

PORTS to PLAINS

CORRIDOR REST AREA STUDY



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Submitted To:



Oklahoma
Department of
Transportation



Submitted By:

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List of Abbreviations

ADT –Average Daily Traffic
ATM –Automated Teller Machine
ATR –Automated Traffic Recorder
CDMP –Corridor Development and Management Plan (2004)
CDOT –Colorado Department of Transportation
CKE –Carl Karcher Enterprises, Inc.
DH –Design Hourly Factor
DOT- Department of Transportation
Dt –Percentage of Truck Parking Spaces
EBIT –Earnings Before Interest Expense and Taxes
FHWA –Federal Highway Administration
GRIP –Governor Richardson's Investment Partnership
NACS –National Association of College Stores
NAFTA –North American Free Trade Agreement
NATSO - National Association of Truckstop Operators
NMDOT –New Mexico Department of Transportation
NT SPACES –Number of Truck Parking Spaces Required
ODOT –Oklahoma Department of Transportation
P –Total Percentage of Mainline Traffic Stopping at Rest Area
PF –Peak Factor
POV –Passenger Vehicle
PPP –Public-Private-Partnership
RIMS –Regional Input-Output Modeling System
SOV –Single Occupancy Vehicle
TAZ –Traffic Analysis Zone
TxDOT –Texas Department of Transportation
USA –United States of America
VHS –Vehicles Parked per Hour per Space

Executive Summary

In December 2004, a Corridor Development and Management Plan (CDMP) for the Ports to Plains Corridor was completed in cooperation with the States of Colorado, Texas, New Mexico and Oklahoma. The CDMP was developed to enhance the efficiency of the Ports to Plains Corridor and identify deficiencies along this 1,390 mile Corridor that runs from Laredo, Texas to Denver Colorado with a connection to Raton, New Mexico. While the recommendations for the plan were far reaching and extensive, the need for improved truck parking and rest area deficiencies was given a limited analysis, resulting in generalized recommendations for improvements along the Corridor. The Ports to Plains Steering Committee initiated this study to provide an additional Public/Private rest area and truck parking needs assessment.

There are 10 locations along the Corridor that are used as designated rest areas that have truck parking. The services provided at these 10 locations range from a simple paved parking lot with picnic tables to more extensive facilities that include complete travel amenity and information services. In total there are 114 truck parking spaces provided at these rest areas. In addition to parking deficiency, safety is also a concern at existing rest area locations on the Corridor. Safety improvement recommendations herein are largely related to proper ingress and egress to the facility, with other safety improvements including improved lighting, paved surfaces and traffic circulation. A review of private truck stops reveals a total of 2,197 available truck parking spaces. When compared to the truck parking spaces available at public rest stops it is clear that most truck parking demand is currently served by private truck stops.

The Corridor Development and Management Plan included expansion of 2-lane roadways along the Corridor to 4-lane roadways. This expansion was envisioned to occur by the year 2030. This study indicates that traffic along the Corridor includes a high percentage of trucks, and with expansion of the roadway and increasing international and regional trade activity an estimate of 1,800 additional truck parking spaces will be needed. The additional truck parking spaces cannot be added overnight. As a result projects along the Corridor were developed and prioritized based on parking deficiencies. (Refer to Figure 2-3 and Table 5-1 in the report)

Ultimately, funding of projects becomes the largest hurdle in implementation. As a response to this challenge, this study provides an overview of the potential Public-Private-Partnership (PPP) opportunities that could be used to help fund rest area and truck parking projects. Part of the PPP question is answered by providing an estimate of where these partnerships might be most feasible in the Corridor, what level of private investment might be attracted, and finally the benefits associated with attracting private investment to these projects.

By creating opportunities for private investment, the economic benefits expressed in terms of employment and incomes are important to both the local jurisdictions and the state. This study finds that a single truck parking/rest area project that includes private investment could result in recurring job income benefits ranging from \$249,000 per year to \$1,675,000 per year, with one-time job income benefits related to construction of up to

\$300,000. In the rural sections of the Ports to Plains Corridor an increase in employment in the form of new jobs is meaningful for a number of reasons:

- Provides a positive effect on the rate of unemployment
- Job growth assists in reducing out-migration of residents
- Bringing in new businesses adds to the local jurisdiction tax base
- Based on the size of the business, adds to the quality of life for local residents by increasing shopping opportunities

From the perspective of the state, growth in employment and incomes provides a fiscal benefit directly measurable by increased sales and income taxes.

Implementation steps should be the result of any study process, and the following list provides actionable items that can be carried forward by various interested stakeholders in the Ports to Plains Corridor.

- Develop and submit a grant application for SAFETEA-LU Section 1305 funds. Based on a review of the grant application requirements it is recommended that a public/private project involving expansion of existing private truck stop parking be initiated as the initial grant project, with the intention of serving as a pilot project in meeting future truck parking demand in other locations along the Corridor. Repeat grant application process each year through 2009 (Section 1305 funds authorized through 2009) with new project grant applications.
- Initiate discussions between DOT officials and local communities to determine if new rest area projects or rest area improvements can be achieved, and explore the partnerships that could be created between these levels of government to establish project success and long term project ownership.
- Encourage development of rest area programs within DOT organizations of Colorado, New Mexico, and Oklahoma that have staff and funds dedicated to improving rest areas.
- Consider application of Federal Enhancement funding to rest area projects.
- Encourage local and regional planning officials to begin the process of programming projects on the Corridor.
- Work with state legislators in creating rest area and truck parking specific programs that would have specific funding commitments in meeting expansion, improvement and maintenance needs.
- Work with state legislators in developing enabling PPP laws in the states of Oklahoma and New Mexico, similar to laws that have been passed in Colorado and Texas.
- Consider forming a transportation group who focuses on seeking out potential projects, gathering private interest, and implementing Public-Private-Partnerships as a means of project funding, not only for large projects but also for smaller projects.

1 FACILITY ASSESSMENT

The Ports to Plains Corridor encompasses a length of 1,390 miles through the states of Texas, New Mexico, Oklahoma, and Colorado. The continued development of this corridor precipitates the need for a comprehensive assessment of facilities that provide parking and rest for travelers along the corridor. As a trade corridor, more specific focus in this study is placed on commercial vehicle parking and safety at rest areas.

1.1 Existing Rest Areas

There is a growing need for a systematic network of safe rest areas for all traffic, and a special need for long-term truck parking facilities. The increase in allowable speed limits and traffic on the Corridor has increased the need for locations offering rest and rejuvenation to the commercial vehicle operator who must maintain a high level of awareness on the road. This has already been provided for, in part, on certain long corridors such as the Interstate system. NAFTA trade between Canada, Mexico, and the urban centers of the USA are putting increased truck activity on North – South corridors such as the Ports to Plains Corridor and increasing need to provide rest and rejuvenation to travelers. These changes in travel demand and trucking activity have increased the need for rest area facilities similar to what can be found on the Interstate system.

The following paragraphs and maps describe the existing rest area facilities that exist along the Ports to Plains Corridor and the capabilities of these existing facilities to service the driver.

Figure 1-1 shows the locations of the existing facilities along the corridor where drivers are encouraged to rest or use facilities and amenities. Starting at the southern end of the corridor, there is a modern Travel Information Center located at the junction of US 83 and I-35. While this is not a ‘rest area’, it does offer the same basic facilities plus expanded services including trained personnel, during business hours of 8 AM to 5 PM, to assist with travel information. During non-business hours, the travel information center is closed to the public, however parking and rest rooms remain open 24 hours a day. Access to this facility is through an interchange of I-35 and US 83, approximately 11 miles north of the urban boundary of Laredo, TX. The rest area has lighting in the parking lot and near the buildings. The Appendix to this report includes photographs and aerial mapping for this as well as other existing rest area locations.

About 25 miles north of San Angelo, TX there is a recently refurbished rest area. This rest area is on US 87 and is located on the east side of the 4-lane, median divided roadway. There are 24 hour restrooms, parking, and picnic areas available at the facility. There is lighting in the parking lot and near the buildings. Access is provided for both northbound and southbound traffic, however, there are safety concerns for the southbound access to this facility. Safety concerns at existing facilities will be discussed in a later section of this report.

On I-27, approximately twenty-five miles north of Lubbock, TX there is a recently renovated Hale County rest area facility. There are 24-hour restrooms, parking, and picnic areas available at the facility. There is lighting in the parking lot and near the buildings. This location has separate facilities for each direction of travel, with high-speed freeway exit and entrance ramps.

Figure 1-1 Existing Rest Areas (South)

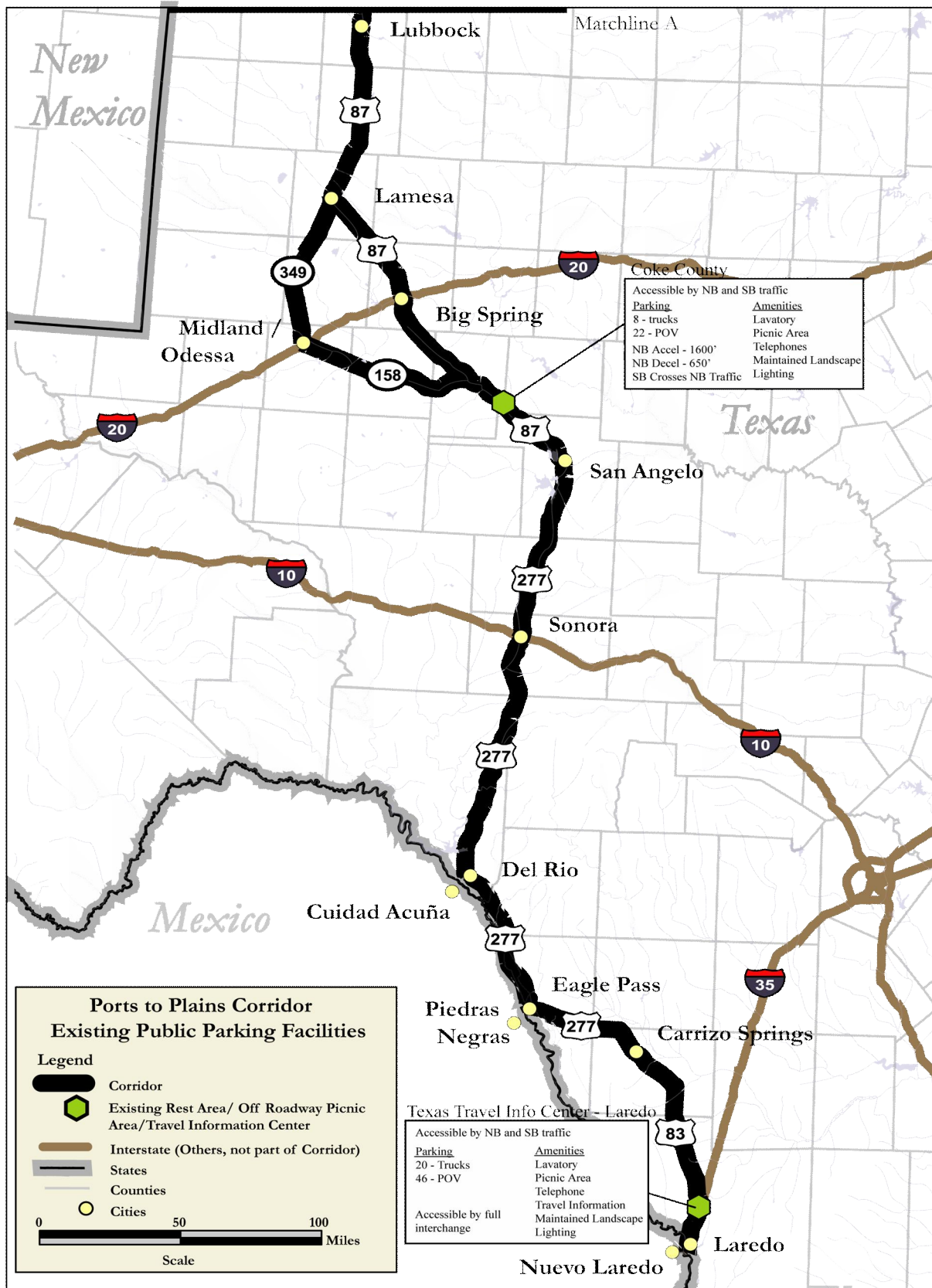
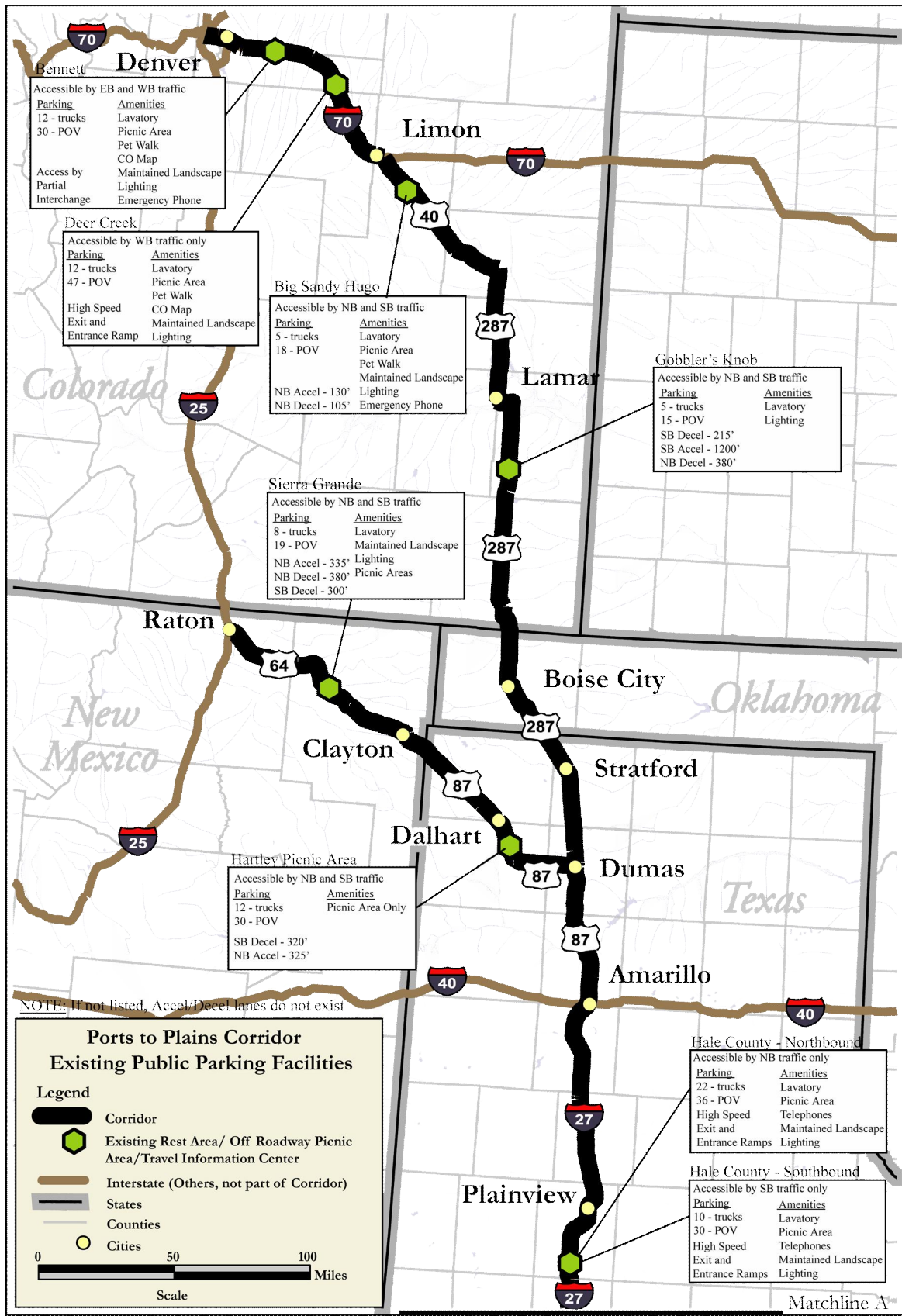


Figure 1-1 Existing Rest Areas (North)



On US 87 just north of Hartley, TX there is a recently re-paved picnic area that has been included in the rest area list because of its off-roadway design. The facility is located on the north side of the 4-lane, median divided roadway and access is provided to both directions of traffic. There are two separate areas to the facility, one for northbound traffic and the other for southbound traffic. This design provides for safe and controlled entrance and exit from the facility, however, the only amenities provided are picnic shelters and tables. The facility does not have lighting.

