

## **Preface**

U.S./Mexico Binational Border Transportation Planning and Programming Study implements a significant binational policy making document entitled "Memorandum of Understanding on the Planning process for Land Transport on Each Side of the Border" signed by the federal governments of Mexico and the United States at the first "NAFTA Transportation Summit" held in Washington D.C., April 29, 1994.

The purpose of this study is to provide policymakers with information needed to establish a continuous, joint, binational, transportation planning and programming process. A goal of this study is to improve the efficiency of the existing binational policy making, planning procedures and funding criteria affecting our Border Land Transportation Systems (BLTS). The BLTS should be seen as a binational transportation system made of international bridges and border crossings and its land connections to major urban and/or economic centers, principal seaports, airports and multimodal/transfer stations, and ultimately to its connections to national transportation facilities.

**BINATIONAL BORDER TRANSPORTATION PLANNING AND PROGRAMMING STUDY  
TASK 3.1 REPORT: DESCRIPTION OF COMMERCIAL  
MOTOR VEHICLE TRADE FLOW PROCESS**

While the US-Mexico trade flow process at each border crossing has unique aspects which reflect the specific characteristics of the crossing, much of the binational trade flow process is common from crossing to crossing. The Task 3.1 report describes generic trade flow processes for three types of cross border trade: traditional, maquiladora and agricultural. Each trade type has characteristics which influence the processing at the ports of entry. Agricultural products undergo different inspections than traditional or maquiladora trade. The frequency of maquiladora trade has created specialized procedures to reduce inspection and document processing times, thereby, reducing the overall border crossing times. The northbound and southbound trade flow processes are laid out in a step-by-step format in order to clearly understand the process as well as identify the parties involved and time costs.

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**Key Words:** border crossings, transportation, port of entry, efficiency, infrastructure, goods, trade, trade flow process, system operations

# **BINATIONAL BORDER TRANSPORTATION PLANNING AND PROGRAMMING STUDY**

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## **Task 3.1:**

### **Description of Commercial Motor Vehicle Trade Flow Process**

*Final Report*

*Barton-Aschman Associates, Inc.  
La Empresa, S. de R.L.*

*May 8, 1996*

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## 3.1 Overview of Trade Flow

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Depending on the type of trade flow, overall travel times from product origin to destination can be measured as being a matter of hours or a number of days. On one hand, traditional trade coming from an origin in the interior of one country and traveling to a destination in the interior of the other country may require a week or more of travel. Maquiladora trade, on the other hand, moves between “sister” plants located on each side of the border in a matter of hours. Therefore, the level of impact caused by the border crossing process and any associated traffic delay caused by inadequate infrastructure varies depending on the type of trade.

Based on the assessment of the trade flow processes presented in this document, it appears that improving the logistical expertise of shippers and carriers offers the greatest opportunity for reducing cross border travel times -- since processing the required paperwork typically consumes the greatest amount of time. For traditional trade, efficient operations can expect paperwork delays of 4 to 5 hours. However, infrequent, inefficient or low volume shippers may experience delays of 1 to 2 days or much more. Therefore, the peak period traffic queue delays of 2 to 3 hours frequently observed at the primary inspection booths of high volume U.S. ports of entry represent only a small portion of the overall travel time of goods crossing the border.

The maquiladora trade process has been streamlined by both countries’ customs agencies. The use of line release in the U.S. and consolidated pedimentos in Mexico has eliminated most of the paperwork processing and related broker activities that normally occur at the border crossing. These techniques allow the maquiladoras to rapidly move shipments through customs. In addition, maquiladoras can schedule shipments to take advantage of off-peak hours (morning hours) at the U.S. ports of entry.

Agricultural and hazardous material shipments both have unique inspection characteristics. In the case of agricultural products, the need for pest and quality control adds inspection time and therefore travel time. In the case of hazardous materials, the regulations and need for special handling makes this type of movement more predictable for both Customs and the shipper.

### 3.1.1 Background

The primary objective of the Binational Transportation Planning and Programming Study is to develop a binational process for the planning and programming of transportation facilities that will facilitate the flow of traffic and trade between the two countries. In order to understand how specific transportation infrastructure improvements might affect the trade flow it is important to understand the overall trade process.

This report summarizes the northbound and southbound trade flow processes along the U.S.-Mexico border for four types of trade movements: traditional, maquiladora, agricultural and hazardous materials. The purpose in diagramming these trade processes is to better understand the border crossing event.

For the purposes of this report these trade flows have been defined as follows:

**Traditional Trade** - Traditional trade represents those products that cross the border for consumption in the country of import. One primary characteristic of this trade flow is that the products are typically destined for locations within the interior of the each country. Traditional trade transport typically involves more steps than the transport of maquiladora trade and the speed of movement is most often a function of logistical expertise.

**Maquiladora** - This trade flow represents the cross border flow of parts from the U.S. and finished products from Mexico that has developed since the creation of the maquiladora system in Mexico in the mid-1960's. This flow is characterized by two factors: 1) the linked flow of goods from the U.S. to Mexico and Mexico to U.S., and 2) the concentration of this activity in close proximity to the border. The sheer volume of parts flowing into Mexico and finished products flowing into the U.S. requires that these trade movements be as efficient as possible.

**Agricultural Trade** - Agricultural trade includes all plant, animal, and forest products that move across the border. This trade flow is similar to traditional trade in that the goods are consumed in the country of import. Due to the nature of agricultural trade, there are additional inspections and documentation which must be accounted for in the trade flow process. Agricultural trade is time-sensitive to insure that products get to market while the product is fresh.

**Hazardous Materials** - A wide range of products fall into the category of hazardous materials. Hazardous materials may cross the border as a raw material, new product or as a waste by-product. The growth in maquiladora activities and the implementation of the environmental protection aspects of the NAFTA accords has had the effect of increasing the movement of hazardous materials across the border. Many of the manufacturing processes used by the maquiladora require the use of solvents or other hazardous materials. NAFTA requires that any by-products from the use of hazardous materials must be returned to the country of origin for proper disposal.

Chapters two and three of this report describe the southbound and northbound trade flow processes which occur across the U.S.-Mexico border. The descriptions contained in these chapters explain the trade flow diagrams presented in the associated appendix. The process flow diagrams were developed from several sources including: publications available from Mexico's Secretary of Communications and Transportation, U.S. Customs, and the U.S. Environmental Protection Agency; transportation studies conducted by the Center for Transportation Research at the University of Texas at Austin and the Instituto Mexicano del Transporte; and transportation magazines and journals. Additional information was collected from conversations with Customs Inspectors, food & drug agents, agricultural agents, brokers, and carriers.

### 3.1.2 Available Data and Analyses Related to Ports of Entry

Based on the review of published reports, there have been few detailed traffic analyses performed for the individual ports. Texas has the best collection of reports that provide operational analyses of the ports of entry. Since many of the Texas border crossing facilities are located within highly urbanized areas, these studies examine the operational characteristics of the international bridges, inspection booths, and city streets. While intersection level of service analyses are presented for some crossings, the majority of the analyses have been conducted at a macro-level using annual or average daily traffic. Some of the reports have presented adjusted peak hour or peak period data. Some of the assumptions and techniques described in the Texas reports are discussed in this document.

Statistical data is collected by both the U.S. and Mexican Customs agencies in terms of the number of vehicles processed. Available data includes total monthly and annual vehicle counts passing through the ports. For most U.S. ports this can be broken down into loaded and unloaded vehicles. In addition to vehicle totals, U.S. Customs maintains data by entry type - informal, formal, in-bond shipments and temporary imports. Again, this information is useful at a macro-level of analyses of port operations, but does not readily lend itself to operational analyses. Due to significant peaks experienced at most U.S. ports of entry, time distribution is an important data

element missing from these existing data sources.

Outside the ports of entry, traffic data is typically collected by the agency responsible for maintaining the roadways adjacent to the port. In the U.S., this may include city, county and state agencies. In Mexico, the federal government may also be involved in collecting and maintaining traffic data. The data may be collected through an ongoing count program or for a specific engineering study. Due to the variety of agencies involved, there is currently no common system for collecting and reporting this data.

The approach taken by this assessment is to describe border crossing time by accounting for the major border crossing processes and associating a time with these processes where possible. While the major steps have been identified by the consultants, the number of permutations of how these steps may be combined for a given product or shipment makes it difficult to report absolute border crossing time estimates. The following pages summarize the crossing times for the various trade flows.

