

**A PROTOTYPE SOUTHERN BORDER FACILITY TO EXPEDITE NAFTA TRUCKS
ENTERING THE UNITED STATES**

Paper Number: 01-0406

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5,010 words of text plus 2 tables (one large—250x3) and 1 figure = 6,260 words

**Submitted for presentation at the 80th Annual Meeting of the Transportation Research
Board and publication in the Transportation Research Record**

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ABSTRACT

This paper is based on a Texas Senate Bill initiative to examine the possibility of expediting current port of entry processing of commercial vehicles entering the U.S. from Mexico. The paper describes the basic prototype plan and operational concept proposed for northbound commercial border inspection stations with automated processing. The prototype would use the International Trade Data System (ITDS) currently under development by the U.S. federal inspection agencies. This database would use Intelligent Transportation Technologies to link ITDS and the inspection process. This combination of a consolidated electronic database and appropriate Intelligent Transportation System (ITS) technologies can significantly reduce border crossing delays by most commercial vehicles without compromising the processes required by the federal and state agencies responsible for interdiction and law enforcement. The prototype also includes a state vehicle safety inspection facility that the State of Texas has committed to operate to implement state and federal safety inspection requirements. The paper suggests the desirability of bi-national links to improve system efficiency, and provides a basis for more effectively accommodating growth in traffic and the adoption of new technologies to improve agency performance.

BACKGROUND

U.S. trade with Mexico has grown substantially over the past decade and is currently predicted to exceed \$200 billion during the year 2000. When petroleum commodities are removed from these trade data, surface transportation dominates the flows of the other commodity groups. Within the surface transportation modes, highways account for almost 80 percent of the trade by value (McCray 1998). Despite the substantial investments made in the northeastern corridor by the Kansas City Southern and Transportaci3n Maritima Mexicana (TMM) consortia, rail is unlikely to dramatically alter this share in the near future. Indeed, some gateways have experienced a recent reduction in rail service (like El Paso, Texas), while others lack any rail connectivity altogether (like McAllen, Texas).

Trucks, as is well documented, comprise the major mover of U.S.-Mexico trade and create a number of well documented problems both along the corridors and at the ports of entry (McCray and Harrison 1999). There has been a substantial amount of research undertaken into these issues at a number of levels including federal (U.S. Department of Transportation 1994), state (Harrison et al 1997; Louis Berger and Associates/Dye Management Group 1998), institutional (Lyndon B. Johnson School of Public Affairs 1993, 1994, 1995), and binational (Barton-Aschman 1997). In spite of this body of research, trade facilitation at southern border ports of entry, particularly those in Texas, remains a critical area at both planning and political levels. The essential issue at stake is the problem of improving efficiencies at border ports of entry while allowing state and federal agencies to conduct their legal duties in an effective manner. This has been termed the issue of interdiction versus facilitation and is ultimately reflected in the logistics cost imposed on the movement of different commodity groups.

During the past decade, technology has started to play an increasing role both in freight movement in general and in processing at the borders more specifically. For example, Table 1 shows that the adoption of advanced technology in the U.S. Motor Carrier industry is growing at various rates, depending on fleet size. Additionally, the Immigration and Naturalization Service (INS) has experimented with pre-clearing and electronically identifying frequently crossing Mexican citizens under its Secure Electronics Network for Travelers Rapid Inspection (SENTRI) system. That system is now being installed at several locations along the border.

TABLE 1 Motor Carrier Use of Advanced Technology¹

	Survey Respondents ² (all percentages)			Weighted Industry Average ³
	Small Fleets	Medium Fleets	Large Fleets	
<u>Communications:</u>				
Mobile	46	42	63	46
Electronic Data Interchange	8	27	65	11
Automatic Vehicle Location	1	5	23	2
<u>Computers:</u>				
Log Scanner/Auditing	7	35	50	10
On-Board/Hand-Held	7	27	57	10
Electronic Logs	1	5	19	2
<u>Software:</u>				
Dispatch/Routing	15	46	74	19

Source: (ATA Foundation 1996)

1 700-carrier survey

2 Small (1—10 units); Medium (11—99 units); Large (100+)

3 Weighted by relative fleet size in current U.S. fleet

A factor favoring the use of technology at the border is that North American Free Trade Agreement (NAFTA) truck traffic is dominated by large companies—those that have adopted relatively high levels of technology adoption in the areas of communications, computers, and software. If technologies can be selected that reduce border crossing time and costs, it is likely that the large NAFTA trucking companies will adopt them.