In New Mexico west of Clayton on US 64, the Sierra Grande rest area provides services for travelers. Amenities are basic with restrooms, picnic areas, and parking. This one sided facility is located on the northeast side of the 2-lane, undivided roadway. The roadway widens near the rest area with acceleration and deceleration lanes that provide safe and efficient access in and out of the facility. There is lighting along the roadway near the entrance and exit points and lighting near the buildings, however the parking lot does not have lighting. As part of the ongoing US 64 widening projects, acceleration and deceleration lane improvements are being constructed for this facility.

In Colorado approximately 20 miles south of Lamar on US 287 there is a rest area that was constructed in 2001. This location provides basic services including rest rooms and parking. The facility is located on the west side of the 2-lane undivided roadway and serves both directions of travel. There are deceleration and acceleration lanes for the southbound direction and a left turn deceleration for the northbound direction. The roadway entrance and parking lot have lighting.

South of Limon about 20 miles on US 287 there is a rest area that includes basic services of rest rooms, picnic areas, emergency telephone, and parking. The facility is located on the east side of the 2-lane undivided roadway. There are deceleration and acceleration lanes for the northbound direction, but there are no deceleration or acceleration lanes for the southbound direction. The roadway entrance does not have lighting, but the buildings and parking lot are mostly lighted.

Continuing on the Corridor toward Denver on I-70 there is a rest stop 20 miles west of Limon. The facility is located on the northeast side of the interstate freeway and is accessible only by westbound traffic. Amenities at this rest area include rest rooms, picnic areas, a map of Colorado, and parking. There are deceleration and acceleration lanes that provide access to the facility. The roadway is not lighted near the entrance or exit, the parking lot has low light landscape lighting at the edge of curb, and there is some lighting near the buildings.

Further west on I-70 there is the Bennett rest stop. This rest stop is located at the intersection of East Colfax Avenue (US 40) and I-70. The facility is accessible by eastbound and westbound traffic, although is more convenient for westbound traffic. Amenities at this rest area include rest rooms, park areas with picnic tables, a map of Colorado, and a vending machine. There is lighting at the entrance and exit and an emergency telephone is provided.

This review of the Corridor rest areas provides a good indication that there are large gaps in public rest areas along the Corridor. In total there are 114 truck parking spaces along the Corridor at rest stops. No time restrictions on these parking spaces were noted, such as time of day or parking limits.

This study is to provide a complete assessment of the truck parking and services along the Corridor. Realizing that trucks often use privately owned facilities, the next section of the report provides an overview of the existing privately owned truck stops along the Ports to Plains Corridor. There are other locations such as at hotels, private residences, and businesses where trucks park along the Corridor. However, this study scope is only able to provide inventory and analysis of the primary designated truck parking facilities at truck stops.

1.2 Existing Private Truck Stops

The analysis takes into consideration the many privately owned facilities along the Corridor that offer many services, especially to commercial truckers. These facilities provide services such as, lighted parking, bath/showers, convenience stores, food, repairs, and fuel. As can be seen on Figure 1-2, a majority of the truck stops are located in close vicinity of cities and towns so that there are potential employees within a close proximity. Services offered at the truck stop can also be used by the local community. Being located near a populated area simply makes the private truck stop more financially feasible because the owner has the opportunity to broaden the market base. Further discussion on the financial feasibility of private services can be found in Section 3 of this report.

The largest and most modern truck stops have an impressive array of amenities for truckers, and their size and services can be compared with commercial shopping centers. Along the Ports to Plains Corridor there is a range of truck stop types, some smaller with limited services, and some larger with extensive on-site services. In addition to on-site services, by being located near populated areas there are often other nearby services for the driver including restaurants,



motels, and shopping centers. Truck drivers often prefer to stop at large full service truck stops when they need to stop for extended rest periods, or overnight. This “one-stop-shop” concept is certainly attractive for truck drivers whose tractor trailers are difficult to maneuver.

In total there are 2,197 truck parking spaces provided by private truck stops with direct access to the Corridor. There are 1,402 in Texas, 702 in Colorado, 68 in Oklahoma, and 25 in New Mexico. When compared to the 114 parking spaces available at public rest stops there is a clear understanding that most truck parking demand is currently served by the private truck stop.

Figure 1-2 Existing Private Truck Stops (South)

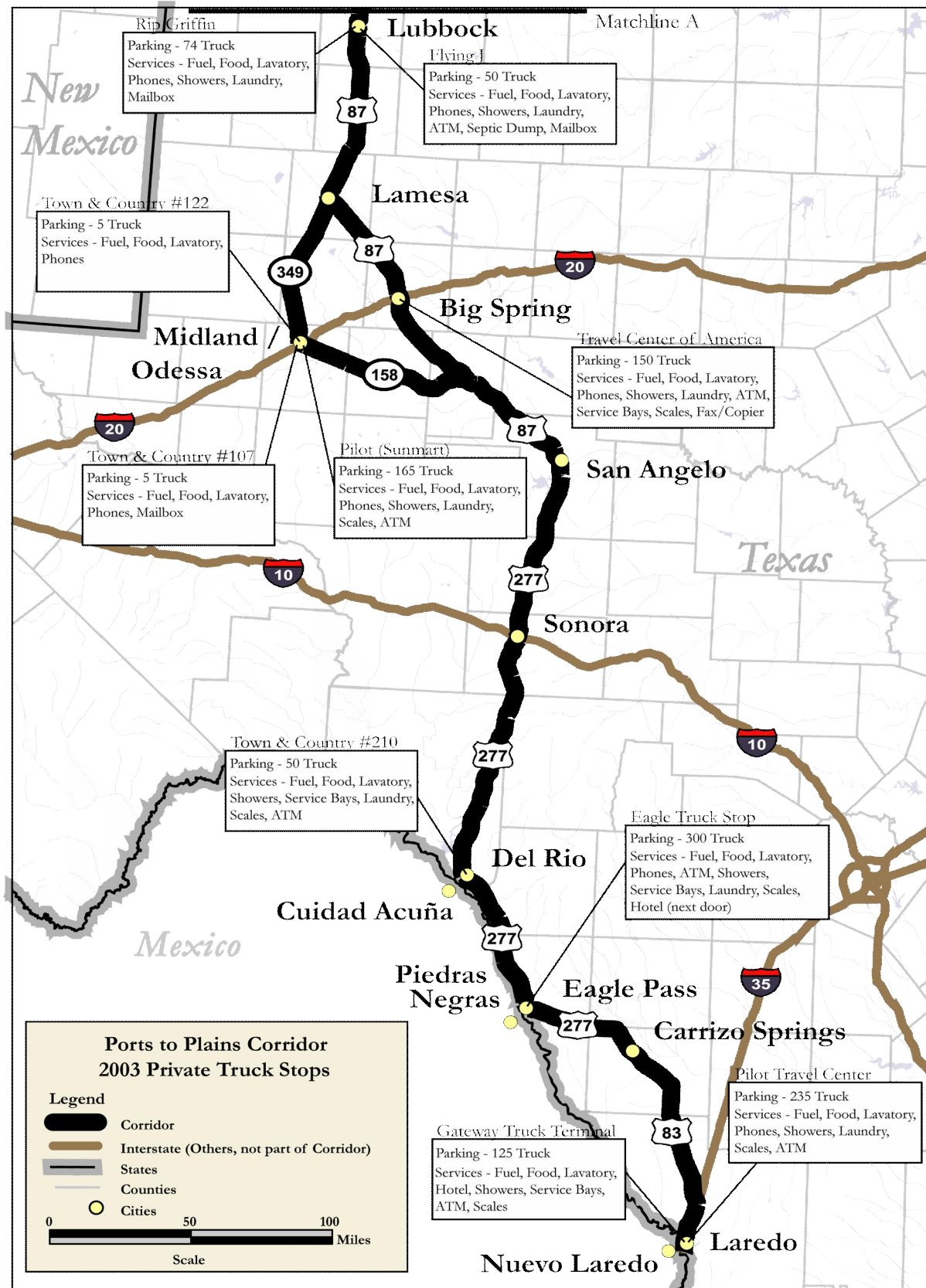
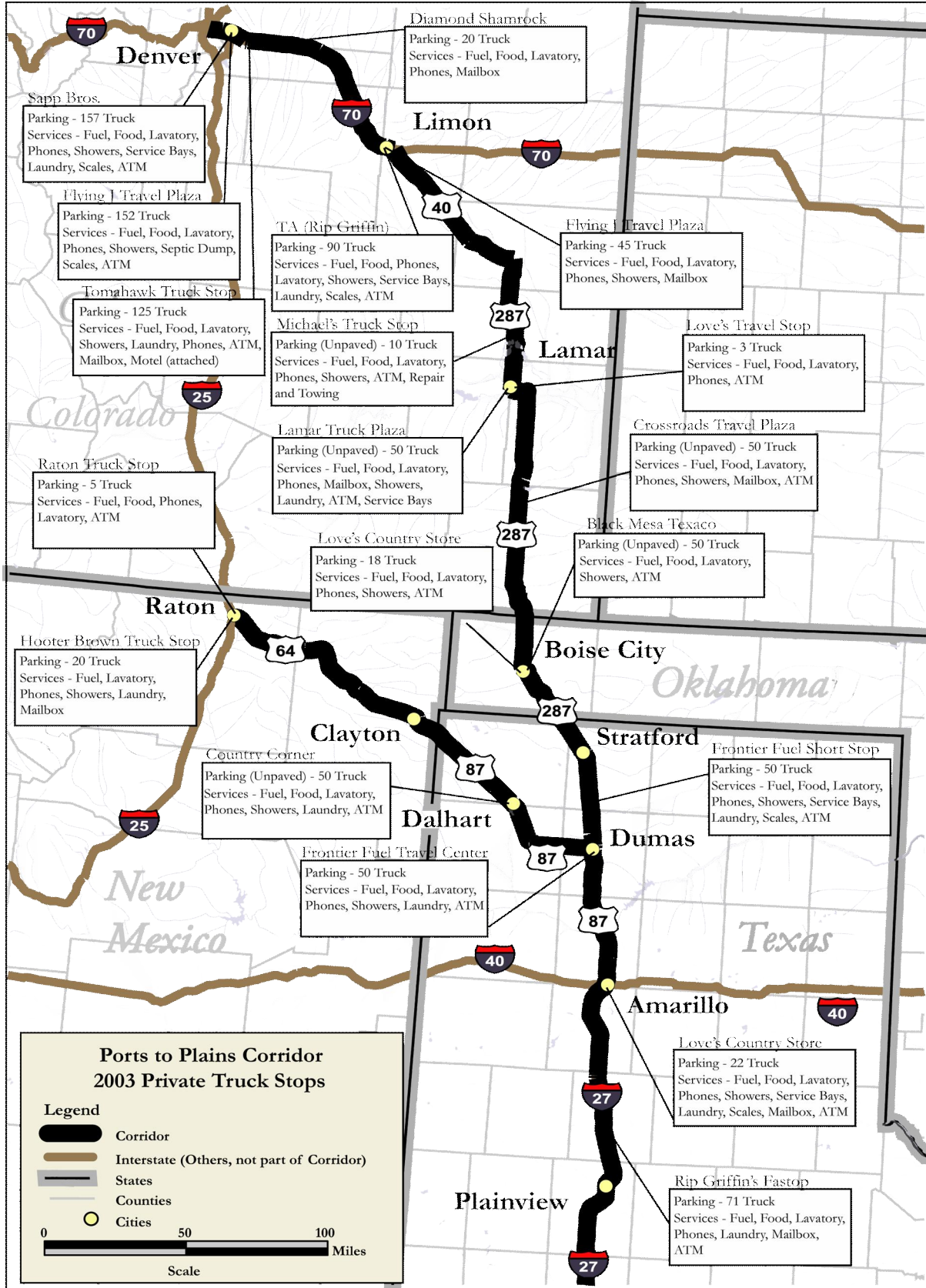
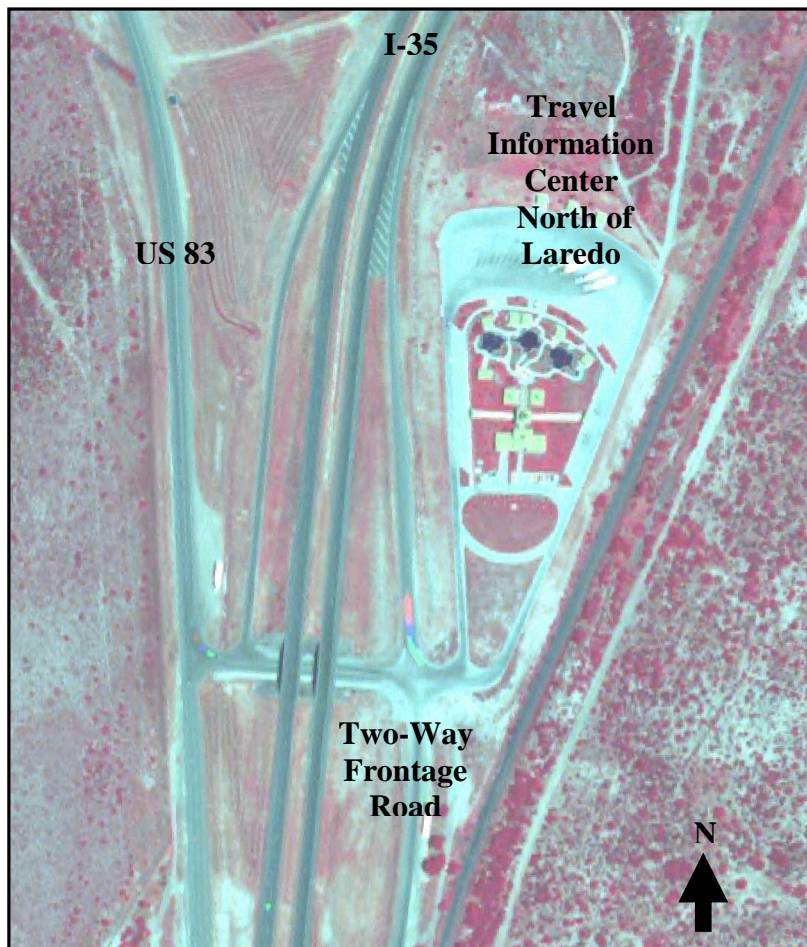


Figure 1-2 Existing Private Truck Stops (North)



1.3 Safety Assessment

Safety of the motorist is most impacted by conflicts between vehicles, and potential conflicts between vehicles are higher at locations where vehicles are either exiting or entering the roadway. The existing rest stops along the Corridor reflect various types of design based on the type of adjacent road. In a comparison of the different facilities, the following locations stand out as locations where potential safety conflicts appear to be greatest. It should be noted that this analysis does not include actual historical accident data at any location along the Corridor; it instead assesses each location based on conformance with standard roadway design criteria and professional judgment.