### 3.1.3 Traditional Trade

Since most traditional trade moves from points located in the interior of both countries, the travel time to and from the border region is relatively long. Travel times to and from the border region can be a few hours or a number of days. The major processes where time is consumed in the traditional trade flow are:

#### *Southbound U.S. to Mexico*

Transport from Manufacturing Areas to Border	4 hrs to 4 days
U.S. Broker Processing Time	< 1 hr
Mexican Broker Processing Time (frequent / infrequent shippers)	4 - 5 hrs / 1 to 3 days
Drayage - Equipment Swap	< 1 hr
U.S. Customs - Export Declaration	1 to 3 min
U.S. Customs - Export Inspection (Limited to Licensed Exports)	30 min to 3 hrs
<<Border Crossing>> (Off Peak / Peak)	1 to 3 mins / 1 to 3 mins
Mexican Customs - Module 1	1 to 3 min
Mexican Customs - Primary Inspection (10% of All Vehicles)	30 min to 3 hrs
Mexican Customs - Secondary Inspection (1% of All Vehicles)	30 min to 3 hrs
Mexican Carrier Pickup	< 1 hr
Transport to Final Destination	1 hr to 4 days

*Northbound Mexico to US*

Transport from Manufacturing Area to Border	2 hrs to 4 days
Mexican Broker Processing Time	4-5 hrs
U.S. Broker Processing Time (Overlaps w/ Mexican Broker < 1hr)	1 hr
Drayage - Equipment Swap	< 1 hr
Mexican Customs - Module 1	1 to 3 min
Mexican Customs - Primary Inspection (10% of All Vehicles)	30 min to 3 hrs
Mexican Customs - Secondary Inspection (1% of All Vehicles)	30 min to 3 hrs
<<Border Crossing>> (Off Peak / Peak)	
	1 to 3 mins / 2 to 3 hours
U.S. Customs - Primary Inspection	
	1 to 3 min
U.S. Customs - Secondary Inspection (percentage varies)	30 min to 6 hrs
U.S. Carrier Pickup	< 1hr
Transport to Final Markets	1 hr to 4 days

For traditional trade, it typically takes a minimum of one day to have the U.S. documents and Mexican pedimentos prepared and to cross the border. For frequent shippers, familiar with the process, the preparation of the southbound Mexican pedimentos typically takes 4 to 5 hours. However, for an infrequent shipper, the preparation of southbound pedimentos could require several days considering the inspection process. An investment in acquiring logistical expertise can greatly speed the preparation of the documents. Usually, the U.S. paperwork can be prepared and submitted concurrent with the processing of the Mexican documents.

For vehicles that are selected for inspection by customs, an additional delay of between 30 minutes to 6 hours can be expected. If selected for both U.S. and Mexican Customs' secondary inspections, the inspection delay could increase to be between 1 and 12 hours.

**3.1.4 Maquiladora Trade**

Since maquiladora facilities are located in close proximity to the border, transport to and from the ports of entry are minimal. Generally, the travel times range from less than an hour to 2 or 3 hours. Both the U.S. and Mexican Customs have established systems to speed the processing of maquiladora shipments. In the U.S., for northbound trade Line Release and other similar programs as being used. For southbound trade, the automated Paperless Export Monthly Reporting Program for the Department of Commerce allows most brokers to stamp a copy of the Pedimento or the invoice for immediate export. The data is entered into the system at a later time and submitted on a monthly basis. In Mexico, consolidated pedimentos are used to streamline the border crossing process. The following lists activities similar to the traditional trade process. Side by side comparison shows where maquiladoras benefit from special processes:

*Southbound U.S. to Mexico*

Transport from Manufacturing Areas to Border (assuming consolidation/distribution center at border)	30 min - 1 hr
U.S. Broker Processing Time (automated monthly reporting)	No Vehicle Delay
Mexican Broker Processing Time (Consolidated Pedimentos)	No Vehicle Delay
Drayage - (Provided by maquiladora)	No Vehicle Delay
U.S. Customs - Export Declaration	1 to 3 min
U.S. Customs - Export Inspection (Limited to Licensed Exports)	30 min to 3 hrs
<<Border Crossing>> (Off Peak / Peak)	1 to 3 mins / 1 to 3 mins
Mexican Customs - Module 1	1 to 3 min
Mexican Customs - Primary Inspection (10% of All Vehicles)	30 min to 3 hrs
Mexican Customs - Secondary Inspection (1% of All Vehicles)	30 min to 3 hrs
Mexican Carrier Pickup (not applicable)	No Vehicle Delay
Transport to Manufacturing Facility	30 min to 2hrs

*Northbound Mexico to U.S.*

Transport from Manufacturing Facility to Border	30 min to 2 hrs
U.S. Broker Processing Time (Line Release)	No Vehicle Delay
Mexican Broker Processing Time (Consolidated Pedimentos)	No Vehicle Delay
Drayage - Equipment Swap	No Vehicle Delay
Mexican Customs - Module 1	1 to 3 min
Mexican Customs - Primary Inspection (2% of All Vehicles)	30 min to 3 hrs
Mexican Customs - Secondary Inspection (0.2% of All Vehicles)	30 min to 3 hrs
<<Border Crossing>> (Off Peak / Peak)	1 to 3 mins / 2 to 3 hours
U.S. Customs - Primary Inspection	1 to 3 min
U.S. Customs - Secondary Inspection (percentage varies)	30 min to 6 hrs
U.S. Carrier Pickup (not applicable)	< 1hr
Transport to Distribution Center	30 min to 1 hr

Maquiladora trade is only delayed by regulatory inspections. In the southbound direction, maquiladoras may not be subject to any inspection by U.S. Customs, except when Customs

performs random “quality control” inspections. Only licensed exports such as hazardous materials, firearms and specialized electronic equipment require inspection. Mexican Customs uses a random selection system which treats all vehicles (and types of trade) equally. One in ten vehicles entering Mexico is inspected.

In the northbound direction maquiladora shipments are also subject to random regulatory inspections on the part of both Mexico and the U.S. Mexico’s system is based on inspections of at least 2 percent of all northbound vehicles. In the U.S. the selection process is not entirely random and it varies from port to port and, potentially, from month to month. Inspection rates as low as 5 percent have been reported in Laredo and as high as 60 percent at Otay Mesa. Some recent data for Otay Mesa places the annual rate of inspection for 1995 at approximately 10 percent of all commercial vehicles.

Since the systems in place for the maquiladora eliminate the delay due to paperwork processing, the border crossing times can be reduced to a very few minutes if no inspections are required. If random inspections occur, the border crossing could take an additional 30 minutes or as much as 6 to 12 hours assuming both countries select the load for inspection.

### **3.1.5 Agricultural Trade**

Agricultural trade has a mixture of traditional and maquiladora trade characteristics along with special inspection requirements. Both countries require that agricultural products be inspected to ascertain quality and potential pest infestation. Often the quality inspection (grading) occurs in the country of origin prior to the shipment reaching the port of entry. In addition, pre-clearance of some agricultural products is allowed by both countries. Typically, each of these inspections adds between 30 minutes and 1 hour to the border crossing process. The following lists the major processing steps for agricultural products, expanded from the traditional trade flow process:

Depending on the number of inspections or if pest control treatment is necessary, anywhere from a few hours to a day or more may be added to the transborder shipment of produce. Tomatoes and mangos coming from Mexico to the U.S. through Nogales provide examples of how the process varies. Tomatoes have a low pest risk, therefore, most loads coming from Mexico are precleared and only 1 in 20 loads are randomly inspected. The tomato inspection involves literally testing a single tomato from each truck load.

Mangos, on the other hand, have a high pest risk, therefore all loads of mangos are both treated and inspected. The treatment process requires that each mango be dipped in hot water to kill any larva. The inspection of mangos requires that 1 mango from each of 15 different boxes be tested for infestation. Therefore, a shipment of mangos could experience a day or more of delay at the border for treatment and inspection.

### **3.1.6 Hazardous Materials**

The strict regulations on the movement of hazardous materials makes this flow the most predictable. In general, advance notification must be given to both U.S. and Mexican Customs prior to the movement of hazardous materials across the border. U.S. Customs typically requires 24-hours notice. The notification process makes it possible to predict how many vehicles will be crossing on a given day and U.S. Customs can provide sufficient staffing to process all vehicles. Processing of hazardous material loads ranges from 15 to 30 minutes for a shipment that does not require transloading and up to 2 hours for a shipment that must be transloaded between vehicles.

*Southbound U.S. to Mexico*

Transport from Growing Areas to Border	4 hrs to 4 days
U.S. Broker Processing Time	< 1 hr
Mexican Broker Processing Time	4-5 hrs
<i>Agricultural Inspection (Mexican Customs Broker in U.S.)</i>	<i>1 hr</i>
Drayage - Equipment Swap	< 1 hr
U.S. Customs - Export Declaration	1 to 3 min
<i>U.S.DA - Vital Sanitary Certificate</i>	<i>15 min to 1 hr</i>
U.S. Customs - Export Inspection (Limited to Licensed Exports)	30 min to 3 hrs
<<Border Crossing>> (Off Peak / Peak)	1 to 3 mins / 1 to 3 mins
Mexican Customs - Module 1	1 to 3 min
<i>Mexican Customs - Fumigation</i>	<i>15 min - 2 hrs</i>
Mexican Customs - Primary Inspection (10% of All Vehicles)	30 min to 3 hrs
Mexican Customs - Secondary Inspection (1% of All Vehicles)	30 min to 3 hrs
Mexican Carrier Pickup	< 1 hr
Transport to Final Markets	1 hr to 4 days

*Northbound Mexico to U.S.*

Transport from Growing Area to Border	2 hrs to 4 days
<i>Grading and Market Demand Evaluation</i>	<i>15 min to 1 hr</i>
<i>Treatment (Products with High Pest Risk, i.e. mangos)</i>	<i>1 hr - 1 day</i>
Mexican Broker Processing Time	4-5 hrs
U.S. Broker Processing Time (Overlaps w/ Mexican Broker < 1hr)	1 hr
Drayage - Equipment Swap	< 1 hr
Mexican Customs - Module 1	1 to 3 min
Mexican Customs - Primary Inspection (10% of All Vehicles)	30 min to 3 hrs
Mexican Customs - Secondary Inspection (1% of All Vehicles)	30 min to 3 hrs
<<Border Crossing>> (Off Peak / Peak)	1 to 3 mins / 2 to 3 hours
U.S. Customs - Primary Inspection	1 to 3 min
<i>U.S.DA Inspection (High Pest Risk Products)</i>	<i>15 min to 1 hr</i>
U.S. Customs - Secondary Inspection (percentage varies)	30 min to 6 hrs
U.S. Carrier Pickup	< 1hr
Transport to Final Markets	1 hr to 4 days

## 3.2 Southbound Trade Flow Process

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Please refer to the flow charts provided in Appendix A to this report for an overview of the southbound trade flow process. The descriptions included in this chapter are linked to the flow charts by the number and title of each discussion.

