

# 3.0 TRAVEL DEMAND

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### 3.1 INTRODUCTION

Travel demand is the amount of traffic that uses a facility in a defined situation. Travel demand is typically shown in either person trips or vehicle trips. For this Environmental Impact Statement (EIS), travel demand is projected 20 years into the future (year 2020) to estimate traffic volumes and transit ridership to assist in long-term planning.

Traffic volumes have been increasing continuously over the past several years. This trend is not expected to change. In 1998 the average daily traffic (ADT) on I-25 between Plum Creek Parkway and Wolfensberger Road was approximately 60,250, while the ADT between Lincoln Avenue and C-470 was approximately 85,100. These figures equate to approximately 72,300 and 102,120 person trips (assuming 1.2 persons per vehicle) for each respective link. Based on the travel demand model refined for this project, traffic volumes along the I-25 Corridor are projected to increase between 90 and 142 percent (depending on location) by 2020. The ADT projected on I-25 in 2020, between Plum Creek Parkway and Wolfensberger Road, is approximately 114,600 (137,500 person trips), while the projected ADT is approximately 206,200 (247,400 person trips) on the section between Lincoln Avenue and C-470.

The 1998 ADT on US 85 between Meadows Parkway and Happy Canyon Road was approximately 13,200, and

the ADT between Town Center Drive and Blakeland Drive was approximately 37,600. These figures equate to approximately 15,840 and 45,120 person trips for each respective link. US 85 Corridor traffic volumes are projected to increase between 29 percent and 50 percent by 2020. The projected ADT between Meadows Parkway and Happy Canyon Road for 2020 is approximately 19,800 vehicles (23,800 person trips), and approximately 35,100 vehicles (42,100 person trips) on the segment between Town Center Drive and Blakeland Drive. Section 1.4, *Traffic Characteristics* details existing traffic volumes.

Transportation models project future traffic volumes and transit ridership for a particular study area. The Denver Regional Council of Governments (DRCOG) maintains the regional travel demand model for the Denver metropolitan area. Planning studies conducted as part of the state and federal process are required to use this model as the basis of analysis. These projections allow comparisons to be made between the alternatives. Section 3.3, *Existing (1998) and Future (2020) Travel Characteristics*, outlines the level of service (LOS) and the hours of congestion for the alternatives being evaluated.

This chapter discusses the transportation model used for this Final EIS (FEIS). It also discusses the differences between FEIS and Draft EIS (DEIS) traffic volume projections and differences between FEIS projections and Douglas County proposed land use projections. Existing and proposed traffic volumes and operations are discussed in this chapter.

### 3.2 TRANSPORTATION MODEL METHODOLOGY

The travel demand model is used to forecast future traffic volumes. This model is not designed to produce an absolute answer; rather, it is a tool used to develop relatively accurate travel projections in the context of regional or corridor transportation analysis. These projections are based on many assumptions about population, employment, and land use. Variations in the actual growth and location of population, employment, and land use development will affect the accuracy of the travel projections. Given one set of assumptions about future land use, however, the model will produce reliable results that are well suited for the comparison of transportation network alternatives.

The first step in the DRCOG modeling process is to determine land use data and transportation network data (including major roads, transit, proposed major improvements, and other modes of transportation). By changing these elements, changes in travel demand can be projected. The model does not produce a definitive answer; it is a tool used to test assumptions or alternatives. The four steps of the modeling process are:

- *Trip generation* calculates how trips begin or end (productions and attractions) in each traffic analysis zone (TAZ) based on household and employment characteristics of each zone.
- *Trip distribution* determines where the trips produced in each zone are attracted by establishing a relationship for trip interchanges between zones.
- *Modal split* determines which modes of travel are used for trips between each pair of zones.
- *Traffic assignment* determines the route(s) that are traveled for non-transit trips between each pair of zones.

The DRCOG transportation model is calibrated with current data and updated periodically. While the calibration

does not produce an exact model, the model allows for adjustments and provides a reasonable estimate of travel behavior.

Induced trips are elements of travel demand projection not included in the DRCOG transportation model or in the analysis for this EIS. Induced trips are trips currently not being made because of traffic congestion, safety, or other travel deterrents. In theory, as capacity and mobility improvements are made, conditions become more conducive to travel such that previously unmade trips are now made, thus increasing traffic volumes without changing land use or population.

The Transportation Research Board (TRB) recently investigated the phenomenon of induced travel, concluding that some effect exists, but the TRB was inconclusive on the magnitude. Research suggests that pricing and land use practices are more effective in controlling traffic to discourage induced travel than are highway improvements. The long-term operations of both corridors in this study ultimately become congested; therefore, it could be concluded that, although induced trips may occur in the interim, long-term congestion ultimately deters induced travel.

Latent demand trips are trips being made but on a different route because of shorter travel times. The model includes latent demand trips; and as improvements are made to a particular route and the travel time becomes shorter, trips previously routed on less congested local streets are assigned to the faster route.

For comparison purposes, the following discussion outlines the DRCOG transportation model used for the DEIS, the updated DRCOG transportation model used for the FEIS, and the Douglas County projected 2020 low- and moderate-growth land use projections.

### **3.2.1 The DEIS Transportation Model (version 3D20)**

The South I-25 Corridor and US 85 Corridor DEIS transportation model used the 3D20 DRCOG model as a base, and added more detailed information about the transportation network to more accurately reflect local travel patterns. The DRCOG model includes a structure of 1,530 TAZs. Household, population, and employment are forecasted for each TAZ. This information is then used to project the number of trips to and from each TAZ. It was determined that the accuracy of the model in the study area could be improved by representing the larger zones in Douglas County as multiple smaller zones. Therefore, input from Douglas County and the Town of Castle Rock was used to refine the model by changing the TAZ structure and roadway network. This improved model was used to perform the DEIS analysis.

### **3.2.2 The FEIS Transportation Model (version 5A20)**

DRCOG recently updated their 3D20 transportation model. The revised model (5A20) was used to project traffic volumes for the FEIS. Between the DEIS and the FEIS, the travel projections were reviewed and revised as appropriate.

The new model provides additional detail for Douglas County and provides outputs for 10-year increments. More detail regarding the transportation network was added based on information obtained from Douglas County and the Town of Castle Rock. Based on the new model estimates, the traffic volumes and resulting LOS have been revised from the DEIS model results and are discussed in this chapter.

