INTRODUCTION

The Otay Mesa-Mesa de Otay Binational Corridor Strategic Plan approved by the SANDAG Board of Directors and the City of Tijuana’s City Council in fall 2007, identified several strategies in the areas of transportation, economic development, housing, and the environment. This report is an update on the implementation of these strategies since last reported in the 2008 Strategic Plan Progress Report, which was published in May 2008.

TRANSPORTATION ACTIONS

ISSUE IMPLEMENT THE OTAY MESA EAST-OTAY II PORT OF ENTRY (POE) AND CONNECTING ROADS

EARLY ACTION Establish the Otay Mesa East-Otay II POE Technical Commission to advance planning and implementation of the future Otay Mesa East-Otay II POE and connecting roads as a binational project, in collaboration with Caltrans, SIDUE, and IMPlan, and based upon discussions with the United States (U.S.) interagency coordination group.

Progress

The Otay Mesa East-Otay II POE Technical Commission, under the umbrella of the U.S.-Mexico Border Liaison Mechanism, was established in 2007. This Technical Commission continues to meet quarterly to coordinate planning activities and to share information among federal, state, and local agencies responsible for POE planning and implementation. The last meeting took place on January 27, 2009.

In the past year, Caltrans, the U.S. General Services Administration (GSA), the County of San Diego, SANDAG, and the Mexican government have made significant progress to advance the implementation of the proposed Otay Mesa East-Otay II POE and connecting roads on both sides of the border (Figure 1). Caltrans District 11 has taken the lead on several planning tasks to advance this project. In Mexico, the Secretariat of Communications and Transportation (SCT) also has undertaken required studies for the Otay II POE and connecting roads. Key planning activities conducted this fiscal year are described in this section.
The purpose of the Phase 1 Environmental Impact Statement (EIS) for State Route (SR) 11 and the Otay Mesa East POE document is to identify preferred facility locations and allow for several decisions and actions, which are outlined below:

- Route adoption by the California Transportation Commission (CTC);
- Consideration and approval of a Presidential permit for locating the POE by the U.S. Department of State (DOS);
- Facilitation of land use and circulation planning in the East Otay Mesa Specific Plan area by local agencies;
- Support of international cooperation efforts to pursue the development of the Otay Mesa East-Otay II POE; and
- Possible future designation of right-of-way for SR 11 and the Otay Mesa East POE in cooperation with local and regional jurisdictions to ensure that the rights-of-way are shown conceptually on planning documents.
The Draft Phase 1 PEIS/PEIR was released for public review and comment in January 2008. In May 2008, Caltrans published the Administrative Draft Final Phase 1 PEIS/PEIR, which included responses to comments received. On August 22, 2008, the Final Phase 1 PEIS/PEIR was released. This document identifies the Western Alternative shown in Figure 1 as the preferred corridor for SR 11 and the POE. The U.S. Federal Highway Administration (FHWA) issued a Record of Decision on October 3, 2008.

**PRESIDENTIAL PERMIT**

Caltrans submitted the Presidential permit application to the DOS in January 2008. It included a description of the facility and its relationship to existing border crossings, traffic information, and projected demand for the new POE, projected financing and construction plans, status of the counterpart project in Mexico, status on U.S. approvals necessary for construction, historic preservation information, and a description of how the POE would serve the national interest.

On December 8, 2008, U.S. DOS approved the Presidential permit, which authorizes U.S. GSA to build the Otay Mesa East POE as a vehicular and pedestrian border crossing.

**U.S. GSA FEASIBILITY/FUNCTIONALITY STUDY**

U.S. GSA completed a feasibility study in June 2008 that evaluated alternatives to satisfy the projected traffic demand and space requirements at the proposed Otay Mesa East POE as well as to reconfigure the existing Otay Mesa POE. The preferred alternative calls for the Otay Mesa East POE to function as a commercial and noncommercial facility, includes modernization of the commercial and noncommercial installations at the existing Otay Mesa POE, and takes into account tolls or user fees for the SR 11-Otay Mesa East POE project.

**TOLL LEGISLATION**

Senate Bill (SB) 1486, the Otay Mesa East Toll Facility Authority Act, was introduced in February 2008 by Senator Denise Ducheny (D-San Diego). SB 1486 was signed by Governor Schwarzenegger on September 30, 2008. The bill allows SANDAG to develop a public toll project to move people and goods along the SR 11 corridor and the Otay Mesa East POE. This bill also authorizes SANDAG to impose tolls and issue bonds secured by those toll revenues to finance the cost to develop, construct, and operate the new SR 11-Otay Mesa East POE project.

**MEXICO**

The Otay Mesa East-Otay II POE is a priority project for the Mexican government. In March 2008, Mexico’s SCT released an economic, financial feasibility, and functionality study.

According to the study, the preferred alternative calls for a POE that would handle both passenger and commercial vehicles with separate access roads connecting to the Mesa de Otay II-Otay Mesa East POE and SR 11. The study contemplates user fees of approximately $19.17 pesos (about $1.46 dollars) for passenger vehicles and up to $86 pesos (about $6.56 dollars) for 5-axle commercial vehicles (user fees would be based on the number of axles). The exchange rate used to convert pesos to dollars is $13.08 pesos per $1 dollar.
The study estimates the cost of the Otay Mesa East-Otay II POE project at $391 million pesos (about $29.8 million dollars). The study does not include the cost of the 39 hectares (about 96 acres) already reserved for the POE site by the City of Tijuana, nor the access roads. The Otay Mesa East-Otay II POE would be built through a 30-year concession, and is planned to be a toll facility.

In December 2008, the Governor of Baja California, Hon. José G. Osuna, announced the investment of $1,600 million pesos (about $122 million dollars) for this project, with $780 million pesos (about $59.5 million dollars) to be used to buy the property, $777 million pesos (about $59.3 million dollars) for access roads, and the rest of the funds will be used for planning and other required studies.

