meet purpose and need. The evaluation determined the alternative did not remove truck traffic from downtown or improve regional mobility. Current stop conditions and speed limits would remain in place, and travel times for through-trips would not improve. Local traffic operations and safety conditions on U.S. 287/Main Street would not improve because the continued high volumes of truck traffic traveling through town would perpetuate conflicts between local and truck and through-traffic.

**FIGURE 2-4**  
Reconstruct Main Street Alternative



### 2.1.3 Alternative B: New Alignment East of Lamar – North to CR 196

This conceptual alternative corridor, shown as Alternative B in Figure 2-1, lies approximately 1 mile east of U.S. 287. This alternative would improve the existing gravel Alternative Truck Route that diverges from U.S. 287 just north of CR CC, travels east of the city, and joins U.S. 50 at the existing intersection immediately east of CR 9. From here, a newly constructed segment of highway would continue north, bypassing northern Lamar, where it would curve west to cross over CR 196 on a bridge and reconnect with existing U.S. 287/U.S. 50 north of the city. CR 196 would remain in use as a local road in its current location (see Figure 2-6).

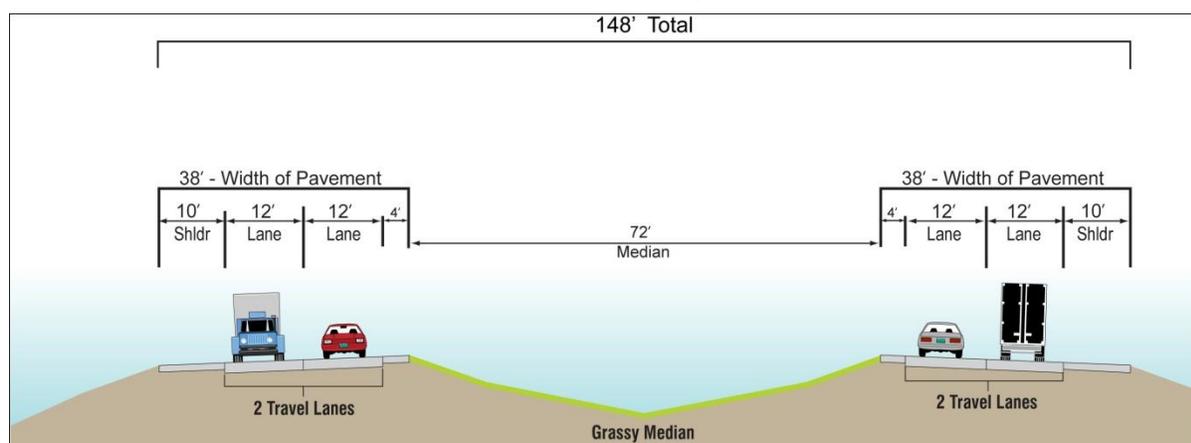
This alternative would require new interchanges at CR CC, Parmenter Street, and CR 196, and a new bridge crossing of the Arkansas River. The ultimate cross-section would have four lanes and a 72-foot median for improved regional mobility and long-term freight traffic growth in the Ports-to-Plains Trade Corridor (see Figure 2-5). Sidewalks would not be

included. The alternative would allow both north-south U.S. 287 traffic and east-west U.S. 50 traffic to bypass the downtown area.

Because the county already owns the corridor of the existing gravel Alternative Truck Route and the northern alignment would avoid developed areas of Lamar, this alternative would not require as many business or residential acquisitions as Alternatives C and D. However, it would require a new roadway be built north of U.S. 50, where no roadway currently exists. The new alignment would require more business and residential acquisitions than Alternative A and would result in greater environmental impacts than Alternatives A and C. Alternative B has the potential to affect downtown businesses reliant on through-traffic, such as gas stations and motels, by diverting through-traffic to a reliever route. However, the alternative would provide economic growth opportunities at the intersection of U.S. 287 and U.S. 50 on a reliever route, and downtown business customers would experience improved travel and parking conditions due to fewer conflicts between local and truck and through-traffic downtown.

This conceptual corridor alignment was selected as the Proposed Action for full analysis in the EA because it met the purpose and need and provided the best level of performance for each of the corridor evaluation criteria. It would route through-traffic onto a higher speed access-controlled facility, allowing improved travel conditions and travel times for through-trips, and accommodate future growth in freight traffic on the Ports-to-Plains Trade Corridor. The removal of truck and through-traffic from Main Street would improve operations on Main Street by reducing delays from slow-moving trucks at traffic signals and reducing conflicts between local and through-traffic. The removal of truck and through-traffic from Main Street would also improve safety downtown by minimizing conflicts with vehicles parallel parking, reducing the number of hazardous loads traveling through town and crossing the BNSF Railway at-grade, and creating safer conditions for pedestrians crossing Main Street. Further details of the Proposed Action, including interchange locations and number of lanes, are described in Section 2.3.

**FIGURE 2-5**  
Typical Cross-Section of the U.S. 287 Reliever Route for Ultimate Configuration



### 2.1.4 Alternative C: New Alignment East of Lamar – North to Crystal Street

The Crystal Street route would improve the existing gravel Alternative Truck Route that diverges from U.S. 287 just north of CR CC, travels east of Lamar, and joins U.S. 50 at the existing intersection immediately east of CR 9. From here, the conceptual alternative would include newly constructed highway for approximately one-quarter mile beyond this intersection with U.S. 50, where it would turn west towards the city following Crystal Street. This route would reconnect with U.S. 287/Main Street near the existing U.S. 287/Main Street and Crystal Street intersection, thereby avoiding the downtown business district.

Shown as Alternative C in Figure 2-1 and following Alternative B for its southern alignment, the Crystal Street route avoids the need for a new crossing of the Arkansas River and, for this reason, was considered as an option in previous studies sponsored by local governments. The ultimate configuration would be a four-lane highway with a median, standard shoulders, and no sidewalk, similar to the configuration shown for Alternative B in Figure 2-5. This alternative would require a grade-separated crossing of the railroad immediately north of the existing U.S. 50 and existing gravel Alternative Truck Route intersection.

Alternative C would require more business acquisitions than Alternative B because of the ROW needs at the new intersection of the Crystal Street U.S. 287/U.S. 50 alignment with Main Street. However, it would have fewer business and residential acquisitions than Alternative D, and fewer environmental impacts than both Alternatives B and D because it would require less construction on a new alignment. Similar to Alternatives B and D, Alternative C has the potential to affect downtown businesses reliant on through-traffic by diverting through-traffic to a reliever route. Alternative C would provide economic growth opportunities at the intersection of U.S. 287 and U.S. 50 on a reliever route, and downtown business customers would experience improved travel and parking conditions due to fewer conflicts between local and truck and through-traffic downtown.