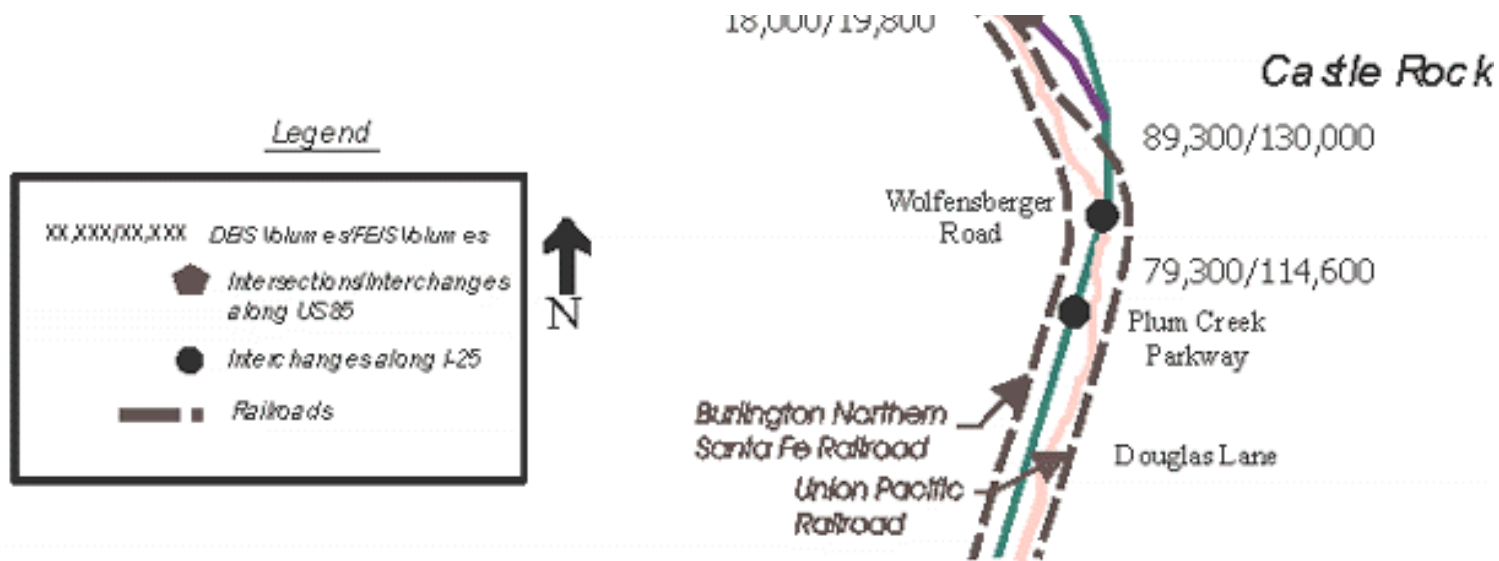
Figure 3.1 compares DEIS and FEIS traffic volumes. The I-25 traffic volumes have increased due to traffic increases from the south (Colorado Springs) and the developments that have recently been added to the updated model. The US 85 Corridor traffic volumes also increased due to updated growth projections.

### 3.2.3 Douglas County Land Use Growth Models

As part of the corridor study and updates to the *Douglas County Master Plan*, 1998, Douglas County has developed two different population growth scenarios: low-growth and moderate-growth. The local growth scenarios incorporate different land use scenarios than the South I-25 Corridor and US 85 Corridor Transportation Model forecasts (obtained from DRCOG) used for this FEIS. Table 3.1 shows projected growth rates for the county from 2005 to 2020 based on the Douglas County scenarios. The Douglas County low-growth population model was based on land use projections developed in 1999. The projected population in the year 2020 for this low-growth scenario was 313,000. Douglas County has since revised their low-growth scenario, shown on Table 3.1. The traffic volumes projected for the Douglas County Land Use Growth Model was the DEIS transportation model and not the FEIS transportation model.

**Figure 3.1**  
**2020 No-Action Average Daily Traffic Volumes**  
**(DEIS Volumes/FEIS Volumes)**





**Table 3.1**  
**South I-25 Corridor and US 85 Corridor and Douglas County**  
**Population Projections (2005-2020)**

Scenario	Growth Projections			
	2005	2010	2015	2020
South I-25 Corridor and US 85 Corridor				296,000
Douglas County Low-Growth Scenario	222,000	272,000	319,000	357,000
Douglas County Moderate-Growth Scenario	248,000	310,000	355,000	386,000

Source: Douglas County Population and Development Report, 2000

Figure 3.2 compares the forecasted ADT volumes using the Douglas County low- and moderate-growth scenarios and the South I-25 Corridor and US 85 Corridor FEIS model projections. When making comparisons, the north and south end of each corridor vary in the percent change. For I-25, the Douglas County low-growth scenario is between 3 percent less (between Schweiger and Lincoln Avenue) and 44 percent less (between Plum Creek Parkway and Wolfensberger Road) in 2020 than the South I-25 Corridor and US 85 Corridor model. The moderate-growth scenario averages 3 percent more to 42 percent less than the South I-25 Corridor and US 85 Corridor model. For US 85, the low-growth scenario is between 30 percent more to 77 percent more traffic than the South I-25 Corridor and US 85 Corridor model; and the moderate-growth scenario is between 37 to 92 percent more traffic than the South I-25 Corridor and US 85 Corridor model.

### 3.3 EXISTING (1998) AND FUTURE (2020) TRAVEL DEMAND

Existing and future traffic volumes are used to identify capacity needs for the I-25 Corridor and US 85 Corridor. Existing (1998) traffic volumes were obtained by CDOT. Future (2020) traffic volumes are forecasted using the revised DRCOG model.

#### 3.3.1 Existing (1998) Travel Demand

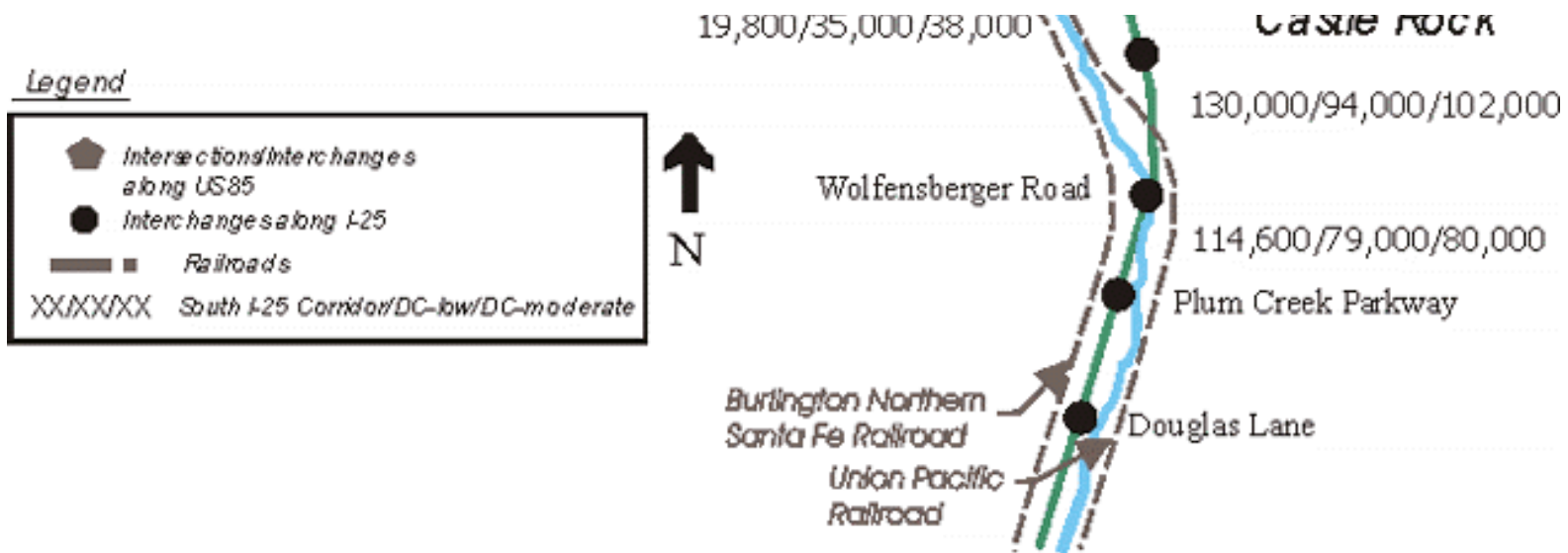
Population and employment increases in Douglas County have substantially contributed to the traffic volume increase along the I-25 Corridor and US 85 Corridor. Travel volumes along the I-25 Corridor have increased 12 percent to 15 percent annually from 1997-1999. Traffic volumes along the US 85 Corridor have increased 6 percent to 28 percent annually from 1997-1999. As discussed in Section 1.4, *Traffic Characteristics*, ADT volumes along I-25 reached 85,100 in 1998. The ADT volume along US 85 reached 37,600 in 1998. Currently, volumes on both corridors are generally heavier in the northbound direction during the morning peak period and in the southbound direction during the evening peak period.