Additionally, the State of Baja California and the City of Tijuana are in the process of identifying possible locations for access roads in the vicinity of the Otay II POE. Funds have been allocated to conduct a risk analysis of nearby canyons to determine whether they should be declared as High Risk Zones for housing settlements and could be considered as right-of-way for access roads. Also the City of Tijuana will start the bid process to initiate construction of the first phase for canalizing the Alamar River and of a new expressway, which also would provide access to the new Otay II POE once complete.

**Next Steps**

**Tier II EIR/EIS for SR 11 and the Otay Mesa East POE**

Caltrans, in cooperation with GSA and FHWA, has initiated project-level environmental clearance studies for SR 11 and the Otay Mesa East POE. A Tier II Environmental Impact Report/Environmental Impact Statement (EIR/EIS) will evaluate design and operational alternatives for SR 11, the POE, and a potential Commercial Vehicle Enforcement Facility (CVEF). A public scoping meeting was held on December 4, 2008. A Draft EIR/EIS will be completed in fall 2009 with completion of the final report anticipated in summer 2010.

In addition, Caltrans will prepare a Project Report for SR 11 (preliminary engineering and design).

**GSA Project Development Study for the Otay Mesa East POE**

The next step in GSA’s planning process, following the completion of the feasibility study in June 2008, is the preparation of a Project Development Study (PDS). The PDS for the Otay Mesa East POE will further develop and analyze the proposed preferred alternative project leading to future design activities. This study is anticipated to begin in spring 2009.

**Future Project Financing**

SB 1486 enacted the Otay Mesa East Toll Facility Act, which authorized SANDAG to, among other things, solicit and accept grants of funds and to enter into contracts and agreements for the purpose of establishing highway toll projects to facilitate the movement of goods and people along the SR 11 corridor in the County of San Diego or at the Otay Mesa East POE. The bill provides SANDAG with various additional powers and duties, including, among others, authorization for SANDAG to issue bonds for the acquisition, construction, and completion of transportation facilities and to impose tolls and user fees for the use of the corridor. The bill requires that toll revenues from the Otay Mesa toll facility project be used to pay for specified costs, including, but not limited to, repaying bonds, the cost to SANDAG for operating the project, and the cost for capital improvements, pursuant to an expenditure plan. The bill also authorizes SANDAG to enter into agreements with the
County of San Diego or a city within that county to accept development impact fees for the construction and reimbursement of improvements in the county or city.

SANDAG staff has completed a due diligence process related to the financial strategy for SR 11 and Otay Mesa East POE project. Staff is recommending to the Board that a Senior Investment Underwriter be engaged to consult with staff to develop the plan of finance. Staff also is working closely with USDOT for technical assistance and discussing loans and grant programs as part of this project’s designation as a Border Congestion Relief Project.

In April 2008, the Otay Mesa East POE and SR 11 project was allocated $75 million from the funding from the Trade Corridors Improvement Fund (TCIF). TCIF is one of the programs under Proposition 1B (Prop. 1B), which was approved by the voters at the November 2006 general election and enacts the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006. This Act authorizes the issuance of more than $19.9 billion of general obligation bonds for various transportation programs.

**Figure 2**
Otay Mesa Passenger Port of Entry
Suggested Capital Improvements

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<table>
<thead>
<tr>
<th>Suggested Capital Improvements</th>
<th>06/21/07 DRAFT</th>
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<tbody>
<tr>
<td>All improvements recommended are within US GSA Right-of-Way.</td>
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<tr>
<td>1. Construct access to allow employee vehicles to exit the employee parking lot directly onto the northbound SR-905 lanes.</td>
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<tr>
<td>2. Remove k-rail, install steel bollards (or k-rail) and tire shredders (port runner system) along the west and east egress pavement and widen for additional lane(s).</td>
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<tr>
<td>3. Construct retaining wall, sidewalk and pavement along west edge of the import cargo facility to allow busses to board passengers.</td>
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<tr>
<td>4. Modify lane #3 for SENTRI/regular vehicles, dual use (not stacked).</td>
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</tr>
<tr>
<td>5. Install tandem booths along west portion of primary inspection. (Pending results from San Ysidro Stacked Booth Test).</td>
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<tr>
<td>6. Modify visitor parking lot. East half of lot for visitors, west half for SENTRI vehicle processing.</td>
<td></td>
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<tr>
<td>7. Construct a slip ramp entrance to the northbound lanes. Allow busses to re-board passengers and have direct access to the northbound SR-905 lanes.</td>
<td></td>
</tr>
<tr>
<td>8. Install signage - Parking for official use only.</td>
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</tbody>
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**Bi-national Effort**
| 9. Implement reversible lanes concept. (International effort) |
ISSUE IMPLEMENT IMPROVEMENTS TO EXISTING OTAY MESA-MESA DE OTAY POE AND CONNECTING ROADS

EARLY ACTIONS

a. Coordinate with Customs Border Protection (CBP) and Mexican Customs on the process to fund and implement identified short-term capital and operational improvements at the Otay Mesa-Mesa de Otay Commercial POE.

b. Explore the feasibility of short-term operational and capital improvements at the Otay Mesa-Mesa de Otay Passenger POE (operations and facilities)

Progress

As described above, GSA’s feasibility study for the proposed Otay Mesa East POE evaluated the modernization of the existing Otay Mesa POE. GSA’s feasibility study for the proposed Otay Mesa East POE also evaluated reconfiguration of the existing Otay Mesa POE.

Some highlights of the proposed Otay Mesa Modernization include the expansion of the passenger vehicle crossing from 12 to 24 primary inspection booths; acquisition of a 10.5 acre parcel immediately east of the commercial facility that would accommodate four new commercial inspection booths and the relocation of the existing hazardous waste truck crossing inspection facility located just west of the southbound vehicle crossing in Otay Mesa.

Staff consulted with GSA on the viability of implementing specific reconfigurations that were identified in the Otay Mesa-Mesa de Otay Strategic Plan of July 2007 and shown in Figure 2.

