

8. Freight Movement

Accomplishments Over the Past Five Years

Over the last several years, regional leaders have worked to ensure that the San Antonio area takes advantage of the considerable economic generators arising from its unique geographic location, world-class infrastructure, bilingual-bicultural workforce, and low cost business climate. San Antonio provides a strategic location for distribution, transshipment and international trade processing activities, and has key logistical assets that support the delivery of products to both domestic and international customers. In 2009, Union Pacific Railroad opened an intermodal rail terminal in southwest Bexar County. This facility is capable of transferring freight between rail cars and trucks. This new terminal is much larger and better equipped than Union Pacific's older rail yards in San Antonio and promises faster and better service to area businesses that ship and receive freight.

The development and promotion of San Antonio as an inland port has become one of the priority economic development strategies for San Antonio. Port San Antonio is home to a number of large aerospace companies with over sixty tenants. Additionally, the Port of San Antonio has become important to the nation as it has been designated as the South Texas Region's Emergency Evacuation Center.

These activities, including manufacturing associated with the Toyota plant, have increased the overall level of freight logistics and distribution related activities. Over the long term, the region will need to maintain and improve its freight infrastructure.

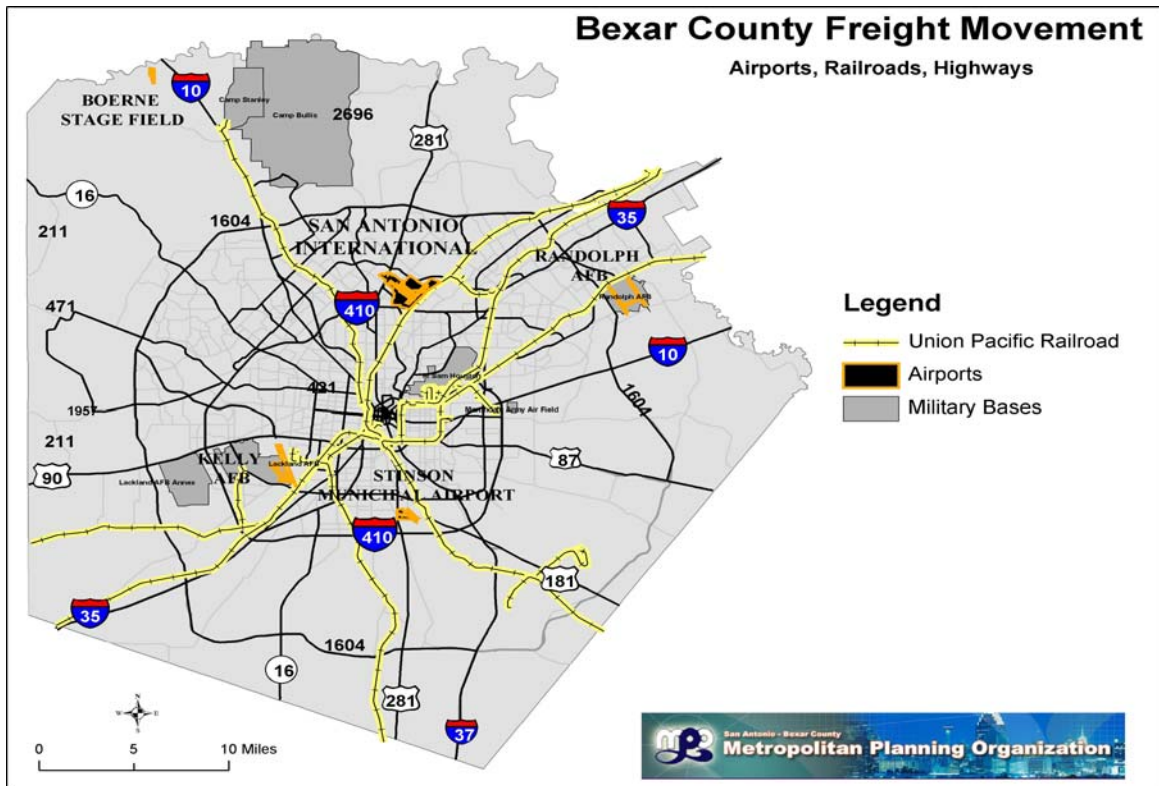
Background

The movement of goods by truck, rail and air is a vital component of trade, and, therefore, essential to the economic strength of an area. Trucks transport between local supply sources (warehouses) to points of consumption (retail stores or homes) and connect elements (seaports, airports, and rail and freight terminals) of the transportation system. To support the truck and rail-based freight analysis in this chapter, the San Antonio-Bexar County Metropolitan Planning Organization (MPO) contracted