### 3.3.2 Future (2020) Travel Demand

Three alternatives are being evaluated for the I-25 Corridor and US 85 Corridor: the No-Action Alternative, the Preferred Alternative, and the Other Alternative. For a complete description of the alternatives, see Chapter 2.0, *Alternatives*.

**Figure 3.2**  
**2020 Forecasted Average Daily Traffic Model Comparisons**  
**South I-25 Corridor and US 85 Corridor/Douglas County Low/Douglas County Moderate**





### 3.3.2.1 No-Action Alternative

The No-Action Alternative includes the Early-Action projects and the Douglas Lane Interchange. The number of travel lanes along I-25 is six lanes from C-470 to Meadows/Founders Parkway and four lanes between Meadows/Founders Parkway and Douglas Lane. This I-25 configuration is different from the existing conditions due to the Early-Action projects, which includes four lanes from Castle Pines Parkway to Meadows/Founders Parkway. US 85 lane configuration includes four lanes between C-470 and Highlands Ranch Parkway and two lanes from Highlands Ranch Parkway to Meadows Parkway. This US 85 lane configuration is the same as the existing conditions. For more information on the No-Action Alternative, see Section 2.4, *No-Action Alternative*.

The I-25 ADT volume for the No-Action Alternative is projected to increase between 90 percent and 142 percent (depending on location) from the existing ADT by 2020. The average number of vehicles driving on I-25 in 2020 between Plum Creek Parkway and Wolfensberger Road is 114,600 (137,500 people, assuming 1.2 persons per vehicle), while 206,200 vehicles (247,400 people) drive on the segment between Lincoln Avenue and C-470. These volumes can be compared to the 1998 volumes of 60,250 (90 percent increase) and 85,100 (142 percent increase), respectively.

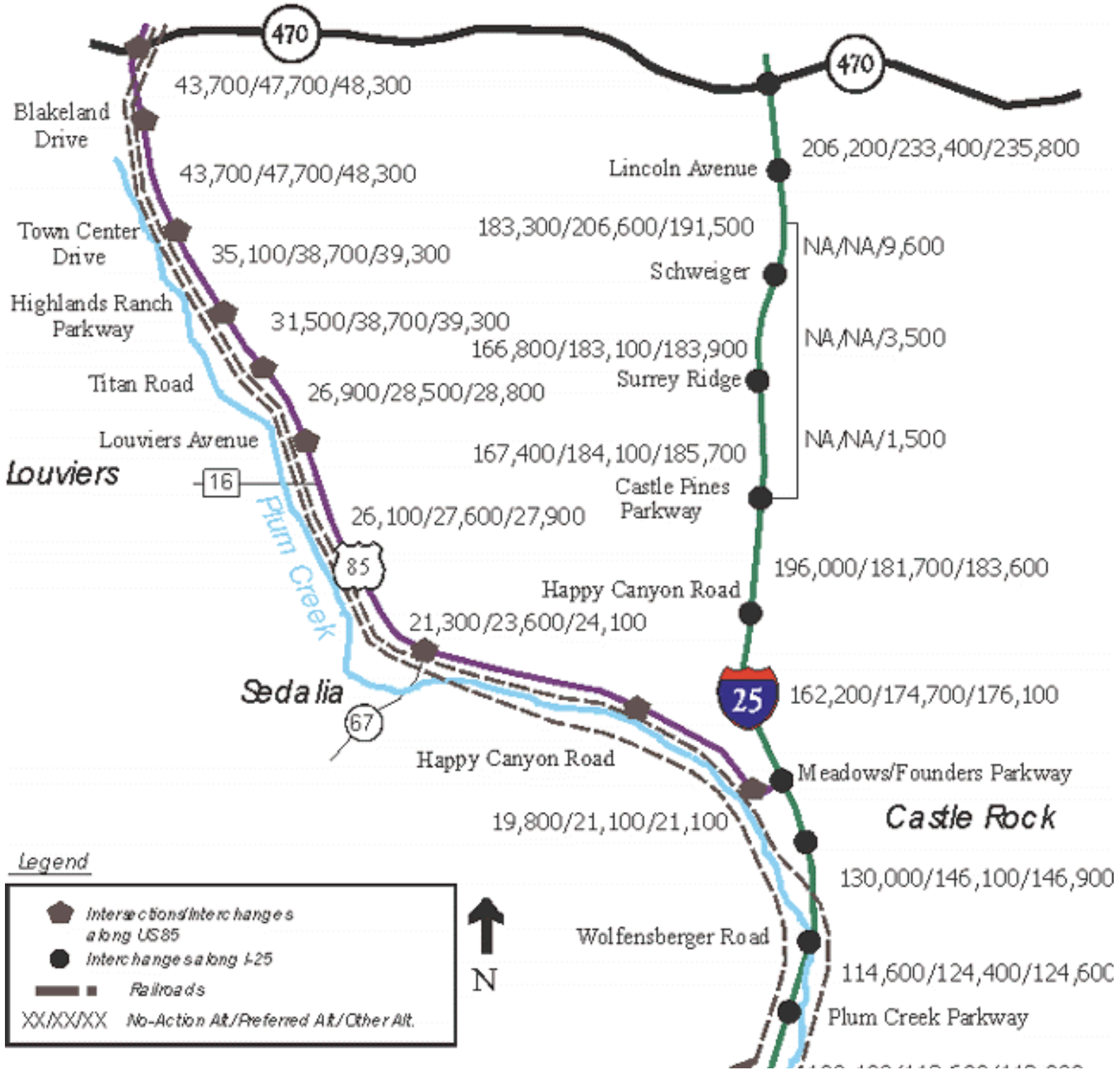
The US 85 ADT volume for the No-Action Alternative is projected to increase between 21 percent and 50 percent (depending on location) from the existing ADT by 2020. The average number of vehicles driving on US 85 in 2020 between Meadows Parkway and Happy Canyon Road is 19,800 (23,800 people, assuming 1.2 persons per vehicle), while 35,100 vehicles (42,100 people) drive on the segment between Highlands Ranch Parkway and Town Center Drive. These volumes can be compared to the 1998 volumes of 13,200 (50 percent increase) and 29,100 (29 percent increase), respectively.