This paper is based on a Texas Senate initiative (Senate Bill 913) to examine the possibility of expediting current port of entry processing of commercial vehicles entering the United States of America (USA) from Mexico. The paper describes the basic prototype plan and operational concept proposed for northbound commercial border inspection stations with automated processing. The prototype would use the International Trade Data System (ITDS) currently under development by the U.S. federal inspection agencies. This database would use Intelligent Transportation Technologies to link ITDS and the inspection process. This combination of a consolidated electronic database and appropriate Intelligent Transportation System (ITS) technologies can significantly reduce border crossing delays by most commercial vehicles without compromising the processes required by the federal and state agencies responsible for interdiction and law enforcement. The paper suggests the desirability of bi-national links to improve system efficiency, and provides a basis for more effectively accommodating growth in traffic and the adoption of new technologies to improve agency performance.

PROTOTYPE BORDER FACILITY STUDY

The Texas legislature passed Senate Bill 913 (SB 913) during the 1999 session. SB 913 directed the Texas Department of Transportation (TxDOT) to develop a design concept for a

“one-stop” commercial border inspection station to expedite border crossings of commercial vehicles into the U.S. “One-stop” was undefined, but the intent was to respect the required inspection processes, and to use design and technology to reduce the number of separate stops to one and to reduce delays during the border crossing process. In addition, it was envisioned that the vehicle safety inspections contemplated under NAFTA would be added and incorporated into the “one-stop” concept. TxDOT then contracted with the Center for Transportation Research (CTR) at The University of Texas at Austin and the Texas Transportation Institute (TTI) at Texas A&M University to undertake the development of a prototype design for such a facility and to report the findings at the 2001 Texas legislative session (Texas Department of Transportation 2000).

SB 913 recognized that the federal inspection agencies, including U.S. Customs Service (USCS), Immigration and Naturalization Service (INS), Drug Enforcement Agency (DEA), Department of Agriculture (USDA) and others would be able to decide whether they would locate in the “one-stop” border inspection stations. Subsequently, it was also recognized that the inspection agencies have commitments to the General Services Administration (GSA), landlord for federal border inspection facilities (which have been built by GSA to suit the enforcement agencies).

A comprehensive examination of the commercial vehicle border crossing process yields a conclusion that a literal one- (U.S.) stop crossing is not possible for all commercial vehicles under an inspection process anywhere similar to what is currently used. Furthermore, the inspection agencies must have the ability to conduct whatever inspections they feel are needed for any particular vehicle. This ranges from a brief primary inspection—a brief review of documents—to a very intense and complete inspection of documents, driver, vehicle, and load involving specialized equipment and sometimes even an isolated location.

Nevertheless, a variation similar to the typical design concept proposed for GSA’s draft forthcoming design manual, using existing and anticipated future technology, could result in a border station concept that will meet the general intent of SB 913’s “one-stop” border commercial inspection station. This document describes such a prototype.

The prototype is anticipated for implementation at new inspection facility sites, perhaps five to ten years in the future. This will permit the necessary site size and configurations to be secured and the necessary technology to be sufficiently perfected. It will also provide time to work out necessary institutional arrangements among the U.S. and Mexican governments and shippers and customs brokers.

Study researchers decided that development of a prototype border crossing facility could be enhanced if the resulting model reflected evaluations, comments, and recommendations made by a variety of interested experts, groups, and individuals who are engaged in transborder freight movements, inspections, infrastructure, and policy. In conjunction with preparation of the preliminary prototype, the project team convened an expert working group, consisting of border transportation analysts from The University of Texas at San Antonio (UTSA), The University of Texas at El Paso (UTEP), Texas A&M University (TAMU), The University of Texas at Brownsville (UT-Brownsville), along with federal and state officials in Mexico to analyze and

discuss operational, institutional, technological, and design features. Additionally, researchers conducted a series of meetings with the principal federal and state agencies (including GSA, U.S. Customs, Texas Department of Public Safety [TxDPS], Federal Highway Administration [FHWA], and TxDOT) to discuss the objectives and procedures of the study. Subsequently, an “information outreach” process was implemented in a series of meetings in El Paso, Laredo, McAllen, and Brownsville in which study researchers dialogued with individuals and representatives from the following subsectors involved with transborder freight operations: shippers, trucking, drayage, cargo and customs inspection agencies, vehicle safety inspection, international bridge owners, facility/infrastructure, trade associations, elected local and state officials, governmental agency officials, and transportation analysts and experts.

