MEETING NOTICE
AND AGENDA

COMMITTEE ON BINATIONAL REGIONAL OPPORTUNITIES (COBRO)
The Committee on Binational Regional Opportunities (COBRO) may take action on any item appearing on this agenda.

Tuesday, February 5, 2008
3:00 to 4:30 p.m.
SANDAG, 7th Floor Conference Room
401 B Street, Suite 800
San Diego, CA 92101-4231

Staff Contact: Hector Vanegas
(619) 699-1972
hva@sandag.org

AGENDA HIGHLIGHTS

• PROGRESS REPORT ON THE IMPLEMENTATION OF THE OTAY MESA-MESA DE OTAY BINATIONAL CORRIDOR STRATEGIC PLAN
• UPDATE ON ECONOMIC DEVELOPMENT STRATEGIES
• INITIATIVE TO SUPPORT IMPLEMENTATION OF TECHNOLOGIES TO MEASURE CROSSBORDER WAIT TIMES
• EVALUATION OF TIJUANA’S PUBLIC TRANSPORTATION PLAN AND TRANSIT SERVICES TO THE OTAY MESA-MESA DE OTAY PORT OF ENTRY

MISSION STATEMENT

The Committee on Binational Regional Opportunities (COBRO) will advise the Borders Committee of the San Diego Association of Governments (SANDAG) concerning both short- and long-term binational related activities, issues, and actions; provide input regarding binational border-related planning and development; and identify ways to assist and coordinate with existing efforts in the binational area. The COBRO will serve as a working group to the SANDAG Borders Committee to facilitate a better understanding of the binational border-related issues and needs of the California-Baja California region.
Welcome to SANDAG! Members of the public may speak to the COBRO on any item at the time that the Committee is considering the item. Please complete a Speaker’s Slip which is located in the rear of the room and then present the slip to Committee staff. Also, members of the public are invited to address the Committee on any issue under the agenda item entitled Public Comments/Communications. Speakers are limited to three minutes. The COBRO may take action on any item appearing on the agenda.

This agenda and related staff reports can be accessed at www.sandag.org under meetings on SANDAG’s Web site. Public comments regarding the agenda can be forwarded to SANDAG via the e-mail comment form also available on the Web site. E-mail comments should be received no later than noon, two days prior to the COBRO meeting.

In compliance with the Americans with Disabilities Act (ADA), SANDAG will accommodate persons who require assistance in order to participate in SANDAG meetings. If such assistance is required, please contact SANDAG at (619) 699-1900 in advance of the meeting. To request this document or related reports in an alternative format, please call (619) 699-1990, (619) 699-1904 (TTY), or fax (619) 699-1905.

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## COMMITTEE ON BINATIONAL REGIONAL OPPORTUNITIES

Tuesday, February 5, 2008

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### CONSENT REPORTS (4 through 6)

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<td>5.</td>
<td>PROGRESS REPORT ON THE CALIFORNIA BIODIVERSITY COUNCIL’S “BIODIVERSITY ALONG THE BORDER” COMMITTEE (Keith Greer and Ron Saenz; SANDAG)</td>
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<td>This item provides a report on the outcomes from recommendations made by the Las Californias and Tijuana River Estuary Issues working groups to the California Biodiversity Council at its October 2007 meeting. It also provides a summary from the Las Californias Working Group meeting held in November 2007.</td>
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<td>SANDAG’S BINATIONAL ANNUAL EVENT (Hector Vanegas, SANDAG)</td>
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<td>At the October 2, 2007 meeting, the Committee recommended that SANDAG staff organize an early staff-level meeting with the new staff at the City of Tijuana, including IMPLAN, and the State of Baja California, to discuss advancing priorities for actions identified in the Otay Mesa-Mesa de Otay Binational Corridor Strategic Plan, and to discuss the upcoming binational annual event. This report summarizes the outcome of a meeting held at IMPlan on January 17, 2008.</td>
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### CHAIR’S REPORTS

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<td>7.</td>
<td>RECOMMENDATION TO ACCEPT SOUTHWESTERN COLLEGE AS NEW COBRO ADVISORY MEMBER AND REINSTATE DESARROLLO ECONOMICO E INDUSTRIAL DE TIJUANA (DEITAC) AS MEMBER</td>
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<td>Southwestern College has requested to become a member of COBRO (Angelica Suarez, Ph.D. Dean Higher Education Center at Otay Mesa/ San Ysidro) and DEITAC has requested to be reinstated as a voting Member. The new COBRO membership list will be presented to the Borders Committee for its approval at its February 22, 2008, meeting.</td>
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REPORTS (8 through 10)

8. NEW COBRO MEMBER ORIENTATION (John Kirk, SANDAG)

John Kirk, SANDAG Deputy General Counsel, will provide an overview of guidelines for SANDAG Working Groups members, as well as a background of adopted policies regarding membership, leadership, attendance, quorum and vacancies that apply to COBRO.

9. PROGRESS REPORT ON THE IMPLEMENTATION OF THE OTAY MESA-MESA DE OTAY BINATIONAL CORRIDOR STRATEGIC PLAN

A. UPDATE ON ECONOMIC DEVELOPMENT STRATEGIES (Nathan Owens, San Diego Dialogue; Ron Saenz, SANDAG)

This report will provide an update on the economic development strategies being implemented by the San Diego Dialogue, University of California San Diego (UCSD) Extension.

B. INITIATIVE TO SUPPORT IMPLEMENTATION OF TECHNOLOGIES TO MEASURE CROSSBORDER WAIT TIMES (Lisa Dye, U.S. Federal Highway Administration; Ron Saenz, SANDAG)

This report provides an update on the study conducted by Caltrans and SANDAG to determine what Intelligent Transportation Systems (ITS) or other commercial technologies are available to support automatic monitoring of border wait times.

C. EVALUATION OF TIJUANA’S PUBLIC TRANSPORTATION PLAN AND TRANSIT SERVICES TO THE OTAY MESA-MESA DE OTAY PORT OF ENTRY (Edgar Torres, Kimley-Horn)

This report provides an overview of the evaluation of Tijuana’s Public Transportation Plan and current and planned transit services to the Otay Mesa-Mesa de Otay Port of Entry in relation to the planned South Bay Bus Rapid Transit (BRT) service. This analysis was conducted in collaboration with IMPlan.

10. A BINATIONAL PLANNING APPROACH FOR THE DEVELOPMENT OF THE Tijuana RIVER WATERSHED: POLICY OPTIONS FROM RHETORIC TO ACTION (Elsa Saxod, Saxod Enterprises; Laura Silvan, Rancho La Puerta)

This presentation reviews and analyzes the challenges and obstacles that are hampering or preventing transborder planning from taking place in the Tijuana River Watershed, and also recommends steps that are necessary to bring about effective transborder planning.
11. NEXT MEETING DATE AND LOCATION INFORMATION

The next meeting of the Committee on Binational Regional Opportunities will be held on Tuesday, March 4, 2008, from 3:00 to 4:30 p.m., at SANDAG.

+ next to an item indicates an attachment
WELCOME AND INTRODUCTIONS

The November 6, 2007, Committee on Binational Regional Opportunities (COBRO) meeting was called to order by Chair Paul Ganster, Institute for Regional Studies of the Californias, San Diego State University (SDSU). The meeting was held at SANDAG.

Members present were: Paul Ganster, Institute for Regional Studies of the Californias, SDSU; Vice Chair Cindy Gompper-Graves, South County Economic Development Council; Past Chair, Elsa Saxod, Saxod Enterprises; Sergio Pallares, Caltrans; Sarah Johnson, City of Chula Vista; Lydia Antonio, Consulado General de Mexico in San Diego; Tatiana Suro, Otay Mesa Chamber of Commerce; Angelika Villagrana, San Diego Regional Chamber of Commerce; Larry Van Wey, City of San Diego; Thomas Currie and Jason MB Wells, San Ysidro Chamber of Commerce; Clay Phillips, Tijuana River National Estuarine Research Reserve (TRNERR); David Fege, U.S. EPA Border Liaison Office; Lorena Santana, Universidad Iberoamericana Tijuana; Advisory members present: Lisa Dye, U.S. Federal Highway Administration; Kathya Yruretagoyena and Claudia Pedrero, City of Mexicali; and Héctor Vanegas, Ron Saenz, Elisa Arias, Carolina Gregor, Andrea Groves and Antoinette Meier, SANDAG staff.

MEETING SUMMARY

Lorena Santana, Universidad Iberoamericana Tijuana, entertained a motion to approve the October 2, 2007, meeting summary. Vice Chair Cindy Gompper-Graves seconded the motion. The meeting summary was approved.

PUBLIC COMMENTS/COMMUNICATIONS AND MEMBER COMMENTS

Chair Ganster announced that he was absent from the October COBRO meeting because he was in Las Cruces for a meeting with the Good Neighbor Environmental Board. Chair Ganster brought copies of the Good Neighbor Environmental Board’s Annual Report on Environmental Protection and Border Security. The Board is currently working on two reports. The first report is examining natural hazards in the border region with an emphasis on the ability of border communities to respond to those disasters. The second report deals with innovative efforts by industry and others for pollution reduction in the border region. Chair Ganster will keep the COBRO members up to date on these reports.
Angelika Villagrana, San Diego Regional Chamber of Commerce, announced that the U.S. passport application process is improving. Ms. Villagrana recently applied to renew her U.S. Passport and received it just over a week after she applied.

Jason MB Wells, San Ysidro Chamber of Commerce, invited COBRO members to an open house sponsored by the United States General Services Administration (GSA) on the proposed San Ysidro Port of Entry (POE) expansion. Ramon Riesgo, U.S. GSA, announced that the current plans for the San Ysidro POE expansion project will be presented and the public is invited and encouraged to attend on November 14, 2007, from 4:00 to 8:00 p.m. at the San Ysidro Multi-Cultural Center. Members of the architectural team and representatives from GSA and Customs and Border Protection will be present to answer any questions. Public comments will be taken and recorded at this meeting.

Lydia Antonio, Mexican Consulate in San Diego (Consulado General de Mexico en San Diego), announced that Mexico’s Secretary of Exterior Relations opened two bank accounts in the U.S. that will accept donations for disaster relief in Tabasco. Chair Ganster announced that approximately 80% of the capital city of Tabasco is under water and 80% of the state has experienced flood damage. Mexico has had serious problems getting relief in to impacted communities. Chair Ganster encouraged the committee to provide support to the relief effort and to help spread the word.

Ron Saenz, SANDAG, announced that the SANDAG Service Bureau is having an open house on Wednesday, November 7, 2007 from 1 to 3 p.m. at SANDAG.

Chair Ganster announced that the new Governor of Baja California, Jose Guadalupe Osuna, was sworn in last week. The new Mayors will be sworn in on November 30, 2007. As a result, COBRO will have new representatives from the incoming administrations. SANDAG staff can now begin planning the mobile seminars with the new administration.

Chair Ganster thanked the outgoing members from the Cities of Tijuana, Tecate and Mexicali for their continued participation in COBRO. Certificates of appreciation were presented to these outgoing members.

Chair Ganster announced that the Spanish language version of the Otay Mesa – Mesa de Otay Binational Corridor Strategic Plan has been completed. The Spanish and English language versions are available on the SANDAG Web site.

Upcoming Events

Chair Ganster directed the Committee members to review the upcoming events report in the agenda packet.

5. BORDER STATISTICS

Chair Ganster directed the Committee members to the section on border region statistics included in the agenda packet. Hector Vanegas, SANDAG, announced that these statistics will be posted on the SANDAG Web site. The packet includes 2006 border crossing statistics for all ports of entry as well as demographic and economic statistics for the San Diego border region. Statistics for 2007 will be posted on the Web site as soon as they are available.
REPORT ON THE XXV BORDER GOVERNORS’ CONFERENCE
A copy of the presentation is available upon request.

Sergio Pallares, Caltrans, reported on the 25th Border Governor’s Conference that took place in Puerto Peñasco on September 27 and 28, 2007. The Border Governors hold annual meetings alternating locations between the United States and Mexico. The first Border Governors Conference convened in Juarez, Chihuahua, Mexico in 1980 to begin the process of crossborder communication among the ten United States and Mexican border states: Arizona, Baja California, California, Chihuahua, Coahuila, New Mexico, Nuevo León, Sonora, Texas, and Tamaulipas.


The ten Border Governors appoint two representatives for the conference. There are 11 work tables with a minimum of one delegate and one alternate per state. Caltrans represents California at two work tables. Work tables are co-chaired by U.S. and Mexican delegates. Chairs and Co-Chairs serve two year periods with the possibility of re-election if voted in by the work table. Work tables are allowed up to three recommendations to include in a Joint Declaration that is signed by the Border Governors that attended the conference. This year, all but two border governors from Texas and New Mexico attended and signed the Joint Declaration.

The California Border Ports of Entry (POE) were important discussion items at the Logistics and Border Crossings Work Table. This table was co-chaired by Pedro Orso Delgado from California and Fernando Lam Koerdell from Sonora. Recommendations from the Logistics and Border Crossings Work Table include:

- Optimize and expand the capacity of POE facilities by providing the necessary personnel and by implementing a pilot Tandem Booths program for passenger and commercial vehicles along the U.S.-Mexico border similar to what has been set up at the San Ysidro-Puerta Mexico POE. To support this recommendation, Mr. Pallares presented the following findings from the San Ysidro Tandem Booths Analysis:
  - Regular lanes process a vehicle every minute.
  - Tandem booths lane process 2 vehicles every 1.5 minutes.
  - Tandem booths lanes process regular vehicle trips an average of 46% faster than regular single booth lanes.
  - SENTRI lanes process a vehicle every 10 seconds.

- Request U.S. and Mexican federal agencies and non-governmental organizations to work with border states towards the development of a Border-wide Master Plan which will focus on transportation and POE’s, similar to the California-Baja California Border Master Plan (BMP), which is funded by the Joint Working Committee (JWC).

- Encourage U.S. and Mexico border states to develop a transportation information system that will provide information on traffic conditions, wait times, traffic jams, border crossings,
and incident reports; leading to the development of a border-wide Traffic Information System, such as the 511 Program shared by Arizona–Sonora.

- Request applicable federal and state legislation to allow for the creation of public and public-private partnerships to provide the necessary funds to cover operational and infrastructure needs in the U.S.-Mexico border region.

The Economic Development Work Table recommended the following:

- Host the 3rd International Forum of Clusters and Business Matchmaking. Clusters are in the sectors of renewable energy, automotive, aerospace, and information technology. The Economic Development Work Table will ask the advice and participation of the Energy Work Table on this item.

- Develop and implement a web-based system to identify potential industry suppliers located in the border region. This system will focus on the automotive, aerospace, and information technology industries.

- Each state shall promote the detection and creation of business networks among the leading players and participants within the private sector involved in the automotive, aerospace, and IT sectors.

Clay Phillips asked about improving staff retention for U.S. Customs and Border Protection (CBP). Mr. Pallares explained that CBP has historically had a high rate of staff turnover in San Diego and the regional CBP is looking at providing incentives, such as housing and education subsidies, to San Diego CBP employees. Mr. Pallares explained that the pay scale for CBP employees is uniform across the country and does not consider regional cost of living issues. As a result, CBP employees are not able to afford the cost of living in San Diego and are forced to relocate.

Mr. Phillips expressed concern over the location of the proposed POE west of San Ysidro. Mr. Pallares explained that these were ideas that would need to be rationally analyzed. The Border Master Plan working group will analyze all proposed POEs. Mr. Phillips asked what role would border agencies play in this Border Master Plan Working Group. Mr. Pallares explained that the working group is in the early development phase. At this time, the three levels of government and two nations involved in the process are working to coordinate amongst themselves. Once they are better organized, they will open up the Master Plan process and involve other agencies.

Jason MB Wells, San Ysidro Chamber of Commerce, asked why improved border technology was not listed in the list of recommendations. Mr. Pallares responded that this was a valid point that should be considered and highlighted in the future.

Ramon Riesgo asked if the list of priorities was vetted through regional forums before it was presented at the national level. Mr. Pallares stated that the state agencies developed the recommendations but maybe in the future they should involve the regional agencies.