Access to the Travel Information Center north of Laredo is provided by a full interchange with I-35 and US 83. When exiting I-35 in the northbound direction the existing ramp intersects a two-way frontage road immediately after exiting the freeway. This requires the exiting vehicle to be in conflict with traffic moving in the opposite direction on the two-way frontage road. In general, this type of two-way frontage system can be confusing to the driver. However, at this location there are very low volumes of traffic on the two-way frontage road so the issue does not appear to be an immediate problem. As traffic volumes increase, improvement of the frontage system to alleviate this confusing location should be explored. The Corridor Development and Management Plan also recommended that a direct connect ramp be constructed for the northbound I-

35 to northbound US 83 movement. If this direct connect ramp is constructed, a collector-distributor style ramp should be considered that will allow exiting traffic the option of using the direct connect ramp to northbound US 83 or exiting the roadway to access the existing Travel Information Center.

As mentioned in an earlier section of the report, the rest stop north of San Angelo raises some concern for southbound traffic exiting and entering the roadway. Currently for southbound travel there is a left turn deceleration lane that allows the driver to move out of the southbound traffic stream. Then the driver must turn left across 2 lanes of oncoming traffic into the northbound deceleration lane into the rest stop. This maneuver is considered to be less than ideal because it places the driver in direct conflict with other vehicles that may be using the deceleration lane in the northbound direction. Furthermore

this u-turn is a slow and awkward maneuver for a tractor trailer vehicle, thus increasing the potential for oncoming traffic to be in conflict with the turning vehicle. To exit the rest area and continue traveling southbound the driver must use the northbound acceleration lane then weave across 2 lanes of traffic into a left turn lane. The distance for this weave and deceleration in the left turn lane is less than 500 feet. Then the driver must again make a u-turn against oncoming traffic to proceed southbound on US 87. As traffic volume increases, these movements will become increasingly difficult to execute.

On US 287 in Colorado at the Big Sandy rest area, the approach to the rest area entrance does not provide a left turn deceleration nor a turn lane. This can make it difficult for trucks to safely decelerate and turn into the rest area, with rear-end conflicts with vehicles behind the turning truck as the primary concern. In the northbound direction there are right turn deceleration and acceleration lanes provided, however the lengths of these lanes do not allow for full deceleration or acceleration to occur outside the through lane, especially when considering the truck as the design vehicle. This again can create more potential for conflict with vehicles that are behind a truck or a car that is entering or exiting the rest area.



Further north in Colorado on I-70 the Bennett rest area is located some distance away from the interstate. The rest area is accessible by a partial interchange at US 40/SH 36 and I-70. East bound traffic exits on a free-flow ramp onto East Colfax Avenue (US 40), then must decelerate and turn right into the rest area. There is no right turn deceleration lane provided for this movement. To continue eastbound, traffic must turn right out of the rest area and continue east on East Colfax Avenue approximately 4 miles to the town of Strasburg, then turn south to an interchange with I-70. This route places the eastbound truck or auto that uses the rest area in potential conflict with local traffic and pedestrians in the town of Strasburg as well as at several intersections of streets and frontage roads. The circuitous route also makes this rest area less convenient and more confusing to the driver. The rest area is far more accessible for westbound traffic, with a direct ramp that provides entrance into the rest area, and a short distance to a direct ramp that provides access back onto westbound I-70.

A significant concern for safety along the Corridor is evidenced by trucks pulling off the road at locations not designed for truck parking. These locations include shoulders of the roadway, at small roadside picnic areas, and at locations along the road that have been widened for temporary weigh stations. In speaking with DOT representatives and through observations along the Corridor there are various locations where there are known issues. The following photographs were taken along the Corridor and illustrate the types of safety concerns each circumstance creates.



At this location the truck driver has pulled off the road on a narrow shoulder, creating a potentially unsafe condition when an oncoming truck is passing.



At this location skid marks where vehicles have left the roadway at high speeds are visible. This suggests lack of proper deceleration from the main lanes of traffic.



Truck drivers traveling the Corridor will eventually find places to stop and rest. As shown in the photo at left, some locations where trucks stop may lack adequate roadway design such as deceleration lanes to safely exit the roadway.

While many driving safety decisions are largely the responsibility of the driver there will always be a need for some drivers to pull off the road, and having adequate and properly designed locations for these maneuvers is important to overall roadway safety.

2 TRAFFIC FORECASTS AND PARKING NEEDS ASSESSMENT

To develop an understanding of the need for rest areas or other locations that provide parking and travel services, an analysis of parking supply and demand is necessary. An inventory of existing facilities serves as the supply side, and traffic forecasts and parking utilization estimates serve as the demand side of the analysis. The goal of this analysis is to identify gaps in the Corridor where demand is forecast to exceed the current supply of parking, the first step in determining if additional facilities are needed. Once the initial parking need is established and the general locations along the Corridor are identified, a second level of analysis is completed to determine what levels of public and private investment may be suited for a given location, and in turn what type of facility should be considered.

2.1 Data Collection

Initial data collection was completed as part of the CDMP completed in 2004. The data collected included field verification of existing roadway geometrics and information related to general traffic operations such as intersections and interchanges along the corridor. This information helped develop the framework for the transportation demand model that was used to develop forecasts for the fully improved Corridor. This data is also useful for this study because it provides a baseline understanding of the roadway network that makes up the Ports to Plains Corridor and the areas along the corridor where parking may be an issue.

In addition to previously collected data, CDOT daily vehicle classification data from 2002 to 2005 was provided for many locations in the corridor where there was ATR (Automated Traffic Recorder) data available. Month-by-month total vehicle trips at ATR's in Texas were also provided by TxDOT for some segments of the corridor. Oklahoma also provided classification data for the panhandle area but none for the corridor specifically. This data was nonetheless helpful in estimating the vehicle classification for traffic in the Oklahoma segment. No new traffic counts or classification data was available from NMDOT, and traffic counts received during the CDMP project have been used in this study for New Mexico.

Since daily traffic for an entire year was not available from all State DOT's, the 2005 daily traffic information provided by CDOT was used to estimate monthly peaking characteristics in the Corridor. With parking supply and demand as a key consideration for this study, seasonal peaking is of direct relevance in developing a parking needs assessment. The 2003 average daily traffic was adjusted for seasonal monthly peaking by using the 2005 CDOT daily data and is shown for various segments of the Corridor on Figure 2-1.

Figure 2-1 2003 Peak Month Adjusted Traffic (South)

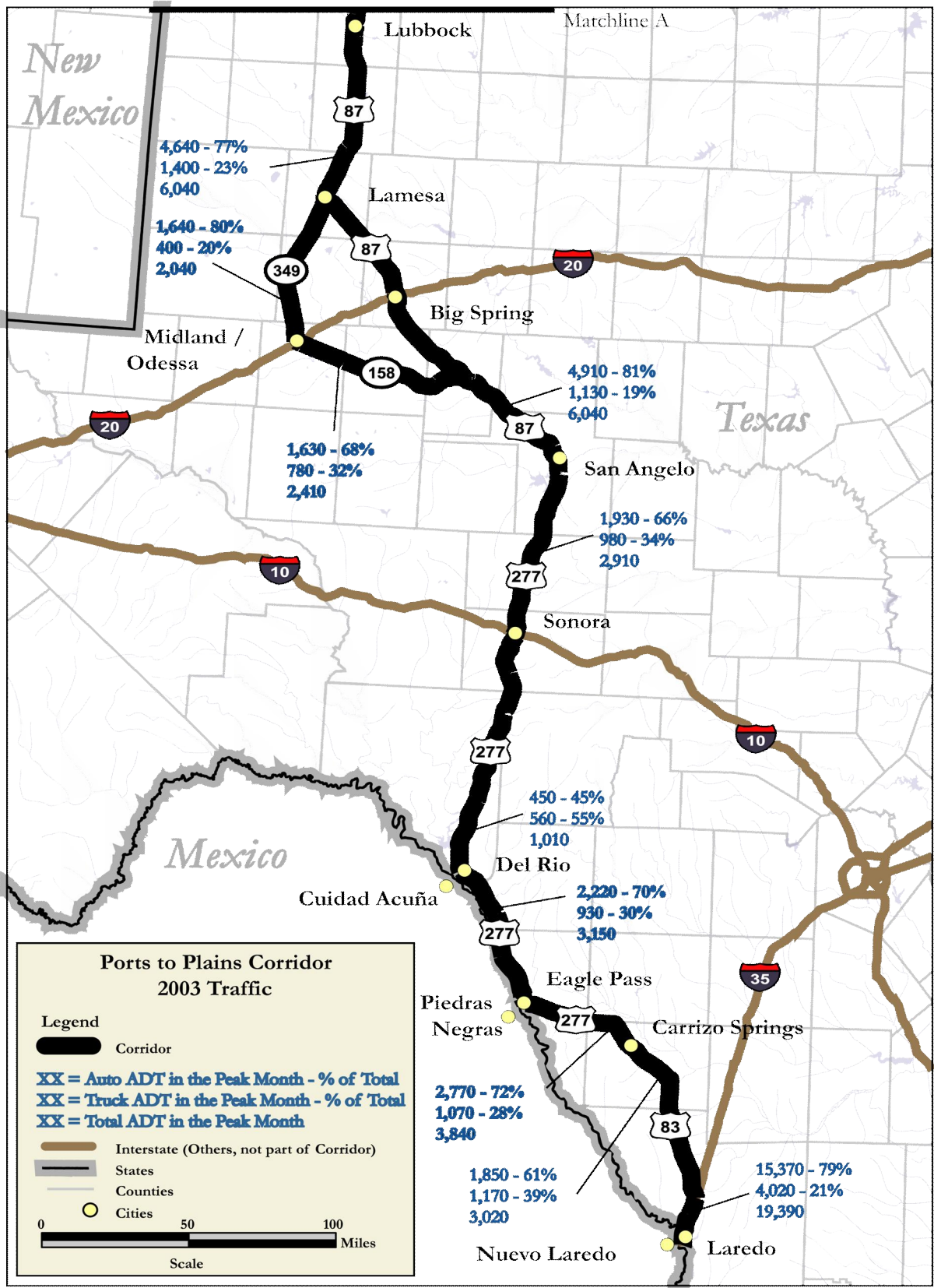
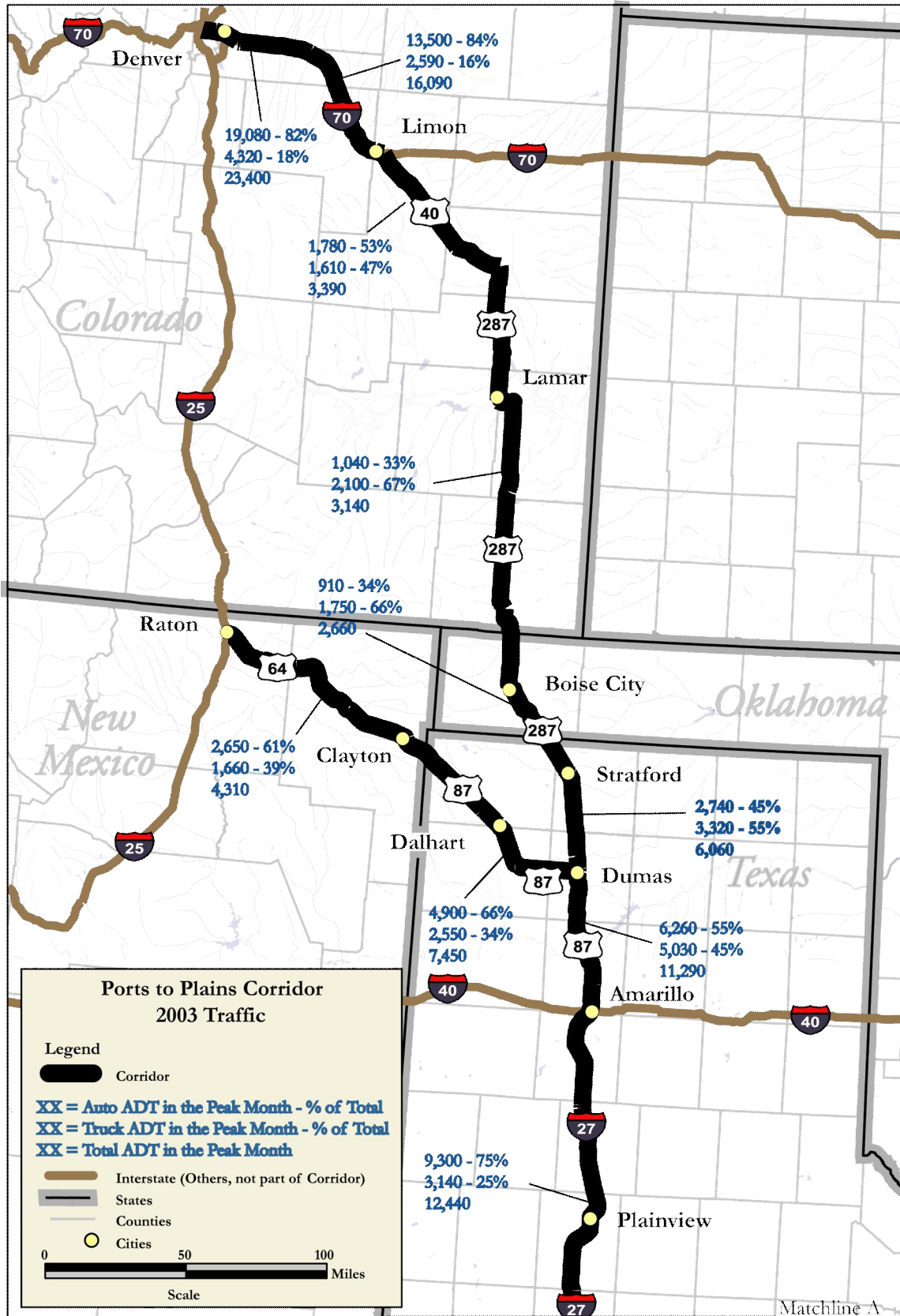


Figure 2-1 2003 Peak Month Adjusted Traffic (North)



2.2 Traffic Forecasts

Year 2030 forecasts developed as part of the CDMP were used as the basis for the 2030 travel forecasts for this study. These forecasts were conducted separately for auto and for truck traffic. The methodology used for 2030 in the CDMP traffic forecasts started with developing an existing conditions model for the entire region surrounding the Ports to Plains Corridor. The length of the Corridor necessitated a large model area, which includes much of Colorado, Kansas, New Mexico, Oklahoma, and Texas. Over 500 traffic analysis zones (TAZs) were used in the model, resulting in a TAZ for every county and significant city within the modeled area.