The status is as follows:

1. PROJECT: Construct Access to allow employee vehicles to exit the employee lot directly onto SR-905 lanes.

STATUS: No active plans for this project.

2. PROJECT: Remove K-Rail and Tire Shredders along west and east lanes and widen for additional lanes.

STATUS: No active plans for this project.

3. PROJECT: Install Stacked Booths on West 3 POV lanes.

STATUS: Installation is expected to be completed by May 31, 2009. Stacked booths could provide a 40-50 percent increase in crossing efficiency.

4. PROJECT: Modify lane No. 3 by adding a swing gate for a second SENTRI lane. This will be a dual use lane and would not include a stacked booth.

STATUS: Cost estimates are being evaluated and funding is being explored. This also would also require the cooperation of Mexican officials to coordinate access to this SENTRI lane.

5. PROJECT: Modify visitor parking (east half for visitors / west half for SENTRI Vehicle Processing.)

STATUS: No active plans for this project.

6. PROJECT: Construct retaining wall and pavement between Commercial and Non-Commercial operations for bus processing.

STATUS: No active plans for this project.
CBP recently completed installation of the Radio Frequency Identification (RFID) technology at the San Ysidro, Otay Mesa, Calexico, and Tecate POEs. Although, this project was not identified on the original list of improvements, it is expected to provide significant operational efficiency advancements to the Otay Mesa POE. These upgrades, which include new software, hardware, and the deployment of vicinity RFID technology, are being implemented as part of the Western Hemisphere Travel Initiative (WHTI). RFID is already utilized for toll collection on the I-15 express lanes and the South Bay Expressway in San Diego County. It can be an inexpensive means of tracking and cataloging freight movement through the Otay Mesa border crossing system. The data transmitted by RFID can track and identify vehicles and provide specific information on items being transported as well as border crossing history. In addition, devices can be moved from one lane to another at nominal costs. U.S. authorities said RFID technology will shave six to eight seconds off each inspection because information will appear on an officer's computer screen before a motorist even arrives at the booth.

**Next Steps**

GSA has commissioned an Otay Mesa Modernization Program Development Study that is expected to be completed in December 2009. A Project Design phase will begin in April 2010 and end in December 2011, and will be followed by construction, which is anticipated to start in April 2012 and end in December 2015.

**NEW ACTION** Support the implementation of technologies to measure cross-border wait times of northbound commercial vehicles at the Otay Mesa-Mesa de Otay Commercial POE.

**Progress**

In March 2007, Caltrans and SANDAG completed a study funded by the FHWA to determine what Intelligent Transportation Systems (ITS) or other commercial technologies are available to monitor, measure, and report on commercial vehicle wait times at the Otay Mesa POE. The study was divided into two stages. The first stage identified high-level requirements for the systems, reviewed ten potential technologies, and described the essential features of the selected solutions.

The Stage 2 Report, completed in June 2007, evaluated the viability, cost and high-level requirements of several technologies for the Otay Mesa Commercial POE.

During 2008, the top three technologies, RFID, Global Positioning Systems (GPS) telemetry, and Automated License Plate Recognition (ALPR) were evaluated. GPS telemetry was chosen as the primary means of collecting travel time information at the Otay Mesa Commercial POE because it was anticipated that GPS data would yield the most robust data set, as opposed to RFID and ALPR that would require more installation of hardware, and therefore be more costly, to get the same potential results.
Subsequently, FHWA’s consultant contracted with a third-party provider to pursue negotiations with motor carriers in the study’s target population and gain access to GPS data. They were successful in securing agreements to collect data from five motor carriers.

Data collection began in January of 2009 and is being collected throughout a ten-sector area along the route where trucks queue to cross into the U.S. The first sector begins at the intersection of Calle 12 and Bellas Artes in Tijuana, which is the beginning of the queue for northbound trucks in peak season, and the final sector ends in San Diego at the exit of Otay Mesa Commercial Vehicle Enforcement Facility.

**Next Steps**

Data collection will continue until spring of 2010. During this time, data will be validated by manually recording crossing times and other techniques to verify accuracy.

At the end of the data collection period a report will be produced analyzing a year’s worth of historical travel data. This report also will include implementation guidance. This data collection program will expire next year, unless another agency chooses to continue it.

**ISSUE FACILITATE IMPROVEMENTS TO CROSS-BORDER AND REGIONAL PUBLIC TRANSPORTATION SERVICES**

**EARLY ACTION** Initiate advanced planning work to extend the South Bay Bus Transit (BRT) service between Eastern Chula Vista and the Otay Mesa POE.

**Progress**

SANDAG is in the process of launching the environmental document for the Phase One BRT alignment. Several technical studies are being conducted including: traffic, habitat, noise, and visual. SANDAG is currently in negotiations with the land owner at Nicola Tesla Court, the location of the proposed transit station, on a long-term lease or acquisition. Figure 3 illustrates the South Bay BRT alignment. The proposed transit station is adjacent to the Otay Mesa POE.

**Next Steps**

The Mitigated Negative Declaration (MND) is expected to be completed and permits are anticipated to be secured by December 2009. The South Bay BRT project is on schedule to be implemented in late 2012.
Source: SANDAG, 2008
EARLY ACTION Evaluate the City of Tijuana’s draft Public Transportation Plan, focusing on routes that would serve the Otay Mesa-Mesa de Otay POE and the proposed Otay Mesa East-Otay II POE

Progress

The City of Tijuana’s Municipal Planning Institute (IMPlan) is currently conducting a transportation study titled “Technical Legal and Financial Study on Route 1 (Internacional-Refugio), Route 2 (Otay-Rosarito Beach), and Route 3 (Valle de las Palmas),” that is evaluating the City of Tijuana’s public transportation system in context of its Metropolitan Zone. The goal of this study is to improve the access to and flow of public transportation in and around the City.

