

2.0 ALTERNATIVES

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
<u>2.0 ALTERNATIVES</u>	1
<u>2.1 INTRODUCTION</u>	1
<u>2.2.1 Issues Team</u>	1
<u>2.2 PUBLIC/AGENCY INVOLVEMENT PROCESS</u>	2
<u>2.2.1 Issues Team</u>	2
<u>2.2.2 Technical Committee</u>	2
<u>2.2.3 Project Management Team</u>	2
<u>2.2.4 Ecological Resources Technical Advisory Committee</u>	3
<u>2.3 ALTERNATIVE EVALUATION PROCESS OVERVIEW</u>	3
<u>2.4 NO-ACTION ALTERNATIVE</u>	6
<u>2.4.1 I-25 Corridor Elements of the No-Action Alternative</u>	7
<u>2.4.2 US 85 Corridor Elements of the No-Action Alternative</u>	8
<u>2.5 PREFERRED ALTERNATIVE</u>	12
<u>2.5.1 I-25 Corridor Elements of the Preferred Alternative</u>	14
<u>2.5.2 US 85 Corridor Elements of the Preferred Alternative</u>	19
<u>2.5.3 Transportation Demand Management Program for Preferred Alternative</u>	26
<u>2.6 OTHER ALTERNATIVE</u>	45
<u>2.6.1 I-25 Corridor Elements of the Other Alternative</u>	47
<u>2.6.2 US 85 Corridor Elements of the Other Alternative</u>	53
<u>2.6.3 Transportation Demand Management Program for the Other Alternative</u>	60
<u>2.7 BICYCLE AND PEDESTRIAN FACILITIES ALONG THE US 85 CORRIDOR</u>	79
<u>2.8 WILDLIFE CROSSINGS ALONG THE US 85 CORRIDOR</u>	84
<u>2.9 ALTERNATIVE COSTS</u>	88
<u>2.10 ALTERNATIVE VARIATIONS</u>	88
<u>2.10.1 Variation 1</u>	88
<u>2.10.1 Variation 1</u>	88
<u>2.10.2 Variation 2</u>	88
<u>2.10.3 Variation 3</u>	88
<u>2.11 THE LONG-TERM VISION FOR SOUTH I-25 and US 85 THROUGH 2020 AND BEYOND</u>	91
<u>2.11.1 I-25 CORRIDOR LONG-TERM VISION ELEMENTS</u>	91

2.11.2 US 85 Corridor Long-Term Vision Elements	98
2.11.3 Responsibility of Long-Term Vision Elements	100
2.12 ALTERNATIVES ELIMINATED FROM CONSIDERATION	100
2.12.1 Alternatives Eliminated at Level 1: Eliminate Unrealistic Alternatives	101
2.12.2 Alternatives Eliminated at Level 2: Evaluation of Alternatives by Mode and Corridor	102
2.12.3 Alternatives Eliminated at Level 3: Evaluation of Packages by Corridor	109
2.12.4 I-25 and US 85 Transportation Management Alternatives	118
2.12.5 Other Alternatives Eliminated	118
2.12.6 DEIS Alternatives Eliminated	124

2.1 INTRODUCTION

This chapter presents the three alternatives (and three variations) still under consideration and the alternative evaluation process. The alternatives presented in this chapter are the result of an extensive public and agency process, combined with environmental and technical analysis. Elements of the public and agency process included several scoping meetings, numerous public meetings, neighborhood group meetings, one-on-one meetings, media outreach, project newsletters, a Web site, a project office, and various advisory committees.

From the public and agency scoping meetings, more than 80 alternatives for improvements were identified. A three-step evaluation process was used to progressively eliminate alternatives from further consideration. From this evaluation process, the Long-Term Vision for South I-25 and US 85 Through 2020 and Beyond was developed to meet the project objectives and community vision. Vision elements likely to be constructed over the next 20 years are presented and comparably evaluated in this Final Environmental Impact Statement (FEIS). This FEIS presents the evaluation of the No-Action Alternative, Preferred Alternative, and Other Alternative. The Other Alternative expands and modifies the elements included in the Preferred Alternative. The Preferred Alternative and Other Alternative were developed based on comments made during the Draft EIS (DEIS) formal comment period and through additional analysis. One of these alternatives, or an alternative developed from a combination of the three, will likely be the Selected Alternative presented in the ROD.

After the initial three-step alternative evaluation process that developed the Long-Term Vision Through 2020 and Beyond was completed, the I-25 project limits were extended from Lincoln Avenue to C-470. This extension was necessary to be compatible with the Southeast Corridor improvements and to provide lane continuity along I-25. A notice of intent to extend the corridor limits was published in the *Federal Register* on November 9, 1999. The Long-Term Vision and the alternatives evaluated in this FEIS reflect the project limit extension.

Sections of this chapter highlight the alternative evaluation process. The first section is a discussion of the public/agency involvement process that was completed throughout the EIS. The second section is an overview of the alternative evaluation process that was followed throughout the FEIS. The third section defines the No-Action Alternative, Preferred Alternative, Other Alternative, and Alternative Variations. The fourth section discusses the Long-Term Vision, which provides an overview of the community's vision for both corridors through 2020 and beyond. The fifth section provides additional detail of the evaluation process that developed the Long-Term Vision and the alternatives that were eliminated.

The Federal Highway Administration (FHWA) and the Colorado Department of Transportation (CDOT) have chosen the Preferred Alternative because it best meets the local communities needs and desires, fulfills the project objectives, and provides flexibility in future transportation needs.

2.2 PUBLIC/AGENCY INVOLVEMENT PROCESS

An extensive public/agency involvement process has been ongoing since the project began in October 1998. This process involves meeting with various community groups, agencies, developers, landowners, special interest groups, and the general public. Four committees/teams representing various interest groups met once or twice a month to discuss the project. Newsletters, a Web site, project hotline, and project office are used to enhance community outreach. The committee/teams that have been involved with this EIS process and a brief discussion of their responsibilities and membership are provided.

2.2.1 Issues Team

The Issues Team consists of representatives from the affected interests, community groups, special interest groups, and the general public. The Issues Team provides input into the EIS process and assesses and reviews recommendations. Their roles and responsibilities include the following activities:

- Provide insight into the planning process and stakeholders' concerns
- Ensure all ideas and concerns are considered throughout the process
- Disseminate project information to neighbors, community groups, and affected interests

2.2.2 Technical Committee

The Technical Committee is made up of agency staff including FHWA, CDOT, Federal Transit Administration (FTA), Federal Railroad Administration (FRA), Douglas County, Town of Castle Rock, Denver Regional Council of Governments (DRCOG), Regional Transportation District (RTD), Public Utilities Commission (PUC), City of Lone Tree, and Colorado Division of Wildlife (CDOW). Their roles and responsibilities include the following activities:

- Technical review of project reports
- Technical support and insight on agency issues and regulations
- Coordination and communication with their respective agency staff and/or elected officials
- Assistance in developing, screening, and evaluating alternatives

2.2.3 Project Management Team

The Project Management Team is an advisory group made up of CDOT, DRCOG, Douglas County, Town of Castle Rock, and the consultant team. The Project Management Team acts in an advisory capacity. Their roles

and responsibility include the following activities:

- Provide guidance, insights, and input to the consulting team throughout the EIS process
- Review project documents
- Communicate project status, issues, and recommendations to their agency

2.2.4 Ecological Resources Technical Advisory Committee

The Ecological Resources Technical Advisory Committee (ERTAC) is made up of agencies having interests or responsibilities with the ecology within the study area. ERTAC consists of representatives from CDOT, CDOW, Douglas County, Chatfield Basin Conservation Network, Shea Homes, Intermountain Rural Electric Association (IREA), Chatfield State Parks, Chatfield Basin Conservation Network, and the Cherokee Ranch Foundation. Their roles and responsibilities include the following activities:

- Provide support and guidance on ecological issues
- Perform technical review of project reports

These four teams are part of the ongoing public/agency involvement process, and have been involved throughout the alternative evaluation process. In addition to the above-mentioned formal committees/teams, 12 public open houses and 8 community meetings have been conducted throughout the alternative evaluation process. CDOT met periodically with a Douglas County trails group to obtain insight on the proposed bicycle/pedestrian facilities along US 85 as well.

2.3 ALTERNATIVE EVALUATION PROCESS OVERVIEW

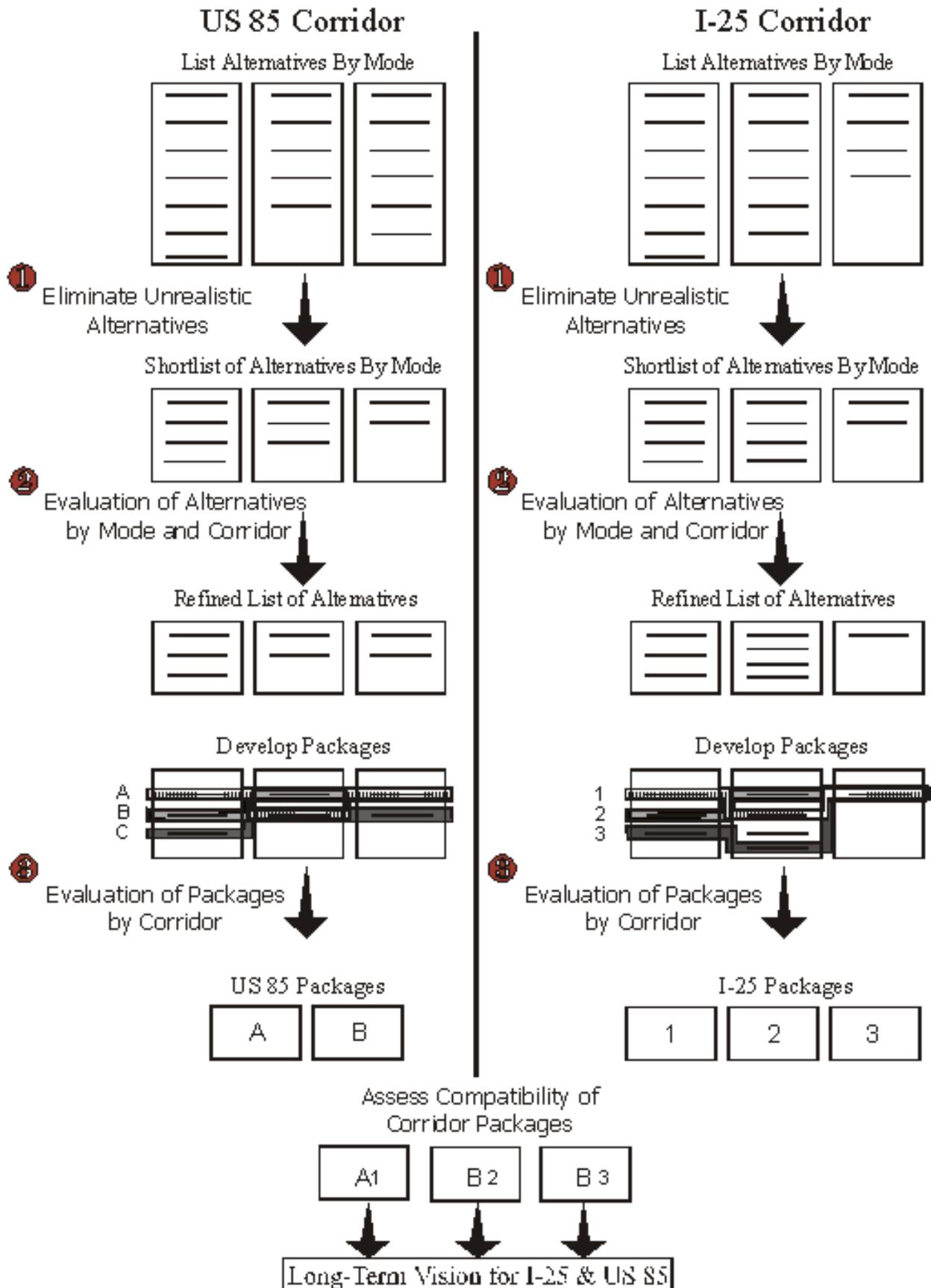
An evaluation process was used to evaluate more than 80 different alternatives for I-25 and US 85 and to reduce the number of alternatives to those that are most reasonable and best meet project objectives. The result of the evaluation process, combined with community input, is the Long-Term Vision for South I-25 and US 85 Through 2020 and Beyond. Based on financial constraints and demand, not all of the improvements can be constructed before 2020, which is the planning period for this study.

The South I-25 Corridor and US 85 Corridor Alternative Evaluation Process was developed with input from the public, the Issues Team, Technical Committee, Project Management Team, and ERTAC. The evaluation process applies progressively more finite criteria to the alternatives through three levels of evaluation. The evaluation process and Long-Term Vision analysis are displayed on Figure 2.1. As shown on Figure 2.1, the process uses a systematic approach to develop the best alternatives for each corridor.

To develop the Long-Term Vision, three evaluation levels were used: **1. Eliminate Unrealistic Alternatives**, **2. Evaluation of Alternatives by Mode and Corridor**, and **3. Evaluation of Packages by Corridor**. Alternatives were analyzed and compared at each level based on criteria from five categories: mobility, safety, environmental, implementation, and community values. These categories and respective criteria were developed from the project purpose and need, project objectives, public input, and environmental regulations. Table 2.1 outlines the criteria used for each level of evaluation. For additional information on the alternative evaluation process, please refer to

Section 2.12: Alternatives Eliminated From Consideration and the South I-25 Corridor and US 85 EIS Alternatives Evaluation Process, March 2000.

Figure 2.1
Alternative Evaluation Process





**Table 2.1
Alternative Evaluation Criteria**

Category	① Eliminate Unrealistic Alternatives	② Evaluation of Alternatives by Mode and Corridor	③ Evaluation of Packages by Corridor
	Yes / No	  	Corridor Measurements
Mobility	<ul style="list-style-type: none"> ➤ Is it compatible with existing or planned transportation system? 	<ul style="list-style-type: none"> ➤ Travel time between origin and destination pairs 	<ul style="list-style-type: none"> ➤ LOS on highway ➤ Travel time on mode ➤ Ridership on transit ➤ Capacity
Safety			<ul style="list-style-type: none"> ➤ Safety
Environmental		<ul style="list-style-type: none"> ➤ Amount of new right-of-way (ROW) required ➤ Number of disturbed acres 	<ul style="list-style-type: none"> ➤ Amount of new ROW required ➤ Number of disturbed acres ➤ Noise impacts ➤ Air quality
Implementation	<ul style="list-style-type: none"> ➤ Is this a proven technology in a comparable application? 	<ul style="list-style-type: none"> ➤ Ease of construction ➤ Capital costs 	<ul style="list-style-type: none"> ➤ Capital costs ➤ Operation/maintenance costs ➤ Does it require moving the railroad? ➤ User costs ➤ Cost per new user by mode
Community Values	<ul style="list-style-type: none"> ➤ Is this compatible with local goals and objectives? ➤ Does it preserve future transit options? 	<ul style="list-style-type: none"> ➤ Community/agency support ➤ Ease of use 	<ul style="list-style-type: none"> ➤ Communities/agencies support ➤ Change in vehicle miles traveled (VMT)

-  Least Favorable
-  Moderately Favorable
-  Most Favorable

After the Long-Term Vision was finalized, the elements that best addressed the purpose and need and could realistically be funded within the next 20 years were carried into the full DEIS alternative evaluation for

comparative analysis. The alternatives fully evaluated in the DEIS included the following:

I-25 Corridor Alternatives:

- Alternative 1: No-Action
- Alternative 2: Mainline Widening (Additional General-Purpose Lanes)
- Alternative 3: Mainline Widening (Additional General-Purpose Lanes), Interchange Improvements, and Frontage Road

US 85 Corridor Alternatives:

- Alternative A: No-Action
- Alternative B: Mainline Widening (Additional General-Purpose Lanes) and Reconstruction

The FEIS alternatives were developed based on public and agency comments on the DEIS alternatives and additional analysis. The FEIS alternatives being evaluated accommodate the Long-Term Vision elements and do not preclude any of the identified improvements. The FEIS alternatives being evaluated in this document include:

- No-Action Alternative
- Preferred Alternative
- Other Alternative

Characteristics of each of the three alternatives evaluated in this FEIS are discussed in the following sections. Two build alternatives are being fully evaluated in this FEIS to allow for the flexibility of selecting different improvement options based on the identified funding. Funding has been identified for the improvements included in the Preferred Alternative. However, funding has not yet been identified for all of the improvements included in the Other Alternative. These improvements are being evaluated in this FEIS so that if funding is identified, with the appropriate amendments, they may be constructed.

2.4 NO-ACTION ALTERNATIVE

The No-Action Alternative represents the conditions if improvements are not recommended as a result of this study. This Alternative consists of no major improvements other than the Early-Action projects that have already been committed and the construction of the Douglas Lane Interchange. These projects are independent projects and accepted as part of the No-Action Alternative. The No-Action Alternative also includes minor safety and maintenance improvements along I-25 and US 85 (e.g., pothole repair and re-striping). Early-Action projects and the Douglas Lane Interchange included in this alternative include the following activities:

- *Climbing Lanes, Phase I.* This project provides one additional lane in each direction along I-25 between Lincoln Avenue and Castle Pines Parkway designated (but not restricted) as climbing lanes for slow-

moving vehicles. The I-25 configuration after the completion of this project is six lanes between Lincoln Avenue and Castle Pines Parkway. This project was completed in October 2000.

- *Climbing Lanes, Phase II.* This project extends the Climbing Lanes Phase I project to Meadows/Founders Parkway. The I-25 configuration after the completion of this project is six lanes between Castle Pines Parkway and Meadows/Founders Parkway. This project is currently under construction and is scheduled to be completed in September 2002.
- *Meadows/Founders Parkway Interchange.* This project improved the existing diamond interchange deficiencies by constructing a partial cloverleaf interchange. This project was completed 1999.
- *Wolfensberger Road.* This project improves the existing I-25 interchange deficiencies by removing and replacing the south half of the Wolfensberger Road Bridge over I-25 and Plum Creek. This project is scheduled to begin construction in Fall 2001 and be completed in Fall 2002.
- *US 85/I-25 Interchange.* This project removes the existing US 85/I-25 Interchange ramps and reroutes traffic through the improved Meadows/Founders Parkway/I-25 Interchange. An overpass is constructed at the existing interchange location to connect the east side of Castle Rock to the west side. This project is scheduled to begin construction in Summer 2001 and be completed in Fall 2002.
- *5th Street Overpass.* This project improves the local Castle Rock transportation network by providing an overpass from 5th Street on the east side of I-25 to Park Street on the west side of I-25. This project began construction in October 2000.
- *US 85 and Titan Road Grade-Separated Intersection.* This project improves existing safety deficiencies of the railroad crossings by constructing a grade-separated intersection at US 85 and Titan Road and by providing grade separations with Titan Road and the Burlington Northern Santa Fe Railroad and Union Pacific Railroad. With the proposed design, traffic crossing the existing Union Pacific Railroad tracks at the existing at-grade crossing will be limited to local business access. Construction is scheduled to begin in October 2001.
- *Douglas Lane Interchange.* This project provides a new interchange along I-25 at Douglas Lane, approximately 1,450 meters (4,750 feet) south of Plum Creek Parkway. The interchange design is a single-point urban interchange. Funding for the Douglas Lane Interchange will be provided through the cooperative efforts of Douglas County, the Town of Castle Rock, and private entities.

In addition to these projects, other roadway improvements being completed by Douglas County and the Town of Castle Rock are part of the No-Action Alternative (i.e., improvements to local network and maintenance of existing systems). One such roadway improvement within the I-25 Corridor is the construction of a two-lane frontage road along I-25 from Sinclair Boulevard to Castle Rock on the west side of the Union Pacific Railroad and Burlington Northern Santa Fe Railroad tracks. Along the US 85 Corridor, roadway improvements include, but are not limited to, Daniels Park Road and widening Titan Road west of the Plum Creek Bridge.

2.4.1 I-25 Corridor Elements of the No-Action Alternative

Alignment, typical section, and cost for the No-Action Alternative along the I-25 Corridor is described in the

following sections.

2.4.1.1. I-25 Corridor Alignment for the No-Action Alternative

The No-Action Alternative is the existing alignment after construction of the Early-Action projects.

2.4.1.2 I-25 Corridor Typical Section for the No-Action Alternative

Typical sections for the No-Action Alternative are shown on Figure 2.2. This alternative consists of six general-purpose lanes between C-470 and Lincoln Avenue, four general-purpose lanes, and two climbing lanes between Lincoln Avenue and Meadows/Founders Parkway, and four general-purpose lanes between Meadows/Founders Parkway and Douglas Lane.

The six-lane section (the same typical as the four general-purpose lanes and two climbing lanes) includes 3.6-meter (12-foot) travel lanes, 3.6-meter (12-foot) outside shoulders, 3-meter (10-foot) inside shoulder, and a 0.6-meter (2-foot) concrete barrier separating the opposing traffic. The total typical section width is 35.4 meters (116 feet). On the outside shoulder of southbound I-25 between Schweiger and Surrey Ridge Road, a Type IV barrier is provided.

The four-lane section includes 3.6-meter (12-foot) travel lanes, 3.0-meter (10-foot) outside and inside shoulders, and a 9.1-meter (30-foot) grass median. The total typical section width is 35.5 meters (116.5 feet).

2.4.1.3. I-25 Corridor Cost for the No-Action Alternative

Because the No-Action Alternative consists of no additional major construction, there are no construction or right-of-way (ROW) costs associated with this alternative along the I-25 Corridor, beyond what is already committed.

2.4.2 US 85 Corridor Elements of the No-Action Alternative

Alignment, typical section, and cost for the No-Action Alternative along the US 85 Corridor is described in the following sections.

2.4.2.1. US 85 Corridor Alignment for the No-Action Alternative

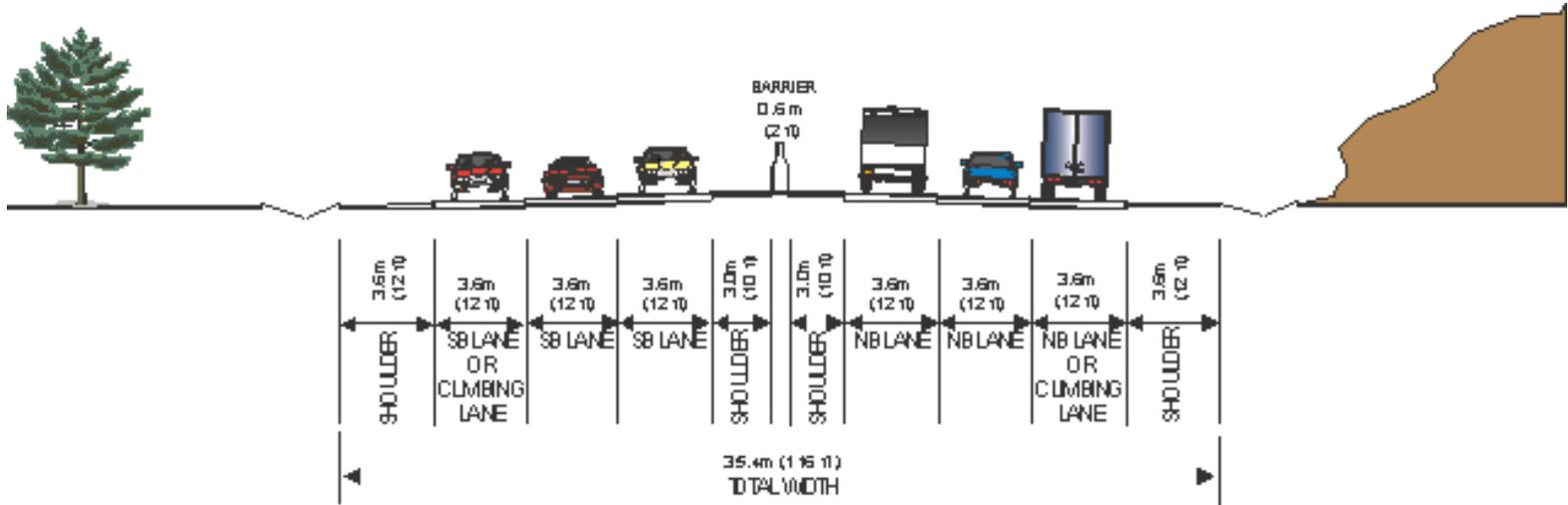
The No-Action Alternative is the existing alignment after the construction of the Early-Action projects.

2.4.2.2. US 85 Corridor Typical Section for the No-Action Alternative

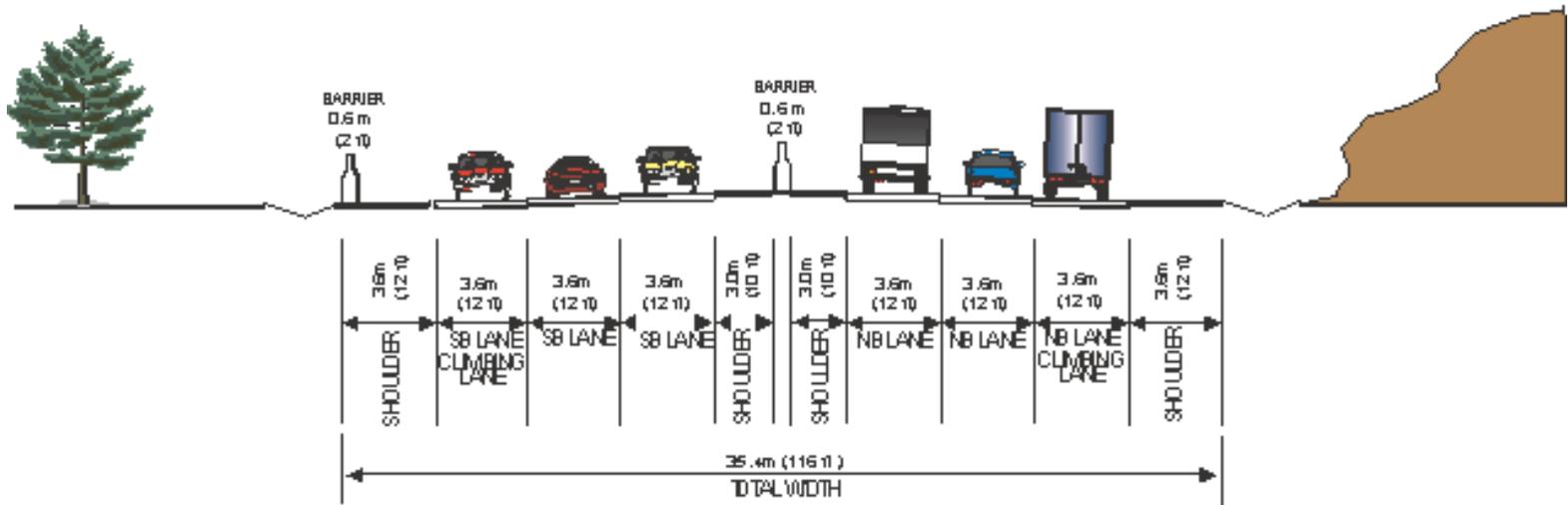
Typical sections for the No-Action Alternative are shown on Figure 2.3. This alternative consists of four lanes between C-470 and Highlands Ranch Parkway and two general-purpose lanes between Highlands Ranch Parkway and Meadows Parkway. Auxiliary lanes are included where they currently exist. The four-lane section includes four 3.6-meter (12-foot) travel lanes, various widths for the median ranging from 0 to 5 meters (0 to 16 feet), and various substandard widths for the outside shoulder ranging from 0.6 meter (2 feet) to 2.4 meters (8 feet). Total typical section width varies from 15.6 to 24.2 meters (51.2 to 79.4 feet).

Figure 2.3 also shows the two-lane typical section. This section includes 3.6-meter (12-foot) travel lanes and various substandard widths for the outside shoulder ranging from 0.6 meter (2 feet) to 2.4 meters (8 feet). Total typical section width south of Highlands Ranch Parkway varies from 8.4 to 12 meters (27.6 to 39.4 feet).

Figure 2.2
I-25 Corridor Typical Sections for the No-Action Alternative



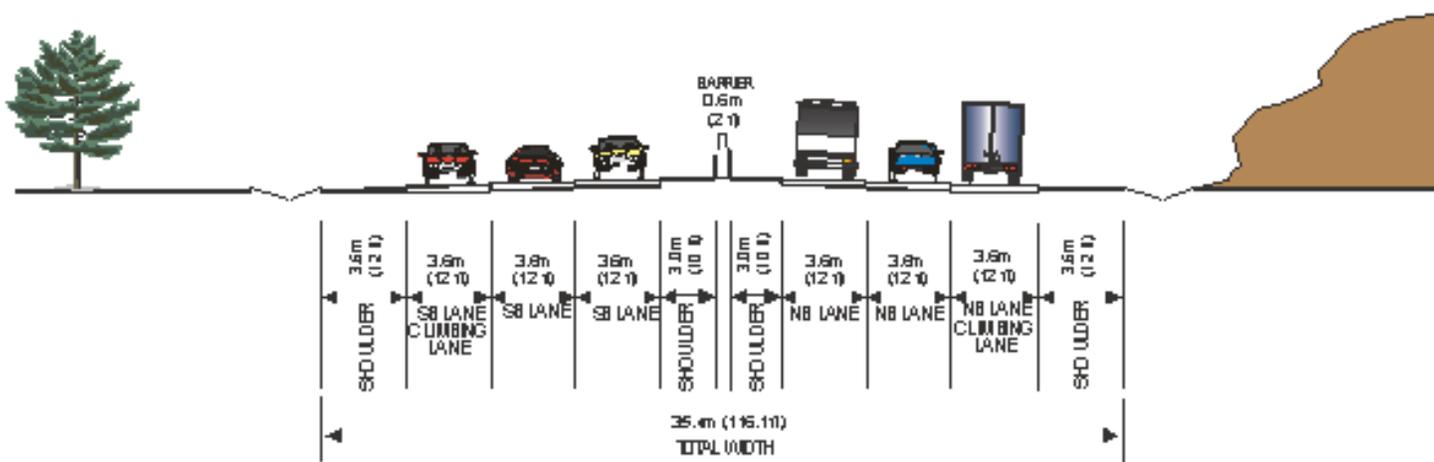
C-470 to Schweiger



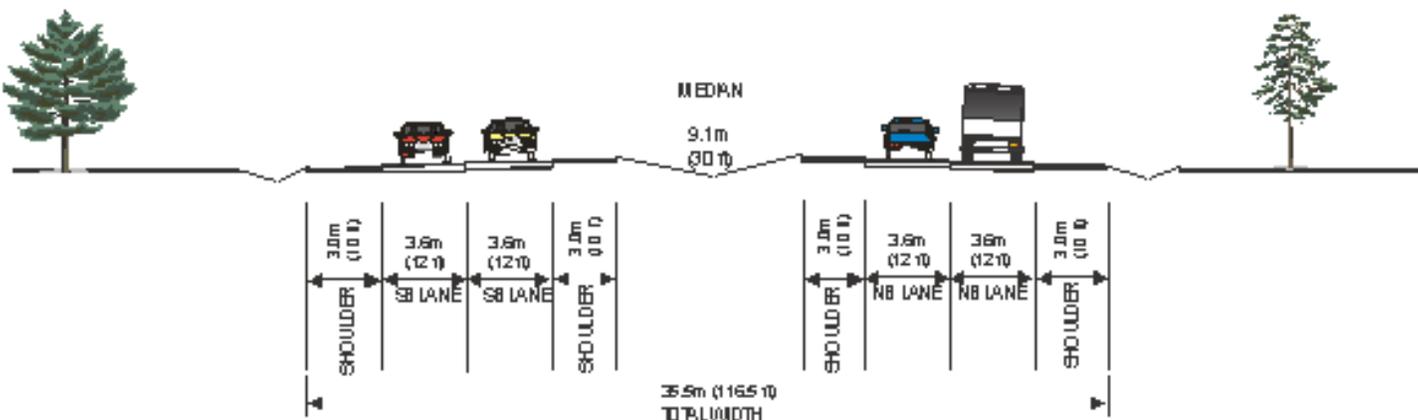
Schweiger to Surrey Ridge Road

Note: Numbers may not add due to rounding of metric unit/english unit conversions.

Figure 2.2 cont.
I-25 Corridor Typical Sections for the No-Action Alternative



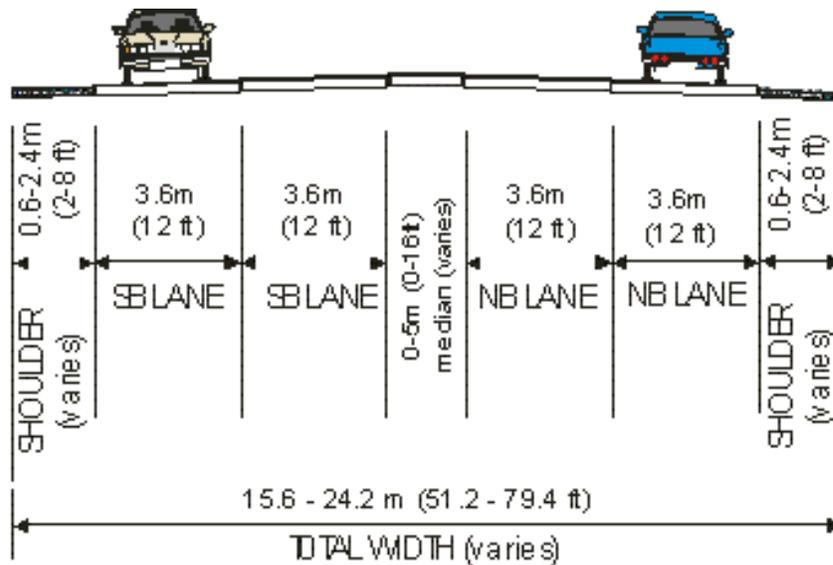
Surrey Ridge Road to Meadows/Founders Parkway



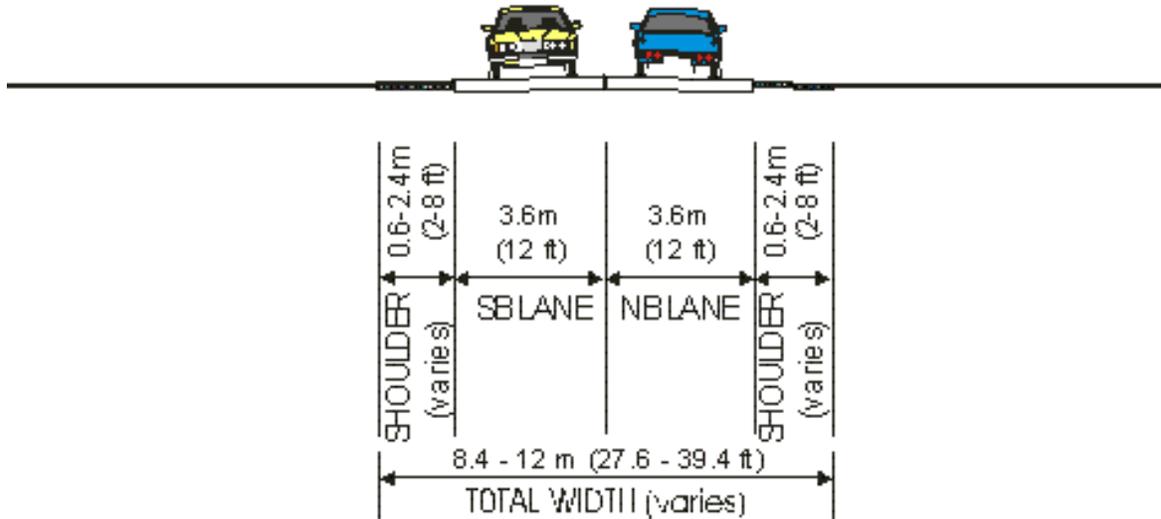
Meadows/Founders Parkway to Douglas Lane

Note: Numbers may not add due to rounding of metric unit/english unit conversions.

Figure 2.3
US 85 Corridor Typical Sections for the No-Action Alternative



C-470 to Highlands Ranch Parkway



Highlands Ranch Parkway to Meadows Parkway

Note: Numbers may not add due to rounding of metric unit/english unit conversions

2.4.2.3. US 85 Corridor Cost for the No-Action Alternative

Because the No-Action Alternative consists of no additional major construction, there are no construction or ROW costs associated with this alternative along the US 85 Corridor, beyond what is already committed.