In comparison to Alternative A, Alternative C would improve travel conditions and travel times for through-trips and better accommodate future growth in freight traffic on the Ports-to-Plains Trade Corridor. However, Alternative C would not meet these criteria as well as Alternative B. Alternative C would remove truck and through-traffic from downtown as would Alternative B, and would result in the same mobility and safety improvements on Main Street through downtown as Alternative B. However, Alternative C was not identified as the Proposed Action because it did not meet the project purpose and need as well as Alternative B; it would not fully improve regional mobility because it would still route traffic through the city, and a signal-controlled movement would be required where Crystal Street connects with U.S. 287/Main Street. The signalized intersection would slow traffic and would not improve travel conditions or accommodate future freight traffic growth as well as Alternative B. In summary, a driver traveling along Alternative C would have more signalized stops and a longer travel time than a driver using Alternative B.

### 2.1.5 Alternative D: New Alignment West of Lamar

This EA is the first study to consider realigning U.S. 287 west of Lamar, shown as Alternative D in Figure 2-1. A conceptual alignment was developed that generally diverts traffic from the south at the same location as the existing CR CC intersection with U.S. 287,

and continues north approximately 1 mile west of the existing U.S. 287/Main Street. The ultimate configuration would be a four-lane highway with a median, standard shoulders, and no sidewalk, similar to the configuration shown for Alternative B in Figure 2-5.

Alternative D would require a new roadway be built west of Lamar, where no roadway currently exists. The new alignment would require more business and residential acquisitions than Alternative B and would result in greater environmental impacts than the other alternatives. Similar to Alternatives B and C, Alternative D has the potential to affect downtown businesses reliant on through-traffic by diverting through-traffic to a reliever route. However, the alternative would provide economic growth opportunities at the intersection of U.S. 287 and U.S. 50 on a reliever route, and downtown business customers would experience improved travel and parking conditions due to fewer conflicts between local and truck and through-traffic downtown.

Alternative D was not identified as the Proposed Action because it did not meet the project purpose and need as well as Alternative B, and it would cause greater environmental impacts than the other alternatives. Alternative D would not improve regional mobility as well as Alternative B because it would not improve regional travel conditions and travel times for through-trips on U.S. 50. While U.S. 287 through-traffic would be re-routed to the west of Lamar, traffic on U.S. 50 would continue to travel through downtown Lamar and would continue to experience delays from the existing traffic signals and reduced speed limit on U.S. 50/Olive Street.

## **2.2 Interchange Alternatives Evaluation**

Alternative B was advanced for additional analysis in the EA as the Proposed Action for the U.S. 287 at Lamar Reliever Route (reliever route). The second step in the alternatives evaluation was evaluating interchange design options at three locations in the reliever route corridor:

- Southern project limit (U.S. 287 just north of CR CC)
- Intersection of the reliever route with U.S. 50 east of downtown Lamar; and
- Northern project limit of the reliever route (0.25 mile north of the intersection of CR 196 and existing U.S. 287/U.S. 50)

The interchange locations were determined through coordination with CDOT staff, community leaders from the city and county, local business owners, and the public.

Interchange design options were developed for each of the three locations along the corridor. The designs were then evaluated and refined based on specific traffic operational performance objectives for each of the interchanges, as shown in Table 2-1. Issues such as local access, local operations, regional mobility for cars and commercial truck traffic, and ease of entering the downtown commercial area were considered as designs evolved.

**TABLE 2-1**  
Interchange Performance Objectives

South Interchange	East Interchange	North Interchange
<ul style="list-style-type: none"> <li>Free-flow movement from northbound U.S. 287 to northbound Main Street</li> <li>Free-flow movement from northbound U.S. 287 to northbound reliever route</li> <li>Free-flow movement from southbound reliever route to southbound U.S. 287</li> <li>Access from southbound reliever route to northbound Main Street</li> <li>Access from southbound Main Street to southbound U.S. 287</li> <li>Access from southbound Main Street to northbound reliever route</li> </ul>	<ul style="list-style-type: none"> <li>Free-flow movement from southbound reliever route to eastbound U.S. 50</li> <li>Free-flow movement from westbound U.S. 50 to northbound reliever route</li> <li>Access from eastbound Olive Street to northbound or southbound reliever route</li> <li>Accommodate a system-level interchange, which provides free-flow movements between U.S. 287 and U.S. 50 in all directions</li> <li>Grade separation with BNSF and no relocation of BNSF</li> <li>Provide/maintain local access adjacent to the interchange</li> <li>Accommodate city's planned future Crystal Street access to reliever route (provide adequate spacing of accesses)</li> </ul>	<ul style="list-style-type: none"> <li>Free-flow ramp movement from eastbound U.S. 287/U.S. 50 to southbound Main Street</li> <li>Free-flow movement from existing eastbound U.S. 287/U.S. 50 to southbound reliever route</li> <li>Free-flow movement northbound reliever route to westbound U.S. 287/U.S. 50</li> <li>Free-flow movement from northbound Main Street to westbound U.S. 287/U.S. 50</li> <li>Maintain continuity of surrounding roadway network including CR 196</li> <li>Provide local access (frontage roads, etc.)</li> <li>Tie into U.S. 287/U.S. 50 east of Port of Entry</li> </ul>

In addition to establishing the interchange performance objectives, selection criteria were developed in several categories for evaluating the interchange design alternatives. The interchange evaluation criteria were presented to the public during an open house on November 14, 2002. During the open house, additional interchange evaluation criteria were identified, and some measures were revised so they would better reflect specific concerns important to the community. The interchange evaluation criteria included accessibility, operations, safety design, environmental impacts, implementation, and ROW needs.

Once the evaluation criteria were established, the project team developed several configurations at each of the three interchanges. The layout of each of the interchange alternatives focused on incorporating solutions that achieved the performance objectives while avoiding or minimizing impacts to environmental resources or addressing physical constraints. Some conceptual interchange alternatives presented to the public were advanced for further evaluation because they achieved the specified performance objective. A schematic diagram and analysis of all of the interchange options is presented in the *Summary of 2025 Interchange Level of Service Data Collection, Analysis, and Results for the U.S. 287 at Lamar Project Technical Memorandum (TM)* (CH2M HILL, 2003a).

The project team evaluated each of the advanced interchange alternatives and established values for each criterion. The values were added to the "Interchange Alternatives Evaluation Matrix," included in the *Summary of 2025 Interchange Level of Service Data Collection, Analysis, and Results for the U.S. 287 at Lamar Project TM* (CH2M HILL, 2003a). This

evaluation led to the selection of a single interchange configuration at each interchange location.

