

Final Report

Naval Station Ingleside Impact Report

prepared for

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prepared by

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Key Findings

The U.S. Department of Defense Base Realignment and Closure Commission's (BRAC) 2005 recommendation to close Naval Station Ingleside (NSI) on the northern shore of Corpus Christi Bay will result in the near-term loss of almost 3,200 active duty military and civilian/contractor jobs and nearly 3,700 indirect jobs.¹ However, successful redevelopment of NSI will create new jobs for the region's residents, new revenues for the region's local governments, and improve the economic vitality of the region as a whole. This report, requested by the Texas Senate Subcommittee on Base Realignment and Closure, indicates that:

- **The Corpus Christi region is well positioned to take advantage of the economic development opportunities provided by the NSI closure.** The Corpus Christi region is a growing community with a number of multimodal transportation assets. This combination will allow the region to take advantage of growing freight demand and redevelopment opportunities – and the jobs and revenue that they bring.
- **But the region's existing transportation system may not be able to absorb growth in demand.** Although the region's transportation system is effectively managing existing demand, there are several transportation chokepoints and issues that, individually or collectively, will prevent the region from taking full advantage of the economic development opportunities afforded by the NSI closure and the improvements being made at the Port of Corpus Christi.
- **There are several transportation planning and investment activities underway in the region, but existing funding is not sufficient to meet regional transportation needs.** The region has initiated a variety of transportation planning activities to meet future demand and boost regional economic competitiveness. However, existing funding streams are inadequate for the level of investment needed.
- **Project implementation will require a prioritization of needs and an understanding of systemwide impacts.** Given fiscal constraints, any transportation improvements in the region will require a systematic approach and phased investment.
- **Innovative approaches are required to meet these challenges.** Financing these system capacity improvements requires a regional approach guided by innovative funding and project delivery options.

¹ U.S. Department of Defense. *Base Closure and Realignment Report to the Commission*, U.S. Department of the Navy, May 2005.

1.0 Introduction

In 2005, the U.S. Department of Defense Base Realignment and Closure Commission (BRAC) recommended the closure of Naval Station Ingleside (NSI) on the northern shore of Corpus Christi Bay. Closure is expected to be complete by 2011. Although the closure of this facility will result in the loss of almost 3,200 active duty military and civilian/contractor jobs and nearly 3,700 indirect jobs² in the near term, redevelopment of NSI offers an exciting economic development opportunity for the Corpus Christi region. Successful redevelopment of NSI will create new jobs for the region's residents, develop new revenues for the region's local governments, and improve the economic vitality of the region as a whole. With this opportunity comes challenges, however – challenges related to understanding the national and global economy in which the Corpus Christi region operates; challenges related to understanding rising travel demand and travel patterns (for both people and goods) and the ability of the region's transportation system to handle this growth; and challenges related to ensuring that redevelopment activities and transportation system improvements are consistent with community needs and goals.

This impact report, requested by the Texas Senate Subcommittee on Base Realignment and Closure, will ultimately provide the Texas Department of Transportation (TxDOT) and the Corpus Christi region with a better understanding of the types of challenges posed by the NSI closure, as well as the types of solutions required for the region to take full advantage of associated economic development opportunities. This report evaluates the existing transportation infrastructure in the Corpus Christi region and identifies issues that could deter economic growth in Nueces and San Patricio Counties.

Cambridge Systematics (CS) participated in a series of stakeholder meetings organized by TxDOT in Corpus Christi and conducted interviews with Corpus Christi Metropolitan Planning Organization, TxDOT District and Area offices, the Port of Corpus Christi, the Ingleside Local Redevelopment Authority, the Corpus Christi Regional Economic Development Corporation, local BRAC personnel, and other local stakeholders to identify economic development opportunities and transportation infrastructure needs in the region.³ The remainder of this report is organized as follows:

² U.S. Department of Defense. *Base Closure and Realignment Report to the Commission*, U.S. Department of the Navy, May 2005.

³ Complete listings of our literature review material and interview participants are included in Appendices A and B, respectively.

- **Section 2.0, Regional Overview**, describes existing NSI operations, the anticipated economic impacts resulting from its closure, and the current planning initiatives to determine the best use of the NSI property after closure is completed. This section also describes the region's transportation assets and the ongoing planning and investment activities in Nueces and San Patricio counties.
- **Section 3.0, Regional Context**, describes global trade, transportation, and logistics trends influencing travel demand in the region. It also identifies national, statewide, and local factors affecting transportation investment and economic development potential in the Corpus Christi region.
- **Section 4.0, Regional Impacts and Impediments**, identifies shortcomings in the highway, rail, and marine infrastructure that could deter economic growth in the region and describes the local initiatives underway to solve the transportation issues.
- **Section 5.0, Regional Needs and Action Items**, summarizes the findings of the report by identifying the types of transportation improvements necessary to mitigate the impacts of the NSI closure while bolstering regional economic vitality.

2.0 Regional Overview

2.1 NAVAL STATION INGLESIDE

Naval Station Ingleside (NSI) occupies a total of 1,067 acres on the northern shore of Corpus Christi Bay, 20 miles northeast of the City of Corpus Christi, as shown in Figure 2.1. Its waterfront comprises 4,600 total feet of berthing space and a 1,100-foot double-deck pier serving Mine Warfare ships that deploy worldwide. Personnel at NSI provide logistics, base support, and force protection to all commands making up the Mine Warfare forces. At present, NSI employs about 3,200 military, civilian, and contract employees and supports eight mine warfare ships.

Figure 2.1 Naval Station Ingleside and Vicinity



Dedicated in 1990, NSI was originally planned as the homeport of the training aircraft carrier USS Lexington and the battleship USS Wisconsin. When these ships were decommissioned in 1991, the Secretary of the Navy designated the Navy's "Mine Center of Excellence" at NSI, and announced plans to homeport Avenger Class mine countermeasures ships and Osprey Class coastal mine hunters there. By April 1999, 24 of the Navy's newest mine countermeasures ships and coastal mine hunters were homeported at Ingleside.

On November 9, 2005, the U.S. Department of Defense BRAC recommended the closure of NSI, along with the realignment of Naval Air Station Corpus Christi and the Corpus Christi Army Depot. NSI is undergoing a phased employee reduction as the station's ships, personnel, and equipment relocate to Naval Station San Diego, California. Navy officials estimate full closure of the facility grounds by 2011. However, the Electromagnetic Roll (EMR) facility (shown in Figure 2.2) is slated for closure as early as September 30, 2008, which will reduce military, civilian, and contract employees at NSI by an estimated 65 percent.⁴

Figure 2.2 NSI Division of Property



Since 1990, NSI has been an important economic engine for the Corpus Christi region, employing thousands of residents and supporting a number of local industries. Although the closure of Naval Station Ingleside will result in short-term job loss, the property's location near the Port of Corpus Christi presents significant redevelopment opportunities that could result in long-term regional economic growth.

⁴ Interview with Daniel Korus, BRAC Officer, Naval Station Ingleside, July 29, 2008.

2.2 NSI REDEVELOPMENT PLANNING

Federal law allows for state or local governments to create local redevelopment authorities, recognized by the Secretary of Defense, to prepare redevelopment plans of installations closed under the BRAC process.⁵ The Ingleside Local Redevelopment Authority (ILRA), an eight member panel consisting of two representatives each from the cities of Ingleside and Corpus Christi and the counties of Nueces and San Patricio, was granted official Federal recognition on October 3, 2007. The ILRA is charged with planning the redevelopment of the base's 155-acre EMR Facility (shown in Figure 2.2), over 100 acres of which is underwater. The facility contains a pier, a metal cage, an operations building and two equipment buildings. ILRA is currently assessing market potential and preparing an economic diversification strategy to help ILRA and the Corpus Christi region identify the best use for the EMR facility.⁶

The remaining 912 acres of the NSI property are to be reverted to the Port of Corpus Christi Authority (PCCA) at no cost.⁷ Approximately 336 acres of the property is dredge area, leaving 93 acres submerged and 483 upland acres for redevelopment. The PCCA also owns a 433-acre greenfield property to the east of and adjacent to the NSI property (Figure 2.2). PCCA has engaged a master developer to assess the market potential and solicit citizen input to determine the best use for the combined 1,009 acres of Port-owned property.

Although we do not yet know what specific land use changes and redevelopment activities will occur on the NSI and the adjacent greenfield properties, we do know that development will have local and regional transportation impacts. The property's waterfront access provides attractive mixed-use development opportunities such as maritime industrial operations as well as residential and commercial development. This mix of land uses will result in differing transportation demand and accessibility needs. The impending NSI closure provides the Corpus Christi region with the opportunity to consider a variety of redevelopment options at the site and the associated effect on economic development and transportation mobility in the region. Redevelopment at Ingleside not only gives the region the opportunity to back fill the jobs that will be displaced by the NSI closure, it prompts consideration of the regional transportation improvements

⁵ *Base Realignment and Closure: Property Transfer and Disposal*, Congressional Research Service RS22066, February 23, 2005 (2-3).

⁶ Interview with Rosie Collin, Project Manager, Ingleside Local Redevelopment Authority, August 4, 2008.

⁷ Chirinos, Fanny, *BRAC Group Eligible for Funds*, Corpus Christi Caller-Times, September 27, 2007; Chirinos, Fanny, *Got ideas for Navy land? Now's time to share*, Corpus Christi Caller-Times, February 7, 2008; Chirinos, Fanny, *TxDOT has 60 days to make report*, Corpus Christi Caller-Times, June 13, 2008.

that would complement the redevelopment efforts and propel regional economic development.

2.3 REGIONAL TRANSPORTATION SYSTEM

The Corpus Christi region has many multimodal transportation assets that make it an attractive location to accommodate global trade. The 45-foot-depth Corpus Christi Ship Channel connects to the Gulf Intracoastal Waterway, which provides access to the U.S. inland waterway system (Figure 2.3). The Port of Corpus Christi's Inner Harbor provides direct connections to I-37 and U.S.-181 – the two primary trade highways connecting the Port to markets in the central and western United States and Mexico (Figure 2.4). In addition, the Port of Corpus Christi has 26 miles of port-owned rail lines operated by the Corpus Christi Terminal Railroad, which serves the public docks within the Inner Harbor. The Port's shortline railroad connects to three Class I carriers: Burlington-Northern Santa Fe Railway (BNSF), the Kansas City Southern (KCS), and the Union Pacific Railroad (UP). These Class I carriers provide service to markets throughout the United States and Mexico (Figure 2.5).

Figure 2.3 1,300-Mile Gulf Intracoastal Waterway



Source: Texas Department of Transportation, Gulf Intracoastal Waterway 2003-2004 Legislative Report.

Figure 2.4 Corpus Christi Highway Connectivity



Source: The Port of Corpus Christi.

Figure 2.5 Corpus Christi Rail Connectivity



Source: The Port of Corpus Christi.