Two existing condition models were developed: one for total vehicles and another for trucks. The “existing total vehicles” model was based on and calibrated to existing traffic volumes. For the truck model, 1998 Texas REEBIE freight model information was calibrated to existing truck volumes for the Corridor. This model data has truck origin and destination freight information for every county in Texas. The data was used as a starting point to develop origin and destination matrices for the entire model. The output of these two existing condition models includes a matrix showing the number of vehicle trips between each pair of TAZs.

Once the existing condition trip tables were developed, the trip tables for trucks and total vehicles were increased and calibrated to the 2025 traffic forecasts in the Ports to Plains Feasibility Study (2001). Growth factors between existing conditions and the Ports to Plains Feasibility Study (2001) forecasts were then established for all TAZ pairs. These individual TAZ annual growth rates were then extrapolated for five additional years to arrive at 2030 truck and total vehicle travel matrices. These trip tables were then overlaid on the existing conditions roadway network, resulting in 2030 Background, or “No-Build,” traffic forecasts. With the 2030 No-Build condition model established, proposed roadway improvements resulting from the Ports to Plains Corridor Development Plan were then added to form the Build model. The improvements directly affecting the model include widening the entire Corridor to 4-lanes as well as implementing relief routes around several Corridor cities.

The 2030 Build travel demand model results indicate that when all improvements have been made, additional traffic will be attracted to the Port to Plains Corridor from surrounding facilities, including I-35 and I-25. The model indicates a 12 percent increase in Corridor vehicle miles traveled over the 2030 No-Build scenario. In addition to these attracted trips, the 2030 Build forecast also reflects a significant shift of travel demand from Dumas, Texas to the north. Because of improvements to the US 287 Corridor through eastern Colorado and increasing congestion on I-25 south of Denver, the model forecasts a shift from I-25 to the improved US 287 Corridor. As a result of this shift, the 2030 Build traffic forecasts for US 64 east of Raton are lower than the 2030 No-Build forecasts. Thus, the proposed Ports to Plains improvements would shift some traffic from one branch of the Corridor (the US 64 or New Mexico branch) to the other (the US 287 or Oklahoma and Colorado branch).

However, New Mexico is rapidly advancing the 4-lane improvements on US 64 as part of Governor Richardson’s Investment Partnership (GRIP), and construction is assumed to be completed before 4-lane improvements on US 287 in Oklahoma and Colorado. To better understand this scenario, an additional analysis that considered only improvements to the US 64 or New Mexico branch was completed. The results of this analysis showed that if only

improvements to the US 64 New Mexico branch are made, then the shifting from US 64 to US 287 as previously explained would not occur, and traffic would in fact be attracted to the 4-lane US 64 roadway. For this study the higher traffic forecast between the sets of forecasts were assumed for the Dalhart/New Mexico segment of the corridor.

The daily traffic and classification data received for this study was then used to further factor the 2030 CDMP forecast traffic for seasonal peaking. First, the highest month for both trucks and cars were determined based on the seasonal and classification data. The classification data was then combined into two types; Autos and Trucks. Autos included all motorcycles, cars, and light trucks and Trucks included all other larger vehicle categories including buses. Since classification data was not available for all segments of the corridor, it was necessary to interpolate some results based on the data received



The 2030 forecast daily traffic adjusted for seasonal monthly peaking is shown for various segments of the Corridor on Figure 2-2.

Figure 2-2 2030 Forecast Traffic (South)

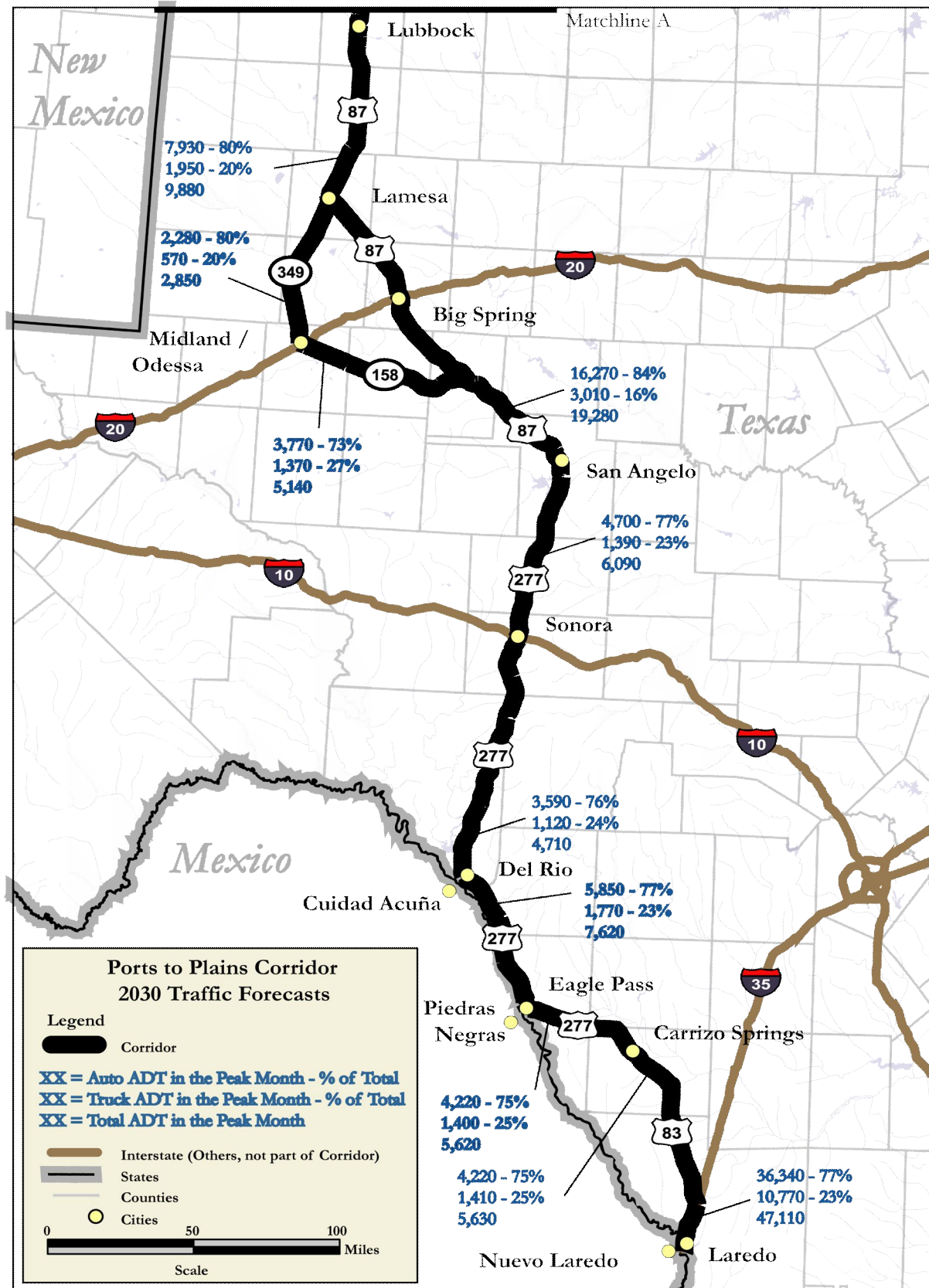
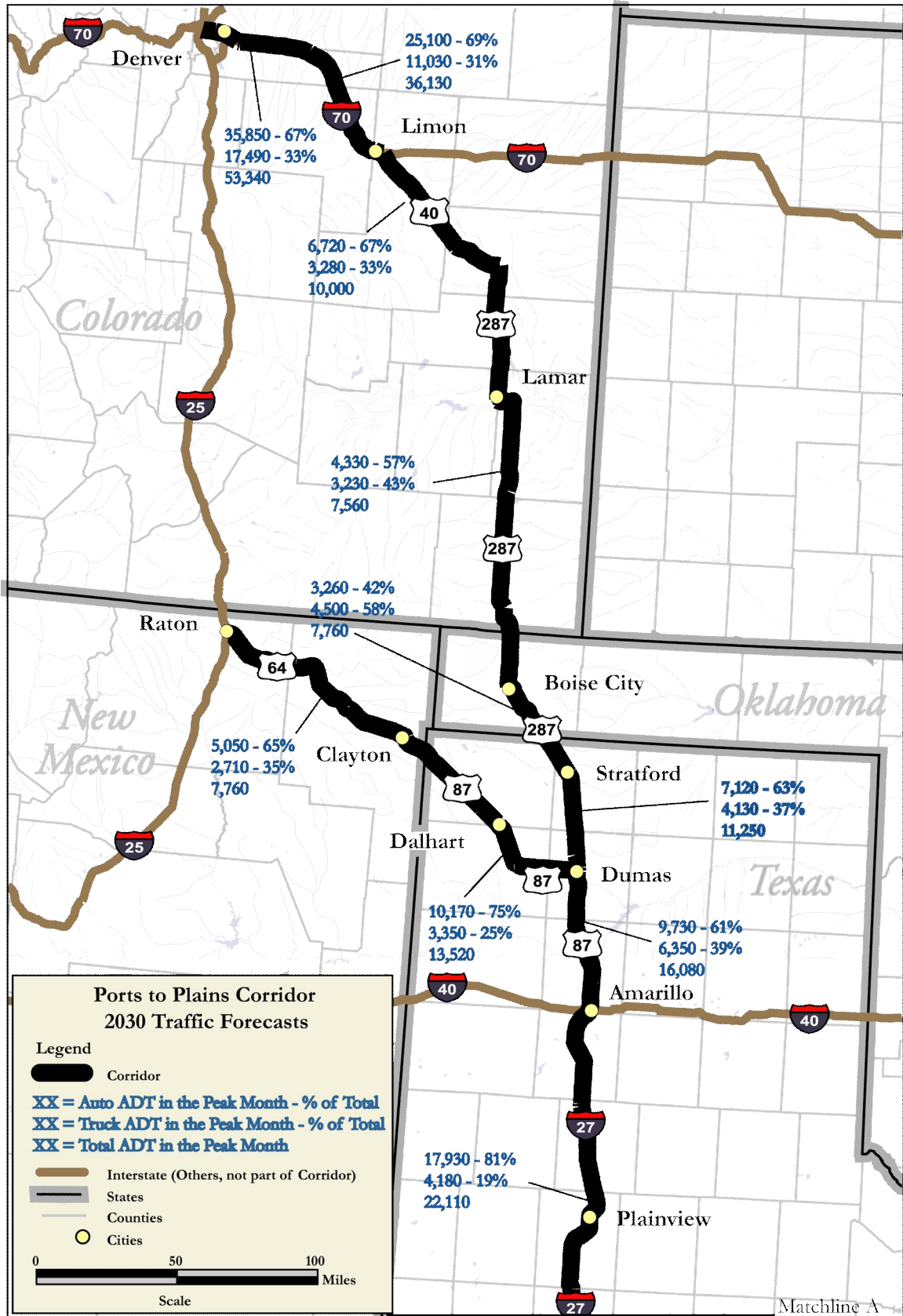


Figure 2-2 2030 Forecast Traffic (North)



2.3 Truck Parking Needs Assessment

Truck parking needs were determined using an FHWA formula (FHWA Report FHWA-MC-96-0010) for calculating truck parking demand on interstate highways. The equation was used with adjustments to the parameter inputs to better fit the Ports to Plains Corridor highways. The FHWA formula is as follows:

$$\text{NTSPACES} = \text{ADT} \times \text{P} \times \text{DH} \times \text{Dt} \times \text{PF} / \text{VHS}$$

where

NTSPACES	= Number of truck parking spaces required.
ADT	= Average Daily Traffic with access to rest areas.
P	= Total percentage of mainline traffic stopping at rest area.
DH	= Design Hour factor.
Dt	= Percentage of truck parking spaces.
PF	= Peak factor, ratio of average day of five summer months to average day of year.
VHS	= Vehicles parked per hour per space(turnover rate).

This formula was used to estimate the total number of truck parking spaces required at a rest area. The process involves applying decision rules to select the appropriate equation parameter values to use for the Ports to Plains Corridor. In this way the results from the equation are more indicative of the Ports to Plains unique characteristics.

The table below summarizes the recommended parameter values based on the FHWA research findings by Apogee Research, Inc., the Minnesota Department of Transportation (MnDOT) and Virginia Department of Transportation (VDOT).

Recommended Parameter Values

Parameter	Recommended Value
Average Daily Traffic (ADT)	Use one-way ADT data
Percentage of Mainline Traffic Stopping at Rest Area (P)	0.12, plus decision rule modifications (explained below)
Design Hour factor (DH)	Based on decision rules (explained below)
Percentage of Truck Parking Spaces Out of Total Parking Spaces at the Rest Area (Dt)	0.25
Peak Factor Ratio (PF)	1.80
Trucks Per Hour Per Truck Parking Space(Turnover) VHS	2.0 (1.0 used in this study as explained below)

Source: MnDOT, VDOT, Apogee Market Strategies and Apogee Research, Inc.

Many of the recommended parameters were used in the calculation of parking needs for the Corridor. These included a seasonal factor 1.8 to reflect the peaking characteristics of demand, and the percentage capture rate that is a variable rate dependent on ADT of the adjacent roadway.

The values for P, DH, and VHS were adjusted from the base default values by applying research recommended decision rule adjustments. The decision rule adjustments for each of these parameters are discussed below.

Percentage of Mainline Traffic Stopping at the Rest Area (P)

The research identified factors that have a statistically significant effect on increasing the usage of public rest area parking spaces by trucks are as follows:

- Distance From Previous Rest Area
- Distance to the Next Interchange
- Diagonal Parking Spaces
- Welcome Center
- Food Facilities
- Attendant
- Lighting

FHWA research indicates that the default value for "P" should be 0.12, and 0.01 should be added for each factor that applies from the list above. This process was used for each rest area location along the Corridor to determine a value of "P" to use for that location.

For example, if the rest area has lighting, and the rest area is classified as a welcome center, a value of 0.14 was assigned for "P" (i.e., $0.12 + 0.01 + 0.01$).

Design Hour Factor (DH)

In general, as the ADT volume increases DH is reduced until the traffic volume reaches a particular level. The factor then stabilizes regardless of how high the average daily traffic increases. This factor is similar to the K-factor that is used for other traffic related calculations. For this purpose, the FHWA research recommended values for DH at given levels of ADT are as follows:

- For ADT Levels of 12,500 and below, use 0.15.
- For ADT Levels greater than 12,500 and less than 30,000, use 0.10.
- For ADT Levels of 30,000 and higher, use 0.075

The 2030 forecasts were used in applying this decision rule. For example, if a rest area is located on a highway where the ADT volume is 9,600 a DH factor of 0.15 is used. Similarly, if the ADT is 26,500, the appropriate DH factor is 0.10. Finally, if the ADT is 34,000, the assigned DH factor is 0.075.