### 3.2.1 SB 1: Product Origin -- U.S. Shipper

The **U.S. Shipper** is defined as the company that wants to export merchandise to Mexico. The shipper may be the manufacturer of the product itself or a distributor of one or more products. In the United States, it is typically the shipper who is responsible for preparing the **Bill of Lading (D1)** that will govern the U.S. portion of the transport to Mexico. However, the **U.S. Carrier** will provide a bill of lading if the shipper elects not to prepare his own.

The purpose of truck and rail bills has been described by one source<sup>1</sup> as follows:

- “the carrier’s formal receipt of the goods shipped;
- evidence of the contract of carriage between the carrier and shipper, including freight charges and the terms and conditions of the carrier’s liability; and
- the consignor-shipper’s means with which to stop or divert delivery of the goods shipped.”

An important aspect of filling out the bill of lading is the classification of goods that is used to calculate the freight charges in accordance with the carrier’s filed tariff. All goods are classified by the National Motor Freight Classifications (NMFC) listing. Freight rates are established for each classification based on weight and volume and considering susceptibility to damage,.

An original bill of lading travels with the shipment to the border region destination which will be one of the following: the carrier’s terminal, a freight forwarder, a U.S. broker, or a Mexican broker. If the destination is not the carrier’s terminal, either an electronic copy or facsimile is transmitted to the freight forwarder or broker.

In terms of transportation origin and destination, **Product Origin** in international trade is often subject to a loose interpretation of the actual physical location where the product was made or assembled. On the other hand, **Country of Origin** is tracked with a very high level of accuracy, but may not be directly linked to the origin of transport. In order for goods to receive preferential tariff treatment under the NAFTA accords, a **Certificate of Origin (D2)** must be prepared and kept on file for any goods imported between the U.S., Mexico and Canada. The certificates are available in English, Spanish and French. Copies of the English and Spanish versions are shown in Figures 1 and 2.

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<sup>1</sup> Disparities in the Law and Practice of Surface Transportation of Goods Between the United States and Mexico; National Law Center for Inter-American Free Trade; Tucson, Arizona; July 1993.

Figure

1 Certificate of Country of Origin - English

Figure

2 Certificate of Country of Origin - English

Where the breakdown occurs in product origin is the **State of Origin** which tends to be open for interpretation, and therefore, is often incorrectly assigned. If products are shipped to a consolidation point within the U.S., the product's state of origin may be reassigned to the state where consolidation occurred. For **Less than a Truck Load** (LTL) shipments, a second (new) bill of lading may also be prepared by the carrier if multiple LTL's are consolidated prior to shipment across the border. This breakdown in the products' origin makes it difficult to correctly estimate origin and destination pairs for transportation planning purposes.

The movement of **Hazardous Materials** across the border requires advance notification of both U.S. and Mexican Customs. Depending on the type of material being transported and the specific border crossing policy, the advanced notification can be from 24 to 72 hours. For most U.S. ports of entry there are special days or hours when hazardous materials can be exported out of the U.S. Often EPA and state vehicle safety inspectors are involved in the inspection process of hazardous materials.

The port at Otay Mesa has one of the best equipped hazardous material handling areas. The facility which handles both northbound and southbound shipments is located in the export (southbound) compound. Otay Mesa only accepts hazardous materials shipments on Tuesdays, Wednesdays and Thursdays between the hours of 7:00am and 9:00am.

In El Paso at the Ysleta port of entry, each shipment is handled on a case-by-case basis and inspections are conducted in a remote area of the main import compound. As the amount of hazardous materials increases, the Ysleta port is planning to add a hazardous materials handling area to the facility.

**3.2.2 SB 2: Transport to Border Region – U.S. Carrier**

Once the carrier has picked up the shipment, the land transport of goods to the border region occurs either over private rail lines, Federal and State highways, or, in the case of many ports of entry, on City and/or County transportation facilities. Therefore, the planning, construction, and maintenance of these transportation facilities fall within the normal procedures of various governmental agencies in the case of commercial vehicles operations. Unfortunately, many of the existing transportation planning efforts do not fully incorporate the movement of goods in the planning activities.

During the trip from the point of origin or consolidation to the border region, the Carrier's truck will be subject to the motor vehicle laws of the state or states through which it travels. All U.S. states have vehicle safety and weight requirements which are enforced at permanent safety inspection facilities and weigh stations. Permanent weigh stations are located at the state borders (entering the state) and along heavily traveled truck corridors. In addition, many states use roving or temporary units that can perform inspections at random locations throughout the state.

**3.2.3 SB 3: Border Regional Destination – Carrier Terminal, Freight Forwarder, or Broker**

Prior to beginning the actual border crossing, a truck will typically go to the U.S. carrier's terminal, a freight forwarder's facility or a broker's facility. In many instances, a U.S. broker will have been contacted to facilitate the border crossing process. The U.S. Broker will fill out the **Shipper's Export Declaration (SED) (D3)** – form 7525-V (OMB No. 0607-0018) (shown in Figure 3). This is a standard form required by the International Trade Administration which is an agency within the U.S. Department of Commerce -- Bureau of the Census. Most U.S. Customs Brokers participate in the Paperless Export Monthly Reporting Program run by the Department of Commerce (DOC). This program allows the broker to place a seal on the Pedimento or invoice and retain the paper copy of the SED. The information from the SED is later entered into a database system and submitted monthly to DOC.

Since this is a census form, there are no legal requirements that a U.S. Broker or even a U.S. citizen fill out this form. Therefore, it is possible for shippers to work directly with a **Mexican Customs Broker** by-passing the U.S. Broker. In this event the shipper or the Mexican broker can fill out and submit the export declaration. Many shippers, however, use a U.S. Broker as they feel more comfortable relying on a U.S. Broker to represent their interests at the border crossing.

Most of the information required to fill out the export declaration is included on the bill of lading. The individual filling out the form must make sure that the commodities are correctly classified into the appropriate chapters (1-97) of the **Harmonized Tariff Schedule** (HST Schedule B). Since the broker usually has this information prior to the shipment's arrival at the border, the export declaration is usually filed electronically using the automated Paperless Export Monthly Reporting System used by the DOC prior to or immediately upon its arrival at the border destination.

The amount of time required for a U.S. broker to complete the necessary paperwork for exportation typically takes less than an hour. One estimate was that for 90-95% of the loads handled by U.S. brokers, it takes as little as 20-minutes to complete the SED and enter it into the Paperless Report System. Since the filing of the SED is usually completed prior to the truck's arrival at the border, there is minimal or no delay to the vehicle.

#### **3.2.4 SB 4: Equipment Inspection – U.S. Equipment Bound for Mexico**

If a U.S. owned trailer is to be taken into Mexico, the trailer may be inspected in order to assess the condition of the trailer prior to leaving the U.S. In addition some carriers require a surety bond or proof of insurance for the equipment, in this event the inspection is also used to determine the value of the equipment. If there is an interline agreement between the U.S. and Mexican carriers this step can be avoided.

#### **3.2.5 SB 5: Freight Forwarder or Broker Verifies Load**

Since the U.S. broker is not legally liable or financially responsible for the contents of the southbound shipment, the U.S. broker's verification effort is minimal compared to that of the Mexican broker. For frequent customers, there may be no verification by the U.S. broker. For infrequent or one time customers, there is a higher probability that the broker may want to verify the load. Once the broker is satisfied that the information provided matches the information on the SED, the export declaration is released to U.S. Customs and to the Mexican broker who will prepare the required Mexican paperwork.

#### **3.2.6 SB 6: Mexican Customs Broker**

**Mexican Customs Brokers**, unlike U.S. Brokers, are legally responsible and liable for the content of shipments across the border. Therefore, the process used by the Mexican Customs Brokers is more rigorous. The broker typically receives both the export declaration and bill of lading in advance of the truck arriving at their facility. With this information, the broker begins the preparation of the **Mexican Import Pedimentos (D4)** which are required for cargo entering into Mexico.

Figure

3 Shipper's Export Declaration

If the shipper is a frequent customer of the Mexican Customs Broker, minimal or no inspection may be undertaken. However, if the shipper is unknown to the broker or is an infrequent customer, a thorough inspection may be required in order to verify the contents and/or for classification purposes. When an inspection is required, the U.S. shipper may incur fees for the unloading and reloading the truck and for storage (“parking”) of the vehicle or trailer during the inspection.

It should be noted that while both the U.S. and Mexico use HST Schedule B, there are significant differences in the method of classification. An example of this difference was provided by one U.S. broker on how prepackaged toy dolls would be classified in both systems. In the U.S. system, the doll and any clothing would be classified as a toy. In the Mexican system, the “body” of the doll would be classified as a toy and the clothing on the doll would be classified as clothing. This difference in the application of the HST Schedule B classifications accounts for some of the differences in the trade values reported by both the U.S. and Mexico.