2.4 REGIONAL TRANSPORTATION PLANNING AND INVESTMENT ACTIVITIES

Identifying the region's multimodal transportation potential, local stakeholders have undertaken several planning and investment activities to further enhance the region's transportation system. While we provide more detail on the regional context of these regional planning activities later in this report, the following summarizes the ongoing planning and investment activities in the region:

- **La Quinta Trade Gateway Development** - The Port of Corpus Christi is planning the development of the La Quinta Trade Gateway, a 1,100-acre container terminal on the northern shore of the Corpus Christi Bay. La Quinta will accommodate multimodal facilities for transferring an estimated 1 million containers per year between highway, rail, ferry, coastal, and deep sea conveyances. This site has direct access to I-37 and a UP mainline that connects to other Class I rail operators in the region.
- **Joe Fulton International Trade Corridor Development** - The Joe Fulton International Trade Corridor includes approximately 11.5 miles of new and existing roadway and seven miles of new rail track along the north side of the existing Corpus Christi Ship Channel. The recently completed corridor has made 1,000 acres of previously inaccessible land available for use as marine terminals and industrial sites. New rail infrastructure will connect to the UP mainline, and roadways connect U.S. 181 to I-37 with a bridge over the UP line, providing additional corridor access and an alternate route for vehicles currently utilizing the Harbor Bridge.⁸
- **City of Robstown Trade Processing and Inland Center Development** - The City of Robstown, served by three Class I railroads and located along U.S. 77, is currently evaluating opportunities in a 240-acre area to locate industries and services related to cargo transportation, supply chain integration, and international trade. The goal of the Robstown Trade Processing and Inland Center is to serve as a logistics hub for receiving, storing, processing, and shipping multimodal shipments from Mexico and overseas markets.
- **Corpus Christi Freight Planning Activities** - TxDOT is in the midst of a Freight Study (including a rail component) within the Corpus Christi and Yoakum Districts. The purpose of the study is to identify opportunities to increase freight movement efficiency in the region, determine the physical and financial viability of potential infrastructure and operational improvements, and evaluate potential freight rail connections to the proposed Trans-Texas Corridor (TTC) system.

⁸ Port of Corpus Christi Authority, *Joe Fulton International Trade Corridor Update*.

- **Harbor Bridge Improvements** – The Harbor Bridge along U.S. 181 spans the Corpus Christi Ship Channel to the Nueces Bay Causeway, providing the only means of direct highway access between the Corpus Christi central business district and the northern suburbs of Portland, Gregory, Ingleside, and Aransas Pass. The Harbor Bridge also serves as the direct connection for truck movements between NSI, north shore Nueces Bay industries, La Quinta, the north harbor area and I-37, including access to the south side harbor industrial area. After completing a feasibility study for replacing the Harbor Bridge in 2003, TxDOT has begun preparing the Environmental Impact Statement required for large projects that use Federal funds.

These and other regional transportation planning activities will help the region prepare for the NSI closure. However, several local and global trends, summarized in the following section, will impact the specific ways these regional improvements take shape.

3.0 Regional Context

Overall freight demand to support the nation's growing population and economy is expected to approximately double by 2035.⁹ Freight movements are becoming increasingly national and global in scope as many domestic companies are managing worldwide production and distribution networks. This increases the need for an efficient, reliable transportation system, especially to and from international ports and at border crossings. However, the demand for transportation is pressing the capacity of the nation's transportation systems, especially its critical highway and freight rail transportation infrastructure.

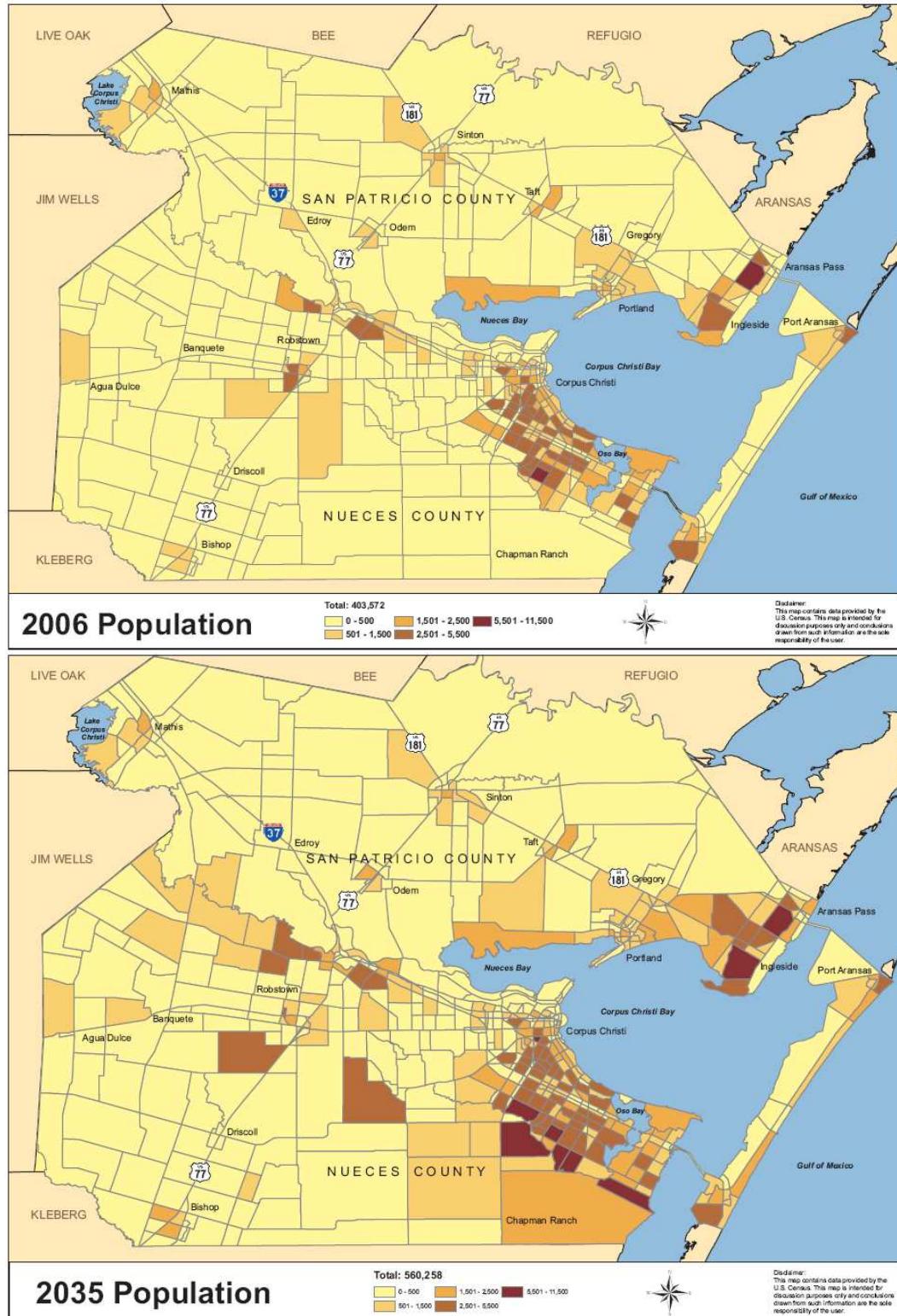
Although the Corpus Christi region's transportation system is effectively managing existing demand, the impact of increased freight activity through the Corpus Christi region will increase the strain on the region's highways, freight rail lines, and intermodal connections. In addition to increasing freight traffic, growing population and employment will increase demand on the local transportation network. Between 2006 and 2035, the Corpus Christi Metropolitan Planning Organization (MPO) forecasts regional population will grow by nearly 39 percent.¹⁰ Figure 3.1 shows the spatial distribution of population in the region. The Ingleside Peninsula is forecasted to experience considerable population growth over the next 30 years. Employment in the region is expected to grow apace.

In addition to growing national freight demand and local population growth, several global trade, transportation, and logistics trends are impacting transportation investment needs and economic development opportunities in the Corpus Christi region. Understanding these trends (described below) will enable the region to identify infrastructure investments that will increase its global competitiveness and maximize the redevelopment opportunities at NSI.

⁹ America Association of State Highway and Transportation Officials, *Freight Bottom Line Report*, 2008.

¹⁰The Corpus Christi MPO planning area excludes Aransas County.

Figure 3.1 Existing and Forecasted Regional Population



Source: Corpus Christi Metropolitan Planning Organization.

3.1 GLOBAL TRADE AND LOGISTICS

Three common trade routes, the Panama Canal, the Suez Canal, and the U.S. intermodal system, connect Asian and European-based manufacturers and exporters with major consumer markets on the U.S. Gulf and East coasts. However, congestion along the common trade routes is initiating shifts in global goods movement, some of which may impact the transportation needs in the Corpus Christi region. The following global trade and logistics issues may impact the volume of goods transported to the Port of Corpus Christi and other U.S. Gulf Coast ports:

- U.S. West Coast port congestion;
- Panama Canal expansion; and
- Western Mexico port development.

This section describes each of these trends and their potential impacts on the Corpus Christi region.

West Coast Port Congestion

Over the last decade, growth in demand for each of the major components of the West Coast trade transportation system underscores the national and regional significance of this system. West Coast seaports, led by Los Angeles, Long Beach, Seattle, Tacoma, and Oakland, handled over one-half of all containerized shipments entering and departing the United States in 2006. In the same year, the West Coast's airports handled nearly 8.4 million tons of overseas freight, accounting for 42 percent of the U.S. total. Since 1996, the West Coast has gained a larger share of both the nation's container and international air cargo shipments, further underlining the importance of the West Coast's port and air gateways to U.S. international trade. The West Coast's share of national container imports and exports grew from 47 to 52 percent from 1996 to 2006, an increase of 12.6 million containers. In the same time period, the West Coast's share of total international air cargo shipments grew from 34 to 42 percent, an increase of 2.0 million tons.¹¹

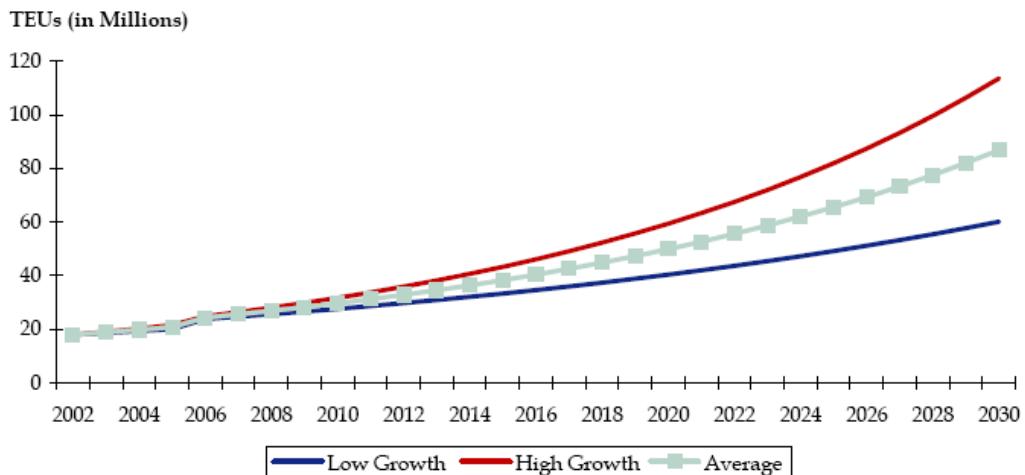
The West Coast is also the gateway of choice for rapidly growing Trans-Pacific Trade. Driven by rapid economic growth and industrialization in China, Malaysia, and other Asian nations, the volume and value of trade between Asia and the United States have been growing significantly. In addition, China is expected to have the largest economy in the world by 2050, which will further increase Trans-Pacific freight demand. Because of its geographic location, the West Coast handles the majority of this freight. The West Coast ports handled

¹¹Cambridge Systematics, *West Coast Corridor Coalition Trade and Transportation Study*, April 2008.

just over one-half of all Asia-Pacific trade tonnage in 2002, or about 130 million tons. By 2030, this is expected to grow to approximately 397 million tons, representing 60 percent of all U.S. trade with Asia.

