

# Logistics Reengineering of Otay Mesa I Port of Entry

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*“A city ... with a sustained growth ...set into action plans and policies oriented to obtain the resources toward the social satisfaction, equity and economic development for this and the next generations”*

**Stockholm Institute, Sweden**

## **Tijuana’s Logistics Activity**

Tijuana’s economically active population is distributed 24.71% industrial, 28.39% service, 18.58% commerce, 7.71% construction and 5.85% tourism<sup>1</sup>. Commerce, Service, Manufacturing Industry and Transportation represents 93.6% of the Baja California’s Gross Domestic Product and because of its nature means a demand from the Commercial Port of Entry Otay Mesa I facilities with the need to transport merchandise daily across the border (776,972 containers in 2008)<sup>2</sup>.

The agile international commercial border crossings over the only port of entry, Otay Mesa I, represent an impact near to 93.6% of the economic activity between Baja California and California.

## **Otay Mesa’s Economic Activity**

Otay Mesa is the sixth American Port due to the amount of merchandise crossing over it<sup>3</sup> and the third commercial port between Mexico and USA. The Otay Mesa Port of Entry serves almost exclusively to import merchandise to California with 96% of the imports. Since 1995, the commercial port increased 66% until 2008 with 776,972 border crossings and the forecast is an increment of 45% for 2030<sup>4</sup>. 2007 averaged an export value of \$31 billion dollars.

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<sup>1</sup> Plan Estratégico de Tijuana-[http://www.cdt.org.mx/attachments/052\\_CAP%202%20Posicionamiento.pdf](http://www.cdt.org.mx/attachments/052_CAP%202%20Posicionamiento.pdf)

<sup>2</sup> Bureau of Transportation and Statistics- <http://www.transtats.bts.gov/BorderCrossing.aspx>

<sup>3</sup> Bureau of Transportation and Statistics-  
[http://www.bts.gov/publications/americas\\_freight\\_transportation\\_gateways/highlights\\_of\\_top\\_25\\_freight\\_gateways\\_by\\_shipment\\_value/port\\_of\\_otay\\_mesa\\_station/index.html](http://www.bts.gov/publications/americas_freight_transportation_gateways/highlights_of_top_25_freight_gateways_by_shipment_value/port_of_otay_mesa_station/index.html)

<sup>4</sup> Boletín SIDUE- [http://www.bajacalifornia.gob.mx/sidue/boletin/n118\\_040908.html](http://www.bajacalifornia.gob.mx/sidue/boletin/n118_040908.html)

## The congestion problem at Otay Mesa I Commercial Port of Entry

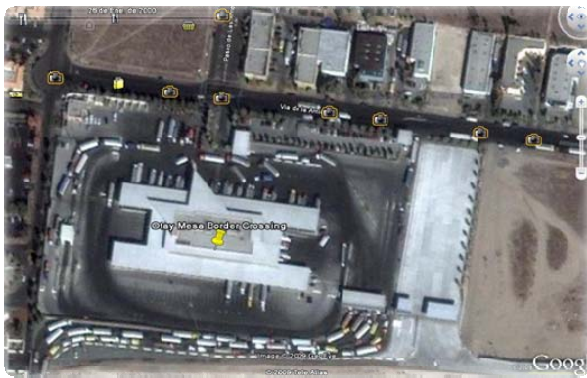
The pictures of year 2000 and 2009 show the need to promote and improvement of the logistics flows through the Customs Compound.

Some of the identified problems generating the congestion in the Otay Port are<sup>5</sup>:

- Lack of alternative entry ports for trucks
- Existing infrastructure within urban areas of the city
- Physical space restriction and insufficient custom modules
- Border crossings concentrated in a time gap
- Exhaustive inspections

The first three causes can be managed with a Logistics Reengineering to maximize the investment on the existing infrastructure. The fourth can be solved with the alternative to operate 24 hours a day and complemented with the Logistics Reengineering proposal. The fifth one there's no argument since it is a mean to protect the security of the regions' economy.