Turnover Rate (VHS)

For the turnover rate, a rate of 1.0 (parking spaces turn over once per hour) for corridor truck parking was used instead of the 2.0 (parking spaces turn over twice per hour) base default value derived for both truck and passenger car parking. By reducing this parameter to 1.0 the results are considered to be more indicative of the type of parking studied which is truck parking. Most of the existing truck parking supply is located at truck stops. Trucks are much more likely to have extended or overnight stays at truck stops which

provide a full complement of one-stop trucker services. Public rest areas, as those studied in support of the FHWA forecast methodology, offer fewer services than truck stops and so can be expected to have higher turnover in parking demand. Assuming a lower turnover rate takes into consideration the fact that the majority of the corridor parking supply is currently at truck stops where extended and overnight stays are more prevalent than at public rest stops.

RESULTS

Application of the parking demand equation yielded the total parking spaces needed in the Corridor. This number was compared to the existing parking supply which resulted in the need for approximately 1,800 additional truck parking spaces in the corridor by 2030. An explanation of the demand versus supply methodology used in this study is further explained below.

The parking supply available to users of the corridor was determined by referring to the truck stop and rest area parking inventories described in Section 1. Assignment of the corridor parking supply occurred as follows. For each segment of the corridor, the parking supply available to that segment was assumed to be equal to the number of truck parking spaces at both rest stops and at truck plazas 100 miles in front of the driver. This was done separately for each direction of travel.

The difference between the existing supply and the 2030 demand resulted in a value for the new parking needed for each segment. Segments were then further aggregated into 15 large study segments located between major cities and facilities. The number of needed truck parking spaces in these aggregated segments equaled the sum of the maximum demand for additional truck parking needed for the northbound and southbound directions of travel. The results of this analysis are depicted on Figure 2-3.

As shown on Figure 2-3, segments were classified as A, B, and C priority in terms of parking need. Those segments with a need of 150 or more additional spaces received priority A designation. Those which had a need of 90 to 150 spaces received priority B designation, and those with need of 89 parking spaces or less, received a priority C designation. This prioritization in no way restricts the ability of a state to advance a project and is limited to the accuracy of forecasting methods. Many variables and conditions in the Corridor could accelerate the need for parking beyond what has been assumed in this study. The priority groupings are only intended to illustrate categories of forecast need for additional parking by 2030 as estimated by this study.

Figure 2-3 2030 Forecast Truck Parking Needs (South)

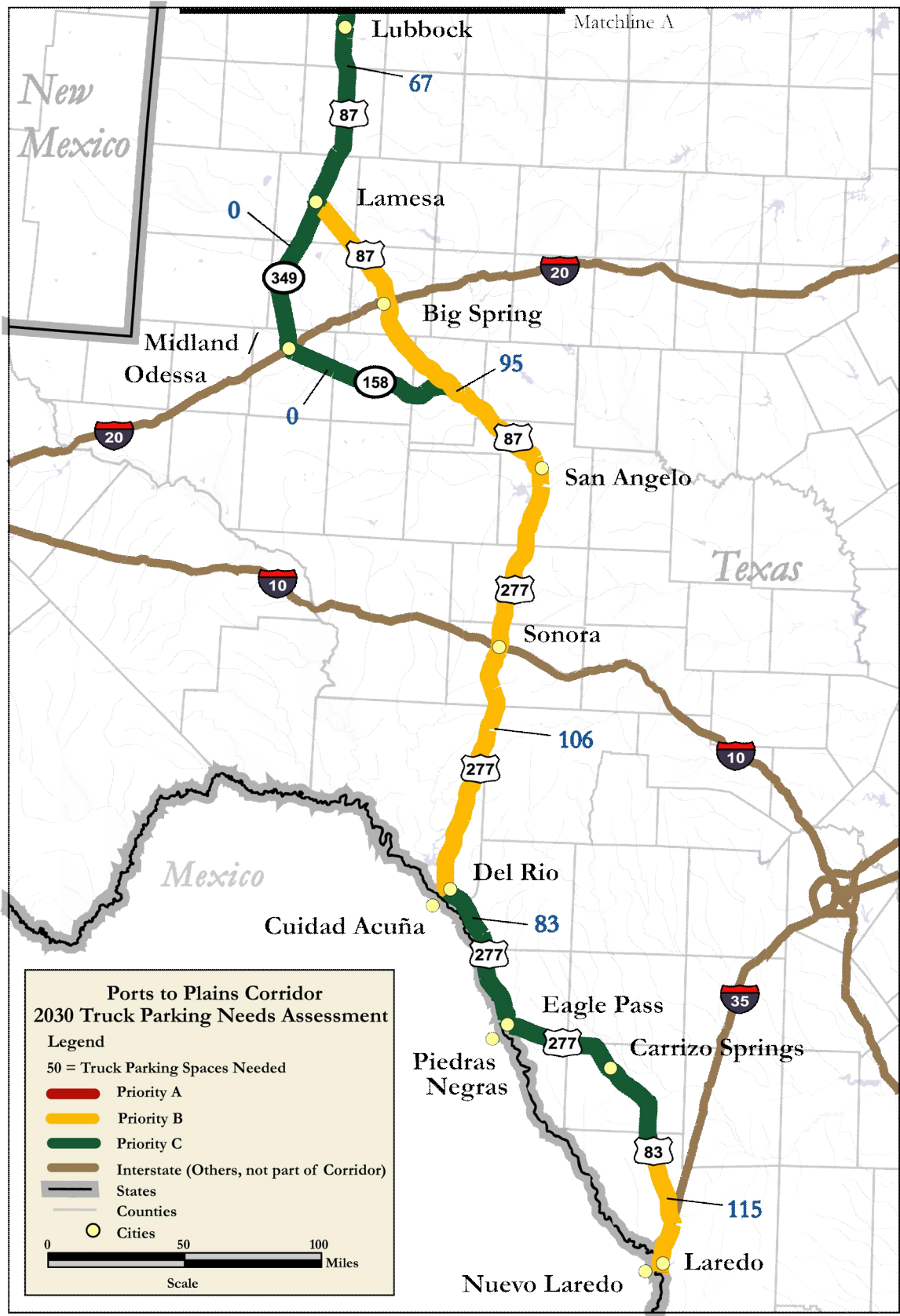
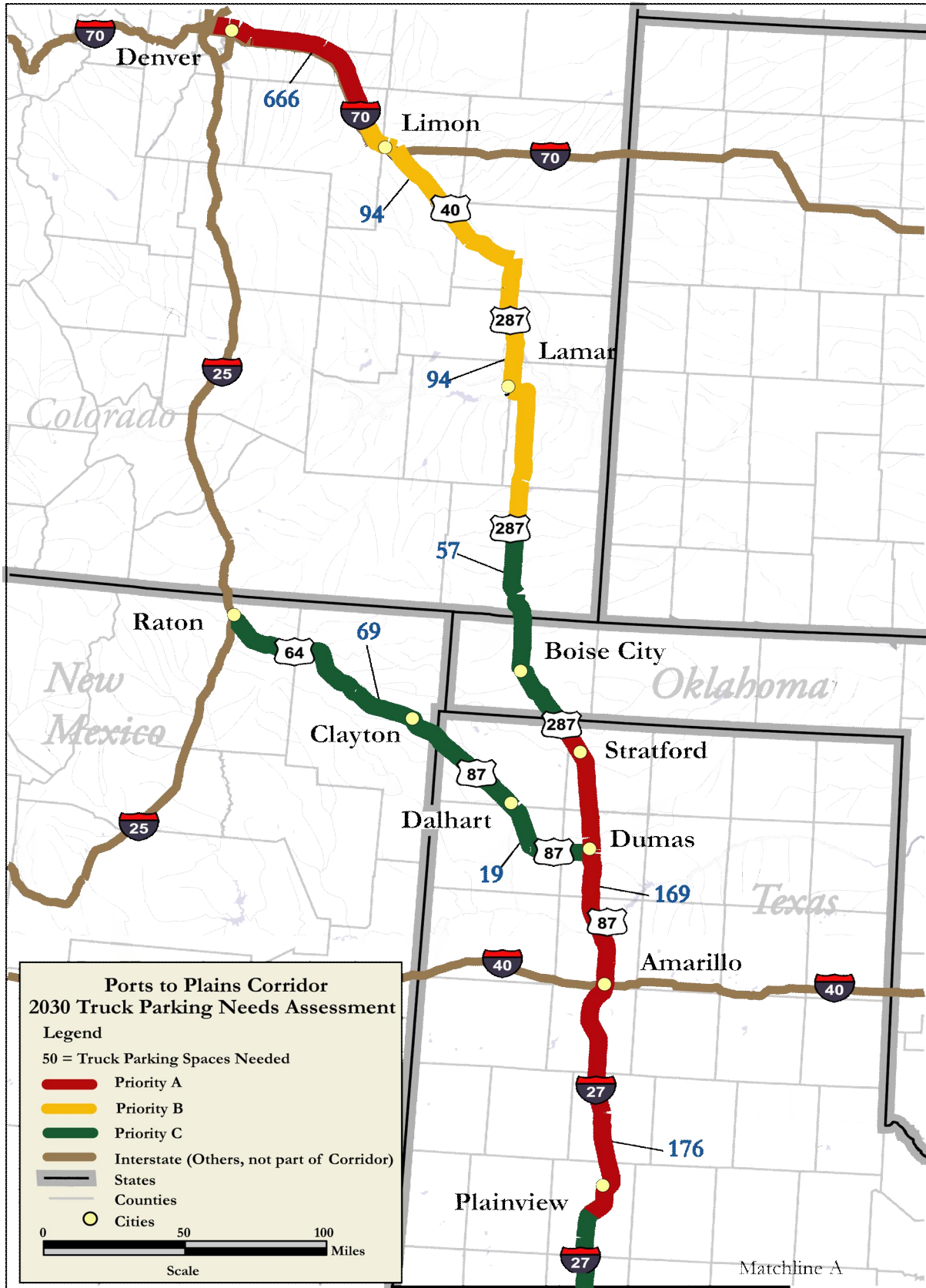


Figure 2-3 2030 Forecast Truck Parking Needs (North)



3 TIERED ECONOMIC FEASIBILITY ANALYSIS

The discussions in this section of the report focus on the potential for revenue generating opportunities at locations along the Port to Plains Corridor. This analysis provides the starting point in determining the feasibility of private investment helping to fund rest area or truck parking projects.

3.1 Tiered Financial Profiles

As a basis for the analysis, financial profiles of typical vending machines, fast food restaurants, combination service station/convenience stores and full service truck stops/travel plazas were researched. The financial profiles are provided for four tiers of service at rest areas, summarized below.

Table 3-1, Tiered Services

	Services	Potential Cost Savings
Tier 1- Minimum Services	Lavatories	n/a
	Parking	n/a
	Vending/Telephones/ATM	Revenue for placement of machines
	Self Service Travel Information	Cost sharing
Tier 2 –Basic Services	Fuel Service, Emergency Repairs	Revenue for concession
	Convenience Store	Revenue for concession
Tier 3 –Enhanced Services	Fast Food Restaurants	Revenue for concession
Tier 4- Full Service	Truck Services, Parking, Repairs, Showers, TV room	Revenue for concession Cost saving for parking

It is important to note that revenue generating opportunities are not mutually exclusive. For example, vending machines while placed as a Tier 1 service would also be present in all levels of service. Tier 3, fast food restaurant would in some cases be an addition to Tier 2 basic services if warranted by traffic levels. Tier 4 services are generally a separate “stand-alone” category, represented by travel plazas that incorporate all of the elements of Tier 1, 2, and 3 and a variety of other services depending on traffic levels.

Tier 1 – Minimum Services

Tier 1 minimum services consist of some combination of the following:

- Lavatories
- Parking
- Vending Machines
- Self service travel information

Of these services, only vending machines generate any funding to support the operations of a highway rest stop. The revenue potential from vending machines is based on the commission to the owner of the space and probably is in a range topping out at 20 percent of profit. (Minnesota has a 17- percent commission rate for vending machines placed on state property.) The commission rate needs to be somewhat favorable to the vendor since the bulk of sales at a rest area, i.e., cold drinks, candy, and salty snack foods, have a

relatively high cost for inventory as opposed to high margin vending items such as gumballs, small toys, and arcade games.

The key to placing vending machines at a highway rest stop is to engage one vendor for all products offered. This would probably consist of vending machines for cold drinks, candy, salty snacks and perhaps travel products, i.e., over the counter medications. By having one vendor it provides enough of a market to service the location on a regular basis. Splitting the vending opportunities necessitates multiple stops for restocking various vending machines, which makes the opportunity less attractive.

Tier 2 – Basic Services

Based on data from “Gas Stations USA”, a broker selling gas stations many of which have some type of convenience store as part of the operation, a profile may be developed that depicts the range of operations for Tier 2 basic services.

Table 3-2, Tier 2 Financial Profile

TYPE OF OPERATION	LOW VOLUME	AVERAGE VOLUME	HIGH VOLUME
Fuel Sales/Gallons per month	25,000	75,000	150,000
Margin per Gallon	\$0.06	\$0.08	\$0.10
Convenience Store Sales per month	\$20,000	\$35,000	\$50,000

Source: Gas Stations USA

Estimates of customer count are based on a combination gas station/convenience store being open 18 hours per day, with customers purchasing an average of 10 gallons of gas.

Table 3-3, Tier 2 Customer Requirements

	CUSTOMERS/MONTH	CUSTOMERS/ DAY	CUSTOMERS/ HOUR
Low Volume	2500	85	5
Average Volume	7500	250	15
High Volume	15000	500	30

Tier 3 – Enhanced Services

The data below depicts the financial profile for Tier 3 enhanced services represented by a fast-food restaurant.

Table 3-4, Tier 3 Financial Profile

Average Sales (yearly)	\$1,341,000
Operating Expenses (76.6% of sales)	\$1,027,200
Approximate EBIT (earnings before interest expense and taxes)	\$313,800
Approximate Average Check	\$6.25
Total Estimated Development Cost per Unit	\$1,248,000

Source: CKE Restaurants

Based on the data in the above table, with average sales of \$1,341,000 and an average check of \$6.25, the estimated number of fast food customers for fiscal year 2006 would be approximately 215,600. Data for another fast food restaurant shows average store sales of \$874,000 and an average check of about \$4.75, providing an estimate of customers for

fiscal year 2006 of approximately 183,600. On a daily basis this equates to 590 and 500 customers per day for the researched fast food restaurants, respectively.

Information researched on site requirements and customer count provide a gross measure of the traffic capture rate necessary to sustain the average store sales figures recorded in fiscal year 2006. On a daily basis, with AADT of 20,000 vehicles and 590 customers a capture rate of 2.95 percent is required, assuming all single-occupancy vehicle traffic.

