

Transportation Policy Brief #7

U.S.-Mexico Transportation and Logistics

TxDOT 0-6581-Task 19-7

Project Directors:

Leigh B. Boske, Ph.D., Professor,
Lyndon B. Johnson School of Public Affairs,
The University of Texas at Austin

Robert Harrison, Deputy Director,
Center for Transportation Research,
The University of Texas at Austin



kut.org

infrastructure-intelligence.com

Transportation Policy Brief #7

U.S.-Mexico Transportation and Logistics

POLICY RESEARCH PROJECT PARTICIPANTS

Students:

- Gregory Conte, B.S. (Hospitality Administration), Boston University; M.S. (Intelligence and National Security Studies), The University of Texas at El Paso
- Jane Santa Cruz, B.A. (History), B.A. (Spanish), Hendrix College
- Paul Gainey, B.S., (American Politics and Law), United States Naval Academy
- Miranda Hoff, B.A. (Government and Latin), The University of Texas at Austin
- Corey Howell, B.A. (Government), The University of Texas at Austin
- Salima Hakim Khan, B.A. (Business Administration), Institute of Business Administration, Karachi, Pakistan
- Kyle McNew, B.A. (English Literature), Penn State University
- Kevin Merrill, B.S. (Political Science), Texas A&M University
- John Montgomery, B.A. (Government and History), The University of Texas at Austin
- Benjamin Moriarty, B.A. (Journalism and Psychology), University of Massachusetts Amherst
- Vivek Nath, B.S. (Electrical Engineering), Georgia Institute of Technology
- Hector Rojas, B.A. (Anthropology), The University of Nevada Las Vegas
- Vance Roper, B.A. (Political Science), Saint Edwards University
- Jacob Thayer, B. A. (Political Science), The George Washington University
- Tiffany Wu, B.S. (Chemical Engineering), The University of Texas at Austin
- Wu Zheng, B.S. (Computer Science), B.A. (Physics), The University of Texas at Austin; M.S. (Computer Science), The University of Texas at Austin

Project Directors:

- Leigh B. Boske, Ph.D., Professor, Lyndon B. Johnson School of Public Affairs, The University of Texas at Austin
- Robert Harrison, Deputy Director, Center for Transportation Research, The University of Texas at Austin

TABLE OF CONTENTS

Foreword.....	vii
Acknowledgments.....	viii
Executive Summary.....	1
Background	2
Mexico’s Rise in Global Economy	2
Modes of Transportation.....	3
Single Supply Chain Network.....	4
Mexico’s National Program of Investment in Transportation and Communications Infrastructure Plan, 2013–2018.....	5
Important Private Sector Stakeholders	6
Key Policy Issues.....	6
Improvements Needed in Infrastructure Development in Mexico.....	7
Lack of Alliances Between Inland Ports.....	7
Regulatory Role of Mexican Government	8
Lessons Learned	8
Relevance to Texas.....	9
Bibliography	11
Appendix 1: Contacts	13
Appendix 2: Map of U.S.-Mexico Border	15
Appendix 3: Top Commodity Transported Between US and Mexico for Each Mode of Transportation (in million of dollars)	17
Appendix 4: Modal Shares of U.S.-Mexico Freight Flow (in millions of dollars)	19

FOREWORD

The Lyndon B. Johnson School of Public Affairs, The University of Texas at Austin, has established interdisciplinary research on policy problems as the core of its educational program. A major part of this program is the nine-month policy research project (PRP), in the course of which two or more faculty members from different disciplines direct the research of 10 to 20 graduate students of diverse backgrounds on a policy issue of concern to a government or nonprofit agency.

During the 2013–2014 academic year, the Texas Department of Transportation (TxDOT) funded, through the Center of Transportation Research (CTR), a policy research project addressing seven key policy issues.

The research team interacted with TxDOT officials throughout the course of the academic year. Overall direction and guidance was provided by Mr. Phil Wilson, the former Executive Director of TxDOT. Mr. Wilson participated in an October 10, 2013 workshop to determine the scope of the study. As a consequence, the following policy issues were selected for study:

- Air Transportation in Texas
- Autonomous Vehicles in Texas
- North Carolina’s Strategic Mobility Formula
- Oregon’s Voluntary Road User Charge Program
- Potential Use of Highway Rights-of-Way for Oil and Natural Gas Pipelines
- State Energy Severance Taxes and Comparative Tax Revenues
- U.S.-Mexico Transportation and Logistics

The findings of each policy issue are presented within the context of separate transportation policy briefs. This particular policy brief, “U.S.-Mexico Transportation and Logistics,” was researched and written by Hector Rojas and Salima Hakim Khan.