The study also proposes to define the location of the pick-up and drop-off points for public transportation near the Mesa de Otay POE in Mexico. Recommendations from SANDAG’s study “Evaluation of Tijuana’s Public Transportation Facilities at the Otay Mesa-Mesa de Otay Port of Entry; South Bay BRT” completed last year will be considered.

An analysis also would be included on transit, passenger vehicle, and truck access routes to the proposed Otay Mesa East-Otay II POE. One of the possible scenarios under consideration is a transit-only access alignment leading from the easternmost extension of Boulevard Bellas Artes in Mesa de Otay to the Otay II POE. All passenger and commercial vehicles would travel through the proposed Cañon Rinconada alignment to access the Otay II POE. This study is being funded by the City of Tijuana and would be completed by summer 2009.

In addition, IMPlan sent a letter of intent to the State of Baja California Secretariat of Infrastructure and Urban Development (SIDUE) in February 2009 expressing the need to acquire right-of-way for access routes to the Otay II POE, emphasizing the Cañon Rinconada alternative. In this letter, IMPlan also requested that public transit and pedestrian access be considered along with a binational strategy to coordinate public transit connections at the Otay II POE.

Next Steps

IMPlan will continue coordinating the Otay Mesa East-Otay II POE study findings with stakeholder agencies on both sides of the border to ensure efficient pedestrian and transit movement and connectivity. As preliminary POE designs are developed, more detailed discussions will focus on pick-up and drop-off points for public transportation near the Mesa de Otay and Otay II POEs.
Figure 4

South Bay BRT

LEGEND

- Blue: Transit Lanes Alternative #1
- Cyan: Transit Lanes Alternative #2
- Yellow: Station Location - Parcel
- Red: Airport Feeder Service
- Green: Central Camionera Feeder Service

Source: SANDAG, 2008
EARLY ACTION   Evaluate the potential for extension of the South Bay BRT service to the proposed Otay Mesa East border crossing along the future SR 11

Progress

As reported in the 2008 Progress Report, SANDAG commissioned a study to evaluate the potential extension of BRT (Figure 3) (or other alternative transit service) to the Otay Mesa East POE. Building on the findings of this study, SANDAG staff has prepared a conceptual transit center proposal to serve this POE.

Staff has estimated that a two-acre site (Figure 4) would accommodate two bays for one BRT route, two bays for one local bus route, two taxi stacks, two jitney stacks, passenger drop off/pick up, and potential space for long haul transit operators. Scenarios B and C show potential locations for the transit center pending additional planning and design for POE pedestrian inspections (i.e. if pedestrian inspections were to take place in the eastern side of the POE, then a two-acre parcel as shown in Scenario C would be most appropriate for the transit center).

Ideally, both northbound and southbound pedestrian crossing facilities would be located on the same side of the highway, so that transit facilities in both the U.S. and Mexico can be consolidated for maximum user convenience.

Caltrans will evaluate the footprint of the conceptual transit center in the Tier II EIR/EIS for SR 11 and the Otay Mesa East POE. Since this POE is in the planning stages, it provides a unique opportunity to influence how transit vehicles (and private vehicles picking up pedestrian crossers) will access the POE.

Next Steps

SANDAG staff will continue to collaborate with stakeholders on both sides of the border to ensure transit and pedestrian access is properly considered for the future Otay Mesa East-Otay II POE.

NEW ACTION   Collaborate with the San Diego County Regional Airport Authority in the upcoming market demand study of a cross-border terminal connection between Otay Mesa and Tijuana International Airport (TIJ) toward its possible implementation.

Progress

In June 2008, the San Diego County Regional Airport Authority accepted a market demand study of the cross-border terminal that evaluated existing demand and capacity at TIJ, reviewed data on existing U.S. passengers that travel to the Tijuana airport, surveyed San Diego residents that may use the Tijuana airport if a convenient cross-border connection existed, and developed projections of expected passenger growth at the Tijuana airport.

The following are the primary market demand study results:

- The number of passengers using TIJ from the U.S. will continue to grow significantly over the next 20 years regardless of whether a crossborder airport terminal is developed.
- With an easy crossborder airport terminal, an estimated total of 3.2 million annual passengers (MAP) would use TIJ to/from the U.S. in 2020; in 2030 that number could rise to 6.4 MAP. This includes both passengers that would be obligated to use TIJ by the crossborder terminal connection.
and passengers that would use TIJ even without a connection.

- The passenger demand that would be obligated to use TIJ to/from the U.S. solely because an easy crossborder terminal connection exists is estimated at 1.1 MAP in 2020 and 2.7 MAP in 2030.

- If an easy crossborder terminal connection does not exist, it is still estimated that 2.1 MAP will use TIA to/from the U.S. in 2020 and 3.7 MAP in 2030.

The Authority Board decided not to dedicate additional funds to further study the cross-border terminal but decided to include it in the Regional Airport Strategic Plan.

In 2008, in an effort to advance this concept, a private investment group - the Otay Tijuana Venture LLC - purchased 52 acres of undeveloped industrial land in Otay Mesa to develop the U.S. side of the crossborder airport terminal project. Their intent is to build a full-service crossborder passenger facility that consists of an elevated toll bridge and a full-service passenger terminal in the U.S. It is believed that this facility would also reduce crossings at the nearby Otay Mesa and San Ysidro POEs.

Next Steps

Tijuana Venture LLC anticipates that the permit process (including a presidential permit), environmental and traffic studies would begin by late spring of 2009 and anticipates the crossborder airport terminal would be operational as early as 2012.