Overall, West Coast container volume (measured in 20-foot equivalent units (TEUs)) – many of which will move out of the region on the east-west land-side transportation network – will more than triple between now and 2030, as shown in Figure 3.2. Due to skyrocketing volumes of containerized imports, however, West Coast ports and intermodal facilities are quickly approaching capacity.¹² Furthermore, the rising cost of fuel has made cross-country eastbound shipments from Western ports more expensive. Due in part to these developments, the containerized shipping industry is exploring alternatives to West Coast ports of entry.

Figure 3.2 Container Movements at West Coast Seaports



Source: Cambridge Systematics, Inc.

If West Coast ports are unable to increase their capacity in order to absorb this growth, some of the freight traffic may divert to other U.S. ports. The Port of Corpus Christi is an under-utilized gateway with multimodal connectivity to key landside trade routes serving the U.S. and Mexico. It could provide a viable alternative to relieve some of the congestion currently facing West Coast ports.

¹²Mallon L.G., and Magaddino J. P., “An Integrated Approach to Managing Local Container Traffic Growth in the Long Beach - Los Angeles Port Complex, Phase II,” Technical Report, Metrans Report 00-17, December 2001.

Panama Canal Expansion

The combination of congestion at West Coast ports, increasing transportation costs, decreasing reliability of the United States intermodal system (particularly rail connections), and the proliferation of distribution and warehousing centers near ports along the Gulf and Southeast U.S. coasts have made the Panama Canal route a more attractive option to shippers serving these markets, particularly those shipping consumer goods in intermodal containers. The Panama Canal expansion is expected to provide relief to the West Coast ports, while the Gulf Coast ports will experience an increase in containerized shipments.

As a result of these and other trends, the Panama Canal's share of total container shipments between Asia and the United States has increased from 11 percent in 1999 to over 38 percent in 2004 and container volumes through the Canal are expected to grow by nearly 6 percent annually in the coming years.¹³ The increased volume of traffic through the Canal has led to capacity constraints driven by the physical limitations of the Canal itself. In addition, rapidly growing trade between the United States and Asia has driven many shippers to utilize "post-Panamax" vessels (those larger than the dimensions permitted through the Panama Canal), although only a handful of ports have sufficient infrastructure to handle these ships. Recognizing these trends, the Panama Canal Authority has embarked on an expansion project to construct new lock facilities, excavate new access channels, and widen and deepen existing channels.

The combination of wider navigation channels and locks (to allow post-Panamax ships to navigate through the Canal), coupled with strategic marketing partnerships with key U.S. ports, will increase demand through the Canal itself and for ports along the Gulf and East Coasts, including the Port of Corpus Christi. Asia-based shippers may begin to use the expanded Canal and Gulf ports to serve Midwestern and Southeastern U.S. markets.

The expansion of the Panama Canal, scheduled for completion by 2015, will significantly impact the intermodal transportation system in Texas and has the potential to accelerate growth at all of the State's seaports. Widening of the Panama Canal will allow a greater share of Texas and Northern Mexico imports from Asia to be handled directly through Texas container ports, rather than moving through U.S. West Coast ports, transported by highway and rail. Forecasts indicate that the Port of Corpus Christi could see a 40 percent increase in freight traffic between 2003 and 2035 from these changes.¹⁴ Additional investment in landside transportation access and the planned La Quinta Container Terminal would position the Port of Corpus Christi to compete with the Port of Houston to attract a higher volume of displaced freight traffic. The Port of

¹³Panama Canal Authority, 2006.

¹⁴Cambridge Systematics. *Effects of the Panama Canal Expansion on Texas Ports and Highway Corridors*, October 2006.

Corpus Christi is also considering opportunities to leverage their substantial bulk freight activity, broad range of petrochemical production, and access to vast agricultural commodities to develop back-haul opportunities for the inbound container traffic flows.

Western Mexico Port Development

As a result of capacity constraints at U.S. West Coast ports, some shippers and steamship lines have begun diverting to emerging west coast Mexican ports. Specifically, the ports of Manzanillo and Lazaro Cardenas along Mexico's Pacific coast have experienced increases in container shipments bound for the United States. A 2004 dockworker's strike at U.S. West Coast ports emphasized this trend as international steamship lines called on Mexican ports, including Manzanillo and Lazaro Cardenas, to provide relief from the backlog at the ports of Los Angeles and Long Beach. U.S.-bound containers entering Mexican ports were transported by truck and rail through Mexico to large U.S. markets traditionally served by the U.S. transcontinental land bridge routes. Following the resolution of the West Coast port labor disputes, steamship lines reoriented to previous ports of call, but the promise of relief to U.S. ports through the development of Mexican ports and landside multimodal infrastructure remains firmly entrenched.

The Mexican Secretaria de Transportes y Comunicaciones (SCT) has espoused the idea of trans-Mexican movements of international container shipments and of increased domestic shipment directly to Mexico. As a result, more than \$700 million has been invested in Western Mexican ports since the late 1990s. Manzanillo is already Mexico's busiest seaport, connecting Asian manufacturers with Eastern U.S. markets through the Panama Canal and handling roughly 1 million 20-foot equivalent units (TEUs) annually. Manzanillo is currently planning to invest \$150 million to double its docking capacity, container storage, and transfer space through the development of a new terminal at Laguna de Cuyutlan. This would increase its overall footprint to nearly 8,400 acres. The Port of Lazaro Cardenas is currently investing \$290 million to expand its capacity from 180,000 to 2.5 million TEUs. Together, these Mexican ports will provide alternative connections to major Midwestern and Northeastern markets and east-west highway and rail corridors, thereby capturing market share from West Coast competitors and East Coast and Gulf Coast ports that rely on Panama Canal traffic.¹⁵

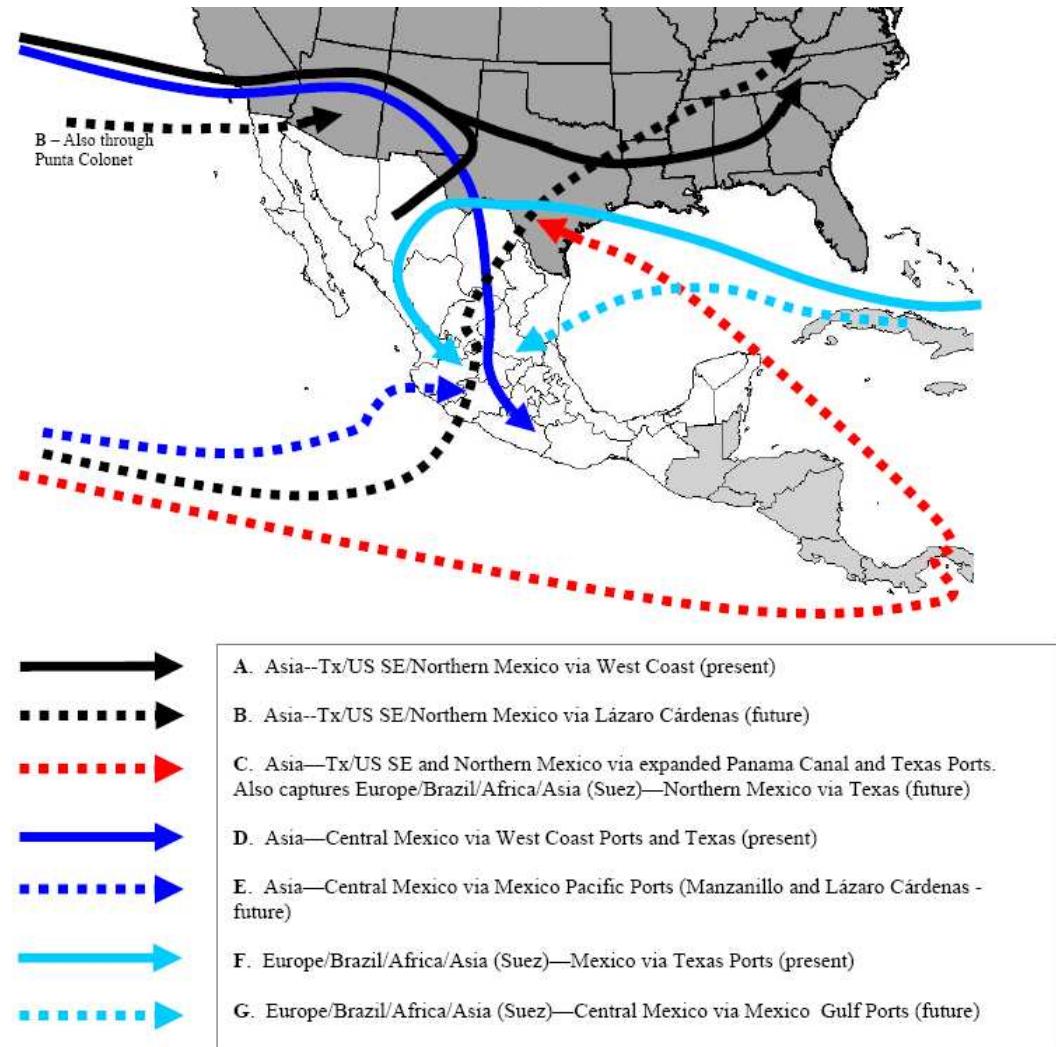
Improvements to Mexican container ports on the Pacific and Gulf coasts, along with improvements to Mexico's land bridge system, will increase the role for Texas-international cargo via Mexico. The containers entering western Mexico ports are offloaded and transported to the U.S. by rail or truck. Manzanillo is

¹⁵Cambridge Systematics, *West Coast Port Trends and Issues (White Paper)*. August 13, 2007.

currently the only port in Mexico offering double-stack service to the U.S. (via the FerroMex railway). While most of the container traffic from western Mexico ports travels through Laredo en route to Houston and other large U.S. markets, the Corpus Christi region is considering opportunities to compete with the Port of Houston as the preferred port of entry. Corpus Christi lacks many of the constraints facing the Houston metropolitan area, such as air non-attainment status and severe roadway and rail traffic congestion. Development of the Robstown Trade Processing and Inland Center (discussed earlier) could serve as an inter-modal hub for processing, storage, and mode transfer to attract goods trans-shipped from western Mexico ports.