Lisa Dye, FHWA, said that a tandem booth at SENTRI could work if the technology was in the booth to make it work. The state does not have a lot to do with technologies at the POEs. They can make recommendations but they can’t direct technology improvements.
Jason MB Wells responded that the state should still be promoting improved technology at the POEs.

Chair Ganster suggested bringing up border technology at a future meeting, due to the lack of time.

The next Border Governors Conference will be held in Hollywood in June 2008.

7. REPORT ON THE OTAY MESA COMMUNITY PLAN UPDATE’S FOURTH LAND USE SCENARIO
   A copy of the presentation is available upon request.

Mary Wright, Deputy Director of City Planning and Community Investment, presented the City’s Otay Mesa Community Plan Update. The Community Plan area covers 9,300 acres along the U.S.-Mexico border. The last community plan update was adopted in 1981. It was amended in the late 1990’s as a result of the Multiple Species Habitat Conservation Plan. This update transferred residential land-uses to protected open space. The City began working on the current plan update in 2001 but due to a lack of resources the update has taken longer than anticipated. In order to accelerate work on the plan update, a number of developers approached the City and offered technical resources in order to accelerate completion of the plan.

The goals that were established early in the update process are:
- Make Otay Mesa a regional center with integrated and balanced land uses.
- Coordinate land-uses with transit.
- Provide the needed infrastructure.
- Broaden the industrial profile and employment opportunities.
- Provide more housing to compensate for the 6,000 acres of residential land-use lost due to habitat planning.
- Support international trade activities.

Three land use scenarios have been developed to date:

Scenario one intensifies residential and mixed-use development in the southwest quadrant of Otay Mesa and introduces residential into the central and eastern part of the Mesa. While the existing community plan calls for 13,000 dwelling units, scenario one calls for 25,000 dwelling units. Scenario two expands upon the concepts of the first scenario and adds larger mixed-use villages. Scenario three provides the least amount of change to the existing land uses. This scenario emphasizes industrial land uses with a small addition of residential uses in the village centers.

These alternative scenarios have been presented to the public through workshops and planning commission meetings over the past year and a half. Focused workshops were established with stakeholders to deal with major points of concern. Those concerns are related to the introduction of residential in industrial areas and the impact of development on habitat. Based on input received at these workshops, two new scenarios were developed: 4a and 4b.

The major changes in the two new scenarios include:
- Reoriented residential densities,
- The removal of all residential between Otay Mesa Road and SR 905.
• The addition of office commercial and village centers to help buffer the residential uses from the industrial uses
• The addition of visitor commercial uses off of SR 905 for possible hotel and single residential occupancy uses.

The difference between Scenarios 4a and 4b involves a proposed McMillin mixed-use village development near Brown Field Airport. Scenario 4a includes the mixed use village. However the City was concerned that this may not be an appropriate area for residential use due to the proximity to Brown Field. Therefore scenario 4b changes the proposed mixed-use village back to industrial use.

The new scenarios are out for public comments. A public workshop with the Planning Commission is tentatively scheduled for December 6. Public Hearings are expected to occur in the second quarter of 2008 with a completion date expected sometime in summer 2008.

Chair Ganster asked if the City has received input or done outreach in the City of Tijuana and if the proposed crossborder airport terminal had been considered in the plan update. Ms. Wright responded that they have had limited input from the City of Tijuana and that they need to do more to address land use compatibility issues. The City anticipates acknowledging the crossborder terminal concept in the text of the plan.

Chair Ganster asked about the runway noise from the Tijuana airport and the impact that it has on the nearby residential areas. Ms. Wright confirmed that airport noise from both Brown Field and Rodriguez airport impacts this area. An EIR is being conducted to examine these impacts. At this point the City thinks that residential will work in this area but the EIR will make the final determination.

Tatiana Suro, Otay Mesa Chamber of Commerce, stated that the Chamber has participated for more than three years in the community plan update process but felt that their input had not been considered in the fourth scenarios. Ms. Wright respectfully disagreed and stated that the City had received a wide range of comments from a variety of stakeholders. City staff had to apply their professional judgment when considering and balancing all of the comments that they received. Ms. Suro provided an example of a Chamber concern that had not been addressed. A high school and village are proposed at La Media Road; however this is a main truck route. Ms. Wright said that they are also concerned with this proposal and plan to address the transport of children to this school in the report. Ms. Wright explained that the residential areas would be buffered so that they are not looking over La Media Road.

Elsa Saxod, Past Chair, expressed concern that Brown Field was not considered in the community plan update. Ms. Wright said that she agrees but that the city does not have land use planning authority over Brown Field. The Brown Field Master Plan will be prepared once funds have been secured for the plan and it will be folded into the community plan update. The plan also will include design standards for Brown Field.

Vice Chair Cindy Gompper-Graves stated that she had participated in a meeting where they had discussed moving the truck route to either Britannia Road or La Media Road. Ms Gompper – Graves stated that she was also concerned about the proposed residential along a major truck route. Ms. Wright responded that she was not up to speed on the proposed truck route but that she would share the concern at an upcoming internal meeting.
Larry Van Wey, City of San Diego, said that Britannia may not be able to accommodate a truck route and the proposed crossborder terminal, therefore, more work should be done on the transportation element of the plan. Ms. Wright said that the plan would need to be amended at a later time to accommodate the crossborder terminal.

Vice Chair Cindy Gompper-Graves, stated that it seems like the City has three different projects that are not mutually exclusive: the Otay Mesa Community Plan Update, the crossborder airport terminal and the Brown Field Master Plan. All of these projects could negatively impact each other if not done cohesively. A fifth scenario that considers the impacts of all of these projects should be considered. Ms. Wright said she understood and would share the feedback. Ms. Gompper Graves asked if there was a possibility for a fifth scenario. Ms. Wright replied that this was a possibility.

Chair Ganster reiterated the importance of the crossborder terminal to the region.

Ramon Riesgo, U.S. GSA, said that the expansion of the existing Otay Mesa POE should be considered in case the new Otay Mesa POE is not built.

8. SOUTHWESTERN COLLEGE HIGHER EDUCATION CENTER AT OTAY MESA
A copy of this presentation is available upon request

Dr. Angelica Suarez, Dean of Southwestern College Otay Mesa, presented the new Otay Mesa Higher Education Center that opened on September 20, 2007. The Otay Mesa center is Southwestern College’s newest facility. The new campus is 70,000 square feet with five buildings and can serve 5,000 students. The cost to construct the facility was $25 million obtained through Proposition AA. Ms. Suarez explained that some of the services at the new center include a conference center that is open to the community, a fitness center that is open to the community and a Learning Resource Center/Library among others.

In addition, several of the signature programs offered at the new center are Emergency Medical Technician/Paramedic Training, Environmental Technology and Fire Science Technology.

Chair Ganster asked Dr. Suarez to describe the capacity of the conference center. Dr. Suarez stated that the conference center could accommodate 100 people with tables and 125 people with out tables and chairs. Eventually the conference center will have video conferencing capabilities and SMART Technology. The cost is around $35 per hour but pricing will be flexible for community partners.

Ron Saenz, SANDAG, stated that the college is located on Airway Road, which the City is looking at as an east-west transit route. Mr. Saenz asked if the City had engaged in dialogue with the college regarding this issue. Ms. Wright said that they had not but that they need to make the connection.

Mr. Saenz asked if the college was working with any of the universities south of the border. Dr. Suarez replied that they are in the process of creating a Memorandum of Understanding with CETYS. They already have good relationships with UABC and CETYS and they are jointly looking at possibilities for collaboration around the employment clusters identified in the Borderless Innovations Plan.
9. SCRAP TIRE CONVERSION PROJECT

Chair Ganster welcomed Former Congressman Jim Bates and Cindi Anderson, Anderson Consulting. He stated that the Scrap Tire issue was not only highlighted in recommendations from the Border Governor’s Conference but that it is a major point of focus for the EPA and its Mexican counterpart in the Border 2012 plan.

Mr. Bates explained that he and Ms. Anderson were working with San Diego Councilman Ben Hueso on developing the Scrap Tire Conversion Project Proposal. Every year, millions of used U.S. tires are exported to Mexico where consumers buy them from used tire dealers. After these tires reach the end of their useful lives, they end up in landfills, or are illegally dumped due to landfill disposal cost.

This proposal recommends a new type of recycling plant that converts scrap tires into useful commodities by using “Catalytically Activated Vacuum Distillation” (CAVD). The tire first goes through a machine that breaks it up into small pieces. Those pieces are then melted and separated. This is a non-polluting process that creates four different byproducts from the scrap tires: steel, carbon black, oil and hydro-carbon fuel gas. The tires are a great source of renewable energy containing more energy per pound than coal. The recycling plant can be dismantled and relocated to where the tire piles are located.

Jason MB Wells asked if they would be forming a Mexican LLC since the plant will be located in Tijuana. Mr. Bates said that the project is on hold until the new administration takes over in Mexico. Currently they are attempting to set up meeting with Mexican government officials to try and locate a site for the facility.

Clay Phillips asked for an Executive Summary of the proposal. Ms. Anderson said that she would provide one to COBRO members.

Mr. Pallares asked what were the challenges to implement the proposal. Ms. Anderson said that they still need to partner with the environmental community on both sides of the border before she feels comfortable proceeding with this project. They also need to establish partnerships with industry because every product that is produced from the scrap tires can be used by industry.

Kathya Yruretagoyena, City of Mexicali, suggested that there are major tire piles in Mexicali and that they should start meeting to discuss how they could work together to implement this project in Mexicali.

Vice Chair Cindy Gompper-Graves said that understanding the culture when meeting with Mexican authorities and business is very important. Ms. Anderson stated that one of the engineers involved in the project is from Mexico and is facilitating meetings south of the border. Ms. Gompper-Graves asked how they envisioned COBRO being involved in the project. Mr. Bates explained that they were there to share information and get feedback from COBRO members.

Clay Phillips reminded the committee that this was one of the top four issues for the Biodiversity Council of California. Clay stated that he would share this information with his staff and the Biodiversity Council.
Angelika Villagrana asked how the byproducts were stored and transported. Ms. Anderson stated that there is a demand in Mexico for all of the byproducts produced. The intention is not to store products but to have trucks pick-up and deliver the byproducts to companies such as Volkswagen on a regular schedule.

Jason MB Wells asked if they would provide financial incentives to encourage the public to deliver their tires to the facility. Mr. Bates responded that they are not considering this presently.

Dave Fege, U.S. EPA, asked what they will use to power the plant. Ms. Anderson stated that the facility is completely self-sufficient.

10. NEXT MEETING DATE AND LOCATION

Prior to closing the meeting, Chair Ganster announced that there was a comment from member Elsa Saxod. Ms. Saxod requested that COBRO send a letter to the City of San Diego regarding their Otay Mesa Community Plan Update concerns. Elisa Arias, SANDAG, reminded members that this was an informational item. Ms. Saxod requested that this item be placed on the agenda as an action item at a future meeting. Ms. Arias encouraged members to send the City their individual comments since the comment period ended on November 16, 2007.

Chair Ganster closed the meeting after reminding members that the next COBRO meeting is scheduled for December 4, 2007, at 3:00 p.m. at SANDAG.
UPCOMING EVENTS

WHAT: Mexico Business Center – San Diego Regional Chamber of Commerce
First Wednesday Breakfast: JORGE C. GARCES, Managing Director & CEO,
North American Development Bank (NADBank)
WHEN: February 6, 2008
WHERE: San Diego Regional Chamber of Commerce
MORE INFO: Viviana Ibañez (619) 544-1362, Vlbanez@sdchamber.org

WHAT: Center for U.S.-Mexican Studies, UCSD
HIV and Hepatitis In Intravenous Drug Users In West Central Mexico
WHEN: February 6, 2008
WHERE: Institute of the Americas Complex at UCSD: Deutz Conference Room
MORE INFO: http://usmex.ucsd.edu/

WHAT: USD Transborder Institute
Crossborder Media Roundtable
WHEN: February 6, 2008
WHERE: USD Joan B. Kroc Institute for Peace & Justice
MORE INFO: www.sandiego.edu/tbi

WHAT: Mexico Business Center – San Diego Regional Chamber of Commerce
United States-Mexico Border Efficiency Conference—California/Baja California Region.
WHEN: February 8, 2008
WHERE: Joan B. Kroc Center for Peace & Justice, University of San Diego.
MORE INFO: James Clark, (619) 544-1376. (By invitation only).

WHAT: Department of State and Secretaría de Relaciones Exteriores
U.S.- Mexico Binational Group on Bridges and Border Crossing
WHEN: February 12-13, 2008
WHERE: El Paso, Texas
MORE INFO: www.sre.gob.mx
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<th>The Closest Mexico to Japan / El México mas Cercano de Japón Documentary Screening</th>
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PROGRESS REPORT ON THE CALIFORNIA BIODIVERSITY COUNCIL’S “BIODIVERSITY ALONG THE BORDER” COMMITTEE

PROGRESS REPORT ON THE CALIFORNIA BIODIVERSITY COUNCIL’S “BIODIVERSITY ALONG THE BORDER” COMMITTEE

Introduction

The California Biodiversity Council (CBC) is a statewide council established to design a strategy to preserve biological diversity and coordinate implementation of this strategy through regional and local institutions. Mike Chrisman, Secretary, State Resources Agency, and Mike Pool, State Director, U.S. Bureau of Land Management, co-chair the Council. City of Del Mar Councilmember Crystal Crawford represents SANDAG on the Council. The Council holds tri-annual meetings around the state to improve coordination among state and federal land management agencies and local interests.

At the April 2007 COBRO meeting, staff reported that the CBC’s “Biodiversity along the Border” Committee had created two working groups: the Tijuana Estuary Issues Working Group and the Las Californias Working Group. The Tijuana Estuary Issues Working Group focused on conservation easements and issues related to the Tijuana River Valley management, while the Las Californias Working Group focus was on exploring the implementation of actions outlined in the Las Californias Binational Conservation Initiative report. This report summarizes recommendations made by the “Biodiversity along the Border” Committee to the CBC, based on input from these Working Groups, at the October 4, 2007, CBC meeting. It also provides a summary from the Las Californias Working Group meeting held in November 2007.

Discussion

At the CBC’s October 2007 meeting, the “Biodiversity along the Border” Committee Co-chair Todd Ferrara, Deputy Undersecretary of the California Resources Agency, presented recommendations made by the two Working Groups. These recommendations are to: (1) create a Las Californias Binational Working Group to continue to collaborate on binational conservation between Mexico and the U.S. through the leadership of Mexico’s SEMARNAT (Secretariat for the Environment and Natural Resources) and the California Resources Agency; (2) seek funding sources for a community sewer system, sedimentation basins, and trash management to enhance the water quality of the Tijuana Estuary and its watershed; and (3) explore developing a tire recycling plant in the San Diego region.

The CBC accepted the report, and directed Co-Chairs Todd Ferrara and Cristina Villeda of SEMARNAT to follow up on these recommendations and continue meeting through the Las Californias Binational Working Group, as the Tijuana River Estuary Issues Working Group’s activities were scheduled to sunset after the October 2007 CBC meeting.
On November 27, 2007, the Las Californias Binational Working Group met in Tijuana to discuss next steps. The following summarizes key meeting highlights:

1. Mexican federal, state, and local agencies are exploring the possibility of entering into a formal Memorandum of Understanding (MOU) to establish a sister-like California Biodiversity Council entity to formally work with the CBC and partners from Non-Governmental Organizations (NGOs). If this entity were established, a future MOU between the CBC and Baja California’s biodiversity council would be explored. As a first step in this effort, representatives from the newly elected local and state governments in Mexico will be invited to the next Las Californias Working Group meeting where they will be updated on the ongoing efforts and proposals.

2. The Las Californias Working Group agreed to meet three times annually while the Mexican delegation has committed to meet monthly. The next Working Group meeting will be held at the Tijuana Estuary Visitor Center in March 2008.

3. Oscar Romo, National Oceanic and Atmospheric Administration Tijuana River National Estuarine Research Reserve, proposed that the Las Californias Working Group incorporate activities managed by the Tijuana River Estuary Issues Working Group to promote water quality and habitat conservation in the portion of the Tijuana River Watershed surrounding the Tijuana Estuary. This area also would include the Alamar River located within the study area of the Otay Mesa-Mesa de Otay Binational Corridor Strategic Plan. This proposal was accepted by the group and will be evaluated along with other proposals to determine priorities.