ECONOMIC DEVELOPMENT ACTIONS

ISSUE PROMOTE CREATION OR EXPANSION OF COMMON EMPLOYMENT CLUSTERS ON BOTH SIDES OF THE BORDER AND ADDRESS FUTURE INDUSTRIAL LAND USE SUPPLY AND DEMAND

EARLY ACTION Within the framework of San Diego Dialogue’s Crossborder Innovation and Competitiveness Initiative, begin the implementation of selected recommendations from the Borderless Innovation study outlined below:

Establish the Crossborder Innovation and Competitiveness Center

Progress

The Crossborder Innovation and Competitiveness Center concept remains on hold. However, there are other ongoing activities between the University of California at San Diego (UCSD) and the Scientific Research and Post Graduate Education Center in Ensenada (CICESE) that hold promise for enhancing the competitiveness of the crossborder region. These activities include UCSD’s California Institute for Telecommunications and Information Technology’s (Calit2) collaboration with CICESE in areas such as high bandwidth communications under the LambdaGrid project and on metagenomic studies of marine life via the CAMERA project. These projects show the development of future enabling technologies in IT and the life sciences, which are important industries for both San Diego and Baja California.
Initiate a crossborder program to foster scientific and technology relationships, awareness of research, and commercialization of discoveries in the life sciences between the San Diego-Baja California region and other regions in Mexico.

**Progress**

In 2008, stakeholders from the Mexican regions of Cuernavaca, Guadalajara, Guanajuato, and Monterrey are in the process of formally establishing the Mexican Life Sciences Alliance to collaboratively promote their capabilities internationally, including a showing at the BIO tradeshow in June 2008. They also agreed to co-develop a proposal to the Inter-American Development Bank (IDB). Under a three-year grant, IDB funding would be used to support Alliance activities to build commercialization infrastructure (e.g., training and policies) within participating research institutions, business support services for new life science start up companies, and international outreach for research and business development opportunities which include linkages with San Diego’s life sciences community. Under the proposal UCSD Extension (San Diego Dialogue and Global CONNECT) and Merck & Co. would serve as partners to the Alliance. Submission of the proposal is currently pending the formalization of the Mexican Life Sciences Alliance into a legal entity (an A.C. or civil association), per IDB requirements. This is expected to be resolved by June 2009, and the IDB award announcement will follow approximately two months later.

**NEW ACTION** Explore the consolidation of employment clusters through the establishment of business service centers such as science and technology parks.

**Progress**

IMPlan proposes to conduct an industrial clusters study, through its Urban Development Program (Programa de Desarrollo Urbano del Centro de Población de Tijuana or PUDCPT). Baseline information such as the number, type, and location of industries would be gathered to develop an industrial cluster database. Information from the industrial cluster study would then be used to develop strategies focused on promoting industrial clusters in the City of Tijuana. Some of these strategies include establishing incentives to attract investment, and coordinating with universities to gear curriculum towards providing a skilled workforce to better serve specific industrial clusters.

**Next Steps**

IMPlan will explore funding opportunities to conduct this study.
HOUSING ACTIONS

ISSUE ADDRESS FUTURE HOUSING SUPPLY AND DEMAND, HOUSING AFFORDABILITY ISSUES AND OPPORTUNITIES, AND INFRASTRUCTURE NEEDS OF EXISTING AND FUTURE RESIDENTIAL LAND USE

NEW ACTION Promote comprehensive housing developments within Tijuana portion of the study area, which would include providing space for recreational activities, sports, green areas, and public facilities and services to improve the quality of life.

Progress

IMPlan applied for and received funds from Secretariat of Social Development (SEDESOL) to evaluate the social and environmental conditions of the Nido de las Aguilas canyon. This study was completed in late 2008 and its findings will contribute to the decision making process involved with identifying a preferred access route to the Otay II POE.

In addition, IMPlan, the State of Baja California, and local developers have been collaborating to develop the area Valle de las Palmas in southeast Tijuana. This development was designed to meet growing housing demand in Tijuana in a sustainable manner. Smart Growth concepts are planned to be incorporated into this development.

The main focus of the sustainability of this development revolves around three points: social equity, ecological balance, and economic development. The social development of the community will involve strong community leadership, community involvement of local residents, and good relations between neighbors. The ecological balance of Valle de las Palmas involves concentrating the housing and commercial activities in one area of the development, while maintaining another part for the natural environment, and promoting renewable energy. The economic development of Valle de las Palmas is designed to promote a high-technology industrial park that caters to such industries as aerospace, automotive, solar energy, information technology, and biotechnology.

NEW ACTION Collaborate with IMPlan and the Urban Land Institute (ULI) on sharing resources, planning techniques, and strategies as they relate to Smart Growth planning.

Progress

IMPlan is currently updating the City of Tijuana’s PDUCPT. The PDUCPT is updated every five years and grants the City zoning authority to regulate land use. IMPlan coordinates the preparation of the PDUCPT and also oversees implementation of long-term urban and regional planning.

The 2009 PDUCPT promotes smart growth practices such as land use densification and infill development of urban zones as a strategy to avoid sprawl and to concentrate access to urban services.

IMPlan also has a new specific planning instrument for the northern zone of Playas de Tijuana that would promote Smart Growth principles in this area.

Additional progress towards the implementation of this strategy was the 2008 binational event, titled “Smart Growth and Sustainability on the Border: Opportunities for Collaboration with Strategic Partners,” sponsored by SANDAG with support from the Consulate General of Mexico in San Diego, the City of Tijuana, IMPlan, and the Urban Land Institute (ULI).
This event focused on regional sustainable planning in Tijuana, the Smart Growth Experience in the San Diego region, as well as emerging issues and next steps in the San Diego region. The conclusions reached from the binational seminar include the following:

- Explore the feasibility of developing maps of the regional transportation infrastructure and existing and planned water, sewer, energy, natural gas, and electrical infrastructure in the San Diego/Tijuana region;
- Investigate and gather existing baseline data on greenhouse gas (GHG) emissions and corresponding target reductions;
- Proceed with arrangements for SANDAG to consider accepting the IMPlan invitation to become a permanent advisory member on its Governing Board;
- Incorporate coordination of Smart Growth and Climate Change planning efforts between the San Diego region and Baja California into the next update of the Otay Mesa-Mesa de Otay Binational Corridor Strategic Plan; and
- Explore opportunities for COBRO members to invite practitioners to discuss best practices at borders around the world to evaluate San Diego/Tijuana border crossings.