Impacts on Corpus Christi

Taken together, these trends could have significant impacts on the Corpus Christi region, the Port of Corpus Christi, and the condition and performance of the region's transportation system. Figure 3.3 provides a conceptual diagram of how these trends could change the nature of freight movements into and out of Texas and the Corpus Christi region, in particular. Clearly, the region is well positioned to capture the employment, revenue, and other benefits that these changing trade patterns may bring.

Figure 3.3 Current and Future Global Trade Flows

4.0 Regional Impacts and Impediments

The Corpus Christi region's rail, marine port, highway, and air transportation assets, coupled with the convergence of the global and national trends described in Section 3.0, places the region in a good position to take advantage of many economic benefits and opportunities. The Corpus Christi region has the opportunity to utilize its multiple transportation assets to serve as a multimodal hub for both international and domestic shipments. However, the region currently faces a number of issues and challenges that – if left unaddressed – may inhibit its ability to take full advantage of this opportunity.

Given the global shifts in trade, transportation, and logistics previously described, the Port of Corpus Christi has become a more attractive option for global shipping. Increased shipments to the Corpus Christi region, however, will increase demand for cargo facilities, intermodal container transfer equipment, and warehousing. Similarly, demand for efficient landside access and intermodal connectivity will place additional strain on the local transportation network. Increased goods movement through the Port of Corpus Christi, growing population, and changing land use development patterns at NSI will exacerbate existing chokepoints. Regional stakeholders have recognized these challenges and have identified several impediments that may affect economic development opportunities at NSI. Increased freight volumes through the region and redevelopment activities at NSI will:

- Worsen existing highway accessibility and access constraints;
- Heighten concerns about freight rail connectivity and competition;
- Place additional stress on the Harbor Bridge;
- Hasten the need for La Quinta Trade Gateway development; and
- Spur warehouse/distribution center and intermodal facility development.

This section describes the transportation needs associated with potential economic development activities at NSI and the local initiatives that are underway to address these concerns.

4.1 IMPACT NUMBER 1: WORSENING HIGHWAY ACCESSIBILITY AND ACCESS CONSTRAINTS

It is important to understand how redevelopment initiatives at NSI, population growth, and changing land use patterns will affect traffic distribution in Ingleside and the surrounding region. Efficient truck accessibility to and from Ingleside to the region's key trade corridors, I-37 and U.S. 181, will be necessary to connect goods-dependent industries to statewide and national markets. In addition, travel patterns surrounding NSI will change. For example, many of the military personnel stationed at NSI did not require daily vehicle use, thereby limiting the daily traffic volumes on the local network. However, travel demand will likely increase as new jobs that require daily commutes replace former military jobs.

Traffic volumes on the Ingleside Peninsula continue to increase. Between 2000 and 2005, average daily traffic at the intersection of Farm-to-Market Road (FM) 1069 and State Highway (SH) 361 increased by approximately 58 percent.¹⁶ Both SH 361 and FM 1069 served approximately 18,000 vehicles per day in 2005, up from about 11,000 vehicles in 2000. This growth trend is expected to continue with the redevelopment at NSI and the continued growth of existing industries along Corpus Christi Bay's northern shore. As a result, the need to provide routing alternatives for freight and passenger transport remains a concern.

Highway Accessibility Hot Spots

Regional stakeholders have identified several problem areas on the Ingleside Peninsula highway network that will impact the NSI redevelopment. Accessibility constraints limit the ability of shippers and manufacturers to reach regional and national markets. As a result, these problem areas may limit redevelopment activities at NSI and/or the expansion of existing businesses in the area. Identified by local stakeholders and located on Figure 4.1, the following problem areas are described in the following sections:

- NSI property accessibility;
- FM 1069/SH 361 intersection traffic operations and capacity constraints; and
- FM 1069 and Sunray Road capacity constraints.

¹⁶Analysis of Texas Department of Transportation annual average daily traffic counts, 2000-2005.

Figure 4.1 Ingleside Peninsula Highway Accessibility Hot Spots

NSI Property Accessibility

When operating as a U.S. Naval Station, limited and controlled access onto the base was a matter of national security. As a result, landside access to NSI was limited through one intersection with FM 1069 (Figure 4.2). Once the NSI property is reverted to the PCCA for redevelopment, however, limited access to the property will no longer be consistent with local transportation needs. A single access point constrains network connectivity and limits accessibility to the region's key trade corridors connecting to regional and national markets.

Figure 4.2 NSI Property Single Access Location

Source: Texas Department of Transportation Corpus Christi District.

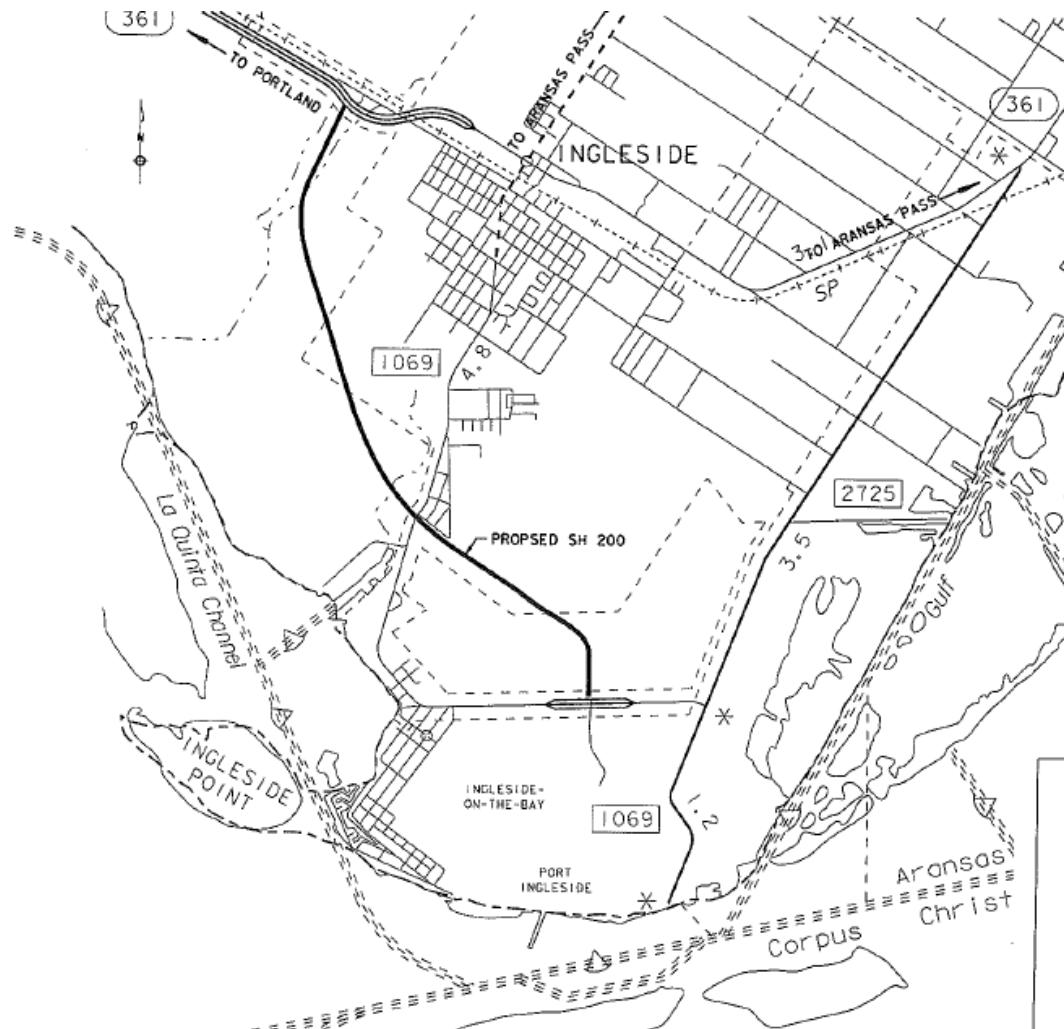
FM 1069/SH 361 Intersection Traffic Operations and Capacity Constraints

Three primary highways serve the Ingleside Peninsula: SH 361, FM 1069, and FM 2725. The intersection of FM 1069 and SH 361 in the City of Ingleside must be negotiated by virtually all peninsula traffic in the direction of Portland, the Harbor Bridge, and Corpus Christi and has become increasingly congested. Furthermore, large trucks hauling wind turbine equipment or other oversize loads from the industrial facilities along the La Quinta Channel exacerbate capacity problems at the intersection. These large trucks have difficulty negotiating turns at the intersection, often requiring police escort and creating traffic disruptions in all directions. Right-of-way constraints adjacent to the intersection, however, limit opportunities to widen the intersection approaches.

When Naval Station Ingleside was initially proposed as a larger facility and the homeport of larger ships such as the USS Wisconsin and USS Lexington, there was widespread concern that increased traffic between the base and points west would clog city streets and cause an already strained intersection to reach capacity. In response, TxDOT proposed SH 200, a 4.2-mile highway connecting NSI's main entrance with SH 361 to the west of the SH 361/FM 1069 intersection (shown in Figure 4.3). When NSI failed to develop into the larger facility initially

envisioned by Navy officials, however, the SH 200 plan was abandoned and no feasibility study was performed.

Figure 4.3 Proposed SH 200 Ingleside Relief Route



Source: Texas Department of Transportation, 2001.

The ILRA recently received a Federal grant from the U.S. Department of Defense to conduct a feasibility study of a proposed corridor linking FM 1069 to SH 361, as well as other base properties and the La Quinta and Joe Fulton shipping channels.¹⁷ A state highway following a path similar to SH 200 would enable west-bound industrial traffic to bypass the City of Ingleside, relieving strain on the intersection of SH 361 and FM 1069. In addition, it would provide further

¹⁷Chirinos, Fanny. *Ingleside base redevelopment group receives \$819K*, [Corpus Christi Caller-Times](#). July 12, 2008.

opportunities for development along the new transportation corridor. At present, TxDOT has not acquired any of the right-of-way required to construct a proposed new location connection between SH 361 and FM 1069.

FM 1069 and Sunray Road Capacity Constraints

Stakeholders identified two locations along FM 1069 (shown in Figure 4.1) where existing capacity may be unable to accommodate growing travel demand on the Ingleside Peninsula. First, the portion of FM 1069 providing access to Ingleside on the Bay, the NSI property, and the adjacent greenfield site owned by Port of Corpus Christi may require capacity expansion to accommodate the growing volume of traffic anticipated from these developments. Widening FM 1069 and improving the connection to FM 2725 would improve network capacity by allowing connectivity to SH 361 via two alternative routes.

Also on FM 1069, stakeholders identified capacity constraints between SH 361 and SH 35 which connects the cities of Ingleside and Aransas Pass and provides access to commercial and retail property. Although capacity improvements to widen this corridor are planned and programmed in the most recent Statewide Transportation Improvement Program, recent statewide transportation funding limitations have slowed progress toward implementing the improvements.