From suggestions received in these outreach engagements, study researchers incorporated a variety of improvements to the model prototype to reflect concerns in these general areas:

1. binational transportation implications,
2. technology applications,
3. geographical relationship between federal inspection activities and state vehicle inspection,
4. vehicular movements to, within, and leaving the prototype facility, and
5. retrofitting of existing facilities.

The prototype design has been refined as a result of these reviews. It is also expected that the prototype concept will provide the opportunity not only for more expeditious crossings, but also solutions to other shortcomings identified by the inspection agencies and GSA.

OVERALL CONCEPT

The basic approach employed in the preliminary prototype includes the following elements:

- Continue to employ the inspections currently used for commercial border crossings from Mexico to the USA. Incorporate any new inspections stipulated by the inspection agencies or GSA.
- Incorporate commercial vehicle safety inspections into the border inspection station, either random inspections made of vehicles already carrying valid inspection stickers or complete inspections, or both.
- Provide for and encourage maximum pre-inspection and line release in advance of approaching the border. It is recognized that this will require U.S. inspection agencies to be able to conduct inspections at locations in Mexico with Mexican government approval. This will require a change in policy by Mexico and/or the USA regarding where and how inspections can be conducted.
- Use electronic (ITS) technology for vehicle, driver, and load identification.

- Maintain a consolidated or coordinated database containing all information necessary for border inspections conducted by all of the inspection agencies.
- Expedite passage of commercial vehicles through the border crossing process to the extent possible by providing expedited handling for those that have been pre-inspected, have arrived at the border within a set time of their pre-inspection, have all (electronic) files in order, and have not been selected for random re-inspection.

Otherwise, this prototype concept contemplates no significant change from the existing process.

STEPS IN PASSAGE THROUGH THE PROCESS

The following steps have been built into the commercial vehicle border crossing process.

TABLE 2. Steps in Commercial Vehicle Border Crossing Process

Step	Vehicles Equipped With Transponders (or Equivalent)	Vehicles Not Transponder Equipped
Acquire transponders from vendor or responsible inspection agency (one time event)	Initial registration of tractor/bobtail, trailer, driver so electronic files can be established for vehicles, drivers, loads. Transponders to carry identification only; current data files to be maintained on agency computers.	NA
Vehicle safety inspection (each tractor, trailer, bobtail)	Comprehensive inspection conducted once very three months by Texas Department of Public Safety at any location. Sticker issued and record of inspection and expiration date entered into consolidated electronic database. This could be accommodated within or outside the federal inspection station.	Same as with transponder
Pre-inspection and line release	Inspection at a remote site of vehicles and loads to same extent as at border; vehicles approved to enter U.S. would have file appropriately coded	Same as vehicles with transponders
Trip to border station	Time limit for pre-inspected vehicles to reach entrance to Mexican export inspection station	Same as vehicles with transponders

TABLE 2. Steps in Commercial Vehicle Border Crossing Process (cont'd)

Step	Vehicles Equipped With Transponders (or Equivalent)	Vehicles Not Transponder Equipped
Initial detection and weigh-in-motion	Vehicle detected, files opened, weight entered from weigh-in-motion scales. Dynamic sign indicates whether vehicle weight is legal in a U.S.; overweight trucks given message to turn back; weight recorded on electronic database using vehicle identification.	Driver given dynamic sign message only
Mexican export inspection	Mexican process; not part of U.S. inspection process	Same as with transponders
Cross border and second detection	After exiting Mexican export inspection, vehicles would be detected at the border and drivers given a message to enter the electronic bypass lane(s) or standard lanes based on the status of their electronic files for the current trip. Vehicles with incomplete files or without all necessary transponders would be directed to the standard lanes. Properly equipped vehicles would be directed to the bypass lane(s) where the driver confirmation and document/inspection completeness would occur.	Same as with transponders
Visual vehicle roadworthiness inspection	Safety inspectors perform visual safety inspection of commercial vehicles crossing border. Vehicles with obvious safety deficiencies would be selected for detailed inspection inside U.S. inspection station. Need for inspection would be entered into database.	Same as with transponders except vehicle would be physically tagged.
Driver confirmation	Drivers would be handled as with SENTRI or its successors. Those with driver approved for admission to the U.S. and a complete file, including valid pre-inspection, would receive a sign message directing them to continue to the exit via the bypass lane. Vehicles with an incomplete file, problems, or those selected for re-inspection would be directed to a specific location in the secondary inspection area. Dynamic signing would be used for this purpose.	Handled manually as part of primary inspection.
Queue approaching primary inspection	Virtually none	Same as currently accommodated except adequate space would be provided for estimated queue size.
Primary inspection	Handled electronically with driver confirmation	Same as existing process