Tier 4 – Full Services

The Tier 4 services represented by the average travel plaza or truck stop have annual sales escalated to 2006 dollars at \$10.9 million for average sales, and \$9.2 million for sales at the median level. An industry leader, Pilot, reported \$15 million in average travel center revenue for 2005, serving an average of 3,000 customers per day at each location. Restaurant sales at Pilot travel plazas averaged about \$900,000 per unit in 2005. The data below depicts the financial profile for Tier 4 full service.

Table 3-5, Tier 4 Financial Profile

Average Sales (yearly)	\$10,900,000
Median Sales (yearly)	\$9,200,000
Pilot average revenue (yearly)	\$15,000,000
Pilot average customers/day	3,000

Source: National Association of Truckstop Operators 1993 Cost of Doing Business Study, with services data as reported by NATSO members (as of November 1999).

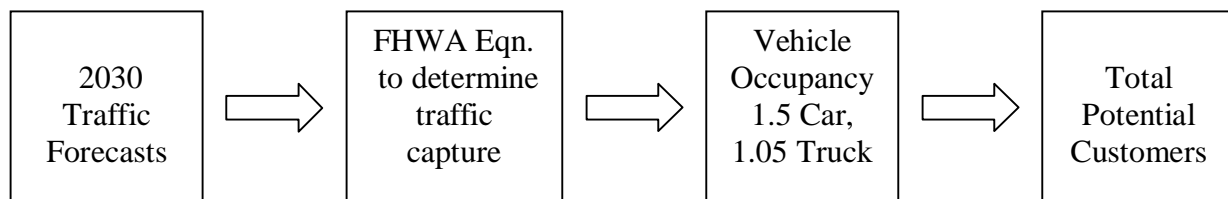
Further information on research conducted for each tier of service can be found in the Appendix.

3.2 Assigning Economic Tiers to Ports to Plains Segments

The tiered economic feasibility analysis is used to help determine what level of private investment might be feasible to help fund truck parking and rest area improvements. The next step in this analysis was to assign a potential tier of service that may be supported by the forecast traffic on a given segment of the Ports to Plains Corridor.

The primary variable in assigning a tier to a segment is estimating the number of potential customers. Traffic forecasts and the FHWA equation from section 2.3 were used to estimate the number of vehicles that would stop at a given location. Then assumptions of vehicle occupancy were used to arrive at total potential customers. The assumed values for vehicle occupancy of 1.5 for passenger cars and 1.05 trucks were estimated from general observations of the rural nature of Corridor. By comparison, the U.S. Department of Transportation, 2001 National Household Travel Survey indicates an average vehicle occupancy nationwide as 1.57 for autos, 2.22 for vans, 1.76 for SUV's, 1.48 for pickup trucks, and 1.18 for all other trucks.

The resulting total potential customers was then compared with the customer/revenue thresholds that were established in the previous tier profiles. The following flow diagram illustrates this analysis.



The following summarizes the assumptions and thresholds for each tier. The customers needed to support each tier are supported by the financial profiles provided in Section 3.1. Tiers are assigned in Section 5 of the report where Corridor specific projects and potential funding is considered.

- Tier 1, Assume 25% of Total Potential Customers will spend \$1.00. If \$2,000 in monthly revenue is reached then Tier 1 is feasible.
- Tier 2, If 250 Total Potential Customers per day then Tier 2 is feasible.
- Tier 3, If 590 Total Potential Customers per day then Tier 3 is feasible.
- Tier 4, If 3,000 Total Potential Customers per day then Tier 4 is feasible.

4 TRUCKING INDUSTRY AND DOT COORDINATION

This study does not have the scope to fully engage communities to understand local needs and concerns. However, project team members did meet with DOT representatives in the states of Colorado and Texas, and met with the Colorado Motor Carriers Association and the Texas Motor Carriers Association. The following paragraphs provide summaries of these discussions.

4.1 Motor Carrier Association Discussion Summary

The trucking industry is growing due to an increase in products being shipped by truck and an ever increasing trend in just-in-time delivery. The pressures of time placed on the trucker have intensified due to the hours-of-service regulations implemented by the Federal Motor Carrier Safety Administration (495 CFR Part 395, 2003 revised 2005). These regulations have increased the need for truckers to take regular and scheduled rest periods along their routes. Timing and location of these stops may become even more critical if proposed onboard recorders are used to enforce the hours-of-service regulations.



For the trucker, security at a location of rest is very important. The trucker wants to be able to take uninterrupted rest from the strains of driving the road. At rest area and truck stops problems with crime have intensified, especially with crimes of prostitution and those involving drugs. This simply creates one more issue that the trucker must contemplate when trying to locate a place to get rest from driving. Lighting of the rest area is one of the improvements that can increase a sense of security, along with increased patrols and enforcement.

Some of the best successes in improving security have been with co-locating state patrol headquarters at rest area or truck parking locations.

Safety is of high concern to the trucking industry because if drivers are involved in accidents there is high liability that could be transferred to the truck driver and/or trucking company. Safety ratings are placed on both driver and trucking companies and are important performance measures within the industry. Due to a focus on safety ratings, truckers will often not stop at locations where they know unsafe conditions exist to avoid unsafe circumstances. Ultimately, trucking companies place the decision on the professional truck driver to stay out of unsafe circumstances, but in some cases the trucking company may prohibit certain unsafe locations to their drivers.

Truck drivers want to stop at locations where services are provided. Basic services that are encouraged to help the trucker perform his job include travel information through intelligent transportation systems. The most common information is road and weather information. The common semi truck is a heavy and high profile vehicle and icy roads and

high wind weather conditions are two of the most concerning elements to the truck driver. Emergency response is also very important to the trucking industry, especially when dealing with incidents involving hazardous materials. Trucking routes are selected based on these types of considerations and a corridor without proper services may be excluded.

4.2 Local DOT Discussion Summary

Capital costs and maintenance are two significant concerns to any DOT considering expansion of public rest areas. Increasing attention has been placed on finding opportunities where alternative funding sources might be applied. Some of the funding sources that have been considered in the past have included Public-Private-Partnerships (PPP), public-public-partnerships, and public-nonprofit-partnerships. Thus far, minimal gain has been made in implementing these funding concepts in any of the four states that the Ports to Plains Corridor intersects. The bottom line is that adding new rest areas or improving existing rest areas will need additional funding, both upfront and in the long-term for maintenance costs.

In Texas, Federal Enhancement Funds have been used to expand their rest area program. Federal Enhancement Funds in one DOT District along the Ports to Plains Corridor is about \$800,000 per year. This amount of funding is not enough to construct meaningful rest area improvements and competition for these funds is very high with urban sidewalk and trail projects as example of competing projects. With the exception of Texas, there are no DOT dedicated programs within the respective organizations. This places the burden of rest area planning, construction, and maintenance on each local DOT District or Region. From the Local DOT perspective, a dedicated rest area program would be more successful at implementing strategic state-wide rest area improvements and maintenance.

5 POTENTIAL CORRIDOR TRUCK PARKING PROJECTS

An outcome of this study is to provide a list of projects that help meet parking deficiencies in the Corridor. Improvement of existing rest areas is one way of providing additional parking supply. These improvements might include both physical parking expansion and/or improvements that might improve utilization of the facilities including safe access and facility features such as lighting and amenities. Adding new rest areas in locations where gaps exist is another method of providing additional parking supply. Finally, expanding private sector parking supply through public-private-partnerships is another potential method for increasing parking supply.

Using the existing facility assessment and existing and forecast parking needs in the corridor, a project list was compiled that includes projects from all three methods of parking expansion strategy. Table 5-1 is a summary of potential projects including priority based on parking need, Tier of private service that could potentially be supported at the location, and a preliminary assessment of the physical site characteristics to help determine if private services could be accommodated on the site. Maps of existing rest areas used in the preliminary assessment can be found in the Appendix.

Table 5-1, Ports to Plains Potential Truck Parking Projects

Location	Project Description	Other Considerations	Priority based on 2030 Forecast Truck Parking Needs	Tier of Potentially Supported Private Services	Site Assessment/Site Capability for Private Services Sig/Mod/Limited
Bennett Rest Area I-70 Colorado	Add an EB flyunder ramp to the interchange at I-70 to provide better access at the Bennett Rest Area. Currently, the EB driver can exit to the Rest Area easily, however entering back onto the EB freeway requires driving through the town of Strasburg, adding delay and confusion to the driver, and putting trucks on more local roads. This new ramp would make the interchange fully directional, making the rest area more accessible and convenient, thereby better utilized. Also construct new lighting for the entrance ramp.	This site has potential for supporting services, possibly a fast food restaurant or travel plaza. Increasing access as a first step may be a catalyst for private development.	A	Tier 3 - Enhanced Services	Significant
Bennett Rest Area I-70 Colorado	Site redevelopment including potential changes to traffic circulation, parking lot expansion, and creation of privately owned services such as fuel and fast food.	Current site has an existing building structure that could provide potential for private services, or could be demolished to provide space for a new building that would have private services. Park amenities on this site could be reduced to allow for some areas to be in-filled with private site development.	A	Tier 3 - Enhanced Services	Significant
Deer Trail Rest Area I-70 Colorado	Expand existing truck parking from approximately 12 to 20. Extension of the existing truck parking aisle will require extension of the NB accel lane. Also add exit and entrance ramp lighting.		B	Tier 2 - Basic Services	Significant

Table 5-1, Ports to Plains Potential Truck Parking Projects (continued)

Location	Project Description	Other Considerations	Priority based on 2030 Forecast Truck Parking Needs	Tier of Potentially Supported Private Services	Site Assessment/Site Capability for Private Services Sig/Mod/Limited
Big Sandy Rest Area US 40 Colorado	Construct SB left turn decel and accel lanes, lengthen existing NB decel and accel lanes. Install intersection lighting. Expand existing truck parking from approximately 5 to 20.		B	Tier 2 - Basic Services	Significant
Gobblers Knob Rest Area US 287 Colorado	Construct additional 20 parking spaces and improved accel/decel lanes with Portland Cement Concrete Pavement. Improve ingress/egress (radius of approaches etc.) Install additional rest area facilities including potential for potable water.		B	Tier 1 - Minimum Services	Moderate
New Boise City Rest Area US 287 Oklahoma	Construct a new rest area on the new Boise City relief route alignment.	Project should be coordinated with ongoing relief route design activities to best place the facility to work with new road system.	C	Tier 1 - Minimum Services	Significant
Dumas Picnic Area US 87 Texas	Upgrade existing NB and SB picnic areas located south of Dumas by adding decel/accel lanes to improve safety. Also add advance static information signs as you approach the facility. Expand paved area to accommodate 20 parking spaces, add basic restroom facilities, and exit and entrance ramp lighting.	If private investment is considered then a 1-sided facility is preferred so that potential customers could be maximized. Therefore this project should not be considered if private investment is used for funding above Tier 1.	A	Tier 2 - Basic Services	Limited
Dumas Picnic Area US 87 Texas	Upgrade either the NB or SB picnic area to include improved accel/decel lanes for both left turn and right turning vehicles. Expand paved area to accommodate 40 parking spaces, add basic restroom facilities, and exit and entrance ramp lighting.	This project should be considered especially if private investment is considered so that the amount of traffic that would have access to the private services would be maximized.	A	Tier 2 - Basic Services	Moderate
Hartley Picnic Area US 87 Texas	Construct SB accel lane and add basic restroom facilities.		C	Tier 2 - Basic Services	Moderate
Sierra Grande Rest Area US 64 New Mexico	Expand truck parking from approximately 8 to 20 spaces.		C	Tier 1 - Minimum Services	Significant
Hale County Rest Area I-27 Texas	Expand SB truck parking from 10 to 15, and NB truck parking from 22 to 27. To expand the SB truck parking the SB decel lane will need to be reconfigured so that more space can be made internal to the rest area facility. Similarly, the NB accel lane will need to be reconfigured so that more space can be made internal to the rest area facility for expanded parking. More extensive expansion at either rest area would require significant ROW acquisition and reconfiguration of the surrounding frontage road system.		A	Tier 2 - Basic Services	Limited

Table 5-1, Ports to Plains Truck Potential Parking Projects (continued)

Location	Project Description	Other Considerations	Priority based on 2030 Forecast Truck Parking Needs	Tier of Potentially Supported Private Services	Site Assessment/Site Capability for Private Services Sig/Mod/Limited
New Rest Area Between Lamesa and Lubbock US 87 Texas	Construct a new rest area north of Lamesa and south of Lubbock. The existing roadway is 4-lane divided therefore either a single sided facility with accel and decel lanes and controlled ingress and egress intersection, or a double sided facility would need to be constructed.	This location provides a rest area that serves both SH 349 and US 87 traffic which branch off south of Lamesa. This rest stop could also benefit traveler safety by providing a stop for Texas Tech commuter students who travel between nearby towns to Lubbock.	C	Tier 2 - Basic Services	Significant
Coke County Rest Area US 87 Texas	Expand truck parking from approximately 8 to 20 spaces. Construct improved truck entrance and exit connecting roads and intersections with US 87 that allow more safe ingress and egress for SB traffic. Re-alignment of NB travel lanes to provide a median wide enough to store a semi-tractor trailer combination at the egress intersection, this allowing the semi to execute a 2-staged left turn. Construct a SB accel lane for egress vehicles to improve safety.	Improving the facility as a 1-sided facility will maximize potential customers to support private investment.	B	Tier 3 - Enhanced Services	Significant
Coke County Rest Area US 87 Texas	Construct separate SB rest area facility with similar footprint as existing NB rest area.	If private investment is considered then a 1-sided facility is preferred so that potential customers could be maximized. Therefore this project should not be considered if private investment is used for funding above Tier 1.	B	Tier 3 - Enhanced Services	Limited
New Rest Area Between Del Rio and Sonora US 277 Texas	Construct a new rest area north of Del Rio and south of Sonora. Given the rough terrain in this section, a flat location will require more extensive grading work than in other sections of the corridor. The existing road is 2-lane, therefore a 1-sided facility could be constructed with accel and decel lanes for both directions. The facility could be designed so that future access to a 4-lane roadway could also be accommodated within the ROW acquired for the facility.		B	Tier 1 - Minimum Services	Significant
New Rest Area Between San Angelo and Sonora US 277 Texas	The existing road is 2-lane, therefore a 1-sided facility could be constructed with accel and decel lanes for both directions. The facility could be designed so that future access to a 4-lane roadway could also be accommodated within the ROW acquired for the facility.		B	Tier 1 - Minimum Services	Significant

Table 5-1, Ports to Plains Potential Truck Parking Projects (continued)

Location	Project Description	Other Considerations	Priority based on 2030 Forecast Truck Parking Needs	Tier of Potentially Supported Private Services	Site Assessment/Site Capability for Private Services Sig/Mod/Limited
New Rest Area Near Carizzo Springs US 277 Texas	The existing road is 2-lane, therefore a 1-sided facility could be constructed with accel and decel lanes for both directions. The facility could be designed so that future access to a 4-lane roadway could also be accommodated within the ROW acquired for the facility.		C	Tier 1 - Minimum Services	Significant
Various	Electronic billboard or variable message sign in the median to convey truck parking availability. Locations with high cost effectiveness would be on current 4-lane median roadways where a message on both sides of the sign could be utilized. Location could also be used to notify of inclement weather, construction information, or amber alerts.	Message for private truck parking availability could require the private truck stop company to buy the line of text, similar to the roadside logo advertising program currently used in Colorado. This would help offset the capital and maintenance costs of the sign.	NA	NA	N/A
Various Candidate Locations that have Existing Truck Stops Including but not Limited to:	A public-private partnership to add 50 long-term (10 hours or more) truck parking spaces at an existing private truck stop location along the Ports to Plains Corridor. The 50 space parameter was selected because it adds a meaningful increment of long-term spaces and is within the existing size of truck parking provided at travel plazas in the corridor.	Federal, State or Local funds could be used to secure ROW, provide minor roadway access improvements, and utility adjustments. Private funds would be used to construct the site improvements including paved surfaces, pedestrian facilities, and lighting. State DOT would administer and conduct necessary NEPA site assessments and clearances.	Varies by Location	NA	TBD
Denver			A	NA	
Limon			B	NA	
Lamar			A	NA	
Boise City			B	NA	
Dumas			A	NA	
Amarillo			A	NA	
Raton			B	NA	
Dalhart			C	NA	
Lubbock			B	NA	
Big Spring			A	NA	
Midland/Odessa			C	NA	
Del Rio			B	NA	
Eagle Pass			C	NA	
Laredo			B	NA	

Site assessments for capability to support private services used the following considerations in providing the Significant, Moderate, and Limited rankings.