2.5 PREFERRED ALTERNATIVE

The Preferred Alternative was developed based on comments made on the DEIS alternatives and additional analysis. The Preferred Alternative consists of improvements to the I-25 Corridor and US 85 Corridor such as

mainline widening, minor realignment, and interchange improvements. All Early-Action projects and the Douglas Lane Interchange are included in this alternative (see Section 2.4, *No-Action Alternative*). The Preferred Alternative is included in the DRCOG Regional Transportation Plan (RTP) (except the Douglas Lane Interchange) and is the responsibility of CDOT (includes federal, state, and local funds). A schematic of the Preferred Alternative is provided on Figure 2.4.

The FHWA and CDOT have chosen the Preferred Alternative because it best meets the local communities needs and desires, fulfills the project objectives, and provides flexibility in future transportation needs.

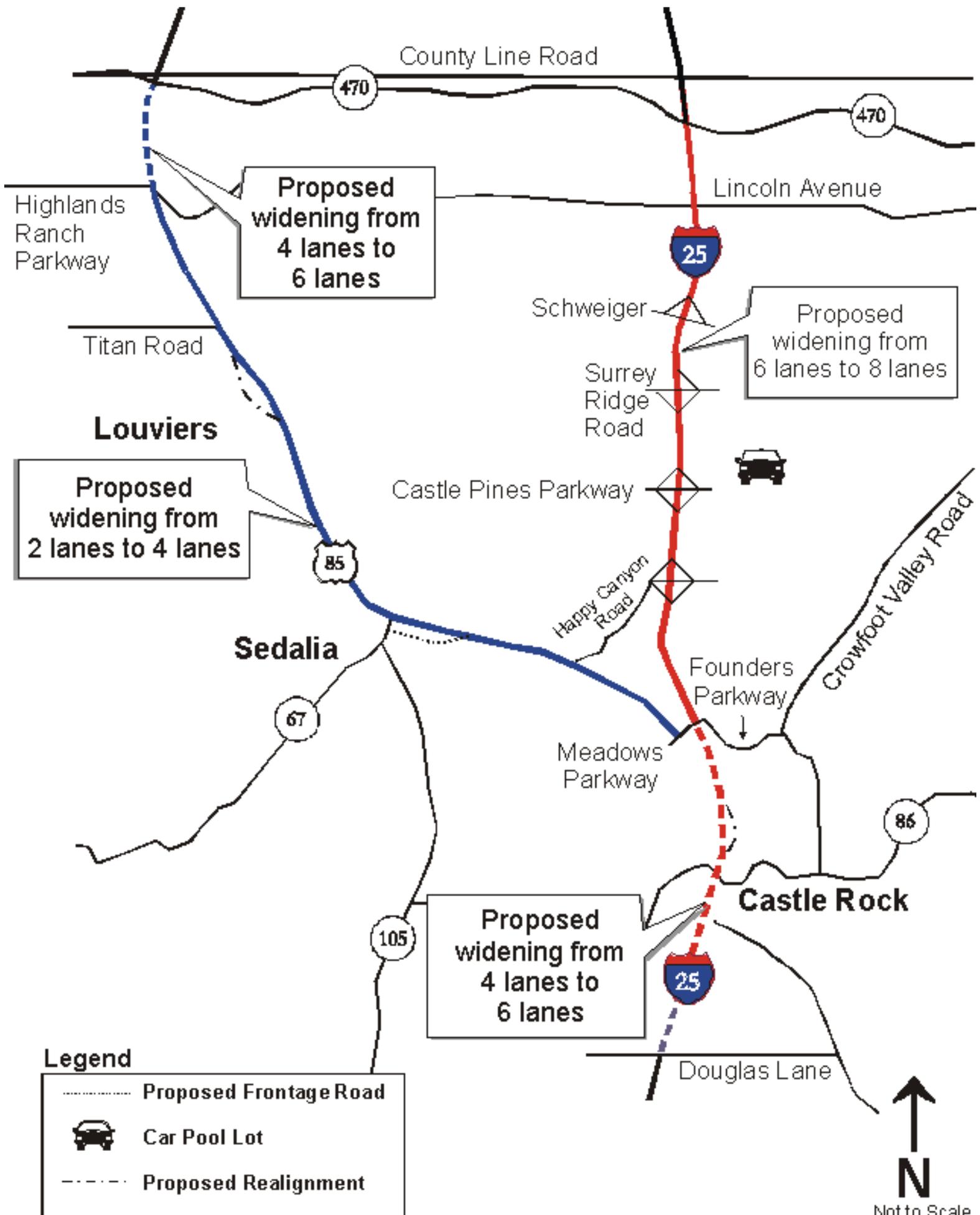
Major components of the Preferred Alternative along the I-25 Corridor include:

- Eight lanes (six through lanes and two climbing lanes) between C-470 and Meadows/Founders Parkway
- Six lanes between Meadows/Founders Parkway and Douglas Lane
- Reconstruction of the Schweiger Interchange into a half diamond interchange (improve and reconstruct northern ramps and remove southern ramps)
- Reconstruction of the Surrey Ridge Road Interchange into a three-quarter diamond interchange (improve southern ramps and northbound entrance ramp; remove southbound exit ramp)
- Car pool lot (accommodating 500 spaces) in northeast quadrant of the I-25 and Castle Pines Parkway Interchange
- Minor I-25 realignment to the east between Wolfensberger Road and Liggett Road
- Construction of a new bridge for the Union Pacific Railroad south of the existing bridge
- Supporting measures

Major components of the Preferred Alternative along the US 85 Corridor include:

- Six lanes between C-470 and Highlands Ranch Parkway
- Four lanes between Highlands Ranch Parkway and Meadows Parkway
- US 85/State Highway (SH) 67 Intersection reconfiguration

Figure 2.4
Preferred Alternative Schematic



- Sedalia frontage road
- US 85 minor realignment at Cook Ranch (approximate milepost [MP] 195.4)
- Bicycle/pedestrian facilities along US 85
- High Line Canal Trail grade-separated crossing under US 85
- Enhanced wildlife crossings
- Supporting measures

Acceleration lanes and deceleration lanes are constructed according to CDOT Design Standards at the interchanges. Retaining walls are added, or slope paving adjusted, under the interchange bridges to accommodate roadway widening.

The Southeast Corridor's ten general-purpose lanes will end on the north end of the C-470 Interchange where two lanes will be dropped in each direction on the north ramps. After a short stretch of six lanes, additional lanes are added at the County Line Road ramps for a total of eight lanes. Traffic studies show that the six-lane section will be sufficient due to the large percentage of entering and exiting vehicles on to and off of the C-470/E-470 Interchange. The six-lane section is between the C-470 north ramps and County Line Road ramps. Figure 2.5a (located at the end of this section) shows the connection to the Southeast Corridor improvements.

Total cost for the Preferred Alternative is \$151.6 million. For a breakdown of cost information, see Section 2.9, *Alternative Costs*. CDOT lacks sufficient funding to build all US 85 elements of the Preferred Alternative. CDOT and Douglas County are working together to find additional funding. If sufficient funds are not found prior to the Record of Decision (ROD), the project work will be prioritized. The Selected Alternative presented in the ROD will be based on available funding.

2.5.1 I-25 Corridor Elements of the Preferred Alternative

Alignment; typical section; changes in travel patterns, access, and safety; and cost for the Preferred Alternative within the I-25 Corridor are described in the following sections.

2.5.1.1. I-25 Corridor Alignment for the Preferred Alternative

The Preferred Alternative generally follows the existing alignment along the entire section of I-25 (between C-470 and Douglas Lane), with one minor realignment between Wolfensberger Road (MP 182) and Liggett Road (MP 182.5) where the existing centerline shifts to the east by 14 meters (46 feet).

As part of the Climbing Lanes Early-Action projects, the entire interstate is being reconstructed between Lincoln Avenue and Meadows/Founders Parkway, providing for three 3.6-meter (12-foot) travel lanes, 3.6-meter (12-foot) outside shoulder, and 3.0-meter (10-foot) inside shoulder in each direction. As part of the Preferred

Alternative improvements, between C-470 and Lincoln Avenue, the interstate is widened to the outside. From Lincoln Avenue to Meadows/Founders Parkway, the shoulder is converted to a travel lane and a new shoulder is constructed. Between Meadows/Founders Parkway and Douglas Lane, the entire interstate is reconstructed with widening primarily to the inside. Figure 2.5a through Figure 2.5i (included at the end of this section, Section 2.5, *Preferred Alternative*) illustrate the I-25 Corridor alignment for the Preferred Alternative.

2.5.1.2. Additional Major Improvements along the I-25 Corridor for the Preferred Alternative

In addition to the mainline widening, the Preferred Alternative includes:

- *Interchange Improvements to Schweiger Interchange and Surrey Ridge Road Interchange.* The existing Schweiger Interchange and Surrey Ridge Road Interchange are reconstructed into improved partial interchanges. The southern I-25 ramps at the Schweiger Interchange and the northwest I-25 ramp at the Surrey Ridge Road Interchange are removed. The remaining ramps are reconstructed according to CDOT design standards. This requires relocating approximately 300 meters (980 feet) of Clydesdale Road.
- *Castle Pines Parkway Car Pool Lot.* A new car pool lot in the northeast quadrant of the Castle Pines Parkway Interchange is constructed. The lot provides for 500 parking spaces and serves as a meeting place and parking area. The car pool lot can be built in phases, starting with a fewer number of parking spaces. The car pool lot may be converted into a park-and-ride lot once transit is operating within the corridor.
- *Union Pacific Railroad Bridge.* The existing Union Pacific Railroad crosses over I-25 just north of the Wolfensberger Road Interchange. The Preferred Alternative proposes realigning the Union Pacific Railroad Bridge 14 meters (46 feet) to the south of the existing alignment. As a result of this realignment, a new bridge for the Union Pacific Railroad is constructed, and the existing bridge is removed. If ROW issues cannot be resolved with Union Pacific Railroad, the bridge will be reconstructed at the existing location.
- *Plum Creek Parkway Bridges and Plum Creek Bridges.* The Plum Creek Parkway Bridges and the Plum Creek Bridges are widened and rehabilitated.

2.5.1.3. I-25 Corridor Typical Section for the Preferred Alternative

The Preferred Alternative along the I-25 Corridor consists of eight general-purpose lanes between C-470 and Lincoln Avenue, six general-purpose lanes and two climbing lanes (designated for, but not restricted to slow-moving vehicles) between Lincoln Avenue and Meadows/Founders Parkway, and six general-purpose lanes between Meadows/Founders Parkway and Douglas Lane. Continuous auxiliary lanes are provided between C-470 and Lincoln Avenue, Lincoln Avenue and Schweiger Interchange, and Wolfensberger Road and Plum Creek Parkway. Figure 2.6 shows the typical sections for the Preferred Alternative.

Each lane in the typical eight-lane section of I-25 between C-470 and Lincoln Avenue is 3.6 meters (12 feet) wide. In order to accommodate the proposed improvements in the Southeast Corridor, a southbound inside shoulder variance of 1.2 meters (4 feet) (to be approved by the FHWA) and an outside shoulder of 3.0 meters (10 feet) is included. The northbound inside shoulder is 3.0 meters (10 feet) wide and the outside shoulder is 3.6 meters (12 feet) wide. A concrete barrier 0.6 meter (2 feet) wide, 0.9 meter (2.8 feet) high separates opposing traffic. The total width of the eight-lane typical section is 40.2 meters (132 feet).

Figure 2.6
I-25 Corridor Typical Sections for the Preferred Alternative

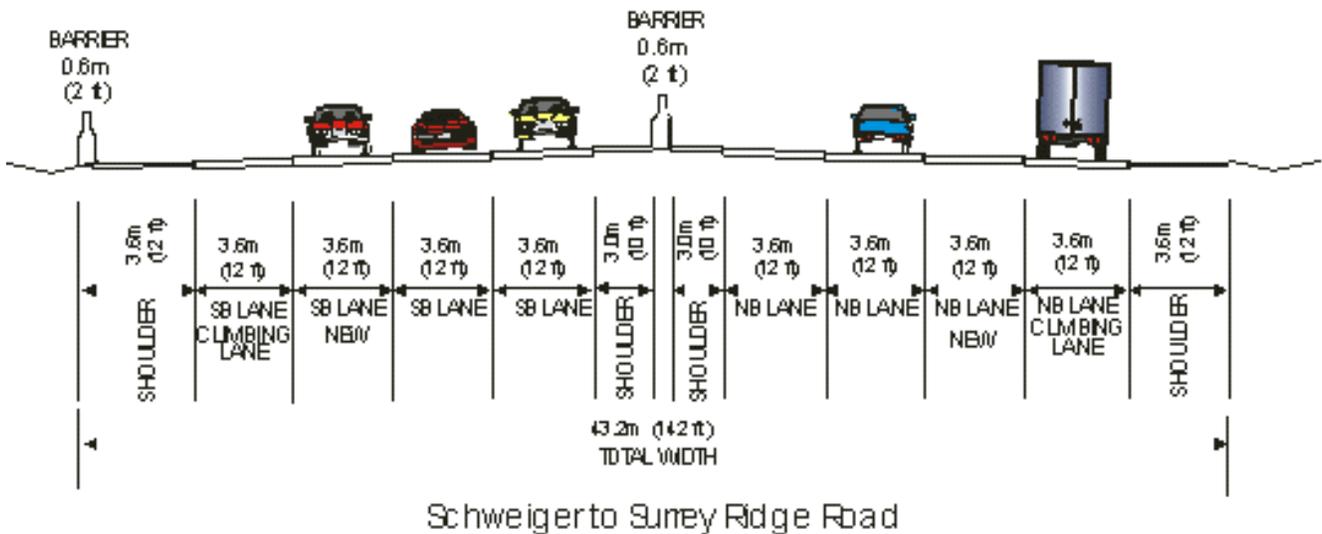
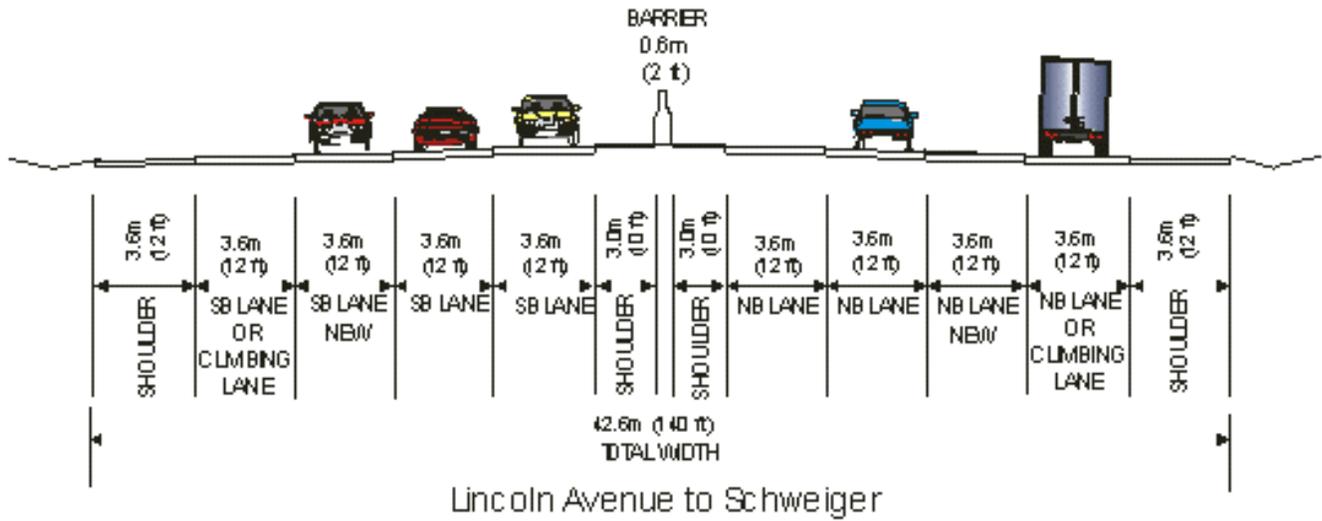
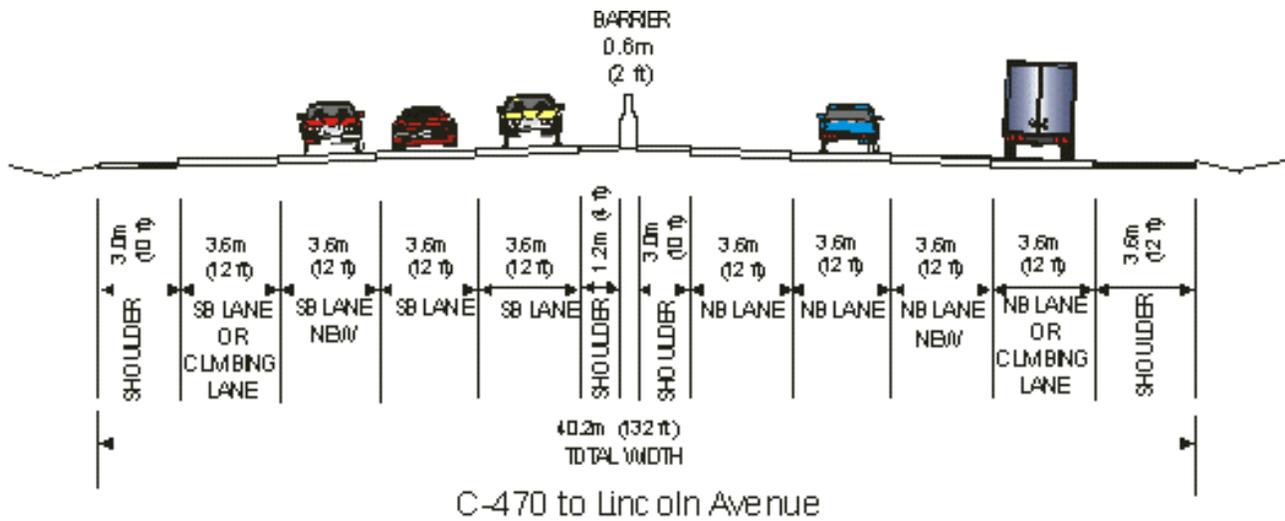
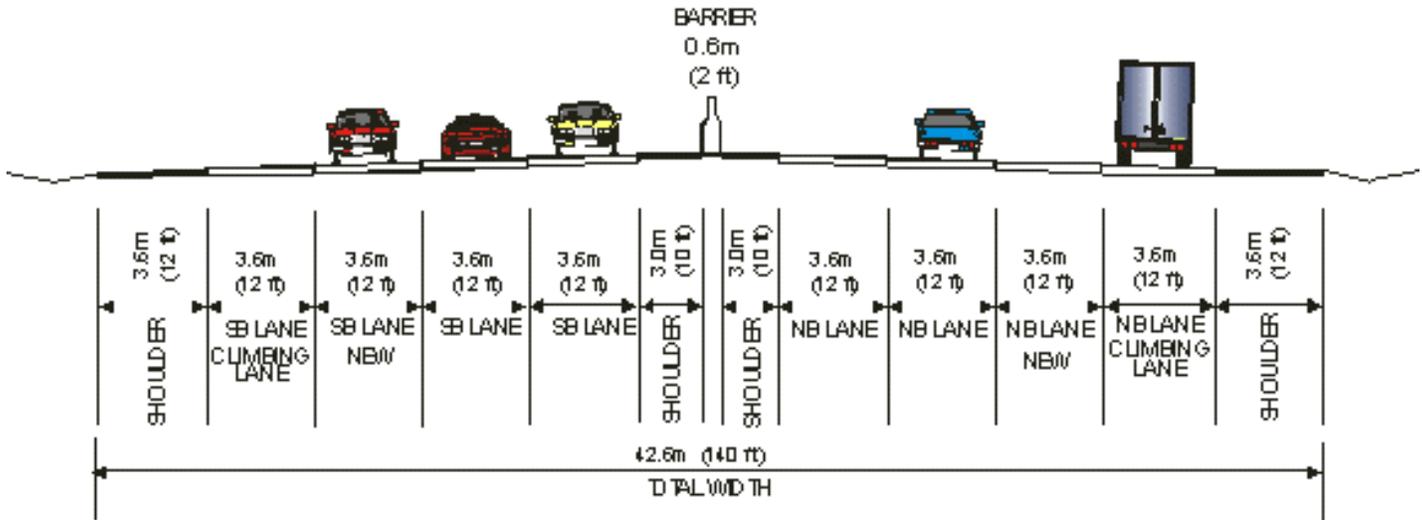
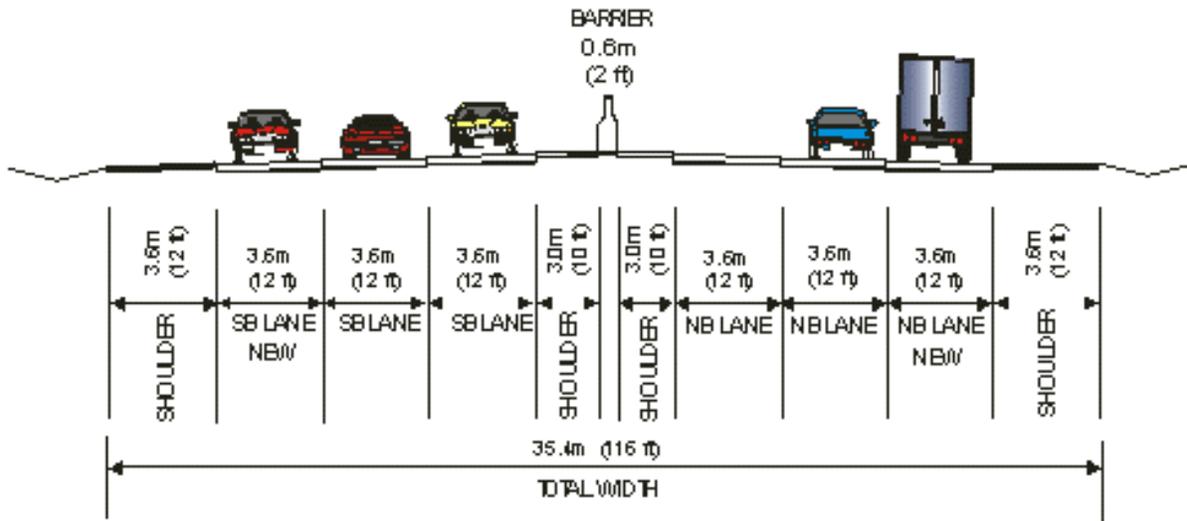


Figure 2.6 cont.
I-25 Corridor Typical Sections for the Preferred Alternative



Surrey Ridge Road to Meadows/Founders Parkway



Meadows/Founders Parkway to Douglas Lane

Each lane in the typical eight-lane section of I-25 between Lincoln Avenue and Meadows/Founders Parkway is 3.6 meters (12 feet) wide. The outside shoulders of this typical section are 3.6 meters (12 feet) wide, allowing enough room for emergency parking on the roadway. The inside shoulders are 3.0 meters (10 feet) wide, with a concrete barrier 0.6 meter (2 feet) wide (0.9 meter [2.8 feet] high) separating opposing traffic. Total width of the eight-lane typical section is approximately 42.6 meters (140 feet). On the outside shoulder of southbound I-25 between Schweiger and Surrey Ridge Road, a Type IV barrier [0.6 meter (2 feet) wide] is provided.

Each lane in the typical six-lane section of I-25 between Meadows/Founders Parkway and Douglas Lane is 3.6 meters (12 feet) wide. The outside shoulder of this typical section is 3.6 meters (12 feet) wide, allowing enough room for emergency parking on the roadway. The inside shoulder is typically 3.0 meters (10 feet) wide, with a concrete barrier 0.6 meter (2 feet) wide (0.9 meter [2.8 feet] high) separating the opposing traffic. The total width of the six-lane typical section is approximately 35.4 meters (116 feet).

2.5.1.4. I-25 Corridor Changes in Travel Patterns, Access, and Safety for the Preferred Alternative

The Preferred Alternative improves access to the interchanges along the I-25 Corridor between Meadows/Founders Parkway and Douglas Lane by improving the acceleration and deceleration lanes to comply with CDOT design standards. As part of the Climbing Lanes Early-Action projects, the acceleration and deceleration lanes from Lincoln Avenue to Meadows/Founders Parkway are extended to comply with CDOT design standards.

The Preferred Alternative includes safety features such as wider shoulders, concrete median barriers, ramp adjustments, longer acceleration and deceleration lanes, wider structures at the Union Pacific Railroad Bridge and Plum Creek Bridge, and better curve geometry. The realignment of I-25 to the east between Wolfensberger Road and Liggett Road increases the curve radius to improve safety along the roadway. Highway safety is also improved due to the additional capacity that the mainline widening provides.

The new interchange configurations improve the safety for vehicles entering and exiting I-25 at Schweiger and Surrey Ridge Road by providing ramps that comply with CDOT design standards.

The reconstruction of the Schweiger Interchange and Surrey Ridge Road Interchange changes travel patterns because the southern I-25 ramps at the Schweiger Interchange and the northwest I-25 ramp at the Surrey Ridge Road Interchange are removed. With the Preferred Alternative, vehicles that currently access southbound I-25 from the Schweiger Interchange will access southbound I-25 from the Surrey Ridge Road Interchange. Vehicles that currently exit northbound I-25 at the Schweiger Interchange will exit at either the Surrey Ridge Road Interchange or Lincoln Avenue. Vehicles that currently exit southbound I-25 at the Surrey Ridge Road Interchange will exit at the Schweiger Interchange or the Castle Pines Parkway Interchange.

The addition of a car pool lot at the Castle Pines Parkway Interchange changes the travel patterns for people using the lot. Currently, the lot does not exist and people do not exit I-25 and consolidate vehicles. Local neighborhood commuters will meet at the car pool lot to consolidate into one car. The car pool lot may increase the number of vehicles using the Castle Pines Parkway Interchange.

2.5.1.5. I-25 Corridor Cost for the Preferred Alternative

The estimated total cost for the I-25 Corridor elements of the Preferred Alternative is \$54.5 million. For a cost breakdown, see Section 2.9, *Alternative Costs*.

The estimated cost between Lincoln Avenue and Meadows/Founders Parkway is substantially less than between Meadows/Founders Parkway and Douglas Lane because the northern section adds only a shoulder in each direction (majority of improvements constructed as part of Early-Action projects). The majority of the alternative cost is in the southern section because it includes complete reconstruction of the entire cross section.

ROW cost to purchase 10.1 hectares (25 acres) along I-25 is \$2.9 million, which is minimal compared to the overall construction cost. It is the intent that this cost is conservative with the anticipation that Douglas County and the Town of Castle Rock will continue to work with CDOT to preserve future ROW as development occurs.

2.5.2 US 85 Corridor Elements of the Preferred Alternative

Alignment; typical section; changes in travel patterns, access, and safety; and cost for the Preferred Alternative within the US 85 Corridor are described in the following sections.

2.5.2.1. US 85 Corridor Alignment for the Preferred Alternative

The Preferred Alternative alignment generally follows the existing alignment with widening to the outside. Exceptions are portions of the roadway at Sedalia and Titan Road where the alignment moves to the northeast and at Cook Ranch (approximate MP 195.4) where the alignment moves to the west.

Beginning at C-470 moving south, the alignment stays along the existing alignment. At Blakeland Drive, the alignment shifts 2.1 meters (7 feet) to the west and then returns to the existing alignment at Highlands Ranch Parkway. The US 85 alignment at Lakeside Drive (approximate MP 197.2) is elevated by approximately 4.2 meters (14 feet) to improve the intersection. Continuing south, the alignment follows the existing alignment to approximately MP 195.4 where it shifts to the west by at most 77.7 meters (255 feet). The alignment returns to the existing alignment at approximately MP 194.9 and continues until MP 190.7.

At approximately MP 190.7 the alignment shifts from the existing alignment to the southeast until approximately MP 187.8 where it returns to the existing alignment. The US 85 alignment at Daniels Park Road runs southwest along the existing alignment to Meadows Parkway. The alignment remains at least 3 meters (10 feet) from the Union Pacific Railroad and the Burlington Northern Santa Fe Railroad ROW throughout the US 85 Corridor.

Figure 2.7a through Figure 2.7h (included at the end of this section, Section 2.5, *Preferred Alternative*) illustrate the US 85 Corridor alignment for the Preferred Alternative.

2.5.2.2. Additional Major Improvements along the US 85 Corridor for the Preferred Alternative

In addition to the mainline widening, the Preferred Alternative includes the following elements:

- *SH 67/US 85 Intersection Reconfiguration and Frontage Road.* This improvement includes construction of a short frontage road in the Town of Sedalia (approximately 365 meters [1,200 feet] long). The intersection of SH 67 and US 85 is improved by extending SH 67 to the north with a full-movement signalized intersection. A frontage road is constructed in the southeast quadrant, connecting SH 67 to US 85 at the Cherokee Ranch access road. The intersection of US 85 and the frontage road is stop-sign controlled. The frontage road provides full-movement access to the local Sedalia businesses. Left turns will be prohibited when accessing SH 67 from the frontage road and when accessing the frontage road from SH 67.
- *Bicycle/pedestrian facilities along US 85.* Bicycle and pedestrian facilities are provided along the US 85 Corridor as described in Section 2.7, *Bicycle and Pedestrian Facilities along the US 85 Corridor*)
- *High Line Canal Trail grade-separated crossing under US 85.* See Section 2.7, *Bicycle and Pedestrian Facilities along the US 85 Corridor.*
- *Enhanced wildlife crossings.* See Section 2.8, *Wildlife Crossings along the US 85 Corridor.*

2.5.2.3. US 85 Corridor Typical Section for the Preferred Alternative

Typicals discussed here best minimize environmental impacts while providing safe roadway and roadside design. Typical section width varies depending on the impacts in the area. For example, around Sedalia many environmental and land use impacts force the typical section to be narrower. Multiple typical sections have been discussed and evaluated during the EIS process.

An inside curb and gutter section is generally used throughout US 85. Where reasonable (south of Daniels Park Road), a full 4.6-meter (15-foot) raised median is used. In areas where the typical section needs to be minimized, a 0.9- to 3.1-meter (3- to 10-foot) raised median is used. The raised median physically separates the opposing flows of traffic and control access.

Figure 2.8 shows the US 85 typical sections for the Preferred Alternative. The six-lane section between C-470 and Blakeland Drive includes six 3.6-meter (12-foot) travel lanes, 3.1-meter (10-foot) raised median, 0.5-meter (1.6-foot) inside curb and gutter, 0.8-meter (2.6-foot) outside curb and gutter, 0.9-meter (3-foot) inside shoulder, 3.0-meter (10-foot) continuous auxiliary lanes, and a 2.4-meter (8-foot) bicycle/pedestrian facility on both sides of the highway. The total typical section is approximately 40 meters (131 feet).

The section between Blakeland Drive and Highlands Ranch Parkway has a total typical section width of 39.6 meters (130 feet). This section includes six 3.6-meter (12-foot) travel lanes, 3.1-meter (10-foot) raised median, 0.5-meter (1.6-foot) inside curb and gutter, 0.8-meter (2.6-foot) outside curb and gutter, 0.9-meter (3-foot) inside shoulder, 3.0-meter (10-foot) continuous auxiliary lanes, and a detached 3.0-meter (10-foot) bicycle/pedestrian facility on the east side of US 85. The detached bicycle/pedestrian facility changes to an attached facility at the Union Pacific Railroad Bridge due to bridge width restrictions. The attached facility is separated from the highway with a 0.6-meter (2-foot) barrier.

The typical section between Highlands Ranch Parkway and Titan Road includes four 3.6-meter (12-foot) travel lanes, 1.8-meter (6-foot) raised median, 0.5-meter (1.6-foot) inside curb and gutter, 0.9-meter (3-foot) inside shoulder, and two 3.0-meter (10-foot) shoulder/bikeway. The total typical section width is approximately 25.0 meters (82 feet).

The section between Titan Road and IREA has a total typical section width of 26.3 meters (86 feet). There are four 3.6-meter (12-foot) lanes, a 3.1-meter (10-foot) raised median, 0.5-meter (1.6-foot) inside curb and gutter, 0.9-meter (3-foot) inside shoulder, and two 3-meter (10-foot) shoulder/bikeway.

The section between IREA and Sedalia (SH 67) has a total typical section width of 20.9 meters (69 feet). There are four 3.6-meter (12-foot) lanes, a 0.9-meter (3-foot) raised median, 0.5-meter (1.6-foot) inside curb and gutter, and a 3-meter (10-foot) bicycle/pedestrian facility on the south side of the typical section. The narrower typical section is required in this section due to ROW constraints and environmental impacts.

The section between Sedalia and the north end of the Cherokee Ranch (approximately MP 190.1) consists of the typical section described previously between IREA and Sedalia, with the addition of a frontage road on the south side of US 85. The frontage road is separated from US 85 by a grass median that varies in width. The frontage road has two 3.6-meter (12-foot) lanes, 0.8-meter (2.6-foot) outside curb and gutter, and a bicycle/pedestrian facility on the north side of the frontage road. The

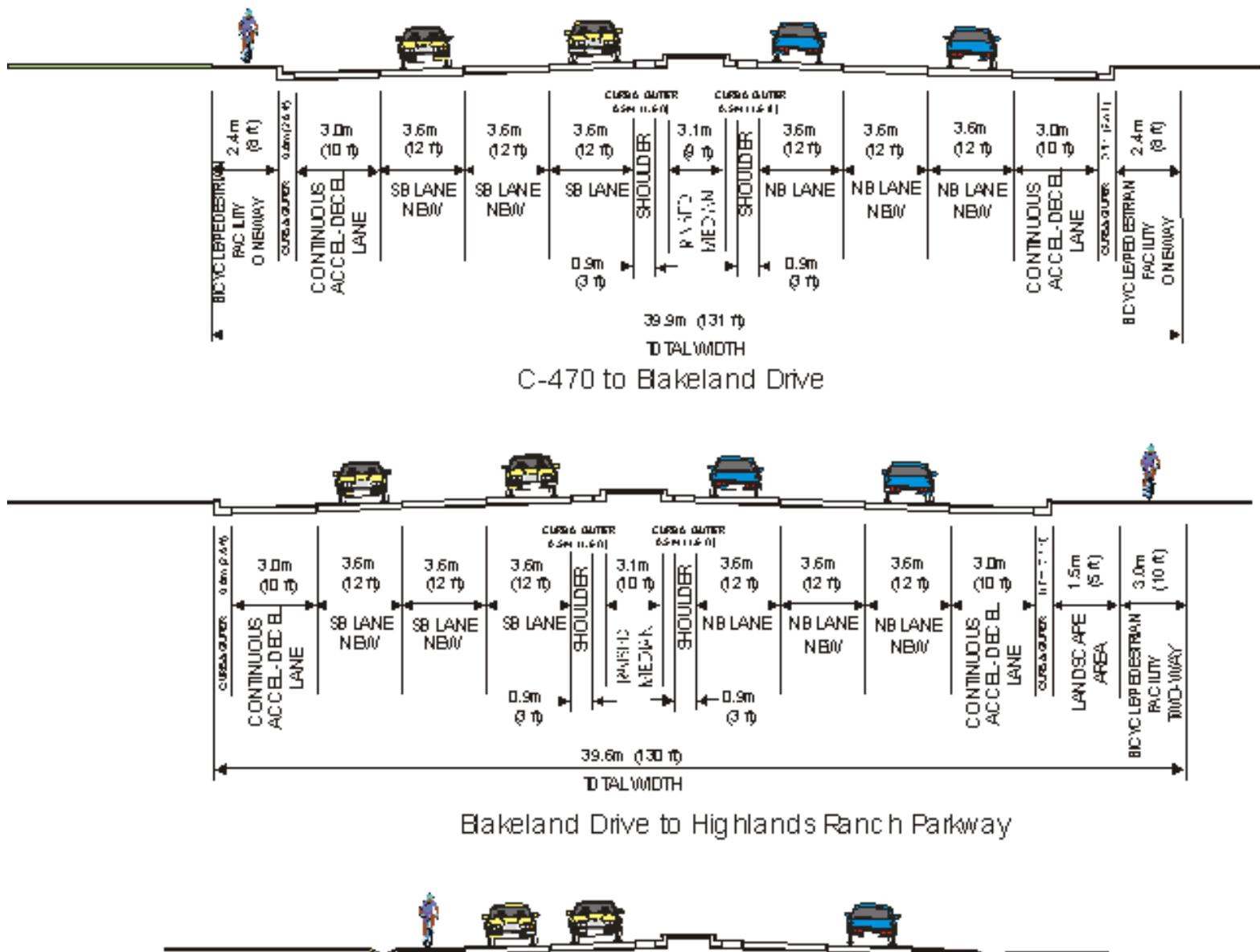
total width of this section is 17.9 meters (59 feet).