4. The Nature Conservancy (TNC) reported on efforts to conserve crossborder biological habitat linkages on the Mexican side of the border between Tecate and Tijuana and areas east of Tecate on both sides of the border adjacent to the southern portion of Borrego Springs State Park extending south to Parque Nacional Constitución de 1857 in Baja California (see Attachment 1). This is part of the Park to Parque initiative, which would link parks from north and south of the border. In 2008, as an initial effort to connect these linkages, TNC and the Anza Borrego Foundation will be purchasing 1,100 acres of land between Anza-Borrego State Park and the U.S.-Mexico border. This land is critical habitat for the Quino Checkerspot Butterfly and links to lands south of the border. TNC also reported that the San Diego Natural History Museum is planning a binational Las Californias expedition within the Park to Parque linkage in 2009.

**Next Steps**

Progress reports on the upcoming activities of the “Las Californias Binational Working Group” will be presented to COBRO periodically.

Attachment: 1. The Las Californias Binational Conservation Initiative – Transboundary Linkages

Key Staff Contact: Ron Saenz, (619) 699-1922, rsa@sandag.org
SANDAG’S BINATIONAL ANNUAL EVENT

Introduction

At the October 2, 2007, meeting, the Committee on Binational Regional Opportunities (COBRO) recommended that SANDAG staff organize an early staff-level meeting with the new City of Tijuana IMPLAN administration and the State of Baja California. The purpose of the meeting would be to discuss advancing short term strategies identified in the Otay Mesa-Mesa de Otay Binational Corridor Strategic Plan, and discuss the upcoming Binational Annual Event. This report summarizes meeting highlights.

Discussion

On January 17, 2008, SANDAG staff met with representatives from IMPlan and the City of Tijuana. The goal of the meeting was to brief the new staff on SANDAG’s binational work, and to learn about the new administration’s priorities as they relate to binational issues. The meeting focused on three topics: The Otay Mesa-Mesa de Otay Binational Corridor Strategic Plan, Tijuana’s 2008-2010 Municipal Development Plan, and the SANDAG Binational Annual Event.

At the meeting, IMPlan expressed its commitment to advance the work of previous administrations including the implementation of strategies identified in the Otay Mesa-Mesa de Otay Binational Corridor Strategic Plan. A follow-up meeting to discuss next steps was scheduled for February 5, 2008.

During IMPlan’s presentation, it was noted that the City of Tijuana XIX Administration’s focus is to create a sense of City as well as region that includes collaboration with Tijuana’s neighbors to the north, south, and east. Some of the immediate actions that IMPlan identified include:

- In line with a strategy identified in the Otay Mesa-Mesa de Otay Binational Corridor Strategic Plan, IMPlan will work to preserve the right-of-way for the proposed Otay II Port of Entry’s access roads, including preservation of three canyons in the nearby area.

- From the Plan Parcial Zona Centro, a new mass transit route (either BRT or light rail) will be evaluated from El Chaparral southeast to the area of La Presa, as well as an elevated express highway from El Chaparral to Playas de Tijuana.

- The current Urban Land Use Plan will be updated to 2030.

In addition, plans also are in progress to include a Comprehensive Roads and Highways Plan of the urban area of Tijuana. The Municipal Development Plan (MDP) will focus on seven thematic areas
Public Safety and Justice, Urban and Regional Development, Life Formation, Social Welfare and Quality of Life, Economic Development and Equal Opportunities, Municipal Modernization, and Border Culture and Municipal Identity. IMPlan will be the lead agency in the area of Urban and Regional Development that will address Urban Mobility, Land Use, Environment, Housing and Land Preservation, Infrastructure and Public Facilities, and Urban Administration (Building and Code Enforcement). The development of the MDP will include an extensive public process with oversight from a Citizen’s Board. IMPlan requested that SANDAG staff join the Citizen’s Board.

IMPlan also expressed its support for the SANDAG Binational Annual Event and committed to help organize a joint meeting of the Borders Committee, COBRO, and the City of Tijuana.

Next Steps

The next IMPlan and SANDAG staff-level meeting is scheduled for February 5, 2008, at SANDAG. In addition to the annual event, discussion items will include advancing the Otay Mesa East-Otay II Port of Entry and other initiatives evaluated in the Otay Mesa-Mesa de Otay Binational Corridor Strategic Plan.

Key Staff Contact: Hector Vanegas, (619) 699-1972, hva@sandag.org
RECOMMENDATION TO ACCEPT SOUTHWESTERN COLLEGE AS NEW COBRO ADVISORY MEMBER AND REINSTATE DESARROLLO ECONOMICO E INDUSTRIAL DE TIJUANA (DEITAC) AS MEMBER

Angelica Suarez, Ph.D. Dean of Southwestern College’s Higher Education Center at the Otay Mesa/ San Ysidro Campuses, has sent the attached letter (Attachment 1) requesting to become a member of COBRO. In addition, Desarrollo Economico e Industrial (DEITAC) has requested to be reinstated as a voting Member (Attachment 2).

Pending acceptance by COBRO, Southwestern College and DEITAC will be included in an updated COBRO membership list that will be presented to the Borders Committee for approval at its February 22, 2008, meeting.

Attachments: 1. Letter from Southwestern College dated 11/28/07
2. Letter from DEITAC dated 12/5/07

Key Staff Contact: Hector Vanegas, (619) 699-1972; hva@sandag.org
November 28, 2007

Dr. Paul Ganster, Director  
Institute for Regional Studies of the Californias  
San Diego State University  
5500 Campanile Drive, AL 377  
San Diego, CA 92182-6039

Dear Dr. Ganster:

Thank you for the invitation to present to SANDAG’s Committee on Binational Regional Opportunities on November 6, 2007 regarding Southwestern College’s newest educational center in Otay Mesa.

The purpose of this letter is to indicate my interest in serving on the SANDAG’s Committee on Binational Regional Opportunities as a representative of Southwestern College. As you are aware, Southwestern College serves at the only public institution of higher education in South San Diego County.

Southwestern College opened the Higher Education Center at Otay Mesa in August 2007, with approximately 1400 students for this Fall 2007 semester. The 70,000 square-foot facility houses a number of signature programs including the Police Academy, Environmental Technology, Nursing, Fire Science Technology, Paramedic, Emergency Medical Technician, and International Business. Through this Center, we are committed to providing the educational programs and training for the workforce that will strengthen the Otay Mesa community and the South Bay region.

The strategic location of Southwestern College’s Higher Education Centers at Otay Mesa and San Ysidro along the United States/Mexico International Border provides an optimal platform for the exploration of the educational training needs of employers/employees in the border region. Consequently, Southwestern College’s participation on the Committee on Binational Regional Opportunities will provide an opportunity to establish joint multi-institutional collaboratives in the crossborder region.

I look forward to hearing from the Committee regarding this request. If you have any questions, please feel free to contact me at (619) 216-6755.

Sincerely,

Angelica L. Suarez, Ph.D., Dean  
Higher Education Center at Otay Mesa/San Ysidro

Cc:  Ron S. Dyste, Vice President, Academic Affairs  
     Ron Saenz, SANDAG
Héctor Venegas.
Director.
SANDAG.
Presente.

Estimado Sr. Venegas:

Anteponiendo un cordial saludo, y en referencia al escrito recibido de su parte, quisiera expresar que sentimos mucho lo que ha sucedido con la asistencia de nuestro Organismo a las reuniones de COBRO durante este año, reiterando en todo momento la vital necesidad para la promoción de la región el estrechar lazos con SANDAG, siendo de gran interés de DEITAC por recuperar el voto lo antes posible y asegurándoles que esta situación desafortunada no sucederá de nuevo.

Para ello me permito integrarme como Presidente del Organismo al listado de Representantes Suplentes, así como al Ing. Raúl Fontes – Consejero, y al Lic. Javier Chávez – Consejero; siendo el representante Titular ante esta Comisión el Lic. José Luis Noriega – Consejero Tesorero de DEITAC.

Conocedores de la excelente labor que lleva a cabo SANDAG como impulsor de la región, me pongo cordialmente a sus órdenes y en espera de su próxima reunión de Comité.

Atentamente,

Arq. José Francisco Padrés León.
Presidente.
NEW COBRO MEMBER ORIENTATION

John Kirk, SANDAG Deputy General Counsel, will provide an overview of guidelines for SANDAG Working Group members, as well as a background on adopted policies regarding membership, leadership, attendance, quorum, and vacancies that apply to COBRO.

Attachment: SANDAG Committee and Working Group Member Guidelines

Key Staff Contact: Hector Vanegas, (619) 699-1972, hva@sandag.org
SANDAG COMMITTEE AND WORKING GROUP MEMBER GUIDELINES

I. PURPOSE

SANDAG thanks you for your willingness to serve on one of its committees or working groups. SANDAG’s committee and working groups are created by SANDAG’s Board of Directors to allow stakeholders in the region to reach consensus and provide input to the Board. These guidelines are intended to provide you with information regarding your responsibilities as a member of one of SANDAG’s committees or working groups.

II. ROLE AS A REPRESENTATIVE

You were most likely asked to serve on a SANDAG committee or working group due to your experience and/or position as an elected official or as a representative of a public agency, regional interest group, or community stakeholder. SANDAG assumes that persons sent to represent a group of people on a SANDAG committee or working group have the appropriate level of authority and understanding to serve in a representative capacity for their organization. If you were selected as the representative of a public agency, regional interest group, or other community stakeholder, SANDAG encourages you to provide input regarding the interests of the organization you represent and assumes that you will communicate information obtained at SANDAG meetings to the appropriate persons in your organization. If you are unable to continue as a SANDAG committee or working group member, please notify SANDAG’s project manager and the organization that you represent. SANDAG will work with you and your organization to ensure that a new representative is selected.

III. ADVISORY CAPACITY

As a member of one of SANDAG’s committees or working groups it is important to work toward consensus with other members on particular issues and then provide recommendations to SANDAG’s Board or its Policy Advisory Committees regarding those issues. The advice and recommendations provided by committee and working group members will be taken into account by the Board or a Policy Advisory Committee in its decision-making process. Please remember that SANDAG’s Board has sole authority to take action on behalf of SANDAG, make a final determination on behalf of SANDAG, and/or take a position on behalf of SANDAG.

IV. CONDUCT AT MEETINGS

As an official member of a SANDAG committee or working group, you should either sit at the conference room table located in the room being used for the meeting or a nameplate or some other device will be used to delineate your status. Attendees who are not members of the committee or working group should request permission to speak from the Chair of the committee or working group. The Chair should recognize requests from non-members to speak and ask them to identify themselves if they have not already been introduced.

SANDAG has implemented policies that apply to all persons attending SANDAG functions. These policies including prohibitions against harassment, discrimination, and violence. A copy of these policies can be obtained upon request. Persons who violate the policies will be asked to leave SANDAG’s premises.

V. CONFLICTS OF INTEREST

Conflicts of interest are a consequence of the many and varied roles that SANDAG committee and working group members play in our community. One of the goals of these Guidelines is to manage
real or perceived conflicts of interest. SANDAG has determined that a system of self-disclosure will be the most effective since conflicts of interest must be dealt with on a case by case basis. Discussion and disclosure generally can resolve issues related to conflict of interest.

A conflict of interest occurs when there is a divergence between an individual's professional, private, or personal relationships or interests and his/her obligations to SANDAG as a committee or working group member such that an independent observer might reasonably question whether the individual’s actions or decisions are determined by considerations of personal benefit, gain or advantage. A conflict of interest or the appearance of it depends on the situation, and not necessarily on the character or actions of the individual. The appearance of a conflict of interest can be as damaging or detrimental as an actual conflict. Thus, individuals are asked to report potential conflicts so that appearances can be separated from reality.

Potential conflicts of interest are not unusual and must be addressed. For example, conflicts of interest can arise out of the fact that some SANDAG committees and working groups assist SANDAG in shaping requests for proposals and specification documents that are in turn used as criteria for competitive selection of consultants. Representatives from private sector organizations may be selected to serve as a member of one of SANDAG’s committee or working groups by virtue of their experience in a particular industry. Therefore, it is expected that situations may arise where a committee or working group member is asked for input on the scoping of a project for which their organization may later want to submit a bid or proposal. This situation presents a potential conflict of interest if the committee or working group member will be rewarded for their participation in SANDAG activities because the member or his/her organization eventually receives consulting fees.

It is wrong for an individual's actions or decisions made in the course of his or her SANDAG activities to be determined by considerations of personal financial gain. Such behavior calls into question the professional objectivity and ethics of the individual, and it also reflects negatively on SANDAG. As a SANDAG committee or working group member you must respect SANDAG's status as a recipient of public funds and conduct your affairs in ways that will not compromise SANDAG's integrity.

All SANDAG committee and working group members have an affirmative duty to disclose any significant potential financial interest to the SANDAG project manager assigned to the committee or working group. Notification of the actual or potential conflict should be given to the project manager. Committee and working group members with an actual or potential conflict of interest should be asked to leave all meetings or portions of meetings where the conflict may arise. If a member must leave their post due to a conflict of interest the former member may continue to attend the meetings as a member of the public.

VI. SANDAG's RESOURCES

Except in a purely incidental way, SANDAG’s resources, including but not limited to, facilities, materials, personnel, or equipment may not be used in external activities by a committee or working group member unless written approval has been received in advance from the executive director or his/her designee. Such permission shall be granted only when the use of SANDAG’s resources is determined to further SANDAG’s mission.

VII. CONFIDENTIAL INFORMATION

Proprietary or other confidential information that a SANDAG committee or working group member may be exposed to at SANDAG may never be used in external activities unless written approval is given in advance by SANDAG’s executive director.
San Diego Association of Governments
COMMITTEE ON BINATIONAL REGIONAL OPPORTUNITIES

February 5, 2008

AGENDA ITEM NO.: 9A

Action Requested: INFORMATION

PROGRESS REPORT ON THE IMPLEMENTATION OF THE OTAY MESA-MESA DE OTAY BINATIONAL CORRIDOR STRATEGIC PLAN: ECONOMIC DEVELOPMENT STRATEGIES

Introduction

This report is an update to three economic development strategies identified in the Otay Mesa-Mesa de Otay Binational Corridor Strategic Plan. One of the strategies is led by SANDAG and the other two by San Diego Dialogue.

Discussion

The following discussion summarizes progress made on key economic development strategies identified in the Strategic Plan.

1. Develop the 2007 San Diego Regional Economic Evaluation and Prosperity Strategy (REPS): This strategy is near completion. This two-volume study identifies demographic and economic challenges facing the San Diego region, and promotes a regionwide strategy to meet these challenges and improve the competitiveness of our local economy. The strategic goals identified in the 2007 REPS include: housing affordability; labor force preparation; investment in goods movement, energy, and water infrastructure; economic monitoring; and financial competitiveness. In addition to the reservation of prime employment land for industrial purposes, these regional issues mirror the issues identified in the Otay Mesa-Mesa de Otay Binational Corridor Strategic Plan, including housing supply and affordability, transportation infrastructure, such as State Route 905 and the proposed Otay Mesa East Port Of Entry and connecting roads, availability of land for nonretail employment, and protection of existing industrial sites.

Since last reported in the Strategic Plan, the draft REPS report was completed by the REPS Advisory Working Group and released for public review and comment in May 2007. Public comments were accepted through October 31, 2007. Currently the draft REPS report is scheduled to go before the Board for acceptance as an element of the Regional Comprehensive Plan at its March 28, 2008, meeting.

2. Establish the Crossborder Innovation and Competitiveness Center: As described in Borderless Innovation, a binational economic development study conducted by San Diego Dialogue, the Crossborder Innovation and Competitiveness Center is envisioned as a binational, nonprofit entity that would serve as a catalytic agent for an integrative economic growth strategy in the binational region of the Californias, operating a core set of research, education, and networking programs, and providing funding through re-granting to organizations focused on crossborder issues.