The following template was also approved for each of the above-mentioned briefs:

- Executive Summary
- Background
- Key Issues
- Lessons Learned
- Relevance to Texas
- Appendices

ACKNOWLEDGMENTS

This policy research project would not have been possible without the generous contributions of assistance of a great number of individuals and organizations. Useful contacts are provided in Appendix 1 of each of the respective transportation policy briefs. As previously mentioned, overall direction and guidance was provided by Mr. Phil Wilson, the former Executive Director of TxDOT. We are also indebted to the following TxDOT officials for participating in weekly class presentations or scheduled interviews, sharing information and data, and suggesting useful contacts:

- John Barton, P.E., Deputy Executive Director/Chief Engineer
- James Bass, Chief Financial Officer
- Oliver “Jay” Bond, Legislative Liaison, State Legislative Affairs Office
- Jessica Butler, Unified Transportation Program Coordinator
- Shannon Crum, Ph.D., Director, Research and Technology Implementation Office
- Will Etheredge, Financial Analyst, Finance Division
- David Fulton, Director, Aviation Division
- Jerry Haddican, J.D., Director, State Legislative Affairs Office
- Caroline Mays, Freight Planning Branch Manager
- Peggy Thurin, Systems Planning Branch Manager
- Lanny Wadle, Deputy Director, Finance Division
- Marc Williams, P.E., Director of Planning

EXECUTIVE SUMMARY

Trade between the U.S. and Mexico has grown substantially since the North American Free Trade Agreement (NAFTA) took effect in 1994 and Mexico is now the third-largest U.S. trading partner.¹ In 2013, total U.S.–Mexico trade reached \$507 billion, of which 66% (\$336 billion) was moved by truck through 24 southern border ports of entry (POEs). Some 73% (\$246 billion) of that truck traffic passed through 13 Texas ports of entry (POEs)² which represent 48% of the total U.S.-Mexico trade moved by truck—\$131 billion in imports and \$115 billion in exports. Trucks use seven Texas interstate and state highway corridors to move U.S.-Mexico trade to customers either within the state or to other U.S. states and Canadian provinces.

This growth has led to forecasts that Mexico may ultimately replace China as the second-ranked U.S. trading partner due to its proximity to the U.S., abundant supply of natural gas from shale plays, and low cost of labor.³ Global manufacturers are contemplating locating their factories in Mexico—termed “near-sourcing”—to grow their market share in the U.S. and in other countries that have entered into free trade agreements with Mexico. This especially of the automobile sector, which is one of the fastest-growing industries in Mexico.

On July 15, 2013, Mexican President Enrique Peña-Nieto announced the new National Program of Investment in Transportation and Communications Infrastructure (Programa de Inversiones en Infraestructura de Transporte y Comunicaciones 2013-2018)⁴, hereafter referred to as the “NIP”. This ambitious program includes both government and private-sector investment. The NIP, prepared according to the parameters included in the current National Development Plan (Plan Nacional de Desarrollo 2013-2018), proposes to invest the equivalent of \$102.5 billion during the President’s stint in new infrastructure and maintenance projects, \$46.6 billion of which will primarily benefit road, rail, port, and airport projects. The remainder will be devoted to improving the nation’s telecommunications infrastructure.

One project is the construction of the Mazatlán-Matamoros highway corridor, which connects the Atlantic and Pacific oceans. Highways traditionally have followed a north-south orientation, reflecting the topography of Mexico and this east-west highway opens up agricultural and industrial areas to U.S. markets. The government has also been promoting the development of a national network of logistics hubs on its trade corridors.⁵

The purpose of this brief is to highlight the increasing involvement and interest of private-sector organizations, including inland ports and transportation companies, that are collaborating with each other to make the trading process more efficient. These companies believe that the U.S.-Mexico transportation network will operate more efficiently, if it acts as a single system, rather than two separate systems divided by an international border.

Interpuerto Monterrey, an inland port in Mexico, has been in talks with Alliance Texas, an inland port and global logistics hub in Fort Worth, to promote logistics efficiencies in cross-border trade. These inland ports are planning to cooperate by sharing information and best practices. An example of this initiative is the potential to develop free trade zones within inland

¹ U.S. Census Bureau, 2013.

² U.S. Department of Transportation, n.d.

³ Coy, 2013.

⁴ Secretaria de Comunicaciones y Transportes, 2013.

⁵ Whitfield and Hulse, 2011.

ports that would allow faster processing at border ports of entry because the cargo would move 'in bond'. Interpuerto Monterrey has also started cooperating with other inland ports in Mexico and Spain to share best practices. These developments suggest that U.S.-Mexico truck-based trade, which represents a significant share of truck use and consumption of TxDOT assets, is best addressed by recognizing trade flows that are sensitive to system-wide planning and investments. Rather than simply removing bottlenecks, like congested ports of entry, the private sector is more concerned with the possible integration of the overall transportation and logistics system.