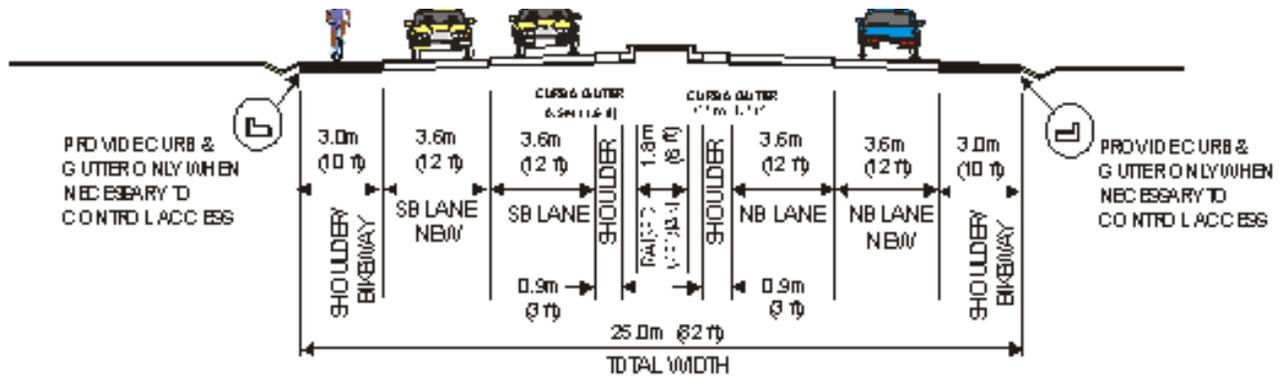
The section between the north end of the Cherokee Ranch and Daniels Park is the same as described between IREA and Sedalia.

From Daniels Park Road to Meadows Parkway, a wider typical section is used with continuous acceleration and deceleration lanes. There are four 3.6-meter (12-foot) lanes, a 4.6-meter (15-foot) raised median, 0.5-meter (1.6-foot) inside and 0.8-meter (2.6-foot) outside curb and gutter, 0.9-meter (3-foot) inside shoulder, 3.0-meter (10-foot) acceleration and deceleration lanes, a landscaped area of approximately 1.5 meters (5 feet) between the roadway and the bikeway, and a detached 3.0-meter (10-foot) bicycle/pedestrian facility on the east side. The total typical section width is approximately 33.6 meters (110 feet).

Typical sections may include left-turn lanes, acceleration lanes, and deceleration lanes where appropriate. Continuous auxiliary lanes are used where accesses are spaced closely together. Most business and residential accesses are provided with right-in/right-out access.

Figure 2.8
US 85 Corridor Typical Sections for the Preferred Alternative

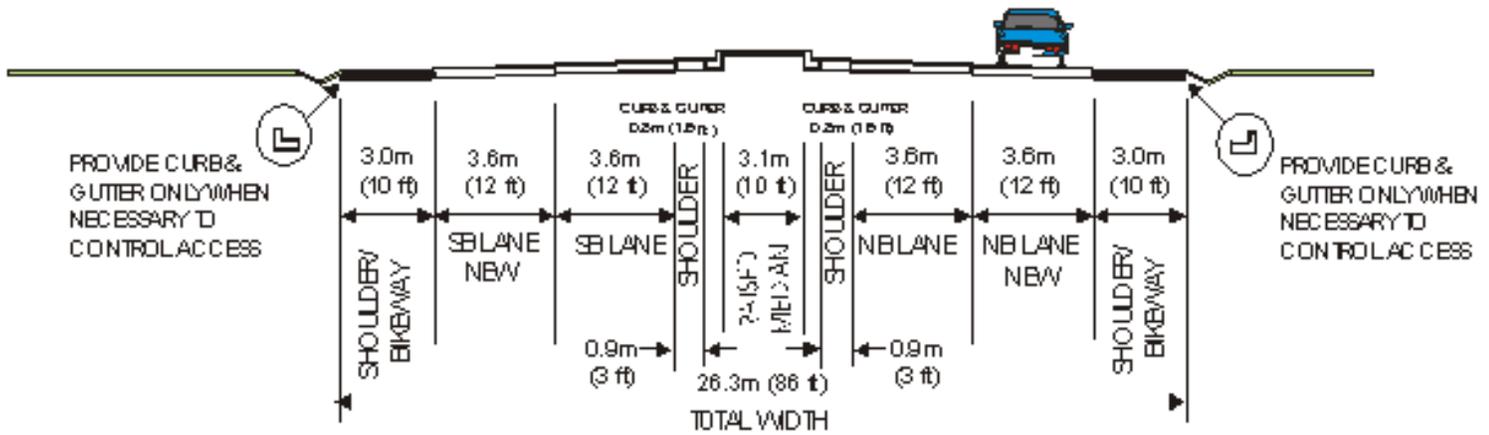




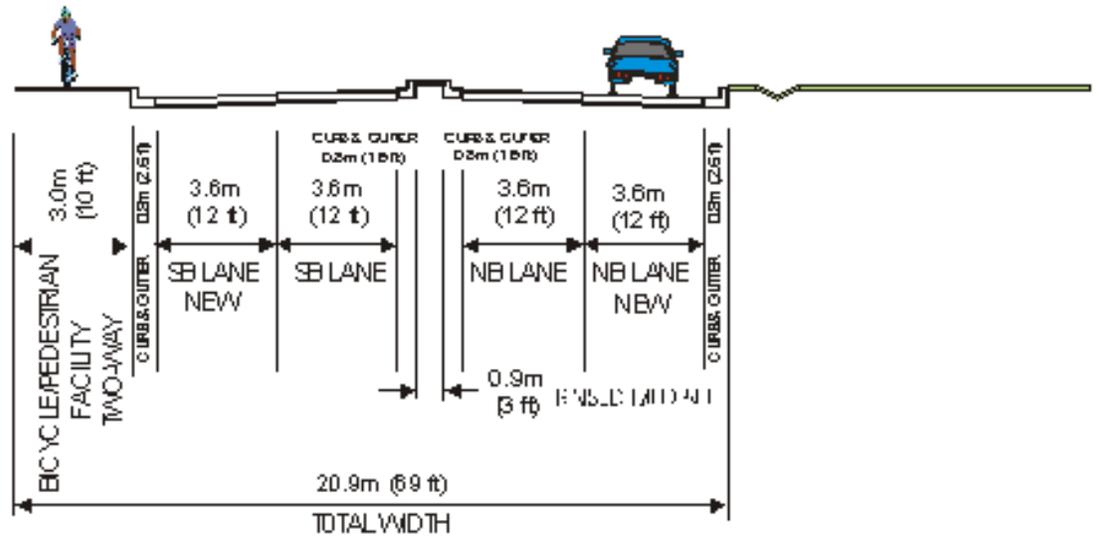
Highland's Ranch Parkway to Titan Road

Note: Numbers may not add due to rounding of metric unit/english unit conversions.

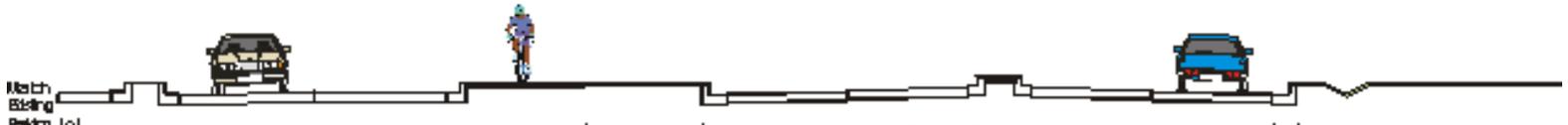
Figure 2.8 cont.
US 85 Corridor Typical Sections for the Preferred Alternative

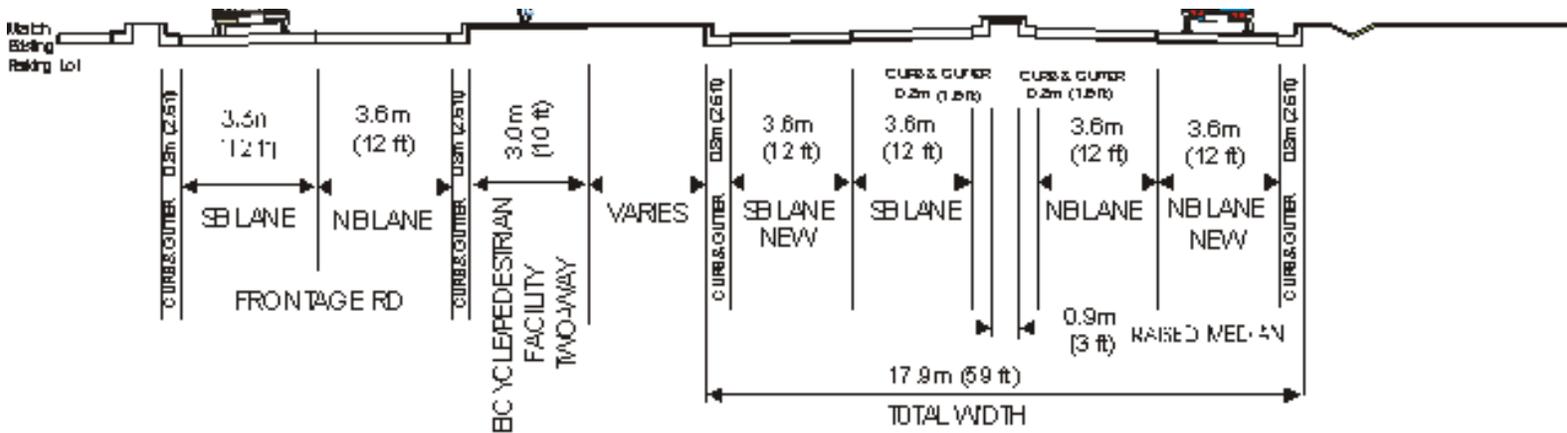


Titan Road to IREA



IREA to Sedalia (SH 67)

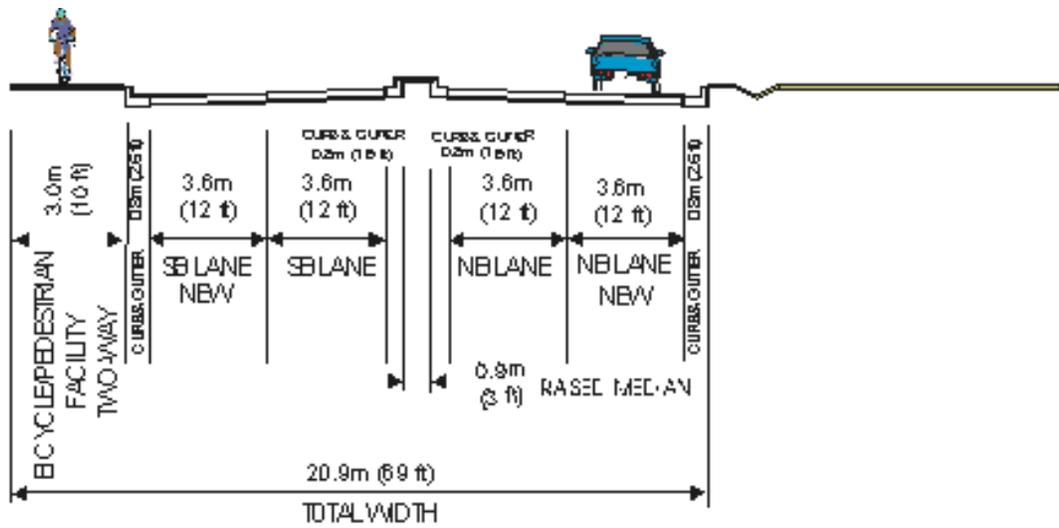




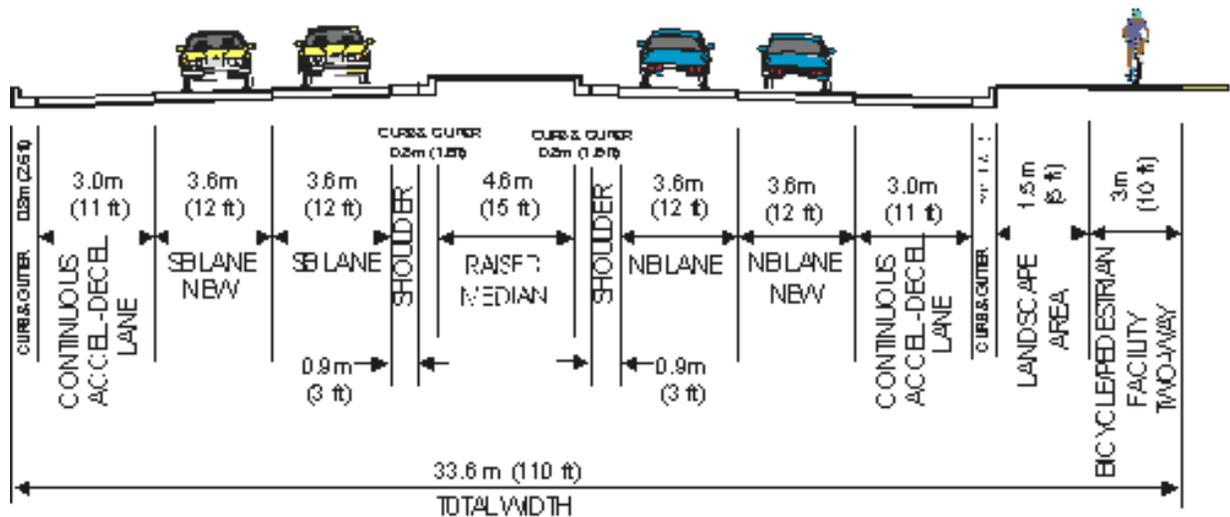
Sedalia to north end of Cherokee Ranch

Figure 2.8 cont.

US 85 Corridor Typical Section for the Preferred Alternative



North end of Cherokee Ranch to Daniels Park Road



Daniels Park Road to Meadows Parkway

Note: Numbers may not add due to rounding of metric unit/english unit conversions.

Note: Numbers may not add due to rounding of metric unit/english unit conversions.

2.5.2.4. US 85 Corridor Travel Patterns, Access, and Safety for the Preferred Alternative

Travel patterns change for those accessing the businesses located in the southeast quadrant of the SH 67 and US 85 intersection. The Preferred Alternative improves the intersection of SH 67 and US 85 at Sedalia. The intersection is improved by adding acceleration and deceleration lanes, a frontage road, and a raised median along SH 67. The interchange moves to the northeast, and a frontage road is constructed along the existing US 85 roadway providing access to the Sedalia businesses. Left turns into and out of the frontage road from SH 67 will be prohibited. Travel patterns change for those currently accessing the businesses directly off of US 85 and from SH 67 as well. Under this alternative, businesses in this area must be accessed via the frontage road.

Access points along US 85 are improved in conjunction with the widening of US 85 based on recommendations from the *Final US 85 Access Management Plan*, February 2001. The purpose of the plan is to improve traffic flow, improve traffic safety, reduce traffic conflicts, and provide appropriate access to adjacent land uses. To meet this objective, existing accesses are consolidated or changed to right-in/right-out. Residents who are provided a limited access of right-in/right-out alter their travel patterns by traveling out of the desired direction to a full-movement access to make a U-turn. Maximum out-of-direction travel is approximately 1.6 kilometers (1 mile). The new SH 67 and US 85 intersection improves access to Sedalia and the businesses.

Safety features incorporated in the Preferred Alternative include wider shoulders, mountable curb, raised median, intersection turn lanes, acceleration lanes, deceleration lanes, and better curve geometry. Highway safety is improved due to the additional capacity that the mainline widening provides and due to the realignment of US 85 at the Cook Ranch property where a curve is minimized. Safety is also improved by reducing traffic conflicts by consolidating access points along US 85. By shifting the SH 67 and US 85 intersection to the northeast, safety and operations are improved by increasing the distance between the railroad tracks and the traffic signal.

2.5.2.5. US 85 Corridor Cost for the Preferred Alternative

The Preferred Alternative assumes the full reconstruction of US 85. Total cost for the US 85 Corridor elements of the Preferred Alternative, assuming full reconstruction of US 85, is approximately \$97.1 million. CDOT currently lacks sufficient funding to build all US 85 elements of the Preferred Alternative. CDOT and Douglas County are working together to find additional funding. If sufficient funds are not found prior to the ROD, the project work will be prioritized. The ROD will be based on available funding. For a cost breakdown, see Section 2.9, *Alternative Costs*.

The ROW/relocation cost for the Preferred Alternative is approximately \$17.3 million to purchase 49.4 hectares (122 acres).

2.5.3 Transportation Demand Management Program for Preferred Alternative

A transportation demand management (TDM) program is recommended to complement the Preferred Alternative identified in the South I-25 Corridor and US 85 Corridor FEIS. The following strategies are planned to be implemented in coordination with local communities.

- Smart Community Information Network – Internet and variable message sign (VMS) based local

information network provides promotional opportunities, real-time congestion information, and other transportation services.

- Area-wide Ridesharing Programs – Programs and incentives that encourage commuters to use alternatives to driving single occupant vehicle (SOV), and encouraging employers to provide in-house programs that promote ridesharing among employees.
- Commuter Education and Outreach – Education campaign to promote alternative transportation to commuters. Outreach to employers to support employee commute programs. Provides for worksite promotions events.
- Pedestrian/Bicycle Facility – Pedestrian/bicycle facility from the Castle Pines car pool lot to the west side of I-25. Encourages pedestrians and bicyclists to car pool.

The cost for the TDM program is estimated to be \$155,000 start-up cost and \$130,000 annual cost.

A commitment has been made to implement these strategies. More detail regarding the TDM program is included in the *South I-25 Corridor and US 85 Corridor Transportation Demand Management Program Report*, December 2000.

Figures 2.5a through Figure 2.5i show improvements included in the Preferred Alternative along the I-25 Corridor.

[Figure 2.5a](#)
[Preferred Alternative I-25 Corridor](#)

[Figure 2.5b](#)
[Preferred Alternative I-25 Corridor](#)

[Figure 2.5c](#)
[Preferred Alternative I-25 Corridor](#)

[Figure 2.5d](#)
[Preferred Alternative I-25 Corridor](#)

[Figure 2.5e](#)
[Preferred Alternative I-25 Corridor](#)

[Figure 2.5f](#)
[Preferred Alternative I-25 Corridor](#)

[Figure 2.5g](#)
[Preferred Alternative I-25 Corridor](#)

[Figure 2.5h](#)
[Preferred Alternative I-25 Corridor](#)

[Figure 2.5i](#)
[Preferred Alternative I-25 Corridor](#)

Figures 2.7a through Figure 2.10h show improvements included in the Preferred Alternative along the US 85 Corridor.

[Figure 2.7a](#)
[Preferred Alternative US 85 Corridor](#)

[Figure 2.7b](#)
[Preferred Alternative US 85 Corridor](#)

[Figure 2.7c](#)
[Preferred Alternative US 85 Corridor](#)

[Figure 2.7d](#)
[Preferred Alternative US 85 Corridor](#)

[Figure 2.7e](#)
[Preferred Alternative US 85 Corridor](#)

[Figure 2.7f](#)
[Preferred Alternative US 85 Corridor](#)

[Figure 2.7g](#)
[Preferred Alternative US 85 Corridor](#)

[Figure 2.7h](#)
[Preferred Alternative US 85 Corridor](#)

2.6 OTHER ALTERNATIVE

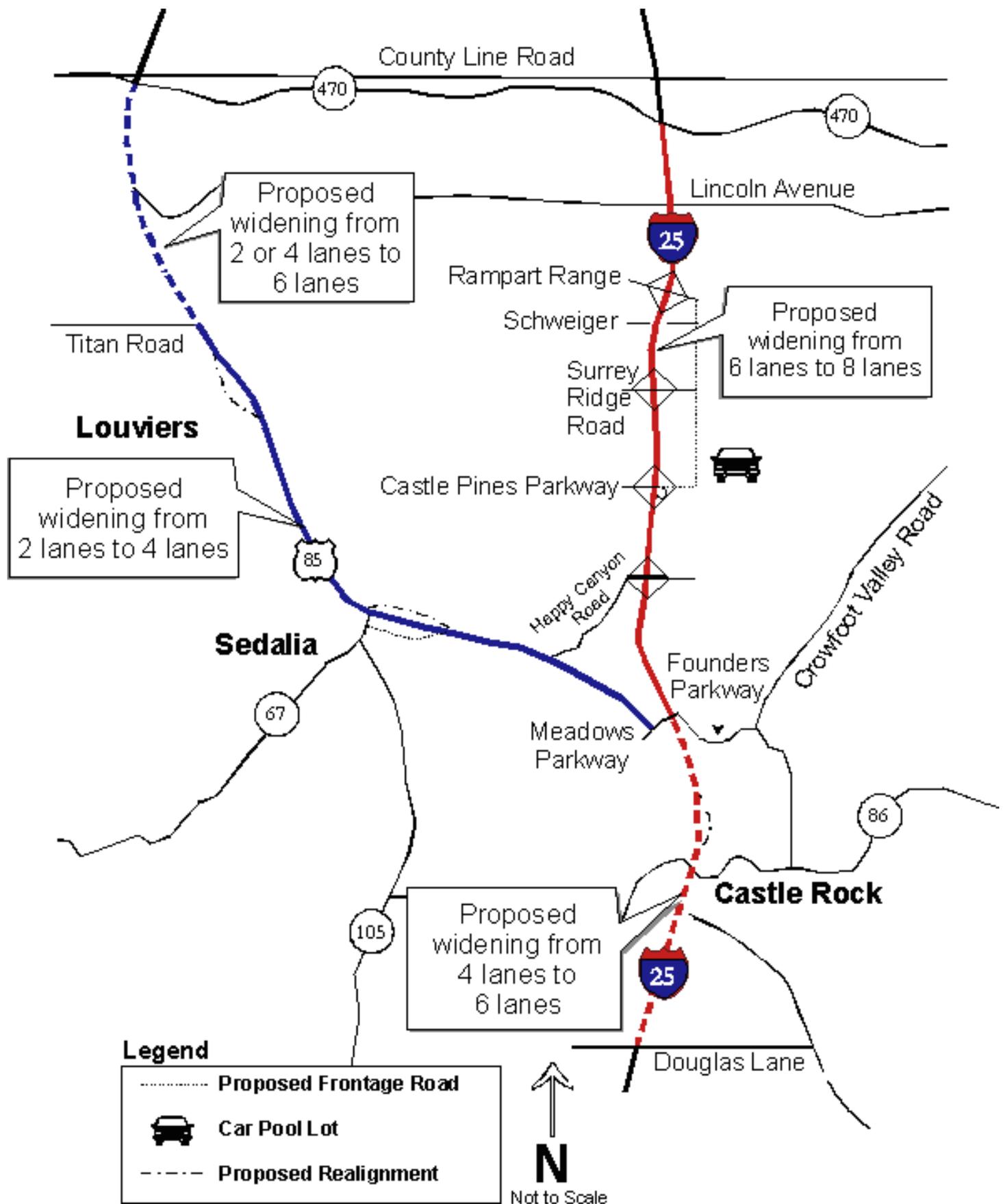
The Other Alternative was also developed based on comments regarding alternatives evaluated in the DEIS and additional analysis. This alternative expands and modifies elements included in the Preferred Alternative. The Other Alternative consists of improvements to the I-25 Corridor and US 85 Corridor such as mainline widening, mainline realignment, and major interchange improvements. All Early-Action projects and the Douglas Lane Interchange are included in this alternative (see Section 2.4, *No-Action Alternative*). A schematic of the Other Alternative is provided on Figure 2.9.

Major components of the Other Alternative along the I-25 Corridor include:

- Eight lanes (six through lanes and two climbing lanes) between C-470 and Meadows/Founders Parkway
- Six lanes between Meadows/Founders Parkway and Douglas Lane
- Diamond interchange at proposed Rampart Range Development
- Reconstruction of the Surrey Ridge Road Interchange to a diamond interchange
- Removal of Schweiger Interchange ramps
- Frontage road on the east side of I-25 from Castle Pines Parkway to proposed Rampart Range Interchange
- Castle Pines Parkway Interchange reconstruction with loop ramp in southeast quadrant
- Car pool lot (accommodating 500 spaces) in northeast quadrant of the I-25 and Castle Pines Parkway Interchange
- Happy Canyon Road Bridge widening
- Minor I-25 realignment to the east between Wolfensberger Road and Liggett Road
- Construction of a new bridge for the Union Pacific Railroad south of the existing bridge
- Supporting measures

Elements not part of the Preferred Alternative along the I-25 Corridor include the completion of a diamond interchange at the proposed Rampart Range Development. If the Rampart Range Interchange is built, the Schweiger Interchange is no longer needed and the Surrey Ridge Road Interchange would be upgraded to a full diamond interchange. A frontage road on the east side of I-25 connecting Castle Pines Parkway to Rampart Range is included to provide local mobility within the corridor. The financial responsibility of these improvements will be determined at a later date.

Figure 2.9
Other Alternative Schematic



Major components of the Other Alternative along the US 85 Corridor include:

- Six lanes between C-470 and Titan Road

- Four lanes between Titan Road and Meadows Parkway
- US 85/SH 67 Intersection reconfiguration
- Sedalia frontage road
- US 85 minor realignment at Cook Ranch (approximate MP 195.4)
- Bicycle/pedestrian facilities along US 85 (see Section 2.7, *Bicycle and Pedestrian Facilities along the US 85 Corridor*)
- Grade-separated crossing under US 85 for High Line Canal Trail (see Section 2.7, *Bicycle and Pedestrian Facilities along the US 85 Corridor*)
- Enhanced wildlife crossings (see Section 2.8, *Wildlife Crossings along the US 85 Corridor*)
- Supporting measures

Acceleration lanes and deceleration lanes are constructed according to CDOT design standards at the interchanges. Retaining walls are added or slope paving adjusted under the interchange bridges to accommodate roadway widening.

The Southeast Corridor's 10 general-purpose lanes will end at the north end of the C-470 Interchange, where two lanes will be dropped in each direction on the northern ramps. After a short stretch of six lanes, additional lanes are added at the County Line Road ramps for a total of eight lanes. Traffic studies show that the six-lane section will be sufficient due to the large percentage of entering and exiting vehicles on to and off of the C-470/E-470 Interchange. The six-lane section is between the C-470 north ramps and County Line Road ramps. Figure 2.10a (located at the end of this section) shows the connection to the Southeast Corridor improvements.

An improvement along the US 85 Corridor included in this alternative is providing six lanes from Highlands Ranch Parkway to Titan Road as opposed to the four lanes shown in the Preferred Alternative. CDOT intends to complete this widening when funding becomes available after the necessary revisions are made to the RTP and ROD.

Total cost for the Other Alternative is \$177.5 million. For a breakdown of the cost information, see Section 2.9, *Alternative Cost*.

2.6.1 I-25 Corridor Elements of the Other Alternative

The alignment; typical section; changes in travel patterns, access, and safety; and cost for the Other Alternative within the I-25 Corridor are described in the following sections.

2.6.1.1. I-25 Corridor Alignment for the Other Alternative

The Other Alternative generally follows the existing alignment along the entire section of I-25 (between C-470 and Douglas Lane) with one minor realignment between Wolfensberger Road (MP 182) and Liggett Road (MP 182.5) where the existing centerline shifts to the east by 14 meters (46 feet).

As part of the Climbing Lanes Early-Action projects, the entire interstate is being reconstructed between Lincoln Avenue and Meadows/Founders Parkway, providing for three 3.6-meter (12-foot) travel lanes, 3.6-meter (12-foot) outside shoulder, and 3.0-meter (10-foot) inside shoulder in each direction. As part of the Other Alternative improvements, between C-470 and Lincoln Avenue, the interstate is widened to the outside. From Lincoln Avenue to Meadows/Founders Parkway, the shoulder is converted into a travel lane and a new shoulder is constructed. Between Meadows/Founders Parkway and Douglas Lane, the entire interstate is reconstructed with widening primarily to the inside. Figure 2.10a through Figure 2.10i (included at the end of this section, Section 2.6, *Other Alternative*) illustrate the I-25 Corridor alignment for the Other Alternative.

A frontage road is added along the east side of I-25 between Rampart Range and Castle Pines Parkway. The frontage road typical section is shown on Figure 2.11. This frontage road is separated from I-25 by approximately 30 to 343 meters (70.5 to 1,094 feet). This separation provides room for a future transportation envelope (e.g., fixed-guideway). The frontage road flares out at the Surrey Ridge Road Interchange (new diamond interchange), Rampart Range Interchange (new diamond interchange), and Castle Pines Parkway Interchange to provide space for the new interchanges and an additional 180 meters (600 feet) to accommodate traffic signal timing and access spacing requirements.

2.6.1.2. Additional Major Improvements along the I-25 Corridor for the Other Alternative

In addition to the mainline widening, the Other Alternative include:

- *Diamond Interchange at Rampart Range.* A new diamond interchange at the proposed Rampart Range is constructed approximately 1,460 meters (4,800 feet) south of Lincoln Avenue to service future development. The Rampart Range Interchange exit ramps flare out to accommodate future loop ramps. This improvement is funded by others because the need for the new interchange is driven by proposed development in the area.
- *Diamond Interchange at Surrey Ridge Road.* The existing Surrey Ridge Road Interchange is reconstructed into a diamond interchange.
- *Removal of Schweiger Interchange Ramps.* The I-25 ramps at the Schweiger Interchange are removed and Schweiger is connected to the frontage road.
- *East-Side Frontage Road from Castle Pines Parkway to Rampart Range.* An east-side, two-lane frontage road is constructed between Castle Pines Parkway and Rampart Range. The frontage road may be accessed by Schweiger and Surrey Ridge Road. Local entities are taking the lead in obtaining ROW for the frontage road. Although CDOT is participating in the funding, local funds are also required.

Figure 2.11
I-25 Corridor Typical Sections for the Other Alternative

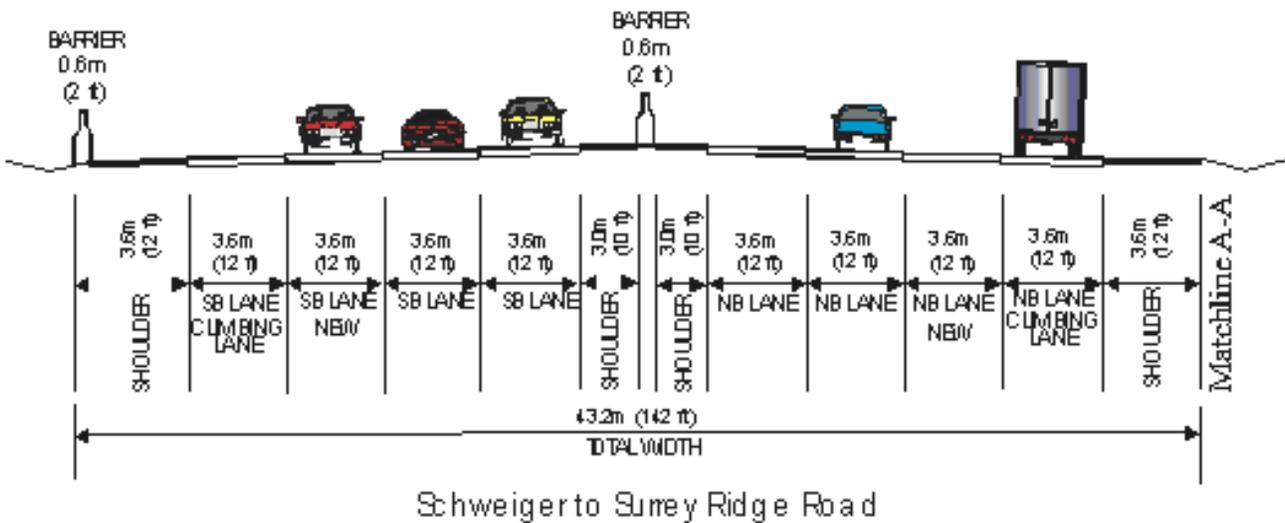
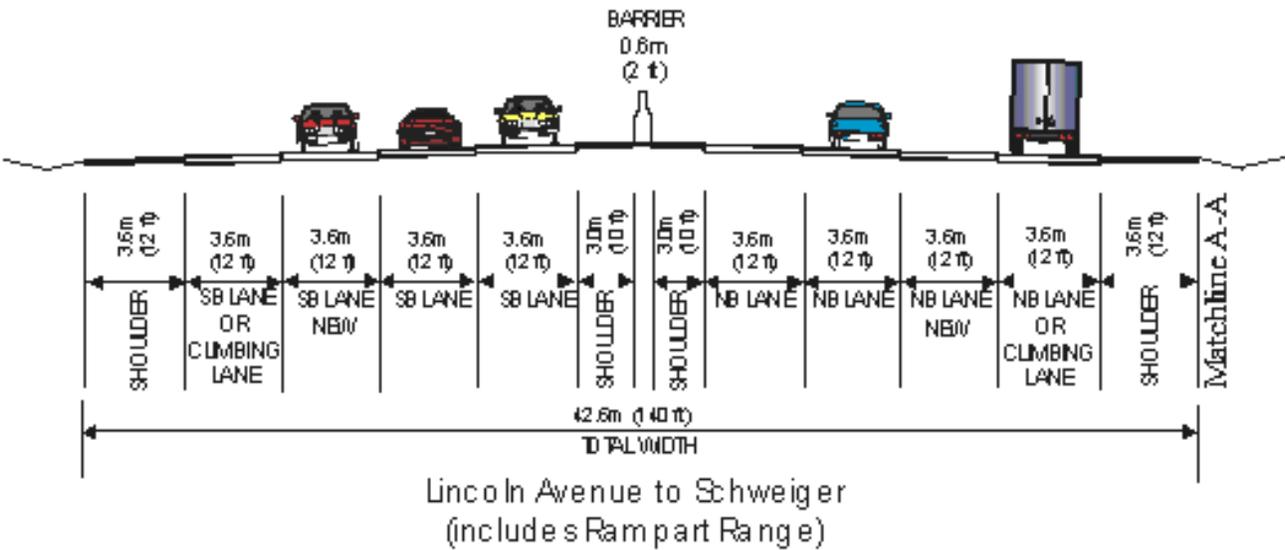
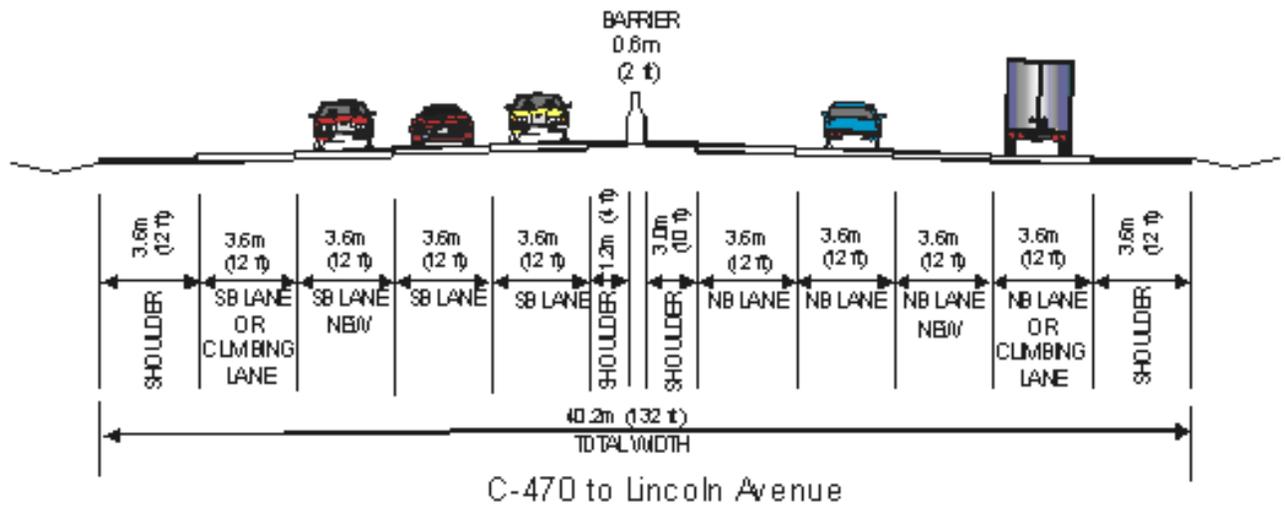
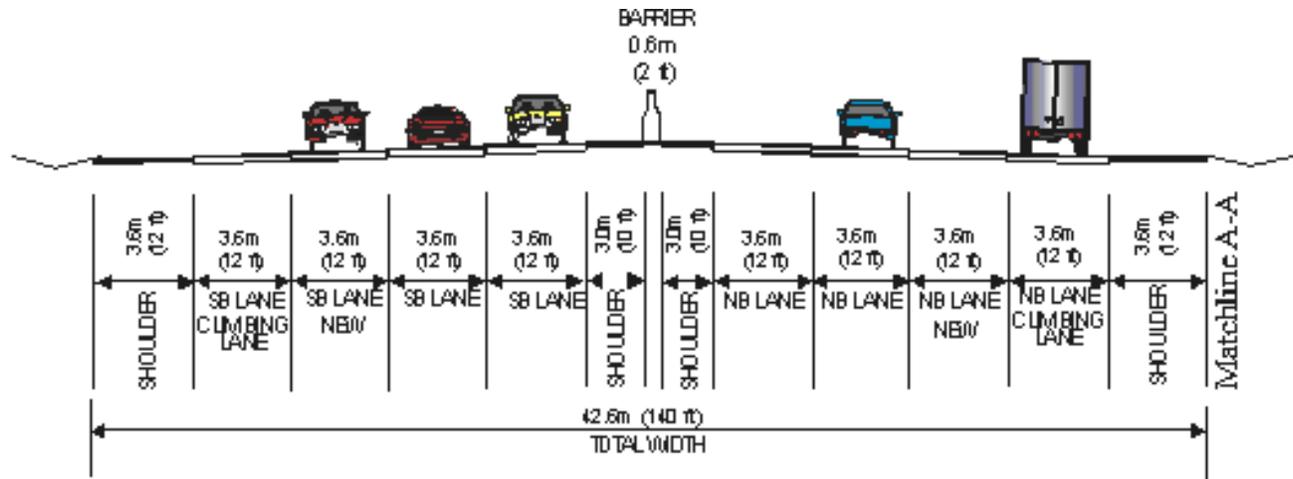
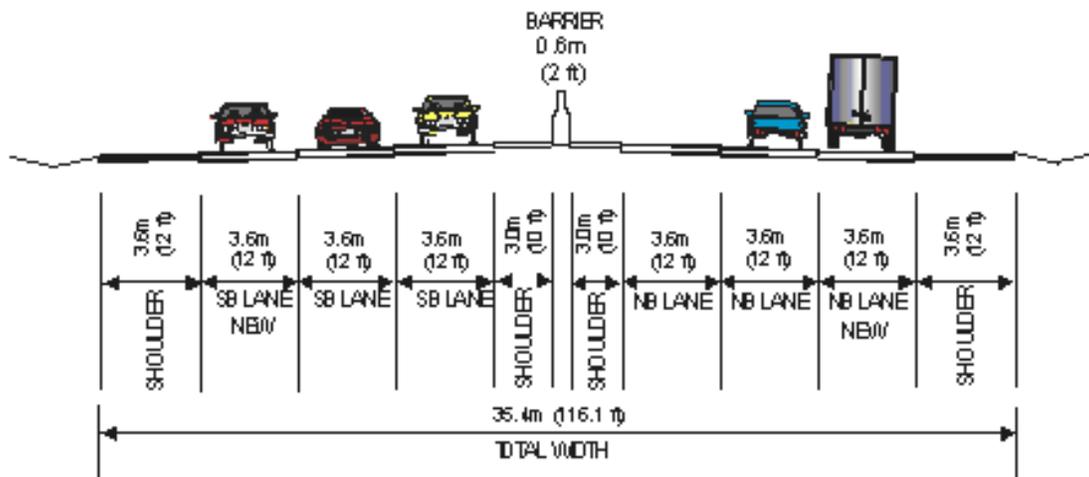


Figure 2.11 cont.
I-25 Corridor Typical Sections for the Other Alternative

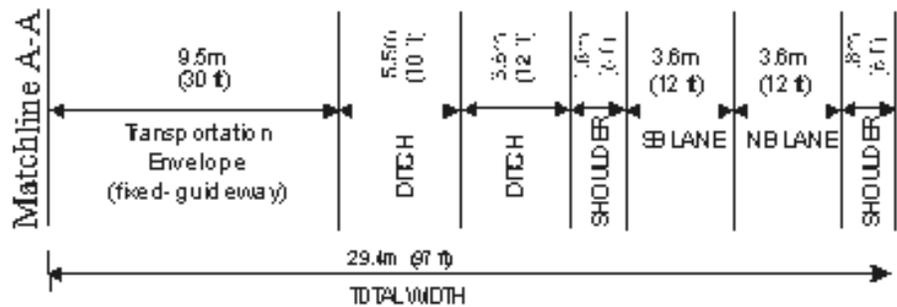


Surrey Ridge Road to Meadows/Founders Parkway
 (includes Castle Pines Parkway)



Meadows/Founders Parkway to Douglas Lane

Connection to
Northbound Lane



Frontage Road
 (Between Rampart Range and Castle Pines Parkway)

Note: Numbers may not add due to rounding of metric unit/English unit conversions.