- Physical site constraints such as size of site and fit within existing roadway network.
- Availability of utilities such as water, electric, and sanitary service.
- Whether the site could be accessed by both directions of traffic to help maximize potential customer base.
- For proposed new facilities, it is assumed that a good site would be chosen through a more detailed site selection process.

6 CORRIDOR TRUCK PARKING PROJECT FUNDING

This section of the report focuses on the biggest hurdle in implementing any truck parking improvements along the Corridor. In large part, it is recognized that creative funding approaches including public-private-partnerships may be necessary to adequately address truck parking deficiencies.

6.1 Overview of Rest Area Funding

Colorado

In Colorado, rest areas have been traditionally funded with State generated funds primarily appropriated for maintenance of existing rest area infrastructure. The only recent new rest area project along the Ports to Plains Corridor was the construction of the Gobblers Knob rest area south of Lamar in 2002. This rest area was funded through 7th Pot Strategic Project funding in coordination with the adjacent roadway reconstruction.

On I-76 in Colorado, several new rest areas/tourist information centers have been constructed between Denver and the Nebraska border to the east. These projects involved multi-jurisdictional funding participation and support, also involving private investment from groups such as Tourism Boards and local Economic Development Boards. Local City and County jurisdictions helped to secure ROW necessary and provide utilities such as water supply and sanitary sewer for restrooms. These projects are considered a model for how to create multi-jurisdictional and private partnerships that fully leverage public investment and create local ownership that is necessary to maintain a high level of pride and maintenance in the facility.

Texas

In 1999 Texas began an extensive rest area program that utilized Federal TEA-21 Transportation Enhancement Funding to revamp Texas Safety Rest Area program. Transportation Enhancement Funding projects must be projects that are over and above what is considered routine construction or maintenance. Along with State generated matching funds, this federal funding program was used effectively by TxDOT to renovate existing and construct new rest areas, including the following Ports to Plains Corridor facilities; Hale County Rest Area, Laredo Travel Information Center, and the Coke County Rest Area.

Oklahoma

Similar to Colorado, Oklahoma rest areas have been traditionally funded with State generated funds primarily appropriated for maintenance of existing rest area infrastructure. There have been no recent rest area projects in Oklahoma along the Ports to Plains Corridor.

New Mexico

As in Colorado and Oklahoma rest areas have been traditionally funded with State generated funds primarily appropriated for maintenance of existing rest area infrastructure.

As part of the US 64 widening project, acceleration and deceleration lane improvements are being constructed at the Sierra Grande rest area.

SAFETEA-LU

The SAFE, ACCOUNTABLE, FLEXIBLE, EFFICIENT TRANSPORTATION EQUITY ACT (SAFETEA-LU), signed into law in August of 2005 includes several sections that may have funding opportunities for truck parking and rest areas on the Ports to Plains Corridor. The following is a summary of 3 specific programs that may provide opportunity.

Section 1305 – Truck Parking Initiative

This program is intended to address the shortage of long-term parking for commercial motor vehicles on the National Highway System. Eligible projects include construction of parking spaces and other capital improvements. For purposes of the program, long-range parking is defined as parking available for 10 or more consecutive hours. Activities that may be funded under Section 1305 include:

- Development phase activities (planning, feasibility analysis, environmental review, engineering and design work)
- Acquisition of real property (including land related to the project and improvements to land)
- Environmental mitigation
- Construction
- Contingencies
- Acquisition of equipment
- Operational improvements

The program is competitive with authorized implementation funding of \$6.25 million per year for Fiscal Years 2006 through 2009.

Section 1310 – Interstate Oasis Program

This program is intended to create a logo for use on signing that informs the motorist of access points along the interstate highway system that have facilities that provide products and services to the public; 24-hour access to restrooms; and parking for automobiles and heavy trucks.

This program would only be applicable to I-35, I-27, and I-70 segments of the Ports to Plains Corridor. This program does not currently have funding authorized for implementation of the program.

Section 1412 - Idling Reduction Facilities in Interstate Rights-of-way

This program is intended to allow and encourage use of commercial vehicle idling reduction facilities at recreation and rest areas on the Interstate Highway System. These facilities cannot reduce the number of parking spaces. The legislation allows the State to collect a fee for the use of the parking space that is equipped with the idling reduction technology.

This program would only be applicable to I-35, I-27, and I-70 segments of the Ports to Plains Corridor. This program does not currently have funding authorized for implementation of the program.

6.2 Project Cost Estimating and Funding

Table 6-1 provides a summary of estimated project costs for the identified Ports to Plains Corridor truck parking projects. More details on cost estimating can be found in the Appendix. Cost estimates were based on historical data of other rest area projects and on unit cost estimates based on current construction costs. For example, in Texas there was a new 2-sided rest area facility on an Interstate Highway that was recently bid on for construction. The construction bids were approximately \$10.5M. Based on this example location and the size of the facility that is being constructed on the Interstate Highway, new rest areas costs on the Ports to Plains Corridor were adjusted depending on the type and size of facility envisioned. It should be noted that all cost estimates are based on current 2006 dollars.

The second focus of the table is a brief screening of the most likely funding opportunities for each project. As shown, Federal and State funding will both provide likely funding opportunities for all the projects. For Federal funding each of the projects was compared against the criteria for Section 1305 funding as described earlier in the report. None of the projects were eliminated based on the Section 1305 requirements. However, some of the projects may have higher probability of being selected based on the competitive process for being screened for Section 1305 funds.

State funding is a given for any project that might be envisioned on the Corridor. State funds necessary may be reduced depending on the amount of Federal, Local, or Private funding available. Finally, Local and Private funding screening was based on proximity of the project to a community place such as a major town and the attractiveness of the project to potential private investors.

6.3 The Role of Private Funding

Rest area and truck parking funding does not gain high attention when compared to the vast roadway maintenance and congestion projects that require large budget control. However, rest areas and truck parking facilities are important to overall roadway safety and traveler comfort. The idea that rest areas are places where motorists leave the roadway for services seems to have a natural fit with providing other purchased items such as food and fuel. Based on this natural fit, proving opportunity for private investment that will benefit both the transportation system and the private business is a funding solution worth further investigation. In the following sections a description of how private contributions could be leveraged against Federal, State, and Local contributions will be discussed, as will the overall economic benefits of coupling rest area facilities and private investment.

Table 6-1, Project Cost Estimate and Funding Opportunities

Location	Project Description	Other Considerations	Total Est Cost (\$Millions)	Most Feasible Funding Opportunities			
				Federal	State	Local	Private
Bennett Rest Area I-70 Colorado	Add an EB flyunder ramp to the interchange at I-70 to provide better access at the Bennett Rest Area. Currently, the EB driver can exit to the Rest Area easily, however entering back onto the EB freeway requires driving through the town of Strasburg, adding delay and confusion to the driver, and putting trucks on more local roads. This new ramp would make the interchange fully directional, making the rest area more accessible and convenient, thereby better utilized. Also construct new lighting for the entrance ramp.	This site has potential for supporting services, possibly a fast food restaurant or travel plaza. Increasing access as a first step may be a catalyst for private development.	\$4.1	P	P		
Bennett Rest Area I-70 Colorado	Site redevelopment including potential changes to traffic circulation, parking lot expansion, and creation of privately owned services such as fuel and fast food.	Current site has an existing building structure that could provide potential for private services, or could be demolished to provide space for a new building that would have private services. Park amenities on this site could be reduced to allow for some areas to be in-filled with private site development.	\$1.5	P	P	P	P
Deer Trail Rest Area I-70 Colorado	Expand existing truck parking from approximately 12 to 20. Extension of the existing truck parking aisle will require extension of the NB accel lane. Also add exit and entrance ramp lighting.		\$0.3	P	P		P
Big Sandy Rest Area US 40 Colorado	Construct SB left turn decel and accel lanes, lengthen existing NB decel and accel lanes. Install intersection lighting. Expand existing truck parking from approximately 5 to 20.		\$0.6	P	P		
Gobblers Knob Rest Area US 287 Colorado	Construct additional parking area and improved accel/decel lanes with Portland Cement Concrete Pavement. Improve ingress/egress (radius of approaches etc.) Install additional rest area facilities.		\$0.7	P	P		
New Boise City Rest Area US 287 Oklahoma	Construct a new rest area on the new Boise City relief route alignment.	Project should be coordinated with ongoing relief route design activities to best place the facility to work with new road system.	\$5.0	P	P	P	P
Dumas Picnic Area US 87 Texas	Upgrade existing NB and SB picnic areas located south of Dumas by adding decel/accel lanes to improve safety. Also add advance static information signs as you approach the facility. Expand paved area to accommodate 20 parking spaces, add basic restroom facilities, and exit and entrance ramp lighting.	If private investment is considered then a 1-sided facility is preferred so that potential customers could be maximized. Therefore this project should not be considered if private investment is used for funding above Tier 1.	\$0.6	P	P		
Dumas Picnic Area US 87 Texas	Upgrade either the NB or SB picnic area to include improved accel/decel lanes for both left turn and right turning vehicles. Expand paved area to accommodate 40 parking spaces, add basic restroom facilities, and exit and entrance ramp lighting.	This project should be considered especially if private investment is considered so that the amount of traffic that would have access to the private services would be maximized.	\$1.2	P	P		P
Hartley Picnic Area US 87 Texas	Construct SB accel lane and add basic restroom facilities.		\$0.2	P	P		

Table 6-1, Project Cost Estimate and Funding Opportunities (continued)

Location	Project Description	Other Considerations	Total Est Cost (\$Millions)	Most Feasible Funding Opportunities			
				Federal	State	Local	Private
Sierra Grande Rest Area US 64 New Mexico	Expand truck parking from approximately 8 to 20 spaces.		\$0.2	P	P		P
Hale County Rest Area I-27 Texas	Expand SB truck parking from 10 to 15, and NB truck parking from 22 to 27. To expand the SB truck parking the SB decel lane will need to be reconfigured so that more space can be made internal to the rest area facility. Similarly, the NB accel lane will need to be reconfigured so that more space can be made internal to the rest area facility for expanded parking. More extensive expansion at either rest area would require significant ROW acquisition and reconfiguration of the surrounding frontage road system.		\$0.4	P	P		
New Rest Area Between Lamesa and Lubbock US 87 Texas	Construct a new rest area north of Lamesa and south of Lubbock. The existing roadway is 4-lane divided therefore either a single sided facility with accel and decel lanes and controlled ingress and egress intersection, or a double sided facility would need to be constructed.	This location provides a rest area that serves both SH 349 and US 87 traffic which branch off south of Lamesa. This rest stop could also benefit traveler safety by providing a stop for Texas Tech commuter students who travel between nearby towns to Lubbock.	\$7.5	P	P	P	P
Coke County Rest Area US 87 Texas	Expand truck parking from approximately 8 to 20 spaces. Construct improved truck entrance and exit connecting roads and intersections with US 87 that allow more safe ingress and egress for SB traffic. Re-alignment of NB travel lanes to provide a median wide enough to store a semi-tractor trailer combination at the egress intersection, this allowing the semi to execute a 2-staged left turn. Construct a SB accel lane for egress vehicles to improve safety.	Improving the facility as a 1-sided facility will maximize potential customers to support private investment.	\$0.7	P	P		P
Coke County Rest Area US 87 Texas	Construct separate SB rest area facility with similar footprint as existing NB rest area.	If private investment is considered then a 1-sided facility is preferred so that potential customers could be maximized. Therefore this project should not be considered if private investment is used for funding above Tier 1.	\$1.8	P	P		
New Rest Area Between Del Rio and Sonora US 277 Texas	Construct a new rest area north of Del Rio and south of Sonora. Given the rough terrain in this section, a flat location will require more extensive grading work than in other sections of the corridor. The existing road is 2-lane, therefore a 1-sided facility could be constructed with accel and decel lanes for both directions. The facility could be designed so that future access to a 4-lane roadway could also be accommodated within the ROW acquired for the facility.		\$7.5	P	P	P	P

Table 6-1, Project Cost Estimate and Funding Opportunities (continued)

				Most Feasible Funding Opportunities			
Location	Project Description	Other Considerations	Total Est Cost (\$Millions)	Federal	State	Local	Private
New Rest Area Between San Angelo and Sonora US 277 Texas	The existing road is 2-lane, therefore a 1-sided facility could be constructed with accel and decel lanes for both directions. The facility could be designed so that future access to a 4-lane roadway could also be accommodated within the ROW acquired for the facility.		\$7.5	P	P	P	P
New Rest Area Near Carizzo Springs US 277 Texas	The existing road is 2-lane, therefore a 1-sided facility could be constructed with accel and decel lanes for both directions. The facility could be designed so that future access to a 4-lane roadway could also be accommodated within the ROW acquired for the facility.		\$7.5	P	P	P	P
Various	Electronic billboard or variable message sign in the median to convey truck parking availability. Locations with high cost effectiveness would be on current 4-lane median roadways where a message on both sides of the sign could be utilized. Location could also be used to notify of inclement weather, construction information, or amber alerts.	Message for private truck parking availability could require the private truck stop company to buy the line of text, similar to the roadside logo advertising program currently used in Colorado. This would help offset the capital and maintenance costs of the sign.	\$0.5	P	P		P
Various Candidate Locations that have Existing Truck Stops Including but not Limited to:	A public-private partnership to add 50 long-term (10 hours or more) truck parking spaces at an existing private truck stop location along the Ports to Plains Corridor. The 50 space parameter was selected because it adds a meaningful increment of long-term spaces and is within the existing size of truck parking provided at travel plazas in the corridor.	Federal, State or Local funds could be used to secure ROW, provide minor roadway access improvements, and utility adjustments. Private funds would be used to construct the site improvements including paved surfaces, pedestrian facilities, and lighting. State DOT would administer and conduct necessary NEPA site assessments and clearances.	\$0.6	P	P	P	P
Denver							
Limon							
Lamar							
Boise City							
Dumas							
Amarillo							
Raton							
Dalhart							
Lubbock							
Big Spring							
Midland/Odessa							
Del Rio							
Eagle Pass							
Laredo							

6.4 Valuing Potential Private Contribution

This section consists of two major concepts. The first describes in conceptual terms the relative shares among the public and private sector participants. The second describes how the private sector contribution may be valued.