### 3.3.2.2 Preferred Alternative

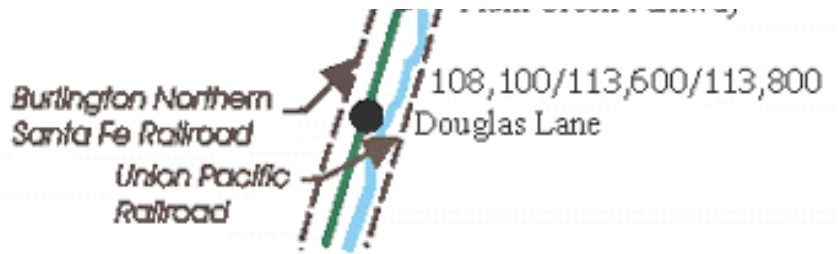
The Preferred Alternative includes adding one general-purpose lane in each direction from C-470 to Douglas Lane along I-25 and adding one general-purpose lane in each direction from C-470 to Meadows Parkway along US 85. The total I-25 lane configuration includes eight lanes between C-470 and Meadows/Founders Parkway and six lanes between Meadows/Founders Parkway and Douglas Lane. The total US 85 lane configuration includes six lanes from C-470 to Highlands Ranch Parkway and four lanes from Highlands Ranch Parkway to Meadows Parkway. For more information on the Preferred Alternative, see Section 2.5, *Preferred Alternative*.

By 2020, the I-25 ADT volume for the Preferred Alternative is projected to increase between 106 percent and 174 percent from the existing ADT volume. This increase is an additional 16 percent to 32 percent from the No-Action Alternative. As shown on Figure 3.3, the average number of vehicles driving on I-25 in 2020 (with the Preferred Alternative) between Plum Creek Parkway and Wolfensberger Road is 124,400 (149,300 people, assuming 1.2 persons per vehicle), while 233,400 vehicles (280,100 people) drive on the section between Lincoln Avenue and C-470.

**Figure 3.3**  
**2020 Forecasted Average Daily Traffic Volumes**  
**(No-Action Alternative/Preferred Alternative/Other Alternative)**







By 2020, the US 85 ADT volume for the Preferred Alternative is projected to increase between 33 percent and 60 percent (depending on location) from the existing ADT volume. This increase is an additional 10 percent to 12 percent from the No-Action Alternative. The average number of vehicles driving on US 85 in 2020 (with the Preferred Alternative) between Meadows Parkway and Happy Canyon Road is 21,100 (25,300 people, assuming 1.2 persons per vehicle), while 38,700 vehicles (46,400 people) drive on the segment between Highlands Ranch Parkway and Town Center Drive.

As travel time is reduced due to the Preferred Alternative improvements, trips made on alternate routes return to the I-25 Corridor and the US 85 Corridor, resulting in the 10 percent to 12 percent increase over the No-Action Alternative. Though traffic volumes increase within the corridors, overall vehicle miles travel (VMT) does not change because traffic volumes projected on the secondary road decreased based on the projected traffic volumes.

### 3.3.2.2 Preferred Alternative

The Other Alternative includes the addition of one general-purpose lane in each direction from C-470 to Douglas Lane along I-25 and the addition of a frontage road between Rampart Range and Castle Pines Parkway. The I-25 lane configuration includes eight lanes between C-470 and Meadows/Founders Parkway and six lanes between Meadows/Founders Parkway and Douglas Lane. The Other Alternative along US 85 includes the addition of one general-purpose lane in each direction from C-470 to Highlands Ranch Parkway, two general-purpose lanes in each direction from Highlands Ranch Parkway to Titan Road, and one general-purpose lane from Titan Road to Meadows Parkway. The US 85 lane configuration includes six lanes from C-470 to Titan Road and four lanes from Titan Road to Meadows Parkway. For more information on the Other Alternative, see Section 2.6, *Other Alternative*.

By 2020, the I-25 ADT volume for the Other Alternative is projected to increase between 106 percent and 177 percent from the existing ADT volume. This increase is an additional 16 percent to 35 percent from the No-Action Alternative. As shown on Figure 3.3, the average number of vehicles driving on I-25 in 2020 between Plum Creek Parkway and Wolfensberger Road is 124,600 (149,500 people, assuming 1.2 persons per vehicle), while 235,800 vehicles (283,000 people) drive on the section between Lincoln Avenue and C-470. Approximately 9,600 vehicles (11,500 people) are projected to travel on the frontage road during an average day.

By 2020, the US 85 ADT volume for the Other Alternative is projected to increase between 35 percent and 60 percent (depending on location) from the existing ADT volume. This increase is an additional 10 percent to 14 percent from the No-Action Alternative. As shown on Figure 3.3, the average number of vehicles driving on US 85 in 2020 between Meadows Parkway and Happy Canyon Road is 21,100 (25,300 people, assuming 1.2 persons per vehicle), while 39,300 vehicles (47,200 people) drive on the segment between Highlands Ranch Parkway and Town Center Drive.

The 10 percent to 35 percent increase over the No-Action Alternative along the I-25 Corridor and the US 85

Corridor is due to latent demand. As the travel times become shorter because of the Other Alternative improvements, trips previously made on less congested local streets move to the faster route, which in this case is I-25 and US 85.

### 3.4 EXISTING (1998) AND FUTURE (2020) TRAFFIC OPERATIONS

Highway traffic operations are expressed in terms of LOS as defined by the *Highway Capacity Manual* (HCM). LOS is a letter code ranging from A for excellent conditions to F for failing conditions. Complete free-flow operations with no restrictions caused by traffic conditions are described as LOS A. LOS F represents forced operations or breakdown of the traffic stream characterized by the familiar traffic jam. LOS B through LOS E describe progressively worse traffic conditions. CDOT defines LOS C as unacceptable operations for rural highways and LOS D unacceptable for urban highways. Conditions defining the LOS for a highway (from the HCM) are summarized as follows:

- LOS A represents the best operating conditions and is considered free flow. Individual users are unaffected by the presence of others in the traffic stream.
- LOS B represents reasonably free-flowing conditions but with some influence by others.
- LOS C represents a constrained constant flow below speed limits, with additional attention required by drivers to maintain safe operations. Comfort and convenience levels of the driver decline noticeably. LOS C is CDOT's design service level (design capacity) for rural highways. (Portions of US 85 and I-25 are rural facilities.)
- LOS D represents traffic operations approaching unstable flow with high passing demand and passing capacity near zero, characterized by drivers being severely restricted in maneuverability. LOS D is CDOT's design service level for urban highways. (Portions of I-25 and US 85 are urban highways.)
- LOS E represents unstable flow near capacity. LOS E often quickly changes to LOS F because of disturbances (road conditions, crashes, etc.) in traffic flow.
- LOS F - Represents the worst conditions with heavily congested flow and traffic demand exceeding capacity, characterized by stop-and-go waves, poor travel time, low comfort and convenience, and increased crash risk.