After the release of the report, the State of Baja California began discussions with the Inter-American Development Bank (IDB) regarding the development of a grant proposal for seed funding.
funds to establish the Center. The Dialogue is working with the new administration in Baja California to monitor progress of those discussions and the grant proposal.

3. **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:** In December 2006, San Diego Dialogue launched an 18-month binational project, the Life Sciences Gateway Initiative, which seeks to forge binational relationships among researchers, scientists and investors for the purpose of establishing crossborder programs in the life sciences. Partners include Mexican academic institutes with advanced life science facilities from the regions of Guanajuato, Jalisco, Morelos, Nuevo León and Baja California. The initiative involves a series of roundtables and seminars among leaders from Mexico and California focused on establishing strategic partnerships in clinical research, manufacturing and venture investing in biomedicine and biotechnology.

In June 2007, the San Diego Dialogue produced the first briefing paper titled *Borderless Biotech & Mexico’s Emerging Life Sciences Industry*, which outlines progress on this collaborative effort. The report describes the San Diego border region as a portal for borderless biotech due to its strategic location along the U.S.-Mexico border and the unique opportunity to work with Mexico’s emerging life science industry. Based upon the progress made during the first year of the Initiative in fostering collaborative relationships among the participating regions, Merck has extended the effort through June 2009.

San Diego Dialogue and Global CONNECT are also assessing the development of a Cleantech Industry Cluster in the San Diego Region. Cleantech industries produce a wide range of products and services that optimize the use of natural resources, offering a cleaner or less wasteful alternative to traditional products and services.

In June 2007, Global CONNECT completed a study titled *Cleantech Industry in San Diego – An Assessment of Assets and Capabilities for the City of San Diego and the San Diego Regional Economic Development Corporation*. With several leading cleantech companies having a presence on both sides of the border, the study acknowledges that the San Diego – Baja California border region offers an ideal location that no other emerging cleantech hub can offer: close proximity of high technology R & D and competitively priced advanced manufacturing capabilities. Baja California also offers an option for firms that may find the amount of land available for large scale manufacturing limited in San Diego or prohibitively priced.

The study recommends that the San Diego region be benchmarked against several other leading clean-tech hubs in terms of industry characteristics and policies relevant to cleantech cluster development. Global CONNECT is currently in discussions with potential funders and have proposed the benchmark study be completed by mid-summer 2008.

**Next Steps**

Staff will continue to monitor implementation of these strategies and provide periodic updates to COBRO.

**Key Staff Contact:** Ron Saenz, 619-669-1922, rsa@sandag.org
PROGRESS REPORT ON THE IMPLEMENTATION OF THE File Number 3006300
OTAY MESA-MESA DE OTAY BINATIONAL CORRIDOR STRATEGIC PLAN:
INITIATIVE TO SUPPORT IMPLEMENTATION OF TECHNOLOGIES
TO MEASURE CROSSBORDER WAIT TIMES

Introduction

During the XXV Border Governors Conference presentation at the November 6, 2007, COBRO meeting, members requested a more detailed presentation on available Intelligent Transportation Systems to measure and border wait times. The scope of this study is part of an initiative identified in the Otay Mesa-Mesa de Otay Binational Corridor Strategic Plan to support the implementation of technologies to measure crossborder wait times of northbound commercial vehicles at the Otay Mesa-Mesa de Otay Port of Entry (POE).

Discussion

Caltrans and SANDAG recently completed a Federal Highway Administration (FHWA) funded study 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.

Of the ten technologies reviewed during Stage 1, the following three technologies met the criteria for further exploration in Stage 2:

• Automated License Plate Recognition (ALPR): This license plate recognition technology has the capability of reading the license plates of incoming vehicles at select locations to identify, catalog, and track freight movement through the Otay Mesa border crossing system. The information is stored in a central database and would provide aggregated data on border wait times. ALPR can also track information such as registered driver when additional system-to-system links (i.e. state registered vehicle database) are incorporated. ALPR technology is flexible in the sense that individual cameras and supporting infrastructure can be changed, moved, operated, updated and integrated from one lane to another. However, installation costs will be incurred for any removal and reinstallation of equipment.

• Radio Frequency Identification (RFID): RFID is already utilized for toll collection on the I-15 express lanes and the South Bay Expressway in San Diego County. RFID 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. RFID devices can be moved from one lane to another at nominal costs.
Global Positioning Systems (GPS): When combined with cellular networks, GPS could efficiently track the exact vehicle location and catalog truck movement through the Otay Mesa border crossing system. Essentially, the GPS receiver sends data into the cell phone network which forwards the information to e-mail, computer browser or cell phone. GPS technology could potentially minimize the need for additional equipment other than the GPS receiver and Internet browser.

The Stage 2 Report, completed in June 2007, evaluated the viability, cost and high-level requirements of these three technologies for the Otay Mesa Commercial POE. Findings from this report indicated that each of these technologies is customizable and environmentally protected from the elements. The only universal requirement among the technologies is an active high-speed broadband connection for real time monitoring.

The report concludes with recommendations to field test each of these technologies to further assess the capability of the technology, the quality and consistency of data provided, and the potential impacts on daily operations. However, if field testing is not viable due to budgetary and scheduling restraints, the report recommends deploying the ALPR technology.

Staff will continue to monitor implementation of this strategy and provide updates to COBRO as progress is made.

Attachment: 1. The Otay Mesa Border Port of Entry Wait Time Study: Stage 2-Draft June 2007

Key Staff Contact: Ron Saenz, (619) 669-1922, rsa@sandag.org
IDENTIFICATION OF READILY AVAILABLE INTELLIGENT TRANSPORTATION SYSTEM (ITS)/TECHNOLOGY TO MEASURE CROSS BORDER WAIT TIMES INTO THE OTAY MESA BORDER CROSSING SYSTEM COMMERCIAL PORT OF ENTRY IN SAN DIEGO, CALIFORNIA-TIJUANA, MEXICO

STAGE 2
June 2007
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EXECUTIVE SUMMARY

The primary objective of this study is to: determine what Intelligent Transportation System (ITS) or other commercial technologies are available that can be used to support automatic monitoring, measuring, and reporting of commercial vehicle wait times at the Otay-Mesa de Otay Commercial Port Of Entry (POE) in San Diego, California. The study was divided into two stages. Stage One identified high level requirements for the system, reviewed ten potential technologies, and described the essential features of the selected solutions. A preliminary evaluation was then performed and the technologies were scored against the requirements. Through this approach three potential technologies were short listed for detailed consideration. The three selected technologies are: Automatic License Plate Recognition (ALPR), Radio Frequency Identification (RFID), and Global Positioning Systems (GPS).

Entry into the USA for commercial vehicles has multiple stages:

- Enter queue on Avenida Internacional in Mexico
- Enter Federal Export Compound in Mexico – primary Mexican inspection
- Cross U.S. border or enter secondary Mexican inspection
- Enter U.S. primary inspection
- Enter U.S. secondary inspection or exit to the CHP Commercial Vehicle Enforcement Facility
- Following CHP vehicle safety inspection enter U.S. highways

The multiple stages are accessed by three lane types:

- FAST (Free And Secure Trade) lanes
- Regular commercial cargo lanes
- Empty container truck lanes
It was determined from the above that detection locations were required at seven locations, three in Mexico and four on the U.S. side of the border. The number of lanes involved impacts the deployment costs in different ways. ALPR has higher initial capital investment but potentially greater accuracy of results, while RFID and GPS have lower initial costs but their ability to monitor border crossing progress is dependent on the numbers of units purchased and installed in vehicles and their circulation through the multi-stage border crossing system.

This Stage 2 Report evaluates the three technologies against the following criteria:

- Maturity
- Flexibility
- Ease of Use
- Technology Costs
- Customization
- Deployment
- Reporting
- System-wide potential

All three systems are potentially viable for measuring border wait times but have different recurring and non-recurring cost structures and different operational agreement needs. It is concluded that field testing would be required to truly test viability and the quality and consistency of data that would result and impact on daily operations. In the absence of a field testing stage ALPR technology would be recommended on the basis of the following attributes:

- 10 year maturity, proven technology
- Unalterable by truck operators/non biased data collection
- No agreement needed with commercial fleet operators
- No communications carrier lease arrangements
- Independent vehicle tracking (potentially 100%)
- Data could be used for other applications
- Easily transferable to other locations

Two alternative deployment options are proposed (i) unconstrained cost (ii) cost constrained.
1. INTRODUCTION

The intention of the project is to identify and evaluate available Intelligent Transportation System (ITS) technologies that would be used to monitor, measure, and report freight cross-border wait times at the Otay Mesa border crossing system Commercial Port of Entry (POE) located in San Diego County, California.

The current study seeks to determine what ITS or other commercial technologies are available that could be used to support automatic monitoring, measuring and reporting of commercial border wait times at the Otay Mesa/Mesa de Otay border crossing system Commercial Port Of Entry (POE) complex. This document provides the foundation for this study and contains an evaluation of ten technologies with potential to automatically measure, monitor and report cross-border wait times of commercial vehicles waiting to enter the U.S.¹

![Figure 1-1: Aerial View of the Mexican and U.S. Inspection Facilities](image)

The process of entering the U.S. Northbound border traffic consists of the following:

- Begin by queuing along Avenida Internacional in Mexico.
- Then to the entrance of the Federal Export Compound in Mexico.
- Once Mexican primary inspection is completed, the driver is either directed to Mexican secondary inspection or across the Mexican/U.S. border.
- Next the driver enters the U.S. primary inspection booth, and is either directed to the U.S. secondary inspection or exit to the CHP Commercial Vehicle Enforcement Facility.
- At the CHP (California Highway Patrol) Commercial Vehicle Enforcement Facility in the U.S. all trucks are inspected for vehicle safety before being allowed to enter U.S. highways.
The 16% that are sent to U.S. secondary inspection are directed to the dock area or to the X-ray/gamma ray machines. The inspections at this location are carried out based on the commodity, paperwork type, and inspection type. Trucks entering the inspection facility are either randomly stopped for canine inspections or proceed directly to the exit booths then to the CHP Commercial Vehicle Enforcement Facility.²

Figure 1-2: Aerial Views of the CHP Commercial Vehicle Enforcement Facility

Figure 1-3: CHP Commercial Vehicle Enforcement Facility
2. **LANE TYPES**

Throughout the entire system, as the trucks pass each booth and inspection, there are three types of lanes:

- FAST (Free And Secure Trade) lanes
- Regular commercial cargo lanes
- Empty container truck lanes

FAST is a program that aims to increase the integrity of the supply chain security by offering expedited clearance to low-risk/approved carriers and importers. FAST is designed to streamline and integrate registration processes for low-risk drivers, carrier, and imports. Once FAST registered, users are eligible for expedited clearance of shipments through the use of transponders which transmit data electronically, minimizing paperwork through the use of dedicated lanes at major crossings.⁴

![Dedicated Free and Secure Trade (FAST) Lane](image1)

Figure 2-1: Dedicated Free and Secure Trade (FAST) Lane

![Entrance to Avenida Internacional](image2)

Figure 2-2: Entrance to Avenida Internacional
2.1. Determining Number of Lanes and Designating Detection Points

To determine an appropriate detection starting and finishing point for this project proved to be challenging due to various possible options available. Ultimately, the best course of action was to choose those locations where a potential bottleneck can occur. A total of nine (7) locations were decided upon, three (3) in Mexico and (4) on the U.S. side of the border. Taking into consideration the number of lanes at each location, a total of (24) lane segments, (9) in the U.S. and (15) in Mexico, were identified. Figure 2-4 is an aerial view of the overall movement of trucks going Northbound across each of the proposed detection points.

The sheer number of lanes, thirty in all, does increase the cost of some technologies to over half a million dollars. However, in the price comparison table included in the document, the cost benefits of certain technology options could potentially outweigh their initial cost. For instance, the GPS and RFID depend on the quantity of units purchased to circulate throughout the border crossing to create a competent study, while ALPR could virtually catalog every vehicle passing its sensors. There are pros and cons to each technology, and this suggests that perhaps a final decision should only be made once a trial of each technology option has been conducted.

Figure 2-3: Aerial view of the typical traffic through the Mexican & U.S Inspection Facilities
Figure 2-4: Aerial view of the typical route the trucks travel

The following locations are designated detection points 1 through 7:
(1) Overhang at entrance of the North Bound truck route to Registration booth (Empty 1, Regular 3, & FAST 1), Mexico side. (5 lanes)
(2) Registration booth accommodating all lanes (Empty 1, Regular 3, & FAST 1) to Mexico / U.S. border, Mexico side. (5 lanes)
(3) Mexico and U.S. border to U.S. inspection (Empty 1, Regular 3, & FAST 1). (5 lanes)
(4) Empty truck booth and gamma and radioactive scan to CHP inspection, U.S. side. (1 lane)
(5) FAST (Free And Secure Trade) lanes entering to U.S. inspection, U.S. side. (2 lanes)
(6) Entering U.S. inspection facility regular lanes, U.S. side. (5 lanes)
(7) After being inspected at the CHP highway safety inspection, drivers exit to U.S. highways, U.S. side. (1 lane)
3. **STAGE 1 TECHNOLOGY REVIEW**

As part of Stage 1, ten technologies were reviewed and evaluated against a set of high level requirements toward meeting the intended desire to measure Border Wait Times. To accomplish the Stage 1 objectives of the study, the technologies were examined in detail, comparing the basic principle of “how it works”, identifying minimum equipment requirements, detailing if the technology must be installed internally or externally to the vehicle, and discussing each technology’s advantages and disadvantages. The goal was to refine the set of candidate technologies toward a reduced list that would be examined in more detail as part of Stage 2.

After reviewing the advantages and disadvantages of each technology and conducting an evaluation of the technologies against the high level requirements, three technologies have been identified to be included as part of the Stage 2 analysis: 1) Automatic License Plate Recognition (ALPR), 2) Radio Frequency Identification (RFID), and 3) Global Positioning Systems (GPS).³

### Table 3-1: Technology Evaluation

<table>
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<tr>
<th># TECHNOLOGY TITLES</th>
<th>#1 License Plate Recognition (LPR)</th>
<th>#2 Radio Frequency Identification (RFID)</th>
<th>#3 Global Positioning Systems / Automatic Vehicle Location - GPS / AVL</th>
<th>#4 Magnetic / Inductive Loops</th>
<th>#5 Radar Sensors</th>
<th>#6 Cell Probing / Floating Cellular Data</th>
<th>#7 Video / Image Signatures</th>
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1 = yes
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4. VENDOR INTRODUCTION

Each vendor is described in a brief introduction and a listing of their individual package solutions for monitoring/tracking/time-stamping vehicles and Stage 2 Assessment Compliance. As described in the previous stage, the technologies of interest include: Automatic License Plate Recognition (ALPR), Radio Frequency Identification (RFID), and Global Positioning Systems (GPS). Each technology solution described in the document is customizable and environmentally protected from the elements. The only universal requirement among the technology solutions is an active high-speed broadband connection for real time monitoring.

An interesting discovery came about from researching the various vendors, in which a combination of GPS and RFID technologies can be utilized together to create an effective tracking solution.

A price comparison organized by vendor is also included in the Stage 2 documentation. The price comparison table includes the following information:

- Solution package
- Equipment cost per lane and installation cost of a complete system based on total detection locations
- Annual support cost per lane and a complete cost based on total detection locations.

All vendor information and brochures as well as specification sheets are included in the appendices.

Figure 4-1: Technology plays an important role in the current border crossing process
5. AUTOMATED LICENSE PLATE RECOGNITION (ALPR)

ALPR applications can assist in identifying, cataloging, and tracking of freight movement through the Otay Mesa border crossing system. ALPR systems can monitor each registered license in a central database and provide the aggregation of data to report border wait times. With additional system-to-system links (i.e. State registered vehicle databases) information such as registered driver can also be tracked as part of this technology. When searching for possible solutions for Automatic License Plate Recognition for trucks, we discovered two potential vendors: 1) Hi-Tech Solutions, and 2) Transport Data Systems.

5.1. Hi-Tech Solutions

Hi-Tech Solutions is based in New Jersey and headed by Donald Brick, who has a promising solution for ALPR for trucks and an assortment of vehicles.