Sunray Road, the two-lane facility connecting SH 361 and FM 2725, was also identified by stakeholders as an important facility for expansion. Widening Sunray road would improve connectivity between two of the primary facilities on the peninsula and enhance accessibility to the NSI property.

Project Prioritization

During an Ingleside stakeholder workshop organized by the TxDOT Corpus Christi District in July 2008, stakeholders prioritized the proposed highway accessibility projects based on their potential to maximize redevelopment opportunities at the NSI property. Priority projects include:

- **Priority 1** - Expand FM 1069 between the industrial sites north of Ingleside-on-the-Bay and FM 2725.
- **Priority 2** - Construct a new connecting route between FM 1069 and SH 361 to bypass the City of Ingleside.
- **Priority 3** - Expand FM 1069 from the City of Ingleside to Aransas Pass.
- **Priority 4** - Expand Sunray Road between SH 361 and FM 2725.

Local Highway Accessibility Initiatives

Regional stakeholders, such as the Port of Corpus Christi Authority, understand the importance of efficient highway accessibility to local traffic generators. To improve connectivity and accessibility to port facilities and supporting industrial sites, the Port of Corpus Christi began construction on the Joe Fulton

International Trade Corridor in 2004. Shown in Figure 4.4, the corridor includes approximately 11.5 miles of new and existing roadway and seven miles of new rail track along the north side of an existing shipping channel on the south side of Nueces Bay. The corridor has made approximately 1,000 acres of previously inaccessible land available for use as marine terminals and industrial sites. New rail infrastructure will connect to the UP mainline, and roadways will connect U.S. 181 to I-37 with a bridge over the UP line, providing additional corridor access and an alternate route for vehicles currently forced to travel over the Harbor Bridge.¹⁸

Figure 4.4 Joe Fulton International Trade Corridor



Source: The Port of Corpus Christi.

¹⁸Port of Corpus Christi Authority, *Joe Fulton International Trade Corridor Update*.

4.2 IMPACT NUMBER 2: HEIGHTENED CONCERNS ABOUT FREIGHT RAIL CONNECTIVITY AND COMPETITION

As previously described, three Class I railroads provide service to the Corpus Christi region: UP, BNSF, and KCS. These rail carriers support the Port of Corpus Christi by transporting inbound and outbound freight to and from statewide and national markets. During a Regional Rail Workshop held in Corpus Christi in July 2008, local rail stakeholders identified two key freight rail issues in the San Patricio and Nueces county region:

- Lack of competition among rail operators serving the La Quinta Trade Gateway, NSI property and existing businesses along Nueces Bay's northern shore; and
- Limited directional connectivity at key rail intersections in Sinton and Odem, as well as intermodal connectivity to the City of Robstown Trade Processing and Inland Center.

Rail stakeholders stressed the importance of addressing these rail issues to maximize economic potential at the planned La Quinta Container Port, the NSI redevelopment, the City of Robstown Trade Processing and Inland Center, and other planned intermodal projects in the San Patricio and Nueces County region. The following sections provide additional discussion of these two freight rail issues.

Rail Competition

Although the KCS and BNSF Class I rail operators have trackage rights on the other UP rail lines in the region, UP is the only operator providing rail service between Sinton and the businesses and industries lining the Corpus Christi Bay's northern shore. Some regional stakeholders believe that limited competition on this line increases costs and shipment delays to area industries and could inhibit economic development opportunities at La Quinta and the NSI property.

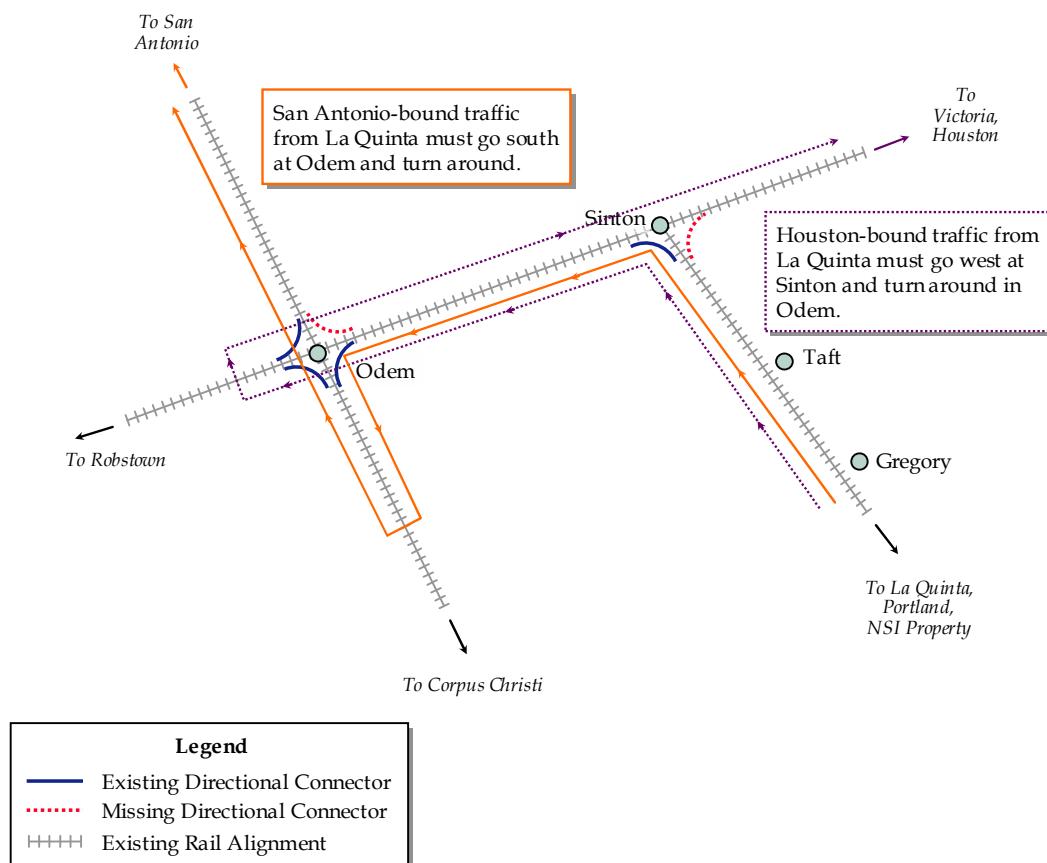
Regional stakeholders stressed the need to have more than one rail operator provide service specifically to La Quinta, either through a multi-use agreement along the existing UP line or construction of a new rail line between La Quinta and Sinton. In addition, many stakeholders felt that increased competition could reduce the cost of rail service to the region's industries and help to attract new businesses to the area.

Rail Connectivity and Intermodal Connections

At present, the lack of efficient north/south and east/west directional connectors in Sinton and Odem limit efficient rail connectivity to San Antonio, Houston, and beyond while causing congestion and safety concerns in the region. Known as the Sinton Wye and Odem Wye (shown in Figure 4.5), two missing directional connectors at key rail intersections in Sinton and Odem prohibit the efficient

movement of rail traffic originating from the Ingleside Peninsula destined for San Antonio and points north or Houston and points east. Without these missing directional connectors, rail traffic from La Quinta, NSI, or the existing industries along Corpus Christi Bay's northern shore must travel through Sinton to Odem where the train can turn around, often adding two to four hours of travel time for the maneuver. Once reoriented, the trains can then proceed toward San Antonio, Houston, or points beyond. Increased connectivity and capacity at the Sinton and Odem wyes, however, would promote public safety, reduce congestion, and improve operational efficiency.

Figure 4.5 Rail Connectivity Needs



In addition to improving directional connectivity, a top priority for regional stakeholders is the addition of new system capacity between Sinton and La Quinta, such as new tracks, sidings, signals, and rail bypasses around Gregory and Taft. New rail infrastructure would allow BNSF and KCS to provide service to La Quinta, resulting in the lower costs and enhanced service that rail competition could provide. In addition, new rail capacity and intermodal connections with trackage rights for UP, BNSF, and KCS would be needed to provide connectivity to the City of Robstown Trade Processing and Inland

Center. Enhanced intermodal connectivity would increase the cargo handling capacity of the Robstown facility.

Opportunities and Local Initiatives

In an effort to understand the present and future impacts that increased trade flowing through Texas will have on the transportation infrastructure, the TxDOT Transportation Planning and Programming Division is conducting a series of studies providing multimodal freight movement analyses. While the rail projects described above represent the priorities of local stakeholders, the TxDOT studies focus on geographic regions containing major trade corridors where such analyses can assist local leadership in identifying opportunities to improve efficiency in goods movement. As part of this effort, TxDOT is in the midst of a Freight Study (which includes a rail component) within the Corpus Christi and Yoakum Districts.¹⁹ The purpose of the study is to identify opportunities to increase freight movement efficiency in the region, determine the physical and financial viability of potential infrastructure and operational improvements (including those identified above by NSI stakeholders), and evaluate potential freight rail connections to the proposed TTC system. The TxDOT study will evaluate improvement impacts on a regionwide basis. Study results should be available by the end of the year in advance of the 2009 legislative session.

Similarly, to meet the region's rail needs, the Port of Corpus Christi, the Nueces Country Rural Rail Transportation District, the San Patricio County Rural Rail Transportation District, and the Corpus Christi MPO have signed a resolution to work together to develop, plan, and implement future regional rail improvements. Establishing a unified vision of the region's rail needs will allow the freight rail stakeholders to develop a regional concept of project prioritization and solicit funding.

Suggested by local stakeholders, one innovative approach to address the region's freight rail needs would be the construction of a freight shuttle connection between La Quinta, the Port of Corpus Christi, and the Joe Fulton International Trade Corridor. The freight shuttle concept, developed by Texas Transportation Institute, would provide an alternative to traditional freight rail.²⁰ It can have an advantage over traditional freight rail because its design requirements are less stringent for accommodating overpasses, curves, and grade separations. It also allows for freight transport without a link to rail operators. The comprehensive development agreement (CDA) under negotiation for the I-69/TTC project includes provisions for the development of a freight shuttle that could be applied in the Corpus Christi region.

¹⁹This Study is expected to be complete in late 2008.

²⁰Freight Shuttle Development Corporation, <http://www.freightshuttle.com/>.

4.3 IMPACT NUMBER 3: ADDITIONAL STRESS ON THE HARBOR BRIDGE

The Harbor Bridge (Figure 4.6), located on U.S. 181 approximately 0.5 miles north of the U.S. 181 to I-37 interchange, opened to traffic in 1959. It spans the Corpus Christi Ship Channel to the Nueces Bay Causeway and provides the only means of direct highway access to the Corpus Christi central business district from the northern suburbs of Portland, Gregory, Ingleside, and Aransas Pass. The only other connection to U.S. 181 from Corpus Christi is the Tule Lake Lift Bridge, which interchanges with U.S. 181 north of the Harbor Bridge via city/county streets.