These recommendations were approved by the SANDAG Board of Directors on November 21, 2008. Since then, SANDAG staff has made some initial progress to coordinate Climate Change planning efforts between the San Diego region and Baja California. In December 2008, SANDAG staff met in Tijuana, with the State of Baja California’s Deputy Director of the Secretariat of the Environment, researchers of the College of the Northern Frontier (COLEF), and the Scientific Research and Post Graduate Education Center in Ensenada (CICESE). These two universities along with the Autonomous University of Baja California (UABC) were contracted by the State of Baja California to develop a statewide climate plan.

The purpose of this meeting was not only to engage in some initial discussions on how to implement the above recommendations, but also to review each other’s progress in developing Climate Change Action Plans and evaluate opportunities for collaboration.

Some initial highlights include:

- Both parties agreed to share data and other information.
- The emissions inventories for the San Diego region and Baja California are prepared with different emissions factors—San Diego mostly uses California-specific factors established by the State Air Resources Board, while Baja California uses more generic factors created by the Intergovernmental Panel on Climate Change (IPCC). Therefore, existing 2005 baseline data on GHG emissions does not match; however, both parties agreed to evaluate ways to reconcile these differences and explore harmonizing data collection methodology in the future.
- It was agreed that some GHG emissions sources, although physically located in Baja California, are essentially binational in nature. Examples include the sale of older (and typically less efficient) vehicles from Californians to Baja Californians and California’s import of electricity generated in Baja California.
- Both parties agreed it would be beneficial to evaluate ways to minimize or avoid GHG emissions at current and planned border crossings. Strategies could include using advance emissions reduction technology, such as Truck Stop Electrification (TSE) and modeling Idle Free British Columbia’s TSE project at the Peace Arch Border Crossing in Vancouver, Canada.
• Both parties thought it would be beneficial to reconvene on climate change planning activities.
• Both parties agreed that jointly exploring funding sources could be advantageous.
• Baja California’s climate action plan is scheduled for completion in December 2009.
• SANDAG’s climate action plan is scheduled for Board of Directors’ approval in October 2009.
• Other important stakeholders will be identified for inclusion in future meetings (Energy Policy Initiatives Center, and Border 2012 San Diego/Tijuana Air Quality Task Force).

Next Steps

SANDAG staff will meet periodically with its Baja California counterparts to share information and discuss opportunities for collaboration on climate change planning.

In addition, to further advance the 2008 Binational Event’s recommendations, SANDAG is focusing the 2009 Binational Event on “Challenges and Opportunities for Crossborder Climate Change Collaboration.” This event is scheduled on June 2, 2009, at the Caltrans District 11 facilities.

The format of the 2009 Binational Event will include the following:

• A presentation by the San Diego Foundation on the “Adaptation 2050 Study” which describes how climate change will affect the San Diego region by the year 2050.
• An overview of SANDAG’s Draft Climate Action Plan.
• An overview of Baja California’s Climate Action Plan.

After these presentations, a panel of experts will discuss the challenges and opportunities for collaboration. The event will finish with an open discussion and conclusions from the seminar.

ENVIRONMENTAL ACTIONS

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EARLY ACTION Support plans for habitat restoration and rehabilitation along the Alamar River riparian corridor.

Progress

The Tecate River in Tecate, Mexico, begins as Cottonwood Creek in the U.S. and then is called the Alamar River when it enters eastern Tijuana. It has been severely impacted both on the floodplain and within the riverbed. The Tecate River was once a reliable source of clean water that over the years has been contaminated by rapid unplanned residential and industrial development. This rapid growth has resulted in significant negative ecological and social impacts, including: destruction of sensitive habitat areas; pollution of soil, air, and waterways; overdraft of the aquifer; and extensive erosion. The effects of this pollution are present in the Alamar River downstream and the Tijuana River Estuary where water from this river enters and eventually flows in the Pacific Ocean.
Fundación La Puerta (Fundación), founded in 1977 by the Szekely family and José Manuel Jasso, in partnership with Rancho La Puerta resort, has actively supported environmental, social and educational projects, including the preservation of endangered native plant and wildlife habitat within Tecate and the surrounding border region.

Its current project is focused on the preservation and rehabilitation of the Tecate River. To accomplish this, the Fundación spearheaded the Tecate River Park Project. Project components include the creation of community parks, recreational areas, and preservation of wetlands and habitat for a cleaner river.

In spring 2008, the State Commission for Public Services in Tecate (CESPTE), La Puerta Foundation (FLP), and the Border Environmental Cooperation Commission (BECC) signed a collaborative agreement to construct “Wetlands for the Restoration of Tecate River” with a total investment of more than $146,885 (equivalent to $1.5 million pesos).

These wetlands were recently restored in early 2009 and will more effectively cleanse the river’s water, create areas for groundwater recharge, help reduce floods, and provide refuge and food for resident and migratory birds. The project covers 5.2 acres (2.1 hectares) of land adjacent to the river with plant species that help improve the quality of the water, most of which comes from the Tecate wastewater treatment plant and the Tecate brewery. This project has the potential to improve water quality in the portion of the Alamar River located in the Strategic Plan’s study area. It also could serve as a prototype for habitat restoration planned for that area.

Next Steps

This project represents only about one-tenth of all the restored wetlands that Fundación and CESPTE envision for the Tecate River. Future funding is being explored by these organizations.

IMPlan is currently in negotiations with Mexico’s National Water Commission (CONAGUA) to define the right-of-way footprint for planned infrastructure along the Alamar River. Jurisdictional authority over this area will need to be secured by the City of Tijuana before any construction would begin.