Hi-Tech Solutions offers various lane by lane configurations and customizations to meet customer needs. Their experience is not limited to just the U.S., they have installations and clients in various countries to meet each unique situation. As each license plate is different in each country in comparison to the U.S., Hi-Tech Solutions became an interesting prospect to inquire the possibility of creating an automatic solution.

A typical ALPR solution for trucks by Hi-Tech Solutions includes a product referred to as "SeeTruck". As each situation will vary in the typical package, the SeeTruck equipment would normally include the following:

- SeeCarHead (s): Integrated Camera/Illumination units(s) housed in a weather proof enclosure
- Multi-Channel Frame Grabber
- Input/Output control card
- Power supply for SeeCarHead units
- SeeTruck software application package, including integrated SeeCarDLL recognition engine
- Software Development Kit (SDK), including:
  - SeeTruck Client sample application program
  - Simulator, Utilities and Tools, Recognition Player and Documentation
- SeeTruck Product user’s license
- Support and warranty for equipment for one year

Figure 5-1: Typical Configuration used for Hi-Tech Solutions’ ALPR System
Hi-Tech Solutions found that they would remain competitive by not including and having the customer procure their own options for the following:

- Installation and integration of the ALPR system (Hi-Tech Solutions gives requirements and guidelines to follow)
- Computer workstations for monitoring (Hi-Tech Solutions gives recommended specifications and applications)
- Vehicle sensors to detect the presence of the vehicle (normally this will be a loop detector or any other detection option could be used)

Support is included with the initial installation, and afterwards Hi-tech solutions will extend the warranty and support on a year-by-year basis at a cost of 10% per year.

Monitoring/tracking data could be shared in the form of ASCII, DDE messages, Weigand. Hi-Tech Solutions also supports the following database formats: Access, Oracle, and SQL.
5.2. **Transport Data Systems**

Another potential Automatic License Plate Recognition solution came from local San Diego based Transport Data Systems managed by William Kreth.

Although one vendor evaluation would have been sufficient for an ALPR solution, we choose to include Transport Data Systems as an additional option. Transport Data Systems was chosen due to their experience with various configurations and the added benefit of a local vendor to the U.S./Mexico border. Transport Data Systems is currently in use in such states as Florida, California, and New Jersey.

A typical ALPR solution for trucks by Transport Data Systems includes a product referred to as License Plate Reader System – 2007 Edition. The general package would include the following items:

- Camera equipment for image capture (a front and rear solution)
- Strobe LED illuminators
- Overhead IR sensor for vehicle detection/trigger
- Lane server and central server
- Optical character recognition lane application with database and website
- Workstation for monitoring
- LCD display for monitoring
- Installation is included

![Figure 5-3: Transport Data Systems License Plate Capture System](image)

Support is provided in an annual support contract provided per lane which includes parts for full maintenance.

Monitoring/tracking data could be shared in the form of CSV (comma-separated values). Transport Data Systems also supports the following database formats: MYSQL and Oracle.
5.3. **ALPR Stage 2 Assessment Compliance**

**Maturity**
- 10 year old technology

**Flexibility**
- The ALPR technology is flexible in the sense that individual cameras and supporting infrastructure can be changed, moved, operated, updated and integrated from one lane to another. However, it should be noted that installation costs of providing power, communications and the mounting of equipment to structures will need to be considered for any lane reconfiguration that requires removal/reinstallation. The costs for installation are detailed below.

**Ease of Use**
- Vendor #1 (Hi-Tech Solutions): the data can be readily monitored via the vendor application.
- Vendor #2 (Transport Data Systems); the data can be readily monitored via the vendor application which may be accessible via the internet.

**Technology Costs**
- **Vendor #1 (Hi-Tech Solutions)**
  - Purchasing: $10,000 (cost per lane, per unit)
  - Testing: $6,000
  - Installation: $10,000 (cost per lane, per unit)
  - Licenses: $1,000 includes support and maintenance (annual cost per year, per lane)
  - Communications: TBD (depends on selected technology and existing communications infrastructure)
- **Vendor #2 (Transport Data Systems)**
  - Purchasing: $25,000 (cost per lane, per unit)
  - Testing: $6,000
  - Installation: included in purchasing cost
  - Licenses: $4,000 includes support and maintenance (annual cost per year, per lane)
  - Communications: TBD (depends on selected technology and existing communications infrastructure)

**Customization**
- **Vendor #1 (Hi-Tech Solutions)**: no customization required; however, could be customized if necessary
- **Vendor #2 (Transport Data Systems)**: no customization required; however, could be customized if necessary

**Total Implementation Cost**
- **Vendor #1 (Hi-Tech Solutions)**: $636,000
- **Vendor #2 (Transport Data Systems)**: $876,000

**Deployment (description of elements)**
- **Vendor #1 (Hi-Tech Solutions)**: See section 5.1
- **Vendor #2 (Transport Data Systems)**: See section 5.2
Deployment Assessment
- Vendor #1 (Hi-Tech Solutions): 2 days per lane
- Vendor #2 (Transport Data Systems): 3 days per lane
  *Assumptions:* Power and communications are readily available

Reporting Assessment
- Recommend field testing to determine potential quality of this technology to measure and record wait times

System-wide Deployment Potential
- Could be readily deployed at other POE facilities provided infrastructure (power, communications, physical structure) are available
- No fleet vehicle agreements are needed
6. **RADIO FREQUENCY IDENTIFICATION (RFID)**

RFID applications can be a valuable inexpensive means of tracking and cataloging freight movement through the Otay Mesa border crossing system. In active use today as toll collection for the I-15 Express Lanes in San Diego County, RFID has a multitude of uses. The data transmitted by the RFID tag may provide specific information such as vehicle tracking, truck identification, items being transported, and border crossing history making the RFID a beneficial option to this project. We research two RFID vendors: E.J Brooks and Transcore.

6.1. **E.J. Brooks Company**

An interesting Radio Frequency Identification solution was presented to us from the vendor E.J. Brooks Company. Product Manager Richard Kirk of the New Jersey based company refers to their tracking solution as ARGOTracker. E.J. Brooks has been utilized in various countries and continents such as: Ireland, Mexico with C-TPAT, Asia, South America, and Europe.

ARGOTracker utilizes an advanced RFID technology referred to as ZigBee (high level communication protocol using small, low-power digital radios based on the IEEE 802.15.4 standard that requires a low data rate, long battery life, and a secure network). The ZigBee RFID solution proposes several configuration options. The main configuration consists of RFID tag attached to the container being shipped and a GPS/GSM transmitter in the cabin of the truck. This collaboration of devices can monitor the vehicle’s movement as well as, the container’s contents. There is a ten second update of various alerts that the RFID tag could monitor including the following: detection of container tampering, altitude, speed, geo-fencing, shock, temperature, and humidity. The GPS/GSM transmitter relays the RFID information along an existing GSM cellular infrastructure already established in the U.S. and Mexico. This constantly transmitted information is accessible on a secure website or a PC application provided to the client by E.J. Brooks Company.

A typical RFID ARGOTracker solution for trucks by the E.J. Brooks Company would include the following:

- One reusable RFID tag
- One GPS/GSM transmitter
- Ten e-seals which include 10 bolts and locks (this is an optional security feature that allows for locking of the container with the RFID tag)

![Figure 6-1: Advanced RFID ZigBee Transmitters by E.J. Brooks Company](image-url)
Additionally, there is a monthly service fee which includes support and parts for full maintenance. Website access is also included in the monthly service fee which allows for any broadband connected web browser to become a monitoring station.

![Typical ARGOTracker Configuration and GPS/GSM Transmitter Unit](image)

Figure 6-2: Typical ARGOTracker Configuration and GPS/GSM Transmitter Unit

Similarly to the GPS option discussed in this document, for the ARGOTracker to produce an effective test for this project’s border wait study, a sample of 100 units passing through the border would be ideal. Therefore, all estimates are made with an ideal sampling of 100 units and this is represented in the price comparison table within this Stage 2 document.

Monitoring/tracking data could be shared in the form of Excel or Lotus Notes 123. E.J. Brooks Company also supports various database formats all accessible and based on a TCP/IP thin Linux client.

![ARGOTracker Real-Time Asset Management Application](image)

Figure 6-3: ARGOTracker Real-Time Asset Management Application
6.2. Transcore

RFID technology requires a reader and a transponder or tag. The reader broadcasts an interrogation signal from its antenna. When a transponder comes within the antenna’s coverage range, the transponder returns the signal to the roadside reader with the vehicle’s identification. The information is then retransmitted for further processing and storage.

With a reader at the entrance to the border crossing and one at the exit, time-stamped data can be gathered on individual vehicles and used to calculate border crossing times. The RFID readers are not affected by adverse weather conditions, but transponders must be within six feet of the reader for data to be collected.

The requirements for installation include AC power, an internet source, and a place to mount the reader.

The main advantages of RFID readers are that a large population of tags or transponders is already installed in trucks crossing the border and that reader technology is widely deployed in metro areas. Currently CBP is using Transcore’s eGo sticker tags that could be used to calculate border wait times (See figure 7). Each reader with installation costs between $25,000 and $50,000.

Figure 6-4: Transcore RFID reader on a FAST lane.
The benefits of RFID technology are:

- CBP is currently using RFID transponders in vehicles, that could be used to measure border wait times.
- Data collected for the border wait times can easily be shared with CBP and DPS. This includes vehicle identifications recorded at the beginning of the queue that can be used to improve the speed of the e-manifest and inspection process.
- DPS is planning to install more RFID readers at the entrance of the inspector lot, decreasing the reader costs and increasing the number of measuring points.

The concerns of RFID technology include:

- The data will not be as detailed as GPS data,
- Identifying trucks that use FAST lanes would require at least one additional reader,
- The readers are expensive to install.
6.3. **RFID Stage 2 Assessment Compliance**

**Maturity**
- Over 10 year old technology

**Flexibility**
- **Vendor #1 (EJ Brooks):** RFID devices could be moved from one lane configuration to another with the cooperation of the fleet management
- **Vendor #2 (TransCore):** RFID devices could be moved from one lane configuration to another with nominal costs

**Ease of Use**
- **Vendor #1 (EJ Brooks):** the data can be readily monitored via the vendor application
- **Vendor #2 (TransCore):** the data can be readily monitored via the vendor application

**Technology Costs**
- **Vendor #1 (EJ Brooks):**
  - Purchasing: $1,000 (cost per lane, per unit)
  - Testing: $6,000
  - Installation: included in monthly service cost
  - Licenses: $22 in monthly service cost, as well as support and maintenance
  - Communications: TBD (depends on selected technology and existing communications infrastructure)
- **Vendor #2 (TransCore):**
  - Purchasing: $5,000 (cost per lane, per unit)
  - Testing: $6,000
  - Installation: $32,500 (cost per lane, per unit)
  - Licenses: Unknown
  - Communications: TBD (depends on selected technology and existing communications infrastructure)

**Customization**
- **Vendor #1 (EJ Brooks):** no customization required; could be customized if necessary
- **Vendor #2 (TransCore):** no customization required; could be customized if necessary

**Total Implementation Cost**
- **Vendor #1 (EJ Brooks):** $132,400 (calculation includes one year of monthly service fees)
- **Vendor #2 (TransCore):** $906,000.00

**Deployment**
- See section 6.1

**Deployment Assessment**
- **Vendor #1 (EJ Brooks):** Installation can be completed in less than 30mins per vehicle
- **Vendor #2 (TransCore):** Unknown
  - *Assumptions:* Power and communications are readily available

**Reporting Assessment**
- Recommend field testing to determine potential quality of this technology to measure and record wait times
System-wide Deployment Potential
   - Limited by the establishment of agreements with Commercial Fleet Management companies to install RFID devices
7. GLOBAL POSITIONING SYSTEM/AUTOMATIC VEHICLE LOCATION (GPS)

Currently GPS applications are being utilized in a range of forms from security systems for personal vehicles, to bus tracking for passenger information, and to parents tracking their teen drivers. When GPS technology is combined with cellular networks, there could be a higher level of efficiency to track and catalog truck movement through the Otay Mesa border crossing system. The GPS receiver sends data into the cell phone network, which forwards the alerts or location information onto email, computer browser or cell phone. The exact location of a vehicle will be determined with an Internet browser, a geo-reference boundary (how far a car could travel from a specified path) and speeding alerts. For this project, GPS technology potentially would minimize the need for additional equipment other than the GPS receiver and an Internet browser.

7.1. Telargo

For GPS we discovered the vendor Telargo based in New Jersey and with the assistance of Paul Aronhime, we were introduced to the Telargo Mobile Unit.

Telargo has experience in the U.S. and varying countries such as Hong Kong, Germany, and France to name a few. Their solutions for vehicle monitoring include geo-fencing, alert/event notification to mobile devices, driving score, remote diagnostics and vehicle maintenance, and many more optional features.

A typical GPS Telargo Mobile Unit solution would normally include the following:
- Mobile GPS/GPRS Unit
- Antenna
- Keypad
- Driver ID Card
- Website for monitoring access
- Monthly Service
- Installation
- Support

![Figure 7-1: Typical Telargo GPS System](image-url)
A note to be aware of is that for GPS to produce an effective test for this project’s border wait study, a sample of 100 units passing through the border would be ideal. Therefore, all estimates are made with an ideal sampling of 100 units and this is represented in the price comparison table within the document.

![Figure 7-2: Telargo’s End to End Service](image)

Telargo includes support in their monthly subscription service making the initial cost for this solution as one of the lowest initial cost options.

![Figure 7-3: Driver Information Provided by Telargo’s Keypad](image)

Monitoring/tracking data could be shared in the form of SOAP, XML, Excel, and PDF. Telargo also supports an SQL database format.
7.2. **GPS Stage 2 Assessment Compliance**

Maturity
- Over 10 year old technology

Flexibility
- Although there are no GPS lane readers, the system can be configured to work for any lane configuration by identifying the associated xy lane location coordinates.

Ease of Use
- Vendor (Telargo): the data can be readily monitored via the vendor application which may be accessible via the internet.

Technology Costs
- Vendor (Telargo)
  - Purchasing: included in monthly service cost
  - Testing: $6,000
  - Installation: included in monthly service cost
  - Licenses: $100 in monthly service cost, as well as support and maintenance
  - Communications: TBD (depends on selected technology and existing communications infrastructure)

Customization
- Vendor (Telargo): no customization required; could be customized if necessary

Total Implementation Cost
- Vendor (Telargo): $126,000 (calculation includes one year of monthly service fees)

Deployment
- See section 7.1

Deployment Assessment
- Vendor (Telargo): 1 to 2 hours per vehicle
  - Assumptions: Power and communications are readily available

Reporting Assessment
- Recommend field testing to determine potential quality of this technology to measure and record wait times

System-wide Deployment Potential
- Limited by the establishment of agreements with Commercial Fleet Management companies to install GPS devices
- Limited by availability of cellular carriers both US and Mexico
8. VENDOR PRICE COMPARISON

The following tables show the comparison of each vendor’s technology for the initial package provided and the installation with annual support.

<table>
<thead>
<tr>
<th>Technology</th>
<th>Equipment</th>
<th>Equipment Cost per Unit</th>
<th>Quantity in Mexico</th>
<th>Quantity in the United States</th>
<th>Total Equipment Cost</th>
<th>Total Installation Cost</th>
<th>Total Purchase and Installation Cost</th>
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<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Vendor:</strong></td>
<td>See Car Head integrated camera</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Hi-Tech Solutions</td>
<td>Hi-Tech Solutions</td>
<td>Multi-Channel Frame Grabber</td>
<td>$10,000.00 15 9 $240,000.00 $240,000.00</td>
<td>$480,000.00</td>
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<td><strong>Vendor:</strong></td>
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<td>Input/Output control card</td>
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<tr>
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<tr>
<td><strong>Vendor:</strong></td>
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<td>SeeTruck Software</td>
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<tr>
<td><strong>Vendor:</strong></td>
<td>Hi-Tech Solutions</td>
<td>Product License</td>
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<tr>
<td><strong>Vendor:</strong></td>
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<td>Support for 1st year</td>
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<td><strong>Vendor:</strong></td>
<td>Hi-Tech Solutions</td>
<td>Annual support cost for each lane</td>
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<td>$24,000.00</td>
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<tr>
<td><strong>Vendor:</strong></td>
<td>Hi-Tech Solutions</td>
<td>Testing</td>
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<td>$6,000.00</td>
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<table>
<thead>
<tr>
<th>Technology</th>
<th>Equipment</th>
<th>Equipment Cost per Unit</th>
<th>Quantity in Mexico</th>
<th>Quantity in the United States</th>
<th>Total Equipment Cost</th>
<th>Total Installation Cost</th>
<th>Total Purchase and Installation Cost</th>
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<tr>
<td><strong>ALPR</strong></td>
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</tr>
<tr>
<td><strong>Vendor:</strong></td>
<td>Transport Data Systems</td>
<td>Camera</td>
<td>$25,000.00 15 9 $600,000.00</td>
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<tr>
<td><strong>Vendor:</strong></td>
<td>Transport Data Systems</td>
<td>LCD Display</td>
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<td><strong>Vendor:</strong></td>
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<td>Website access login</td>
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<td><strong>Vendor:</strong></td>
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<td>$6,000.00</td>
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Note: These estimates do not include costs associated with data procurement and process.
For the RFID and GPS options, a quantity based on a large sample size of 100 probes was required to produce an enhanced test sample.