The completed evaluation matrix along with the project team's recommended interchange designs were presented to the public during a public meeting held on March 25, 2003. Participants in small groups discussed the alternatives and the values obtained for each criterion. As a result of public input, the north interchange was shifted farther north to be located on mostly agricultural land, thereby reducing the number of parcels affected and eliminating the need for several business relocations and residential property acquisitions (see Figure 2-9). The eastern interchange was designed to provide loop ramps for free-flow movement between U.S. 287 and U.S. 50 (see Figure 2-8). The project team selected a trumpet configuration for the southern interchange, which narrows the footprint of the interchange (see Figure 2-7). Details of the three interchanges are provided in the following section.

The final step in developing the Proposed Action was selecting a site for the crossing of the Arkansas River. The proposed crossing was selected by aligning the bridge with the highway corridor and making the crossing as perpendicular as possible to the river, while minimizing the number of affected parcels and avoiding large stands of mature cottonwood trees near the river.

## 2.3 Proposed Action

The Proposed Action is known officially as the U.S. 287 at Lamar Reliever Route (reliever route). The Proposed Action relocates U.S. 287 and U.S. 50 from Main Street and Olive Street in downtown Lamar to a new alignment approximately 1 mile east of Lamar to serve as an alternate route for non-stop regional truck and automobile traffic (Figure 2-6). U.S. 385 is contiguous with both U.S. 287 and U.S. 50 through Lamar and would also be relocated onto the reliever route.

The Proposed Action consists of an ultimate configuration of four lanes and a 72-foot median to provide regional mobility and accommodate long-term freight traffic growth on the Ports-to-Plains Trade Corridor. The four-lane configuration would also be consistent with the vision for mobility and safety improvements on U.S. 50 between Pueblo and the Kansas state line. The four-lane configuration would be the ultimate phase of construction. The Proposed Action would be constructed initially as a two-lane roadway until traffic operations would benefit from expansion. The two-lane configuration would be the interim phase of construction.

The alignment would have three interchanges and two local access points provided along the route for future connections to Lamar. The interchanges would be located slightly north of existing CR CC south of the city to provide access between Main Street and the reliever route; between existing U.S. 50/Olive Street and Parmenter Street east of Lamar to provide access between U.S. 50/Olive Street and the reliever route; and at CR 196 north of the city to provide access between CR 196, Main Street, and the reliever route. The interchanges are described further in Section 2.3.3. Two local access points to be provided on the reliever route would be designated at Crystal Street and at Lake Road.

The Proposed Action also includes a new grade-separated crossing of the BNSF Railway. New bridges would be constructed over the Arkansas River, the Markham Arroyo, and Willow Creek. In addition, the alignment would cross the Vista Del Rio Ditch, Hyde Canal, Lamar Canal, and Fort Bent Canal using either bridge or culvert crossings.

### **2.3.1 Alignment**

This alternative would improve the existing gravel Alternative Truck Route that diverges from U.S. 287 just north of CR CC, travels approximately 1 mile east of the city, and joins U.S. 50 at an existing intersection just east of CR 9. From here, a newly constructed segment of highway would continue north, bypassing northern Lamar, where it would curve west to cross over CR 196 on a bridge and reconnect with existing U.S. 287/U.S. 50 north of the city, as shown in Figure 2-6. CR 196 would remain in use as a local road in its current location (see Figure 2-6).

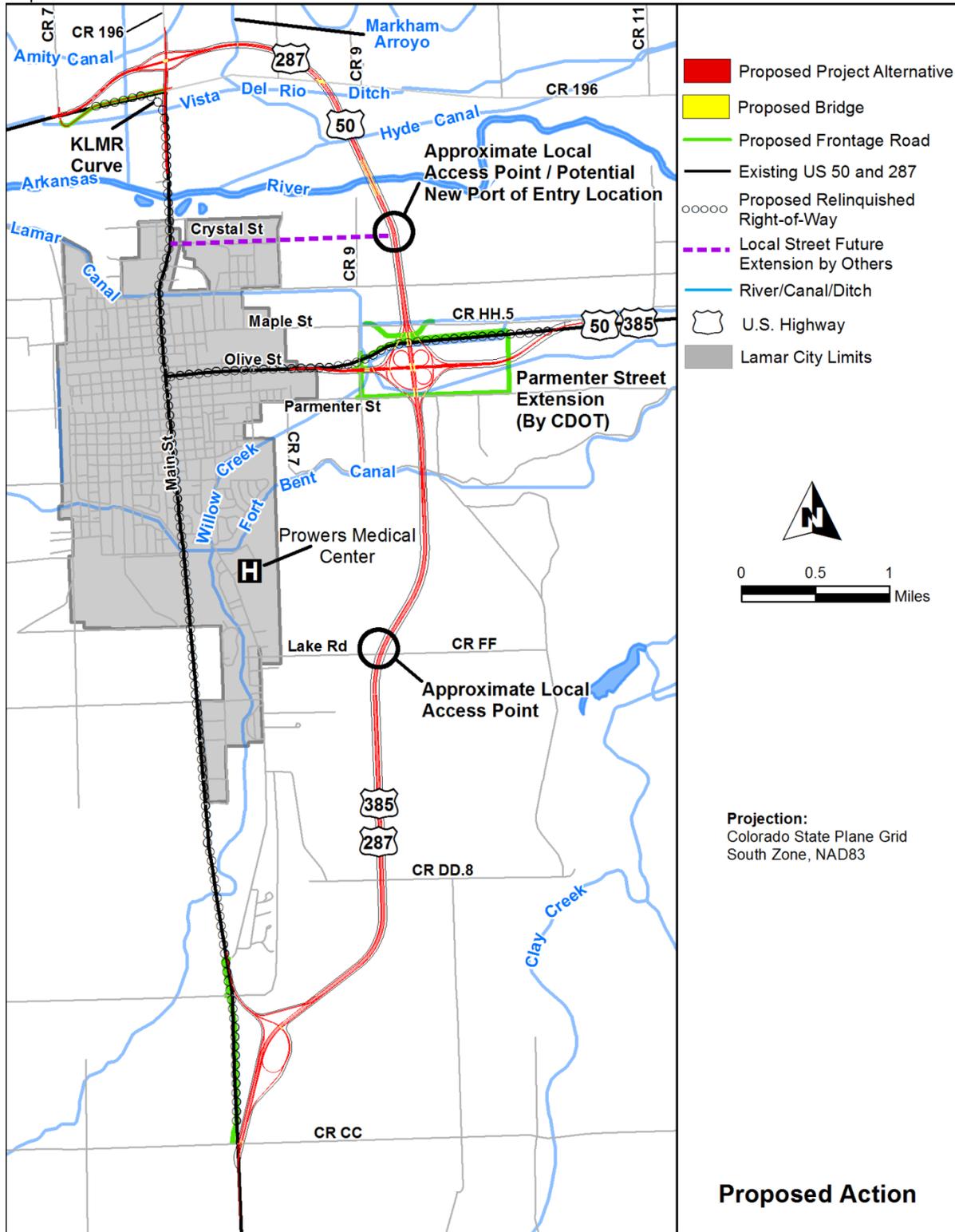
As part of the Proposed Action, CDOT would relinquish the existing U.S. 287/Main Street route from the south project limit near CR CC to the north project limit at the new alignment's intersection with CR 196. CDOT would also relinquish the existing section of U.S. 50 from CR HH.5 to Main Street. Ownership would be transferred from CDOT to the city and/or county through a process documented in an Intergovernmental Agreement (IGA). The designations of U.S. 287 and U.S. 50 would be moved from the Main Street and Olive Street alignments to the reliever route, and Main Street and Olive Street would be designated as business routes for U.S. 287 and U.S. 50.