with IHS Global Insight to provide current and projected flow of domestic and international cargo to, from and through the San Antonio Metropolitan Statistical Area which is comprised of Atascosa, Bandera, Bexar, Comal, Guadalupe, Kendall, Medina and Wilson counties. Additionally, the Texas Department of Transportation has undertaken three rail plans in the past several years: a Regional Rail Master Plan, Freight Rail Relocation Study, and Adaptive Rail Reuse (Land Use) Study. The City of San Antonio also continues to implement its adopted Airport Master Plan.

Local Freight Conditions

The map shown in Figure 8.1 shows the MPO study area's freight infrastructure. Local airports, rail lines and the area's highway system serve as the primary conduit for movement of goods throughout the region. The San Antonio International Airport offers state-of-the-art cargo facilities and has space identified for airport related industrial use. Port San Antonio, as mentioned earlier, is a master-planned, aerospace, industrial complex and international logistics platform created from the former Kelly Air Force Base. It is centered halfway between the East and West coasts and at the center of the NAFTA Corridor between Mexico and Canada. The port also enjoys designation as a Foreign Trade Zone. The Port of San Antonio includes an airport, accessibility by the rail roads of Union Pacific and Burlington Northern Santa Fe Railroads, and three interstate highways, IH 35, IH 10 and IH 37. According to the Port, markets of more than 90 million people are within two days drive, and five major seaports are accessible within a three day drive: the Ports of Houston, Corpus Christi, Manzanillo, Lazaro Cardenas and Veracruz.

Figure 8.1 Freight Infrastructure within the MPO Study Area

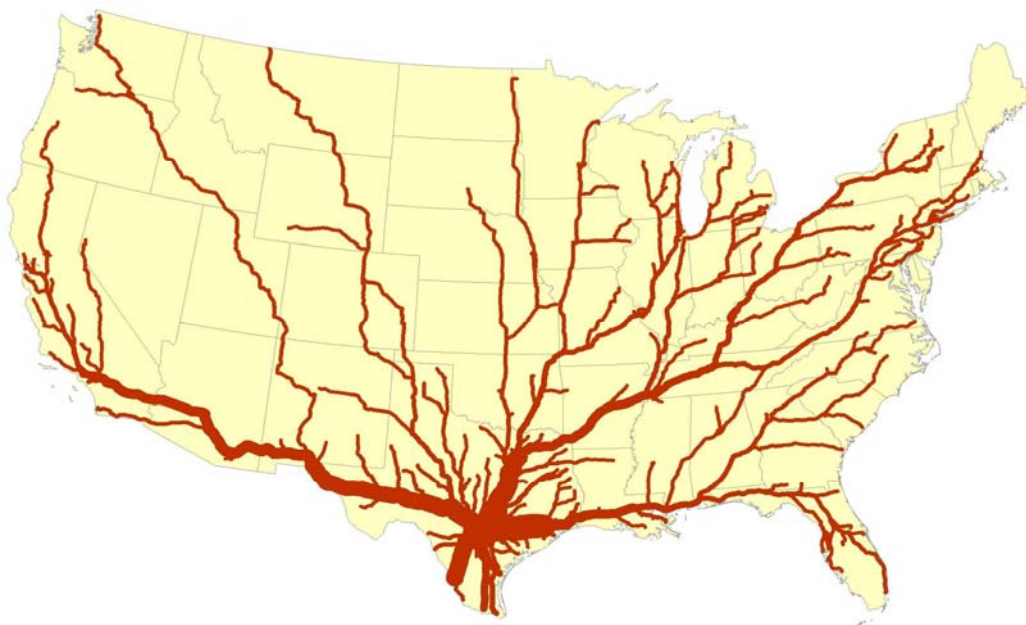


San Antonio is about two hundred miles west of Houston, the nation's second largest port by total tonnage. US Army Corps of Engineers figures show that the port received approximately 191.4 million tons of cargo in 2000. Additionally, by 2006 total cargo increased to 240.9 million tons. That number has continued to increase steadily.