### Table 8-2: RFID and GPS vendor cost comparison

<table>
<thead>
<tr>
<th>Technology</th>
<th>Equipment</th>
<th>Equipment Cost per Unit</th>
<th>Quantity in Mexico</th>
<th>Quantity in the United States</th>
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<th>Total Purchase and Installation Cost</th>
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<tr>
<td></td>
<td></td>
<td>Mobile GPS/GPRS Unit</td>
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<td>Monthly Service login</td>
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<td></td>
<td>E.J. Brooks Company</td>
<td>bolts &amp; lock</td>
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<td></td>
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<td>Optional (additional 100 e-seals)</td>
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<tr>
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<td>$0.00</td>
<td>$0.00</td>
</tr>
</tbody>
</table>

* (Assumes CBP's RFID tags could be used)
* (NA- Information is currently not available; end use of data has not been determined which will affect costs)

Note: These estimates do not include costs associated with data procurement and process.
9. **CONCLUSION/RECOMMENDATION**

This Stage 2 Report has built upon the initial Stage 1 Report which provided a summary and analysis of 10 commercially available ITS/other technologies that could be potentially used to measure border wait times. The Stage 1 Report narrowed the focus for additional detail analysis to three technology candidates: ALPR, RFID, and GPS. This Stage 2 Report has extended the analysis by characterizing the three technologies against the following assessment components:

- Maturity
- Flexibility
- Ease of Use
- Technology Costs
- Customization
- Deployment
- Reporting Assessment
- System-wide Potential

To provide significant analysis against the listed assessment components, several vendors were contacted to obtain the specifications and implementation characteristics for each technology candidate. The specifications and contact information of each vendor contacted has been included in Appendices B-D. The analysis shows that each technology candidate is equally viable for measuring border wait times. However, decisions on which technology to deploy will be dependent on specific informational and agency requirements, desired field testing, implementation preference, and ability to establish operational agreements between Mexican (Federal/local) agencies and Commercial Fleet companies. Depending on the technology path chosen there are also recurring and non-recurring costs to consider.

Consequently, it is our recommendation that some field testing is performed for each technology candidate to further assess the viability of the technology, the quality and consistency of the data that is provided, and the potential (if any) impacts on daily operations. If field testing is not desired due to budgetary or schedule constraints, we recommend deploying ALPR technology.
ALPR technology has the following attributes:

- 10 year maturity, proven technology
- Unalterable by truck operators/non biased data collection
- No agreement needed with commercial fleet operators
- No communications carrier lease arrangements
- Independent vehicle tracking (potentially 100% coverage)
- Data could be used for other applications

Due to the significant cost associated with the procurement and installation of ALPR systems, different deployment options could be considered.

Two deployment options are listed below:

- Option A (See Figure 3-4 ) Core Deployment
  - Location 2: Deploy 5 cameras at Mexican Federal Primary Inspection Stage
  - Location 4: Deploy 1 camera at US Customs Facility Primary Inspection-Empty Lane
  - Location 5 & 6: Deploy 7 cameras at US Custom Facility Primary Inspection (2 FAST lanes, and 5 Regular Lanes).

- Option B (See Figure 3-4 ) Full Deployment
  - Locations 1-9: Deploy 30 cameras at all designated measurement points.

Lastly, ALPR technology is best suited for deployment at other Commercial POEs, because it reduces the implementation complexity and provides for a more uniform or standard implementation approach provided that the other POEs have supporting infrastructure components.
PROGRESS REPORT ON THE IMPLEMENTATION OF THE OTAY MESA-MESA DE OTAY BINATIONAL CORRIDOR STRATEGIC PLAN: EVALUATION OF TIJUANA’S PUBLIC TRANSPORTATION PLAN AND TRANSIT SERVICES TO THE OTAY MESA-MESA DE OTAY PORT OF ENTRY

Introduction

The Otay Mesa-Mesa de Otay Binational Corridor Strategic Plan identified a strategy to evaluate the City of Tijuana’s draft Public Transportation Plan, focusing on routes that would serve the Otay Mesa-Mesa de Otay Port of Entry (POE) and the proposed Otay Mesa East-Otay II POE. This report provides an update on progress made on this strategy.

Discussion

To implement this strategy, a transit consultant was recently retained by SANDAG to complete a study to gather information on ridership and current and planned routes serving the Mesa de Otay POE and the site of the proposed Otay Mesa East-Otay II POE (see Attachment 1). In addition, current and future gaps in transit services to accommodate crossborder travel via the Otay Mesa-Mesa de Otay POE were identified.

The findings from the study are presented as recommendations and are based on the assumption that pedestrian crossings will increase at the Otay Mesa POE in response to the forecasted growth of communities in eastern Tijuana and implementation of the South Bay BRT service in the San Diego region. The findings and recommendations focus on improvements to pedestrian and public transportation infrastructure to facilitate access to both sides of the border.

SANDAG staff has shared the study’s findings and recommendations with IMPlan for its review and evaluation. Comments received from IMPlan were incorporated in the attached Technical Memorandum.

IMPlan and SANDAG will continue to collaborate towards the implementation of this strategy and provide periodic updates to COBRO.

Attachment: 1. Evaluation of Tijuana’s Public Transportation Facilities at the Otay Mesa-Mesa de Otay Port of Entry; South Bay BRT, December 2007

Key Staff Contact: Ron Saenz, (619) 669-1922, rsa@sandag.org
Memorandum

To: Elisa Arias
Cc: Jennifer Williamson
From: John Morris
Date: December 18, 2007

Subject: Evaluation of Tijuana’s Public Transportation Facilities at the Otay Mesa-Mesa de Otay Port of Entry; South Bay BRT, KHA Project No. 095596000

Introduction

SANDAG requested that Kimley-Horn and Associates provide an evaluation of the existing and proposed public transportation services to the Otay Mesa-Mesa de Otay Port of Entry (OMPOE)—see Figure 1: Vicinity Map. This evaluation was initiated in response to the Otay Mesa-Mesa de Otay Binational Corridor Strategic Plan’s early action item recommending the evaluation of the City of Tijuana’s transit routes proposed to serve the OMPOE.

Figure 1: Vicinity Map
The results of Kimley-Horn’s evaluation are presented in this memo. Our findings are organized in the following sections:

A) Overview of proposed South Bay Bus Rapid Transit (BRT) service to OMPOE.

B) Evaluation of the existing pedestrian and transit access to the OMPOE (MX) on the Tijuana side.

C) Calculation of the anticipated increase in pedestrian crossings at the OMPOE in response to the implementation of BRT service. This section will take into consideration shifts in border crossing activity between the San Ysidro and Otay Mesa POEs.

D) Review of the public transportation network proposed by Tijuana’s Instituto Municipal de Planeación (IMPlan). This section will look at how IMPlan’s proposed network will serve both the OMPOE and its surrounding area.

E) Qualitative recommendations for development of potential access improvements to pedestrian and public transportation infrastructure to facilitate access to both sides of the border. Based on the evaluation of the previous sections, a set of options were developed and compiled.

F) Recommended next steps.

Based on the evaluation of the factors described above, Kimley-Horn and Associates can make the following recommendations for improved pedestrian and public transportation facilities; see Figure 2 – Otay Mesa-Mesa de Otay POE Proposed Access Improvements. These options are not mutually exclusive and may be combined:

1. Implement a public transportation station in Tijuana, similar to the proposed South Bay BRT at-grade station, at one of two sites on the east side of the OMPOE (MX), or on the west side, with transit only lanes from Avenida de las Bellas Artes.

2. If public transit facilities in Tijuana are developed on the east side of the access road, build a pedestrian bridge from the west side of the access road, where pedestrians enter Mexico after passing through the POE.

3. Improve pedestrian infrastructure leading to and from the OMPOE (MX) along Mexico’s auto access route to Avenida de las Bellas Artes. This can be limited to the east side of the access road if a pedestrian bridge is constructed—as shown in Figure 8.

4. Provide shuttle services between IMPlan’s proposed transit network trunk routes on Boulevard Industrial (Highway 2D) and the OMPOE (MX). The shuttle could
also take advantage of its proximity to the Tijuana Airport and provide direct service from the OMPOE to the airport. This route could serve the tourism market from San Diego by providing an option to use the Tijuana Airport.

5. Provide direct service between the OMPOE and the Central de Autobuses (Central Camionera) in Tijuana—a large bus station which provides interregional bus services to Baja California and the interior of Mexico. This service could serve the tourism markets between Baja California and United States as well as interregional markets. Such a link would also greatly expand mobility options for residents of San Diego/Tijuana by providing a direct connection to the many destinations in the interior of Mexico accessible from the Central de Autobuses. Because the bus terminal is located in the eastern area of Tijuana, a connection via Otay Mesa is potentially more convenient for travelers from the US than using the San Ysidro crossing to the west.
Figure 2
Otay Mesa-Mesa de Otay POE
Proposed Access Improvements
A. Overview of proposed South Bay BRT service to OMPOE

The proposed South Bay Bus Rapid Transit line is anticipated to provide service from the OMPOE through developing communities in Chula Vista and into downtown San Diego in less than an hour. This transit service is currently in the planning phase with implementation expected in approximately 2013.

South Bay BRT will provide a level of service and access to the San Diego region that exceeds current public transportation services at the OMPOE. Currently, Route 905 operates between the OMPOE and Iris Trolley Station on the Blue Line Trolley with 15 to 30 minutes frequency. The South Bay BRT service, however, will have a high frequency service (10 to 15 minutes headways) to destinations in Chula Vista, National City, and downtown San Diego—see Figure 3: South Bay BRT Route Map.

![Figure 3: South Bay BRT Route Map](image)
Because of the high level of service planned, South Bay BRT will likely increase the pedestrian demand to the OMPOE which in turn may require improved/additional public transportation and pedestrian services on the Tijuana side of the OMPOE. It may also pose an opportunity to mitigate the current pedestrian lines in San Ysidro by attracting more pedestrian crossings to the OMPOE through improved accessibility.

The following sections evaluate elements at the OMPOE which may be affected by the introduction of South Bay BRT service to the OMPOE—specifically pedestrian and transit access, the demand for pedestrian crossings, and the proposed transit network by IMPlan. These elements will be evaluated with respect to the introduction of the South Bay BRT to determine if any infrastructure or service improvements should be suggested due to the proposed South Bay BRT service.

**B. Existing Pedestrian and Transit Access to Otay Mesa POE**

The choice to be a pedestrian crosser at OMPOE (versus San Ysidro POE) can be dependent on the minimum level of both pedestrian and transit access on either side to and from the OMPOE. In other words, the least common denominator in pedestrian and transit facilities between the U.S. and Mexico sides may influence how and where a person crosses the border. The assessment of the existing facilities takes into consideration:

1) The ability to cross auto access/inspection facilities if transit or pedestrian access is limited to one side or the other of these auto-oriented facilities at the OMPOE.

2) The distance walked by a pedestrian between the bus stop/station and the pedestrian processing facilities at the OMPOE is preferred to be within 200’ but not more than a quarter of a mile from the pedestrian processing facilities.

3) The quality of pedestrian facilities with regards to finding their way toward and away from the POE to their destination and overall ease of using the existing facilities.
The following is an assessment of the existing conditions encountered by pedestrians crossing the border. The northbound and southbound conditions are described separately.

MEXICO to UNITED STATES –
The pedestrian crossing at the OMPOE into the United States is along the east side of the OMPOE. Consequently, pedestrians must approach the OMPOE facilities on the east side of the automobile access road to the OMPOE. The following are locations in Tijuana where pedestrians may be dropped off or begin their walk towards the OMPOE.

1. Avenida de las Bellas Artes: Currently, passengers using public transportation alight at Avenida de las Bellas Artes and must walk to the OMPOE from this arterial road. The walk is approximately 0.5 miles using an un-paved median between the SENTRI access road and the local road. Facilities provided at the bus stop are minimal without a path clearly defined to and from the OMPOE facilities.

2. SENTRI/Drop-Off Road: The OMPOE does allow for SENTRI processing through a separate road that is also used for dropping off pedestrians. The road is on the east side of the OMPOE and the general traffic lanes and provides a sidewalk on the right side of the road for pedestrian drop-offs. The road also provides a right lane u-turn back towards Avenida de las Bellas Artes for vehicles dropping off pedestrian crossers. While this area may not be a designated drop-off zone, it has been utilized by both private and public vehicles to drop-off pedestrian crossers.

Once across the border, pedestrians using the future South Bay BRT would cross SR-905 and the automobile inspection facilities using the existing pedestrian bridge to reach the proposed elevated or at-grade station on the west side of the OMPOE—see Figure 4 Otay Mesa U.S. POE – Elevated and At Grade South Bay BRT Station. Private vehicle pick-ups can occur along Via de la Amistad (0.1 mile walk) on the east side of the OMPOE or along Nicola Tesla Ct. and Otay Center Dr. (0.33 mile walk) on the west side of the OMPOE. Both locations also provide access to MTS Route 905 which travels along Otay Mesa Rd. and terminates at the Iris Trolley Station (2 trolley stops north of the San Ysidro POE). The distance and ability to access these transit services at OMPOE are in direct contrast to the San Ysidro Intermodal Transportation Center which is directly
adjacent to the San Ysidro POE and visible upon exiting the pedestrian processing facilities.
UNITED STATES to MEXICO –

The pedestrian crossing towards Mexico is located on the west side of the OMPOE. It can be accessed by two paths:

1. Via de la Amistad: Since vehicles are currently not allowed to drop off pedestrian crossers on the east side near the OMPOE (US), pedestrians must walk across the existing pedestrian bridge adjacent to the OMPOE (US). There is a proposed pedestrian bridge would be located about 0.15 miles north of the OMPOE.

2. Nicola Tesla Ct: On the west side of the OMPOE (US), pedestrian trips are generated from Nicola Tesla Ct via a bicycle/pedestrian path adjacent to the border access road (SR-905). The cul de sac is a convenient location for people to be dropped off or picked up when crossing the border.

3. West Side of OMPOE (MX): On the west side of the OMPOE in Mexico, excluding taxis, pedestrians have no immediate access to the public transportation system in Tijuana. For pedestrians to reach the nearest bus routes, they would need to walk 0.5 miles to Avenida de las Bellas Artes. Buses are color coded, using gold/white vehicles or blue/white vehicles depending on the destination of the passenger; however, while vehicles are easily identifiable, first time passengers are not provided with the facilities or information as to destinations of those bus routes. Furthermore, a potential passenger does not have an identifiable location where he or she is insured that the bus will stop to pick them up.

Once across the border pedestrians are somewhat isolated from public transportation facilities and services in Tijuana. There are taxis available near the vehicle inspection facilities. However, pedestrians wanting to take a bus into various neighborhoods in Tijuana would need to walk 0.5 miles to the Avenida de las Bellas Artes. Also, in order for pedestrian to reach the east side of the OMPOE (MX), to an area where private cars are allowed to enter and exit the immediate vicinity of the POE, the pedestrian needs to cross the auto access road using an at-grade pedestrian crosswalk through the lanes of cars.
POTENTIAL IMPROVEMENTS
The existing infrastructure could be improved upon with the addition of a pedestrian bridge connecting the east and west sides of the OMPOE within Mexico—see Figure 5 Border Access from Tijuana Transit System. This improvement in the infrastructure would allow for consolidated resources serving the OMPOE (MX) to one side of the access road—similar to the consolidation of transit services on the west side of the OMPOE (US) proposed with the South Bay BRT as shown in Figure 4.