### **2.3.2 Cross-Section**

The ultimate configuration of the reliever route would consist of a divided four-lane highway with a 72-foot median (see Figure 2-5). This configuration would improve regional mobility in the Ports-to-Plains Trade Corridor and U.S. 50 corridor; provide flexibility to address travel needs as freight traffic increases in these two corridors; and is consistent with the Ports-to-Plains Trade Corridor vision of a four-lane divided facility. The reliever route would be constructed initially as a two-lane roadway, as described in Section 2.4 of this chapter. Although traffic volumes in 2035 are not projected to warrant four-lane capacity, traffic operations would benefit from expansion to four lanes. For example, providing safe passing opportunities and separating fast- and slow-moving vehicles on a four-lane facility would provide more consistent and faster average travel times for regional trips. When traffic operations indicate a need for expansion, CDOT would construct the median and second set of lanes. The median and the second set of lanes could be constructed by CDOT when traffic operations indicate a need for expansion or by others (including local agencies or private sponsors) as funding becomes available.

The proposed state facility would be access controlled, meaning the roadway would be accessible via interchanges and intersections and free of private property access. ROW required for the four-lane facility ranges from approximately 300 feet wide along the mainline and 2,000 feet to accommodate the interchanges. The roadway width would be 148 feet. The proposed speed for the mainline is 65 mph.

**FIGURE 2-6**  
Proposed Action



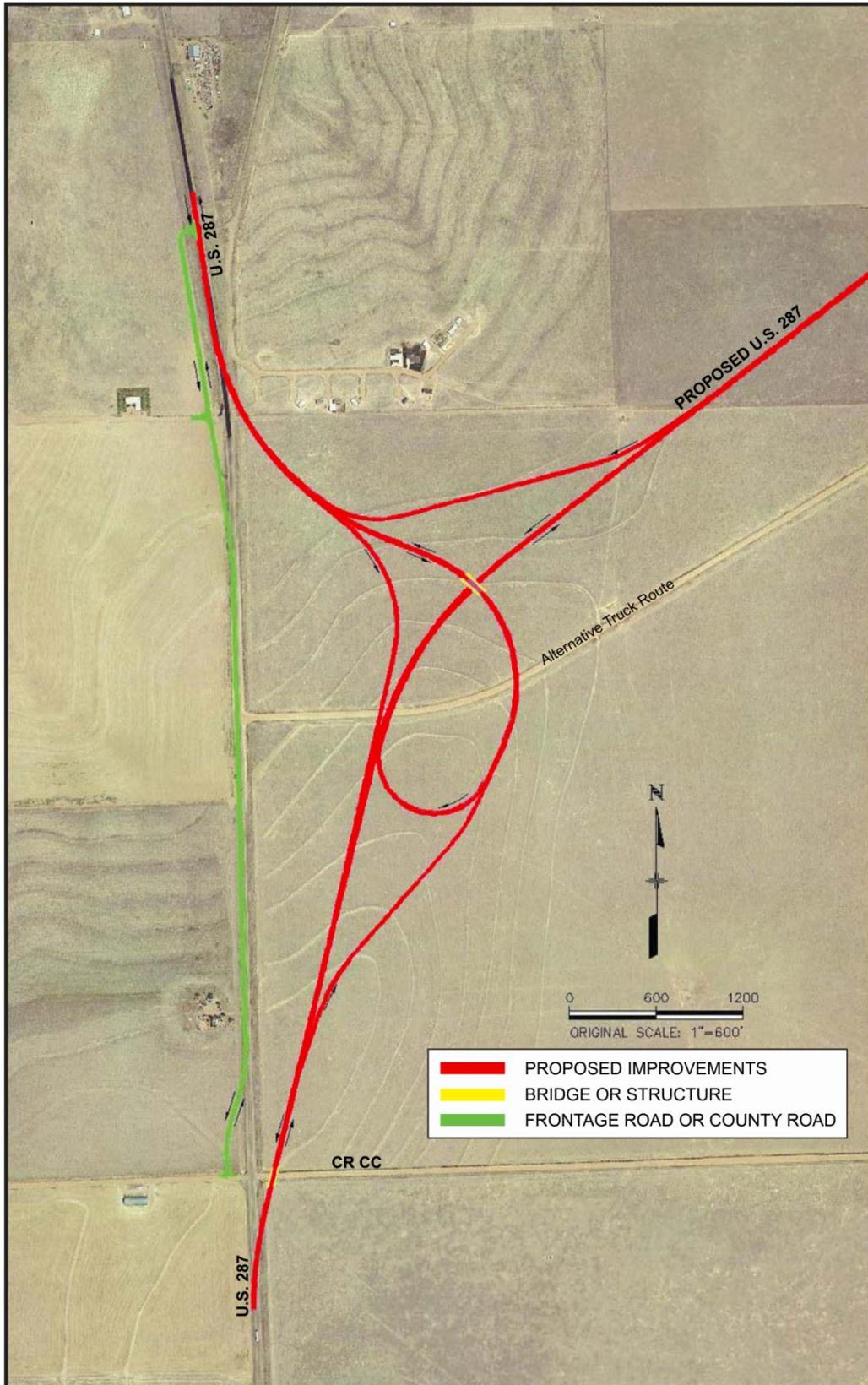
### 2.3.3 Interchanges

The interchanges would be located at the southern project terminus just north of CR CC, east of downtown Lamar along the alignment crossing U.S. 50, and at the northern project terminus where U.S. 287/U.S. 50 intersect with CR 196. At the southern terminus, the proposed interchange for the four-lane ultimate phase is a trumpet configuration providing a free-flow movement into downtown Lamar (see Figure 2-7). A 1.2-mile segment of existing U.S. 287 would be reconfigured to serve as a frontage road to provide local access. The interim phase interchange configuration is described in Section 2.4.1.