TABLE 2. Steps in Commercial Vehicle Border Crossing Process (cont'd)

Step	Vehicles Equipped With Transponders (or Equivalent)	Vehicles Not Transponder Equipped
Secondary inspections - USCS - INS - DEA - U.S. Department of Agriculture (DA) - Texas Department of Agriculture (TxAg) - TxDPS safety - Canine block - X-ray - Static weight - Hazmat - Bulk materials - Other - Impoundment	Vehicles directed to specific location depending on inspection requirements. To the extent possible, all inspections would be handled at one berth, with inspectors and equipment going to that location. X-ray, static weight, Hazardous Materials (HAZMAT), bulk materials, comprehensive safety, and some special inspections could necessitate separate stop(s) to complete the inspection process. Each inspection would end with the electronic database being updated with the inspection results. Rejected vehicles would be sent back to Mexico, adjusted, or impounded as appropriate. Vehicles with loads and drivers passing inspection would be directed to the exit bypass after passing through a detector at the exit from the secondary inspection area or the road serving HAZMAT, impoundment, etc. The DPS safety inspection may be completed at a safety inspection facility within or adjacent to the federal inspection facility.	Same as with transponders except vehicles directed to manual exit inspection lane.
Return to Mexico	Rejected vehicles may be directed to return to Mexico via the appropriate exit.	Same as with transponder
Exit detection	Vehicles in bypass lane detected and database files read. Those approved to enter the U.S. would be given a dynamic sign message to exit the inspection facility. Those failing inspection or still having an incomplete file would be directed back into secondary inspection area.	NA
Exit inspection	NA	As currently performed
Violator trap	Any vehicle trying to exit without having been approved would be pulled over at this location and dealt with appropriately.	NA
Exit to U.S.	Driver welcomed to the U.S. and directed to the U.S. road network.	Same as with transponder.

AUTOMATION OF COMMERCIAL BORDER CROSSINGS

Expediting border crossings for commercial vehicles as described in Table 2 and achieving the general intent of a “one-stop” border crossing will require automation of at least portions of the border crossing process. This section briefly describes the concept being proposed.

The automated system needs to enable border inspectors to track and verify status of four types of items: (1) driver/passengers, (2) tractor or bobtail, (3) trailer, (4) load. Each person would have a personal transponder or be eventually identifiable through a thumbprint or other

unique and accurately discernable identifier. Each tractor, trailer, and bobtail would carry a permanent transponder capable of identifying both vehicle and load. The transponder would carry no data except the identification code.

The inspection process is envisioned to accommodate and encourage inspections to be completed away from and in advance of the border, so commercial vehicles approach the border pre-cleared in line-release.

- Drivers and passengers would be handled similarly to the current SENTRI system or subsequent refinements
- Vehicles would be weighed on weigh-in-motion scales to determine compliance with weight limits. Drivers of overweight vehicles would be given a message on a dynamic sign to adjust their loads before proceeding into the Mexican export inspection area (last stop prior reaching border in Mexico).
- A consolidated electronic database would include data needed by all state and federal inspection agencies. It would have two components: a permanent file and a transaction file for the specific crossing. This database is currently under development by the federal inspection agencies and is called the International Trade Data System (ITDS).
- Vehicles would be inspected for safety (and later possibly for emissions at the same time) by Texas Department of Public Safety (DPS) every 90 days and those passing the inspection would have the appropriate code in the consolidated database. Any vehicle due for inspection would be automatically flagged in the database as it came to the first detection point (see below).
- On a trip across the border, a pre-cleared vehicle would have been inspected for contraband, etc. at the advance inspection location. The truck would be sealed and the status would be entered into the consolidated database, which would be electronically checked at each detection point. A vehicle would have a reasonable travel time to reach the border. Vehicles taking longer would have their advance inspection cancelled and be subject to re-inspection as if they had not yet been inspected on that trip.
- All drivers, passengers, vehicles and loads would be subject to selective re-inspection at the option of border inspectors as they are today. However, those in line release not picked for re-inspection could pass through the U.S. border inspection station on a bypass lane without a stop. These vehicles would have a “no stop” crossing. Based on current practice, this could include over 50 percent of commercial vehicle crossings that become properly equipped with transponders.