LOS is calculated differently based on the roadway classification. A two-lane highway LOS is dependent on the two-way traffic volume (US 85 between Meadows Parkway and Highlands Ranch Parkway) because operations worsen if one vehicle cannot pass another vehicle. The LOS of an arterial is dependent on the delay at traffic signals, overall travel time, and travel speed. The LOS of an interstate is dependent on the free-flow speed.

Traffic operations were analyzed for 1998 traffic volumes and 2020 traffic volumes for mainline freeway segments along I-25 and mainline roadway segments along US 85, as well as at intersections/interchanges along both corridors. Mainline traffic operations were affected by the classification of roadway (i.e., controlled access, principal arterial), geometry of the roadway (i.e., curves, shoulder width), number of vehicles on the roadway, ability of vehicles to pass other slow-moving vehicles, percentage of trucks on the roadway, vehicle speeds, terrain type, and weather.

### 3.4.1 Existing (1998) Operations

Figure 3.4 shows the existing (1998) peak-hour LOS for the I-25 Corridor and the US 85 Corridor. In 1998, the peak-hour LOS in the northbound direction was generally LOS C, with LOS B south of Wolfensberger Road. The LOS in the southbound direction was generally worse, with LOS C through LOS F north of Meadows/Founders Parkway.

As shown on Figure 3.4, 1998 traffic conditions along the US 85 Corridor were operating at similar LOS in both directions during the peak periods. The LOS along US 85 ranged from LOS C to LOS E. The section from Highlands Ranch Parkway to Meadows Parkway operated at LOS E during peak periods.

Hours of congestion are used to evaluate improvements resulting from a proposed alternative. Hours of congestion are used to evaluate the time roadway section is congested (i.e., LOS E or LOS F) and whether the proposed improvements reduce the hours of congestion. Some roadway sections will have LOS E or LOS F regardless of the improvements made. Table 3.2 shows existing daily hours of congestion for the I-25 Corridor and the US 85 Corridor. US 85 is currently a two-lane highway south of Highlands Ranch Parkway, and the LOS for a two-lane highway is analyzed as a whole, not by direction. In 1998, northbound I-25 and US 85 operated at LOS C during the a.m. peak hour.

**Table 3.2**  
**Existing (1998) Daily Hours of Congestion**

Roadway	Existing Hours of Congestion
I-25 Northbound	0
I-25 Southbound	1
US 85 (Northbound and southbound)	8

### 3.4.2 Future (2020) Operations

Traffic volumes were projected for 2020 for each of the three alternatives. These volumes were used to estimate roadway operations on the corridors. Figure 3.5 summarizes the operational LOS for the No-Action Alternative, Preferred Alternative, and the Other Alternative for the I-25 Corridor and the US 85 Corridor.

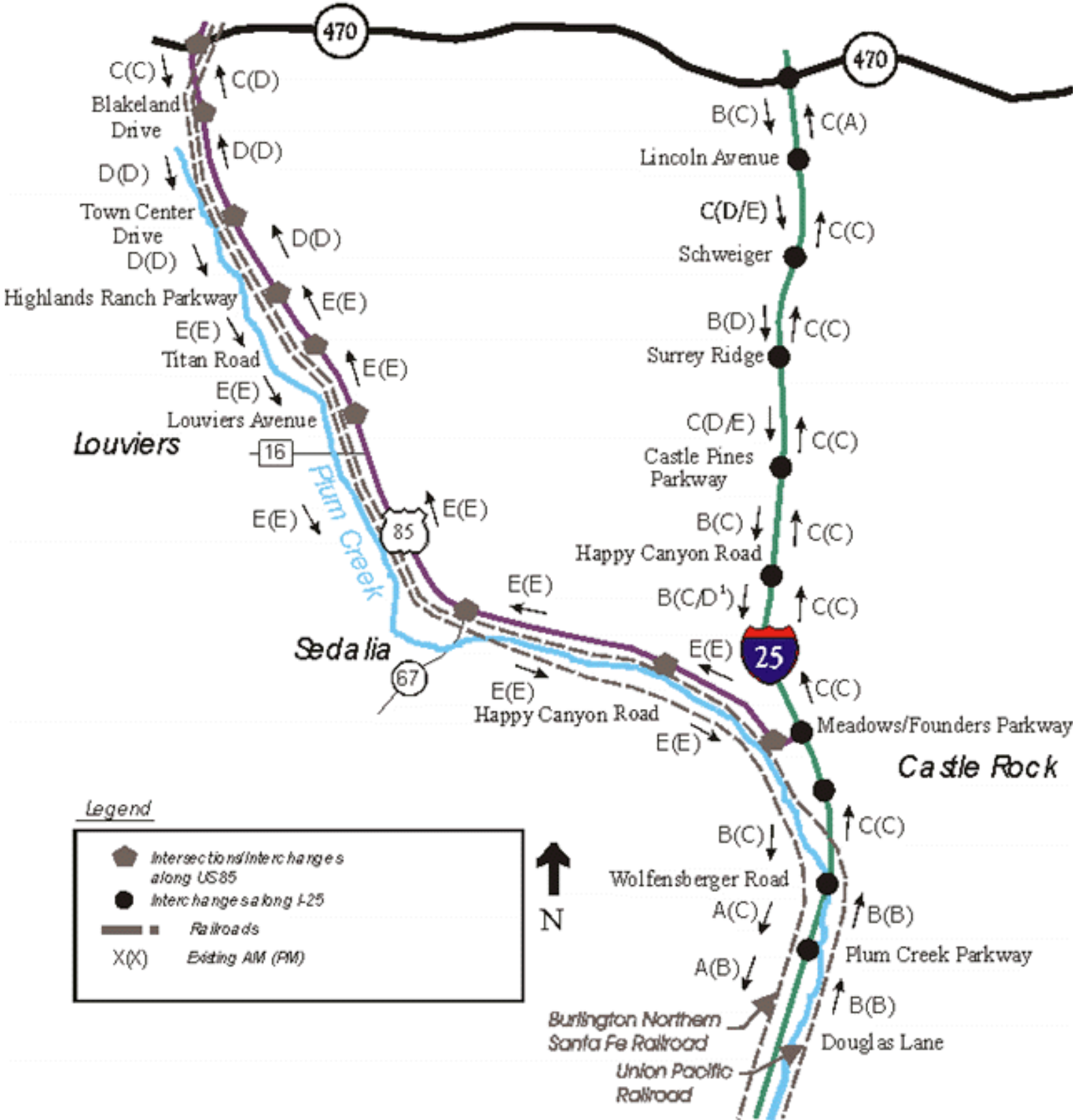
#### 3.4.2.1 No-Action Alternative

No-Action traffic volumes projected for 2020 indicate that all sections of the I-25 Corridor operate at poor levels if no additional improvements are made. The LOS on I-25 is LOS D through LOS F throughout the entire corridor for the No-Action Alternative. Figure 3.5 shows the LOS for the No-Action Alternative along the I-25 Corridor.