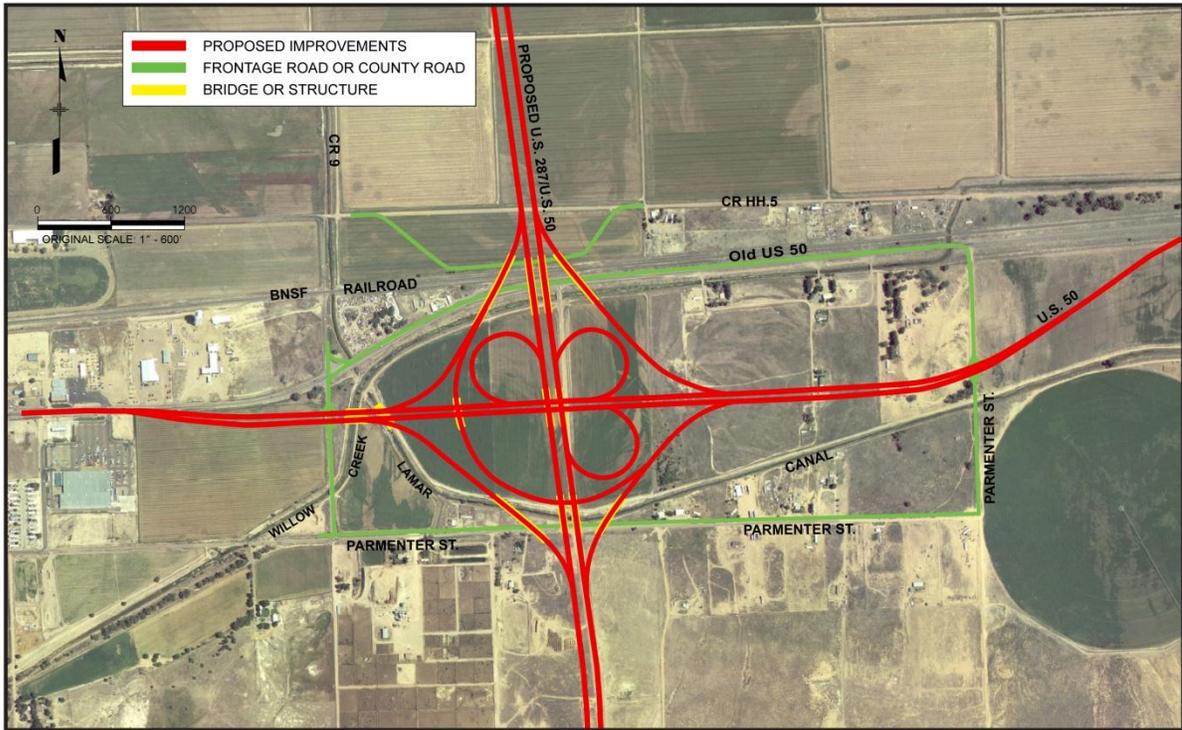
The east interchange with U.S. 50 is located east of CR 9 and consists of a wide diamond with directional loop ramps for the four-lane ultimate phase (see Figure 2-8). The mainline would cross over the railroad tracks and CR HH.5 at a grade-separated crossing just north of existing U.S. 50. To facilitate this interchange, a 1.8-mile segment of U.S. 50 between CR HH.5 and CR 7 would realign about 1,000 feet south of its present location. In addition, CR HH.5 would shift south of its current alignment for a 0.5-mile stretch (moving closer to the railroad) to minimize the span of the grade-separated crossing over the railroad and CR HH.5. A restricted-access, grade-separated crossing is proposed over existing Parmenter Street on the south end of the interchange. An extension of Parmenter Street to the east and then to the north, approximately 0.4 miles in length, would be constructed by CDOT to provide access back to U.S. 50. The Parmenter Street extension would be a two-lane facility maintained by the county. The interim phase interchange configuration is described in Section 2.4.1.

A diamond interchange is proposed at the northern project terminus with CR 196 and Main Street for the four-lane ultimate phase (see Figure 2-9). The realignment of U.S. 287/U.S. 50 would reconnect with the existing highway at CR 7 immediately west of the existing Port of Entry station, requiring the relocation of the Port of Entry. The existing high-speed curve of U.S. 287 and U.S. 50, known locally as the “KLMR curve” for the radio station near the west tangent of the curve, may be removed as that movement is no longer needed. The existing U.S. 287 and U.S. 50 route through Lamar would be designated as Main Street. The interim phase interchange configuration is described in Section 2.4.1.

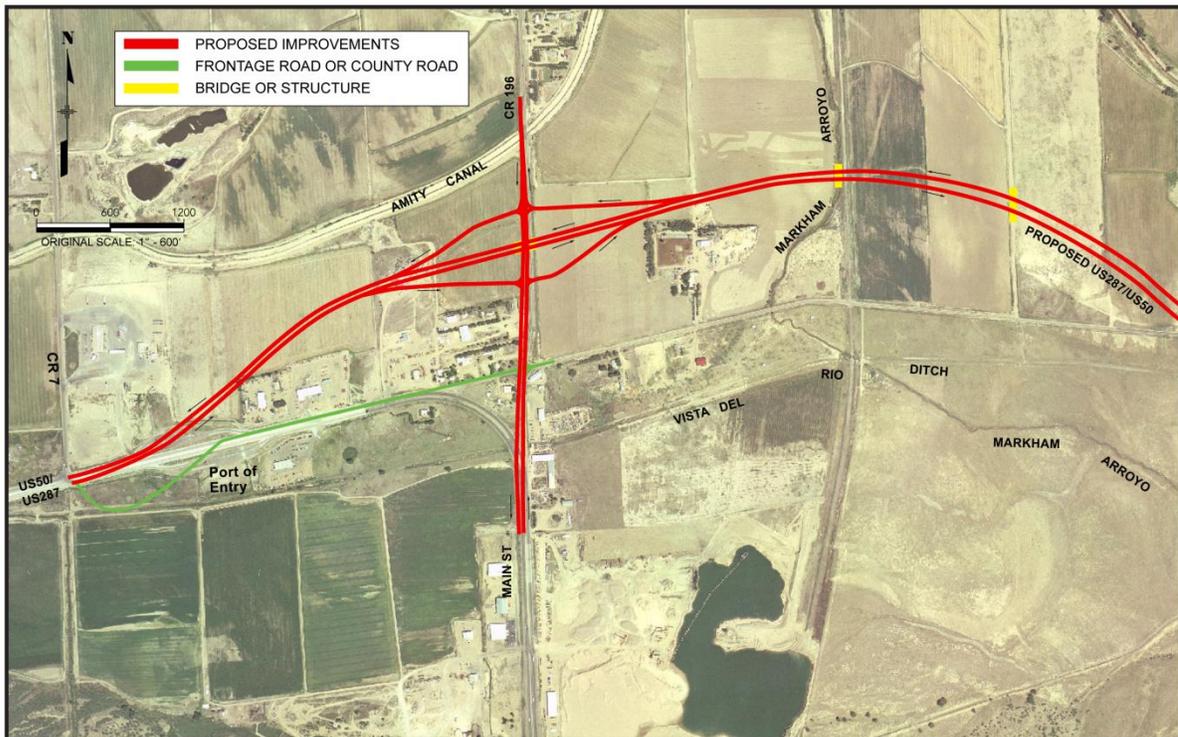
**FIGURE 2-7**  
Interchange Location at Southern Project Terminus