Additionally, the Port of Corpus Christi was ranked as the nation's fifth largest port in the United States. Because these areas are so close to San Antonio, these growth figures were significant to justify new regional truck travel data.

Figure 8.2 depicts the national truck traffic network flows through the region. It not only establishes Texas', but also San Antonio's importance in the freight industry. The map shows how San Antonio serves as a hub for cargo traveling to and from important ports of entry such as Houston, Laredo, Corpus Christi, El Paso, and well as other states throughout the country. According to Global Insight data, because of its location, the San Antonio region is a major link in the nation's transportation network. Through truck traffic comprises about 60% of total truck traffic in the area and continues to grow. By 2035, total truck traffic in the region is expected to increase by nearly 85%. This alone demonstrates the need for additional freight transport capacity in and around San Antonio.

Figure 8.2 National Truck Flow Network Through the San Antonio Region



(Source: IHS Global Insight)

Table 8.1 shows the ultimate origin and destination of all traffic over 100,000 tons into, out of, and through the eight county San Antonio region. There is at least 100,000 tons of traffic between San Antonio and nearly every other major city in the United States. The heaviest traffic flows are between the Mexican border and Dallas and Houston. The signing of the North American Free Trade Agreement (NAFTA), as well as the creation of the maquiladora plants which predate NAFTA, have helped fuel the yearly increase in truck crossings from Mexico into the United States. With the dramatic increase in goods movement across the United States/Mexico border, an accompanying increase in truck traffic in the San Antonio region, especially along IH 35, becomes predictable. Table 8.1

also shows the top transportation flows through the San Antonio region noting that the fastest growing through routes are exports to Mexico.

Table 8.1 Top Transportation Flows Through the San Antonio Region

Ultimate Origin	Ultimate Destination	Tons 2007	Tons 2035	Annual Growth Rate
Houston	Mexico	8,335	27,903	4.4%
California	Houston	6,065	15,276	3.4%
Houston	California	6,003	6,413	0.2%
Dallas	Mexico	5,362	17,444	4.3%
Louisiana	California	4,963	7,305	1.4%

(Source: IHS Global Insight)

As of May of 2009, Texas led all states in surface trade with Mexico with \$6.2 billion, as noted in Table 8.2.

Table 8.2 Top 10 States Trading with Mexico by Surface Modes of Transportation

Rank	State	May 2009
1	Texas	6,194
2	California	3,365
3	Michigan	1,454
4	Arizona	754
5	Illinois	682
6	Ohio	490
7	Tennessee	400
8	North Carolina	317
9	New Jersey	308
10	Pennsylvania	307

(Source: BTS TransBorder Freight Data, <http://www.bts.gov/transborder/>)

Secondary Traffic in the San Antonio Region

Additionally, secondary traffic in the San Antonio region - defined as freight flows to and from distribution centers or through intermodal facilities and are considered intermediate steps in the transportation process - are predicted to grow nearly 250% by MOBILITY 2035

2035. Secondary freight traffic amounted to 31.1 million tons in 2007 and is expected to be at 76.7 million in the forecasted year of 2035.

Table 8.3 Secondary Truck Traffic, Millions of Tons

2007 Tonnage	2035 Tonnage	Total Growth	Average Yearly Growth
31.1	76.7	246%	3.3%

(Source: IHS Global Insight)

By 2035, secondary traffic will account for more tons than any other commodity group. This trend reflects growth of Port San Antonio and expansion of distribution centers into San Antonio from Laredo. Additionally, Truck Vehicle Miles Traveled (VMTs) are expected to more than double by 2035. Specifically, in 2007 Truck VMT was 9.4 million annual vehicle miles and by 2035 that number is expected to increase to 20.3 million. The area's highways will need to be able to accommodate more freight movement and more through freight may need to be diverted to rail or other routes.