Improving freight flows to maintain economic competitiveness and highway safety is a major TxDOT goal and state planners are aware of bottlenecks at border POEs that have been created by increased trade between the U.S. and Mexico, particularly at peak periods during the working day. This brief suggests that evaluating truck trade flows from a system perspective might more accurately reflect current and future decisions made by highway users. This will enable both countries to support a more efficient supply chain network, which will not only allow timely and safe delivery of goods, but also reduce transportation and inventory costs.

BACKGROUND

MEXICO'S RISE IN THE GLOBAL ECONOMY

Mexico is now one of the largest economies in the world—ranked 14th by the World Bank in 2012 with a gross domestic product (GDP) of \$1.18 trillion. Mexico is a member of the G-20, an alliance of the 20-biggest economies of the world, and has entered into a total of 44 free trade agreements (FTAs) with other countries. The alliance and other FTAs have given Mexico the opportunity to open its markets to countries outside of the North American Free Trade Agreement (NAFTA).⁶

The U.S., Canada, and Mexico signed NAFTA which was fully implemented on January 1, 1994. In 2008, all trade barriers were eliminated, making it a tariff-free trade zone. This agreement has been instrumental in facilitating trade of goods and services growth, inflow of foreign direct investment, and creation of jobs. Each day, NAFTA creates \$3.2 billion worth of trade with its NAFTA partners and produces one-third of the world's total GDP.⁷ Mexico has become a major exporter of manufactured goods to the U.S. It has been a major supplier of household appliances, electronics including cell phones, pharmaceuticals, medical devices, power systems, and other consumer goods. According to a study by World Bank, NAFTA not only had a positive impact on the Mexican economy, but it has also enabled the Mexican manufacturers to adopt innovative technologies used in the U.S.⁸ There are 330 ports of entry on 45 border crossings between the U.S. and Mexico.

From 2012 to 2013, total trade between the U.S. and Mexico increased by 2.6%. In 2013, the top commodity exported between the U.S. and Mexico was electrical machinery at

⁶The New Policy Institute, 2013.

⁷U.S. Chamber of Commerce, 2012.

⁸ Villarreal and Fergusson, 2013.

\$94.2 billion (see Appendix 3). In the U.S., 23 states consider Mexico as one of its top-three trading partners.⁹ Table 1 presents the top-ten U.S. states with the highest share of trade with Mexico using all modes of transportation. Texas has the highest volume of trade with Mexico amounting to \$195.6 billion in 2013—three times greater than the second state, California.

TABLE 1: Top 10 U.S. States Trading with Mexico¹⁰

Value of Trade in 2013 (in millions of dollars)	
State	Value of Trade
Texas	195,636
California	60,174
Michigan	52,431
Illinois	18,987
Arizona	14,113
Ohio	12,642
Louisiana	11,013
Tennessee	10,020
Indiana	7,966
Georgia	7,882

Mexico may supplant China as the second-ranked U.S. trading partner, primarily because the former wide disparity between Mexican and Chinese labor costs (especially in the respective manufacturing sectors) is closing rapidly. The U.S. economy will also benefit because Mexican factories use four times more U.S.-manufactured components as China. Another consideration is the declining cost of energy which will soon be lower in Mexico due to abundant supply of natural gas in Texas. Most manufacturers also prefer to be closer to their largest consumer--the U.S. market--and are, therefore, establishing their manufacturing facilities in Mexico to lower their transportation and inventory costs. In other words, “near-shoring” is economical not only for U.S. consumers, but also for its manufacturers.¹¹

One of the fastest-growing industries in Mexico is the automobile sector due to lower costs of production, availability of skilled labor, government support such as tax credits, and job training assistance. Audi, Honda, Nissan, and Mazda are planning to open manufacturing or assembly facilities in Mexico by the end of 2014/15.¹²

MODES OF TRANSPORTATION

There are five primary modes of transportation used in bi-lateral U.S.-Mexico trade: rail, truck, air, ocean vessels, and pipelines. In 2013, surface transportation, which includes truck, rail and pipeline transport, carried 80.8% of the total dollar value of goods or services traded.

⁹The New Policy Institute, 2013.

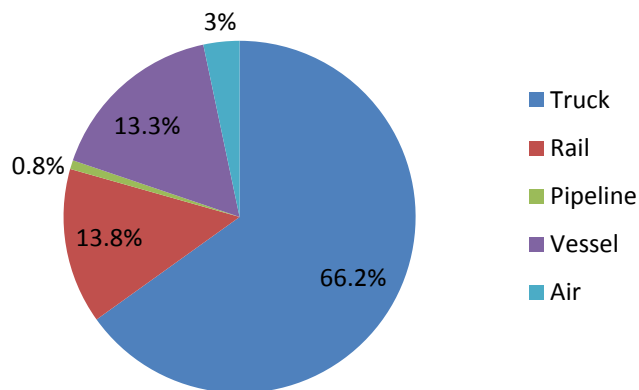
¹⁰ U.S. Department of Transportation, n.d.