The US 85 Corridor also has poor LOS during the peak hour for the No-Action Alternative. The LOS is generally

LOS F throughout the US 85 Corridor for the No-Action Alternative. Figure 3.5 shows the LOS for the No-Action Alternative along the US 85 Corridor.

**Figure 3.4**  
**Existing (1998) Freeway Level of Service**



When LOS E or LOS F is experienced on the roadway, it is defined as hours of congestion. The hours of

congestion are used to further evaluate the proposed improvements. For the No-Action Alternative, there are 12.5 hours of congestion northbound and 7.0 hours of congestion southbound on I-25 south of Lincoln Avenue. Congestion occurs in most US 85 Corridor sections during both the morning and evening peak periods. There are 4.5 hours of congestion northbound and 7.0 hours of congestion southbound on US 85, north of Titan Road. Table 3.3 and Table 3.4 show the hours of congestion for the No-Action Alternative. The existing hours of congestion as shown on Table 3.2 compared with the projected 2020 No-Action Alternative hours of congestion dramatically illustrates the impact of the increased traffic on the overall operation of the I-25 Corridor and the US 85 Corridor without improvements. The I-25 Corridor increases the daily hours of congestion from a total of 1 hour to 19.5 hours. US 85 increases from a total of 8 hours of congestion per day to a total of 11.5 hours of congestion per day.

### 3.4.2.2 Preferred Alternative

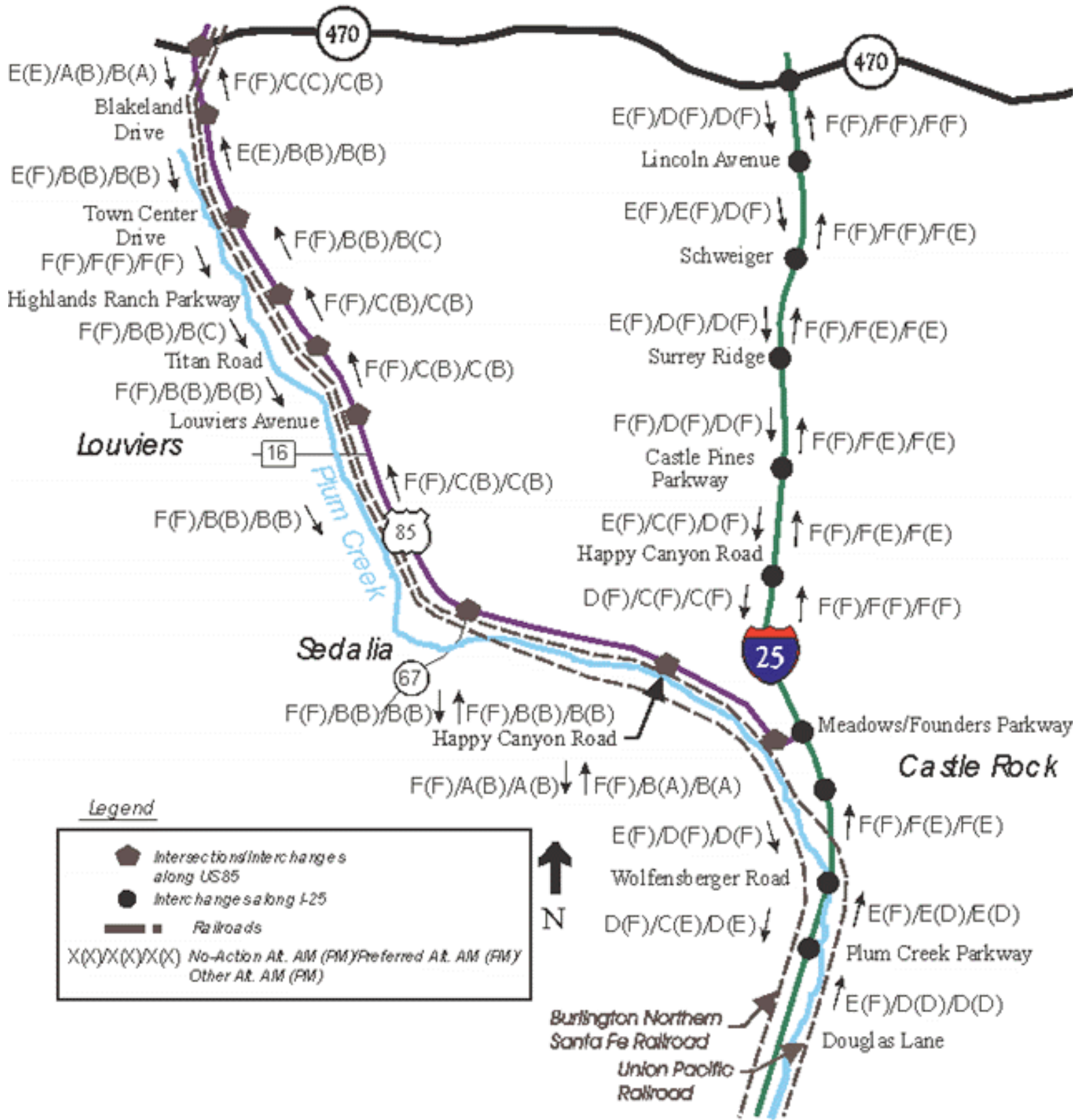
The LOS for the Preferred Alternative along the I-25 Corridor is shown on Figure 3.5. The peak-hour LOS along the I-25 Corridor for the Preferred Alternative improves in some sections from the No-Action Alternative. On the southern sections, the LOS changes from LOS F (No-Action) to LOS C, LOS D, or LOS E. The LOS for the peak hour does not improve on the north end of I-25 where congestion is the most severe.

The peak-hour LOS along the US 85 Corridor improves in most sections. In several sections the LOS changes from LOS F (No-Action) to LOS B. With the additional lanes, the capacity more than doubles from Highlands Ranch Parkway to Meadows Parkway, causing the improved LOS. The LOS for the Preferred Alternative along the US 85 Corridor is shown on Figure 3.5.

The Preferred Alternative improves the peak-hour LOS along both I-25 and US 85 in some areas. The LOS does not improve in those areas with severe congestion. Another method used to evaluate the operational improvements of an alternative is the hours of congestion. Improvements along the I-25 Corridor and the US 85 Corridor with regard to operations can be seen in the hours of congestion. The Preferred Alternative reduces the daily hours of congestion from the No-Action Alternative along I-25 by 8.5 hours northbound and 2.5 hours southbound and 6 hours northbound and 8 hours southbound along the US 85 Corridor.