Also, as part of the first phase of this project IMPlan continues its work on the logistics and negotiations with approximately 300 families that would be relocated to clear the way to construct the Alamar River Expressway, the cement channel, and complete habitat restoration plans. Construction of the channel and of the Alamar River Expressway is scheduled to begin in 2010. Both projects are anticipated to be completed in late 2011.

As soon as the City of Tijuana secures the right-of-way, IMPlan will start the bid process to initiate construction of the first phase for canalizing the Alamar River and a new expressway, which also will provide access to the new Otay Mesa East-Otay II POE once completed.
ISSUE COLLABORATE WITH THE U.S. EPA IN THE BORDER 2012 PROGRAM, THE BINATIONAL AIR QUALITY TASK FORCE, AND THE SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT (APCD) IN BINATIONAL CLEAN AIR EFFORTS

EARLY ACTION Support the San Diego APCD cross-border clean air demonstration projects.

Progress

In 2008, the APCD received a grant from the U.S. Environmental Protection Agency (EPA) to fund the second phase of the San Diego/Tijuana Clean Diesel Demonstration Project, with the objective of mitigating the air quality impact of increased cross-border, heavy-duty diesel truck traffic. The first phase of this project was completed in 2008 and retrofitted 50 cross-border trucks with Diesel Oxidation Catalysts (DOCs) plus a Spiracle crankcase filtration system. The second phase of the project is underway and will demonstrate advanced diesel emission control technology, such as Diesel Particulate Filters (DPFs), on eight cross-border trucks. This project is expected to be completed in September 2009.

Next Steps

The APCD is currently applying for a grant from the EPA’s National Clean Diesel Funding Assistance Program to retrofit crossborder drayage trucks. Earlier this year, $156 million in funds were approved by the U.S. Congress to fund this program through the American Recovery and Reinvestment Act of 2009 (Recovery Act). Funding is dedicated to reduce emissions from existing diesel engines through a variety of strategies, including: add-on emission control retrofit technologies; idle reduction technologies; cleaner fuel use; engine repowers; engine upgrades; and/or vehicle or equipment replacement; and the creation of innovative finance programs to fund diesel emissions reduction projects. Under this grant program, funding is restricted to the use of EPA and California Air Resources Board (CARB) verified and certified diesel emission reduction technologies.

EARLY ACTION Link the creation of conservation areas to the objectives and goals established in “A Binational Vision for the Tijuana River Watershed” and the Border 2012 programs.

Progress

• The City of Tijuana’s Environmental Protection Department (DMPA) engaged in a public private partnership with Casas Geo Foundation, a Mexican residential housing developer, who donated approximately 19 acres of land to be used as open space and recreational purposes in the area known as the Libramiento, located adjacent to the free road between Tijuana and Playas de Rosarito.

• IMPlan has identified the following three priority locations in the City of Tijuana for environmental conservation and/or rehabilitation: Vaso de la Presa, Cerro San Ysidro, and Canyon Laureles. IMPlan has had some initial discussions with a key landowner whose landholdings lie in portions of designated conservation areas in Cerro San Ysidro and the Alamar River. Discussions at these meetings have focused on the negotiation of the exchange of development rights for setting aside conservation lands. The landowner is receptive to this concept and discussions are expected to continue this year.

• As reported in the 2008 progress report, the Nature Conservancy (TNC) received approximately $30,000 dollars from a private donor to advance planning efforts in Baja California to support the Park to Parque initiative. TNC has been working
with Terra Peninsular, a Mexican Non-Governmental Organization (NGO), on a conservation action plan for the Sierra Juarez that will identify strategies to create a transboundary park that would link Anza Borrego Desert State Park to Parque Constitución Nacional de 1857 (Figure 5). Also during this period and in advance of the Park to Parque initiative, Terra Peninsular secured a contract with a rancher with property adjacent to Parque Nacional that requires the rancher to manage his land for conservation purposes. The size of that ranch is approximately 1,800 hectares and is known as Rancho Rodeo del Rey. The plan is anticipated by be completed by Summer 2009.

- In early 2009, the State of Baja California allocated $64 million to its State Commission for Public Works in Tijuana (CESPT) for a zero sewer discharge program that seeks to ultimately eliminate the City’s sewer discharge into the Tijuana River Watershed and the Pacific Ocean. Funds will be use to provide sewer connections to many neighborhoods in Tijuana, and include monitoring and inspections. The secondary treated sewage would be recycled and sent through purple pipes to irrigate city parks and green spaces. This program marks a significant milestone in reducing the flow of sewage across the border. One of the first neighborhoods to receive sewer connections was the neighborhood of San Bernardo located in and around Las Laureles Canyon. Currently, sewage from San Bernardo discharges to the Los Laureles canyon on the Mexican side, which then flows across to Goat Canyon on the U.S. side to the Tijuana River Estuary, eventually draining into the Pacific Ocean. This new infrastructure would essentially stop the flow of sewage there and thus result in improved water quality in the Tijuana River Estuary. Installation is scheduled to begin in May and be completed in December of 2009.

- Work continues in the Los Laureles Canyon to collect pavers for erosion protection. So far 130,000 pavers are necessary to pave one of the roads. With the new paving project, the goal is to collect 250,000 pavers by next year.
NEW ACTION Support APCD efforts to implement the SmartWay Transport project in the San Diego region.

Progress

To advance SmartWay Transport goals, EPA completed an Anti-Idling and Truck Stop Electrification (AI/TSE) study in April 2009. AI/TSE approaches are strategies to encourage (or require) drivers to turn off their vehicles rather than idling at a stand-still or very slow speeds. This study analyzed AI/TSE approaches successfully applied at international POEs between the U.S. and Mexico and how they can be implemented to save money, reduce diesel emissions, and reduce traffic congestion from idling trucks. Various stakeholders, including SANDAG, were interviewed to help identify opportunities and barriers to implementation.

The study applied its findings to examine how AI/TSE could be implemented at the Otay Mesa-Mesa de Otay POE. According to SANDAG (2006) the average wait time for a truck at the Otay Mesa-Mesa de Otay POE is estimated at two hours. It is calculated that a
A cargo truck idling for one hour uses one gallon of gas and emits 24.69 lbs of GHG gases.