¹¹ Coy, 2013.

¹² Ross, 2013.

From 2012 to 2013, freight--in terms of value--on these three modes grew faster than overall trade. That is, transport by pipeline grew by 8.5%, rail by 8.2% and truck by 3.8%. In the same period, air and maritime trade declined by 6.9% and 9.1%, respectively (see Appendix 4). Figure 1 shows the percent of total usage by each mode of transportation in the year 2013.

FIGURE 1: Trade Value between U.S.-Mexico by Mode of Transportation in 2013¹³



SINGLE SUPPLY CHAIN NETWORK

NAFTA enabled manufacturing industries in North America to stay globally competitive and focus on establishing strong and efficient supply chains. It reoriented manufacturing and assembly facilities between the U.S. and Mexico to take advantage of economies of scale. Both countries are using production sharing as manufacturers in these countries are working together to create finished goods. In such situations, intermediate goods produced in the U.S. are sent to assembly/value addition facilities in Mexico where the finished goods are produced and transferred to U.S. consumers. Therefore, an efficient supply chain is critical to support this manufacturing and production system.¹⁴ International supply chains comprise points of production and consumption, multimodal corridors, and ports of entry/export where security inspections, together with legal and tariff compliance, are undertaken. These are conducted at the first entry point for imports--airports, seaports, and border ports of entry for truck and rail imports. International and domestic supply chains may also have load centers at strategic locations along their highway or rail corridors, particularly near large metropolitan markets. These inland ports provide a range of services to shippers and have been most strongly linked to the growth of Class 1 rail carrier intermodal business.

Transportation experts define an inland port as a location where multimodal transportation facilities, along with other services, are offered at a single location. The services include warehousing, freight forwarding, and logistics management. The inland ports provide ways to lower costs by reducing transportation links, delays from customs, and allow shippers

¹³U.S. Department of Transportation, n.d.

¹⁴ Villareal and Fergusson, 2013.

to use Just-in-Time (JIT) inventory methods.¹⁵ In light of the growth of such facilities, private investors and public policy makers are focusing on inland ports to strengthen the effectiveness of multimodal corridors. Inland ports can also be linked to industrial parks, which cities promote for industrial development.

MEXICO'S NATIONAL PROGRAM OF INVESTMENT IN TRANSPORTATION AND COMMUNICATIONS INFRASTRUCTURE 2013–2018

Mexico has four main north-south transportation corridors: the Pacific Corridor, the Chihuahua Corridor, the Central Corridor, and the Gulf Corridor, which link into Mexico City. Of the four corridors, the Gulf Corridor is the least significant in terms of the dollar value of trade between the U.S. and Mexico.¹⁶

As previously mentioned, the Mexican government launched its most recent NIP on July 15, 2013 to enable the nation to be globally competitive with other developed nations. Some \$46.6 billion will be devoted to improving transportation-related infrastructure projects, including modernization and upgrading of the nation's 17,598 km of highways and rural roads.

The Mexican government also plans to construct two new, modern, north-south trade corridors along with two east-west routes. One of the two north-south corridors will be the Pacific Coastline Corridor, which will integrate the country's northwest and western regions. The other corridor is the Gulf Coastline Corridor, which will connect Veracruz, Tampico, and Monterrey to Matamoros. This corridor will not only allow for a smooth flow of goods, but also encourage tourism. It will enable the rest of Mexico's regions to be connected to the oil and gas industries. The first east-west corridor, Manzanillo-Tampico, will connect Mexico's four major north-south trade corridors and will provide easy access to cities at the northern border such as Nuevo Laredo, Reynosa, and Juarez. The second corridor, Mazatlán-Matamoros, will connect the Pacific and Atlantic oceans, linking the U.S. and Mexico with Asia in a well-connected 1,242 km corridor. The superhighway will connect southern U.S. cities to the northern part of Mexico and offer access to the Mazatlán port, which will provide the U.S. with faster access to Asian markets.

In the NIP, the Mexican government acknowledged that the nation has lagged behind in its development of infrastructure. Mexico's infrastructure was rated lower than in previous years, meaning that the country needs to devote more effort to improving its infrastructure to compete with other countries. In the plan, the government includes building its infrastructure to fulfill its mission of uniting North America with Central and South America. Road infrastructure is of special importance to Mexico since it accounts for more than three quarters of its freight flows and over 95% of passenger travel. It is also significant that, compared to similar countries, Mexico relies less on rail transport although that might be changing on key corridors.