In Figure 5, transit only lanes and station alternatives are shown on both the east and west sides of the OMPOE (MX). However, there are several reasons for recommending the east side as opposed to the west side. First, through the redesign of current SENTRI/Drop-Off access roads and local streets, OMPOE access and circulation can be improved for SENTRI participants, drop-off vehicles, taxis, public transportation buses, and pedestrians. The redesign would allow the station to be within an eighth of a mile from the OMPOE and could include transit only lanes on the east side of a pedestrian median maintaining private vehicle and taxi drop-offs on the west side of the median adjacent to the SENTRI access lanes.

Second, while the west side of the OMPOE(MX) is potentially convenient for pedestrians entering Mexico, a facility to the west would be located at best a quarter mile away from either the Mexico or U.S. pedestrian processing facilities—as opposed to an eighth of a mile on the east side. The west side also lacks access for buses to the OMPOE (MX) from Avenida de las Bellas Artes. To provide access on the west side, the truck processing facility exit and adjacent intersection may need to be reconfigured to accommodate a left turn for public transportation vehicles. Table 1 compares the advantages and disadvantages for having a station on the eastside or westside of the OMPOE (MX).

---

1 There was additional conceptual routing of buses considered along local roads east of the OMPOE. These routes would allow for minimal impact to the SENTRI access—assuming only one contra-flow transit lane from the OMPOE to Avenida de las Bellas Artes; however, these routing alternatives would take passengers out of direction to the OMPOE (at least three-quarters of a mile), with the bus traveling through residential neighborhoods, and could be substantially slower.
Figure 5
Border Access From Tijuana Transit System
### Table 1: Comparison between the eastside/westside of the OMPOE (MX) station locations

<table>
<thead>
<tr>
<th>ADVANTAGES</th>
<th>Westside of OMPOE (MX)</th>
<th>Eastside of OMPOE (MX)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Location provides easier egress from the station via the Otay Mesa auto access road—which has small amounts of traffic from automobiles leaving the OMPOE (MX) auto inspection facility. Public transportation vehicles would exit the station towards the Otay Mesa auto access road. All directions of travel (except north) are possible from this access road via the interchange at Bellas Artes.</td>
<td>1. Provides close proximity (1/8th of a mile) to the pedestrian facilities of the OMPOE (US).</td>
<td></td>
</tr>
<tr>
<td>2. Location proposed for station is currently vacant while the northeast corner of the lot is used as parking for taxis waiting to enter the queue to pick-up passengers.</td>
<td>2. Station would clearly visible to pedestrians coming from Bellas Artes on the eastside and by pedestrians crossing the bridge from the westside of the OMPOE (MX).</td>
<td></td>
</tr>
<tr>
<td>3. Station location, with the construction of the pedestrian bridge, would allow both transit and taxi access to be in the same location for ease of use for pedestrian crossers.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DISADVANTAGES</th>
<th>Westside of OMPOE (MX)</th>
<th>Eastside of OMPOE (MX)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Station would be located, at-best, a quarter of a mile from the OMPOE (MX) and would require pedestrians crossing into the US to cross the auto access road either at-grade or through a pedestrian bridge.</td>
<td>1. Buses would need use the SENTRI access road even when the border inspection queue blocks the entrance causing delay for passengers.</td>
<td></td>
</tr>
<tr>
<td>2. Access to the parcel is difficult. The adjacent intersection will require a protected left turn signal and turning lane for public transportation vehicles entering the station.</td>
<td>2. When demand is significant, left turns into the SENTRI lanes from Bellas Artes are not allowed and buses would need to detour to the next intersection to make a u-turn.</td>
<td></td>
</tr>
<tr>
<td>3. Proposed modified intersection is adjacent to the truck inspection facility. Trucks leaving the facility may create delays for buses entering the station.</td>
<td>3. The adjacent intersection will require a protected left turn signal and turning lane for public transportation vehicles entering the station.</td>
<td></td>
</tr>
<tr>
<td>4. Location is not easy to reach by pedestrians coming from Bellas Artes.</td>
<td>4. The parcel of land needed for the proposed station appears to be used as a private parking facility. Parcel would need to be acquired.</td>
<td></td>
</tr>
<tr>
<td>5. Any changes to queuing locations or access for taxis may need to be coordinated with operators.</td>
<td>5. May require transit only lanes and contra-flow lanes adjacent to the SENTRI access lanes.</td>
<td></td>
</tr>
<tr>
<td>6. Access to the south and Blvd. Industrial would not be able to use the Otay Mesa auto access road. Instead a significantly out of direction route via Lazero Cardenas would be necessary.</td>
<td>6. Access to the south and Blvd. Industrial would not be able to use the Otay Mesa auto access road. Instead a significantly out of direction route via Lazero Cardenas would be necessary.</td>
<td></td>
</tr>
<tr>
<td>7. Any changes to queuing locations or access for taxis may need to be coordinated with operators.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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C. Anticipated Increase in Pedestrian Crossings at the Otay Mesa POE

The level of service that is expected from South Bay BRT will be comparable to trolley service with a travel time of approximately 50-55 minutes to downtown San Diego. The introduction of the South Bay BRT service would allow for greater overall efficiency in travel from an origin in Tijuana via OMPOE to a destination in San Diego, Chula Vista, or National City. Due to this travel improvement from the OMPOE via the South Bay BRT service, it is expected that more pedestrian crossings would be attracted at the OMPOE, just as the level of trolley service at San Ysidro attracts a large number of transit riders today.

Additionally, the South Bay BRT alignment will have significant trip generators such as major employment centers (i.e., the proposed university in Chula Vista, the proposed Eastern Urban Center, medical centers near East Palomar Street, and Downtown San Diego) and shopping destinations (Otay Ranch Town Center). According to the “Otay Mesa-Mesa de Otay Binational Corridor Strategic Plan” published by SANDAG July 2007, shopping/errands and work/business accounted for 56.5% and 22.3%, respectively, as the primary purpose for border crossings at OMPOE among those who live in Mexico. These two purposes account for approximately 79% of the crossings at the OMPOE and the trip generators along SBBRT will likely attract additional crossings at the OMPOE.

![Figure 6: Percent of Otay Mesa POE Border Crossings Among Those Who Live in Mexico](source: SANDAG - Otay Mesa-Mesa de Otay Binational Corridor Strategic Plan)
Also, a second major generator of crossings (and SBBRT ridership), is the growing communities on the eastern side of Tijuana, as well as increased tourism generated by the new Tijuana-Rosarito corridor to the east of the OMPOE. According to the “Program for the Urban Development of Tijuana, BC 2002-2005”, Tijuana is expected to grow from 1.4 million in 2002 to approximately 2.8 million in 2025—with a significant portion of the growth occurring on the eastern side of Tijuana and along the Tijuana-Rosarito corridor.

In order to develop an assessment of the additional transportation services and facilities needed on the Tijuana side of the OMPOE, it is first necessary to estimate the future level of border crossing activity among transit users at Otay Mesa.

**Estimate of Future Otay Mesa Border Crossings**

Estimates of future transit demand at OMPOE were based on existing travel patterns at both San Ysidro and Otay Mesa, using two underlying assumptions: First, it was assumed that the current volume of transit travelers is skewed toward San Ysidro due to the far superior existing service at that location, and that the availability of similar high-quality transit at Otay Mesa would encourage some fraction of those travelers (particularly those from eastern Tijuana) to shift to the Otay crossing. Second, it was assumed that overall trends in population and travel growth would result in proportional increases in demand at both border crossings. The following describes the method that was used to first estimate the current latent demand at OMPOE, and then scale that estimate upward to account for long-term growth trends for the years 2015 and 2030.

The present-day latent demand for transit travel at OMPOE was calculated based on four segments of the existing border-crossing population: San Ysidro pedestrian, San Ysidro auto passenger, Otay Mesa pedestrian, and Otay Mesa auto passenger.

The first step involves redistributing the existing volume of pedestrians between Otay Mesa and San Ysidro based on the existing ratio of automobile passengers. It is presumed that the current pedestrian split between Otay Mesa and San Ysidro may not accurately represent the latent demand distribution due to the relative lack of transit options at the OMPOE compared to the extremely high level of transit service at San Ysidro. In order to estimate the latent demand at Otay Mesa, Kimley-Horn used the auto
distribution. Between 2004 and 2006, 28% of auto passengers entered the U.S. through Otay Mesa, with 73% going to San Ysidro. Because auto drivers are not constrained by the availability of transit and can choose to cross the border at the location most convenient to them, this percentage split provides a better indicator of the regional demand between the two crossings. The existing pedestrian/transit traffic at San Ysidro presumably includes some residents of eastern Tijuana who currently travel cross-town to San Ysidro because of the relative lack of transit options on the U.S. side at Otay Mesa. With the introduction of South Bay BRT service, IMPlan’s proposed public transportation can incorporate improved access to the OMPOE. Therefore, it can be inferred that although Otay Mesa currently only accounts for 16% of the total pedestrian crossings at both POE locations, the underlying demand is likely closer to 28%--similar to the unconstrained auto access. Table 1 below shows the average monthly border crossings between 2004 and 2006\(^2\). These numbers were used in the calculation.

### Table 2: Existing Monthly Border Crossings

<table>
<thead>
<tr>
<th>2004-2006 Monthly Average Crossings</th>
<th>Pedestrian</th>
<th>Automobile Pax</th>
<th>Total</th>
<th>Pedestrian Share</th>
<th>Automobile Pax</th>
</tr>
</thead>
<tbody>
<tr>
<td>Otay Mesa</td>
<td>124,680</td>
<td>1,032,970</td>
<td>1,157,350</td>
<td>10.8%</td>
<td>89.3%</td>
</tr>
<tr>
<td>San Ysidro</td>
<td>679,700</td>
<td>2,688,790</td>
<td>3,368,490</td>
<td>20.2%</td>
<td>79.8%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>804,380</td>
<td>3,721,760</td>
<td>4,525,840</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

To estimate the latent demand for current pedestrian crossers multiply the total pedestrian crossings for the month by 28% (the share of automobile passengers crossing at Otay Mesa).

\[
\text{Adjusted monthly pedestrian demand for Otay Mesa POE:} \\
804,380 \times 0.28 \approx 225,000
\]

Change in pedestrian demand = 100,000 increase from existing

---

The second step involves projecting the redistributed pedestrians at the OMPOE to the years 2015 and 2030. The projection can be based on the growth of the average total monthly average crossings seen from 2000 to 2005. The overall growth over those six years was 17% which is approximately 2.7% annual growth\(^3\). It is assumed that this growth will continue at a similar rate into the future given expanding population in eastern Tijuana along with increasing employment and shopping opportunities in Otay Mesa and eastern Chula Vista. This estimate may be considered conservative since the majority of new development in the border zone is concentrated in eastern areas closer to (or east of) the Otay crossing.

In order to estimate the average monthly demand in 2015 and 2030, the annual growth rate calculated above will be applied to the 2005 estimated demand of 225,000.

This trend will lead to 70,000 additional pedestrian crossings per month by 2015 and 180,000 by 2030. Table 2 shows the projected average monthly border crossings based on the 2.7% annual growth rate.

<table>
<thead>
<tr>
<th>Year</th>
<th>Pedestrian Crossings</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>225,000</td>
</tr>
<tr>
<td>2015</td>
<td>~295,000</td>
</tr>
<tr>
<td>2030</td>
<td>~405,000</td>
</tr>
</tbody>
</table>

It is important to acknowledge that this estimate does not take into consideration changes in the regional economy, the possibility for an increase or decrease in border security requirements or restrictions (including the effect of passport requirements), or the possible mode shift from automobile to pedestrian crossing in response to the introduction of rapid transit service on either side of the OMPOE.

\(^3\) This growth rate is higher than San Diego’s annual population growth rate of 1.8% between 2000-2004 while much lower than Tijuana’s annual population growth rate of approximately 3-4% published in the “Program for the Urban Development of Tijuana, BC 2002-2005”.
D. Review of the IMPlan Proposed Public Transportation Network and its Access to the Otay Mesa-Mesa de Otay POE

This section reviews and evaluates the proposed transit network by the City of Tijuana’s Municipal Planning Institute, or IMPlan, and how it can serve the potential demand that could be induced by the introduction of the South Bay BRT service at the OMPOE. IMPlan has proposed a new public transportation network that closely emulates systems such as the Integrated Transport Network in Curitiba, Brazil, TransMilenio in Bogota, Colombia, and MetroBus in Mexico City—see Figure 7 Red de Transporte Propuesta (Proposed Transit Network).

![Proposed Transit Network Diagram]

**Figure 7: Red de Transporte Propuesta (Proposed Transit Network)**
*Source: IMPlan – Estudio integral para la reestructuracion del transporte publico de pasajeros en el municipio de Tijuana, 2004-2005*

The proposed network introduces three types of public transportation routes:

1. **Rutas Troncales (Trunk Routes):** These types of routes will operate in high demand corridors (5-12 miles in length) with high frequency service and well defined stations. These routes would likely be operated with high capacity vehicles such as articulated buses. Also, the trunk routes are anticipated to carry the bulk of trips in the network.

2. **Rutas Alimentadoras (Feeder Routes):** These routes fill in the network between the high demand trunk routes feeding into stations along the trunk routes. These routes can vary greatly and can be operated by calafias (i.e. jitney or shared taxi),
microbuses, or regular buses depending on the demand and expected frequency of the service. These routes are relatively shorter (0.5 to 7 miles) than trunk routes and are complementary (not competitive) to the trunk routes.

3. Rutas Suburbanas (Suburban Routes): These routes are oriented towards suburban areas of the city. Type of vehicles operated on these routes is dependent on demand and frequency of service.

Currently, there are four proposed trunk lines (out of twelve) that are planned to operate within 1.25 miles of the OMPOE. None of the four routes were considered for immediate or short-term implementation which is presumed to be a time period of 0-3 years. Two trunk lines are “medium-term” routes while the other two are “long-term” routes. The “medium” and “long-term” planning horizons were not defined in the Public Transportation Restructuring Report. Routes are to be implemented at the discretion of the City of Tijuana based on demand, and some routes may be in service before the introduction of South Bay BRT service in 2013.

Portions of the latter two routes (the “long-term” routes) are proposed to operate on Avenida de las Bellas Artes—an arterial street that runs parallel to the border and is within half a mile of the OMPOE. These routes show the greatest promise for access to the OMPOE due to their proximity and their direct access to three areas of Tijuana: eastern Tijuana (Mesa de Otay), southern Tijuana/Boulevard Insurgentes, and the center of Tijuana. Both lines will serve unique markets while providing connections to the rest of the proposed network which will make the OMPOE attractive to various communities to the south and east.

The former two routes (the “medium-term” routes) provide access from the eastern-most areas of metropolitan Tijuana to the western areas. These routes utilize Boulevard Industrial (Highway 2D) as the east-west spine of the proposed public transportation network.
The “medium-term” routes are anticipated to serve the higher demand origin-destinations in Otay Mesa—see Figure 8 Origin-Destination GIS Map\(^4\).

The routes proposed by IMPlan, while a mile away from the OMPOE at the closest point on the route, provide an opportunity for a complementary/feeder route providing direct access to the OMPOE and/or the airport from the trunk route. This feeder route could be similar to MTS Airport shuttle service between downtown San Diego, Santa Fe Depot, and San Diego Airport.