The Pedimentos, which are similar to the U.S. Entry Documents required by U.S. Customs, include an invoice identifying the shipper (exporter), buyer (if goods will stay in Mexico) or manufacturing location (for maquiladora goods), and the carrier. The Mexican broker submits the pedimentos electronically to Mexican Customs using the Sistema de Automatización Aduanera Integral (SAAI) which is similar to the U.S. ABI/ACS systems. The SAAI server is located at the Customs Broker Association (Asociación de Agentes Aduanales or AAA) and can only be accessed by a limited number of broker representatives. Once the pedimentos are approved an electronic signature and bar code are attached to the pedimentos document. Finally, the pedimentos must include an acknowledgment of the pre-payment of any fees, duties, or taxes required by Mexican law. Pre-payment is made in advance of the border crossing at the “**Banking Module**”.

Maquiladora operations avoid many of the steps described above through the use of the consolidated pedimentos. Consolidated pedimentos are similar to the Line-Release program used in the U.S. A maquiladora can fill out a special invoice which is accepted and entered by a Mexican Customs official once the shipment reaches Module 1 at the border crossing. At the end of each week, the maquiladora or their broker must submit the consolidated pedimentos which accounts for all the invoices which crossed during the week. This system eliminates the need to have each load processed by a Mexican broker at the border crossing area.

**3.2.7 SB 7: Mexican Broker - Agricultural Inspections**

Agricultural inspections are performed at one of three facilities within the U.S. territory that have been approved **by the Secretaría de Agricultura, Ganadería y Desarrollo Rural (SAGAR)** of Mexico. Each facility is designed for the inspection of a particular product type: animal, vegetable, or forest product. The time for processing agricultural products is approximately 30 minutes which includes a review of the paperwork and visual inspection of the products. It takes another 30 minutes to issue the **Mexican import certificate (D5)**.

**3.2.8 SB 8: Mexican Broker - Banking Module**

One article<sup>2</sup> provides the following description of the pedimentos payment process:

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<sup>2</sup> Trucking Into Mexico; E.J. Muller, Senior Editor; Distribution Magazine; June 1993.

“Duties are paid at the Bank of Laredo upon clearance. Customs brokers can pay in cash, by check or through wire transfer. A wire transfer hastens the process, but many companies are afraid of untraceable breaks in the paper trail and do not want to pay twice to get shipments into the country. They would rather wait to hand over duties at the point of entry. This does not apply to big shippers who handle their paperwork through faxes and pay duties through wire transfers.”

Since the majority of the trade flowing across the border is handled by large shippers, the payment of pedimentos does not add any significant delay to the process, however, small brokers or infrequent shippers may experience a delay while the pedimentos are paid.

### **3.2.9 SB 9: Mexican Drayage**

Once all the physical paper work is prepared and the pedimentos are electronically transmitted to the Mexican Customs officials, the shipment can move across the border. In the past, the Mexican broker would always arrange the drayage across the border due to the laws that governed trucking into Mexico. Under this system, the drayage company was often either part of or directly associated with the Mexican Customs Broker. Regardless of ownership, this step required at a minimum that the tractor would have to be switched from the U.S. Carrier to the Mexican Drayage company. In the event that the U.S. trailer was not to leave the country, the shipment would have to be off-loaded and reloaded onto a Mexican trailer.

Due to the increase in maquiladora trade, the drayage system described above has been undergoing some changes. Initially, local agreements were being made to allow maquiladoras to use their own drivers and equipment to haul between the “sister” plants located on either side of the border. This type of arrangement has eliminated the need for an equipment swap during the cross border movement. In addition, one result of the NAFTA accord is that Mexico will ultimately permit U.S. and Canadian carriers to make deliveries across the border and pick up cargo in the Mexican border states.

### **3.2.10 SB 10: U.S. Customs - Standard Export Declaration**

Once the shipment reaches the port of entry, U.S. Customs Inspectors checks to see if the invoice or Pedimento has been stamped by the U.S. broker indicating that the SED will be filed electronically with the Department of Commerce. Since most of the SEDs are filed monthly, there is a minimum of delay exiting the country and processing time is typically less than 2 minutes for most exports. In the event that a SED must be filled out at the time of export, the delay is as long as it takes to type out the SED. There are some commodities, such as arms, munitions, and certain electronic/computer technologies, that require an export license or have quotas and U.S. Customs Inspectors must inspect these loads on export. In addition, any item being exported for temporary use must be cleared before export.

### **3.2.11 SB 11: U.S. Customs - Export Loads Requiring Inspection**

U.S. Customs Inspectors are called on to enforce the laws and regulations of other government agencies at U.S. ports of entry, therefore, there are several commodities that must be inspected on export from the U.S. Typically, these commodities require a license or permit to export or have export quotas. The most common commodities that require an inspection on export are firearms, ammunition, computers, specialized electronic equipment and hazardous materials. Many of the maquiladoras temporarily export test equipment for use in their Mexican plants. This equipment cannot be exported for consumption in Mexico and must be returned to the U.S. within a specified time. The equipment must be inspected when leaving the country and be registered

with U.S. Customs.

The **Toxic Substance Control Act (TSCA)** requires that certain chemicals and products be inspected on exportation and that EPA be notified seven (7) days in advance of the first exportation of a hazardous material. Subsequent exportations require less lead time but a minimum of 24 hours notification is required at most ports. The TSCA covers many of the chemicals exported to Mexico for use in the maquiladora plants. NAFTA requires that by-products of any hazardous materials exported to Mexico be returned to the country of origin. Therefore, U.S. Customs must register TSCA materials being exported to Mexico.

### **3.2.12 SB 12: Physical Border Crossing**

Along the U.S./Mexico border there are approximately 20 toll facilities. Along the Texas border alone there are 24 border crossings of which 17 have tolls in one or both directions. At these locations, the toll is typically collected just prior to crossing. Therefore, the U.S. bridge owner would collect the southbound tolls and Mexican bridge owner the northbound tolls. In a few instances the tolls are collected only on the U.S. side in either one or both directions. In most cases, the driver pays the toll upon reaching the bridge. Southbound tolls along the border range from U.S. \$1 to \$30 depending on the type of shipment or the size/weight of the vehicle or number of axles. Automated toll systems have been used at a few border crossings.

Outside of Texas, most of the border crossings are accomplished simply by driving across the short stretch of pavement between the two port of entry facilities. Since Mexico uses an automated random selection system for inspections, there is usually minimal delay in the southbound direction and traffic flows with a minimal amount of interference. However, when the automated system breaks down, there have been times when the border was effectively closed.

### **3.2.13 SB 13: Mexican Customs - Module 1**

Mexican Customs **Module 1** is where the first interaction occurs with Mexican Customs officials. At Module 1, the Customs Inspector verifies that the papers carried by the driver match the information that has been filed electronically. This check only takes between 1 to 2 minutes to complete. If the paperwork has not been filed correctly, the truck can be impounded or returned to the U.S.

If all the paperwork is in order, the truck is subjected to the random selection system (red light primary inspection, green light pass). The random selection system is designed to select 10% of all southbound trucks. If the truck receives a green light, it proceeds to the final check point at the commercial facility. If it receives a red light, it moves to the primary inspection area.

### **3.2.14 SB 14: Mexican Customs - Primary Inspection**

A primary inspection typically does not require unloading the vehicle. The paperwork is sent to the Customs office and is held until the inspection is complete. The time consumed by a primary inspection ranges from 15 minutes to 3 hours.

Once the primary inspection is complete, the vehicle is again subjected to the random selection system. Again, 10% of the vehicles passing through the primary inspection area (1% of all vehicles) are selected for a secondary inspection.

### **3.2.15 SB 15: Mexican Customs - Secondary Inspection**

A secondary inspection is more thorough than the primary inspection. Secondary inspection often requires that either a portion of, or the entire contents be unloaded from the truck. Secondary

inspections are carried out by a private company (ISOSA) under contract to Mexican Customs whose job is to serve as a quality control of Mexican Customs officials. The amount of time required to perform a secondary inspection is also between 15 minutes and 3 hours.

### **3.2.16 SB 16: Mexican Customs - Final Check Point**

The final check point is where all paperwork is collected and the vehicle is allowed to exit the import compound. Since all agricultural loads go through an inspection process in the U.S. by Mexican officials prior to arriving at the border, the only agricultural activity is the verification of the certificate of inspection and fumigation, if needed. One of two fumigation methods are used by SAGAR. The first method is used for fully enclosed trailers where a gas is released inside the container and fumigation occurs while the vehicle is enroute. For open containers or vehicles, fumigation is carried out in the Mexican Customs compound. Since most of the import compounds do not have dedicated facilities for fumigation, it occurs in an open area of the compound.

### **3.2.17 SB 17: SCT Vehicle Safety Inspection**

Typically, SCT maintains a vehicle safety inspection point at the exit of the commercial compound. This inspection point is used to insure that both the tractor and trailer are cleared to operate in Mexico.

### **3.2.18 SB 18: Mexican Broker - Truck Corral**

Once the vehicle has cleared the SCT inspection it moves on to one of several possible destinations. If the vehicle is destined to a maquiladora plant within close proximity of the border, it will go directly to that facility. In the event the vehicle is destined to the interior of Mexico, it will go to either a broker's facility or a truck corral where the drayage company's tractor is disconnected and the trailer is stored until a long-haul carrier's tractor arrives to transport it to the interior of Mexico.