Figure 4.6 Harbor Bridge



Source: Texas Department of Transportation, *Harbor Bridge Feasibility Study*, June 2003.

A Feasibility Study completed by TxDOT in 2003 concluded that the Harbor Bridge is reaching the end of its useful life. Classified as “functionally obsolete,” the bridge has older design features that limit its ability to accommodate safely current traffic volumes.²¹ The six-lane bridge does not have shoulders to accommodate disabled vehicles and the steep grades on the bridge approaches are dif-

²¹Functionally obsolete bridges are those with deck geometry (e.g., lane width), load carrying capacity, clearance, or approach roadway alignment that no longer meet the criteria for the system of which the bridge is a part. Structurally deficient bridges are those that are restricted to light vehicles, require immediate rehabilitation to remain open, or are closed.

ficult for some vehicles to negotiate. In addition, the horizontal and vertical alignments of the bridge restrict driver sight distance and do not meet current freeway design criteria. Entrance and exit ramps near each end of the bridge create require drivers to make quick decisions that increase the likelihood of erratic movements and accidents.²²

Of particular concern to the Port of Corpus Christi, the Harbor Bridge has a 138-foot vertical air draft preventing the passage of larger, modern ships into the Port's Inner Harbor. Many existing ships and most new generation ships, including many passenger cruise ships and the "post-Panamax" ships that will be able to navigate the Panama Canal once expansion is complete, require a minimum clearance of 175 feet.

To address these design and clearance issues, a new, higher, longer, and wider bridge would need to replace the existing Harbor Bridge. Bridge replacement costs, originally estimated at \$550 million, have risen to approximately \$700 due to the rising cost of construction materials. Maintenance costs are estimated at \$2.5 to \$4 million annually.

Local Initiatives

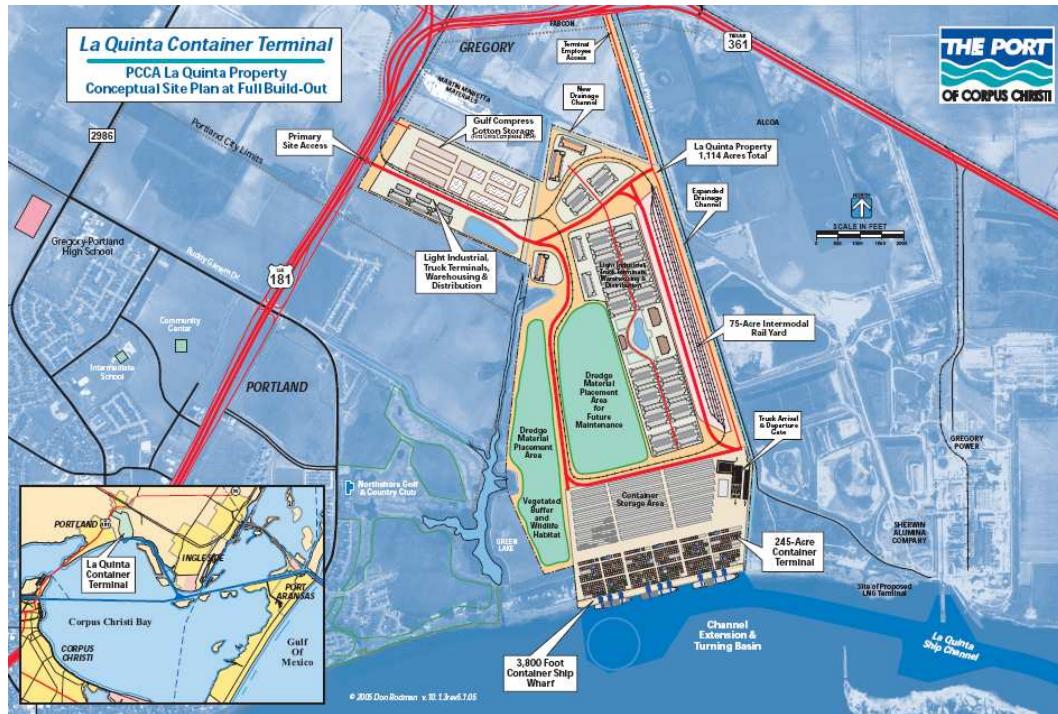
After completing the Harbor Bridge Feasibility Study in 2003, TxDOT is now preparing the environmental documentation required to qualify for Federal funding. Stakeholders are also considering a variety of potential financing alternatives to expedite bridge reconstruction; however, the Corpus Christi MPO Policy Committee will ultimately be responsible for the development of the financial plan. A financial white paper, prepared by the TxDOT Corpus Christi District and included in Appendix C, identifies potential innovative funding sources under consideration. We provide additional discussion of funding sources and limitations in Section 4.6.

4.4 IMPACT NUMBER 4: HASTENED NEED FOR LA QUINTA TRADE GATEWAY DEVELOPMENT

The La Quinta Trade Gateway, shown in Figure 4.7, is a 1,100-acre development at the Port of Corpus Christi, approximately 10 miles northwest of the NSI site. La Quinta will include a container terminal enabling the Port to handle growing volumes of containerized freight, which often consists of lower-weight, higher-value goods. The new facility will help the Port of Corpus Christi compete with existing container terminals in Texas and other Gulf States, as well as ports on the U.S. West Coast.

²²Texas Department of Transportation Corpus Christi District, U.S. 181 (*Harbor Bridge Feasibility Study*, URS, June 2003).

Figure 4.7 La Quinta Container Terminal Conceptual Site Plan



Source: The Port of Corpus Christi.

Based on existing growth rates of international trade to and from U.S. ports, the La Quinta container facility has the market potential to attract upwards of 1 million TEUs of container activity by the year 2024.²³ In addition, the La Quinta Trade Gateway could generate nearly 15,000 annual direct, induced, and indirect jobs; \$907 million in business revenue; \$785 million in personal wages, salaries, and consumption purchases; \$108 million in indirect purchases; and \$70 million in state and local taxes.²⁴

The completed La Quinta Trade Gateway will include an on-dock intermodal facility with multiple working tracks to provide for the transfer of an estimated 400,000 containers annually from ships to truck or rail.²⁵

²³Port of Corpus Christi Authority, *Review of La Quinta's Market Potential*. March, 2005 (8-9).

²⁴Port of Corpus Christi Authority, *The Potential Economic Impact of the La Quinta Trade Gateway Container Terminal*, February, 2004 (4-5).

²⁵Port of Corpus Christi Authority, *Review of La Quinta's Market Potential*. March, 2005 (12).

Challenges to Attracting Container Freight

While the Port of Corpus Christi competes with the Port of Houston and other Gulf Coast ports for serving maritime trade, currently it does not handle any container traffic. The Port of Corpus Christi has grown from handling primarily agriculture and petrochemicals to a more diverse array of products, such as coal, forest products, and automobiles. However, approximately 90 percent of its cargo is still petrochemical-related.

Before the Port of Corpus Christi can begin capturing a percentage of Gulf Coast container shipments, it must first attract industries to the region that rely on regular container shipments. However, global shipping, distributing and manufacturing firms have been reluctant to locate in the region because the Port does not currently receive regular container shipments. To remedy this circular dilemma and redirect cargo from other Gulf Coast ports, the Port of Corpus Christi has pursued container-intensive companies, such as Wal-Mart, to open a distribution center in the region.²⁶ Establishing regular container service at La Quinta will allow the region to more easily attract other container-intensive businesses.

Opportunities and Local Initiatives

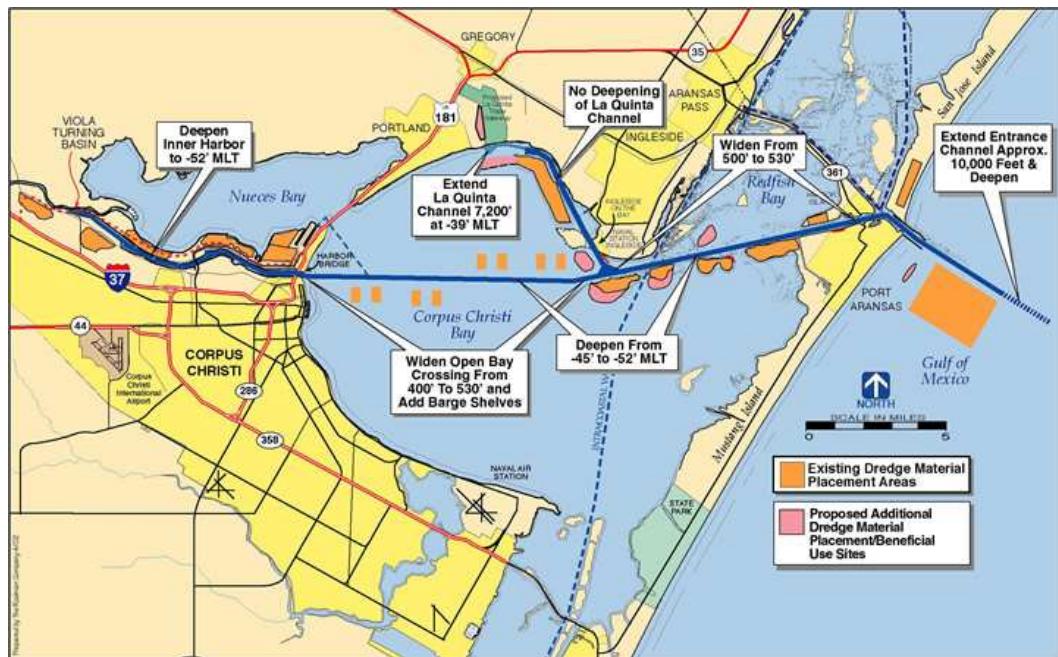
To prepare for the anticipated growth of containerized cargo resulting from continued West Coast port congestion and the expansion of the Panama Canal while boosting its competitiveness against other Gulf Coast ports, the Port of Corpus Christi has identified several projects to promote container operations and increase capacity. The Port will attract new container operations after completing the La Quinta terminal facilities. In addition, plans are underway to deepen, widen, and extend the ship channels serving the Port's inner harbor and the new container terminal.

At 45 feet, the Port of Corpus Christi has one of the deepest ship channels among Gulf Coast ports. However, newer containerships (i.e., the mega-ships initiating the Panama Canal expansion) typically require channel depths of at least 50 feet, particularly for fully loaded vessels. Authorized by Congress in 1990, the U.S. Army Corps of Engineers reviewed the feasibility of modifying the Corpus Christi Ship Channel's depth from 45 to 52 feet, matching the maximum depth of the expanded Panama Canal. The Final Feasibility Report and Final Environmental Impact Statement released April 2003 also included provisions to widen the ship channel between the Harbor Bridge and the La Quinta Ship

²⁶Interview with Frank Brogan, Director of Engineering Services, Port of Corpus Christi, July 28, 2008.