Note: Numbers may not add due to rounding of metric unit/English unit conversions.

- *Partial Cloverleaf Interchange at Castle Pines Parkway.* The Castle Pines Parkway Interchange is reconfigured by adding a loop ramp in the southeast quadrant of the Castle Pines Parkway Interchange to improve traffic operations for eastbound to northbound traffic in response to proposed development in the area. For more information on the traffic operations at this interchange, see the *South I-25 Corridor Interchange Study*, January 2000. Although CDOT is participating in the funding of the improvements to this interchange, local funds are also required due to the development needs.
- *Castle Pines Parkway Car Pool Lot.* A new car pool lot in the northeast quadrant of the Castle Pines Parkway Interchange is constructed. The lot provides for 500 parking spaces and serves as a meeting place and parking area. The car pool lot can be built in phases, starting with a fewer number of parking spaces. When transit is constructed within the corridor, the car pool lot may be converted into a park-and-ride lot.
- *Happy Canyon Road Bridge Widening.* The Happy Canyon Road Bridge is widened to provide additional left-turn lanes. Projected traffic volumes warrant the addition of turning lanes to accommodate access onto I-25. Although CDOT is participating in the funding of the improvements to this bridge, local funds are also required due to the development needs. For additional information on projected traffic volumes, see *I-25 Corridor and US 85 Corridor Future (2020) Traffic Operations*, December 2000.
- *Union Pacific Railroad Bridge.* The existing Union Pacific Railroad crosses over I-25 just north of the Wolfensberger Interchange. The Other Alternative proposes realigning the Union Pacific Railroad Bridge 14 meters (46 feet) to the south of the existing alignment. As a result of this realignment, a new bridge for the Union Pacific Railroad is constructed, and the existing bridge is removed.
- *Plum Creek Parkway Bridges and Plum Creek Bridges.* The Plum Creek Parkway Bridge and the Plum Creek Bridges are widened and rehabilitated.

Figures 2.10a through Figure 2.10i show improvements included in the Other Alternative along the I-25 Corridor.

2.6.1.3. I-25 Corridor Typical Section for the Other Alternative

The Other Alternative along the I-25 Corridor consists of eight general-purpose lanes between C-470 and Lincoln Avenue, six general-purpose lanes and two climbing lanes between Lincoln Avenue and Meadows/Founders Parkway, and six general-purpose lanes between Meadows/Founders Parkway and Douglas Lane. Figure 2.11 shows the typical sections for the Other Alternative.

Each lane in the typical eight-lane section of I-25 between C-470 and Lincoln Avenue is 3.6 meters (12 feet) wide. In order to accommodate the proposed improvements in the Southeast Corridor, a southbound inside shoulder variance of 1.2 meters (4 feet) (to be approved by the FHWA) and an outside shoulder of 3.0 meters (10 feet) is included. The northbound inside shoulder is 3.0 meters (10 feet) wide and the outside shoulder is 3.6 meters (12 feet) wide. A concrete barrier 0.6 meter (2 feet) wide, 0.9 meter (2.8 feet) high separates opposing traffic. The total width of the eight-lane typical section is 40.2 meters (132 feet).

Each lane in the typical eight-lane section of I-25 between Lincoln Avenue and Meadows/Founders Parkway is

3.6 meters (12 feet) wide. The outside shoulders of this typical section are 3.6 meters (12 feet) wide, allowing enough room for emergency parking on the roadway. Inside shoulders are 3.0 meters (10 feet) wide, with a concrete barrier 0.6 meter (2 feet) wide (1 meter [3 feet] high) separating the opposing traffic. Total width of the eight-lane typical section is approximately 42.6 meters (140 feet). On the outside shoulder of southbound I-25 between Schweiger and Surrey Ridge Road, a Type IV barrier [0.6 meter (2 feet) wide] is provided.

Each lane in the typical six-lane section of I-25 between Meadows/Founders Parkway and Douglas Lane is 3.6 meters (12 feet) wide. The outside shoulder of this typical section is 3.6 meters (12 feet) wide, allowing enough room for emergency parking on the roadway. The inside shoulder is typically 3.0 meters (10 feet) wide, with a concrete barrier 0.6 meter (2 feet) wide (0.9 meter [2.8 feet] high) separating opposing traffic. Total width of the six-lane typical section is approximately 35.4 meters (116 feet).

The frontage road between Castle Pines Parkway and Rampart Range includes two 3.6-meter (12-foot) travel lanes and 1.8-meter (6-foot) shoulders. Total width of the frontage road is approximately 10.8 meters (35.5 feet). The frontage road is located at least 9 meters (30 feet) from I-25 to accommodate future transit, this width may be adjusted to accommodate various types of fixed-guideway.

2.6.1.4. I-25 Corridor Changes in Travel Pattern, Access, and Safety for the Other Alternative

The Other Alternative improves access to the interchanges along the I-25 Corridor between Meadows/Founders Parkway and Douglas Lane by improving the acceleration and deceleration lanes to comply with CDOT design standards. As part of the Climbing Lanes Early-Action projects, acceleration and deceleration lanes from Lincoln Avenue to Meadows/Founders Parkway are extended to comply with CDOT design standards.

The Other Alternative includes safety features such as wider shoulders, concrete median barriers, ramp adjustments, longer acceleration and deceleration lanes, wider structures at the railroad and Plum Creek, and better curve geometry. The realignment of I-25 to the east between Wolfensberger Road and Liggett Road increases the curve radius to improve safety along the roadway. Highway safety is also improved due to the additional capacity that the mainline widening provides.

The new diamond interchanges at Rampart Range and Surrey Ridge Road improve safety for vehicles entering and exiting I-25 by providing ramps that comply with CDOT design standards. The Rampart Range Interchange adds new access points along I-25, which increase the likelihood of crashes. The Surrey Ridge Road Interchange does not add another access. The Schweiger Interchange is eliminated by removing the I-25 ramps. Safety conditions here may improve due to a possible decrease in crashes as a result of removing the access to I-25.

The frontage road along I-25 between Rampart Range and Castle Pines Parkway may change travel patterns for those traveling in the vicinity of the frontage road. The frontage road allows residents to access adjacent neighborhoods without using I-25. Included in this alternative is the closure of the Schweiger Interchange, and access is provided to I-25 via the frontage road. The travel patterns of those in the vicinity of the Schweiger Interchange access I-25 from either Rampart Range or Surrey Ridge Road on the frontage road.

Vehicles traveling eastbound on Castle Pines Parkway have improved access on northbound I-25 by providing a loop entrance ramp and eliminating the need for left turns. The eastbound-to-northbound traffic flow is continuous (eliminating left turns), thus improving interchange operations. The loop provides an additional on-ramp to I-25. The Castle Pines loop ramp improves safety for vehicles traveling eastbound onto northbound I-25.

The loop ramp eliminates conflict for vehicles currently making left turns. However, the addition of the Castle Pines loop ramp creates another access point on I-25, increasing the possibility of crashes; thus safety conditions may deteriorate along I-25.

The addition of a car pool lot at the Castle Pines Parkway Interchange changes the travel patterns for those using the lot. Currently, the lot does not exist and people do not exit I-25 and consolidate vehicles. Local neighborhood commuters may meet at the car pool lot to consolidate into one car. The car pool lot may increase the number of vehicles using the Castle Pines Parkway Interchange and alter the existing access.

The addition of left-turn lanes on Happy Canyon Road creates greater capacity for the entire intersection and, in return, improves access for those turning onto I-25 to travel either northbound or southbound. Additional left-turn lanes on Happy Canyon Road improve safety by providing more capacity for vehicles making left turns.

2.6.1.5. I-25 Corridor Cost for the Other Alternative

The estimated cost for the I-25 Corridor elements of the Other Alternative is approximately \$78.7 million. For a cost breakdown, see Section 2.9, *Alternative Costs*.

Minimal construction cost is included for the I-25 mainline improvements between Lincoln Avenue and Meadows/Founders Parkway because this section only includes adding a shoulder in each direction. Most of the construction cost for I-25 widening is south of Meadows/Founders Parkway because this section includes complete interstate reconstruction.

A major cost of this alternative is the interchange improvements and frontage road. The ROW increases for this alternative because the frontage road is being constructed on a new alignment. The total ROW required for the Other Alternative is 28.9 hectares (71.4 acres), which costs \$8.2 million to purchase. However, it is intended that as part of the Douglas County planning process, future ROW will be preserved as development occurs.

2.6.2 US 85 Corridor Elements of the Other Alternative

The alignment; typical section; changes in travel patterns, access, and safety; and cost for the Other Alternative within the US 85 Corridor are described in the following sections.

2.6.2.1. US 85 Corridor Alignment for the Other Alternative

The Other Alternative alignment generally follows the existing alignment with widening to the outside. Exceptions are portions of the roadway at Sedalia and Titan Road where the alignment moves to the northeast and at Cook Ranch (approximate MP 195.4) where the alignment moves to the west.

Beginning at C-470 moving south, the alignment stays along the existing alignment. At Blakeland Drive, the alignment shifts 2.1 meters (7 feet) to the west and then returns to the existing alignment at Highlands Ranch Parkway. The US 85 alignment at Lakeside Drive (approximate MP 197.2) is elevated by approximately 4.2 meters (14 feet) to improve the intersection. Continuing south, the alignment follows the existing alignment to approximately MP 195.4 where it shifts to the west by at most 77.7 meters (255 feet). The alignment returns to the existing alignment at approximately MP 194.9 and continues until MP 190.7.

At approximately MP 190.7, the alignment shifts from the existing alignment to the southeast until approximately MP 187.8 where it returns to the existing alignment. The US 85 alignment at Daniels Park Road runs southwest along the existing alignment to Meadows Parkway. The alignment remains at least 3 meters (10 feet) from the Union Pacific Railroad and the Burlington Northern Santa Fe Railroad ROW throughout the US 85 Corridor.

Figure 2.12a through Figure 2.12h (included at the end of this section, Section 2.6, *Other Alternative*) illustrate the US 85 Corridor alignment for the Other Alternative.

2.6.2.2. Additional Major Improvements along the US 85 Corridor for the Other Alternative

In addition to the mainline widening, the Other Alternative includes:

- *SH 67/US 85 Intersection Reconfiguration and Frontage Road.* This improvement includes the construction of a short frontage road in the Town of Sedalia (approximately 365 meters [1,200 feet] long). The intersection of SH 67 and US 85 is improved by extending SH 67 to the north with a full-movement signalized intersection. A frontage road is constructed in the southeast quadrant, connecting SH 67 to US 85 at the Cherokee Ranch access road. The intersection of US 85 and the frontage road is stop-sign controlled. The frontage road provides full-movement access to local Sedalia businesses. Left turns will be prohibited when accessing SH 67 from the frontage road and when accessing the frontage road from SH 67.
- *Bicycle/pedestrian facilities along US 85.* Bicycle and pedestrian facilities are provided along the US 85 Corridor as described in Section 2.7, *Bicycle and Pedestrian Facilities along the US 85 Corridor*)
- *High Line Canal Trail grade-separated crossing under US 85.* See Section 2.7, *Bicycle and Pedestrian Facilities along the US 85 Corridor.*
- *Enhanced wildlife crossings.* See Section 2.8, *Wildlife Crossings along the US 85 Corridor.*

2.6.2.3. US 85 Corridor Typical Section for the Other Alternative

Typical sections discussed here best minimize environmental impacts while providing safe roadway and roadside design. Typical section width varies depending on impacts in the area. For example, many environmental and land use impacts around Sedalia force the typical section to be narrower. Multiple typical sections were discussed and evaluated during the EIS process.

An inside curb and gutter section is generally used throughout US 85. Where reasonable, a full 4.6-meter (15-foot) raised median is used. In areas where the typical section needs to be minimized, a 1.8-meter (6-foot) raised median is used. The raised median physically separates opposing traffic flows and controls access.

Figure 2.13 shows the typical section for the Other Alternative. The six-lane section between C-470 and Blakeland Drive includes six 3.6-meter (12-foot) travel lanes, 3.1-meter (10-foot) raised median, 0.5-meter (1.6-foot) inside curb and gutter, 0.8-meter (2.6-foot) outside curb and gutter, 0.9-meter (3-foot) inside shoulder, 3.0-meter (10-foot) continuous auxiliary lanes, and a 2.4-meter (8-foot) bicycle/pedestrian facility on both sides of the highway. The total typical section is approximately 40 meters (131 feet).

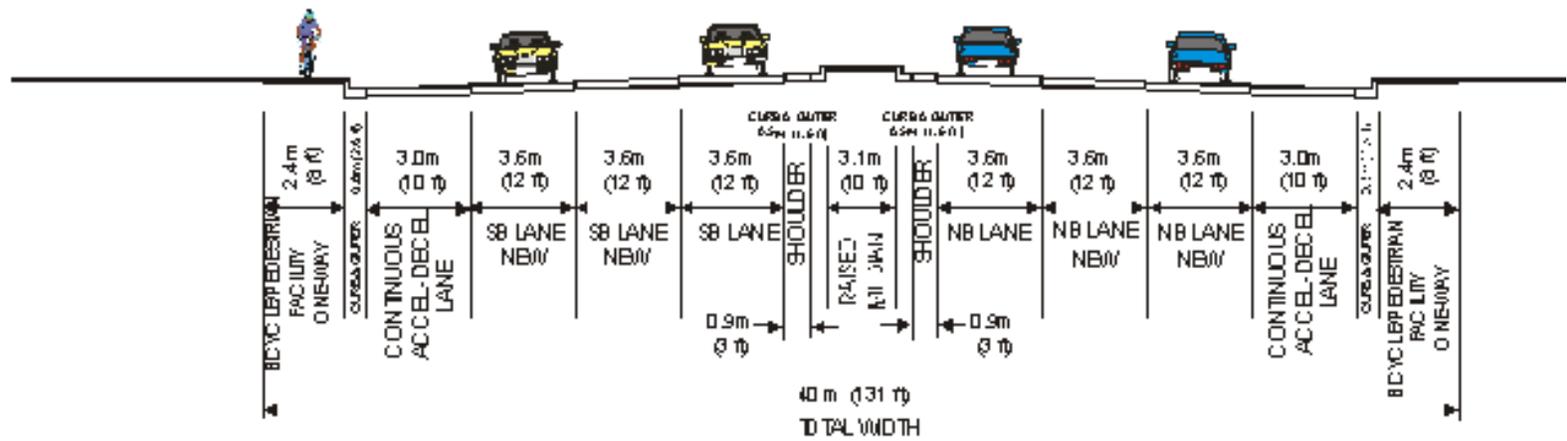
The section between Blakeland Drive and Highlands Ranch Parkway has a total typical section width of 39.6 meters (130 feet). This section includes six 3.6-meter (12-foot) travel lanes, 3.1-meter (10-foot) raised median, 0.5-meter (1.6-foot) inside curb and gutter, 0.8-meter (2.6-foot) outside curb and gutter, 0.9-meter (3-foot) inside shoulder, 3.0-meter (10-foot) continuous auxiliary lanes, and a detached 3-meter (10-foot) bicycle/pedestrian facility on the east side of US 85. The detached bicycle/pedestrian facility changes to an attached facility at the Union Pacific Railroad Bridge due to width restrictions with the bridge. The attached facility is separated from the highway with a 0.6-meter (2-foot) barrier.

The typical section between Highlands Ranch Parkway and Titan Road includes six 3.6-meter (12-foot) travel lanes, 1.8-meter (6-foot) raised median, 0.5-meter (1.6-foot) inside curb and gutter, 0.9-meter (3-foot) inside shoulder, and two 3.0-meter (10-foot) shoulder/bikeway. The total typical section width is approximately 32.2 meters (106 feet).

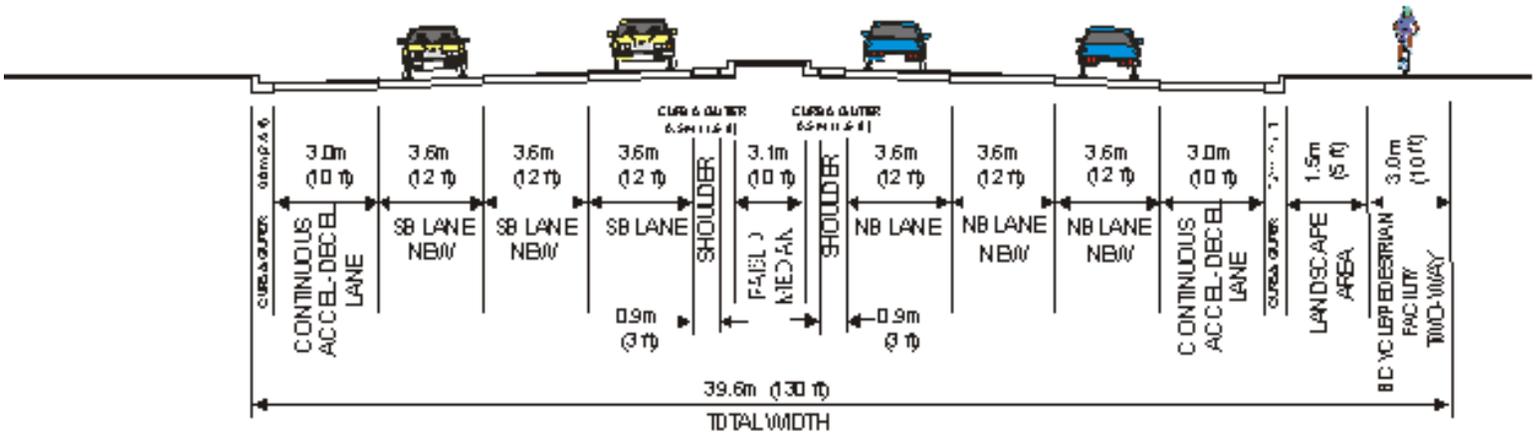
The section between Titan Road and IREA has a total typical section width of 26.3 meters (86 feet). There are four 3.6-meter (12-foot) lanes, a 3.1-meter (10-foot) raised median, 0.5-meter (1.6-foot) inside curb and gutter, 0.9-meter (3-foot) inside shoulder, and two 3-meter (10-foot) shoulder/bikeway.

The section between IREA and Sedalia (SH 67) has a total typical section width of 20.9 meters (69 feet). There are four 3.6-meter (12-foot) lanes, a 0.9-meter (3 feet) raised median, 0.5-meter (1.6-foot) inside and 0.8-meter (2.6-foot) outside curb and gutter, and a 3-meter (10-foot) bicycle/pedestrian facility on the south side of the typical section. The narrower typical section is required in this section due to ROW constraints and environmental impacts.

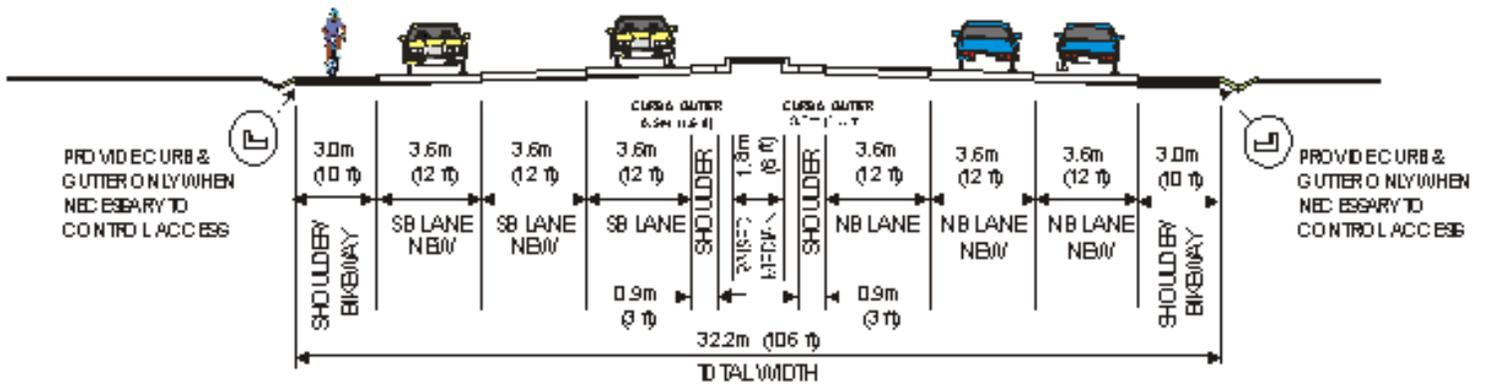
Figure 2.13
US 85 Corridor Typical Sections for Other Alternative



C-470 to Blakeland Drive



Blakeland Drive to Highlands Ranch Parkway



Highlands Ranch Parkway to Titan Road

Note: Numbers may not add due to rounding of metric unit/english unit conversions.

Figure 2.13
US 85 Corridor Typical Sections for the Other Alternative

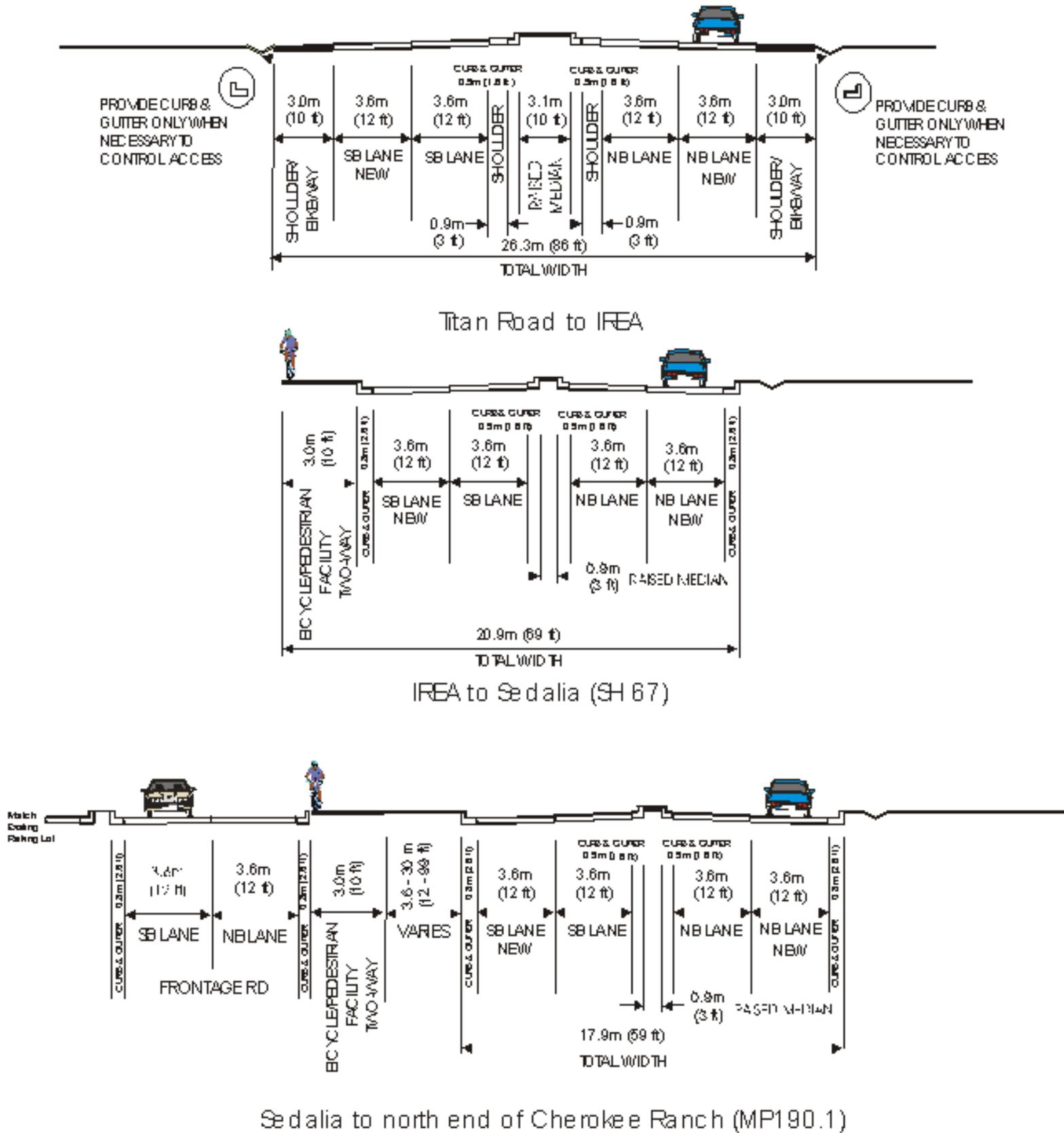
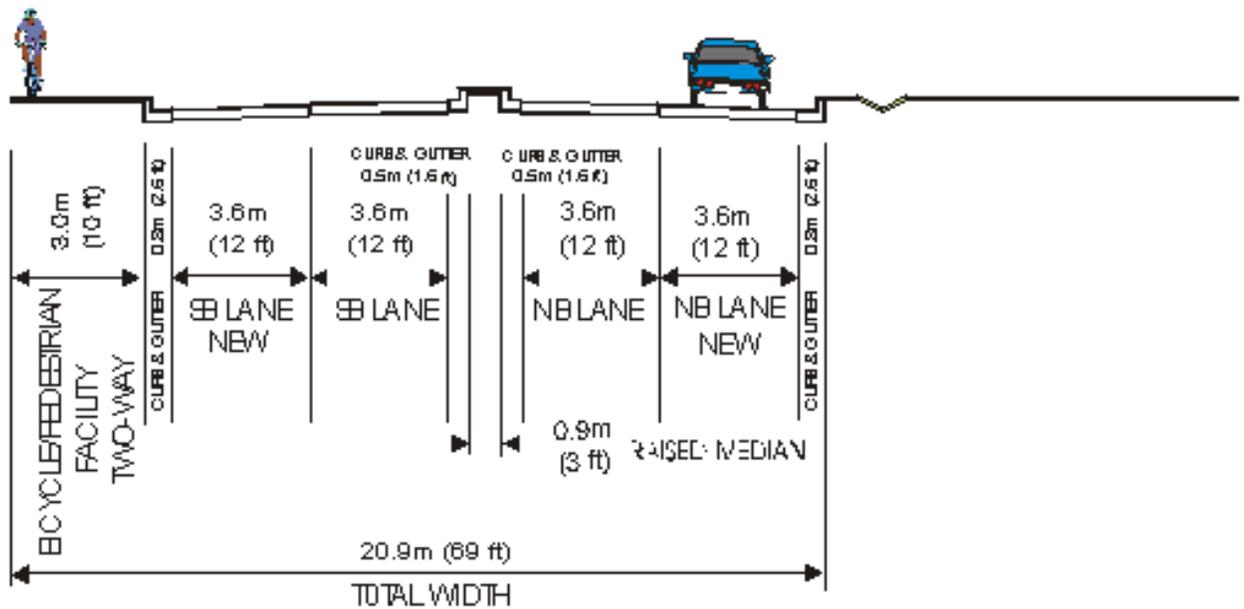
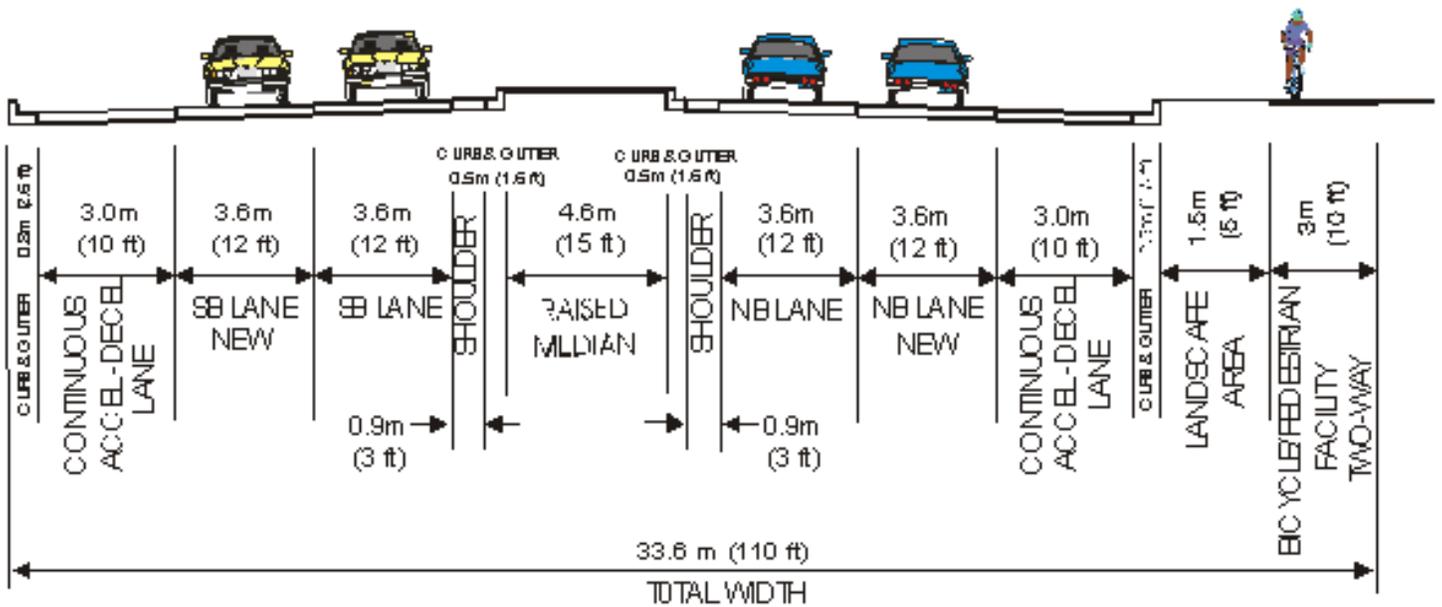


Figure 2.13
US 85 Corridor Typical Sections for the Other Alternative



**North end of Cherokee Ranch (MP 190.1)
to Daniels Park Road**



Daniels Park Road to Meadows Parkway

The section between Sedalia and the north end of the Cherokee Ranch (approximately MP 190.1) consists of the typical section described previously between IREA and Sedalia, with the addition of a frontage road on the south side of US 85. The frontage road is separated from US 85 by a grass median that varies in width. The frontage road has two 3.6-meter (12-foot) lanes, 0.8-meter (2.6-foot) outside curb and gutter, and a bicycle/pedestrian facility to the north. Total width of this section is 17.9 meters (59 feet).

The section between the north end of the Cherokee Ranch and Daniels Park is the same as described between IREA and Sedalia.

From Daniels Park Road to Meadows Parkway, a wider typical section is used with continuous acceleration and deceleration lanes. There are four 3.6-meter (12-foot) lanes, a 4.6-meter (15-foot) raised median, 0.5-meter (1.6-foot) inside curb and gutter, 0.9-meter (3-foot) inside shoulder, 3.0-meter (10-foot) acceleration and deceleration lanes, a landscaped area of approximately 1.5 meters (5 feet) between the roadway and the bikeway, and a detached 3.0-meter (10-foot) bicycle/pedestrian facility on the east side. The total typical section width is approximately 33.6 meters (110 feet).

The typical section may include left-turn lanes, acceleration lanes, and deceleration lanes where appropriate. Continuous auxiliary lanes are used where accesses are spaced closely together. Most business and residential accesses are provided with right-in/right-out access.