**FIGURE 2-8**  
Interchange Location East of Downtown Lamar



**FIGURE 2-9**  
Interchange Location at Northern Project Terminus



### **2.3.4 Local Road Access**

Lake Road currently extends out to the existing gravel Alternative Truck Route, approximately 3 miles north of the proposed southern interchange. The Proposed Action provides an at-grade intersection at Lake Road, with stop signs on Lake Road only, for access to the Prowers County Medical Center and southern Lamar. Lake Road would be improved by others and is not a part of this project.

A second local access point to U.S. 287 would be provided approximately 1 mile north of the U.S. 50 interchange. This at-grade connection, with stop signs on the cross street only, would allow the city and/or county to construct the planned extension of existing Crystal Street east to connect with relocated U.S. 287 and U.S. 50. The city's planned future Crystal Street extension would be constructed by the city and/or county and is not part of this project.

### **2.3.5 Bridge Crossings**

The new reliever route would cross the Arkansas River approximately 1.4 miles downstream of the existing U.S. 287 and U.S. 50 bridge (see Figure 2-6). The proposed crossing would consist of two bridge structures, one carrying the two northbound lanes and the other carrying the two southbound lanes. The structures would be 1,400-foot-long, multi-span structures to provide adequate flood capacity and wildlife movement along the riparian corridor. Further design of the Proposed Action will work to minimize the bridge footprint to the adjacent riparian, wetland, and open water areas of the Arkansas River floodplain. New bridges would be constructed over the Markham Arroyo and Willow Creek as well. The alignment would cross the Vista Del Rio Ditch, Hyde Canal, Lamar Canal, and Fort Bent Canal using either bridge or culvert crossings (see Figure 2-6).

The Proposed Action also includes new grade-separated crossings of Parmenter Street, Olive Street, the BNSF Railway, and CR HH.5 in the vicinity of the east interchange and a grade-separated crossing of CR 196 northwest of the new Arkansas River bridge.

### **2.3.6 Stormwater Management**

Additional project features would include permanent stormwater best management practices (BMPs) to treat highway stormwater runoff before it enters the adjacent water bodies. Specific BMPs will be determined during final design and may include roadside ditches, constructed wetlands, and extended detention basins. The sizing and location of the features will also be calculated during final design.

### **2.3.7 Benefits of the Proposed Action**

The Proposed Action would provide several important benefits locally and regionally by:

- Improving travel conditions for pedestrians and passenger vehicles in the city by reducing the number of long-distance trucks in the downtown business district.
- Improving safety for pedestrians and passenger vehicles by reducing conflicts with long-distance commercial freight truck traffic and trucks hauling hazardous materials in Lamar's downtown business district.

- Improving regional travel mobility by allowing through-traffic more efficient cross-country travel routes, increasing design and travel speed on the federal highway system in and near the city, and improving the operation of the connection between U.S. 287 and U.S. 50.
- Providing a grade separation of the highway over the BNSF Railway, thereby reducing the number of vehicles and trucks hauling hazardous materials traveling through the at-grade railroad crossing within the downtown area.
- Accommodating future growth of freight traffic in the Ports-to-Plains Trade Corridor.

## 2.4 Project Phasing and Funding

The Proposed Action would be implemented in phases, as growth occurs and traffic increases in the study area and as funding becomes available. The two-lane interim phase could be in place for a number of years before the ultimate phase is completed. This approach to project implementation addresses those improvements that are needed first and provides the flexibility to implement improvements as needs arise and additional funding becomes available.

During the interim phase, the Proposed Action would be constructed as a two-lane facility, as shown in the cross-section in Figure 2-11. The 72-foot-wide median and second set of travel lanes would not be constructed in the interim phase. The interim two-lane configuration would address local mobility and safety concerns by providing a more appropriate route for through-traffic. The interim phase configuration is described in more detail in Section 2.4.1.

The ultimate phase would consist of a four-lane divided facility, as described in Section 2.3, and would be consistent with the configuration envisioned by the Ports-to-Plains Trade Corridor. However, U.S. 287 in Lamar is not currently included in the Statewide Transportation Improvement Program (STIP) for the ultimate phase (CDOT, 2011a). Projected 2035 traffic volumes do not warrant the additional capacity the four-lane configuration would provide. Current traffic modeling is unable to project when traffic volumes would warrant four-lane capacity. However, as freight traffic grows in response to completion of remaining sections of the Ports-to-Plains Trade Corridor and possibly in response to safety and mobility improvements on U.S. 50 between Pueblo and the Kansas state line, the four-lane ultimate phase would provide flexibility in meeting travel needs. Safe passing opportunities and the separation of fast- and slow-moving vehicles would provide a more consistent and higher travel speed and would improve regional mobility. When traffic operations indicate a need for expansion and funds are secured, the Proposed Action would be expanded to a four-lane facility, with three new interchanges, a new bridge over the Arkansas River, and two local access points provided along the route for future connections to the city. The availability of funding will play a major role in determining when either phase begins. Cost estimates and potential funding sources for both the interim and ultimate phases are provided in Table 2-2 and Table 2-3. Construction funds would comprise a mix of sources including federal and state transportation funds, Ports-to-Plains Trade Corridor program funds, and local funds (a mix of city and county). Table 2-3 summarizes current allocated funding for the Proposed Action. A specific year for

construction of either configuration has not been established at this time, and the numbers presented in these tables are for planning purposes.