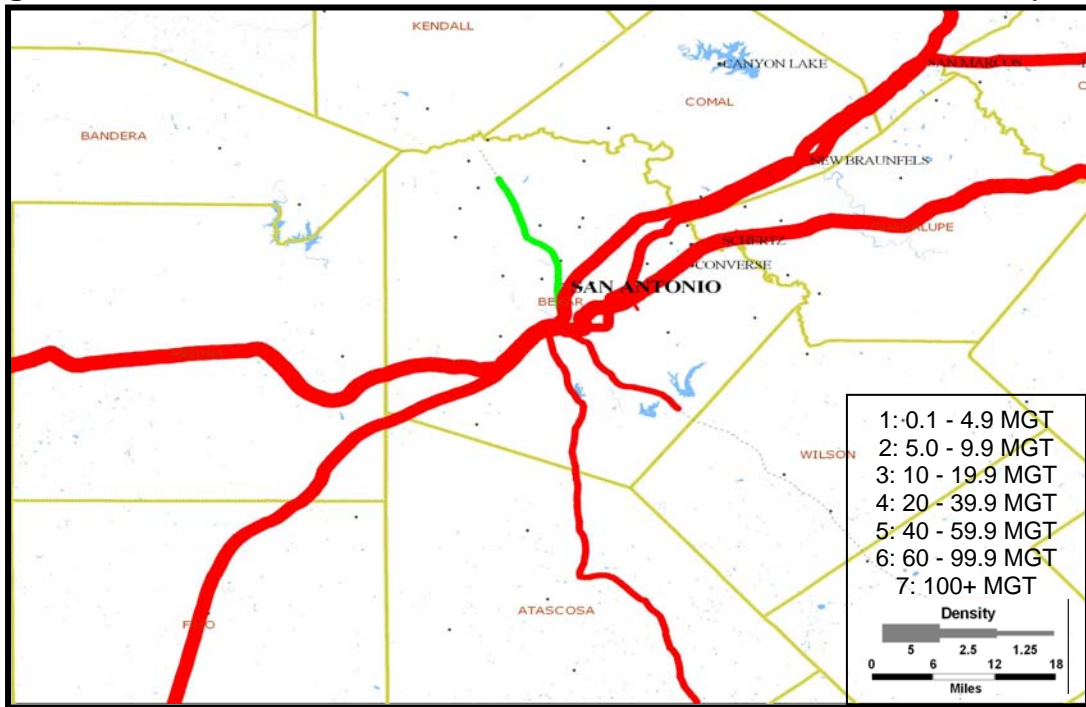
Rail Freight Data

The basic framework of San Antonio's rail network was laid out many years ago, with the construction occurring between 1877 and 1912 according to the Texas Department of Transportation. With the deregulation of the railroad industry in 1980, the railroads have endured increasing competitive pressures from other modes of transportation, especially the trucking industry. This competition has impacted railroad infrastructure improvements and expansion projects to the point where they are done very selectively. As a result, the railroads are turning to the movement of higher profit margin products such as containerized freight. It is predicted that the next 25 years will see tremendous demands placed on the rail network due to international trade growth and rising fuel costs. This may lead to more truck to rail modal shifting and thus longer and heavier trains.

Figure 8.3 depicts the rail density categories for freight originating in, terminating in and local rail freight for the San Antonio region, as defined by the Federal Railroad Association (FRA). The data is supplied in Million Gross Tons (MGT).