2.6.2.4. US 85 Corridor Travel Patterns, Access, and Safety for the Other Alternative

Travel patterns change for those accessing the businesses located in the southeast quadrant of the SH 67 and US 85 intersection. The Other Alternative improves the intersection of SH 67 and US 85 at Sedalia. The intersection is improved by adding acceleration and deceleration lanes, a frontage road, and a raised median along SH 67. The interchange moves to the northeast, and a frontage road is constructed along the existing US 85 roadway providing access to the Sedalia businesses. Travel patterns change for those currently accessing the businesses directly off of US 85 and from SH 67 as well. Left turns onto and off of the frontage road frontage road from SH67 will be prohibited. Under this alternative, businesses in this area must be accessed via the frontage road.

Access points along US 85 are improved in conjunction with the widening of US 85 based on recommendations from the *Final US 85 Access Management Plan*, February 2001. The purpose of the plan is to improve traffic flow, improve traffic safety, reduce traffic conflicts, and provide appropriate access to adjacent land uses. To meet this objective, existing accesses are consolidated or changed to right-in/right-out. Residents who are provided a limited access of right-in/right-out alter their travel patterns by traveling out of the desired direction to a full-movement access to make a U-turn. Maximum out-of-direction travel is approximately 1.6 kilometers (1 mile). The new SH 67 and US 85 intersection improves access to Sedalia and the businesses.

Safety features incorporated in the Other Alternative include wider shoulders, mountable curb, raised median, intersection turn lanes, acceleration lanes, deceleration lanes; and better curve geometry. Highway safety is improved due to the additional capacity that the mainline widening provides and due to the realignment of US 85 at the Cook Ranch property where a curve is minimized. Safety is also improved by reducing traffic conflicts by consolidating access points along US 85. By shifting the SH 67 and US 85 intersection to the northeast, safety and operations are improved by increasing the distance between the railroad tracks and the signal.

2.6.2.5. US 85 Corridor Cost for the Other Alternative

Total cost for the US 85 Corridor elements of the Other Alternative is approximately \$98.8 million. For a cost breakdown, see Section 2.9, *Alternative Costs*.

The ROW/relocation cost for the Other Alternative is approximately \$17.8 million to purchase 51.4 hectares (127 acres).

2.6.3 Transportation Demand Management Program for the Other Alternative

The TDM program for the Other Alternative is the same as the TDM program for the Preferred Alternative. For additional information, see Section 2.5.3, *Transportation Demand Management Program for the Preferred Alternative*.

Figures 2.10a through Figure 2.10i show improvements included in the Other Alternative along the I-25 Corridor.

[Figure 2.10a](#)
[Other Alternative I-25 Corridor](#)

[Figure 2.10b](#)
[Other Alternative I-25 Corridor](#)

[Figure 2.10c](#)
[Other Alternative I-25 Corridor](#)

[Figure 2.10d](#)
[Other Alternative I-25 Corridor](#)

[Figure 2.10e](#)
[Other Alternative I-25 Corridor](#)

[Figure 2.10f](#)
[Other Alternative I-25 Corridor](#)

[Figure 2.10g](#)
[Other Alternative I-25 Corridor](#)

[Figure 2.10h](#)
[Other Alternative I-25 Corridor](#)

[Figure 2.10i](#)
[Other Alternative I-25 Corridor](#)

Figures 2.12a through Figure 2.10h show improvements included in the Other Alternative along the US 85 Corridor.

[Figure 2.12a](#)

Other Alternative US 85 Corridor

Figure 2.12b

Other Alternative US 85 Corridor

Figure 2.12c

Other Alternative US 85 Corridor

Figure 2.12d

Other Alternative US 85 Corridor

Figure 2.12e

Other Alternative US 85 Corridor

Figure 2.12f

Other Alternative US 85 Corridor

Figure 2.12g

Other Alternative US 85 Corridor

Figure 2.12h

Other Alternative US 85 Corridor

2.7 BICYCLE AND PEDESTRIAN FACILITIES ALONG THE US 85 CORRIDOR

In addition to improving the existing highway, CDOT is also seeking opportunities to improve the entire multi-modal system. Figure 2.14 shows the bicycle and pedestrian facilities along US 85 under consideration in the Preferred Alternative and Other Alternative.

CDOT would prefer a detached bicycle and pedestrian facility along US 85. However, various properties along US 85, including houses, businesses, and Section 4(f) properties, restrict the amount of bikeway that can be detached. As part of the Preferred Alternative and Other Alternative, a detached bicycle/pedestrian facility is located between Blakeland Drive and Highlands Ranch Parkway and between Daniels Park Road and Meadows Parkway. Figure 2.15 is a photo simulation of the detached trail just north of Happy Canyon Road. Where a detached bicycle/pedestrian facility does not fit due to various restrictions, either an attached facility or a large shoulder serves as the bikeway. Multiple bicycle/pedestrian facilities were discussed and evaluated during the EIS process.

Bicycle/pedestrian facilities generally follow the US 85 alignment where possible. Between C-470 and Blakeland Drive, an attached, 2.4-meter (8-foot) bicycle/pedestrian facility is located on both sides of US 85. Along the east side of US 85 from Blakeland Drive to Highlands Ranch Parkway, a 3.0-meter (10-foot), detached bicycle/pedestrian facility that is separated from US 85 by a 1.5-meter (5-foot) landscaped area is provided. The detached bicycle/pedestrian facility changes to an attached facility at the Union Pacific Railroad Bridge due to width restrictions with the bridge. The attached facility is separated from the highway with a 0.6-

meter (2-foot) barrier.

The section between Highlands Ranch Parkway and IREA includes 3.0-meter (10-foot) shoulder/bikeways on both sides of the highway. Along the west side of US 85 from IREA to Sedalia (SH 67), a 3.0-meter (10-foot), attached bicycle/pedestrian facility is provided.

The section between Sedalia and the north end of the Cherokee Ranch (approximately MP 190.1) consists of a frontage road on the south side of US 85. A 3.0-meter (10-foot) bicycle/pedestrian facility is located on the east side of the frontage road. From approximately MP 190.1 to Daniels Park Road, a 3.0-meter (10-foot), attached bicycle/pedestrian facility is located on the west side of US 85. Between Daniels Park Road and Meadows Parkway, a detached, 3.0-meter (10-foot) bicycle/pedestrian facility that is separated from US 85 by a 1.5-meter (5-foot) landscaped area is provided on the east side of US 85.

Bicycle and pedestrian facilities included in the Preferred Alternative and Other Alternative connect to existing paths, such as the High Line Canal Trail. Improvements to the High Line Canal Trail are included as part of the Preferred Alternative and Other Alternative. The trail is realigned to the north and improved into a grade-separated crossing. The crossing is a 3-meter (10-foot) high by 3.7-meter (12-foot) wide culvert. The original High Line Canal Trail remains in place to provide a connection to the US 85 bicycle/pedestrian facility. Figure 2.16 shows the design and typical section of the trail under US 85. Figure 2.17 is a photo simulation showing the new grade-separated crossing and the original trail.

Figure 2.14
Bicycle/Pedestrian Facilities Considered for the Preferred Alternative
and the Other Alternative

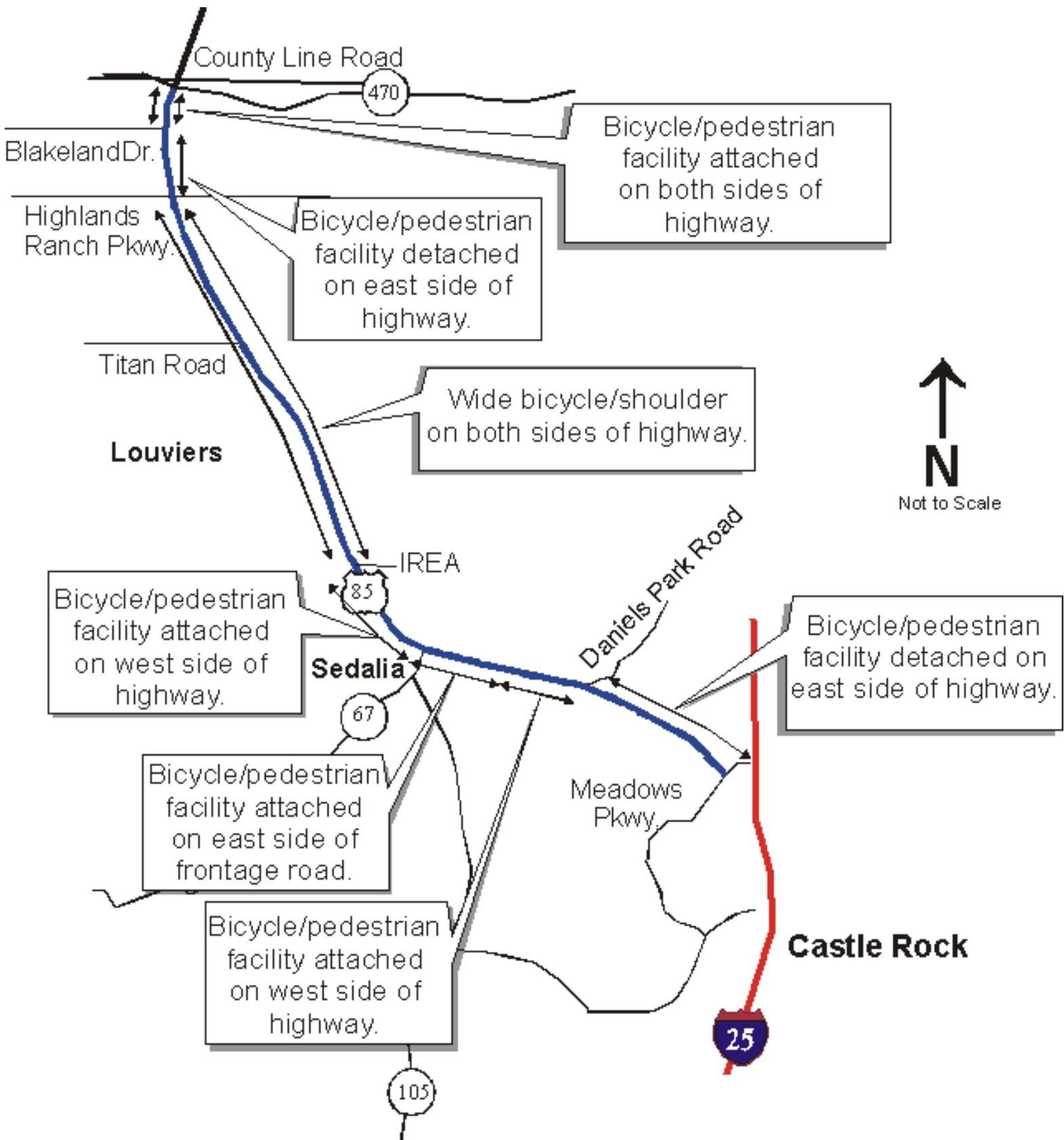


Figure 2.15
Detached Bicycle/Pedestrian Facility Photo Simulation at Approximate MP 187.2
(looking north)



Figure 2.16
High Line Canal Trail Grade - Separation
M.P. 199.56

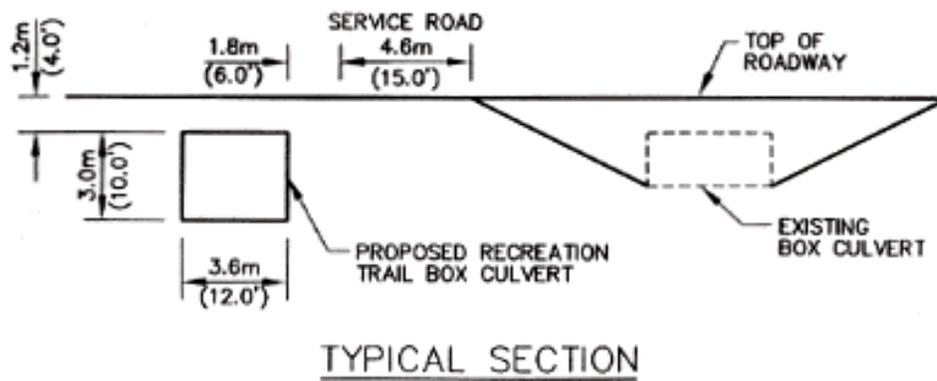
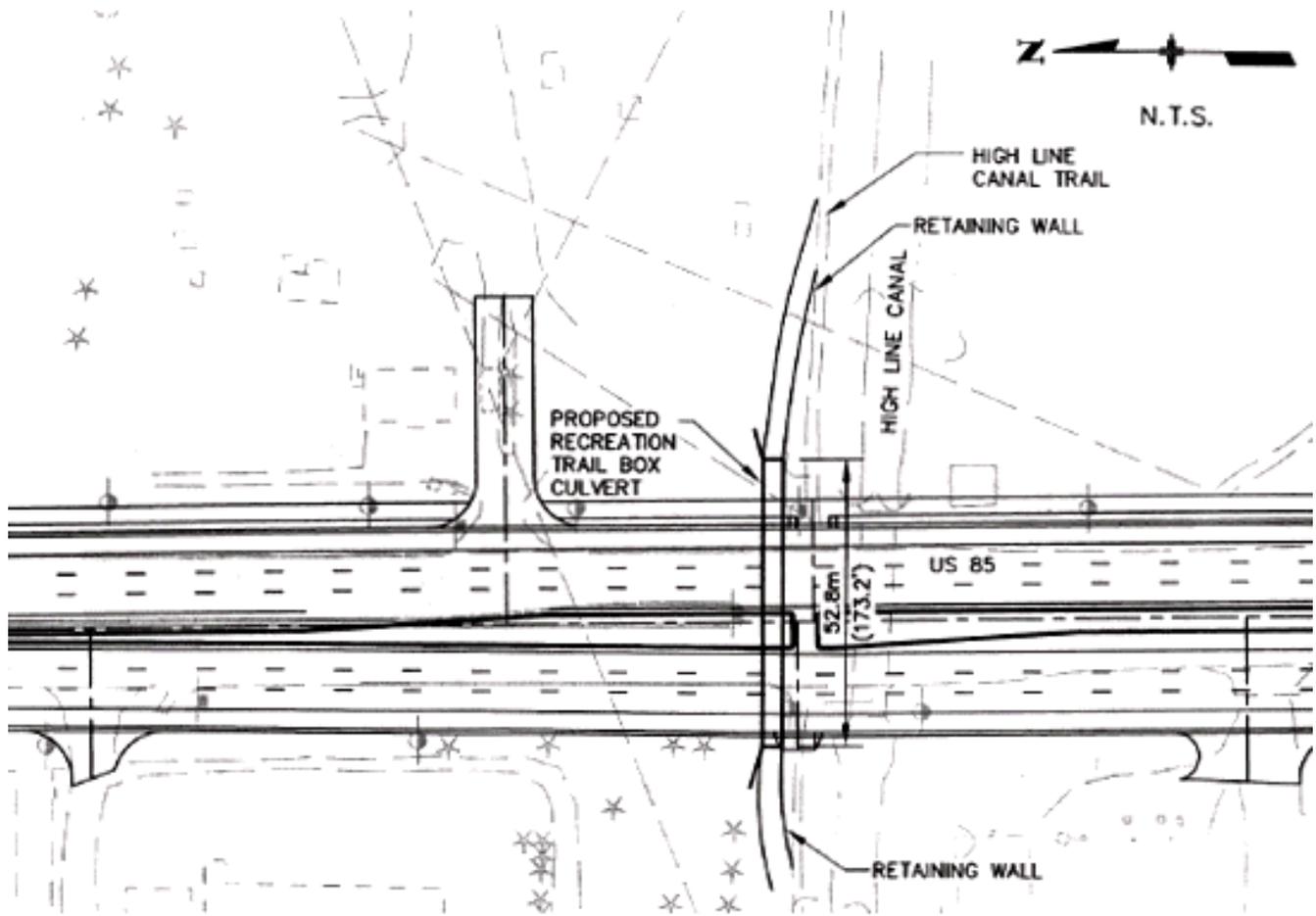


Figure 2.17
High Line Canal Trail Photo Simulation at Approximate MP 199.5
(looking west)



CDOT is committed to continue working with trail groups throughout the design process to develop the best possible design for the bicycle/pedestrian facility within the existing constraints. A design enhancement example is to provide curb inlet grates along US 85 to accommodate bicyclists. It is CDOT's intent to continue to work with Douglas County to try to tie into the existing trail system where possible and to encourage the county to also contribute to improving the current system.

Total cost of the bicycle and pedestrian facilities along the US 85 Corridor for the Preferred Alternative and Other Alternative is \$1.2 million. The cost of the High Line Canal grade-separation crossing for the Preferred Alternative and Other Alternative is \$0.3 million.

For a detailed description of the US 85 typical sections for the future build alternatives, see Section 2.5.2.3, *US 85 Corridor Typical Section for the Preferred Alternative* and Section 2.6.2.3, *US 85 Corridor Typical Section for the Other Alternative*.

2.8 WILDLIFE CROSSINGS ALONG THE US 85 CORRIDOR

The US 85 Corridor bisects open space land used by wildlife. Crucial impacts to wildlife along US 85 are the potential for habitat fragmentation and reduction in wildlife habitat connectivity as a result of the widening. Widening increases the barrier to wildlife attempting to cross over US 85 and further fragments deer and elk

habitat.

Tracking studies at existing highway crossings indicate that available bridges and culverts along US 85 are being used by small- to medium-sized mammals. These structures appear to be inadequate for deer and elk due to the small openness factors. The openness factor is defined as the relative openness of an underpass and is calculated as $(\text{height} \times \text{width})/\text{length}$. CDOW recommends an openness factor of greater than 0.6 for deer crossing and 0.78 for elk crossing. These recommended openness factors have been determined to provide the adequate size needed to encourage deer and elk crossing.

To mitigate wildlife impacts and to enhance existing crossings, two wildlife crossings along US 85 are improved by the future build alternatives. These crossings were strategically chosen based on tracking study results. The first crossing is located on US 85 at MP 195.1 as shown on Figure 2.18. This wildlife crossing is a proposed bridge at the realignment of US 85 near the Cook Ranch property. The proposed crossing is 26.2 meters (86 feet) long, 4.1 meters (13.5 feet) high, and 9.1 meters (30 feet) wide. The openness factor of the proposed bridge is 4.7, which is greater than the recommended factor for elk crossing. A photo simulation of this wildlife crossing is shown in Figure 2.19.

The second crossing is an enhancement of an existing crossing located along US 85 at MP 189.65 as shown on Figure 2.20. The existing crossing is a 2.4-meter (8-foot) by 2.4-meter (8-foot) box culvert 32 meters (105 feet) long. The existing openness factor is 0.61, which is not adequate for elk crossing. The proposed crossing shows an increase in the height of the culvert to 4.1 meters (13.5 feet), which provides an openness factor of 1.0, which is greater than the recommended factor for elk crossing.

Figure 2.18
Proposed Elk Crossing M.P. 195.1

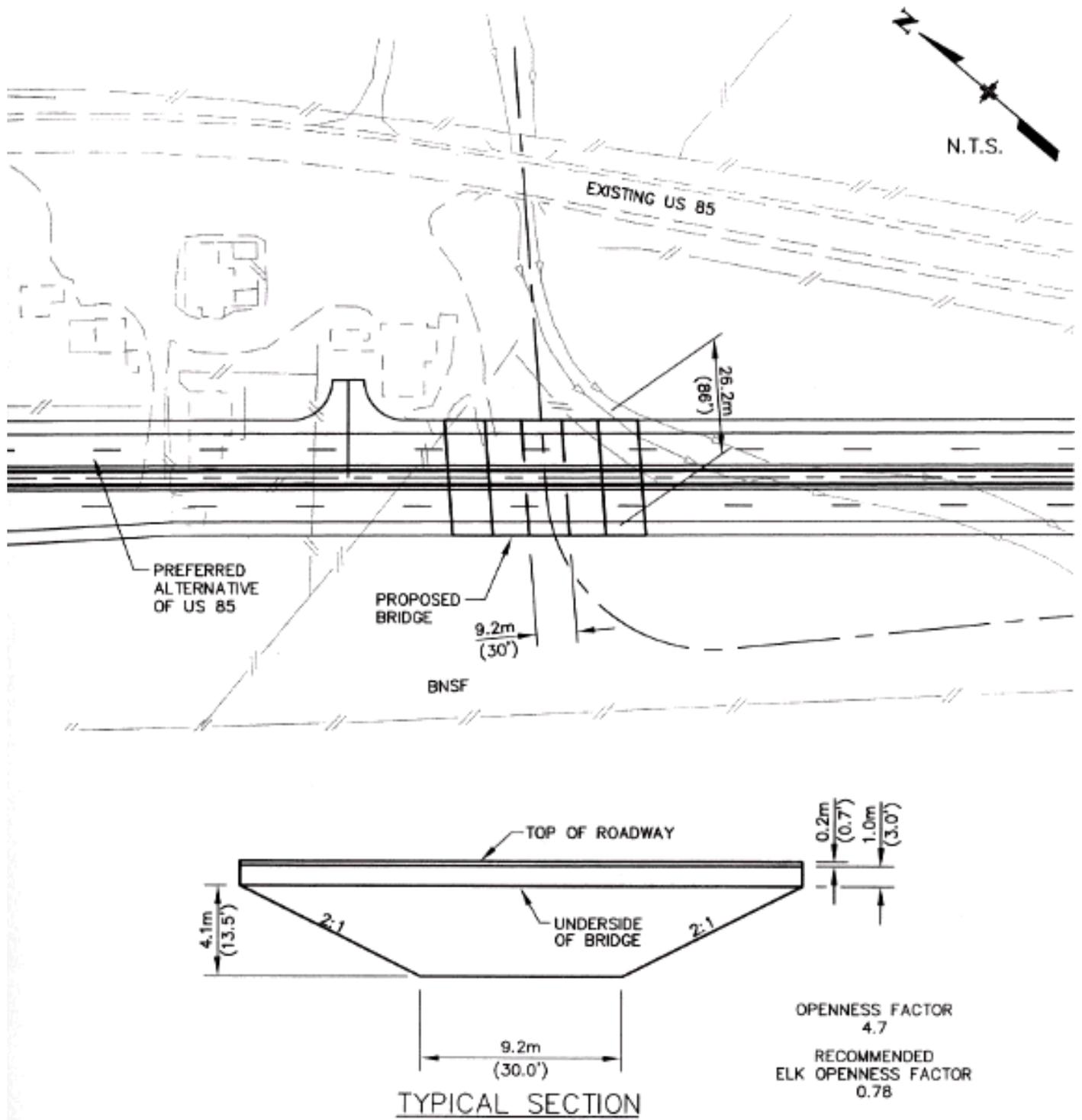
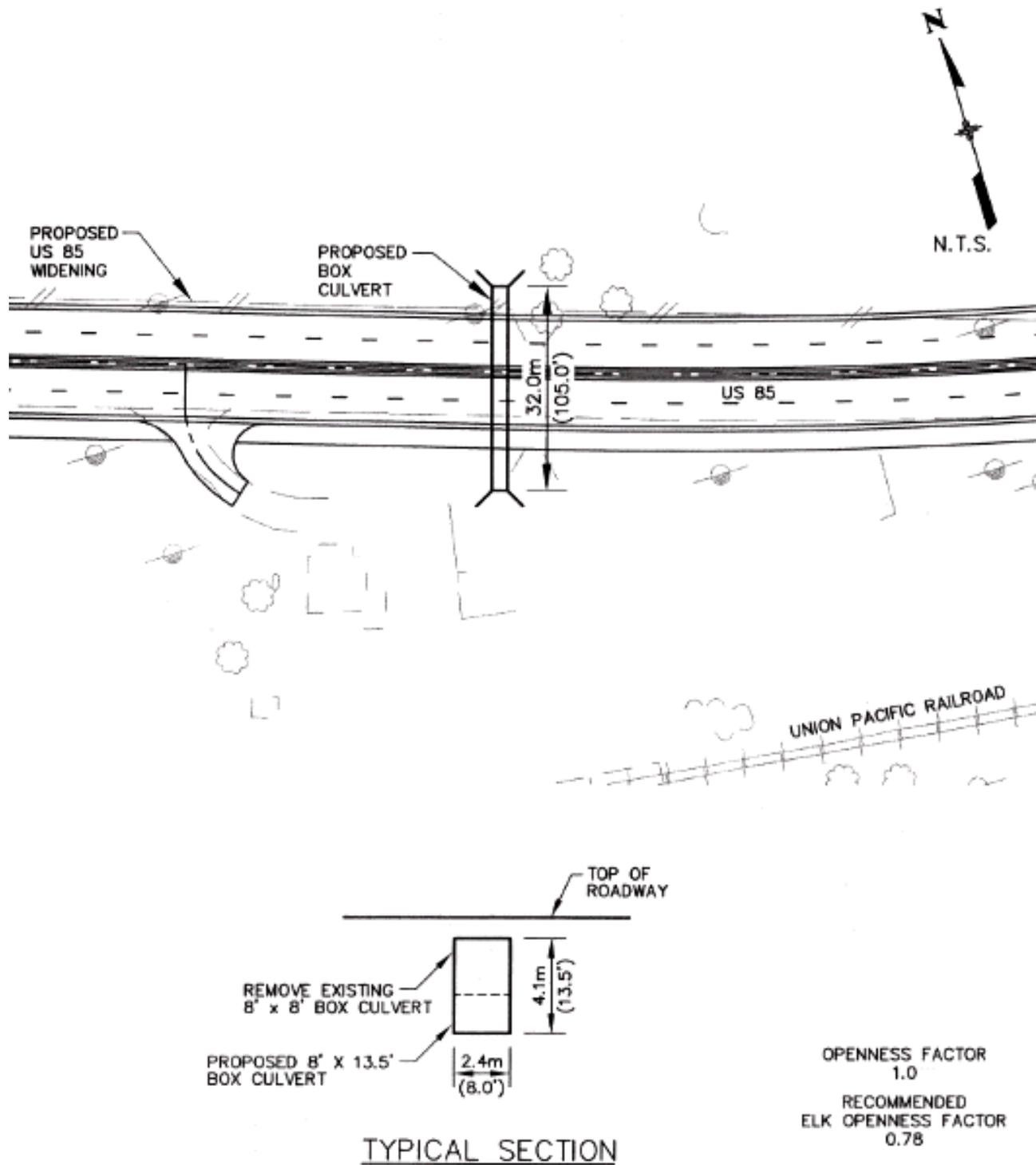


Figure 2.19
Wildlife Crossing Photo Simulation at Approximate MP 195.1
(looking east)



Figure 2.20
Proposed Elk Crossing M.P. 189.65



The two proposed wildlife crossings are strategically located and provide openness factors to accommodate deer and elk movement. These crossings help maintain habitat connectivity for elk, deer, and other wildlife. The total cost of the wildlife enhancements along the US 85 Corridor for the Preferred Alternative and Other Alternative is \$0.3 million. CDOT will coordinate with the CDOW during the design phase in order to determine if any additional wildlife crossing enhancements are needed. For more information on wildlife and wildlife crossings, see Section 4.3.6, *Wildlife*; Section 5.3.3.6, *Wildlife Impacts*; and Section 7.3.6, *Wildlife*.

CDOT has been working with ERTAC to determine wildlife mitigation measures and enhancements. This committee is an advisory group made up of agencies with interests or responsibilities with the ecology within the study area. For more information on ERTAC, see Section 2.2.4, *Ecological Resources Technical Advisory*

Committee.

2.9 ALTERNATIVE COSTS

Preferred Alternative and Other Alternative cost is shown on Table 2.2. The Preferred Alternative assumes the full reconstruction of US 85. Total cost for the US 85 Corridor elements of the Preferred Alternative, assuming full reconstruction of US 85, is approximately \$97.1 million. CDOT lacks sufficient funding to build all US 85 elements of the Preferred Alternative. CDOT and Douglas County are working together to find additional funding. If sufficient funds are not found prior to the ROD, the project work will be prioritized. The ROD will be based on available funding.

2.10 ALTERNATIVE VARIATIONS

Previous sections in this chapter presented the No-Action Alternative, Preferred Alternative, and Other Alternative. Based on comments received at the November public open houses, three variations along the I-25 Corridor between Lincoln Avenue and Castle Pines Parkway were suggested and are presented below. One of these alternatives, or an alternative developed from a combination of the three, will likely be the Selected Alternative presented in the ROD.

2.10.1 Variation 1

Variation 1 is the Preferred Alternative with the addition of an east-side frontage road between Schweiger and Surrey Ridge Road, as shown on Figure 2.21. The new east-side frontage road would provide vehicle access to and from I-25 without disrupting the Surrey Ridge residential area.

2.10.2 Variation 2

Variation 2 eliminates the Surrey Ridge Road Interchange and provides an east-side frontage road from Schweiger to Castle Pines Parkway as shown on Figure 2.22. Under this variation, residents of the Surrey Ridge area access I-25 from either the Schweiger Interchange or Castle Pines Parkway Interchange.

2.10.3 Variation 3

Variation 3 eliminates the Schweiger Interchange and Surrey Ridge Road Interchange, provides a new interchange at Rampart Range, and provides an east-side frontage road from Rampart Range to Castle Pines Parkway as shown on Figure 2.23. Under this variation, residents of the Surrey Ridge area access I-25 from either the Rampart Range Interchange or Castle Pines Parkway Interchange.

Table 2.2
Cost Comparison (\$ million)

		Improvements	Preferred Alternative	Other Alternative	
I-25 Corridor	Mainline Widening	C-470 to Lincoln Ave	3.5	3.5	
		Lincoln Ave to Castle Pines Pkwy	10.2	10.2	
		Castle Pines Pkwy to Meadows/Founders Pkwy	6.1	6.1	
		Meadows/Founders Pkwy to MP 178 and Union Pacific Railroad relocation	30.0	30.0	
	Frontage Road	Rampart Range to Schweiger	N/A	3.7	
		Schweiger to Surrey Ridge Rd	N/A	4.5	
		Surrey Ridge Rd to Castle Pines Pkwy	N/A	4.9	
	Interchanges	Schweiger	1.7	N/A	
		Rampart Range	N/A	9.1	
		Surrey Ridge Rd	2.4	3.6	
		Castle Pines Pkwy	N/A	5.1	
		Happy Canyon Rd	N/A	1.6	
	Other	Car pool lot	1.0	1.0	
			I-25 Corridor Total	54.5	78.7
	US 85 Corridor	Mainline Widening	C-470 to Highlands Ranch Parkway	12.3	12.3
Highlands Ranch Parkway to Titan Road			16.3	18.0	
Titan Road to MP 190.6			39.5	39.5	
MP 190.6 to 189.74 (SH 67/US 85 Intersection)			6.2	6.2	
MP 189.74 to Meadows Parkway			21.0	21.0	
Other		Bicycle/Pedestrian Facilities	1.2	1.2	
		High Line Canal Trail Grade-Separation	0.3	0.3	
		Enhanced Wildlife Crossings	0.3	0.3	
		US 85 Corridor Total	97.1	98.8	
TOTAL			151.6	177.5	
N/A Not Applicable All values shown in 1999 dollars.					

Figure 2.21
Variation 1

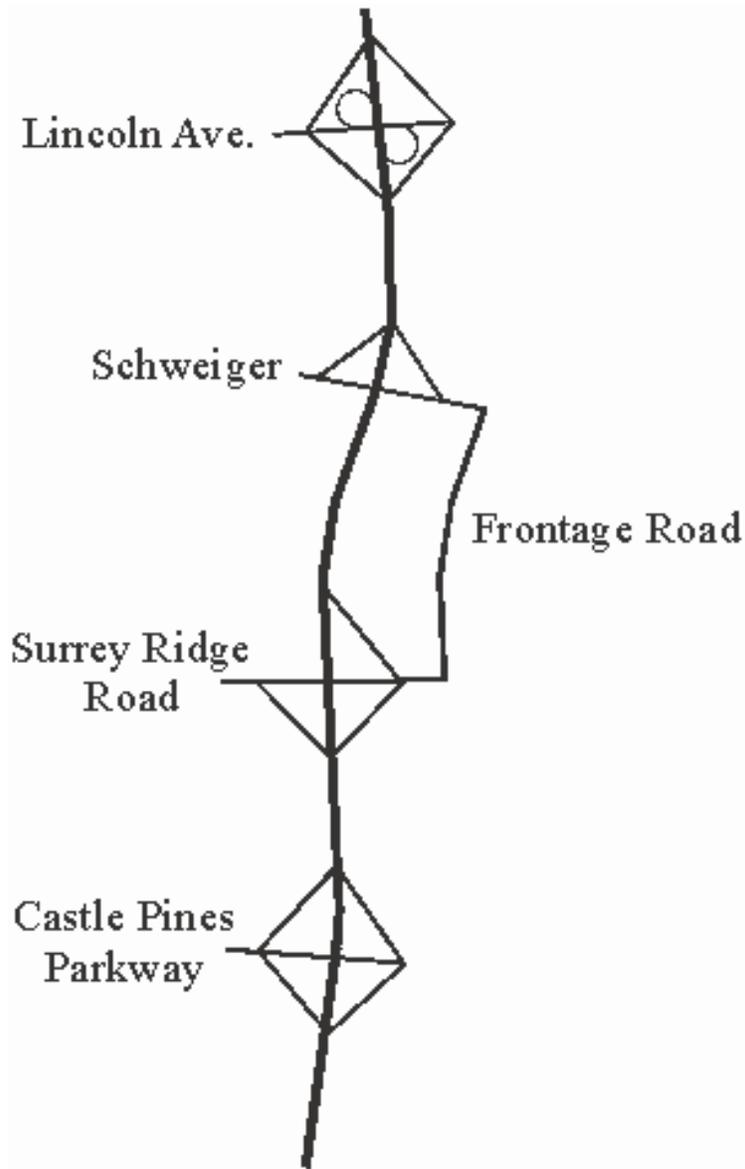


Figure 2.22
Variation 2

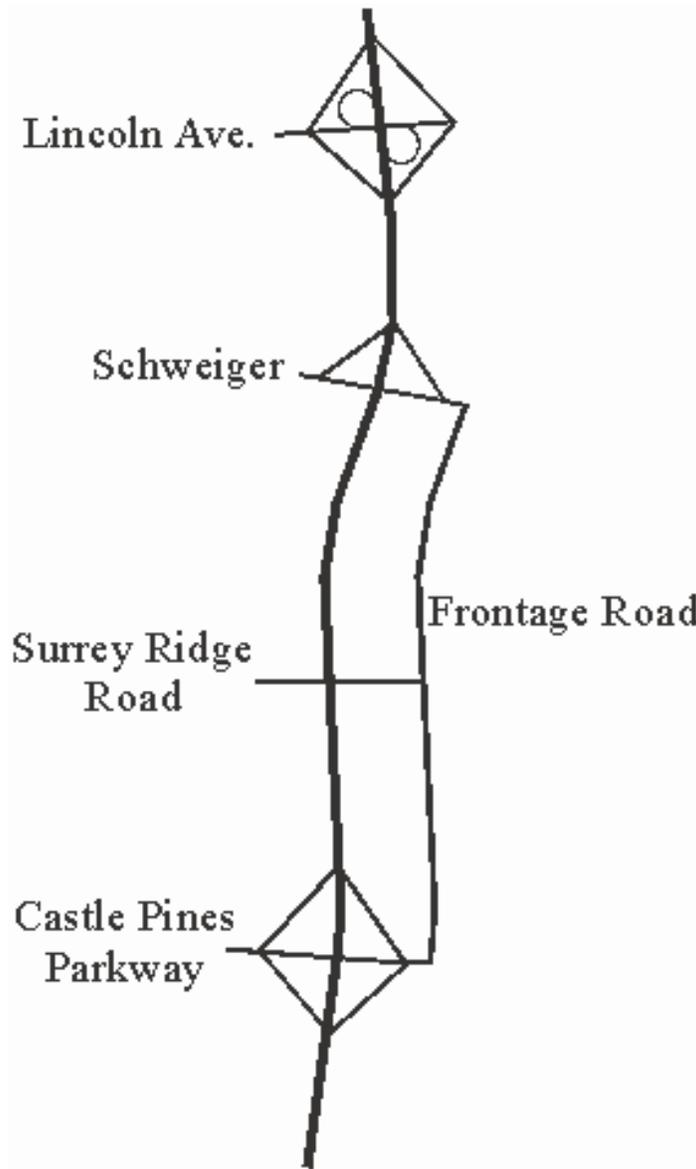
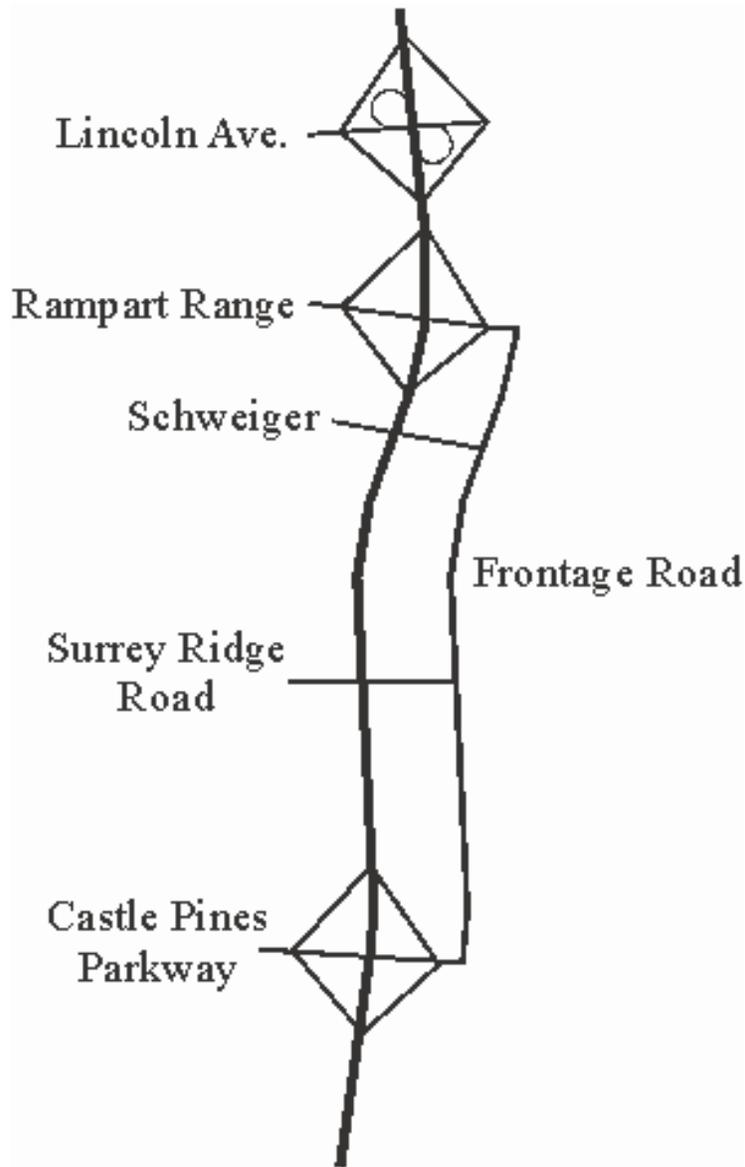


Figure 2.23
Variation 3



2.11 THE LONG-TERM VISION FOR SOUTH I-25 AND US 85 THROUGH 2020 AND BEYOND

The Long-Term Vision for South I-25 and US 85 Through 2020 and Beyond (referred to as the Long-Term Vision) was developed through the previously discussed extensive evaluation and public/agency involvement process. The Long-Term Vision reflects improvements that meet the purpose and need and/or are desired through community values and agency support. Because the Long-Term Vision assumes no fiscal constraints, not all of the elements included in the Long-Term Vision have been included in the FEIS build alternatives. Major elements of the vision are discussed in the following sections and are shown on Figure 2.24. Upon adoption of this FEIS by FHWA and CDOT, these items will be conveyed to DRCOG with a request for inclusion in Metro Vision.