Otay Mesa US Compound year 2000



Otay Mesa US Compound year 2009



We observe the congestion remains since 10 years ago.

### Infrastructure in other locations with similar import/export activities

Tijuana ranks third nationwide due to the containers crossed over the Otay Mesa Compound.

There is a correlation between the border crossing capacity and the operation with extended hours with a trend to 24 hours even with only one port of entry. The port of entry in Nuevo Laredo doubles the capacity of the three ports of entry in Ciudad Juarez

<sup>5</sup> [www.borderplanning.fhwa.dot.gov/TTIstudy/FOA-espanol.ppt](http://www.borderplanning.fhwa.dot.gov/TTIstudy/FOA-espanol.ppt)

(see Table 1). Nuevo Laredo offers 92 of the 168 hours available on a week representing a utilization of 55% of the installed infrastructure.

Ciudad Juárez offers a maximum of 85 hours with utilizations of 42%, 50% and 44%. Tijuana offers 71 hours with a utilization of 42% being the shortest shift among the main ports of entry between Mexico and USA.

Ciudad	Tijuana	Ciudad Juárez			Nuevo Laredo	
Puerto	Mesa de Otay / Otay Mesa	Córdova/Las Américas	Zaragoza/ Ysleta	San Jerónimo/ Santa Teresa	Total	Laredo III/World Trade Internation Bridge
Modulos de Exportacion	4	4	2	2	8	4
Carriles FAST	1	1	1		2	1
Plataforma 1er Reconocimiento	1	1	1	1	3	1
Equipo de Rayos Gamma			1		1	
Carriles para Vacios	1	1	1	1	3	1
Horarios Lunes a Viernes	6:00 am - 7:00 pm	6:00 am - 8:00 pm	8:00 am - 12:00 am	8:00 am - 6:00 pm		7:00 am - 11:00 pm
Horarios Sábado	8:00 am - 2:00 pm		10:00 am - 3:00 pm	10:00 am - 2:00 pm		8:00 am - 4:00 pm
Horarios Domingo						10:00 am - 2:00 pm

**Table 1. Infrastructure and operations hours of the main three Mexican ports with USA.**

### Some efforts to improve the Commercial Port of Entry of Otay Mesa I

The activities toward solving the congestion in the commercial port of entry of Tijuana on Otay Mesa were proposed from several civil organizations and the governments from both nations.

Proposed Improvement	Effective Date
Governor Eugenio Elorduy Walter mentioned in October of 2003 the achievement of “extension of hours for border crossing 24 hours in the Otay Mesa I Porto f Entry with Tijuana” <sup>6</sup>	Didn’t happen
FAST lanes ( <b>Free and Secure Trade</b> ) in Tijuana, October 15th of 2004 <sup>7</sup> , complying with CTPAT program	2004
Customs Border Protection <sup>8</sup> declared the extension of 2 hours of service of the Customs Compound Mesa de Otay/Otay Mesa, to support “peak season”	2006
Implementation of new system ACE (Automated Commerce Environment)	2006
The construction of a second Otay Mesa Port of Entry investing \$715 million dollars <sup>9</sup> announced in December of 2008 <sup>10</sup> to be completed by 2014	Project
Border Master Plan California- Baja California to increase the commercial lanes in the Port of Entry of Otay Mesa I <sup>11</sup> .	Project

<sup>6</sup> Segundo Informe del Gobernador Eugenio Elorduy Walter, octubre del 2003 ([http://www.bajacalifornia.gob.mx/informe/II\\_Informe/DesarrolloUrbano.htm](http://www.bajacalifornia.gob.mx/informe/II_Informe/DesarrolloUrbano.htm))

<sup>7</sup> Banco de Comercio Exterior de México (<http://www.bancomext.com/Bancomext/aplicaciones/directivos/documentos/Presentacion-Las-Aduanas.pdf>)