Municipal bonds may be issued to fund local governments' shares of the project. Bonding costs are not included in the current cost estimates and will be determined prior to bond issuance, after the final design plans are complete and an accurate estimate of the cost of construction is known. At that time, the Southeast Colorado Transportation Improvements Program (TIP), Long-Range Transportation Plan, and the STIP will be amended to reflect the total project costs.

CDOT's 2012-2017 STIP programs \$10.2 million in funds for this project, of which \$10 million are programmed for fiscal years 2016-2017 and \$0.2 million are programmed for fiscal year 2013. The corridor vision for U.S. 287 presented in the *Southeast Transportation Planning Region 2035 Regional Transportation Plan* (CDOT, 2008) identifies the highway as high-priority investment to improve safety and maintain system quality on the National Ports-to-Plains Trade Corridor. The corridor vision for U.S. 50 presented in the same plan identifies U.S. 50 as a high-priority investment for mobility improvements and connections between the Ports-to-Plains Trade Corridor and I-25.

**TABLE 2-2**  
Cost Estimate for Proposed Action (2010 dollars)

<b>Project Activity</b>	<b>Interim Phase (Millions)</b>	<b>Ultimate Phase (Millions)</b>	<b>Total Cost (Millions)</b>
Planning, Design	\$ 11.5	\$ 7.7	\$ 19.2
ROW (includes Port of Entry acquisition)	\$ 1.1	\$ 0.0	\$ 1.1
Construction	\$ 57.5	\$ 38.4	\$ 95.9
<b>Total Cost</b>	<b>\$70.1</b>	<b>\$46.1</b>	<b>\$116.2</b>

**TABLE 2-3**  
Funding Currently Allocated for the Proposed Action (dollars in year of expenditure)

<b>Funding Entity</b>	<b>Funding Program</b>	<b>Amount (Millions)</b>	<b>Funding Available</b>
State	FASTER Safety Allocation	\$10.0	Fiscal Year 2016-2017
Federal	CDOT Regional Priority Program	\$0.166	Fiscal Year 2013
State	CDOT Regional Priority Program	\$0.034	Fiscal Year 2013
State	State funds from General Fund (informally called 7 <sup>th</sup> Pot funds)*	\$2.0**	Fiscal Year 2013
Federal	Individual Appropriation	\$1.3**	Fiscal Year 2013
<b>Total Funding</b>		<b>\$13.5</b>	

\* Sources comprise SB 97-1 sales and use tax revenues, General Fund moneys from Capital Construction Fund appropriations, gaming funds, and General Fund excess reserve moneys.

\*\* Funding for design.

Source: CDOT, 2011a. *Statewide Transportation Improvement Program (STIP) Fiscal Years 2012-2017*. Adopted May 19.

## 2.4.1 Interim Phase

CDOT would construct interim improvements within the ultimate four-lane ROW corridor, as described below and illustrated in Figures 2-10 and 2-11. As shown in Table 2-2, constructing the interim phase requires an estimated \$70.1 million (in 2010 dollars). This cost estimate includes the cost of acquiring all property required for the four-lane ultimate phase and the acquisition of the Port of Entry, which would be impacted by the proposed reliever route alignment.

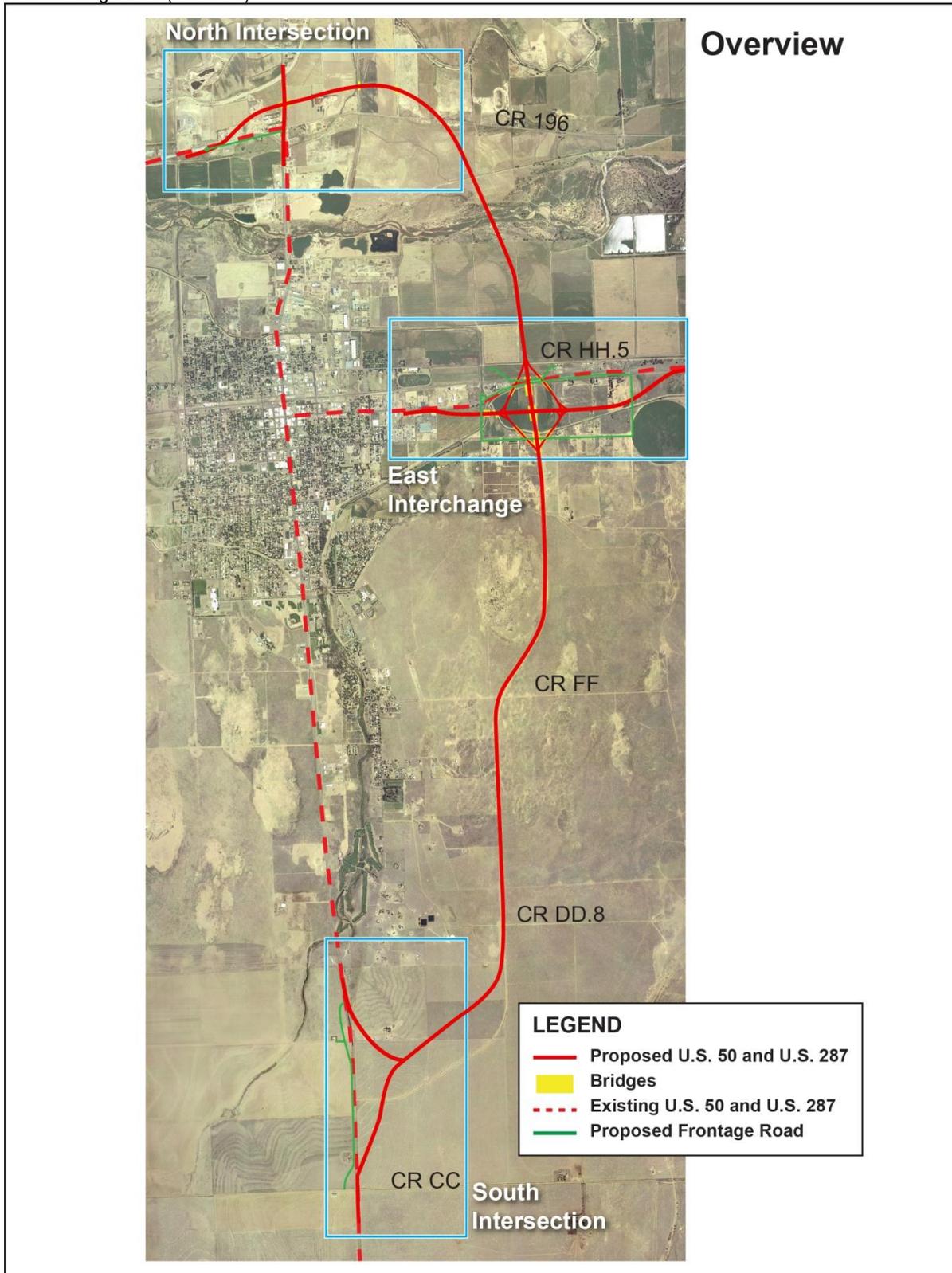
- The interim highway mainline would be a two-lane facility on either the northbound or southbound alignment described above in the Proposed Action. The typical section for the interim condition would include two 12-foot lanes and two 10-foot shoulders (see Figure 2-11).
- The interim bridge over the Arkansas River would allow for two lanes of traffic.
- The interim south interchange would be an at-grade intersection with the new reliever route carrying through-traffic and a stop sign controlling southbound Main Street traffic. The western frontage road would be constructed to provide local access.
- The interim east interchange would be a diamond interchange with U.S. 287 and U.S. 50, with U.S. 50 realigned to the south to provide separation from the BNSF Railway tracks. CR HH.5 would be realigned to the south adjacent to the BNSF Railway tracks in order to minimize the span of the grade-separated crossing. The interchange ramps would be aligned wide to match the ultimate configuration's loops and directional ramps. At-grade intersections would be provided at the Parmenter Street/U.S. 50 intersection and the CR 9/Olive Street intersection.
- The interim north interchange would be an at-grade intersection with the new reliever route carrying through-traffic and a stop sign controlling Main Street/CR 196 traffic. The south frontage road (extending from Main Street to U.S. 50 east) would be constructed to provide local access.