After research and discussion with various stakeholders, three viable adaptations of the AI/TSE concept were developed to avoid trucks slowly idling in a queue while they wait to access border crossing facilities:

- **Traffic Controls on Existing Roadways**: This approach uses traffic controls on existing roadways to process truck crossings in “batches.” Traffic signals are used to stop vehicles, which are encouraged or required to turn their engines off, and drivers wait for a period of time while batches of vehicles in front of them cross the border and clear the roadway. This strategy would not include TSE technology.

- **Mandatory AI/TSE Facility**: This approach requires all vehicles accessing a POE to enter a parking area, turn off their engines, and wait for a signal to cross the border via an appointment.

- **Voluntary AI/TSE Facility**: Trucks accessing a POE have the option to enter a parking area with an appointment system, TSE equipment, and amenities. Or they can choose to use the traditional (congested) approach to the customs facility. Drivers would pay to use the facility in exchange for reduced fuel costs, a resting environment, use of amenities and possibly (depending on the procedures) a shorter wait time.

The study also focused on how AI/TSE could work at the current Otay Mesa POE and the planned Otay II POE. Based on the characteristics of the location of the POE – congestion, length of wait, land availability, local climate, need for new/upgraded infrastructure, cost, and willingness to pay – the following conclusions were determined about the value of AI/TSE in these locations:

- **Otay Mesa-Mesa de Otay POE**: Due to high population density and expensive land costs in the area, the most effective AI/TSE approach would be a mandatory traffic control approach on the existing roadway, or a voluntary off-site AI/TSE parking area that serves the POE by a designated roadway.

- **East Otay Mesa POE**: Since more land is available in the area, a mandatory on-site parking facility would be most effective.

Based on the study’s key findings, EPA made the following recommendations:

**Recommendation 1**: All new POEs should consider strategies for reducing idling through infrastructure and border crossing processes in their planning. The BECC and North American Development Bank (NADBank) should consider an evaluation of AI/TSE approaches as pollution emissions mitigation strategies. NADBank could leverage AI/TSE facilities through loans for new ports.

**Recommendation 2**: Existing POEs with congestion issues should evaluate options for retrofitting with AI infrastructure and determine which models (with which adaptations) could work.

**Recommendation 3**: For the Mexican side of the Otay Mesa border crossing, the U.S. and Mexico should jointly conduct a feasibility study to evaluate and compare the cost and effectiveness for: 1) a mandatory on-road AI approach that uses traffic controls to “batch” trucks through the port using the existing access road and lanes; and 2) a fee-based, voluntary, remote, off-site parking/TSE area that serves the port via a dedicated roadway.
Recommendation 4: For the Mexican side of the Otay II crossing, if congestion is predicted over the life of the facility, the project planning should include an AI/TSE facility that is incorporated into the port infrastructure so that all vehicles accessing the POE would use it. In addition, Otay II project planning should analyze options for using a portion of toll fees for the new port to cover the cost of the TSE facility. This facility should be evaluated as a possible staging area for access to the Otay Mesa POE as well, via a dedicated roadway.

Next Steps

The following are U.S EPA’s recommended future steps:

1. Hold additional discussions with stakeholders involved in AI/TSE strategies for Otay Mesa to better understand institutional jurisdictions and the feasibility of the recommended AI/TSE strategies. These stakeholders include: Mexico’s SCT, City of Tijuana (e.g., Sub Comité Binacional and local traffic enforcement), SIDUE, and shippers/maquiladoras.

2. Further evaluate key aspects of the Otay Mesa and Otay II crossings, including:
   - What land is available for a dedicated AI/TSE parking area and the acquisition cost;
   - The length of the roadway needed to accommodate batching of trucks using existing roadways;
   - A more refined analysis of congestion and wait times that takes into account possible near-term congestion relief due to a new Otay II crossing and possible longer-term increases in commercial vehicle traffic at both POEs;
   - The impact on the viability of AI/TSE approaches if Otay II offers a service that guarantees a 30 minute crossing time; and
   - The demand impact on Otay II from an additional fee component to pay for the AI/TSE facility.

3. Evaluate other existing northbound and southbound truck and passenger vehicle border crossings for the need for, and viability of, AI/TSE strategies using consistent analytical approaches and/or tools for evaluating when AI/TSE sites make sense, what type of AI/TSE strategy is most appropriate in a given location, and the costs and benefits of different approaches.

4. Evaluate existing and planned AI/TSE strategies at international POEs and elsewhere, including 1) the planned San Luis Rio Colorado Commercial POEs TSE facility and 2) the traffic controls at the U.S.-Canada Peace Arch passenger vehicle crossing. Other examples may be useful to monitor as well (e.g., using maglev technology to move trucks with their engines shut off through ports, as suggested by the Long Beach Port study, or the Universal Freight Shuttle concept developed by the Texas Transportation Institute.

5. Develop more sophisticated approaches for quantifying potential emissions reductions from AI/TSE strategies at various levels of congestion and length of wait times, beginning with the Otay Mesa and Otay II crossings. These approaches should take into account the various emissions dynamics of creep idling, idling at a standstill, starting and stopping, etc. The Texas Transportation Institute, for example, has done detailed analyses of emissions characteristics at POEs that could be used in such an analysis.
6. Further analyze anti-idling options, including their staffing requirements and operations and maintenance costs.

7. Conduct outreach or educational campaigns with Mexican trucking and shipping companies and with drivers about anti-idling options that are available and their benefits.

8. Develop “model” approaches for deploying AI/TSE at new POEs.

9. Conduct pilot projects to test and evaluate AI/TSE strategies.

10. Share data and collaborate with global climate change planning efforts in both the U.S. and Mexico and incorporate the use of AI/TSE as a GHG and air pollution reduction strategy.