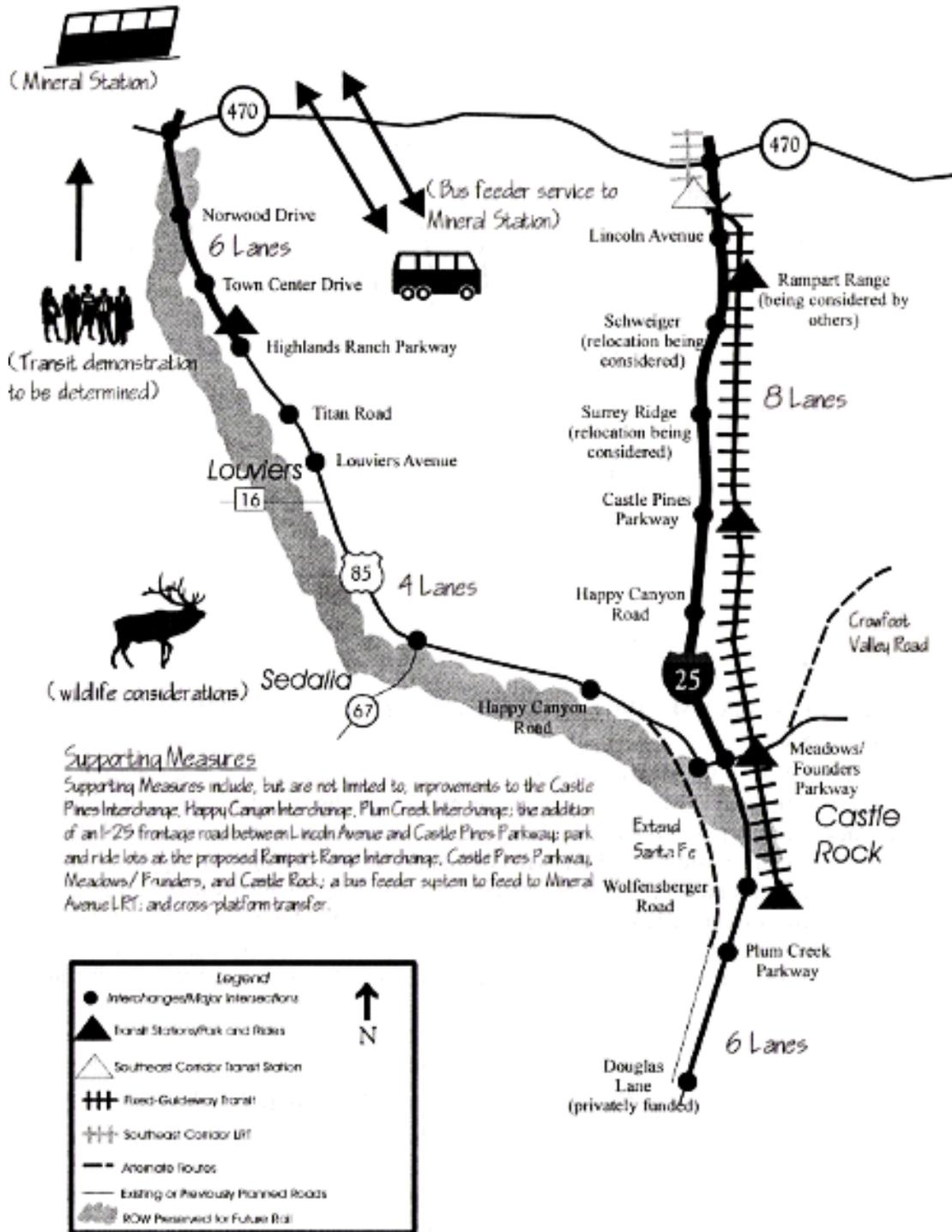
2.11.1 I-25 Corridor Long-Term Vision Elements

2.11.1.1. Additional General-Purpose Lanes from C-470 through Castle Rock

One additional lane is added in each direction from C-470 to Douglas Lane. The final configuration is eight lanes between C-470 and Meadows/Founders Parkway and six lanes between Meadows/Founders Parkway and Douglas Lane. This element of the Long-Term Vision is evaluated in the Preferred Alternative and Other

Alternative.

Figure 2.24
The Long-Term Vision for the South I-25 Corridor and US 85 Corridor
Through 2020 and Beyond



2.11.1.2. I-25 Fixed-Guideway

The Long-Term Vision includes fixed-guideway along I-25. The fixed-guideway in the Long-Term Vision extends from the Southeast Corridor terminus, north of Lincoln Avenue to Castle Rock. Proposed stations are

located at the Rampart Range Development, Castle Pines Parkway, Meadows/Founders Parkway, and Castle Rock. Future construction of this element is provided for as a transportation envelope (located between I-25 and the frontage road) between Lincoln Avenue and Castle Pines Parkway in the Other Alternative. Fixed-guideway is not anticipated to be constructed in the next 20 years, but CDOT has been coordinating with Douglas County, the Town of Castle Rock, and the City of Lone Tree to not preclude future fixed-guideway options.

Fixed-Guideway Alignment

The tentative conceptual alignment of the fixed-guideway is shown on Figure 2.25. The fixed-guideway alignment extends south from the Southeast Corridor terminus at Lincoln Avenue along the west side of I-25. The alignment crosses I-25 near the Lincoln Avenue Interchange. This crossing may be either north or south of the interchange and may be either an overpass or tunnel. (For cost estimating purposes, the fixed-guideway alignment is assumed to cross north of Lincoln Avenue through a tunnel.) After the fixed-guideway crosses I-25, the alignment closely parallels I-25 on the east side and curves around interchanges to reach stations.

The southern terminus of the fixed-guideway has not been finalized. The final determination will be part of the planning effort for fixed-guideway construction. Several options within the Town of Castle Rock have been identified as potential termini:

- Meadows/Founders Parkway
- Downtown Castle Rock
- Plum Creek Parkway

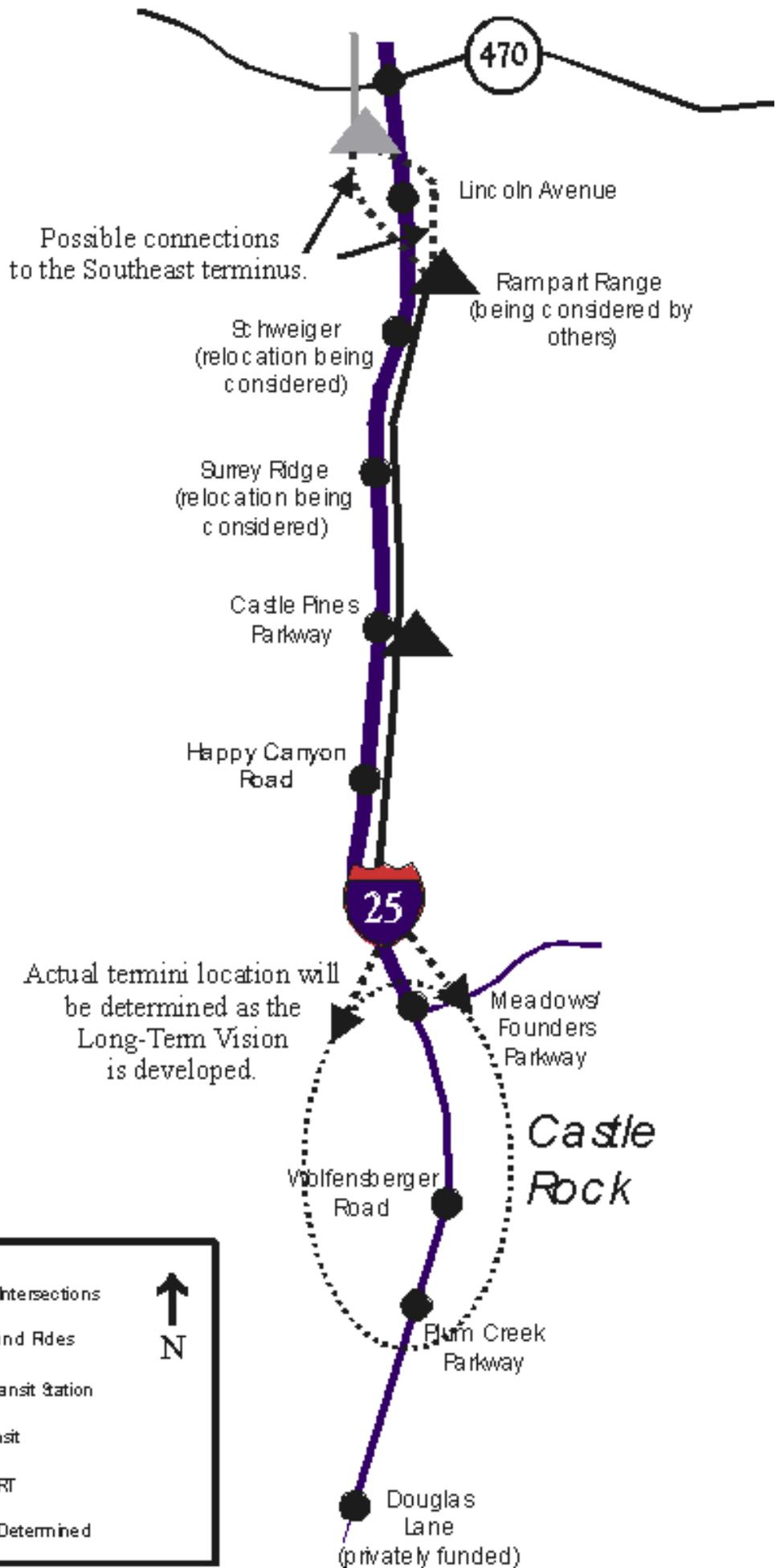
Meadows/Founders Parkway. The fixed-guideway could terminate near the Meadows/Founders Parkway Interchange. Three alignment options exist for this terminus. One option is to continue the alignment on the east side of I-25 and terminate just north of the houses along Allen Street. This option includes a pedestrian overpass that connects the fixed-guideway station to the Prime Outlets.

A second option is located at the Meadows/Founders Interchange and crosses the fixed-guideway from the east side of I-25 to the west side of I-25 and ends at the Prime Outlets.

The third option examines the location of a fixed-guideway terminus near the Prime Outlets that accommodates possible future rail corridors along I-25 and US 85.

Downtown Castle Rock. The fixed-guideway could terminate in downtown Castle Rock. Two alignment options exist for this terminus. One option is to continue the alignment on the east side of I-25 and continue up the Wilcox northbound entrance ramp. The fixed-guideway alignment is adjacent to the east side of Wilcox Street and terminates at 5th Street.

Figure 2.25
Potential I-25 Fixed-Guideway





(privately funded)

Another option for the fixed-guideway ending in downtown Castle Rock is to continue the alignment on the east side of I-25 and connect to the existing railroad tracks. The fixed-guideway could use the existing tracks into downtown Castle Rock, dependent on the existing railroad tracks being relocated.

Plum Creek Parkway. The fixed-guideway may terminate at Plum Creek Parkway. The alignment for this option continues on the east side of I-25 and terminates at the Plum Creek Parkway Interchange.

This FEIS provides for the fixed-guideway alignment between Lincoln Avenue and Castle Pines Parkway in the Other Alternative (between I-25 and Frontage Road). Several options for the alignment are available at the other locations. These decisions will be made after additional evaluation is completed.

Fixed-Guideway Typical Section

Figure 2.26 shows the fixed-guideway typical section. A concrete barrier and 3.6-meter (12-foot) shoulder separate the fixed-guideway from the highway. The double-track, fixed-guideway is located on the east side of I-25 in a 9.1-meter (30-foot) envelope. The fixed-guideway envelope may be revised (for example, 9.4-meter [31-foot] wide to match the Southeast Corridor envelope) after additional evaluation is completed and at the time of final design.

Fixed-Guideway Cost

The cost for the fixed-guideway was developed as part of the second level of evaluation and was used only for comparison purposes with the other alternatives. The cost is estimated at \$105 million and would need to be re-evaluated in the future. The estimated cost assumes single-track, and diesel multiple unit (DMU) commuter rail. It includes tunneling beneath I-25 north of Lincoln Avenue. The alignment begins at Lincoln Avenue and continues to Plum Creek Parkway. The cost is conceptual and does not include ROW costs, although some of the ROW costs are included in the Other Alternative. The above assumptions were made for comparison purposes only. The type of fixed-guideway alignment and station locations should be re-evaluated closer to the time of implementation.

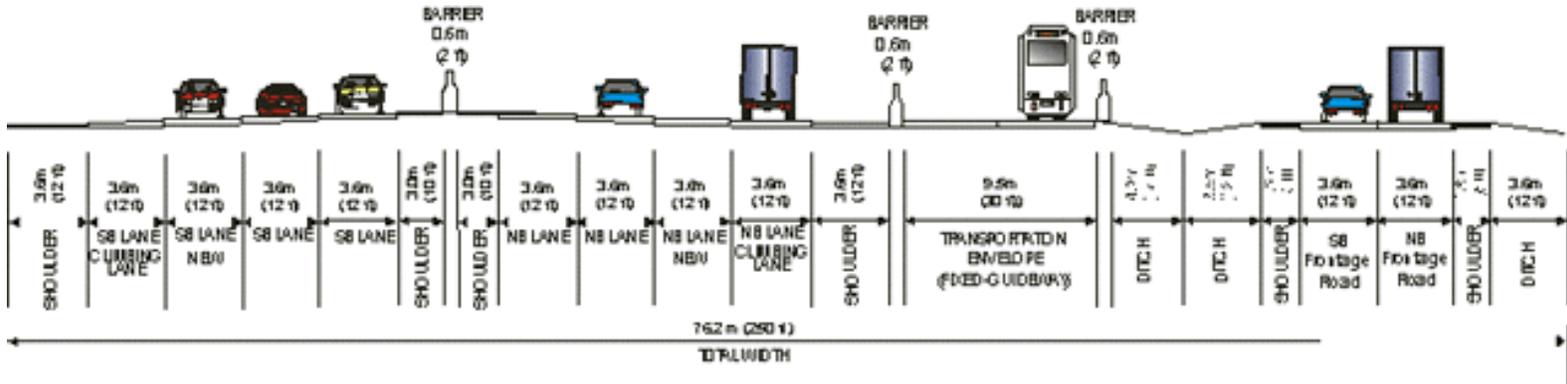
2.11.1.3. I-25 Interchange Improvements and Frontage Road (Recommendations from the *South I-25 Corridor Interchange Study*, March 2000)

Based on the recommendations of the I-25 Interchange Study and the public process, the following improvements or options are included in the Long-Term Vision:

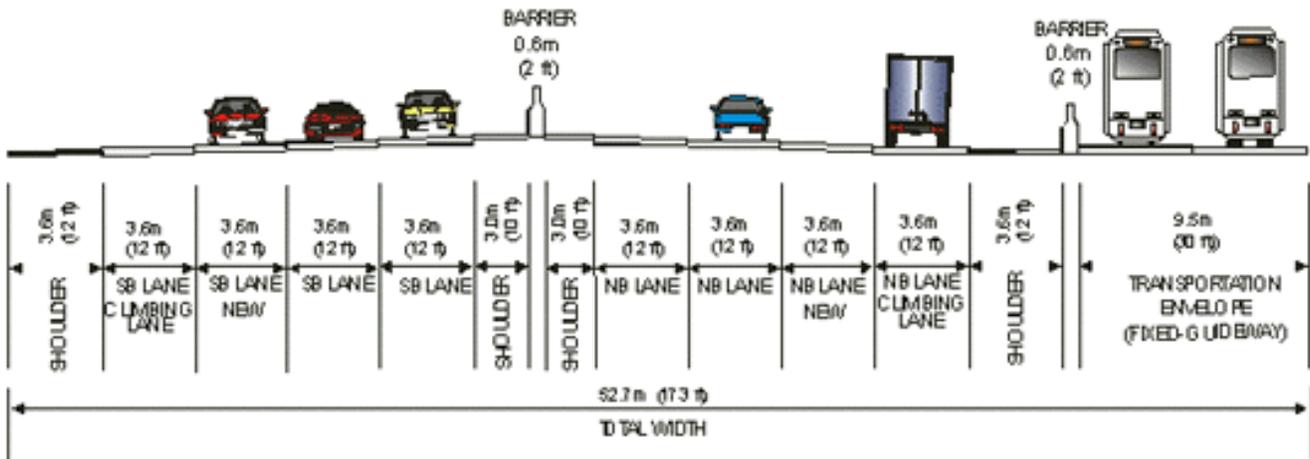
- Construct new interchange at Rampart Range (funded privately) or reconstruct Surrey Ridge Road Interchange as a diamond
- Build frontage road between either Castle Pines Parkway and Rampart Range or Castle Pines Parkway and Lincoln Avenue
- Reconstruct or relocate the I-25/Schweiger (exit 191) Interchange

- Close the I-25/Surrey Ridge Road Interchange and relocate access to the north or south

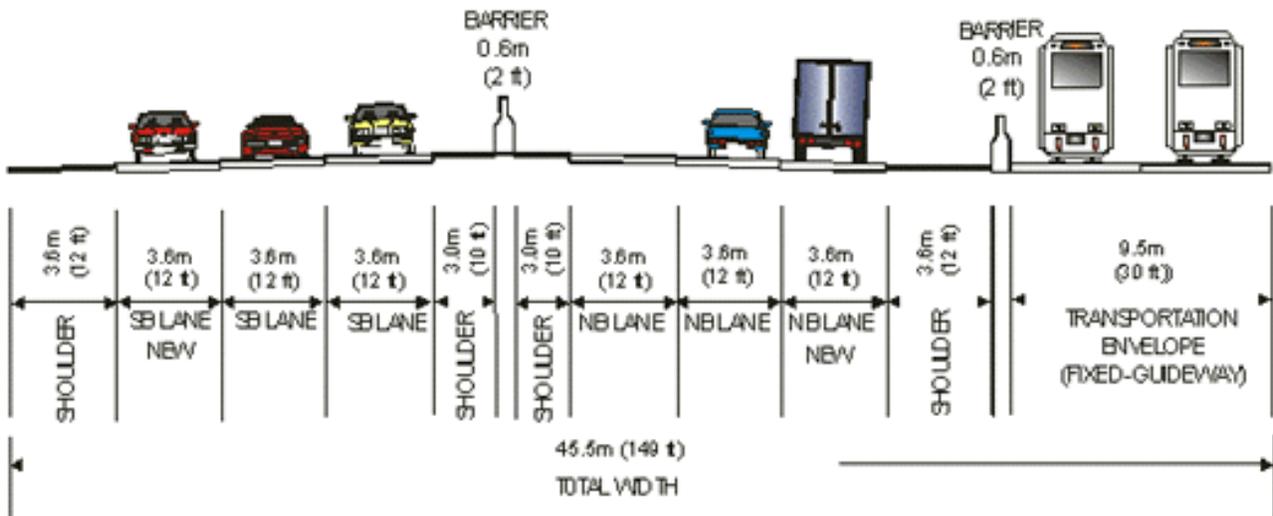
Figure 2.26
Potential I-25 Fixed-Guideway Typical Section



Lincoln Avenue to Castle Pines Parkway



Castle Pines Parkway to Meadows/Founders Parkway



Meadows/Founders Parkway to Fixed-Guideway Southern Termini

Note: Numbers may not add due to rounding of metric unit/english unit conversions.

Note: Numbers may not add due to rounding of metric unit/english unit conversions.

- Add a southeast quadrant loop ramp at the I-25/Castle Pines Parkway Interchange to serve eastbound Castle Pines Parkway to northbound I-25
- Widen Happy Canyon Road over I-25 to provide for additional through lane and turn lane
- Reconstruct Plum Creek Parkway either in existing location as a single-point urban interchange or at a new location to the south as a diamond interchange
- Construct new diamond interchange at Douglas Lane (funded privately)
- Review operational characteristics of freeway merge and diverge at Larkspur/Palmer Lake Interchange and provide improvements as necessary

2.11.1.4. Preservation of Future Transportation Options along I-25

As part of the Long-Term Vision, none of the constructed improvements will preclude future transportation options. CDOT encourages local entities to obtain transportation easements from developers as part of their referral process. As discussed in the DEIS, CDOT has been working with Douglas County, the Town of Castle Rock, and City of Lone Tree to provide for and preserve mass transit and bicycle facilities. Each of these agencies has been supportive in implementing mass transit and providing for bicycle facilities. Examples where CDOT is preserving ROW include providing for mass transit along the east side of I-25 (shown in the Other Alternative) between I-25 and the proposed frontage road and the inclusion of a car pool lot in the FEIS that may be converted into a park-and-ride lot at a future date. Douglas County and the Town of Castle Rock are working with developers to provide a transportation easement along both US 85 and I-25 for future improvements. The City of Lone Tree has been working with the Rampart Range Development in extending light rail transit (LRT) from the Southeast Corridor terminus. RTD boundaries do not include the Town of Castle Rock. The only RTD bus operating in the study area is the Highlands Ranch Town Center Express. Several years ago the residents of the Town of Castle Rock voted against expanding RTD service into Castle Rock.

2.11.1.5. I-25 Alternate Routes

Crowfoot Valley Road is improved to provide for a local access alternate route to I-25. Improvements include upgrading Crowfoot Valley Road to Stroh Road to four-lane arterials between Founders Parkway and Parker Road. This improvement helps the local network and is currently part of Douglas County's planned improvements. This alternate route will need to be funded by others.

2.11.1.6. Supporting Measures

As part of the overall corridor plan, measures that support mobility and safety are desirable. These measures include TDM, transportation system management (TSM), and intelligent transportation systems (ITS). Supporting measures may also include, but are not limited to, car pool/park-and-ride lots, bus feeder systems, and cross-platform transfers. CDOT has initiated an I-25 incident management study that evaluates strategies to handle incidents along I-25.

2.11.1.7. Car Pool Lots

Car pool lots are included as elements of the Long-Term Vision. These lots are designed to encourage travelers to car pool to their destination. A car pool lot is being evaluated in the FEIS build alternatives along I-25 at the northeast quadrant of the Castle Pines Parkway Interchange (see Section 2.5.1.2, *Additional Major Improvements along the I-25 Corridor for the Preferred Alternative*). Other car pool lots are included in the Long-Term Vision but are not being fully evaluated in this FEIS. Environmental clearances will be completed for these car pool lots prior to ROW purchase and construction. Proposed locations include:

- The proposed Rampart Range/I-25 Interchange
- Meadows/Founders Parkway Interchange
- Downtown Castle Rock

Car pool lots are being designed to be converted into park-and-ride facilities when the fixed-guideway transit is extended to Castle Rock.

2.11.2 US 85 Corridor Long-Term Vision Elements

2.11.2.1. Additional General-Purpose Lanes from C-470 to Meadows Parkway

One general-purpose lane is added in each direction between C-470 and Meadows Parkway. The Long-Term Vision lane configuration is six general-purpose lanes between C-470 and Titan Road and four general-purpose lanes between Titan Road and Meadows Parkway. This element is evaluated in the Other Alternative.

2.11.2.2. Bus Feeder Service from Highlands Ranch Parkway to the Mineral Avenue Light Rail Transit Station

A bus service is provided as a feeder system to the Mineral Avenue LRT station and park-and-ride. As part of this, a new park-and-ride lot will be located along US 85 in the vicinity of Highlands Ranch Parkway. The buses will use the general-purpose lanes. RTD currently operates circulation routes to feed the Mineral Avenue LRT station.

2.11.2.3. US 85 Transit Rail Demonstration Project

Included in the Long-Term Vision is a Transit Demonstration Project along US 85. A potential demonstration project is being investigated as an independent study. (CDOT is not leading this effort.) This project is exploring the option of connecting a commuter rail line to the Southwest Corridor LRT terminus at Mineral Avenue to determine potential ridership of a permanent rail line. An independent group is evaluating the cost and operations of three commuter rail options operating on or parallel to the existing freight railroad tracks from Mineral Avenue to downtown Castle Rock. All three options include a cross-platform transfer at the Mineral Avenue LRT station. Train times are scheduled to coincide with peak hour demand, although off-peak service is also offered. Travel time from Castle Rock to Mineral Avenue is approximately 35 minutes, making the total trip time from Castle Rock to Denver approximately 1 hour. The following three options are being evaluated by the group:

Option A: Six-Month to One-Year Demonstration Project

Option A is a six-month to one-year demonstration that operates with one train set making continuous round trips. It includes minimal mainline improvements, assuming the trains can feasibly operate on the existing tracks.

Option B: Annual Service Demonstration Project

Option B operates on an annual basis using 4 train sets, making a total of 14 daily train trips (7 inbound, 7 outbound). It includes moderate mainline improvements, assuming the trains can operate on a portion of the existing track. The trains operate mostly on the existing freight track with an additional 9.6 kilometers (6 miles) of new siding and station area track.

Option C: Permanent Service

Option C operates on a permanent basis using four train sets, making a total of 18 daily train trips (9 inbound, 9 outbound). The trains operate on a newly constructed track connecting Castle Rock to the Mineral Avenue LRT station.

The Commuter Rail Between Castle Rock and Mineral Avenue, January 2000 provides more details of the demonstration project.

2.11.2.4. Preservation of Future Fixed-Guideway Corridor along Existing Rail Corridor

As part of the Long-Term Vision and the Rail Corridor Preservation Policy, the existing rail corridors are preserved for future transit use. If the existing rail corridor is abandoned, the land is preserved for future fixed-guideway transit, and none of the roadway improvements constructed preclude future fixed-guideway. The Rail Corridor Preservation Policy Directive 1906, adopted by CDOT on April 19, 1000, requires CDOT to consider passenger and freight rail transportation. This includes developing criteria used in defining rail corridors of state interest and describing rail activities in which CDOT may engage. Since the existing rail corridor included in the South I-25 Corridor and US 85 Corridor FEIS has been designated as a rail corridor of state significance, CDOT is required to design and construct roads and roadway related structures that will preserve an envelope sufficient for future rail service unless physically or financially prohibited. The Preferred Alternative and Other Alternative remain at least 3 meters (10 feet) from the Union Pacific Railroad ROW and the Burlington Northern Santa Fe Railroad ROW.

2.11.2.5. US 85 Alternate Routes

Santa Fe Drive (US 85) is extended to the south at approximately Meadows/Founders Parkway along I-25 to provide for an alternate route to US 85. Improvements include extending and upgrading US 85 (Santa Fe Drive) to a four-lane arterial between the existing Castlegate Drive and downtown Castle Rock. This alternate route is under the jurisdiction of the Town of Castle Rock, and planning and funding will ultimately be their responsibility.

2.11.2.6. Supporting Measures

As part of the overall corridor plan, measures that support mobility and safety are desirable. These measures include TDM, TSM, and ITS. Supporting measures may also include, but are not limited to, car pool/park-and-ride lots, bus feeder systems, and cross-platform transfers. Another supporting measure is the *Final Access Management Plan for US 85*, November 2000.

The South I-25 Corridor and US 85 Corridor Transportation Demand Management Program Report, December 2000, details TDM measures included in the Preferred Alternative.

2.11.3 Responsibility of Long-Term Vision Elements

Because of jurisdictional and funding constraints, CDOT cannot be responsible for all elements of the Long-Term Vision. Other agencies/groups (i.e., Douglas County, the Town of Castle Rock, Rampart Range Development Group) have jurisdiction over some elements. Potential responsibilities are outlined in Table 2.3 and will be refined as the different elements are developed.

Table 2.3
Responsibility of Elements

Major Elements of Draft Vision	Responsible Agency(s)
I-25 Fixed-Guideway Transit	To Be Determined
I-25 General-Purpose Lanes	CDOT
I-25 Interchanges/Frontage Road	To Be Determined
I-25 Park-and-Ride Lots/Stations	To Be Determined
US 85 General-Purpose Lanes	CDOT
US 85 Transit Demonstration Project	To Be Determined
US 85 Bus Circulation Service (Highlands Ranch to Mineral Station)	RTD
US 85 Park-and-Ride lot (Highlands Ranch Area)	To Be Determined
Alternate Routes	Varies – Douglas County and Castle Rock
Early-Action Projects	CDOT with assistance from Douglas County and Castle Rock
Supporting Measures	Varies – CDOT, Douglas County, Castle Rock, Private Developers, and Others

2.12 ALTERNATIVES ELIMINATED FROM CONSIDERATION

A three-level evaluation process was developed to reduce the number of alternatives fully evaluated in the EIS to those that are reasonable and meet the project purpose and need. The first level of evaluation eliminates unrealistic alternatives; the second level of evaluation eliminates alternatives based on how well they compare with the other alternatives; and the third level of evaluation evaluates combinations of alternatives to determine how well the alternatives work together. The Long-Term Vision is developed from the results of the third level of evaluation and the communities' desires. Additional analysis that determined the alternatives considered in the DEIS was completed after the Long-Term Vision was developed. Since the release of the DEIS, some elements in those alternatives were eliminated and are discussed in Section 2.12.6, *DEIS Alternatives Eliminated*. The

alternatives presented in this FEIS were developed based on comments on the DEIS and on additional analysis.

The first step in the evaluation process is to assess alternatives to improve both the I-25 Corridor and US 85 Corridor. The purpose of determining this assessment is to ensure that all reasonable alternatives are included in the evaluation process. Approximately 80 improvement alternatives were considered for the I-25 Corridor and US 85 Corridor. Alternatives were sorted into the different modes: highway, fixed-guideway, rubber-tired transit, transportation management, alternate routes, and supporting measures. These alternatives are identified in Figure 2.27a and Figure 2.27b. These alternatives proceeded through the evaluation process, and several were eliminated as appropriate.

The No-Action Alternative is evaluated throughout the three-step evaluation process. The No-Action Alternative includes existing conditions and Early-Action projects. Early-Action projects are primarily safety improvements or minor improvements that have either been previously approved or are in the process of being approved.

2.12.1 Alternatives Eliminated at Level 1: Eliminate Unrealistic Alternatives

The first level of evaluation eliminated unrealistic corridor improvements. Alternatives are eliminated at this level for one or more of the following reasons:

- Are not compatible with existing or planned transportation systems
- Are not technologies in use in similar settings
- Do not meet local community goals and objectives
- Fail to preserve future transit options

Alternatives not eliminated at this level are evaluated at the second level. Figure 2.27a and Figure 2.27b identify results of the first level. These figures identify all of the alternatives under consideration and whether they are eliminated at this level. If the alternative is eliminated, the figure shows it stopping at the first level line and gives a brief explanation of why it failed. If the alternative passed this level, the figure shows an arrow passing through the line. The *South I-25 Corridor and US 85 Corridor EIS Alternative Evaluation Process Technical Report*, March 2000, details why each alternative is eliminated.

2.12.2 Alternatives Eliminated at Level 2: Evaluation of Alternatives by Mode and Corridor

The second level of evaluation assesses alternatives that passed the first level of evaluation for each corridor. A rating system is used to categorize each alternative as least favorable, moderately favorable, and most favorable within each mode based on the criteria within each category. The alternatives that generally scored moderately favorable and most favorable were carried forward to the third level of evaluation.

The alternatives eliminated during the second level of evaluation are described in the following sections and the second level of evaluation is summarized on Figure 2.28a and Figure 2.28b. A discussion of why they were eliminated is also included. For additional information see the *South I-25 Corridor and US 85 Corridor EIS Alternative Evaluation Process Technical Report*, March 2000.