CROSSING PROCESS

The process of crossing the border for line release trucks would be as follows; trucks not pre-inspected would be handled similarly to today's process with exceptions as noted below.

1. Entry check. On the road approaching the Mexican export inspection entrance, all vehicles would pass over a weigh-in-motion scale (one in each lane). At the same time, all transponders would be read, the consolidated data base accessed, and a dynamic message sign would provide the status as follows:
 - Weight: acceptable or overweight, or not admissible
 - Vehicle: same as driver/passenger
 - Load: same as driver/passenger
2. On exiting the Mexican export inspection and at the border, there would be another detection point and sign that would instruct the driver to use the bypass lane (if pre-cleared and still approved) or manual lanes (no transponders or not pre-cleared).
3. Primary inspection. Trucks directed to the conventional/manual lanes would go through U.S. primary inspection the same as at present. Trucks using the bypass lane would pass a SENTRI-type inspection point where driver and any passengers would be verified. The vehicle and load data would also be checked for completeness and acceptance. Those not passed or selected for re-inspection would be directed to a specified secondary inspection berth or other location. Those cleared would proceed on a bypass road to the exit gate.
4. Secondary inspection. All trucks sent to secondary inspection would proceed to the assigned berth. In most cases, all inspections would occur there. However, x-rays, canine block inspections, hazardous materials (HAZMAT), and bulk loads would, by necessity, require stops at those locations. For them, additional required inspections would require additional stop(s). USCS, INS, USDA, drug and other inspections would be handled at one berth ("one stop") for each truck, except trucks failing inspections. Violations could require additional stops. Once cleared, trucks would proceed to the exit lanes. Those with transponders would be directed to the bypass lane.
5. Exit check. Approaching the exit in the bypass lane, transponders would again be read. Trucks meeting clearance requirements would be released to the exit. Those not cleared would be directed to re-enter the secondary inspection area. An enforcement lane would be used to trap those trying to exit without clearance. Trucks without transponders would be handled as they are today.
6. Vehicle safety check. Vehicles with valid safety certificates/stickers would pass the safety inspection area and exit to the USA. Vehicles without a valid inspection or that were sighted as having an obvious safety deficiency (e.g., broken headlight, flat

tire) would be directed by dynamic sign to enter the safety inspection facility and go to an inspection lane or other location. Once the safety inspection was complete and approval given, the truck would exit to the USA.

At each point in the process, the database would be updated. This would occur with an inspection agent's entry into a hand-held or other computer after an inspection or automatically as detector locations were passed and the database queried.

TECHNOLOGY

In support of the one-stop border crossing model, the research team is considering either a conventional Intelligent Transportation System – (ITS) type automated vehicle identification system with on-board transponders and roadside detectors, or perhaps a more sophisticated transponder capable of storing temporary written material. This would involve the implementation of a radio frequency (RF) communication link approach. Trucks would be equipped with a transponder capable of receiving and sending data to roadside detectors located at strategic locations within the border crossing facility. Conceptually, the RF communication link system is a dedicated short-range communication system (DSRC) somewhat similar to those deployed at ports of entry such as Nogales, Arizona, and Otay Mesa, California.

Figure 1 shows a schematic representation of the RF communication link approach. At each strategic location within the border crossing facility, the interaction between the transponder and the roadside reader/antenna would result in three possible types of messages: (a) request a unique shipment identifier or trip/load number from the transponder, (b) read specific information from the transponder, and (c) write specific information to the transponder.