Road projects dominate the plan, representing 149 out of the total 210 projects. The Mexican region where most of the budget will be spent is in the southernmost region, followed by the central and northern regions. With Mexico concentrating its resources on road

¹⁵ Walter and Poist, 2003.

¹⁶ Eichenauer, 1995.

infrastructure, it is closer to accomplishing its goal of connecting North America with the rest of the continent and ultimately, with the world.¹⁷

IMPORTANT PRIVATE SECTOR STAKEHOLDERS

The Mexican Association of Industrial Parks (AMPIP) was established to encourage foreign direct investment (FDI) in the country. High inflow of FDI was accomplished by assisting and providing investors from other countries with incentives to establish their manufacturing units in Mexico. Currently, AMPIP has 57 corporate members who own more than 200 industrial parks located throughout Mexico.¹⁸

Other important stakeholders in cross-border trading activities include inland ports and transportation companies. Alliance Texas in Fort Worth is one of the important inland ports in the state. It is termed a “global logistics hub” and is the cornerstone of an 18,000-acre area developed by the Hillwood Group. Alliance offers inland port transportation options via one of the nation's largest intermodal yards, two Class I rail lines, the world's first industrial airport, and connecting state and interstate highways. Stemming from this strong infrastructure system are corporate campuses, office complexes and tech centers, destination retail and entertainment venues, residential housing, apartments, schools, churches and community shopping.¹⁹ Succinctly, it is a master-planned, mixed-use development, not only providing its customers with access to multiple modes of transportation, but also includes an industrial park.²⁰ Similarly, one of the largest inland ports in Mexico is Interpuerto Monterrey. It is situated in one of the largest industrial cities in Mexico, 200 km from the U.S. border, which makes it an important location for manufacturers and shippers who are also served by two railroads. The government of Mexico has been a strategic partner in terms of both facilitating the development of the infrastructure²¹ and meeting with Interpuerto to evaluate the potential of pre-clearance of goods and developing bi-national customs programs.

One of the important private railroad service providers in the U.S. is the Kansas City Southern Railway Company (KCS). KCS owns Kansas City Southern de Mexico (KCSM), which is one of two railroad companies—the other being Ferromex—to offer service between key terminals located in U.S. and Mexican cities.

KEY POLICY ISSUES

Issues arising from a consolidated transportation system between U.S.-Mexico include improvements needed for the logistics system within Mexico, the lack of alliances between the U.S. and Mexican inland ports, and the absence of a deregulated logistics system in Mexico.

¹⁷ Secretaria de Comunicaciones y Transportes, 2013.

¹⁸ AMPIP, n.d.

¹⁹ Alliance Texas, n.d.

²⁰ Dallas logistics Hub, n.d.

²¹ Interpuerto Monterrey, n.d.

IMPROVEMENTS NEEDED IN INFRASTRUCTURE DEVELOPMENT IN MEXICO

The Secretariat of Communications and Transportation (SCT) and the Secretariat of the Economy (SE) are collaborating with the Inter-American Development Bank to create a National System of Logistics Platforms. In this regard, the April 2013 Mexican National System of Logistics Platforms and Implementation Plan (*Sistema Nacional de Plataformas Logísticas y Plan de Implementación*) states that primary logistics nodes, secondary nodes, and the cities that unite these nodes form logistics macrospheres that serve to facilitate transport and commerce in Mexico. These logistics macrospheres are strong and overlapped in the central region of the country. This region is the most populous area of Mexico where a significant amount of manufacturing takes place. The logistics macrosphere surrounding Monterrey is very large, but it is separated and distant from other logistics macrospheres. This makes the Monterrey region logistically weak, as it does not have many cities and secondary logistics nodes to facilitate transportation.

Monterrey is part of the most consolidated logistics corridor. This corridor is highly consolidated with good reason—it has the job of transporting goods for export from the industrial manufacturing cities in the central region of Mexico into the U.S. through Texas. The other branch of the strongest consolidated logistics corridor starts in the central region of Mexico then makes its way to Chihuahua and across the border through Juarez. Both of the consolidated logistics corridors in Mexico are set up to facilitate trade between Mexico and the rest of North America. Comparatively, the Monterrey branch of the corridor has a stronger network surrounding its region. The Mexican government has singled it out as an area that will receive a significant amount of attention over the next five years because it expects the growth in trade to continue. But, on the other hand, the government also acknowledges that the Chihuahua branch of this corridor is less developed and points out that it is an issue of concern to them.²²