Figure 2.27a
I-25 Alternatives Eliminated at Level 1

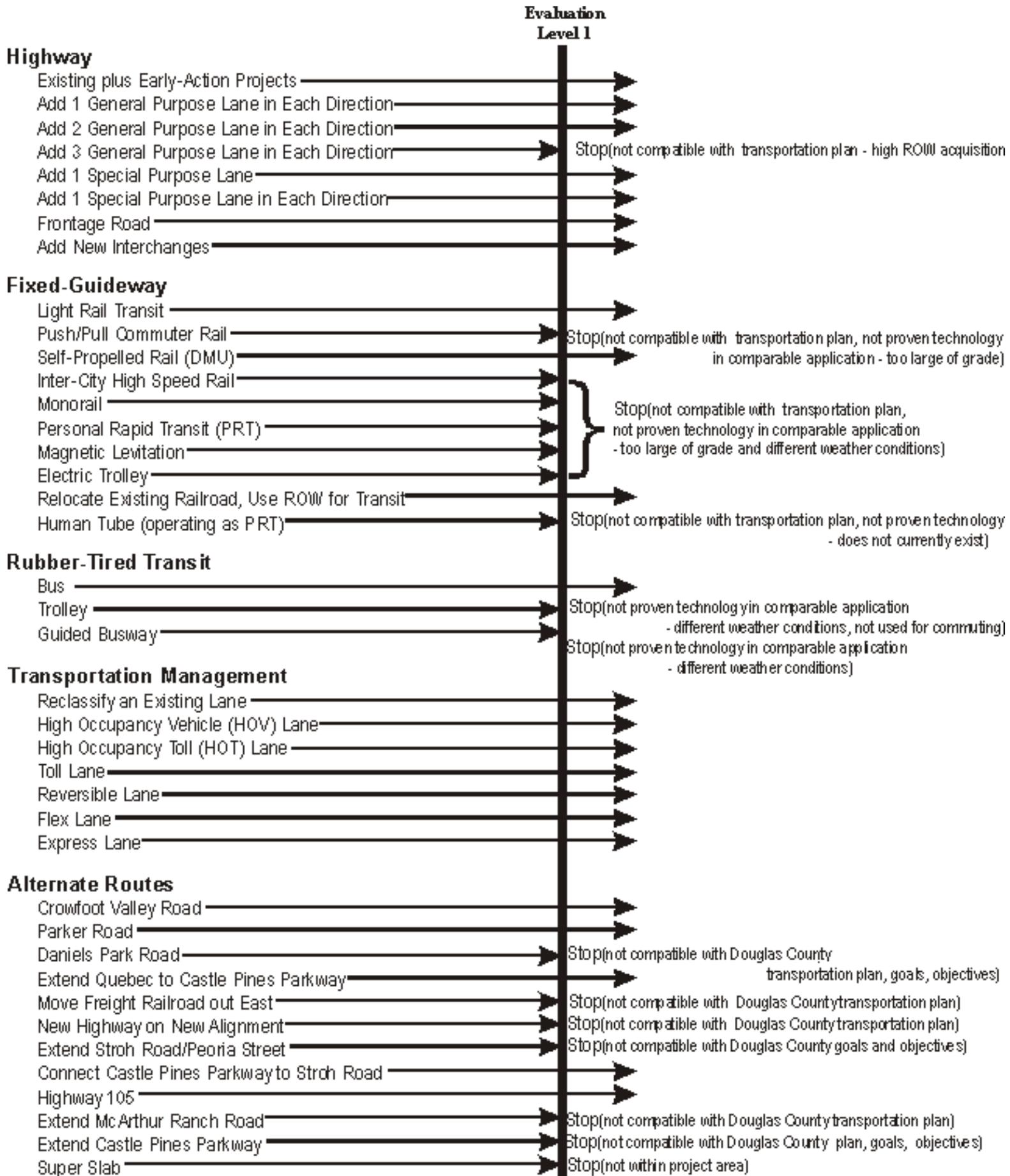


Figure 2.27b
US 85 Alternatives Eliminated at Level 1

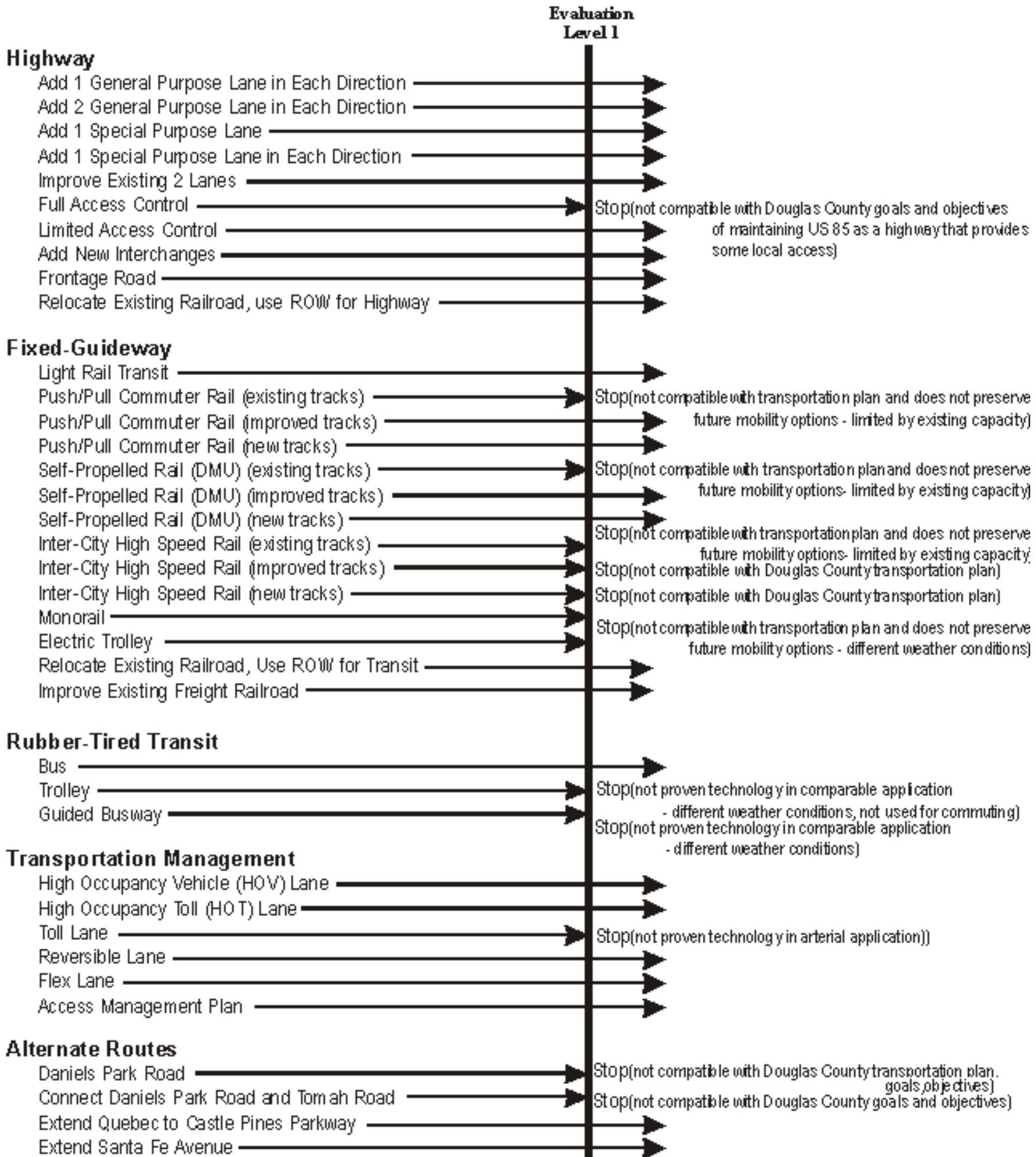
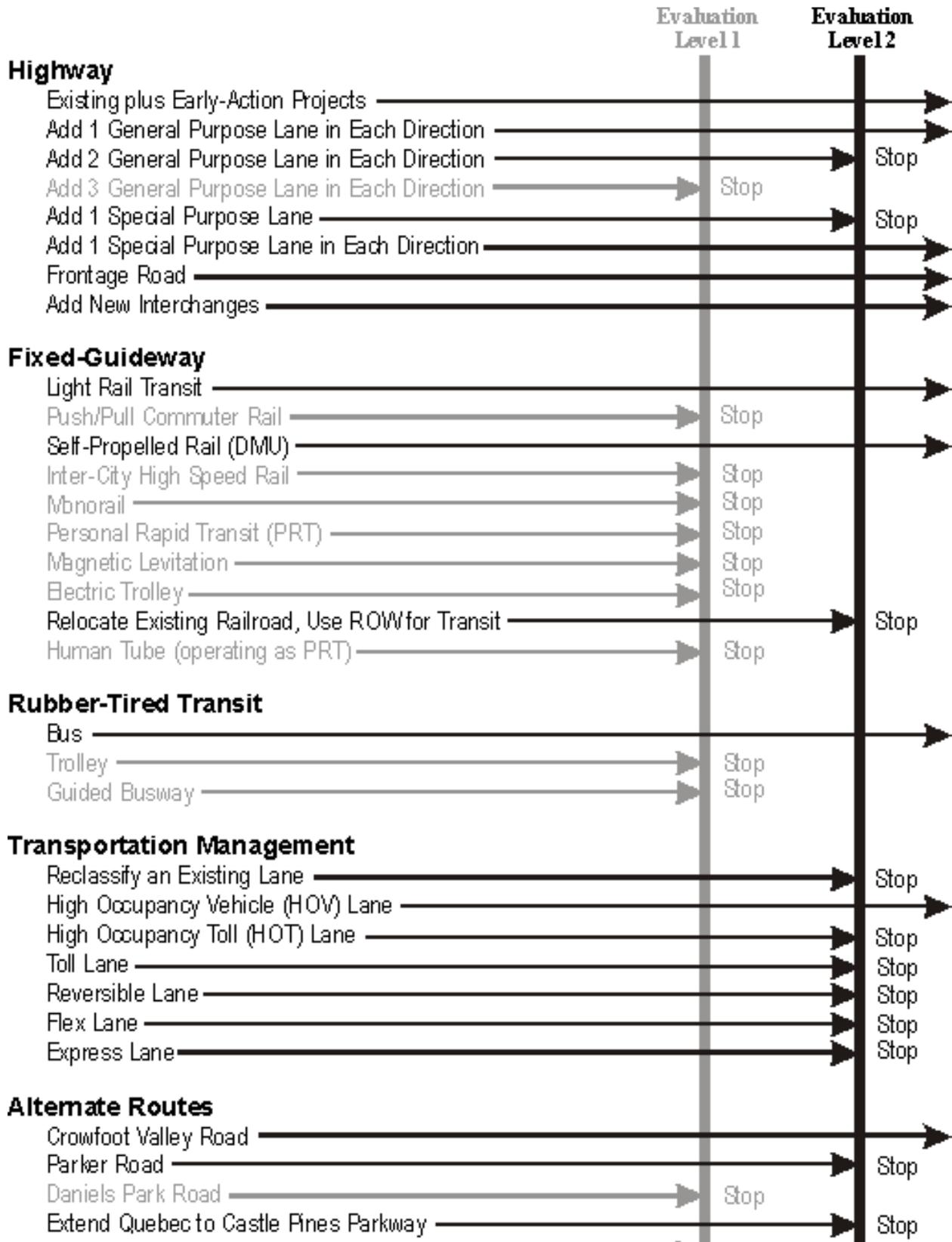




Figure 2.28a
I-25 Alternatives Eliminated at Level 2



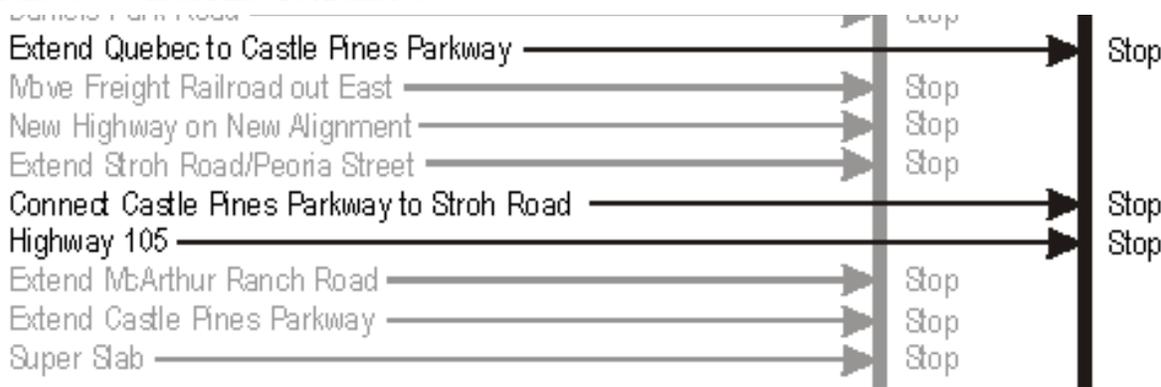
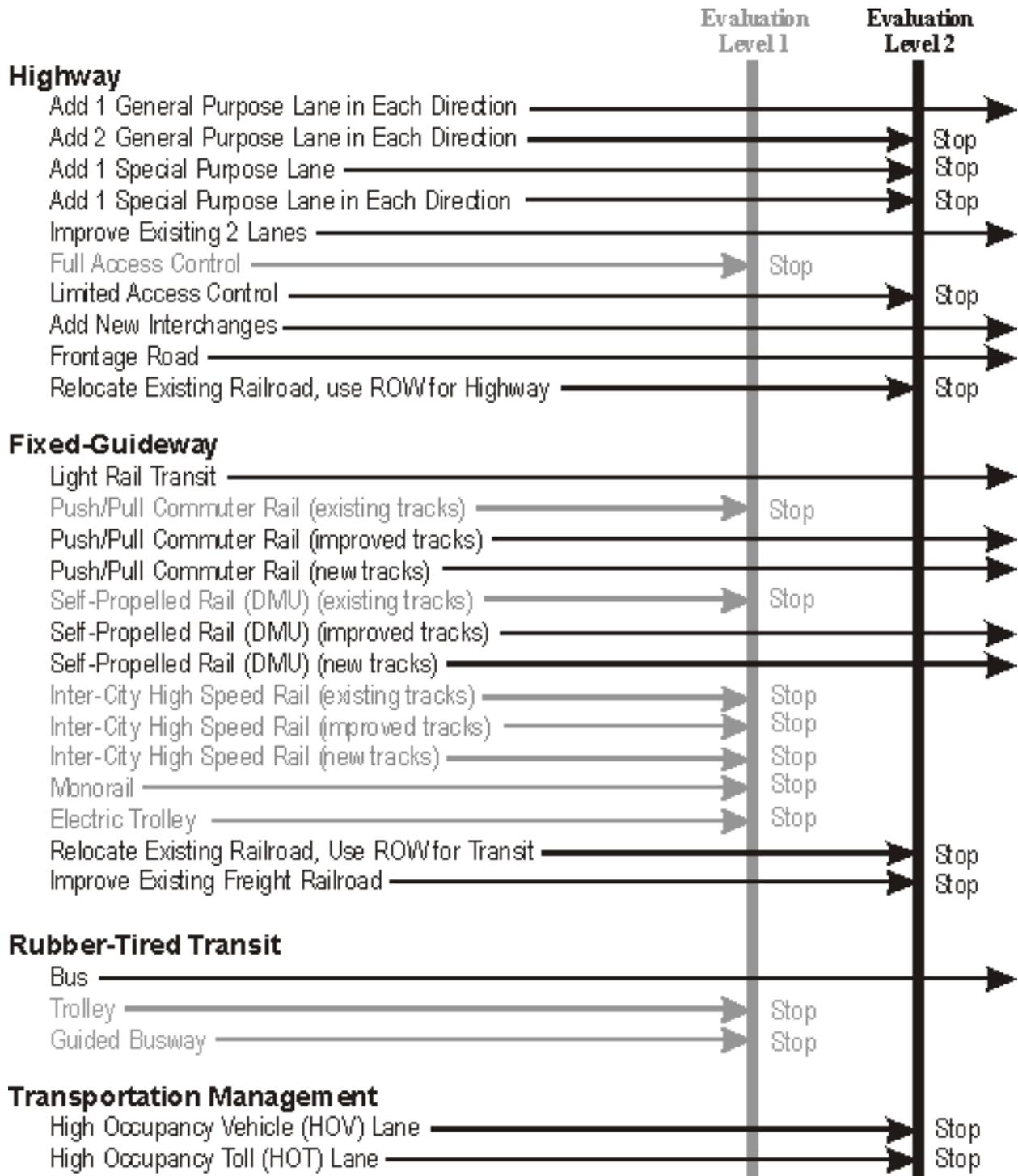
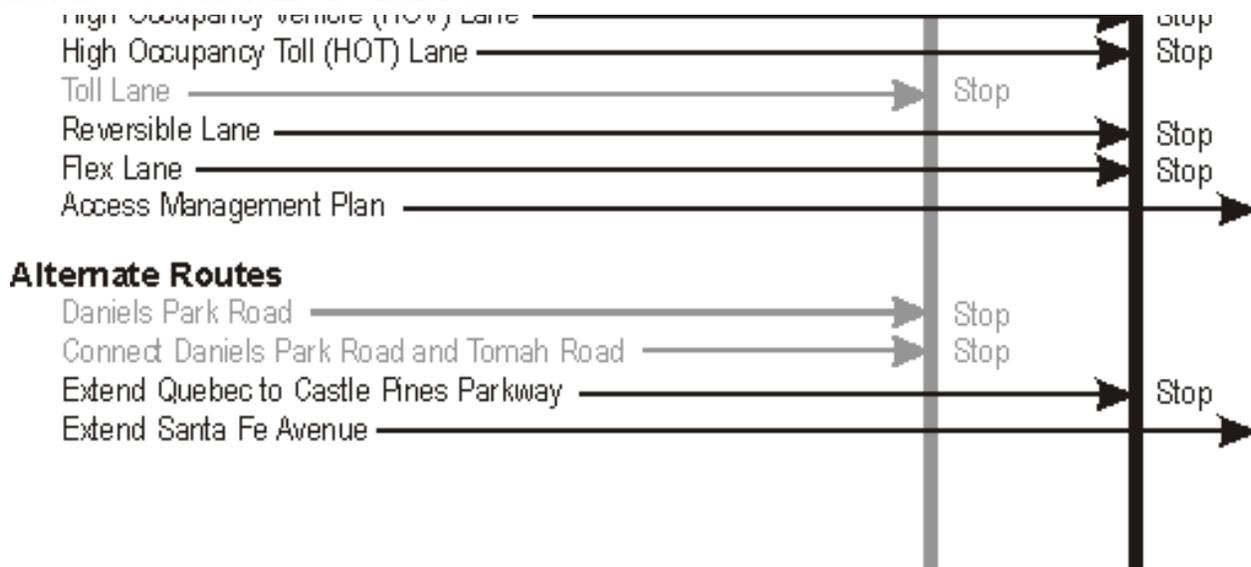


Figure 2.28b
US 85 Alternatives Eliminated at Level 2





I-25 Corridor Alternatives Eliminated at Level 2

The following I-25 alternatives are eliminated at the second level of evaluation:

Highway

- *Add Two General-Purpose Lanes.* This alternative adds two general-purpose lanes in each direction along I-25. The final configuration is 10 lanes from Lincoln Avenue to Meadows/Founders Parkway and 8 lanes from Meadows/Founders Parkway to Douglas Lane. This alternative did not proceed to the third level of evaluation due to environmental issues, implementation issues (including compatibility concerns north of C-470), and community values.
- *Add One Special-Purpose Lane.* This alternative adds one lane along I-25 to be managed as a special-purpose lane (high occupancy vehicle [HOV], high occupancy toll [HOT], or toll lane). The final configuration is six general-purpose lanes and one special-purpose lane from Lincoln Avenue to Meadows/Founders Parkway and four general-purpose lanes and one special-purpose lane from Meadows/Founders Parkway to Douglas Lane. This alternative did not proceed to the third level of evaluation due to implementation issues and community values.

Fixed-Guideway

- *Relocate Existing Railroad; Use Existing ROW for Transit.* This alternative relocates the existing Union Pacific Railroad through Castle Rock and constructs passenger rail on the existing ROW. This alternative did not proceed to the third level of evaluation due to ease of construction issues and capital costs.

Transportation Management (Programs and Policies Designed to Reduce Travel Demand and to Improve Utilization of the Transportation System)

- *Reclassify an Existing Lane.* This alternative changes the classification of the existing lane (i.e., an existing general-purpose lane is changed to a special-purpose lane). This alternative did not proceed to the third level of evaluation due to implementation issues and community values.

- *HOT Lane*. This alternative manages one or more lanes for use of HOV (typically defined as two or more people) or single-occupancy vehicles that are charged a fee. This alternative was eliminated due to implementation issues and community values.
- *Toll Lane*. This alternative manages one or more lanes by requiring a fee from every vehicle using the lane. This alternative was eliminated due to implementation issues and community values.
- *Reversible Lane*. This alternative manages one or more lanes by designating travel in one direction during part of the day and the other direction during a different part of the day. Reversible lanes are effective when travel patterns are predominantly in one direction during the morning peak and the other direction during the evening peak. This alternative was eliminated due to implementation issues and community values.
- *Flex Lane*. This alternative uses a shoulder as a through lane during peak periods. This alternative was eliminated due to mobility issues, implementation issues, and community values.
- *Express Lane*. This alternative manages one or more lanes by designating it for regional through traffic only (e.g., Denver Tech Center to Colorado Springs). This alternative was eliminated due to implementation issues and community values.

Alternate Routes

- *Parker Road*. This alternate route is a north/south connector between C-470 and SH 86. Improvements include upgrading Parker Road by adding an auxiliary lane in each direction north of Stroh Road and adding one through lane in each direction between Stroh Road and SH 86. This improvement is shown on the 2020 RTP, thus is considered part of the base condition.
- *Connect Castle Pines Parkway to Stroh Road*. This alternate route is an east/west connector between I-25 and Parker Road. Improvements include extending Castle Pines Parkway east to connect with Stroh Road, upgrading Castle Pines Parkway to a four-lane arterial from I-25 to Stroh Road, and upgrading Stroh Road to a four-lane arterial. This alternative was eliminated due to environmental issues, implementation issues, and community values.
- *Extend Quebec to Castle Pines Parkway*. This alternate route is a north/south connector between Lincoln Avenue and US 85. Improvements include extending and upgrading Quebec to a four-lane arterial between Lincoln Avenue and Castle Pines Parkway and upgrading Daniels Park Road from Castle Pines Parkway to US 85 to a four-lane arterial. This alternative was eliminated due to environmental issues and community values.
- *Highway 105*. This alternate north/south route parallels I-25 south of Sedalia. Improvements include enhancing safety and alignment and upgrading Highway 105 to a two-lane arterial to support additional traffic. The northern terminus to the northwest is extended, connecting US 85 with a two-lane ramp. This alternative was eliminated due to environmental issues, implementation issues, and community values.

2.12.2.2. US 85 Corridor Alternatives Eliminated at Level 2

The following US 85 alternatives are eliminated during the second level of evaluation:

Highway

- *Add Two General-Purpose Lanes.* This alternative adds two general-purpose lanes in each direction along US 85. The final configuration is eight lanes from C-470 to Highlands Ranch Parkway and six lanes from Highlands Ranch Parkway to Meadows Parkway. This alternative was eliminated due to environmental issues, implementation issues, and community values.
- *Add One Special-Purpose Lane.* This alternative adds one lane to be managed as a special-purpose (HOV, HOT, or toll) lane. The final configuration is four general-purpose lanes and one special-purpose lane from C-470 to Highlands Ranch Parkway and two general-purpose lanes and one special-purpose lane from Highlands Ranch Parkway to Meadows Parkway. This alternative was eliminated due to environmental issues, implementation issues, and community values.
- *Add One Special-Purpose Lane in Each Direction.* This alternative adds two lanes to be managed as special-purpose (HOV, HOT, or toll) lanes. The final configuration is four general-purpose lanes and two special-purpose lanes from C-470 to Highlands Ranch Parkway and two general-purpose lanes and two special-purpose lanes from Highlands Ranch Parkway to Meadows Parkway. This alternative was eliminated due to environmental issues, implementation issues, and community values.
- *Limited Access Control.* This alternative provides minimal accesses on US 85. Various driveways and minor roadways are consolidated and allowed to access US 85 through frontage roads. This alternative was eliminated due to environmental issues and community values.
- *Relocate Existing Railroad; Use ROW for Highway.* This alternative relocates the existing Union Pacific Railroad track (closest to US 85) and uses the ROW for highway improvements (either re-align US 85 or construct a new highway). This alternative was eliminated due to environmental issues, implementation issues, and community values.

Fixed-Guideway

- *Relocate Existing Railroad; Use Existing ROW for Transit* - This alternative relocates the existing Union Pacific Railroad track (closest to US 85) and constructs passenger rail on the existing ROW. This alternative was eliminated due to mobility issues, environmental issues, and implementation issues.
- *Improve Existing Freight Railroad.* This alternative improves the existing Union Pacific Railroad and Burlington Northern Santa Fe Railroad tracks so that all freight can be transported on trains along the tracks. This alternative reduces all heavy trucks from US 85. This alternative was eliminated due to a lack of community/agency support.

Transportation Management (Programs and Policies Designed to Reduce Travel Demand and to Improve Utilization of the Transportation System)

- *HOV Lane.* This alternative manages one or more lanes to be used only by vehicles with high occupancy

(typically defined as two or more people). This alternative was eliminated due to environmental issues, implementation issues, and community values.

- *HOT Lane*. This alternative manages one or more lanes for use of HOV (typically defined as two or more people) or single occupancy vehicles that are charged a fee. This alternative was eliminated due to implementation issues, community values, and is not a proven technology in arterial use.
- *Reversible Lane*. This alternative manages one or more lanes designated for one direction during part of the day and the other direction during a different part of the day. Reversible lanes are effective when travel patterns are predominantly in one direction during the morning peak and the other direction during the afternoon peak. This alternative was eliminated due to implementation issues, community values, and safety concerns.
- *Flex Lane*. This alternative uses a shoulder as a lane during peak periods. This alternative was eliminated due to mobility issues, implementation issues, community values, and safety concerns.

Alternate Routes

- *Extend Quebec to Castle Pines Parkway*. This alternate route is a north/south connector between Lincoln Avenue and US 85. Improvements include extending and upgrading Quebec to a four-lane arterial between Lincoln Avenue and Castle Pines Parkway and upgrading Daniels Park Road from Castle Pines Parkway to US 85 to a four-lane arterial. This alternative was eliminated due to environmental issues and community values.

2.12.3 Alternatives Eliminated at Level 3: Evaluation of Packages by Corridor

Alternatives that performed well in the second level of evaluation (Evaluation of Alternatives by Mode and Corridor) are combined into packages for the third level of evaluation (Evaluation of Packages by Corridor). The packages are developed to test concepts and evaluate the operations of various modes combined for each corridor. Results of the third level of evaluation identify which modes perform well together to meet project objectives. These results are used to help develop the Long-Term Vision.

Corridor packages used in the third level of evaluation were developed from alternatives of the different modes or categories that scored favorably in the second level of evaluation. If the alternative did not score favorably, it was not included in a package. Each package included different alternatives (there were no duplications) to evaluate the benefits of each alternative. Table 2.4a and Table 2.4b show how the alternatives were placed in each package.

2.12.3.1. I-25 Corridor Packages Evaluated

Descriptions of the I-25 Corridor packages evaluated in the third level of evaluation are as follows:

I-25 Package 1: No-Action

This package consists of no major build improvements as a result of the EIS. The No-Action Package consists of existing conditions and the Early-Action projects.

I-25 Package 2: No-Action with Supporting Measures (Transportation Management Package)

This package consists of the No-Action Package as described above, with minor improvements to the existing transportation system. Supporting measures include TDM measures, TSM measures, and ITS measures. Resulting laneage along I-25 is two lanes in each direction and one climbing lane in each direction from Lincoln Avenue to Meadows/Founders Parkway and two lanes in each direction from Meadows/Founders Parkway to Douglas Lane.

I-25 Package 3: Add General-Purpose Lanes

This package adds one lane in each direction for all uses between Lincoln Avenue and Douglas Lane to the No-Action Package. The Early-Action projects and supporting measures are also included. Resulting laneage is three general-purpose lanes in each direction and one climbing lane in each direction from Lincoln Avenue to Meadows/Founders Parkway, and three lanes in each direction from Meadows/Founders Parkway to Douglas Lane.

**Table 2.4a
I-25 Placement of Alternatives for Packages in Level 3**

	Package 1: No-Action	Package 2: No-Action with Supporting Measures	Package 3: Add General Purpose Lanes	Package 4: Add Special Purpose Lanes with Regional Bus Service	Package 5: Fixed-Guideway Transit	Package 6: Add General Purpose Lanes with Fixed-Guideway Transit	Package 7: Add General Purpose Lanes with Limited Fixed-Guideway Transit
NO-ACTION ALTERNATIVE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HIGHWAY							
Add 1 General Purpose Lane in each direction			<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
Add 1 Special Purpose Lane in each Direction				<input type="checkbox"/>			
Add Frontage Road		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Add New Interchanges		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
FIXED GUIDEWAY							
Light Rail Transit					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Self-Propelled Rail (DMU)					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
RUBBER-TIRED TRANSIT							
Bus				<input type="checkbox"/>			
TRANSPORTATION MANAGEMENT							
HOV Lane				<input type="checkbox"/>			
ALTERNATE ROUTES							
Crowfoot Valley Road		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Crowfoot Valley Road		<input type="checkbox"/>					
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- included in package

✓ - included as a supporting measure

Table 2.4b
US 85 Placement of Alternatives for Packages in Level 3

	Package A: No-Action	Package B: Reconstruct U.S. Highway 85/Safety Improvements	Package C: Add General Purpose Lanes	Package D: Add General Purpose Lanes with Regional Bus Service	Package E: Fixed-Guideway Transit with Reconstructed US 85/Safety Improvements	Package F: Add General Purpose Lanes with Fixed-Guideway Transit
NO-ACTION ALTERNATIVE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HIGHWAY						
Add 1 General Purpose Lane in each direction			<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
Improve the Existing 2 lanes		<input type="checkbox"/>			<input type="checkbox"/>	
Add New Interchanges		✓	✓	✓	✓	✓
Frontage Road		✓	✓	✓	✓	✓
FIXED GUIDEWAY						
Light Rail Transit					<input type="checkbox"/>	<input type="checkbox"/>
Push/Pull Commuter Rail (improved tracks)					<input type="checkbox"/>	<input type="checkbox"/>
Push/Pull Commuter Rail (new tracks)					<input type="checkbox"/>	<input type="checkbox"/>
Self-Propelled (DMU) (improved tracks)					<input type="checkbox"/>	<input type="checkbox"/>
Self-Propelled (DMU) (new tracks)					<input type="checkbox"/>	<input type="checkbox"/>
RUBBER-TIRED TRANSIT						
Bus				<input type="checkbox"/>		
TRANSPORTATION MANAGEMENT						
Access Management Plan		✓	✓	✓	✓	✓
ALTERNATE ROUTES						
Extend Santa Fe Avenue		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- included in package

✓ - included as a supporting measure

I-25 Package 4: Add Special-Purpose Lanes with Regional Bus Service

This package adds one lane in each direction between Lincoln Avenue and Douglas Lane to be managed as a bus/HOV lane. Early-Action projects and supporting measures are also included. Resulting laneage is two general-purpose lanes in each direction, one special-purpose lane in each direction, and one climbing lane in each direction from Lincoln Avenue to Meadows/Founders Parkway; and two general-purpose lanes in each direction and one special-purpose lane in each direction from Meadows/Founders Parkway to Douglas Lane.

I-25 Package 5: Fixed-Guideway Transit

This package adds a rail system (LRT or Self-Propelled Rail [DMU]) between the Southeast Corridor Terminus at Lincoln Avenue and Plum Creek Parkway. Early-Action projects and supporting measures are also included. Resulting laneage along I-25 is two lanes in each direction and one climbing lane in each direction from Lincoln Avenue to Meadows/Founder Parkway and existing laneage south of Meadows/Founders Parkway. Fixed-guideway stations are assumed to be located at the proposed Rampart Range Development, Castle Pines Parkway, Meadows/Founders Parkway, and Castle Rock.

I-25 Package 6: Add General-Purpose Lanes and Fixed-Guideway Transit

This package adds one general-purpose lane in each direction for all uses between the Southeast Corridor Terminus at C-470 and Douglas Lane and adds a fixed-guideway transit system between the Southeast Corridor terminus at Lincoln Avenue and Plum Creek Parkway. Early-Action projects and supporting measures are also included. Resulting configuration is three general-purpose lanes in each direction and one climbing lane in each direction from Lincoln Avenue to Meadows/Founders Parkway and three lanes in each direction from Meadows/Founders Parkway to Douglas Lane. Fixed-guideway stations are assumed to be located at the proposed Rampart Range Development, Castle Pines Parkway, Meadows/Founders Parkway, and Castle Rock.

I-25 Package 7: Add General-Purpose Lanes and Limited Fixed-Guideway Transit

This package adds one general-purpose lane in each direction for all uses between Lincoln Avenue and Douglas Lane and adds a fixed-guideway transit system between the Southeast Corridor Terminus at Lincoln Avenue and the proposed Rampart Range. The Early-Action projects and supporting measures are also included. The resulting laneage is three general-purpose lanes in each direction and one climbing lane in each direction from Lincoln Avenue to Meadows/Founders Parkway and three lanes in each direction from Meadows/Founders Parkway to Douglas Lane. The fixed-guideway station is assumed to be located at Rampart Range.

2.12.3.2. US 85 Corridor Packages Evaluated

Descriptions of the US 85 Corridor packages evaluated in the third level of evaluation are as follows:

US 85 Package A: No-Action

This package consists of no major build improvements as a result of the EIS. The No-Action Package includes the existing conditions in addition to the Early-Action projects:

- Titan Road
- I-25/US 85 Interchange

- Re-striping and minor widening from C-470 to Highlands Ranch Parkway

In addition to these projects, other roadway improvements are anticipated to be completed by Douglas County and the Town of Castle Rock as part of the No-Action Alternative. The resulting configuration is two lanes in each direction from C-470 to Highlands Ranch Parkway and one lane in each direction from Highlands Ranch Parkway to Meadows Parkway.

US 85 Package B: Reconstruct US 85/Safety Improvements

This package reconstructs US 85 to meet CDOT standards. The package includes reconstructing the roadway bed, paving the roadway, increasing existing shoulders and lane widths, and smoothing out substandard horizontal curves. Early-Action projects and supporting measures are also included. Supporting measures may include, but are not limited to, a bus feeder system in the Highlands Ranch area to collect people for the Mineral Avenue LRT and an access management plan. Resulting configuration is the same as existing: two lanes in each direction from C-470 to Highlands Ranch Parkway and one lane in each direction from Highlands Ranch Parkway to Meadows Parkway.

US 85 Package C: Add General-Purpose Lanes

This package reconstructs existing US 85 and adds one lane in each direction for all uses between C-470 and Norwood Drive, two lanes in each direction between Norwood Drive and Highlands Ranch Parkway, and one lane in each direction between Highlands Ranch Parkway and Meadows Parkway. The final configuration is six lanes between C-470 and Highlands Ranch Parkway and four lanes between Highlands Ranch Parkway and Meadows Parkway. Early-Action projects and the supporting measures are also included.

US 85 Package D: Add General-Purpose Lanes with Regional Bus Service

This package reconstructs existing US 85 and adds one lane in each direction for all uses between C-470 and Norwood Drive, two lanes in each direction between Norwood Drive and Highlands Ranch Parkway, and one lane in each direction between Highlands Ranch Parkway and Meadows Parkway. The final configuration is six lanes between C-470 and Highlands Ranch Parkway and four lanes between Highlands Ranch Parkway and Meadows Parkway. A regional bus system is provided to service passengers between Castle Rock and Denver. The park-and-ride stations are assumed to be located at Highlands Ranch Parkway, Sedalia, Meadows Parkway, and Castle Rock. Early-Action projects and supporting measures are also included.

US 85 Package E: Fixed-Guideway Transit with Reconstructed US 85 Safety Improvements

This package includes fixed-guideway transit between Mineral Avenue and Plum Creek Parkway and the reconstruction of the existing highway lanes to meet CDOT standards. Fixed-guideway stations are assumed to be located at Highlands Ranch Parkway, Sedalia, Meadows Parkway, and Castle Rock. Early-Action projects and supporting measures are also included.

US 85 Package F: Add General-Purpose Lanes and Fixed-Guideway Transit

This package reconstructs existing US 85 and adds one lane in each direction for all uses between C-470 and Norwood Drive, two lanes in each direction between Norwood Drive and Highlands Ranch Parkway, and one lane in each direction between Highlands Ranch Parkway and Meadows Parkway. Fixed-guideway transit, connecting the Mineral Avenue LRT station with Plum Creek Parkway is also added. Fixed-guideway stations are assumed to be located at Highlands Ranch Parkway, Sedalia, Meadows Parkway, and Castle Rock. Early-Action projects and supporting measures are also included.

Results for the third level of evaluation for I-25 are shown on Table 2.5a. Table 2.5b shows results for the US 85 third level of evaluation. Criteria summarized include ridership, LOS, cost, and ROW.

Figure 2.29a and Figure 2.29b outline this evaluation process. The *South I-25 Corridor and US 85 Corridor EIS Alternative Evaluation Process Technical Report*, March 2000 contains detailed information on the third level of evaluation.

2.12.3.3. I-25 Corridor Packages Eliminated at Level 3

One I-25 Corridor Package was eliminated during the third level of evaluation. Package 4: Add Special Purpose Lanes with Regional Bus Service did not proceed into the compatibility analysis. This package does not substantially address the north/south mobility of I-25. This package has high costs and high ROW acquisition.