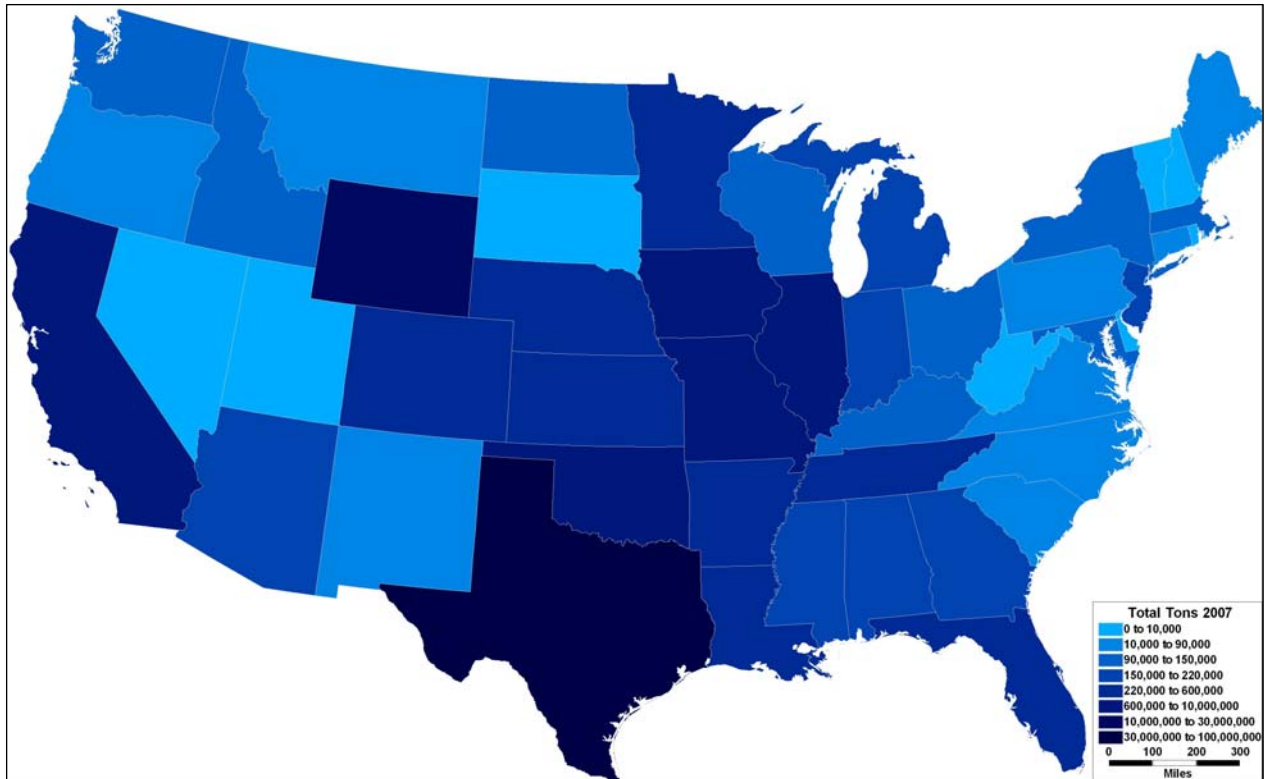
The San Antonio region sees more than twice as many rail terminations as origins by tonnage. In 2007, 64% of the terminating traffic was coal for domestic use, projected to decrease slightly to 60% in 2035 due to increasing diversification of rail commodities. Grains, food and vehicles are also high volume inbound moves. By 2035, total rail traffic in the region, excluding through traffic, is expected to increase by 15% for an average of .5% annually. Domestic rail intermodal is expected to more than double by 2035, growing nearly 3% annually,

Figure 8.3 San Antonio Area Rail Densities in Millions of Gross Tons (MGT)



(Source: IHS Global Insight)

Figure 8.4 Rail Origin and Termination States



(Source: IHS Global Insight)

Trucks move most of the nation's freight and will continue to do so, but rail freight is critical to the freight transportation system, the competitiveness of many industries, and the economies of most states. In the American Association of State Highway and Transportation Officials (AASHTO) Freight Rail Bottom line report, AASHTO reports the following public benefits of the freight-rail system: Transportation System Capacity and Highway Cost Savings, Economic Development and Productivity, Environmental Health and Safety, International Trade Competitiveness and Emergency Response.

Total U.S. rail demand is projected to increase by 4% annually, with rail capacity projected to increase by 2% annually. Total U.S. tonnage is forecast to double by 2025. According to AASHTO, by 2020 there could be 900 million tons of freight added to highways if there are no increases in the rail system, and 450 million tons of freight added to highways if railroads build what they can afford from revenue and loans.

Texas leads the nation in both Rail Freight Originating and Terminating sites with 18 million rail tons originating and 39.6 million tons terminating. In order to improve congestion, air quality and increase safety with the increased demands on rail infrastructure, the Texas Department of Transportation (TxDOT) has been working on rail relocation and improvement studies. Rail improvements and relocations may better enable rail infrastructure for freight, but also for alternative uses such as commuter rail.

Rail relocation is the top priority for the state of Texas to improve congestion, air quality and increase safety. In order to study the infrastructure and operations within the San Antonio region and across the state, in 2007-2008, TxDOT produced six freight studies.