Channel to 530 feet.²⁷ Plans to widen and deepen the ship channel, shown in Figure 4.8, would allow the Port of Corpus Christi to accommodate larger vessels, increase shipping efficiency, and reduce the potential for accidents and need for tug services through the channel. Similarly, these improvements would increase the Port's competitiveness with other Gulf Coast ports.

Figure 4.8 Corpus Christi Channel Improvements



Source: The Port of Corpus Christi.

Funding for the ship channel improvements (approximately \$200 million) will be shared between industry, the Federal government, and the Port of Corpus Christi Authority. Although the U.S. Congress determined the ship channel improvements would be cost-effective and in the nation's interest in 2007, the improvements have been delayed until Federal funding becomes available. It is likely that the channel improvements will not be completed until after completion of the Panama Canal expansion in 2015.²⁸

²⁷U.S. Army Corps of Engineers Galveston District. *Corpus Christi Ship Channel, Texas Channel Improvement Project Final Feasibility Report and Final Environmental Impact Statement*, April, 2003.

²⁸Interview with Frank Brogan, Director of Engineering Services, Port of Corpus Christi, July 28, 2008.

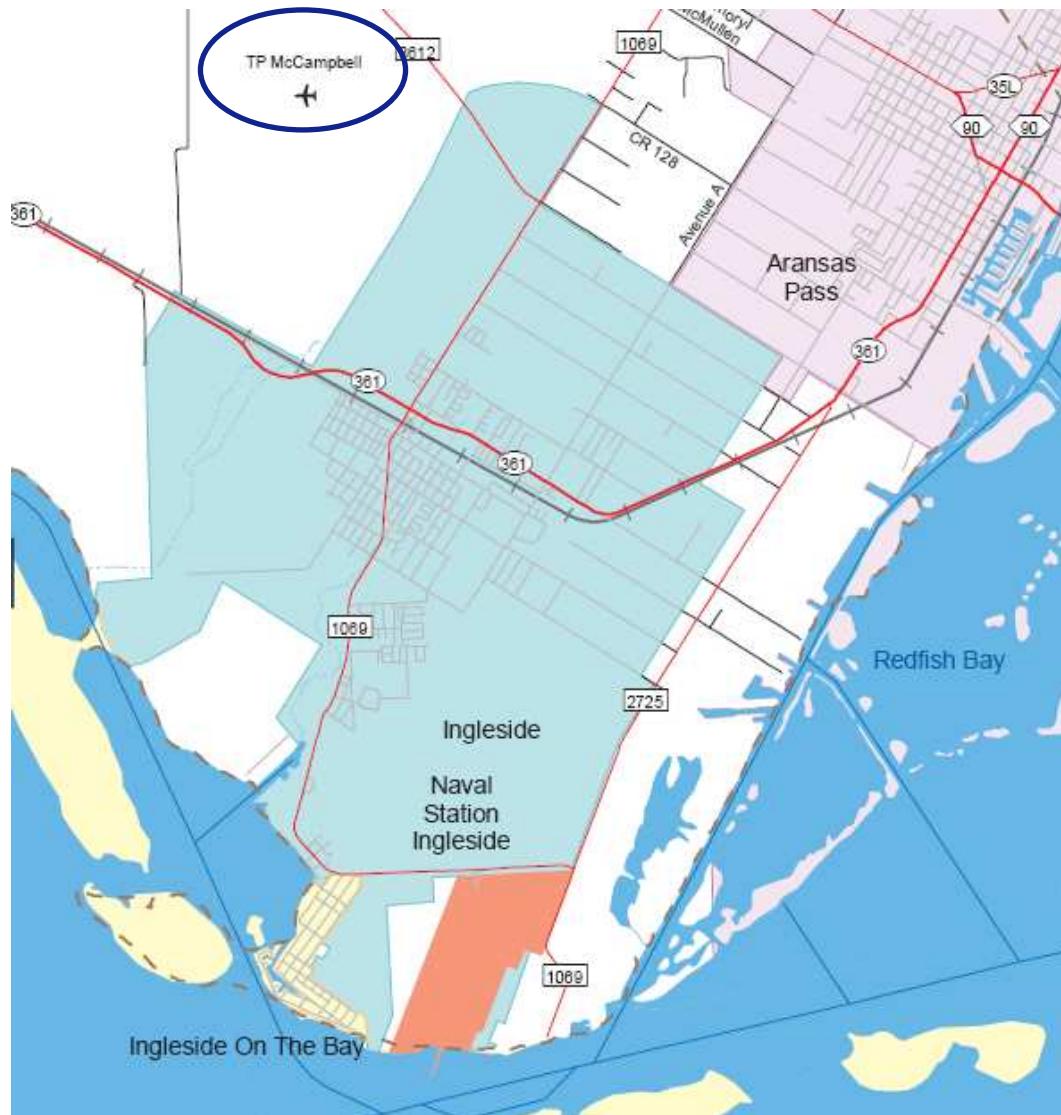
4.5 IMPACT NUMBER 5: SPUR WAREHOUSE/ DISTRIBUTION CENTER AND INTERMODAL FACILITY DEVELOPMENT

Increased shipments to the Port of Corpus Christi will increase the demand for cargo facilities, intermodal container transfer equipment, and warehousing. The master plan for the La Quinta Trade Gateway includes areas designated for container storage, warehousing and distribution, and intermodal rail facilities. Given its convenient location along the La Quinta Ship Channel and connectivity to the regional highway and rail network, redevelopment at the NSI property could include warehousing and distribution facilities as well.

To attract industries and services related to cargo transportation, supply chains integration, and international trade, the City of Robstown is currently evaluating opportunities within a 240-acre area to locate the Robstown Trade Processing and Inland Center. Served by three Class I railroads and located along U.S. 77, the City of Robstown is seeking trade partnerships that would facilitate investment and economic development in the region. The proposed center would serve as a logistics hub for receiving, storing, processing, and shipping multimodal shipments from Mexico and overseas markets to other areas in Texas and the United States.

Local stakeholders are also considering opportunities to bolster economic activity within the Corpus Christi region by identifying backhaul opportunities for exporting commodities such as grains, cotton, and petrochemicals. By retrofitting containers to accommodate bulk commodities, the Port of Corpus Christi and La Quinta could support considerable backhaul volume to overseas markets.

Another multimodal asset near NSI is the TP McCampbell airport located north of the City of Ingleside (Figure 4.9). Long-term planning at the airport includes a 1,000-foot extension of the runway to allow larger aircraft to land, refuel, and take-off at the airport. With the airport's current runway length of 5,000 feet, Federal regulations prohibit fully refueling the aircraft that land at McCampbell. Regional stakeholders view the general aviation airport as an underutilized asset that could provide additional multimodal connectivity to meet the region's growing transportation needs.

Figure 4.9 TP McCampbell Airport Location

To centralize potential air cargo operations at the McCampbell airport, the Corpus Christi region could consider obtaining Foreign Trade Zone (FTZ) status at the airport. An air cargo airport with FTZ status would be attractive to local manufacturers because it reduces the import taxes and tariffs required on shipments arriving through the FTZ. FTZs can also attract additional development and light manufacturing/transportation jobs to a region.

4.6 TRANSPORTATION FUNDING LIMITATIONS

Given the potential transportation impacts previously described, the Corpus Christi region has recognized the need for transportation investment and has initiated several projects to address local concerns. Funding these projects, however, remains a challenge.

To meet the region's transportation needs resulting from NSI redevelopment and increased freight movement though the region, local stakeholders are considering both traditional and innovative financing options, including:

- New sales tax or county registration fees;
- Transportation Improvement Districts for new development along the Corpus Christi Ship Channel;
- Rail Relocation and Improvement Fund (after capitalization);
- Statewide and national economic development funds (e.g., Texas Enterprise Fund, Economic Development Grants, etc);
- User fees captured from Harbor Bridge traffic; and
- U.S. Department of Defense or Department of Homeland Security funding (recognizing the Port of Corpus Christi as a “strategic port” for national security).

While some of these strategies would require legislative action, it is clear that a combination of funding sources will be required to implement all of the transportation improvement projects needed in the region.

Railroad Relocation and Improvement Fund

Despite the increasingly global freight environment, addressing freight in the transportation planning process has gradually become the responsibility of state DOTs and MPOs. In Texas, gas tax dollars are constitutionally dedicated to roadways. As such, TxDOT does not have constitutional authority to spend gas tax revenues on rail projects. On November 8, 2005, Texas voters approved the creation of the Railroad Relocation and Improvement Fund (RRIF). Administered by the Texas Transportation Commission, this fund authorizes TxDOT to finance the relocation, construction, acquisition, improvement, rehabilitation, and expansion of rail facilities in the State for the purposes of relieving congestion on public highways, enhancing public safety, improving air quality, and expanding economic opportunity.

Although RRIF funds can be used by all railroads in the State, they will be especially useful to the State's regional and shortline railroads. These smaller railroads are often able to operate in conditions where the Class I railroads cannot, taking advantage of different labor cost structures, profitability targets, and business models. However, they often do not have access to sufficient capital to make significant infrastructure or equipment improvements. The ability to

access capital available from these funding programs will allow these smaller railroads to more effectively improve their infrastructure and operations, allowing them to retain or enhance their market share, expand the transportation options available to shippers in the State, and improve overall mobility and economic competitiveness statewide.

The RRIF would be an important source of funding for rail improvements in the Corpus Christi region. However, while current legislation has authorized the fund, no money has been allocated and there is no legislation directing the processes required to access the funds once capitalized. A Federal funding source for rail improvements, the Congestion Mitigation and Air Quality (CMAQ) Improvement Program, is available only to non-attainment areas for rail improvements that are shown to improve air quality in the region. While many other major ports in the U.S. are in non-attainment, the Corpus Christi region meets National Ambient Air Quality Standards and does not qualify for the CMAQ funds. Marketing the Port of Corpus Christi as the largest attainment port in the United States could provide a benefit for attracting new industries and freight traffic to the region, but the Corpus Christi region will have to rely on the RRIF as the sole source of state funding for its local rail projects.

Texas Enterprise Fund

An additional funding source, the Texas Enterprise Fund (TEF) established in 2003 and reauthorized in 2005, is a critical tool that helps the State bring jobs and employers to Texas. The TEF receives appropriations from general revenues of approximately \$300 million per biennium for grants to projects that will stimulate economic growth in Texas. The grants are used most often to “close the deal” with prospective companies when Texas is competing with other states for major expansion projects. While the focus of the program is economic development, state statute (Subtitle F, §481.078) indicates that the fund may be used for “infrastructure development.” Recent TEF grants have been disbursed mostly for business incentives and to support innovation in fledgling industries, such as biotechnology/life sciences. Transportation improvements, including rail transportation improvements, are also eligible for funding under this program, as they often generate strong return on investment in terms of economic impacts (e.g., industry attraction and retention, jobs, and wage levels). However, Transportation Code Title 5, Section 91.071(b), which governs how TxDOT can fund rail projects, currently stipulates that TxDOT may not use general revenues (the funding source of the TEF) for rail projects except pursuant to a line-item appropriation by the legislature. The delays that result from having to wait for a line-item appropriation is a burden that other TEF projects do not incur, making rail transportation improvement projects less attractive than other competing proposals.