LACK OF ALLIANCES BETWEEN INLAND PORTS

Transportation companies in Mexico, such as KCSM, are working in close coordination with some of the inland ports in Mexico. KCSM has established such collaboration by having terminals located within the inland ports to facilitate the transportation of goods. These terminals are located in Puerto Mexico (Taloca), Interpuerto (San Luis Potosi) and Monterrey, which connects the ports to the KCS network in the U.S. to move different goods between the two countries.²³ Partnerships between inland ports or an alliance between inland ports and transportation companies in the U.S. and Mexico can provide immense benefit to both countries by not only ensuring timely delivery of goods, but also reducing transportation and inventory costs. There is a lack of a functioning alliance between inland ports located in the U.S. and Mexico to facilitate cross-border trade. Hence, many inland ports in Mexico are entering into strategic partnerships with industrial parks in other countries. For instance, Interpuerto

²² Secretaria de Comunicaciones y Transportes, Secretaria de Economía, & Banco Interamericano de Desarrollo, 2013.

²³ Délano, 2014.

Monterrey has been working in collaboration with PLAZA (Plataforma logística de Zaragoza) in Zaragoza, Spain.²⁴

REGULATORY ROLE OF MEXICAN GOVERNMENT

There is a need for a national logistics platform in Mexico that can lead to more efficiency and competitiveness in all modes of transportation. Success of an efficient transportation system requires a deregulated logistics system. The government needs to support private-sector collaboration and initiatives that will accomplish these ends and spur growth of this sector.²⁵

According to recent reports, two of the leading railroad companies—KCSM and Grupo Mexico, operator of the Ferromex and Ferrosur railroads—have been targeted by draft legislation in the Mexican House of Deputies for monopolistic behavior. The proposed legislation would require the companies to share their tracks and disclose their confidential rates associated with private contracts. Ferromex has threatened to withhold a \$2.2 billion investment plan if it is forced to disclose rates.²⁶

LESSONS LEARNED

Recent reports suggest that, in the future, Mexico will become increasingly competitive with Asia as a manufacturing base. This will also benefit the U.S. economy since global manufacturing in Mexico will enable the U.S. to increase its imports. Typically, Mexican factories use four times as much U.S.-manufactured components as Chinese manufacturers. Such an industrial boost in Mexico will also lead to an increase in the standard of living; hence, Mexicans will be able to buy more U.S. goods.

An analysis of the plans drafted by the Mexican government shows that Mexico has been allocating a significant amount of resources to improve its infrastructure, especially when it comes to the trade corridors used for export and import with other countries. The Mexican government realizes that a strong logistics network is necessary to be competitive in the global market. Similarly, its private sector is working toward finding ways to improve the logistics networks, which will facilitate transport across the U.S.-Mexico border, especially between Texas and Mexico. Mexico passed a Public-Private Partnerships law in 2012, offering much-needed regulatory clarity and legal protection for private investors.

Part of this research was devoted to ascertaining what the private sector is doing to strengthen logistics networks through cooperation. As a result, some of the private-sector stakeholders in the U.S.-Mexico transportation network were interviewed for this project. These included representatives from the North American Strategy for Competitiveness (NASCO), AMPIP, KCSM, and Interpuerto Monterrey. NASCO's work is centered on bringing

²⁴ Hulse, 2014.

²⁵ Déllano, 2014.

²⁶ Szakonyi, 2014.

together the different components of the North American Corridor that unites U.S., Mexico and Canada.

NASCO, AMPIP, KCSM and Interpuerto Monterrey all believe that U.S.-Mexico transportation should be treated as a single, continuous logistics network. They believe that companies on both sides of the border should plan their operations as if no border existed. For this reason, the private sector is looking for ways to integrate the transportation system, including encouraging all important stakeholders, especially the inland ports and transportation companies, to cooperate by sharing information and best practices.

Interpuerto Monterrey has been in talks with Alliance Texas in Fort Worth to create a partnership to promote cross-border trade. Interpuerto Monterrey is currently cooperating with inland ports in San Luis Potosi and Spain in order to share best practices. Through cooperation amongst different members of the transportation industry, the private sector is enhancing its ability to facilitate trade.²⁷

RELEVANCE TO TEXAS

The main objective of this policy brief is to provide TxDOT with the information on how the private-sector firms on both sides of the border are working diligently to make the supply chain network between U.S.-Mexico more efficient. The private sector has always considered the transportation network between the two countries as a single network, rather than two transportation infrastructure systems situated in different countries. The private sector is developing mutual agreements to form strategic partnerships, which will facilitate a system of sharing best practices and experiences with each other. They want to achieve “integrated” trade corridors through public-private partnerships and cooperative agreements, and need investments in transport logistics, such as telecommunications and warehouses.