The two studies of significance to San Antonio were the San Antonio Region Freight Study and the Central Texas Rail Relocation Study. The San Antonio Region Freight Study primarily focused on rail relocation and included the existing freight model, necessary freight improvements, rail relocation public/private benefits and costs, the potential for passenger rail and economic development components. The purpose of the San Antonio Region Freight Study was to establish a Master Plan for TxDOT's 12-county wide San Antonio District with evaluations and recommendations for near term, mid-range, and long term improvements and/or activities that may reduce freight mobility impacts within the region. The overall concept was to evaluate freight movements and operations and identify opportunities to increase freight movement efficiency, determine the physical and financial viability of potential improvements, and include an analysis of potential freight corridor connections.

The study includes three phases:

- Phase 1: establish an inventory of the existing freight rail system, conduct a region wide freight rail operational study, identify freight rail constraints, and identify rail and rail/roadway interface safety issues.
- Phase 2: addresses alternatives and associated feasibility for rail system/roadway improvements within the region, model rail system improvement recommendations to develop a realistic cost/benefit analysis, and determine potential freight flows to and from the conceptual Trans Texas Corridor (TTC).
- Phase 3 is intended to determine the feasibility of utilizing existing freight rail lines for potential passenger rail operations.

The San Antonio Region Freight Study and the Central Texas Rail Relocation Study, released on July 30, 2008 contained a visionary plan to reroute Union Pacific (UP) non-local freight trains in the Austin - San Antonio corridors (ASA). The two studies provided analysis of the existing rail network in the central Texas region. The studies used that analysis to identify improvements to the existing system as well as alternative bypass routes that would reroute most UP freight trains between Austin and San Antonio that do not serve local customers. The reports quantify both the public and private benefits for these improvements. Additionally, the studies identified potential rail and roadway improvements including new grade overpasses in conjunction with crossing closures, improvements to the rail infrastructure in San Antonio as well as proposed bypass routes outside the metropolitan area for UP non-local freight. The total for improvements was estimated at \$3.8 billion. Any of the proposed new routes between Austin and San Antonio would allow for the implementation of commuter rail service in the I-35 corridor between San Antonio and Round Rock on the existing rail lines.

While the rerouting of trains is further studied, TxDOT has partnered with Amtrak to study the feasibility of providing additional intercity passenger rail service between Round Rock and San Antonio along the existing tracks in the same manner Amtrak travels now. This could include upgrades to the existing infrastructure providing public benefits such as improving safety and air quality and alleviating congestion.

Phase 3 of the San Antonio Region Freight Study has begun and expected completion is in 2010. Phase 3 includes TxDOT's study of all existing lines in the San Antonio region and the ASA Rail Corridor alternatives.

In 2005 the Texas Legislature approved a constitutional amendment creating the Texas Rail Relocation and Improvement Fund. The purpose of the fund is to relocate and improve public or private rail facilities. The Rail Relocation Fund could be used throughout the State to improve freight mobility and relieve traffic congestion. In the Austin-San

Antonio Corridor, the fund could be used to relocate Union Pacific's through-freight away from the heavily populated cities in the corridor. In 2009, the State Legislature appropriated \$182 million in Texas Rail Relocation Funding, \$91 million per year for two years, which includes the possibility in bondable funds for those years.

Domestic Air Freight

In 2007, inbound domestic air cargo with a ground transportation component only accounted for 24,756 tons. Outbound consisted of 15,530 tons. The San Antonio International Airport is not a major domestic cargo hub; therefore this type of traffic is expected to increase by 35% by 2035, with slow average annual growth of only 1.1%.

The Local Freight Picture

NAFTA related trade continues to impact the San Antonio metropolitan area and will continue to do so, growing at a faster rate than what was earlier anticipated. The growth in freight movement and the growth in local population and employment will increase the level of service on local freeways. Figure 8.5 describes total truck originations and terminations by country for the U.S., Canada and Mexico in the forecasted time period.

Figure 8.5 Truck Originations and Terminations by Country



(Source: IHS Global Insight 2009)

According to Global Insight, in the forecasted time period, and as described by the pie charts above, total truck originations and terminations are predicted to grow from 91.3 million tons in 2007 to 119 million tons in 2035. Additionally, NAFTA through traffic is expected to grow from 133 million tons in 2007 to 298 million tons in 2035.