When the study corridor limits were extended to include I-25 from Lincoln Avenue to C-470, an operational analysis was completed. Lane balance, basic number of lanes, and weaving analyses were completed for the C-470 and I-25 Interchange for the Preferred Alternative. The I-25 configuration is comprised of eight through lanes to C-470 and drops or adds the lanes on the south side of the interchange to carry six lanes into the proposed Southeast Corridor I-25 mainline configuration. The outside northbound lane is an optional lane at the C-470 exit and is dropped at the County Line Road exit. The outside southbound lane is carried continuously south from the County Line Road entrance. The resulting laneage is six lanes between the C-470 on-ramp and the County Line Road off-ramp and eight lanes from the County Line Road off-ramp to Lincoln Avenue. The analysis showed that the Preferred Alternative for I-25, with this configuration, passed the lane balance, basic number of lanes, and weaving analysis criteria.

**Figure 3.5**  
**Future 2020 Peak-Hour Level of Service**  
**(No-Action Alternative/Preferred Alternative/Other Alternative)**



**Table 3.3**  
**2020 Daily Hours of Congestion**

Alternative	Daily Hours of Congestion	
	Northbound	Southbound
<b>I-25 Corridor</b>		
No-Action	12.5	7.5
Preferred Alternative/Other Alternative	4	5
<b>US 85 Corridor</b>		
No-Action	7	8.5
Preferred Alternative/Other Alternative	1	0.5

*I-25 hours of congestion measured south of Lincoln Avenue and US 85 hours of congestion measured north of Titan Road.*

### 3.4.2.3 Other Alternative

The LOS for the Other Alternative is similar to the LOS calculated for the Preferred Alternative. The addition of the frontage road from Rampart Range to Castle Pines Parkway and the additional general-purpose lane in each direction from Highlands Ranch Parkway to Titan Road change the operations slightly on I-25. The improvement for the I-25 Corridor is seen in the northbound p.m. LOS (from LOS F to LOS E) and in the southbound a.m. LOS (from LOS E to LOS D). Figure 3.5 shows the LOS for the Other Alternative along the I-25 Corridor.

The LOS for the Other Alternative along the US 85 Corridor varies slightly from the Preferred Alternative. An improvement in the LOS can be seen from Titan Road to the north end of the corridor. Change in the LOS results from additional lanes from Titan Road to Highlands Ranch Parkway. Figure 3.5 shows the LOS for the Other Alternative along the US 85 Corridor.

The daily hours of congestion for the Other Alternative is the same as the Preferred Alternative. The Other Alternative yields 4 hours of congestion northbound and 5 hours of congestion southbound along the I-25 Corridor. The Other Alternative has 1 hour of congestion northbound and 0.5 hour of congestion south bound along US 85.

Lane balance, basic number of lanes, and weaving analyses were completed for the C-470 and I-25 Interchange for the Other Alternative. A detailed explanation is included as part of the Preferred Alternative discussion. The analysis showed that the Other Alternative for I-25, with this configuration, passed the lane balance, basic number of lanes, and weaving analysis criteria.

## 3.5 TRANSIT DEMAND

Fixed-guideway transit is part of the South I-25 Corridor and US 85 Corridor Long-Term Vision Through 2020 and Beyond. Due to fiscal constraints, fixed-guideway is not evaluated as an alternative in this FEIS. Fixed-guideway and bus transit were analyzed as part of the third level of evaluation in the alternative evaluation process to determine transit ridership. Fixed-guideway and bus transit were eliminated because ridership numbers did not reduce the number of trips made by single-occupant vehicles to improve north to south mobility.

Ridership numbers for each corridor are independent of one another (i.e., as transit was modeled on one corridor, no improvements were modeled along the other corridor). If improvements are made to both corridors, it is anticipated that the ridership numbers would decrease because of competing transit systems. This section presents the projected ridership for the fixed-guideway transit.

### 3.5.1 I-25 Corridor Ridership

A fixed-guideway alternative and a bus alternative were modeled along I-25 between the proposed Southeast Corridor LRT termini and Castle Rock. Daily ridership (one-way trips) between stations is shown on Figure 3.6. These numbers assume no improvements to US 85. Figure 3.6 also shows proposed station locations for commuters. The northernmost station is part of the Southeast Corridor Project, located on the west side of I-25 north of Lincoln Avenue. Other station locations are:

- Castle Pines Parkway (east side of I-25)
- Meadows/Founders Parkway (east side of I-25)
- Downtown Castle Rock

Daily ridership was calculated based on frequency assumptions. The fixed-guideway and buses are assumed to run 12.5 hours daily. During peak hours, 2 hours in the morning and 2.5 hours in the evening, the fixed-guideway and buses run every 15 minutes. During off-peak hours (the remaining 8 hours of operations) the fixed-guideway and buses run every 30 minutes.

As shown on Figure 3.6, the highest ridership is in the northern section, with 1,630 riders daily for fixed-guideway and 255 riders daily for bus.

### 3.5.2 US 85 Corridor Ridership

A fixed-guideway alternative and a bus alternative were modeled along US 85 between the existing Southwest Corridor LRT termini and Castle Rock. Daily ridership between stations is shown on Figure 3.7. These numbers assume no improvements to I-25. Figure 3.7 also shows the locations of proposed commuter stations. The northernmost station is the existing Southwest Corridor Termini, located on the west side of US 85 at Mineral Avenue. Other station locations are:

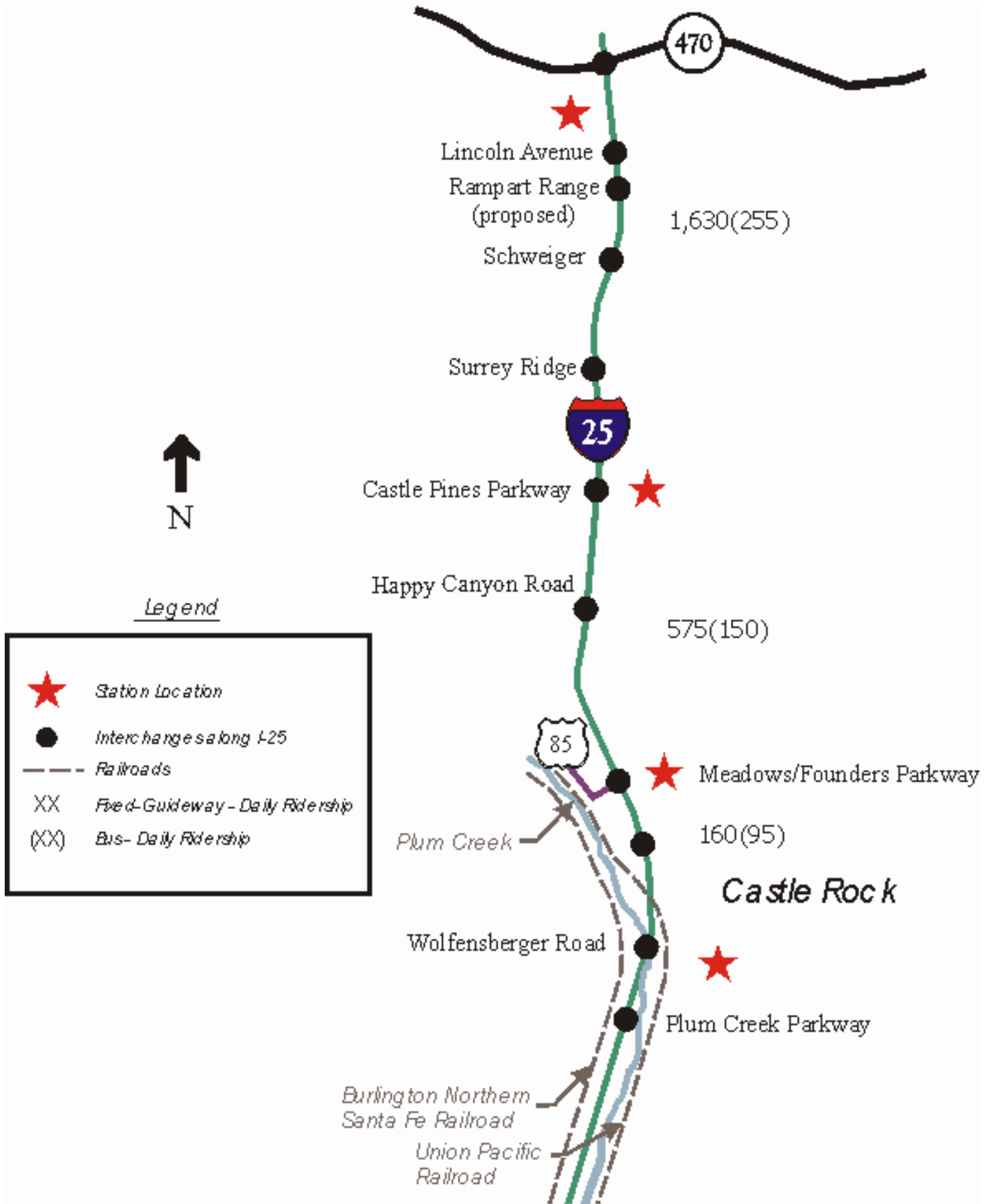
- Highlands Ranch Parkway
- Sedalia
- Meadows/Founders Parkway
- Downtown Castle Rock

Daily ridership was calculated based on frequency assumptions. The fixed-guideway and buses are assumed to run 12.5 hours daily. During peak hours, 2.5 hours in the morning and 3 hours in the evening, the fixed-guideway and buses run every 10 minutes. During off-peak hours (the remaining 7 hours of operations) the fixed-guideway and buses run every 30 minutes.

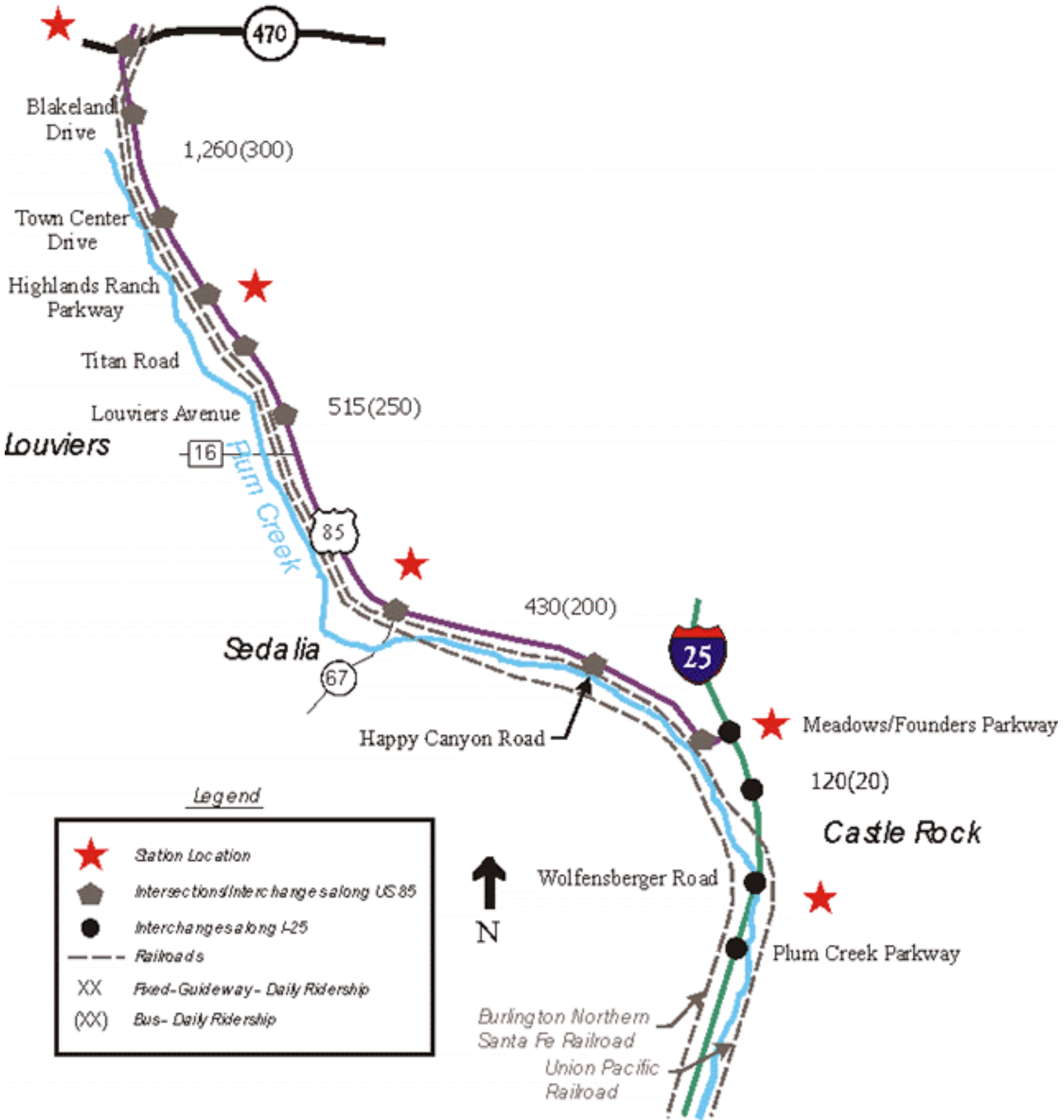
**Figure 3.6**



### I-25 Corridor Projected Transit Ridership (2020)



**Figure 3.7**  
**US 85 Corridor Projected Transit Ridership (2020)**



As shown on Figure 3.7, the highest ridership is in the northern section, with 1,260 for fixed-guideway and 300 for bus.

### **3.6 SUMMARY**

The operational analysis of the 2020 No-Action Alternative indicates that traffic volumes will exceed capacity by 2020 on both I-25 and US 85 if no improvements are implemented. The analysis of the alternatives being evaluated shows that traffic volumes will continue to be high during peak travel periods. By implementing improvements, the highway LOS will improve on some links and it will reduce the duration of congestion on all links. The Preferred Alternative and the Other Alternative reduce the hours of congestion along I-25 by 11 hours a day and by 14 hours a day along US 85 compared to the No-Action Alternative.