<sup>8</sup> Buró de Aduanas y Protección Fronteriza (CBP) (<http://www.el-mexicano.info/noticias/internacional/2008/10/09/321954/ampliara-eu-los-horarios-en-garitas.aspx>)

<sup>9</sup> <http://www.frontera.info/EdicionEnLinea/Notas/Noticias/25062009/384562.aspx>

<sup>10</sup> Gobierno del Estado de California, Estados Unidos de America (<http://gov.ca.gov/speech/11205/>)

<sup>11</sup> US Department of Transportation ([http://www.borderplanning.fhwa.dot.gov/documents/baja\\_complete.pdf](http://www.borderplanning.fhwa.dot.gov/documents/baja_complete.pdf))

## Development of Alternative Projects for the Broker Crossing Demand

There are several projects without effective actions to concrete them and this condition highlights the urgent need to act in the Otay Mesa I Port of Entry.

Project	Basic Description	Project Finish Date
Tijuana Intermodal Terminal	Investment: \$15 millions dollars.	Start: Mid 2009 (Not started yet)
Punta Colonet	Investment: \$5,000 millions dollars. <sup>12</sup>	Start: 2014 <sup>13</sup>
Ensenada “El Tigre” International Airport	Investment: \$230 millions dollars.	Start: 2007 (Not started yet) <sup>14</sup>

## A better flow to improve Safety and Environment

In California, USA, each 16 minutes a person dies or is injured in an accident involving a 18 wheel truck, yearly 5,000 people die in these type of accidents; 30% of these were because of excessive fatigue of truck drivers and the forecast is an increase of 40% by 2020. Highways I-710 and I-5 are the most critical in California in regards to the annual accidents<sup>15</sup>.

## 24 hours operation in Otay Mesa I

The alternative to operate 24 hours at the Otay Mesa I port of entry allows distributing uniformly the export shipments through customs. The extension of useful hours to import/export allows exhaustive inspections when necessary to increase international security practically duplicating the capacity of border crossings when complementing this with the Logistics Reengineering of Otay Mesa I. A 24 hours operation promotes a distributed transit between night and day over the streets and roads in Tijuana and California with a tendency for the trucking industry to displace over night to avoid the natural traffic of the cities over daylight; this impact to reduce accidents over highways and smog pollution excess because of the traffic congestion.

The infrastructure on the Otay Mesa I port of entry will be the same requiring only the budget for the night shifts personnel.

The Manufacturing Industry and Commerce can then reduce their energy consumption in peak hours from 2:00pm to 5:00pm by distributing their activities over 24 hours available.

## Flow Analysis in Otay Mesa I

The proposal of Logistics Reengineering in Otay Mesa I US Customs Compound applies simple changes but with significant impact to the operations flow.

<sup>12</sup> <http://www.cnnexpansion.com/actualidad/2009/01/13/la-crisis-detiene-a-punta-colonet>

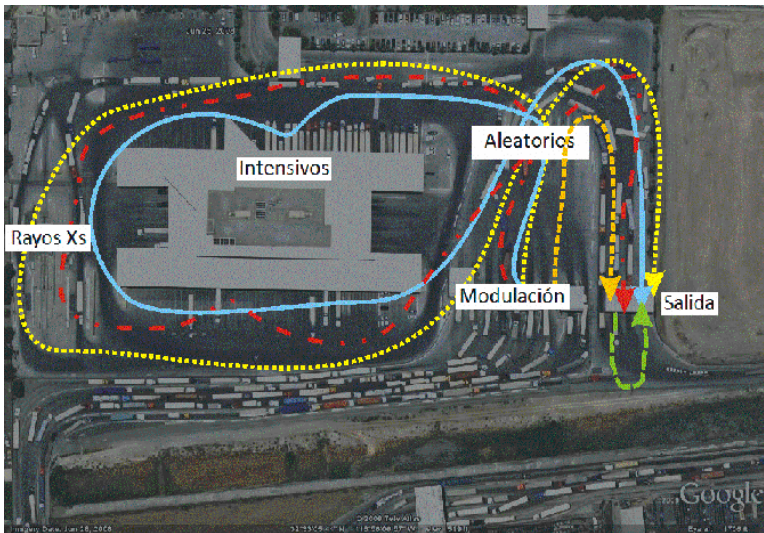
<sup>13</sup> <http://www.frontera.info/EdicionEnLinea/Notas/Noticias/22092009/403770.aspx>