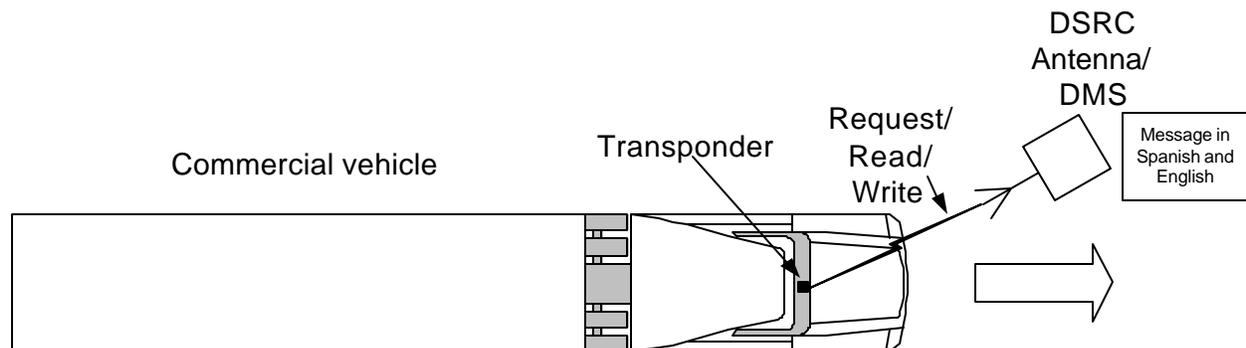


Figure 1. Radio frequency (RF) communication link

The first location equipped with a reader/antenna would be in advance of the Mexican export inspection station entrance where the weigh-in-motion scales would be located. The roadside detection system would read the vehicle/load number off the transponder and would send the data to a central consolidated inspection agency database in Washington for processing. Based on a preliminary inquiry, it is estimated that the transaction time, i.e. the time between reading the data off the transponder and the time a response is received from Washington, would be well below one minute. During this time period, the truck could start moving forward at a

pre-specified low speed and through the Mexican export process until reaching a second reader/antenna location that would be beyond the exit from the Mexican export inspection station and just inside the U.S. The roadside system would display a message on a dynamic message sign (DMS). Examples of possible messages include “Use bypass lane.” Subsequent DMS signs would direct drivers to “Proceed to exit,” “Stop at X-ray station,” “Park in Berth 52,” or perhaps even “Stop immediately.” All messages could be displayed/written both in Spanish and English.

At other locations inside the border crossing facility there would be additional reader/antenna systems to guide the truck driver. For example, if the original message at the sign following driver verification was “Bypass inspections. Proceed to Exit,” this message would also be repeated at other reader/antenna/dynamic sign locations to reinforce the message. If the driver ignores this message, the next roadside system would be able to detect that the truck has not been cleared from the X-ray station, would display a message such as “Return to X-ray station,” and would activate a warning signal.

It is assumed that the RF communication link approach discussed above will conform to the requirements defined for the design and implementation of the International Trade Data System (ITDS) being developed by the U.S. Treasury Department (Atalla 1999). These requirements cover issues such as functionality, reliability, scalability, and versatility. A complete description of those requirements is not included in this document. However, it may be worth noting two of the requirements that implicitly or explicitly have been addressed in this document. One of the requirements is that the truck detection system should provide lane discrimination, entrance notification, and exit notification. Current DSRC systems do not consistently read trip/load numbers and do not consistently write to transponders. In addition, some existing transponders are difficult to use and do not provide the driver with a visual confirmation of transactions. However, it is reasonable to assume that the next generation of DSRC systems (available, most likely, within the next two to three years) will have addressed those technical concerns satisfactorily.

Another requirement is that the system should provide truck drivers with the capability to make a pre-arrival oral declaration regarding any personal belongings they are carrying. The oral declaration could also eventually be used to verify the identity of the driver. For implementation purposes, oral declarations could be made using cellular phone communications. While this approach is potentially promising, the technology has not been tested or deployed in a border crossing station context. In addition, the technology appears to be more costly than transponder-based technologies. To bypass this limitation, the research team is considering an approach already tested at several locations based on the use of digital cameras to generate a visual record of the physical appearance of the driver.