### **3.2.19 SB 19: Mexican Carrier**

A Mexican Carrier is used to transport products to the interior of Mexico. Maquiladora operations may not need the services of the Mexican Carriers since their production facilities are near the border. However, companies engaged with traditional trade will typically use a Mexican Carrier.

### **3.2.20 SB 20: 25km Check Point**

The 25km Check Point defines the limit of the free travel zone for foreign travelers in Mexico. (Due to geographic and/or physical conditions, the check point may be located beyond the actual 25 km point such is the case in Esenada, Baja California.) Foreigners may move freely within the 25km limit without any special paperwork or passport. However should a foreign traveler desire to visit the interior of Mexico (beyond the 25km zone), they are required to have an appropriate travel or work visa. The 25km Check Points are operated by Immigration officials. Each vehicle must stop and passengers must declare citizenship. Foreign travelers must present the appropriate papers in order to proceed.

For commercial shipments the 25km Check Point serves as a final quality control point for Mexican Customs. Each commercial vehicle is again submitted to a random selection process. If the vehicle is selected by the system for inspection, the inspector verifies three items, the drivers licenses, the cargo seal and bond. The inspection are carried out by a private contractor to the Ministry of Revenue.

### 3.2.21 SB 21: Final Destination

The shipment travels to its final destination either within the border zone or interior of Mexico. Border zone trade is primarily made up of maquiladora trade while interior trade is typically consumer oriented. Since the highest concentrations of population are located in the center of the country (Mexico City, Guadalajara, Monterrey), this is the primary traditional trade destination.

### 3.3

## Northbound Trade Flow Process

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Please refer to the flow charts provided in Appendix B to this report for an overview of the southbound trade flow process. The descriptions included in this chapter are linked to the flow charts by the number and title of each discussion.

### 3.3.1 NB 1: Product Origin – Mexican Shipper<sup>3</sup>

The **Mexican Shipper** is defined as the organization or person that wants to export merchandise to the United States. The shipper may be the manufacturer of the product itself or a distributor of one or more products. In Mexico, unlike the U.S., it is typically the receiver of the goods (cosignee) that negotiates with the carrier to arrange the transport. However, in the case of international shipments it is more common for the shipper to arrange transport.

Another difference between the U.S. and Mexican systems, is that the Mexican Carrier is usually responsible for preparing the **Bill of Lading (D1)** that will govern the Mexican portion of the transport to the U.S. Often the carrier prepares and keeps the bill of lading until it is turned over to the cosignee upon delivery.

While the bill of lading in the U.S. serves as a contractual agreement between the consignor and the carrier, in Mexico the terms of the contract (bill of lading) are regulated and standardized by the **Secretaria of Comunicaciones y Transportes (SCT)**. Any changes to this format must be approved by SCT.

The Mexican Carrier is not required to file a tariff and is, therefore, free to charge what the market will bear. The carriers' liability is also negotiable. If the carrier's liability is limited, then a "less than ordinary rate" can be used, otherwise an ordinary rate is used which includes the charge for increased liability.

An original bill of lading travels with the shipment to the border region destination, which will be either the carrier's terminal or a Mexican broker's facility. Typically, a facsimile of the bill of lading is transmitted directly to the broker in advance of the shipment's arrival. If a U.S. broker will be involved in the shipment's entry to the U.S., a facsimile of the bill of lading will also be sent to the U.S. broker in advance of the shipment's arrival.

**Product Origin** in international trade is often subject to a loose interpretation of the actual location where the product was made or assembled. On the other hand, **Country of Origin** is tracked with a very high level of accuracy. In order for goods to receive preferential tariff treatment under the NAFTA accords, a **Certificate of Origin (D5)** must accompany any goods imported into the U.S., Mexico or Canada. The certificates are available in English, Spanish and French. Copies of the English and Spanish versions are shown in Figures 1 and 2 (Chapter 2, pages 2 and 3).

Where the breakdown occurs in product origin is the **State of Origin** which tends to be open for greater interpretation, and therefore, is often incorrectly assigned. In Mexico, the definition of state of origin is often misleading due to the system used for collecting data. This system utilizes paperwork that is filed in order to pay taxes. This paperwork often originates from the company's headquarters or financial office rather than from the production facility. Therefore, it has been

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<sup>3</sup> Disparities in the Law and Practice of Surface Transportation of Goods Between the United States and Mexico; National Law Center for Inter-American Free Trade; Tucson, Arizona; July 1993.

noted that the Federal District (D.F.) is overrepresented as the origin of products coming from Mexico. Since consolidation and distribution centers have not been commonly used in Mexico, they do not experience the same misrepresentation as in the U.S. However, these types of operations are becoming more common in Mexico and may add to the uncertainty of product state of origin.

For transportation planning and analysis purposes the problem of determining the actual physical product origin is of significant importance. Without accurate origin and destination data, it is impossible to make reasonable estimates and/or projections of demand that international trade places on existing transportation facilities or to plan future transportation facilities.

The movement of **Hazardous Materials** across the border requires advance notification of both U.S. and Mexican Customs. For most U.S. ports of entry there are special days or hours when hazardous materials can be imported into the U.S. Often EPA and state vehicle safety inspectors are involved in the inspection process of hazardous materials.

The Port of Entry at Otay Mesa has one of the best equipped hazardous material handling areas. Located in the export (southbound) compound, it handles all hazardous material shipments, imports and exports. Therefore, the hours of operation are limited to the early morning hours before the Port of Entry is actually open for commercial activity. Otay Mesa only accepts hazardous materials shipments on Tuesdays, Wednesdays and Thursdays between the hours of 7:00 am and 9:00 am.

In El Paso at the Ysleta port of entry, each shipment is handled on a case-by-case basis and inspections are conducted in a remote area of the main import compound. As the amount of hazardous materials increases, the Ysleta port is planning to add a hazardous materials handling area to the facility.

### 3.3.2 NB 2: Transport to Border Region – Mexican Carrier

As stated above, the Mexican Carrier will prepare the bill of lading and pick up the goods for transport to the border. In Mexico, the Federal government is responsible for planning and maintaining national and regional roadways. In many of the most traveled corridors, the carrier may have the opportunity to use either free or toll roads. The toll roads tend to be better maintained and reduce the travel time, however, they represent a direct cost which must be included in the total cost of the shipment.

### 3.3.3 NB 3: U.S. Brokers -- Mexican Office

At some ports of entry, U.S. brokers are allowed to maintain small offices in Mexico. These offices are typically used as collection points for information which is forwarded to the U.S. broker's offices in the United States. This information allows the U.S. broker to prepare the appropriate U.S. entry documents and, in most cases, file them electronically with U.S. Customs using the **Automated Broker Interface** (ABI). In addition, the U.S. broker's Mexico offices provide a location where truckers can pick up the U.S. entry papers prior to approaching the U.S. border.

The U.S. entry documents for conveyance are:

- **Evidence of Right to Make Entry (D2)** - Goods may be entered only by the owner, purchaser, or by a licensed broker. When the goods are cosigned "to order", the bill of lading, properly endorsed by the consignor, may serve as evidence of the right to make entry. In most instances, entry is made by a person or firm certified by the carrier bringing the goods to the port of entry and is considered the "owner" of the goods for Customs purposes. The document issued by the carrier is known as a "Carrier's Certificate."

- **Entry or Inward Manifest (D3)** - Typically, the entry manifest is prepared using Customs Form (CF) 7533 and the bill of lading may be used as a supporting document. However, there are other forms for other types of shipments such as CF 3461 for Entry/Immediate Delivery or a Bar Code Form for Line Release. It should be noted that district directors may specify other types of forms for merchandise release unique to their POE operation.
- **Invoice or a proforma Invoice (D4)** - This document must identify the buyer and seller, port of entry, a detailed description of the merchandise, quantities, weights and measures, purchase price, all charges on the merchandise, and country of origin. While there is no standard format for the invoice, the specific content is well documented. This information can be entered into the **Automated Invoice** system by a broker using the ABI.

In some cases, packing lists may be required and/or there may be documents required in order to determine if the merchandise is admissible to the United States.

The entry must be accompanied by evidence that a bond is posted with Customs to cover any potential duties, taxes, and penalties which may accrue. Bonds may be secured through a resident U.S. surety company and may be posted in the form of U.S. dollars or U.S. government obligations. In the event that a customs broker is employed for the purpose of making entry, the broker may permit his bond to provide the required coverage.

If the goods are to be released from Customs custody on entry documents, an entry summary for consumption must be filed and estimated duties deposited at the port of entry within 10 working days of the time the goods are entered and released. The Entry Summary Documentation process is as follows.

- **Entry Documents are Returned** - The entry documents described above are returned to the importer, broker or their authorized agent after the merchandise is permitted release.
- **Entry Summary (D5)** - Customs Form 7501 (Figure 4) is called the entry summary which is used to collect classification, values and other statistical information on the merchandise entered.
- **Certificate of Origin (D6)** - As described above this certificate is required in order to benefit from the preferential NAFTA tariffs. This form does not have to be submitted with the entry summary documentation; however, it must be kept on file in the event a dispute arises over the tariffs and/or duties charged.