<sup>14</sup>

<http://www.elfinanciero.com.mx/ElFinanciero/Portal/cfpages/contentmgr.cfm?docId=175480&docTipo=1&orderby=docid&sortBy=ASC>

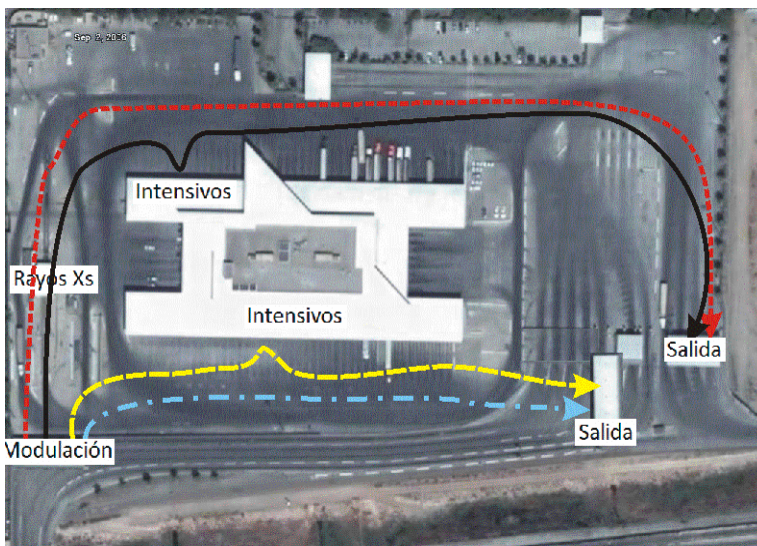
<sup>15</sup> <http://proceedings.esri.com/library/userconf/proc01/professional/papers/pap1001/p1001.htm>

## Before the Logistics Reengineering



The satellite picture allows us to observe the flows over the maneuvers zone in the US Customs compound, originating crossed flows, causing the congestion at the exit of the compound. The picture shows the congestion over the random inspection area.

## After the Logistics Reengineering







The adjustments to the internal logistics keeping the security and commerce mission of Customs are:

**1) Relocate the Customs modulation stand** just at the entry of the Customs Compound (See the picture After Logistics Reengineering). The path for trucks assigned to X ray inspection is to flow directly to the X ray area and continue to the exit

lane. If after X ray an intensive inspection is required it can flow directly to the intensive zone and later continue to the exit queue. Trucks assigned only to intensive inspection can advance directly to the area and afterwards go to the exit queue.

**2) The efficient flows** will allow a clear area for improved security visual control within the customs compound. The recommended logistics flows as route for the carriers are:

-  Customs modulation without further inspections.
-  Customs modulation requiring X ray inspection.
-  Customs modulation with X ray and intensive load inspection.
-  Customs modulation and intensive inspection.

## **Conclusions**

The immediate attention from the authorities to the capacity of commercial border crossings is urgent to sustain the growth of merchandise flow through the Otay Mesa I Port of Entry.

Efforts to expedite commercial border crossings over Otay Mesa I until 2010 have been insufficient.

Long waiting lines are unnecessary for Carriers generating smog pollution and excessive fatigue associated with highway accidents.

The Logistics Reengineering of process flows at the US Customs Compound and 24 hours operation of Otay Mesa I is a viable short term alternative impacting with results the agile and safe commercial border crossings.

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