The Mexican government is working toward strengthening its transportation network to facilitate the flow of goods with its trading partners. It has realized the importance of logistics hubs to create links between trade corridors and to contribute to the establishment of a national network of logistics hubs. According to the NIP, one of the east-west trade corridors—Mazatlán to Matamoros—will link North America with Asia, which will facilitate global trade. This corridor will make the current two-day journey from the Pacific Ocean to the Gulf of Mexico a reduced, ten-hour voyage on a toll road. As with all toll roads, however, the pricing of the facility will impact truck demand and commercial success. The Mexican government also realizes the need to build logistics hubs at various locations on this trade corridor to facilitate commerce. This will enable Mexico to diversify its trade links by strengthening trade ties with other countries, in addition to the U.S. and Canada. Major industrial and logistics companies are already working in the state of Durango, which will provide services such as industrial parks, foreign trade zones, and intermodal terminals.

In the future, a lack of integrated transportation system between Mexico and the U.S. might begin to adversely impact trade between the two countries. Therefore, TxDOT should focus on helping to facilitate improvements and integration of U.S.-Mexico transportation

²⁷ Hulse, 2014.

infrastructure to remedy this potential problem. TxDOT planning should support more efficient supply chain networks, so as to enhance competitive advantages in Mexico-Texas markets.

BIBLIOGRAPHY

- Alliance Texas. "Why Alliance Texas." n.d.
<http://www.alliancetexas.com/WhyAllianceTexas.aspx>
- AMPIP. "Homepage." <http://www.ampip.org.mx/>. n.d.
- Chapman, Soosay and Kandampully. "Innovation in Logistics Services and the new Business Model: A conceptual Framework." *International Journal of Physical Distribution and Logistics Management*, 2005.
- Conde, Frank. Interview by Hector Rojas and Salima Khan. *Director of Communications and Special Projects, NASCO*, December 2013.
- Coy, Peter. "Four Reasons Mexico is Becoming a Global Manufacturing Power." *Bloombergbusinessweek.com*, 2013. <http://www.businessweek.com/articles/2013-06-27/four-reasons-mexico-is-becoming-a-global-manufacturing-power>
- Dallas Logistics Hub. "Homepage." <http://dallaslogisticshub.com/>. n.d.
- Delano, Lic. Jose Guillermo Zozaya. Interview by Hector Rojas and Salima Khan. *President and Executive Representative, KCSM*, 2014.
- Durvasula, Lysonski, Mehta. "Service Recovery and Customer Satisfaction Issues with Ocean Shipping lines." *European Journal of Marketing*, 2000.
http://epublications.marquette.edu/cgi/viewcontent.cgi?article=1081&context=market_fac
- Eichenauer, Steven, et al. *US-Mexico Trade and Transportation: Corridors, Logistics*. Austin: University of Texas, 1995.
http://www.utexas.edu/research/ctr/pdf_reports/PRP_113.pdf
- Hulse, Leslie. Interview by Hector Rojas and Salima Khan. *Director of Marketing, Interpuerto Monterrey*, 2014.
- Institute of Shipping Economics and Logistics. *Shipping Statistics and Market Review*. Bremen, Germany: ISL Institute of Shipping Economics and Logistics, 2012.
<http://www.infoline.isl.org/index.php?func=viewpub&module=Pagesetter&pid=1&tid=1>
- Interpuerto Monterrey. "Homepage." <http://www.interpuertomty.com/>. n.d.
- Ross, Jon. "American Shipper ." *"South of the Border": Mexico , once again, becomes attractive to U.S shippers"*. 2013.
http://www.americanshipper.com/Main/News/South_of_the_border_53969.aspx
- Secretaria de Comunicaciones y Transportes (SCT). *Programa de Inversiones en Infraestructura de Transporte y Comunicaciones 2013-2018*. 2013.
http://www.sct.gob.mx/fileadmin/GITS/PIITC_-_SCT.pdf
- Secretaria de Comunicaciones y Transportes (SCT), Secretaria de Economia (SE) and Banco Interamericano de Desarrollo (BID). *Definicion de un Sistema Nacional de Plataformas*