Once the information above is complete, it is submitted within 10 working days to Entry Control of U.S. Customs for final review and quality control of the information submitted.

### **3.3.4 NB 4: Agricultural Grading & Market Demand Evaluation**

Prior to crossing the border into the U.S., agricultural products must be graded and an evaluation must be made for those products which are covered by any import demand quotas. In Nogales, Sonora, produce is graded by Arizona Federal and State Inspection Services at the CAAEDS compound prior to being sent across the border. The CAAEDS compound is operated by the growers association of Sinaloa. In addition to grading the produce, each vehicle is weighed and any overweight produce is removed and loaded onto other vehicles. If this occurs, the U.S. entry documents and Mexican export pedimentos must be revised for the original load and new papers must be created for the off-loaded produce.

### **3.3.5 NB 5: Mexican Broker - Preparation of Pedimentos**

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The Mexican Broker prepares the ***Mexican Export Pedimentos (D7)*** which are similar to the U.S. export declaration. Both the Mexican and U.S. documents require an invoice and certificate of origin. The process usually begins with the truck arriving at the brokers' office in the early morning and the drivers submitting their paperwork to the broker. When the brokers arrive they typically need to complete the process of filing the previous days receipts, therefore, they do not immediately begin processing the paperwork for the new shipments. Based on conversations with Mexican brokers, the processing of new shipments may not begin until around 9:00-9:30 am.

The preparation of the pedimentos begins with an inspection of each vehicle's cargo. Usually a broker will inspect all of the vehicles first, prior to beginning the preparation of any pedimentos. Once the pedimentos are prepared for all of the broker's vehicles, they are submitted to a senior broker for final checking. Only after the senior broker has approved the pedimentos are they submitted to the validator. While the validator reviews the pedimentos, the broker arranges the drayage of the shipment across the border.

In the northbound direction, it is common for the Mexican broker to work with a U.S. broker in the preparation of the U.S. entry documents. If the Mexican shipper or carrier did not contact a U.S. broker before the shipment reached the border, the Mexican broker will typically facsimile a copy of the paperwork to a U.S. broker who will enter the information into the ABI. This step in the process can be critical at some ports of entry. In Laredo, Customs requires 6 hours of lead time for preclearance, however, in Otay Mesa there is no formal time requirement.

Maquiladora operations avoid the steps described above on individual shipments through the use of consolidated pedimentos. Consolidated pedimentos provided similar efficiencies as the Line-Release program used by U.S. Customs. A maquiladora fills out a special invoice for each shipment which is accepted by Customs officials at Module 1. Certain information is entered by the Customs official at Module 1 for tracking purposes and the vehicle is subjected to the random selection system. At the end of each week, the maquiladora or their broker must submit a consolidated pedimento which accounts for all the invoices which crossed during the week. This system eliminates the need to have each load processed by a Mexican broker at the border crossing area.

### **3.3.6 NB 6: Validator**

The validator is a broker representative who electronically files the pedimento via the Sistema de Automatización Aduanera Integral (SAAI) server located at the Customs Broker Association (Asociación de Agentes Aduanales or AAA). SAAI is an electronic filing system which the AAA,

Figure

4 Entry Summary

Mexican Brokers, Mexican Customs (port of entry modules), and Bank Modules use to track the import and export processes.

Once the pedimento has been entered into the system and is approved, a validated pedimento with an electronic signature and bar code is created which is used to release the shipment to Mexican Customs. Once the pedimentos are released, any taxes or duties must be paid prior to the shipment moving north to the Mexican Customs. Maquiladora shipments can by-pass this step through the use of consolidated pedimentos.

### **3.3.7 NB 7: Payment of Duties or Taxes - Bank Module**

The **Bank Module** is a bank office located at the border which has the responsibility to collect any export duties and taxes owed the Mexican government. The pedimentos are presented for visual inspection and verification of the electronic signature and bar code. The Bank Module is also responsible for confirming that the duty and tax amounts on the pedimentos are the same as the amounts entered into the SAAI. The Bank certifies the pedimentos and the shipment can moved north into Mexican Customs Module 1. Maquiladora shipments can by-pass this step through the use of consolidated pedimentos.

### **3.3.8 NB 8: Mexican Drayage Across Border**

Once the export pedimentos are complete, the Mexican broker must collect the pedimentos, an invoice, certificate of origin (NAFTA requirement for special tariffs), the U.S. entry documents, the truck, and truck driver together. Mexican drayage companies transport most of the goods across the U.S./Mexican border. Often the drayage company is associated with the Mexican broker, however, at some ports, the drayage firms are selected on a first come first served basis.

In the case of maquiladoras, they may provide their own equipment and drivers rather than using a drayage company. This type of arrangement is more common since it eliminates the need for equipment swaps thereby reducing the time for the cross border movement. For traditional trade which typically comes from the interior of Mexico, a drayage company usually provides a tractor which picks up the trailer at a "corral". This arrangement allows the best equipment to be used for the long-haul trips.

By the time, the Mexican broker has completed all the pedimentos, paid any duties or taxes, and connected the appropriate paperwork with the driver and vehicle, it is often 2:00 pm or later. In most cases, each broker releases his vehicles all at once, even though this often results in congestion at the U.S. POE.

### **3.3.9 NB 9: Mexican Customs - Module 1**

Upon entering the Mexican Customs facility, the driver presents the export pedimentos which are compared to the electronic forms filed with Customs using the Sistema de Automacion Aduanera Integral (SAAI) which is similar to the Automated Broker Interface in the U.S. Maquiladora shipments using consolidated pedimentos will submit a special invoice which is processed by the Customs Inspector. Once the Customs Inspector has verified that the paperwork is complete, the vehicle is subjected to the random selection system. The random selection system is used to select approximately 2% of the northbound vehicles for a primary inspection. The random selection system serves as a quality control on the work performed by the Mexican brokers and validators.

### **3.3.10 NB 10: Mexican Customs - Primary Inspection**

Once a shipment is selected for primary inspection, the documents submitted by the truck driver are sent from the Module 1 to the Vista Aduanal offices at the dock area. Depending on the port of entry, the documents may be sent by a bicycle customs official that rides back and forth from the module to the dock area or using a pneumatic system. The officer at the module directs the driver to the primary inspection area where the driver parks the vehicle.

At the dock office, one customs official (Vista Aduanal) confirms that the documents are complete and then proceeds to verify pallet, box and piece counts. Depending on the type of commodity, the truck may or may not be unloaded. If the truck must be unloaded, this work is performed by personnel of the load/unload unions. If something is wrong with the shipment, the cargo is impounded until the problem is corrected. If everything is correct, the shipment is released (desaduanamiento) using the SAAI, and the documents are returned to the truck driver who then proceeds to Customs Module 2. The primary inspection time ranges from 30 minutes up to a maximum of 3 hours, depending on the type of commodity and the way it is loaded in the truck.

Once the primary inspection is complete, the vehicle is then subjected to the random selection system. This time the system selects 10% of the vehicles in the primary inspection area for a secondary inspection. Therefore, less than 1% of all vehicles are subjected to a secondary inspection.

### **3.3.11 NB 11: Mexican Customs - Secondary Inspection**

The secondary inspection is used as a quality control system for the Mexican Customs. Secondary inspections are conducted by a private company and the inspectors are called "Dictaminadores Aduaneros". The secondary inspection procedures are identical to the primary inspection process described above. Brokers report that in practice very few, if any, secondary inspections occur in the northbound direction.

### **3.3.12 NB 12: Mexican Customs - Final Check Point**

This is the final check point in the Mexican commercial export process. Once all paperwork is completed the vehicle passes out of the Customs compound. In the event that this is a border crossing involving a toll facility, the vehicle moves forward and the truck driver pays the toll on the Mexican side of the border. It should be noted that there is at least one location where both the northbound and southbound tolls are collected on the U.S. side of the border.

### **3.3.13 NB 13: Physical Border Crossing**

Along the U.S./Mexico border there are approximately 20 toll facilities. Along the Texas border alone there are 24 border crossings of which 17 have tolls in one or both directions. At these locations, the toll is typically collected just prior to crossing. Therefore, the U.S. bridge owner would collect the southbound tolls and the Mexican bridge owner the northbound tolls. In at least one location the tolls are collected only on the U.S. side in either one or both directions. In most cases, the driver pays the toll upon reaching the bridge.

CAPUFE is the centralized agency within the Mexican government which is responsible for all of the Mexican toll bridge facilities. Some bridges are operated by CAPUFE while others are operated as concessions by private companies. Northbound tolls are based on the vehicle type and number of axles. For commercial trucks, tolls range from 4 to 85 Mexican Pesos depending on the number of axles. These tolls are collected for each vehicle crossing regardless of whether the vehicle is loaded or empty.

Often there is only a short stretch of pavement between the two facilities and there are times when queues form in this area. When observing these queues from a traffic engineering viewpoint, there are two possible strategies for eliminating the queue: 1) add capacity at the primary inspection stations and 2) distribute the demand if capacity exists at other times of the day.

A study<sup>4</sup> conducted along the Texas-Mexico border by the Center for Transportation Research in March 1994 presented a technique for estimating the capacity of the primary inspection stations in both the northbound and southbound directions. Based on field data and interviews with Customs officials, a processing time of 2 minutes per vehicle was established for commercial vehicles in both directions. Field data in the southbound direction (at Mexican Customs Module 1), indicated that for pre-cleared shipments, the processing time was closer to 1 minute. However, since pre-clearance is not available at all crossings, 2 minutes was used as the standard processing rate for commercial vehicles in both the north- and southbound directions. The processing time was then converted into a capacity of 30 vehicles per hour per primary inspection lane.