CONCLUSIONS AND RECOMMENDATIONS

The first phase of this study makes several recommendations to incorporate the prototype concept into design and operational plans at future U.S. commercial inspection sites. These recommendations can be grouped into facility plans and institutional arrangements. Elements of the facility planning include the incorporation of a state safety facility, the adoption of a consolidated electronic inspection agency database (ITDS or its successor) and electronic

identification and messaging systems (which could be similar to a combination ITDS, SENTRI, ITS). All site layouts should be designed to accommodate future forecasted needs through some form of incremental implementation. This would require a change in current federal policy in some states.

Adoption of some technologies will require institutional changes, most clearly first in the case of adopting a single consolidated electronic inspection database and identification process, and secondly in the development of a bi-national process. In the latter category, U.S. vehicle inspections in Mexico (and vice versa), the location of weigh in motion scales for vehicle monitoring and the development of a common customs database (the original objective of North American Trade Automation Prototype [NATAP]) could be identified.

The steps required for implementation are beyond the scope of this paper. However, it appears that the proposed prototype, including the consolidated database and ITS technology will be feasible at the time the next new commercial inspection station is needed on the U.S.-Mexican border (2005 or later). Adaptation of the prototype to existing facilities will require further evaluation; this is to be done in the next phase of the current project.

The phase I conclusions of this study indicate that there are appropriate solutions, using current technology, to expedite trade processing while maintaining current levels of state and federal interdiction. Several elements of these conclusions are now presented.

1. The study shows that it is feasible to design a working “reduced stop” facility that can be constructed along the U.S.-Mexican border. Many of the vehicles (typically averaging about 60 percent) would make no further stops if their database file is complete and the inspections were satisfactory and if they are not selected for any random inspections.
2. Those vehicles that proceed to secondary inspection may make fewer stops under the proposed design. They will be sent to a specific berth in the secondary inspection facility where all the relevant agency personnel involved in the inspection will inspect the vehicle or driver. This is being carried out at some ports of entry but is largely absent along the Texas border. It would obviate the need to move trucks between berths that are nearing capacity through many hours of the day.
3. Vehicles requiring additional special inspections that cannot be handled at a secondary inspection platform would be directed to the appropriate location (e.g., X-ray, detailed safety inspection). Such vehicles might experience more than one stop.
4. These stages can be implemented based on current processes and traditional data handling now performed by shippers, customs brokers and the inspection agencies. If the consolidated database and electronic data interchange, or “paperless” exchanges can be implemented in the border processes, then a true “no-stop” can be implemented for pre-cleared trucks within the planned facility. Pre-cleared trucks would have a dedicated lane through the entire facility in order to expeditiously clear the port of entry.

5. This is somewhat similar to the NATAP processes that were pre-pilot tested in 1997 and 1998, in that they require electronic information on the driver-tractor trailer and cargo and in a form that is capable of being transmitted electronically to those agencies responsible for the customs, immigration, agricultural, and safety interdiction (NATAP 1998). As clearly identified in many ITS initiatives, suitable technology is already available and its cost is falling (Federal Highway Administration 1998a, 1998b). In addition, new and less intrusive wireless technologies are coming on stream that can be easily fitted into the infrastructure to permit rapid adoption of more efficient systems. The researchers strongly advocate that brokers as well as transportation companies be part of the technological solution if this is to be successfully implemented.
6. The new facility is not likely to be built for a period of at least five years due to the lead time required for any new border crossings to be approved, planned, and financed. At this time it is expected that by then referenced technologies will have improved and prices for the basic set of required services will have further decreased, and there is the real prospect of the implementation of a true bi-national collaborative border system. This would gain great impetus if the long-delayed NAFTA trucking legislation is at last implemented and the U.S.-Mexican border opened to commercial trucking. The powerful combination of new technologies, bi-national support, and an open border would signal the first overall significant change in border processing for trucking along the ports of entry with Mexico in over two decades.
7. An agreement between the USA and Mexico will be needed to make possible the U.S. inspections in Mexico under conditions acceptable to both governments. As Mexico is also evaluating similar changes for southbound commercial vehicles entering Mexico, it may be that both countries implement similar technologies and prototypes in future commercial border inspection stations.
8. The specific prototype would be for commercial border inspection stations along the Texas border. However, the concept is applicable along the entire border with Mexico. Indeed, California has already implemented a safety inspection facility at Otay Mesa and Arizona is using an early partial form of consolidated inspection processing in Nogales.

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