Economic Development Administration Grants

The Economic Development Administration (EDA) of the U.S. Department of Commerce provides grants for projects that are expected to increase investment in economically distressed areas. Eligible projects related to freight include railroad sidings, industrial access roads, and port improvement activities. The project must fulfill a pressing need in the region and must:

- Improve the prospects for the establishment or expansion of industrial or commercial facilities in the region;
- Help to create additional long-term employment in the area; or
- Primarily benefit the long-term unemployed and members of low-income families.

Grant assistance typically covers up to 50 percent of a project's cost, but it can cover up to 80 percent for severely depressed areas. In fiscal year 2006, EDA grants totaled approximately \$158 million. The applicant must have the required local match available, committed, and unencumbered.

5.0 Regional Needs and Action Items

Our conclusions were developed from our analysis of trade and transportation trends in the region, our discussions with key regional stakeholders, and our identification of key regional chokepoints and issues. They are meant to provide a foundation to allow the Corpus Christi region to begin addressing specific systemwide issues and constraints and take full advantage of the economic development opportunity provided by the NSI closure.

The Corpus Christi region is well positioned to take advantage of the economic development opportunities provided by the NSI closure.

The Corpus Christi region is a growing community with the multimodal transportation assets that will help it to attract new trade and businesses and stimulate economic development. Similarly, several global trade, transportation, and logistics trends are initiating shifts in international goods movement. Increasing congestion at U.S. West Coast marine ports, coupled with the Panama Canal expansion and increasing multimodal transport of goods from Western Mexico ports, will impact the volume of goods transported to the Port of Corpus Christi and other U.S. Gulf Coast ports.

But the region's existing transportation system may not be able to absorb growth in demand.

The Corpus Christi region's population, employment, and trade levels are expected to grow significantly over the next several years. The redevelopment of NSI, particularly when coupled with the development of the La Quinta Trade Gateway, the expansion of the Panama Canal, and increasing warehousing/distribution and intermodal center development, will drive population, employment, and trade growth even higher.

Although the region's transportation system is effectively managing existing demand, there are several transportation chokepoints and issues that, individually or collectively, will prevent the region from taking full advantage of the economic development opportunities afforded by the NSI closure, as well as the improvements being made at the Port of Corpus Christi. Of particular concern is limited highway and rail access from NSI and the Port of Corpus Christi to the mainline highway and rail networks. These access issues may prevent shippers and manufacturers using the NSI and the Port of Corpus Christi from effectively accessing regional and national markets. Not addressing these critical access points will hinder the region's ability to fully realize the benefits of NSI redevelopment activities or maximize the region's economic competitiveness.

There are several transportation planning and investment activities underway in the region, but existing funding is not sufficient to meet regional transportation needs.

The Corpus Christi region has initiated a variety of transportation planning activities to meet its transportation needs and boost economic competitiveness on a global scale. These planning and investment activities include the La Quinta Trade Gateway, the Joe Fulton International Trade Corridor, the City of Robstown Trade Processing and Inland Center, regional rail mobility studies, Harbor Bridge environmental studies, and regional airport master planning. However, the region is facing exceeding difficulty to secure necessary funding for these transportation projects.

TxDOT, the Corpus Christi MPO, and regional and local governments – like their counterparts across the U.S. – already commit a large portion of their budgets to the maintenance and preservation of their current highway systems. However, construction (e.g., concrete, steel, labor) and maintenance (e.g., highway crack and joint repairs) costs have been increasing faster than the general rate of inflation (6 to 8 percent versus 5 percent, respectively) over the last several years.²⁹ These increases have caused the purchasing power of transportation dollars to decline, particularly in the last several years. Compounding this issue is the fact that the region's vehicle fleet, in aggregate, is becoming more fuel efficient and these efficiency gains are outpacing growth in vehicle-miles traveled on the system. Improvements in fuel efficiency will continue to decrease overall gas tax revenues, particularly at the Federal level; and there is little appetite among many state and national transportation decision-makers to modify existing gasoline or diesel tax rates.

Complicating matters is the fact that there are a variety of state, Federal, and local agencies involved in the planning and approval of system improvements, particularly those that add capacity to the system. Interlocking requirements for coordination among Federal, state, and local agencies, along with permit and environmental approvals, can significantly expand the time required to plan and implement projects, often driving up the cost of projects significantly. Although these reviews and approvals serve an essential function, the costs of the reviews themselves, in dollars, time to complete, and uncertainty, are substantial.

Project implementation will require a prioritization of needs and an understanding of systemwide impacts.

Given fiscal constraints, any transportation improvements in the region will require a systematic approach and phased investment. Addressing the region's broad range of transportation needs, including highway capacity expansion,

²⁹Based on Consumer Price Index (CPI), Building Cost Index (BCI), Highway Construction Cost, Construction Cost Index (CCI), Producer Price Index (PPI), and FHWA Estimates of Highway Construction costs.

improved freight rail connectivity, Harbor Bridge replacement, ship channel improvements, and efficient intermodal connections, will require a regional prioritization effort. While many of the transportation improvements discussed in this report were targeted to maximize redevelopment opportunities at the NSI property, it will also be important to evaluate the potential regional impact that any transportation investment will have on the system as a whole.

Innovative approaches are required to meet these challenges.

Solving the region's access issues will be critical to helping the Corpus Christi region realize the economic development opportunities afforded by the closure of NSI. However, traditional approaches to planning and investing in the region's transportation system may not be adequate to meet the challenges facing the region.

Financing these system capacity improvements requires a regional approach and investments must be made at the network level, including:

- Capacity chokepoints along regionally significant trade corridors;
- In and around the Port of Corpus Christi, regional airports, intermodal terminals and other key trade facilities; and
- Key urban rail or highway interchanges and connectors, such as the Harbor Bridge.

Developing and implementing specific funding solutions and mechanisms to facilitate new innovative funding and project delivery options will require a strong state and regional role. Most importantly, though, addressing these challenges will require a willingness to plan and fund system improvements across jurisdictional boundaries (e.g., between counties, TxDOT districts, and metropolitan areas) and interest boundaries (e.g., between public agencies and private sector interests).

Appendix A

Literature Review Library

A. Literature Review Library

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Appendix B

Interview Participants

B. Interview Participants

The Cambridge Systematics study team acknowledges the contributions of the following individuals and organizations to this study.

Texas Department of Transportation

Craig Clark, PE - District Engineer, Corpus Christi District

Paula Sales-Evans, PE - Director of Transportation Planning and Development, Corpus Christi District

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Bill Reitmann - Sinton Area Engineer, Corpus Christi District

Frances Garza - Public Information Officer, Corpus Christi District

Christina Currier - Government and Public Affairs Division

Jennifer Moczygembba, PE - Multimodal Section Director, Transportation Planning and Programming Division

Port of Corpus Christi

Frank Brogan, Director of Engineering Services

Tom Moore, Business Development Manager

Ruben Bonilla, Jr., Port Commission Chairman

Judy Hawley, Port Commissioner

Naval Station Ingleside

Daniel Korus, BRAC Officer

Ingleside Local Redevelopment Authority

Rosie Collin, Project Manager

Corpus Christi Metropolitan Planning Organization

Tom Niskala, Transportation Planning Director

San Patricio and Nueces Counties

Judge Terry Simpson, San Patricio County Judge

Judge Loyd Neal, Nueces County Judge

Commissioner Fred Nardini, San Patricio County

Other Study Participants

Paul Kliebert, Business Development Manager, Maverick Engineering, Inc.

Regional Stakeholder Meetings

July 18, 2008, Regional Rail Workshop, TxDOT Corpus Christi District Office

July 25, 2008, TxDOT/MPO Transportation Briefing, Ortiz Center

July 31, 2008, Transportation Issues Related to Naval Station Ingleside Redevelopment

Appendix C

Harbor Bridge Financial White Paper

C. Harbor Bridge Financial White Paper

The Texas Department of Transportation Corpus Christi District prepared this Harbor Bridge Financial White Paper for distribution at the July 25, 2008 Transportation Briefing stakeholder meeting. While the revenues presented herein prepared by District staff are theoretical and preliminary estimates only, this White Paper presents several potential financing alternatives available to the region for funding the Harbor Bridge replacement.

Possible Funding Options for the Replacement of the Harbor Bridge

Projected Revenue from Additional New Half-Cent Sales Tax Would Require Legislative Action to Allow Higher Maximum Tax Rate

	2007 Local Sales Tax	Projected Tax Per Year	Projected Revenue for 20 Years	Projected Revenue for 40 Years
Corpus Christi Sales Tax	\$84,327,369			
Projected New Half-Cent Sales Tax		\$21,081,842	\$421,636,840	\$843,273,680
Portland Sales Tax	\$2,797,921			
Projected New Half-Cent Sales Tax		\$699,480	\$13,989,600	\$27,979,200
Ingleside Sales Tax	\$950,353			
Projected New Half-Cent Sales Tax		\$237,588	\$4,751,760	\$9,503,520
Totals			\$440,378,200	\$880,756,400

Projected Revenue from Special Additional County Registration Fee

Would Require Legislative Action to Assess Additional Registration Fee

	2007 Number of Registered Vehicles	Projected Revenue per Year	Projected Revenue for 20 Years	Projected Revenue for 40 Years
Nueces County	266,868			
\$10 Extra Per Year		\$2,668,680	\$53,373,600	\$106,747,200
\$25 Extra Per Year		\$6,671,700	\$133,434,000	\$266,868,000
San Patricio County	61,651			
\$10 Extra Per Year		\$616,510	\$12,330,200	\$24,660,400
\$25 Extra Per Year		\$1,541,275	\$30,825,500	\$61,651,000

Projected Revenue from Possible New/Additional Franchise Fee

The City of Lubbock is a good example of using this innovative revenue source. The City of Lubbock approved an increase to the percentage of franchise fees collected on utilities such as cable, gas, electricity, and water with 40 percent of the increased revenue earmarked for transportation (new streets and roads). This new revenue was sufficient to generate \$125 million in bonds.

Projected Revenue from Possible Transportation Improvement District Associated with New Development along the Corpus Christi Ship Channel

For example: Five new industrial facilities develop on the vacant land adjacent to the Port of Corpus Christi Inner Harbor with an average asset value of \$200 million. If a Transportation Improvement District or Zone were created for undeveloped property between the Harbor Bridge and the turning basin and Nueces County would agree to split the tax revenue generated with 40 percent going to transportation infrastructure the revenue generated by these five new facilities would be about \$1.4 million per year.

Other Potential Funding Opportunities

- Freight Tariff (for example: The Alameda Corridor connecting the Port of Long Beach to the transcontinental rail network assesses a freight charge per container hauled).
- Federal Department of Defense Funding.
- Federal Highway Administration Funding (Bridge Program, Metropolitan Mobility, Federal Earmark).
- State of Texas Funding (Texas Mobility Fund, Proposition 12 Funds, Governor's Office of Economic Development).