Considering this capacity, the following theoretical analysis was undertaken for Otay Mesa U.S. Customs facility. Table 1 presents the results of a theoretical demand to capacity analysis for the port of entry at Otay Mesa. This analysis was performed using inspection statistics compiled by U.S. Customs and the capacities developed by Center for Transportation Research study. Three scenarios are presented:

- **Scenario 1 - Uniform Distribution of Demand** - While a uniform distribution of demand rarely occurs in traffic patterns, this scenario provides a baseline for the other two scenarios. Assuming that the commercial demand is distributed uniformly over the total hours of operation at the port, 83 trucks would arrive at the primary inspection booths every hour. Using a per lane capacity of 30 vehicles per hour, it would require 3 inspection booths be open during operating hours to meet this flattened demand. If four booths were open throughout the day, there would be a residual capacity of approximately 30%.
- **Scenario 2 - 3-Hour Peak at 100% of Demand** - As a worst case condition, we assumed that 100% of the average daily demand approaches the primary inspection booths between the hours of 2:00 pm and 5:00 pm. Under this scenario with all 5 existing primary inspection booths operating, the demand to capacity ratio would approach 1.5. Assuming a capacity of 30 vehicles per hour per lane, at 5:00 pm there would be approximately 220 trucks queued to enter the U.S. Customs compound.
- **Scenario 3 - 2-Hour Peak at 50% of Demand** - This scenario attempts to incorporate two additional conditions which occur at the Otay Mesa facility into the analysis. First, empty vehicles, which require less paperwork, typically enter the U.S. during the morning hours when demand is low. Second, U.S. Customs often turns back vehicles near the end of the day in order to insure the processing of all vehicles prior to the 10:00 pm closing time of the facility. Under this scenario with all 5 primary inspection booths open, the demand still exceeds the available capacity. At 4:00 pm there would be 45 trucks waiting in the queue to enter the U.S. compound.

Based on observations and accounts from Customs Inspectors, brokers, and truckers, the reality of the situation lies somewhere between Scenarios 2 and 3. However, the baseline scenario would indicate that the distribution of demand plays a large part in creating the congestion and time spent in queues at Otay Mesa today. Figure 5 demonstrates how the uneven distribution of

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<sup>4</sup> Overview of the Texas-Mexico Border: Capacity, Demand, and Revenue Analyses of Border Segment 1 (Gulf to Laredo); A. Weissman, M. Matrello, B.F. McCullough, and R. Harrison; Center for Transportation Research, University of Texas at Austin; April 1994.

demand creates large queues in the afternoon.

For U.S. ports of entry that are operating well below capacity during the morning hours, there appear to be opportunities to use demand management to reduce or eliminate the afternoon queues. Several explanations have been put forth as to why these mid-afternoon queues form. The following are the two most commonly held theories:

**Rushing** - Rushing is when a large number of trucks arrive at the border late in the afternoon. The commonly held belief of U.S. Customs officials is that the drivers think that by “rushing” U.S. Customs late in the day the number and length of inspections will be reduced. U.S. Customs denies that afternoon inspections are shorter, however, a study of border crossing times conducted by Cal y Mayor in 1994 seems to indicate the opposite. Figures 6 through 9 were prepared from data collected by Cal y Mayor in October, 1994 for two bridges in Ciudad Juarez. These figures show the processing times for vehicles passing through both the U.S. and Mexican ports of entry for two crossings. Three of the four figures generally support the theory that if a vehicle arrives late in the afternoon it may in fact receive a shorter inspection.

**Mexican Broker Practices (or Hours)** - The second theory is that the Mexican brokers create the conditions whereby demand peaks in the afternoon. It has been observed at several ports of entry that trucks arrive on the Mexican side of the border early in the morning and are parked until the pedimentos arrive in the middle of the afternoon. While many reasons have been suggested for this practice, it appears that it simply takes most of the morning and part of the afternoon for the Mexican brokers to complete all the tasks required.

A Mexican broker recently explained that on arriving in the morning the Mexican brokers must first clear all paperwork and receipts from the previous day. The brokers are typically busy with this process until 9:00 - 9:30am. Once the paperwork has been cleared the processing of new shipments begins. As described above, the brokers first verify the contents and equipment. Next, the pedimentos are prepared and submitted to a senior person for review.

Once the pedimentos are reviewed internally, they are forwarded to the validator who reviews and approves them. After the validator signs off, the duties are paid at the bank module. While the paperwork is being processed, the broker arranges drayage across the border. Finally, the broker must physically get the paperwork, trailer, and driver together. Only, when all these things come together can the shipment move across the border. Typically, this occurs around 2:00 pm.

While the first explanation supports the theory that less money is expended on drayage driver costs than the cost to unload a trailer for inspection, it is more likely that the second explanation is more probable in most cases. Assuming that the late afternoon rush is caused by the practices of the Mexican brokers, there should be opportunities to better manage demand thereby minimizing the delay. Balancing of the hours of operation between U.S. customs and the Mexican brokers, would be one solution to the over capacity situations that occur at Otay Mesa and other ports of entry. Earlier start times for the Mexican brokers or later hours for U.S. Customs could each be a possible solution. Greater electronic automation, shorter lunch hours, and or clearing paperwork and receipts in the afternoon could offer additional options for reducing vehicle queuing.

Table

1 Theoretical Demand to Capacity Analysis for Otay Mesa

Figure 5

5 Primary Inspection Lane Capacity to Demand

Figures

6 Commercial Vehicle Processing Times - Juarez Station 1: 6-Oct-94

7 Commercial Vehicle Processing Times - Juarez Station 1: 7-Oct-94

Figures

8 Commercial Vehicle Processing Times - Juarez Station 2 : 6-Oct-94

9 Commercial Vehicle Processing Times - Juarez Station 2 : 7-Oct-94

At crossing where there is a high volume of maquiladora trade, another factor which influences the evening rush is the positioning of equipment on the correct side of the border. In Otay Mesa, maquiladoras typically want their tractors on the north side of the border in the mornings to haul shipments coming from Long Beach into Mexico. Therefore, the last border crossing of the day is in the northbound direction into the U.S.

### **3.3.14 NB 14: U.S. Customs - Primary Inspection**

At the **Primary Inspection** station, the Customs Inspector must begin by determining the citizenship of the driver and any passengers in the vehicle. This is a requirement of U.S. immigration law and must be asked of each driver and passenger. After determining the citizenship status of each passenger, the officer will proceed to obtain a declaration for any agricultural products, narcotics, merchandise or currency in excess of \$10,000. The response to the questions will determine whether the vehicle is sent for inspection or the shipment is processed for release into the U.S.

There are four basic entry processes: informal entries, at the gate entries, Automated Broker Interface (ABI) pre-file entries, and line release entries. These processes can be briefly described as follows:

**Informal Entries** are the least common form of entry. These entries are generally made by small "mom and pop" operations with no regular exportation experience. Typically, completion of entry documents and the purchase of any necessary permits occur at the time of entry. These entries are not processed at the primary inspection station and are referred to the secondary inspection area. These types of entries are sometimes difficult to process and are time consuming.

**Gate Entries** are any entry that can be cleared at the primary booth. These include Automated Broker Interface Entries and Line Release Entries described below as well as those where the manifest and other paperwork have been completed prior to arriving at the primary inspection station but may not have been filed electronically. In addition, Gate Entries include arrivals where no entry is required, i.e. empties. The entry documents are presented to the inspectors at the time of entry. This type of entry reduces the time a vehicle spends at the port of entry, but still requires that the inspector process all the documents at the time of entry.

**Automated Broker Interface (ABI) Entries** are the most common form of entry. A U.S. customs broker files the release documents electronically with U.S. Customs prior to arrival of the shipment. Since some pre-processing can occur, this form of entry tends to reduce the amount of time a shipment is at the port of entry.

**Line Release Entries** are a specialized pre-filed electronic entry. Line release allows import cargo that has consistently problem-free cargo manifests and invoices to bypass standard Customs and other regulatory inspections. To qualify for line release, commodities must also be free of enforcement concerns (such as marking violations, penalties, seizures, fraud, and suspected narcotics); require no special documentation; and be selected by local Customs Districts on the basis of high volume and low risk cargoes. This process minimizes the amount of time a vehicle is at the port of entry.

The Customs Inspector reviews the paperwork presented by the driver. If this is an informal or at the gate entry, most are sent to a secondary inspection area to complete the paperwork. There are very few informal and at the gate entries at the major commercial ports of entry.

If the entry is an ABI, the agent compares the driver's paperwork with the information in the **Automated Customs System (ACS)**. The ACS is the information system that stores data

originally entered by the U.S. broker using the ABI. If the entry is Line-Release, the driver presents a form that has a series of bar codes on it. The Customs Inspector scans the bar codes and the shipment is verified by the ACS.

Once the paperwork and computer information has been verified by the agent or computer in the case of line-release, the computer may indicate that the vehicle needs to undergo a secondary inspection. While U.S. Customs will not discuss exactly how vehicles are selected for secondary inspection, there are only two reasons that the computer may select a particular vehicle: enforcement or compliance monitoring.