Conceptual Funding Plan

The funding plan for the candidate projects relies on a mix of Federal, State, private, and possibly local funds. The structure of the funding plan envisions the private sector contribution in an amount sufficient to fund grading, paving and striping of long-term truck parking spaces. The remaining funding requirements would be met with a combination of Federal 1305 funds and state and possibly local participation. The funding plan envisions an 80/20 Federal/non-Federal share. Any contributions from the private sector would be part of the 20 percent non-Federal share. The remainder would come from state/local in-kind contributions of land/utilities used for the long-term truck parking and the private Tier 2 (gas station/convenience store) or Tier 3 (gas station/convenience store/fast-food restaurant) operations. Any shortfall in the non-Federal share would be met with cash investment from the state.

Valuing Potential Private Sector Contribution

The non-Federal match can be from any combination of state/local/private funds. Estimating the potential value of the private sector contribution is important because it acts to define the needed state/local contribution necessary to match the Federal 1305 funds. The model for developing additional long-term parking at rest areas would have the public sector either contribute the land as an in-kind contribution and/or acquire sufficient acreage to accommodate the number of long-term spaces for the candidate projects. The private sector participation would consist of a ground lease for a specified term (typically 10 years with two 5-year options). This would allow two alternatives for application of the private sector contribution: (1) use the proceeds for ordinary maintenance and repaving and restriping; (2) factor the ground lease receivables to generate upfront cash for project implementation.

There are two methods to estimate the potential value of a ground lease, which would define the potential private sector contribution and bound the remaining contribution from the state/local participants to match the Federal 1305 funds.

1. Assemble assessment data for similar land uses in the corridor. This will require working with counties in the Ports to Plains Corridor to identify locations with gas station/convenience stores and gas station/convenience stores/fast food restaurants. The assessment data typically will show valuations for land and improvements separately. The land value will then be adjusted to reflect any assessment ratio less than 100 percent of market value. The resulting value will be converted to a leasehold value by applying a capital recovery value (e.g., 8%/20 years), which when applied to the market value provides an estimate of yearly rent for the land.
2. Assemble income statement data for gas station/convenience stores and gas station/convenience stores/fast food restaurants. The income statements may show the ground rent as an expense. This prorated share of revenue will be applied to the revenue

figures (by scale of operations) previously developed to estimate potential ground rents for these types of commercial ventures in the corridor.

This work could be conducted in the implementation phase of a rest area project in conjunction with testing the concept with potential private sector partners.

6.5 Economic Benefits of Attracting Tier 2, Tier 3, and Tier 4 Private Investment

This section addresses the economic benefits of attracting Tier 2, Tier 3, and Tier 4 private investment. The Tier 2 and Tier 3 investment is assumed to occur partially in response to the public investment in rest areas. The Tier 4 investment is assumed to occur through private expansion of long-term truck parking spaces at existing travel plazas in the corridor.

Tier 2 Analysis

Building on the financial profile for Tier 2 developed in Section 3 of the report, the profile is expanded to provide estimates of yearly revenue, which is the basis for projecting employment and income for residents in the Corridor.

Table 6-2, Estimated Tier 2 Yearly Revenue

TYPE OF OPERATION	LOW VOLUME	AVERAGE VOLUME	HIGH VOLUME
FUEL SALES (based on \$2.099 gallon reported by Pilot on 12/06/06)	\$52,475	\$157,425	\$314,850
CONVENIENCE STORE SALES/year	\$240,000	\$420,000	\$600,000

The following table summarizes the recurring employment and income for Ports-to-Plains Corridor residents for the three scales of a combined gas station/convenience store operation.

Table 6-3, Estimated Tier 2 Employment/Income Impact

Type of Operation	Employment (number of jobs)	Income
Low Volume	10	\$249,300
Average Volume	30	\$661,800
High Volume	50	\$1,254,800

The employment and income in the Table 6-3 consists of both direct jobs and wages for workers at the gas station/convenience store and indirect benefits from the household spending associated with these new jobs.

There also will be one-time earnings benefits from the construction of the gas station/convenience store, which range from \$42,000 for the Low Volume operation, to \$75,000 for the High Volume operation. The variance in benefits is due to the size (square feet) of the type of operation. These benefits consist of construction wages to corridor residents.

Tier 3 Analysis

Tier 3 operations would consist of the high volume gas station/convenience store and a fast food restaurant as described in Section 3. Direct and indirect employment for Port to Plains Corridor residents results in approximately 25 jobs and income of about \$421,000. Combined with a high volume gas station/convenience store, there is a result in total employment of 75 direct and indirect jobs and income of approximately \$1,675,900.

Table 6-4, Estimated Tier 3 Employment/Income Impact

Type of Operation	Employment (number of jobs)	Income
Fast Food	25	\$421,000
Fast Food + Convenience/Fuel	75	\$1,675,000

There also will be one-time earnings benefits of approximately \$301,300 from the construction of the facility. These benefits consist of construction wages to corridor residents.

Tier 4 Analysis

The analysis of the economic benefits of attracting Tier 4 private investment addresses the economic benefits of adding 50 long-term (10 hours or more) truck parking spaces at a location along the Ports to Plains Corridor. The 50 space parameter was selected because it adds a meaningful increment of long-term spaces and is within the existing size of truck parking provided at travel plazas in the Corridor.

The key assumptions for the economic benefits analysis follow.

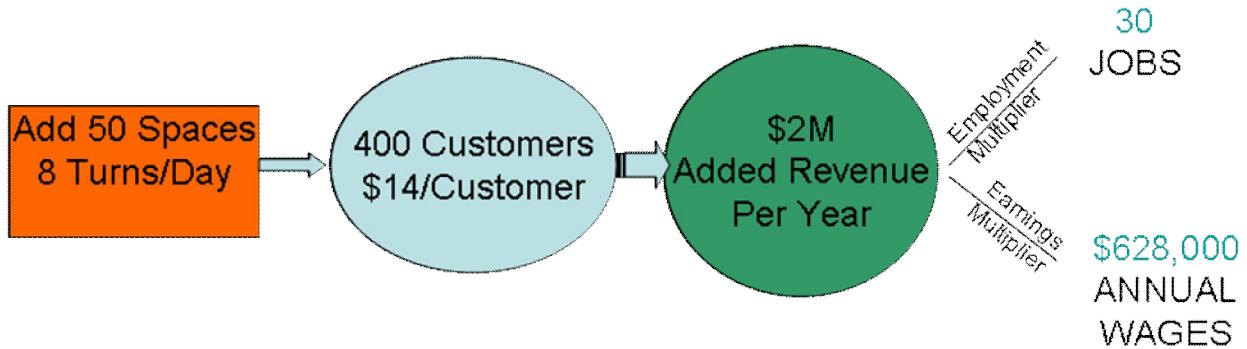
- Pilot travel plazas average \$15,000,000 in yearly revenue, with 3,000 customers per day per unit
- Average revenue per day is about \$41,100
- Average revenue per customer is approximately \$14
- Assume 50 spaces turnover 8 times per day (Minimum) and 15 times per day (Maximum)
- The 50 spaces are added to respond to growth in the economy, increased goods movement, government regulations, etc.

Pilot travel plazas (one of the leaders in the industry with locations in the Ports to Plains Corridor) provide data on revenue and customer count. These data were used as the basis for estimating the revenue generated from the increased traffic at a travel plaza accommodated by more truck parking. It is assumed each space turns over a minimum of eight times per day, which would be represented by space turnover every two hours between the hours of 8:00 am and 10:00 pm and a long-term overnight truck parker from 10:00 pm until the following morning. Maximum turnover would be represented by space turnover on an hourly basis between the hours of 8:00 am and 10:00 pm and a long-term overnight truck parker from 10:00 pm until the following morning. It is assumed all truck parkers spend at the average revenue per customer of \$14.

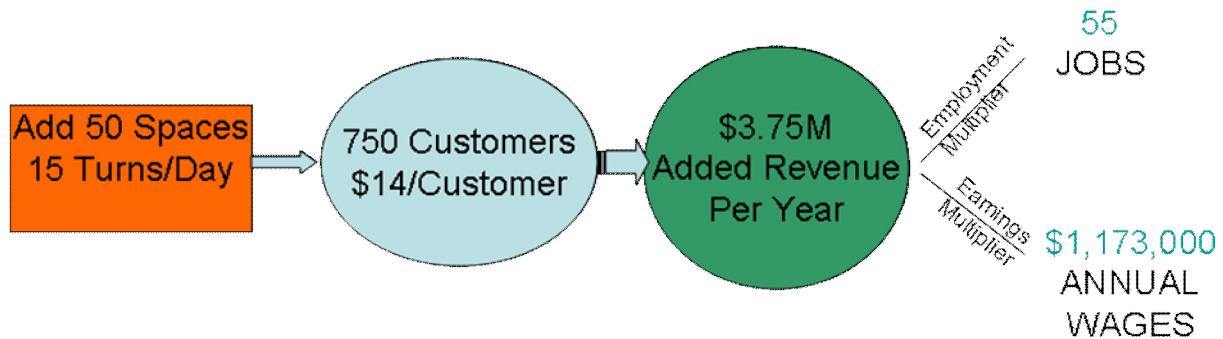
Figure 6-1 describes the economic benefits under the assumptions of the minimum and maximum turnover of the 50 additional truck parking spaces. The first part of the Figure

shows the benefits with eight turns per space per day generating 400 additional customers per day. The second part of the Figure provides a similar analysis for 15 turns per space per day generating 750 additional customers per day.

Figure 6-1
Economic Impacts of Adding 50 Truck Parking Spaces with Minimum Turnover



Economic Impacts of Adding 50 Truck Parking Spaces with Maximum Turnover



The employment and earnings multipliers are the RIMS II multipliers (Regional Input-Output Modeling System output published by the US Department of Commerce) for the following Colorado counties which were used for benefits estimation:

- Baca
- Adams
- Arapahoe
- Cheyenne
- Elbert
- Kiowa
- Lincoln
- Prowers

Total spending from the additional customers accommodated by the 50 long-term parking spaces generates between 30 and 55 jobs. These jobs are the direct employment at the travel plaza and the indirect employment from supply linkage industries, e.g., food and retail goods wholesaling, etc. Total income from the increased employment generates from

\$628,000 to \$1,173,000 in annual wages to workers. This translates to an average annual wage of about \$22,400, which largely reflects the wages in the service sector. These are annual figures meaning these are recurring economic benefits.

This analysis used data from Colorado for the multiplier effects and the estimate of total employment and earning impacts. Given the consistent rural Ports to Plains characteristics, use of the same RIMS II multipliers throughout the Corridor was considered adequate for estimation purposes. However, results for Oklahoma may be smaller unless adjacent counties in Texas and Colorado were included to create a region of economic dependencies. This result would probably be similar for New Mexico since the only travel plazas on the Ports to Plains Corridor are located in Raton, which is near the Colorado border.

The analysis is valid if the facilities are at capacity. This would be the case if long-term spaces in a section of the Port to Plains Corridor fill-up and additional parking is created by truckers by using the highway shoulder or pulling off the highway onto vacant land.

Economic Benefit Conclusions

The economic benefits expressed in terms of employment and incomes are important to both the local jurisdictions and the state. In the rural sections of the Ports to Plains Corridor an increase in employment in the form of new jobs is meaningful for a number of reasons:

- Provides a positive effect on the rate of unemployment
- Job growth assists in reducing out-migration of residents
- Bringing in new businesses adds to the local jurisdiction tax base
- Based on the size of the business, adds to the quality of life for local residents by increasing shopping opportunities

From the perspective of the state, growth in employment and incomes provides a fiscal benefit directly measurable by increased sales and income taxes.

6.6 Overview of Public-Private-Partnership (PPP) Regulation/Laws

Several potential projects discussed have included the possibility of using private investment to help provide the upfront capital necessary to construct the project. There was also an assessment of the potential benefits to both private and public sectors for completing these projects. It appears that Public-Private-Partnerships (PPP) are clearly a feasible mechanism for funding future truck parking projects.

In Texas and in Colorado, enabling legislation has been passed that allows Public-Private-Partnerships for transportation projects. However, no such legislation is in place in New Mexico or Oklahoma. So far in Texas and Colorado, larger projects involving tolling and concessions have attracted the most interest in the PPP concepts. However, there is no reason the PPP concepts cannot be transferred to smaller projects such as truck parking projects. A barrier that may keep the PPP concept from being widespread on smaller projects might include the relative risk that is taken on by the public sector in competitively procuring the private investment. This risk and the associated legal attention that must be given to the PPP concept perhaps creates a burden on the public sector for which the benefits do not outweigh.

7 STUDY CONCLUSIONS AND ACTION ITEMS

The results of the study indicate there is need for additional truck parking and rest area facilities in the Ports to Plains Corridor. Through detailed facility site assessments, a deficiency in the number of and design features of existing rest area and truck parking facilities was discovered. A preliminary list of projects was developed that provides a starting point in meeting both the existing and future rest area and truck parking deficiencies.

Ultimately, funding of projects becomes the largest hurdle in implementation. As a response to this challenge, this study provides an overview of the potential PPP opportunities that could be used to help fund rest area and truck parking projects. Part of the Public-Private-Partnership question is answered by providing an estimate of where these partnerships might be most feasible in the Corridor, what level of private investment might be attracted, and finally the benefits associated with attracting private investment to these projects.

Implementation steps should be the result of any study process, and the following list provides actionable items that can be carried forward by various interested stakeholders in the Ports to Plains Corridor.

- Develop and submit a grant application for SAFETEA-LU Section 1305 funds. Based on a review of the grant application requirements it is recommended that a PPP project involving expansion of existing private truck stop parking be initiated as the initial grant project, with the intention of serving as a pilot project in meeting future truck parking demand in other locations along the Corridor. Repeat grant application process each year through 2009 (Section 1305 funds authorized through 2009) with new project grant applications.
- Initiate discussions between DOT officials and local communities to determine if new rest area projects or rest area improvements can be achieved, and explore the partnerships that could be created between these levels of government to establish project success and long term project ownership.
- Encourage development of rest area programs within DOT organizations of Colorado, New Mexico, and Oklahoma that have staff and funds dedicated to improving rest areas.
- Consider application of Federal Enhancement funding to rest area projects.
- Encourage local and regional planning officials to begin the process of programming projects on the Corridor.
- Work with state legislators in creating rest area and truck parking specific programs that would have specific funding commitments in meeting expansion, improvement and maintenance needs.
- Work with state legislators in developing enabling PPP laws in the states of Oklahoma and New Mexico, similar to laws that have been passed in Colorado and Texas.
- Consider forming a transportation group who focuses on seeking out potential projects, gathering private interest, and implementing PPP as a means of project funding, not only for large projects but also for smaller projects.