The interim configuration includes stormwater detention and other utilities, and accommodates the two local access points described in the Proposed Action. Elements constructed for the interim configuration would be used in the ultimate configuration, to ensure efficient investment in the project.

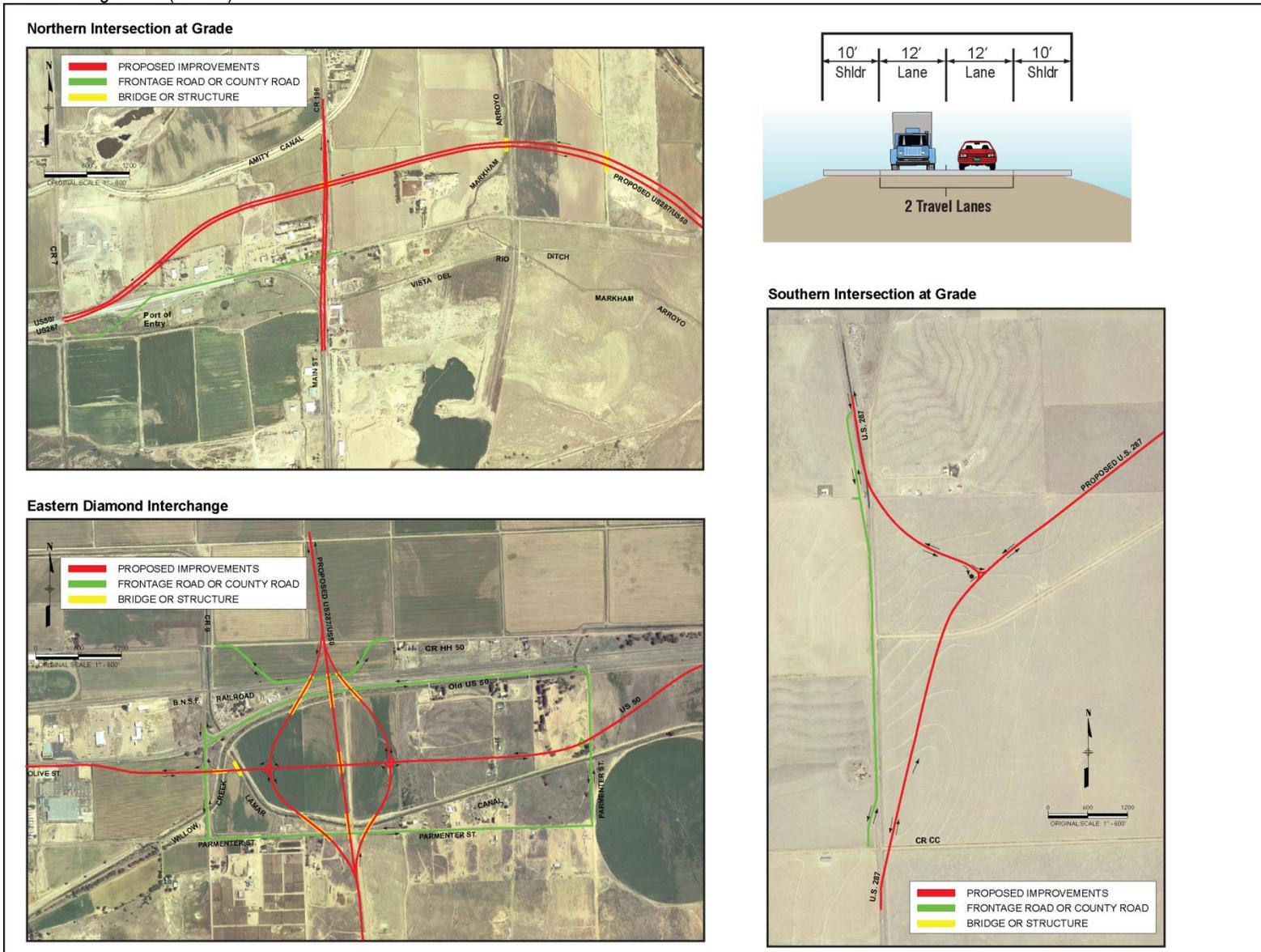
If funding were not adequate to construct the entire interim phase at one time, construction could be separated into smaller packages. The priority of interim construction segments would be:

- Realign the east U.S. 50 segment to the south to provide adequate separation from the BNSF Railway.
- Construct the northeast portion of the reliever route across the Arkansas River to provide a full reliever route for U.S. 50 (US 287 route would remain on Main Street).
- Construct the south portion of the reliever route next to provide a full reliever route for U.S. 287.

**FIGURE 2-10**  
Interim Configuration (Overview)



**FIGURE 2-11**  
Interim Configuration (Details)



## **2.4.2 Ultimate Phase**

The ultimate phase would be the Proposed Action as described in Section 2.3. Constructing the ultimate phase requires an estimated additional \$46.1 million (in 2010 dollars), as shown in Table 2-2. These elements of the project would be built in the future when traffic conditions along the U.S. 287 corridor warrant expansion. The ultimate phase would construct a median and two additional lanes adjacent to the lanes previously constructed during the interim phase.