**Random Inspection** (Enforcement) - This is similar to the Mexican random selection system and serves as a quality control measure. If a random inspection is called for, the vehicle is moved into the secondary inspection area and an agent begins the inspection process. In a random inspection they will verify the contents, check for the appropriate marking for country of origin, and search for contraband. An enforcement inspection may focus on the cargo, the conveyance or the driver.

**Selectivity Review** (Compliance) - an examination of the entry documents to determine admissibility of the merchandise and/or if other agency requirements or special permits and licenses are present.

**Standard Cargo Exam** (Compliance) - - A standard cargo exam is an examination of the merchandise to determine admissibility and to verify the correctness of the entry documents and invoices. . A standard cargo exam is not entirely random, since it is typically targeting a particular shipper, importer, broker or drayage company. A compliance inspection is a directed form of quality control.

**Stratified Inspection** (Compliance)- A stratified inspection is a quality control inspection that targets a particular product or commodity. These inspections are more intensive than the standard exam and are selected based on a statistical methodology developed as a part of the National Compliance Measurement Program. This form of inspection is generated from the information contained in the bill of lading.

All **hazardous materials** loads must be inspected by Customs and EPA under Section 13 of the Toxic Substance Control Act. If the material is covered under Section 13 of TSCA, a certificate is required which declares what chemicals are being transported and that the shipment complies to all rules of the TSCA. The certificate must be submitted prior to the vehicle arriving at U.S. Customs.

Depending on the specific product, **agricultural, food products, pharmaceuticals and medical equipment** shipments may be sent directly to the agricultural inspection docks where U.S. Department of Agriculture and or the U.S. Food and Drug Administration inspect the loads. U.S.DA has established some low risk products that can be precleared and are only subject to random inspections. In many ports, State and County inspectors may also be present at these inspections.

Finally, while vehicles are at the primary inspection station or in the queue, K9 units will patrol around the vehicles. If a K9 Unit reacts to a vehicle, it will be selected for a secondary inspection. In addition, the agent may send a vehicle to a secondary inspection if he or she feels that there is something suspicious about the paperwork, vehicle or driver.

If everything is in order and no inspections are required, the vehicle is allowed to pass through to the final check point and exit the port of entry. Some Mexican vehicles - particularly some tankers - are too large (oversized) for operation on U.S. roadways. These vehicles may have to be trans-loaded onto smaller U.S. vehicles. This transfer occurs within the commercial compound and the

oversized vehicle is returned to Mexico.

### **3.3.15 NB 15: U.S. Customs - Secondary Inspection**

At Otay Mesa, the port is testing an X-ray machine which can scan an entire tractor-trailer rig in a single pass. When fully operational, this may become the first step in all secondary inspections where the X-ray devices are available. Once the vehicle has been X-rayed, it moves to a dock where the actual inspection will occur.

In most ports, the docks are divided into four areas: informal entries, agricultural inspections, in-bond inspections, and secondary inspections. Hazardous materials are usually handled on a case-by-case basis in a remote area of the import compound. Otay Mesa is one of the few ports that has a dedicated area for receiving and processing hazardous materials.

Regardless of the type of secondary inspection, the first item of business will be to verify the information on the driver and the equipment. The driver must have the appropriate documentation, typically a passport and visa, to satisfy **Immigration and Naturalization Services** (INS). If the driver does not have the appropriate documentation, he is referred to INS which have offices at most commercial ports.

As stated earlier, there are several types of inspections which can be conducted: random, compliance, or stratified. Depending on the type of secondary inspection, the trailer may or may not have to be unloaded. In some cases, the inspector has sufficient room to move within the trailer and nothing has to be removed from the vehicle. In other cases, the entire contents of the trailer will be unloaded.

In the event that the trailer must be unloaded, the shipper typically has to pay a fee for unloading the vehicle. In some ports there are stevedores who unload the trucks by hand. In other ports, the brokers have personnel and equipment within the port for unloading vehicles. Palletization of loads has improved the efficiency of this process.

Throughout the secondary inspection process, K9 patrols may be moving in and around the trucks and trailers. If a K9 unit reacts to a vehicle a **Contraband Enforcement Team** (CET) may be called in to aid in the inspection of the vehicle. In Nogales, Arizona, they are using a **Secondary Express** inspection program on all vehicles that move into the secondary inspection area. This program subjects the outside of the tractor and trailer to a very quick but thorough examination.

Depending on the level of inspection required, processing of a vehicle in the secondary inspection area may take from 1 to 6 hours. There have been cases where an inspection takes more than 6 hours due to special circumstances, however, these cases are rare.

### **3.3.16 NB 16: U.S. Customs - Final Check Point**

Once a vehicle is released from primary or secondary inspection, it proceeds to the final check point at the U.S. commercial compound. All the paperwork is submitted and the vehicle is allowed to exit the compound.

### **3.3.17 NB 17: State Safety Inspection**

All U.S. states have vehicle safety inspection and weigh station programs. Depending on the state, there may be either a permanent or temporary inspection/weigh station at the border. Where permanent stations exist, such as in Otay Mesa, all vehicles exiting the U.S. Customs compound must pass through an inspection/weigh station and are subject to inspection and measurement. The hours of operation of the weigh station match those of the Customs commercial facility. California issues certificates once an inspection has been performed which

remains valid for the current quarter. This approach reduces the number of inspections performed by the highway patrol and minimizes the delay for the truck driver. The processing time at the Otay Mesa facility is less than 3 minutes when an inspection is not required. A typical inspection at the Otay Mesa facility takes approximately 20 minutes.

In states where there are not any permanent stations, temporary inspection stations and scales are used. Until recently, Texas used a system of roving roadside inspectors to patrol the border region. With the increase in truck traffic along the border, Texas has added permanent stations near many of the border crossings, however, staffing limitations keep these stations from operating on the same hours as the U.S. Customs compound. Therefore, the inspection process in Texas is still a random sampling of vehicles rather than all vehicles.

In the past, Texas performed the inspections within the U.S. Customs compound; however, it was noted that when this operation was in progress the demand at the port dropped. Once the inspection team left, the demand increased significantly. This observation is another example of the complex interrelationship of activities impacting the border crossing process.

### **3.3.18 NB 18: Border Destination - Carrier, Freight Forwarder, or Broker Facility**

For shipments destined to the U.S. interior, the drayage company will deliver the trailer to a U.S. carrier, broker or freight forwarder's facility. The tractor will either return without a trailer to Mexico or pick up a southbound trailer. Maquiladora operations that use their own equipment and drivers may bypass this part of the process. If the trailer was bonded for use in Mexico the bond will be released.

### **3.3.19 NB 19: U.S. Carrier**

If a single bill of lading was not prepared in Mexico, a new bill of lading will be prepared to cover the transport from the border region to the interior of the U.S. If information was transmitted to the carrier in advance of the shipment's arrival there may not be any additional delay. However, if the bill of lading must be created, some delay may occur. Once the U.S. bill of lading is prepared, a driver will pick up the load and transport it to the final destination.

### **3.3.20 NB 20: Weigh Station and Inspections**

During the trip from the border region to its final destination, the carrier's truck will be subject to the motor vehicle laws of the state or states through which it travels. All U.S. states have vehicle safety and weight requirements which are enforced at permanent safety inspection facilities and weigh stations. Permanent weigh stations are located at the state borders (entering the state) and along heavily traveled truck corridors. In addition, many states use roving or temporary units that can perform inspections at random locations throughout the state.

### **3.3.21 NB 21: Final Destination**

The shipment arrives at the final destination either within the border region or interior of the U.S. Border zone trade is primarily made up of maquiladora trade while interior trade is typically consumer oriented. Typically, northbound maquiladora trade consists of finished goods which will ultimately be consumed in either the U.S. or abroad. The maquiladora facilities located in the U.S. act as distribution centers for these final products.

In the U.S., most traditional trade from Mexico goes to distribution centers operated by major retailers or importers. These distribution centers tend to be located in the border states along the major trade corridors such as Interstate-5 and -15 in California, Interstate 10 in Arizona and New Mexico, I-25 in New Mexico and Texas, and Interstate-10 and -35 in Texas. Mexican products

are shipped throughout the U.S. from these regional distribution centers.

## 3.4 Bibliography & Resources

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The following documents were used as resources in the preparation of the commercial trade flow process diagrams. In addition, interviews were conducted with some of the many participants in cross border trade. The list below is a partial list of the individuals interviewed.

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### 3.4.2 Interviews

Barabara Camacho, Past President - Otay Mesa Freight Forwarders and Brokers Association.

Fernando Camacho, Camacho Trucking Company – Licensed in both the U.S. and Mexico.

Lt. Vince Calderon, California Highway Patrol, Otay Mesa Truck Inspection Station.

Dan Foster, Senior Inspector, U.S. Customs Otay Mesa, California.

Adrian Gracia, Food and Drug Administration, Nogales, Arizona.  
Celia de la Ossa, Chief Inspector, U.S. Customs Nogales, Arizona.  
Brent Martin, Senior Inspector, U.S. Customs Nogales, Arizona.  
Ken Timmons, Current President Otay Mesa Freight Forwarders and Brokers Association.  
Manny Trujillo, Inspector, United States Department of Agriculture, Nogales, Arizona.

## Appendix A

### Southbound Trade Flow Process Diagram

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## **Appendix B**

### **Northbound Trade Flow Process Diagram**

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