Some of the results of this data are as follows:

- The San Antonio region is a major link in the nation's transportation network.
- Through truck traffic comprises about 60% of total truck traffic in the area, and is growing.
- San Antonio area counties consume more truck freight than they produce.
- By 2035, total truck traffic in the region is expected to increase by nearly 85%.

This demonstrates the intense need for additional freight transport capacity.

Union Pacific Railroad has predicted that the economic effect of the new terminal in San Antonio will total between \$2.5 billion and \$3 billion during the next 10 years. The 300-acre terminal can process about 180,000 containers per year with a growth capacity of 250,000. Furthermore, this new facility will reduce congestion and improve air quality. Because of its location, the terminal will reduce truck congestion in San Antonio by about 80,000 trucks per year. According to Union Pacific, the terminal is equipped with the latest processing technology, including biometrics gear that, when recording a truck driver's fingerprints, can identify the carrier and freight involved. Processing times are reduced to between 30 and 60 seconds per container from 5 to 10 minutes. That limits idling time and improves air quality.

The National Freight Picture

The U.S. freight transportation network moves a staggering volume of goods each year. Over 15 billion tons of goods, worth over \$9 trillion, were moved in 1998 according to the Federal Highway Administration. By 2020, the U.S. transportation system is expected to handle about 23 billion tons of cargo valued at nearly \$30 trillion. Freight moves throughout the U.S., according to the Federal Highway Administration, on 985,000 miles of Federal –aid highways, 141,000 miles of railroads, 11,000 miles of inland waterways and 1.6 million miles of pipelines.

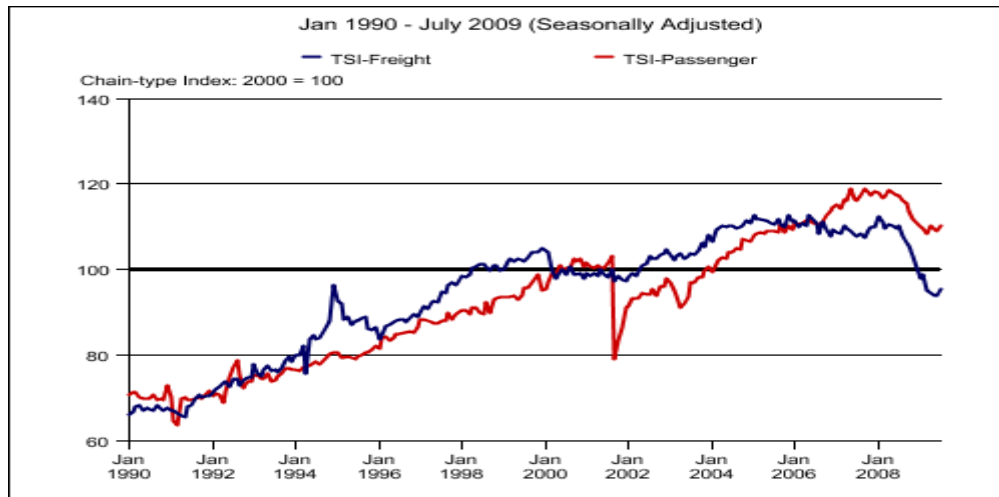
Recent trade activity points towards a downward trend. However, this is due to the current state of the economy and as the economy rebounds, trade is expected to trend a great deal upward by 2035. According to the Bureau of Transportation Statistics, trade using surface transportation between the United States and its North American Free Trade Agreement (NAFTA) partners Canada and Mexico was 35.4 percent lower in May 2009 than in May 2008, the biggest decline from the same month of the previous year on record. Still, Texas led all states in surface trade with Mexico in May 2009 with \$6.2 billion.

During a recent 2009 Freight Transportation Research conference, freight presenters stated that the economy has bottomed out for the freight transportation industry, but recovery will be slow and uneven. Among the presentation themes, most suggested a gradual growth in freight volumes, noting that freight transportation will continue to be a

buyer's market in the near term as depressed freight volumes and substantial excess capacity will continue to be the rule and freight carriers might not reach equilibrium until 2011, unless there's a more rapid recovery than expected.

Even though numbers are down during the economic recession, as shown in Figure 8.6, freight continues to trend upward over time and we will continue to be in need of both truck and rail freight improvements.

Figure 8.6 Freight Trends



(Source: Bureau of Transportation Statistics)