2.12.3.4. US 85 Corridor Packages Eliminated at Level 3

Package B, Package E, and Package F were eliminated during the third level of evaluation. Package B: Reconstruct US 85/Safety Improvements does not address the purpose and need of the project because it does not address the north/south mobility of US 85 and it minimally addresses the safety issues. Package E: Fixed-Guideway Transit with Reconstructed US 85/Safety Improvements does not address the north/south mobility of US 85 and it minimally addresses the safety issues. Package F: Add General-Purpose Lanes with Fixed-Guideway Transit requires substantial ROW acquisition and has high costs.

2.12.3.5. Package Compatibility Analysis

A compatibility analysis was completed based on the results of the third level of evaluation. This analysis evaluated the effects each I-25 package has on each US 85 package. The analysis evaluated how each combination met the purpose and need, what fiscal constraints each combination had, and whether the combination consisted of competing capital-intensive improvements (i.e., fixed-guideway on both I-25 and US 85 would compete for ridership). The result of the compatibility analysis is that certain I-25 packages are compatible with certain US 85 packages.

- The I-25 Package 3: Add General-Purpose Lanes is compatible with US 85 Package C: Add General-Purpose Lanes and US 85 Package D: Add General-Purpose Lanes with Regional Bus Service.
- The I-25 Package 4: Add Special-Purpose Lanes with Regional Bus Service is compatible with US 85 Package C: Add General-Purpose Lanes and US 85 Package D: Add General-Purpose Lanes with Regional Bus Service.

Table 2.5a

I-25 Corridor Package Summary

		Packages						
		Package 1: No-Action	Package 2: No-Action with Supporting Measures	Package 3: Add General Purpose Lanes	Package 4: Add Special Purpose Lanes with Regional Bus Service	Package 5: Fixed-Guideway	Package 6: Add General Purpose Lanes with Fixed-Guideway Transit	Package 7: Add General Purpose Lanes with Limited Fixed-Guideway Transit
Criteria	Measure							
Ridership	Number of Daily Boardings	N/A	N/A	N/A	254	1,630	1,630	110
LOS	Range of LOS on Highway	E-F	D-F	C-F	D-F	E-F	C-F	C-F
Cost ¹	Capital Cost (Millions)	N/A	N/A	\$71	\$124	\$109	\$183	\$106
ROW ²	Number of acres of new ROW required	0	0	6	25	15	25	9

¹ Cost does not include ROW acquisition

² ROW acres are based on typical cross sections for each package and assumes improvements are along the existing I-25 centerline.

N/A: not applicable

**Table 2.5b
US 85 Corridor Package Summary**

		Packages					
		A: No-Action	B: Reconstruct US 85/Safety Improvements	C: Add General Purpose Lanes	D: Add General Purpose Lanes with Regional Bus Service	E: Fixed-Guideway Transit with Reconstructed US 85/Safety Improvements	F: Add General Purpose Lanes with Fixed-Guideway Transit
Criteria	Measure						
Ridership	Number of Daily Boardings	N/A	N/A	N/A	302	1,258	1,258
LOS	Range of LOS on Highway	E-F	E-F	C-E	C-E	E-F	C-E
Cost ¹	Capital Cost (Millions)	N/A	\$37	\$56	\$63	\$139	\$177
ROW ²	Number of acres of new ROW required	0	12	35	38	66	117

¹ Cost does not include ROW acquisition

² ROW acres are based on typical cross sections for each package and assumes improvements are along the existing US 85 centerline.

N/A: not applicable

Figure 2.29a
I-25 Alternatives Eliminated at Level 3

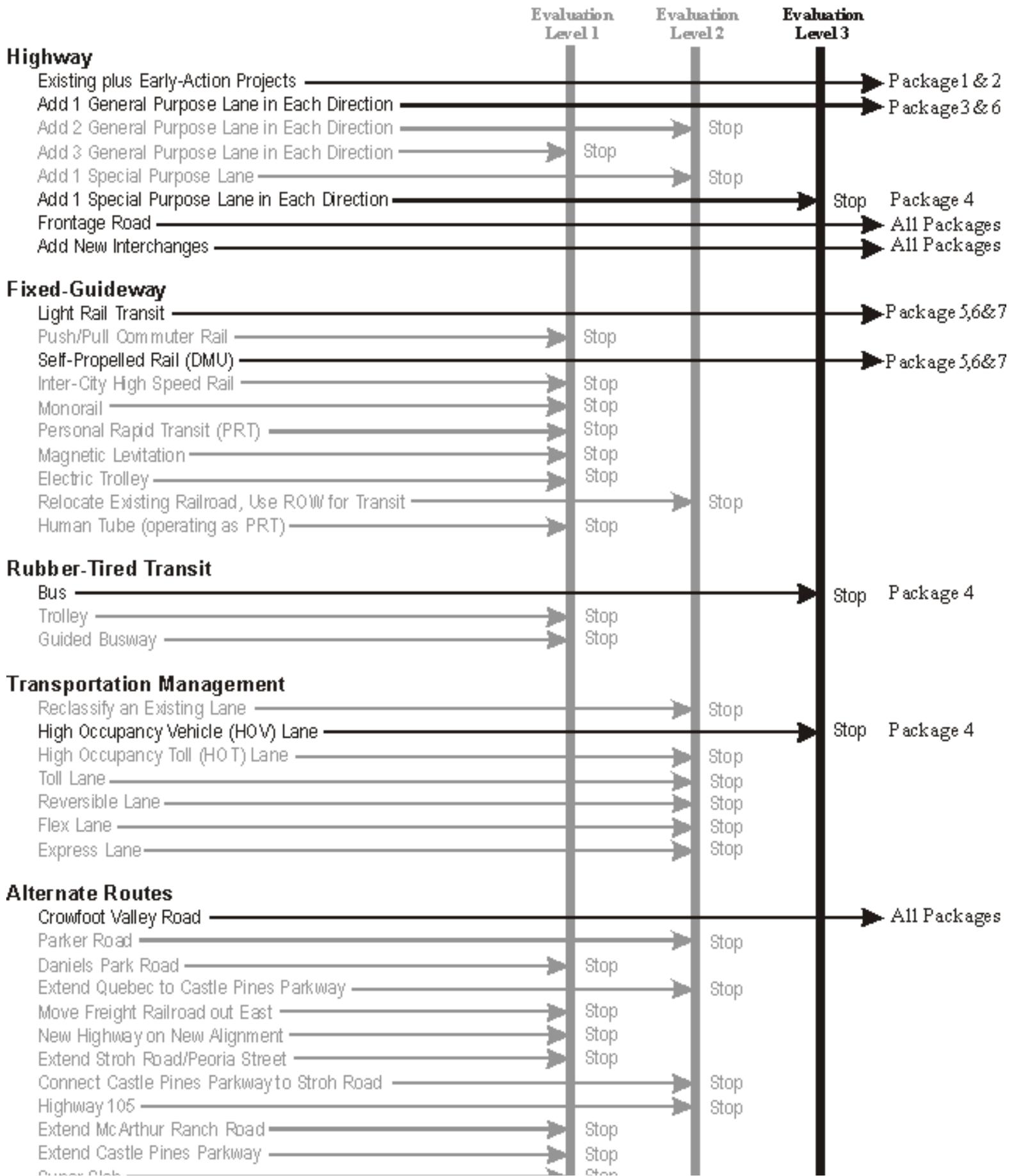
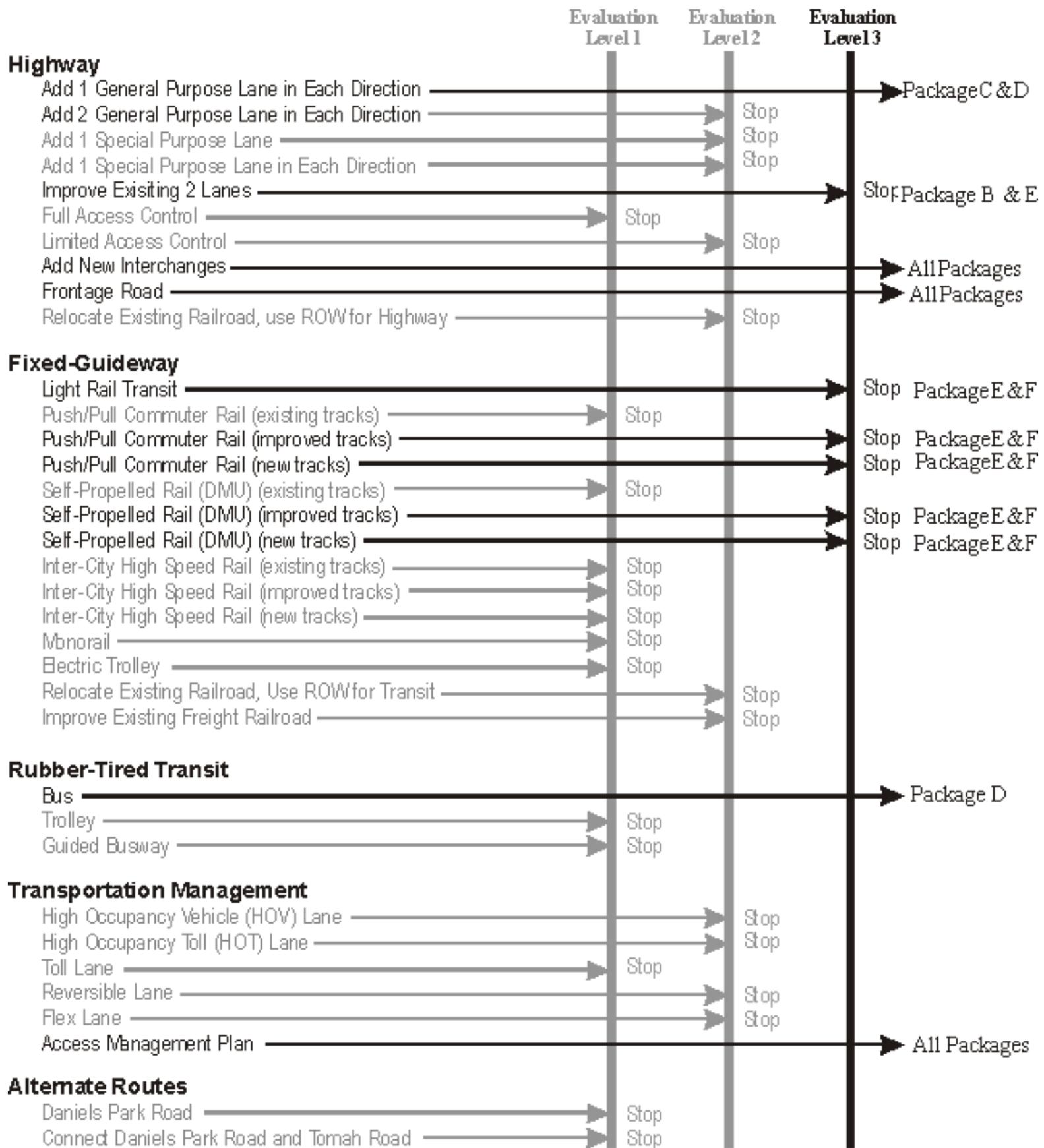
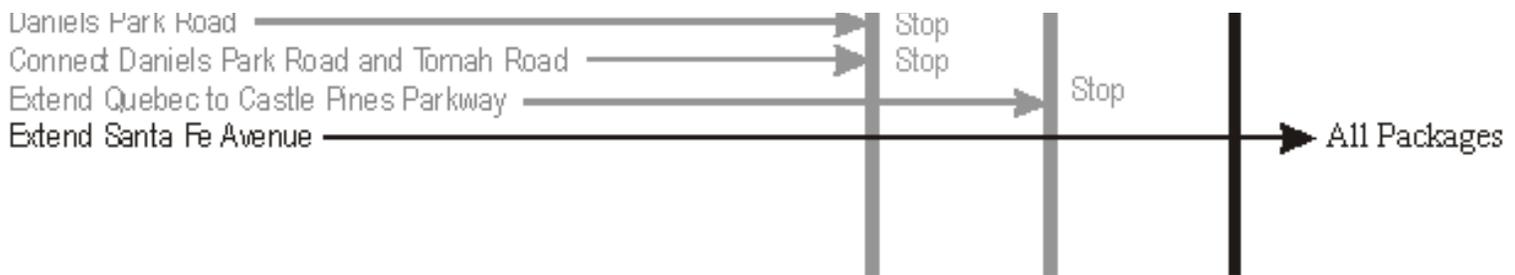




Figure 2.29b
US 85 Alternatives Eliminated at Level 3





- The I-25 Package 7: Add General-Purpose Lanes and Limited Fixed-Guideway Transit is compatible with US 85 Package C: Add General-Purpose Lanes and US 85 Package D: Add General-Purpose Lanes with Regional Bus Service.

Based on the results of the compatibility analysis, the project objectives, and the communities' needs the Long-Term Vision was developed. The Long-Term Vision includes adding general-purpose lanes to both I-25 and US 85, fixed-guideway transit along the I-25 Corridor, improvements to two alternate routes, park-and-ride lots, preservation of future transportation corridor, wildlife considerations, US 85 transit demonstration project, and supporting measures.

2.12.4 I-25 and US 85 Transportation Management Alternatives

The I-25 and US 85 transportation management (TM) alternatives (as stand-alone alternatives) were eliminated from consideration because they did not meet the purpose and need. However, TM measures (TSM, TDM, and ITS) are being carried forward as supporting measures to accompany each of the alternatives being evaluated in the FEIS. TM measures will be included throughout both corridors in the FEIS Alternatives, but will not be stand-alone alternatives.

Other Alternatives Eliminated

While developing the conceptual design of the alternatives under consideration in the DEIS, other alternatives not carried into the full EIS comparative analysis were evaluated and eliminated. These include:

- Major reconstruction of C-470 and I-25 Interchange
- Plum Creek Parkway Interchange alternatives
- I-25 west-side frontage road (between the proposed Rampart Range Interchange and Castle Pines Parkway Interchange)
- Major improvements to C-470 and US 85 Interchange
- Various SH 67 and US 85 intersection alternatives
- Various I-25 typical sections
- Various US 85 typical sections

- Relocation of existing railroad corridor along US 85

Following are discussions of each of the alternatives and why they were eliminated.

2.12.5.1. Major Reconstruction of C-470 and I-25 Interchange

During the EIS alternative analysis process, the study corridor was extended to C-470 to ensure continuity and capacity of the I-25 lanes to C-470. The Southeast Corridor I-25 improvements end on the north side of the C-470 Interchange. The South I-25 Corridor and US 85 Corridor EIS was responsible for developing a logical connection to C-470 that did not restrict traffic or create a bottleneck. Two general alternatives were developed and evaluated. The alternative that carried eight through lanes and the accompanying auxiliary lanes through the C-470 interchange was eliminated because of major impacts and associated cost with major reconstruction of the interchange structures, the I-25 northbound entrance ramp from C-470, the I-25 southbound exit ramp to C-470, and the I-25 northbound exit ramp to County Line Road. The travel demand projection for 2020 also showed a large percentage of the I-25 traffic entering or exiting I-25 at C-470. This characteristic in traffic flow demonstrated that eight continuous through lanes was not warranted between the C-470 exit and entrance ramps based on the *American Association of State Highway and Transportation Officials* design criteria, such as the basic number of lanes and lane balance.

The alternative that is evaluated in this FEIS carries eight through lanes to C-470 and drops or adds the lanes at County Line Road ramps. The outside northbound lane is an optional lane at the C-470 exit and at the County Line Road exit. The outside southbound lane is carried continuously south from the County Line Road entrance.

2.12.5.2. Plum Creek Parkway Interchange Alternatives

The existing Plum Creek Parkway Interchange consists of split ramps from Wilcox Street on the east and a half-diamond from Plum Creek Parkway on the west. The *I-25 Through Castle Rock Corridor Feasibility Study*, 1995 and the *I-25/US 85 Interchange Study*, April 13, 1999, discuss the following two alternatives that were considered for improvements to this interchange but were not carried forward:

- *Single-Point Urban Interchange at Existing Location.* This alternative includes complete reconstruction of the existing interchange. Existing hook ramps are removed and replaced with a single-point urban interchange. This alternative costs approximately \$20 million. This alternative was evaluated and not carried forward due to major environmental impacts, high costs, and minor benefits.
- *Diamond Interchange at Relocated Location.* This alternative includes constructing a new diamond interchange approximately 700 meters (2,500 feet) south of the existing interchange. Existing hook ramps are removed. This alternative costs approximately \$15 million. This new interchange was planned to tie into the "ring road" proposed by the Town of Castle Rock. Since the initial design of the interchange, the ring road to that location is no longer feasible, and the relocated Plum Creek Interchange would have poor connectivity to the local network. Also, the Douglas Lane proposed interchange will redirect some of the traffic currently using the Plum Creek Parkway Interchange. A diamond interchange at a relocated site was evaluated and not carried forward due to inconsistencies with the local planned network, high costs, and minor benefits.

2.12.5.3. I-25 West-Side Frontage Road

An I-25 east-side frontage road between Castle Pines Parkway and Rampart Range is included in the Other Alternative. A frontage road was also evaluated along the west side of I-25. The west-side frontage road generally followed Clydesdale Road, through the Surrey Ridge neighborhood. This alternative was evaluated in the *South I-25 Corridor Interchange Study*, January 2000 and eliminated through the public involvement process.

2.12.5.4. Major Improvements to C-470 and US 85 Interchange

Improvements to the C-470/US 85 Interchange are needed to improve US 85 operations. The C-470/US 85 Interchange is currently operating at a LOS F. The following alternatives were considered for improving the operations of this interchange:

- *Southwest Quadrant Loop Ramp.* This alternative includes the addition of a loop ramp in the southwest quadrant. The US 85 southbound left-turn vehicles exit on the right side and loop around onto eastbound C-470. The new configuration improves the existing operations by eliminating the US 85 southbound left-turns onto eastbound C-470.
- *Southwest and Northeast Quadrant Loop Ramps.* This alternative includes the addition of two loop ramps, one in the southwest quadrant and one in the northeast quadrant. The US 85 southbound left-turn vehicles exit on the right side and loop around onto eastbound C-470 and the northbound US 85 left-turns exit on the right side and loop around onto westbound C-470. The new configuration improves the existing operations by eliminating the US 85 left-turns onto C-470.
- *Single-Point Urban Interchange.* This alternative reconstructs the existing diamond interchange to a single-point urban interchange. The new configuration improves the existing operations by reducing the traffic signal phases from four to three phases, thus increasing interchange capacity.
- *Directional Interchange.* This alternative includes two-directional US 85 to C-470 entrance ramps. One ramp is for the southbound US 85 traffic that exits on the right side and flies over the interchange, merging with the eastbound C-470 traffic. The other ramp is for northbound US 85 traffic that exits on the right side and flies-over the interchange, merging with the westbound C-470 traffic. This option improves existing operations by eliminating US 85 left turns onto C-470.

Major improvements to the C-470/US 85 Interchange are needed but were eliminated from further consideration in this EIS due to high costs, associated environmental impacts, and limited funding. Improvements to this interchange will be further identified and evaluated under a separate environmental study.

2.12.5.5. Various SH 67 and US 85 Intersection Alternatives

As part of the alternative evaluation process, numerous alternatives were evaluated for the intersection of SH 67 and US 85. These alternatives included grade separations, railroad relocation, and numerous intersection combinations. The alternative that best meets the needs of the community, minimizes environmental impacts, and provides for safe operations is included in the Preferred Alternative and Other Alternative. Other options evaluated but eliminated from further consideration include:

- *Reconstruct Existing Intersection.* This alternative reconstructs the existing SH 67/US 85 signalized intersection with full-movement access. Two right-in/right-out access points are provided for businesses along US 85. This alternative costs approximately \$4 million, not including highway ROW costs. This alternative was eliminated due to safety and access problems. Two alternatives were recommended from the public for reconstruction of the SH 67/US 85 Intersection. These alternatives were eliminated due to safety problems and railroad impacts.
- *Relocate Railroad.* This alternative reconstructs the existing SH 67/US 85 signalized intersection with full-movement access. Two right-in/right-out access points are provided for businesses along US 85. The Burlington Northern Santa Fe Railroad is relocated to the south, parallel to the Union Pacific Railroad. This alternative costs approximately \$19 million, not including highway ROW costs. This alternative was eliminated due to high costs with minimal benefits and railroad impacts.
- *New SH 67 Alignment.* This alternative constructs a new SH 67 alignment with a new full-movement intersection at US 85. The existing SH 67/US 85 Intersection is reconstructed with controlled access. Two right-in/right-out access points are provided for businesses along US 85. This alternative costs approximately \$12 million, not including highway ROW costs. This alternative was eliminated due to environmental impacts, community impacts, and high costs.

2.12.5.6. Various I-25 Typical Sections

Currently along I-25, south of Meadows/Founders Parkway, a 9.1-meter (30-foot) grass median separates the northbound and southbound lanes. The typical section of the Preferred Alternative and Other Alternative between Meadows/Founders Parkway and Plum Creek Parkway includes reconstructing the existing highway and widening to the inside. A 0.6-meter (2-foot) concrete barrier separates northbound and southbound lanes. Another alternative evaluated but eliminated from further consideration includes widening to the outside. This option consists of six 3.6-meter (12-foot) travel lanes, 3.0-meter (10-foot) outside and inside shoulders, 4.6-meter (15-foot) ditch area, and a 9.1-meter (30-foot) grass median. The total typical width is 53.5 meters (172 feet). This option was eliminated from further consideration due to environmental impacts.

2.12.5.6. Various I-25 Typical Sections

Typical sections evaluated in this FEIS for the US 85 Corridor are a result of numerous revisions. Because the US 85 Corridor is located in a sensitive area (surrounded by parkland, businesses, and residences), impacts are minimized by using a narrow typical section. Several typical sections for improvements to US 85 were evaluated and eliminated from further consideration due to environmental and safety impacts.

The environmental assessment (EA) completed for the US 85 Corridor in 1994 presented a conceptual design with four different typical sections. The EA proposed six lanes from C-470 to Highlands Ranch Parkway. Two 3.6-meter (12-foot) general-purpose lanes, one 3.6-meter (12-foot) HOV lane, and one 4.3-meter (14-foot) auxiliary lane were used in each direction. From Highlands Ranch Parkway to Lakeside Drive, the typical section becomes a split alignment, and the northbound lane moves to the east to avoid the transmission lines in the Highlands Ranch Parkway area. This typical section has two general-purpose lanes in each direction and an HOV lane in each direction. There is a 3-meter (10-foot) outside shoulder and a 2.4-meter (8-foot) inside shoulder in each direction. From Lakeside Drive to Titan Road, the typical section continues with the same number of lanes, but the median is reduced to a 7.3-meter (24-foot) grass median. From Titan Road to the intersection of US 85

and I-25, the typical section becomes two lanes in each direction and the median is 21.9 meters (72 feet) wide.

Typical sections used for the US 85 EA were much wider than the US 85 typical sections being evaluated for this FEIS. Through the use of a narrower typical section, environmental impacts are minimized.

2.12.5.8. Relocation of Existing Railroad Corridor along US 85

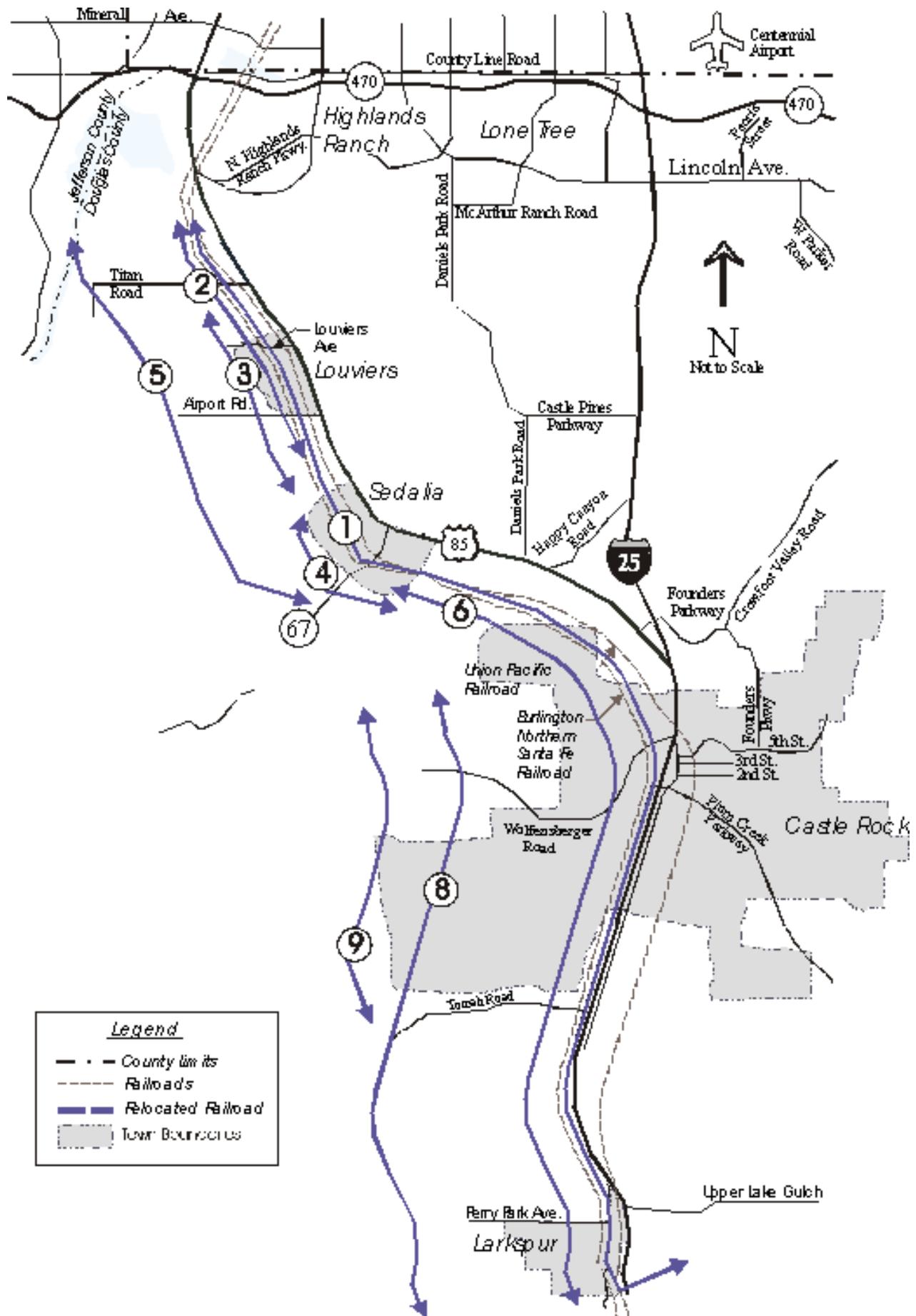
A railroad relocation study was completed to explore the options and feasibility of relocating a portion or all of the easternmost rail line along US 85 to provide benefits to US 85. Relocating the railroad would improve safety on local streets by combining and/or eliminating at-grade crossings through the towns of Louviers, Sedalia, and Castle Rock. There are currently 25 single-track public crossings and 30 single-track private crossings throughout the corridor. In all cases, the rail line was relocated from the east rail line to the west rail line. Nine alternatives were analyzed and are listed in Table 2.6 and illustrated on Figure 2.30.

Relocation of the railroad has been eliminated from further consideration for this EIS due to the high costs and minimal benefits provided to the mobility and safety of US 85. The Town of Castle Rock and Douglas County are currently researching funding options to explore relocation options.

Table 2.6
Railroad Relocation Analysis Results

Alternative Description	Track Miles Relocated	Existing Single Track Crossings		Single Track Crossings Eliminated		Single Track Crossings Converted to Double Track		Estimated Cost (in millions)
		Private	Public	Private	Public	Private	Public	
1. Consolidate railroad for length of corridor	27.5	30	25	17	12	13	13	\$98.8
2. Consolidate railroad from south of C-470 to south of Louviers	7.3	6	10	6	5	0	5	\$31.3
3. Consolidate railroad from north of Titan Road to south of Louviers	3	4	6	4	3	0	3	\$20.5
4. Consolidate railroad from north of Sedalia to south of Sedalia	2.5	1	3	0	1	1	2	\$15.0
5. Consolidate railroad from south of C-470 to south of Sedalia	10.5	10	13	6	6	4	7	\$35.7
6. Consolidate railroad from south of Sedalia to south of Larkspur	18	20	12	11	6	9	6	\$66.4
7. Make safety improvements to signalized public at-grade crossings	0	0	0	0	0	0	0	\$0.37
8. Consolidate railroad from north of Castle Rock to south of Larkspur	12.8	11	11	5	6	6	5	\$69.7
9. Consolidate railroad from north of Castle Rock to south of Castle Rock	6	3	6	2	3	1	3	\$69.0

Figure 2.30
Railroad Relocation Alternatives



2.12.6 DEIS Alternatives Eliminated

Alternatives presented in this FEIS were developed from elements evaluated in the DEIS alternatives. The DEIS alternatives listed in this section were eliminated from further consideration after the full evaluation in the DEIS.

2.12.6.1. I-25 Corridor DEIS Alternatives Eliminated

Three alternatives (including the No-Action Alternative) and various improvement options were considered for the I-25 Corridor in the DEIS:

- Alternative 1: No-Action
- Alternative 2: Mainline Widening (Additional General-Purpose Lanes)
- Alternative 3: Mainline Widening (Additional General-Purpose Lanes), Interchange Improvements, and Frontage Road

The No-Action Alternative is still under consideration in the FEIS. Portions of Alternative 2 and Alternative 3 were incorporated into the Preferred Alternative and Other Alternative.

Alternative 2: Mainline Widening (Additional General-Purpose Lanes)

Alternative 2 focuses on mainline I-25 widening to add one general-purpose lane in each direction without major interchange reconstruction or improvements. Existing interchanges are improved minimally (box culverts extended, bridges widened, ramps adjusted, slope paving removed, etc.) where necessary to accommodate the widening of I-25. The new bridge for the Union Pacific Railroad is constructed to the north of the existing bridge. All Early-Action projects are included in this alternative. Major elements of Alternative 2 include:

- Eight lanes between C-470 and Meadows/Founders Parkway
- Six lanes between Meadows/Founders Parkway and Douglas Lane

Estimated total cost for Alternative 2 is \$66.3 million, including the cost for adding one general-purpose lane in each direction along I-25 between C-470 and Douglas Lane and minor interchange improvements that adjust for the widening.

Alternative 3: Mainline Widening (Two Additional General-Purpose Lanes), Interchange Improvements, and Frontage Road

Alternative 3 builds on Alternative 2 in that it includes all the Early-Action projects and Alternative 2 elements and a new Surrey Ridge Road diamond interchange, Castle Pines Parkway partial cloverleaf interchange, Castle Pines Parkway car pool lot, widened Happy Canyon Bridge, and a two-lane frontage road on the east side of I-25 between Castle Pines Parkway and Lincoln Avenue. Bridge reconstruction is required for the Union Pacific Railroad. This alternative also includes the following major improvements:

- Eight lanes between C-470 and Meadows/Founders Parkway

- Six lanes between Meadows/Founders Parkway and Douglas Lane
- New diamond interchange at Surrey Ridge Road, east-side frontage road between Castle Pines Parkway and Lincoln Avenue, and removal of Schweiger Interchange I-25 ramps
- Castle Pines Parkway Interchange reconstruction with loop ramp in southeast quadrant
- Car pool lot (500 spaces) in northeast quadrant of the I-25 and Castle Pines Parkway Interchange
- Happy Canyon Road Bridge widening

In addition to the mainline widening, Alternative 3 includes Additional Major Improvements:

- *Frontage Road and Diamond Interchange at Surrey Ridge Road.* The existing Surrey Ridge Road Interchange is reconstructed into a diamond interchange and an east-side, two-lane frontage road is constructed between Castle Pines Parkway and Lincoln Avenue. The I-25 ramps at the Schweiger Interchange are removed, and Schweiger is connected to the frontage road.
- *Partial Cloverleaf Interchange at Castle Pines Parkway.* The Castle Pines Parkway Interchange is reconfigured by adding a loop ramp in the southeast quadrant of the Castle Pines Parkway Interchange. Remaining ramps are adjusted for mainline widening.
- *Castle Pines Parkway Car Pool Lot.* A new car pool lot in the northeast quadrant of the Castle Pines Parkway Interchange is constructed. The lot provides for approximately 500 parking spaces and serves as a meeting place and parking area. The car pool lot can be built in phases, starting with a fewer number of parking spaces.
- *Happy Canyon Road Bridge Widening.* The Happy Canyon Bridge is widened to accommodate the additional left-turn lanes warranted with the projected future traffic volumes.

Total cost for Alternative 3 is approximately \$95.3 million, including adding one general-purpose lane in each direction along I-25 between C-470 and Douglas Lane, constructing a frontage road along the east side of I-25 between Lincoln Avenue and Castle Pines Parkway, and providing major interchange improvements. A major cost of this alternative is the interchange improvements and frontage road estimated to be \$26.0 million. The ROW increases for this alternative because the frontage road is being constructed on a new alignment that requires 23 hectares (57 acres).

Other I-25 Corridor Improvement Options

Certain sections of I-25 have variations or options that could be included in different combinations with any of the three alternatives. The options have been developed to provide variations to the three alternatives. The improvement options for I-25 that have been eliminated are described below.

Interchange Improvements and Frontage Road between Lincoln Avenue and Castle Pines Parkway, Option B: Diamond Interchange at Surrey Ridge Road and Frontage Road

This option includes constructing a new diamond interchange at Surrey Ridge Road and an east-side frontage road between Castle Pines Parkway and Lincoln Avenue. The exiting I-25 ramps at Castle Pines Parkway and Lincoln Avenue are adjusted for the mainline widening. Existing ramps at Surrey Ridge Road are replaced with a standard diamond interchange. The I-25 ramps at Schweiger Interchange are removed, and local traffic circulation is provided at Lincoln Avenue and Surrey Ridge Road via the frontage road. A variation of this option (Surrey Ridge Road diamond interchange and frontage road between Rampart Range and Castle Pines Parkway) is included in the Other Alternative.

Laneage Options between Castle Pines Parkway and Meadow/Founders Parkway, Option A: Existing Conditions of Six Lanes Between Castle Pines Parkway and Meadow/Founders Parkway

This option does not include widening on I-25 between Castle Pines Parkway and Meadows/Founders Parkway beyond the Early-Action projects. The configuration in this section remains as the No-Action (after the completion of Climbing Lanes, Phase II) four general-purpose lanes and two climbing lanes.

2.12.6.2. US 85 Corridor DEIS Alternatives Eliminated

Two general alternatives (including the No-Action Alternative) and an improvement option were considered for improvements to US 85 in the DEIS:

- Alternative A: No-Action
- Alternative B: Mainline Widening (Additional General-Purpose Lanes) and Reconstruction

The No-Action Alternative is still under consideration in the FEIS. Alternative B and an improvement option have been eliminated and are described in the following section.

Alternative B: Mainline Widening (Additional General-Purpose Lanes) and Reconstruction

Alternative B focuses on complete reconstruction and mainline US 85 widening. Where needed, the existing culverts are extended and other drainage structures are replaced to accommodate the widening. The proposed access along US 85 is managed as described in the *Draft US 85 Access Management Plan*, June 2000. This alternative also includes a bikeway along US 85. All Early-Action projects are assumed for this alternative. Major elements of Alternative B include:

- Six lanes between C-470 and Titan Road
- Four lanes between Titan Road and Meadows Parkway
- US 85/SH 67 Intersection Reconfiguration

The total cost for Alternative B is approximately \$93.3 million, including the cost for complete reconstruction of US 85 and widening to six lanes between C-470 and Titan Road and four lanes between Titan Road and Meadows Parkway. The ROW cost for Alternative B is approximately \$10 million (not including relocation costs) to purchase 46 hectares (114 acres).

Other US 85 Proposed Typical Sections

The Douglas County Trail Group submitted typical sections showing detached bicycle and pedestrian facilities. Various restrictions along US 85, including houses, businesses, and Section 4(f) Properties restrict the amount of bikeway that can be detached. The Preferred Alternative and Other Alternative include a detached bikeway at prudent and feasible locations. Where a detached trail does not fit due to various restrictions, either an attached facility or a large shoulder serves as the bikeway.