- Logisticas y Plan de Implementacion*. 2013.
<http://www.sagarpa.gob.mx/agronegocios/Documents/SNPL%20BID.pdf>
- Szakonyi, Mark. "KCS to Aggressively Defend MEXican Concession Agreement." *Journal of Commerce*, 2014. http://www.joc.com/regulation-policy/transportation-regulations/international-transportation-regulations/kcs-aggressively-defend-mexican-concession-agreement_20140210.html
- The New Policy Institute. "Realizing the Strategic National Value of our Trade, Tourism, and Ports of Entry with Mexico." 2013.
http://ndn.org/sites/default/files/blog_files/NPI%20U%20S%20-Mexico%20Trade%20Tourism%20POE%20Report_0.pdf
- U.S. Census Bureau. "Top Trading Partners - November 2013." *census.gov*, 2013.
<http://www.census.gov/foreign-trade/statistics/highlights/top/top1311yr.html>
- U.S. Chamber of Commerce. *NAFTA Triumphant: Assessing Two Decades of Gains in Trade, Growth and Jobs*. 2012. <https://www.uschamber.com/report/nafta-triumphant-assessing-two-decades-gains-trade-growth-and-jobs>
- U.S. Department of Transportation. "Intermodal Transportation Database." n.d.
https://www.rita.dot.gov/bts/data_and_statistics/index.html
- Villarreal, M Angeles, and Ian F Ferguson. *NAFTA at 20: Overview and Trade Effects*. Congressional Research Service, 2013. <http://www.fas.org/sgp/crs/row/R42965.pdf>
- Walter, Kenneth Clyde, and Poist Richard. "Desired Attributes of an Inland Port: Shippers Vs Carriers Perspective." *Transportation Journal* 42-44. 2003.
- Whitfield, Brittany, and Leslie Hulse. *Mexico's Evolving Network of Modern Interstate Roadways*. ProLogis Research Insights, 2011.
http://www.prologis.com/docs/research/north_america/Mexico_Research_Feb2011_FINAL.PDF
- Wikipedia. "Kansas City Southern Railway." n.d.
http://en.wikipedia.org/wiki/Kansas_City_Southern_Railway.
- Wikipedia. "Industrial Park." n.d.
http://en.wikipedia.org/wiki/Industrial_park
- Wikipedia. "United States - Mexico Border." n.d.
http://en.wikipedia.org/wiki/Mexico%E2%80%93United_States_border

APPENDIX 1: CONTACTS

Francisco Conde

Director of Communications and Special Projects
NASCO, North American Strategy for Competitiveness
214-744-1018
frank@nasconetwork.com

Claudia Avila Connelly

Executive Director
AMPIP, Mexican Association of Industrial Parks
+52 (55) 2623-2216
cavila@ampip.org.mx

Lic. José Guillermo Zozaya Délano

President and Executive Representative
Kansas City Southern de México SA
+52 (55) 9178-5676 and +52 (55) 9178-5628
jzozaya@kcsouthern.com.mx

Steve Boeking, Hillwood

Vice President for Business Development,
Fort Worth.
steve.boeking@hillwood.com

Leslie Hulse

Director Marketing
Interpuerto Monterrey
+52 (81) 1477-9024
lhulse@interpuertomty.com

Alejandra Cruz-Ross

alecruzross@gmail.com

APPENDIX 2: MAP OF U.S.-MEXICO BORDER



APPENDIX 3: TOP COMMODITY TRANSPORTED BETWEEN U.S. AND MEXICO FOR EACH MODE OF TRANSPORTATION (IN MILLIONS OF DOLLARS)

Mode	Commodities	Exports	Imports	Total
All Modes	Electrical Machinery; Equipment and Parts	36,774	57,395	94,168
Truck	Electrical Machinery; Equipment and Parts	32,925	52,207	85,131
Rail	Vehicles Other than Railway	6,810	31,832	38,643
Pipeline	Mineral Fuels; Oils and Waxes	3,703	241	3,944
Vessel	Mineral Fuels; Oils and Waxes	16,500	33,825	50,325
Air	Electrical Machinery; Equipment and Parts	2,740	2,462	5,202

Source: U.S. Department of Transportation, n.d.

APPENDIX 4: MODAL SHARES OF U.S.-MEXICO FREIGHT FLOW (IN MILLIONS OF DOLLARS)

Mode		2012	2013	Percentage Change
All Modes	Imports	277,653	280,456	1.0
	Exports	216,331	226,153	4.5
	Total	493,984	506,608	2.6
Share of Total by Mode (% of total value)				% Point Change 2012-2013
All Surface Modes*	Imports	79.1	81	2
	Exports	79.5	80.5	1
	Total	79.2	80.8	1.6
Truck	Imports	65.7	65.9	0.3
	Exports	65.1	66.6	1.5
	Total	65.4	66.2	0.8
Rail	Imports	13.3	15	1.7
	Exports	12.8	12.3	-0.5
	Total	13.1	13.8	0.7
Pipeline	Imports	0.1	0.1	0
	Exports	1.6	1.6	0.1
	Total	0.7	0.8	0
Vessel	Imports	16.3	14.3	-2
	Exports	13.2	12	-1.2
	Total	15	13.3	-1.7
Air	Imports	3.1	2.6	-0.5
	Exports	3.4	3.4	0
	Total	3.3	3	-0.3

Source: U.S. Department of Transportation, Bureau of Transportation Statistics, TransBorder Freight Data