![Figure 8: Origin-Destination GIS Map.](image)

Source: IMPlan – Estudio integral para la reestructuración del transporte público de pasajeros en el municipio de Tijuana, 2004-2005

These suggested new feeder routes would best serve pedestrian border crossers by dropping them as close as possible to the OMPOE rather than along Avenida de las Bellas Artes and providing direct access between the OMPOE and the Tijuana Airport—see Figure 9 Otay Mesa POE – Airport Feeder Route. Based on the previous section’s estimate of 225,000 monthly pedestrian crossings (approximately 7,400 daily pedestrian crossings with the assumption that 4,900 are carried by public transportation\(^5\)) and a

\(^4\) Figure 5 shows the areas around the ports of entry as major destinations; however, the figure does not show San Ysidro POE or Otay Mesa POE as an origin-destination node. The additional information from including the POEs as a node would be greatly beneficial for accessing the infrastructure and service levels need to serve the destinations.

\(^5\) This number is based on the assumption that two thirds of pedestrian crossers will arrive by public transportation. This amount can be modified based on IMPlan’s estimates at the San Ysidro POE.
comparable Tijuana feeder route\(^6\), the feeder route should be operated at 10-15 minute frequency with either microbuses or regular sized buses. Because the volume of border crossings can vary dramatically from day to day, having additional capacity through larger vehicles may be prudent for any unanticipated surges in demand.

Currently there is no dedicated bus service from the OMPOE to Tijuana’s International Airport. Pedestrian crossers can take a taxi from the OMPOE to the airport or other destinations in eastern Tijuana; however, the addition of direct feeder service between the Airport and OMPOE to the trunk routes on Hwy 2D - Boulevard Industrial would expand access and facilitate mobility from Otay Mesa to major destinations on the east side of Tijuana—International Airport, Central Camionera and the Universidad Autonoma de Baja California.

Without a complete reconfiguration of the OMPOE access roads and adjacent land uses, the east side of the OMPOE is currently the best location for access to the OMPOE. The east side of the OMPOE (MX) has sufficient space to provide transit only lanes while minimizing the impact to future expansion of the SENTRI program. Also, consolidation of services to one location at the OMPOE would help define the path for pedestrian access to and from the OMPOE and Avenida de las Bellas Artes.

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\(^6\) Based on feeder route #35 which is 12km in length and is anticipated to carry 6370 passengers per day with a peak period fleet 8 microbuses. The peak period frequency is every 12 minutes.
E. Potential Improvements to Pedestrian/Public Transportation Facilities

As mentioned in Section C, the anticipated increase in pedestrian crossings at the OMPOE is based on the assumption that comparable transit service will be provided on the Mexican side of the border within walking distance of the OMPOE as at San Ysidro POE. For the purposes of this evaluation a reasonable walking distance will be assumed to be 0.25 miles.

Consequently the two areas of improvement can be categorized as improved transit access to the OMPOE and improved pedestrian access within and around the OMPOE. Ideally, a well balanced plan integrating both options will provide a significant improvement over existing conditions. The following are potential improvements for discussion with IMPlan:

1. Implement a public transportation station similar to South Bay BRT at-grade station at one of two sites with transit only lanes on the east side of the OMPOE as shown in Figure 5. The transit lanes from Avenida de las Bellas Artes to the OMPOE would allow transit routes direct access to and from the OMPOE.

2. Build a pedestrian bridge from pedestrian facilities on the west side of Mexico’s auto access road to the existing pick-up areas and suggested public transportation station on the east side (Figure 5).

3. Improve pedestrian infrastructure leading to and from the OMPOE on both sides of Mexico’s auto access road to Avenida de las Bellas Artes. This can be limited to the east side of the access road if a pedestrian bridge is constructed.

4. Provide shuttle services between the trunk routes on Boulevard Industrial (Highway 2D) and the OMPOE. The shuttle can also take advantage of its proximity to the Tijuana Airport and provide direct service from the OMPOE to the airport. This route could serve the tourism market from San Diego by providing an option to use the Tijuana Airport (Figure 8).

5. Provide direct service between the OMPOE and the Central de Autobuses (Central Camionera) in Tijuana—a large bus station which provides interregional bus services to Baja California and the interior of Mexico.
F. Recommended Next Steps

There were several elements of planning and analysis that were not part of the current task; however, these items can be included in future studies by IMPlan and/or SANDAG for further analysis:

1. The proposed improvements should be further evaluated and compared based on the potential travel time savings, increase in demand, improved access toward and from the OMPOE, and/or the cost of implementing the improvement. This evaluation should also include a benefit/cost analysis for each of the improvements.

2. Market analysis, such as a survey, should be performed to refine the estimate of the potential increase in pedestrian crossings at the OMPOE due to the introduction of South Bay BRT service and/or a complementary service on the Tijuana side of the OMPOE.

3. Modifications to the taxi plazas should be evaluated in the next steps—especially if impacted by future planning/design of a pedestrian bridge. Taxi services will need to be taken into consideration with regards to any changes in access to the OMPOE.

4. The introduction of public transportation services from Otay Mesa-Mesa de Otay POE to destinations in Tijuana may impact where and how people choose to cross the border. An evaluation of the impact may be beneficial for future expansion of transit services at the POEs.
A BINATIONAL PLANNING APPROACH FOR THE
DEVELOPMENT OF THE TIJUANA RIVER WATERSHED:
POLICY OPTIONS FROM RHETORIC TO ACTION

Introduction

At the April 3, 2007, COBRO meeting, members requested a presentation on the report, A Binational Planning Approach for the Development of the Tijuana River Watershed: Policy Options from Rhetoric to Action (Attachment 1). This report analyzes and provides recommendations for necessary steps to achieve more effective binational planning through binational policy accords and development of institutions. The analysis is divided into four sections which represent examples of existing binational planning efforts, academic perspective, survey results, and concludes with some final observations and recommendations. The following discussion provides a summary of this report’s analysis and recommendations.

Discussion

As part of the analysis to explore opportunities for binational planning, the binational planning efforts that focused on the Tijuana River Watershed (TRW) were chosen as a case study to review and analyze the challenges and obstacles that are hampering or preventing transborder planning in the TRW. The Binational Watershed Advisory Council (BWAC) was convened to address a myriad of environmental challenges facing the TRW, due to uncontrolled urbanization and infrastructure deficits. The BWAC invited a diverse group of binational participants from all sectors of government and private industry to participate. This group developed the report, A Binational Vision for the Tijuana River Watershed, a vision document for the TRW that made several recommendations to protect the TRW. Upon analysis of this document it was found that these recommendations require the development or strengthening of policies that address specific issues, others require nonexistent funding, while still others require intergovernmental and transborder coordination, cooperation, and agreement unattainable at present.

Some existing binational planning organizations were created from the North American Free Trade Agreement (NAFTA). They include the Border Environment Cooperation Commission (BECC) and the North American Development Bank (NADBk), which provide for a totally new institutional context in which environmental management is handled. A central theme to follow is how these institutions prioritize regional environmental concerns as well as encourage public participation and local involvement.

In addition, the Border XXI/Frontera XXI Plan, developed by the U.S. Environmental Protection Agency (EPA) and the Secretaría del Medio Ambiente y Recursos Naturales (SEMARNAT), is another example of a binational organization. The main feature of Border XXI/Frontera XXI is its focus on
important local issues through the establishment of nine binational working groups: natural resources, information resources, environmental health, water, air, hazardous and solid waste, enforcement, pollution prevention and emergency response. While there has been criticism concerning the reactive rather than proactive nature of these initiatives, and although they have limited funding, they have provided much-needed visibility to binational environmental problems.

As part of this report’s analysis, academic research was compiled and a survey was developed to determine expert opinions on transborder planning and to determine the status of binational planning efforts that are already under way in the U.S.-Mexican border region. Results from the survey cite barriers to binational planning to include the need for data sharing.

Overall, the survey responses paralleled what the research indicates. Both refer to the importance of cooperation as the underlying basis for successful transborder planning. Concerns also were voiced about the difficulty of working in different political, language, and cultural systems.

Some of the recommendations include:

• Bringing the federal governments into the discussions about what needs to be done to solve the border’s environmental problems, especially transboundary problems.
• Building on existing binational models. One of the objectives of the TRW vision project was to assemble local and regional representatives from San Diego and Tijuana in order to increase communication.
• Continuing to reinforce opportunities to link the decision making process to local initiatives.
• Bringing together local and regional representatives who have concerns for the problems of their region.
• Promoting communication and information exchanges among all those involved in transboundary work.
• Raising funding for ongoing projects and related activities so that fundamental progress can take place on binational projects.

The report concludes by stating that the BWAC’s development of the TRW vision document is far from sufficient. Further research is needed to determine the feasibility of a truly transboundary mechanism that would allow transborder planning with a watershed focus.


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A Binational Planning Approach for the Development of the Tijuana River Watershed: Policy Options from Rhetoric to Action

By Elsa Saxod, Jose Luis Castro, Laura Silvan and Marco Antonio Reyna

INTRODUCTION

The environmental future of the U.S.-Mexican border is uncertain. On the one hand, the border region continues to exhibit explosive growth, exerting ever increasing and more complex pressure on available resources. On the other hand, despite the numerous efforts from the academic, non-governmental and the government sectors of both the U.S. and Mexico, very little has been accomplished in terms of solid binational policy accords or the development of institutions to deal with the formidable problems facing the region. In this paper, we will examine what needs to be done, using the Tijuana River Watershed (TRW) as a case study. This paper will review and analyze the challenges and obstacles that are hampering or preventing transborder planning from taking place in the TRW. This paper will also consider the steps that are necessary to bring about effective transborder planning.

This work is organized into four sections. The first is a background discussion. The second reviews a sample of the academic evidence on the subject, and its major findings and conclusions. In the third section, we present the methodology and the results of a survey conducted on a sample of selected specialists. Finally, the paper presents analysis and conclusions.

PART ONE: BACKGROUND

In 2002, a binational team of researchers, government officials and agency representatives, and non-governmental and private sector representatives was assembled to develop a mutually acceptable vision for the TRW. One thousand seven hundred and fifty square miles (4,465 km²) in area, the TRW straddles the U.S.-Mexican border, with one-third in California and two-thirds in Baja California. The team, known as the Binational Watershed Advisory Council (BWAC), was convened to address a myriad of environmental challenges facing the TRW, due to uncontrolled urbanization and infrastructure deficits. The BWAC invited a diverse group of binational participants from all sectors of government and private industry to participate. The members of the council were asked to disregard personal goals and instead consider a collective vision for the TRW. The development of an integrated vision for the TRW included not only information and input from the BWAC members, but also engaged the participation of a multitude of stakeholders from the region. That way, the stakeholders’ concerns, feedback and insights were addressed. The vision is a snapshot of the current and desired conditions in the TRW. The BWAC process has undoubtedly been an important step, yet there is much to accomplish before it can be considered true binational planning.

The most pressing issue that the BWAC must deal with is the San Diego-Tijuana region’s colossal population and urban grown, as this growth contributes to the TRW’s deterioration. The watershed is currently home to 1.4 million people and this figure is
expected to double in 15 to 20 years. Experts estimate that 90 percent of the land within the Municipality of Tijuana will eventually be developed. Tecate, a city east of Tijuana and south of the County of San Diego, is expected to see its industrial, commercial and residential sectors grow southward. The City of San Diego is projected to expand southeast. This southward expansion will be facilitated by new proposed border crossings: (from west to east) East Otay Mesa (Otay II), Tecate and Jacumba. There is concern that these three cities will merge into one megalopolis at the Otay corridor and choke off open space and wildlife corridors.

Continued population growth will only worsen existing problems. Among the problems caused by the increasing population and land use changes are:

- Decline in local groundwater quantity and further dependence on imported water
- Decline in quality of surface and groundwater for human use
- Increased erosion and flood dangers
- Increased air pollution
- Reduction in the amount of safe, open and green areas for urban residents
- Decline in ecosystem health
- Increasing numbers of threatened and endangered plants and animals

Water is a major concern for this arid region. Historically, the TRW discharged pristine waters into a healthy ocean and intact wetlands. As well, groundwater was the primary source of potable water for the San Diego-Tijuana region. Today, imported water from the Colorado River serves much of the area, and water demand is increasing with the population. Surface and groundwater are scarce in the TRW and the region only sees an average rainfall of 10 inches per year. Sewage runoff, fertilizers and pesticides also contaminate the TRW aquifers and surface water.

The Tijuana River flows into the Tijuana River Estuary in the United States and then into the Pacific Ocean. The water at the discharge point into the ocean contains some of the highest concentrations of suspended solids measured in Southern California. The water’s pathogens, contaminants and pollutants can accumulate in people and animals and cause health problems.

The hilly topography of Tijuana and the unplanned squatter settlements on slopes produce significant erosion and flooding during the rainy season. Flooding will continue to be problematic because of: the expanding impermeable areas that increase the speed and volume of runoff, the lack of vegetation on hillsides that would slow water flow, the trash and sediment that clog stream channels and the inadequate municipal storm drainage system.

The TRW region is known internationally for the quantity and diversity of its flora and fauna species. Many endangered and threatened species live in the region: the bighorn sheep, the Arroyo toad and several avian species. There are also endangered/threatened vegetation communities, including coastal sage scrub and chaparral. Many of these plants
and animal species are migratory and use habitats on both sides of the international boundary.

Municipal waste disposal is inadequate in Baja California, which causes trash accumulations in rivers and creeks that is harmful to wildlife and pollutes surface and groundwater. Hazardous materials can also be found in the TRW, due to inadequate management of industrial waste, commercial waste, household waste and biological waste that are illegally dumped into the sewers or canyons. Proper treatment and disposal facilities for hazardous materials are not readily available in Baja California.

Additionally, vehicular congestion in urban areas and border crossings, heavy commercial trucking, dust from unpaved roads, landfill fires and industrial contamination all pollute the atmosphere.

The TRW enjoys cultural diversity and dynamic economic activity, which unfortunately also contributes to rapid population growth, accelerated industrialization and uncontrolled urbanization. These conditions are most apparent on the Mexican side of the international border, where the government does not have the resources to provide adequate urban infrastructure, affordable housing, parks and green areas, healthcare and education.

On the U.S. side of the border, San Diego’s booming population, economic expansion and urbanization have caused habitat loss, fragmentation and a decrease in open space. Urban runoff and a poorly maintained basic sewage infrastructure have impaired the surface groundwater and marine waters of the TRW.

The BWAC vision document for the TRW has a number of recommendations for meeting the goals identified by stakeholders, including:

- Identify important conservation areas for restoration and rehabilitation based on ecosystem functions and threats
- Increase knowledge of the cultural characteristics of indigenous and other peoples of the watershed
- Protect sensitive habitat as well as cultural and historical areas
- Market sustainable tourism opportunities
- Undertake binational planning for floods
- Evaluate and protect groundwater supplies
- Develop and expand existing watershed education programs and products for children and adults
- Connect conservation areas across the border
- Expand water reuse
- Facilitate cross-border vehicular traffic flow and reduce impacts in adjacent communities
- Develop an integrated waste management systems with recycling components
- Implement a binational water quality monitoring system
- Develop point and non-point source water pollution prevention programs
- Create mechanisms for transborder watershed management
Some of the TRW vision document’s recommendations require the development or strengthening of policies that address specific issues, others require nonexistent funding, while still others require intergovernmental and transborder coordination, cooperation and agreement unattainable at present. Unilateral policy changes will not protect or restore the watershed. Instead, mechanisms that facilitate cross-border collaboration and the development of binational policy must be created, so that stakeholders are no longer hampered by an international border that arbitrarily slices a watershed in half.

Binational planning can only go from rhetoric to action through an institutional vehicle that enables local governments on both sides of the U.S.-Mexican border to work together to develop solutions. Only the U.S. and Mexican federal governments can develop international agreements. However, it is these same governments that have not demonstrated much interest in binational planning for the U.S.-Mexican border region. Moreover, even if the two governments were to begin to work toward binational planning, their priorities are different. The U.S. focuses on immigration, stopping the flow of drugs from Mexico and terrorism, while Mexico focuses on public safety, unemployment, attracting investment and bringing urban infrastructure to marginalized communities. What, then, will it take for both federal governments to grant the attention and resources that are needed to resolve the environmental problems that affect the quality of life of the border residents?

PART TWO: BINATIONAL COLLABORATION ON THE U.S.-MEXICAN BORDER: THE ACADEMIC EVIDENCE

The academic communities of both the United States and Mexico have produced an inchoate desire for binational cooperation between people and government agencies in the U.S. and Mexico. There is ample data on the region’s conditions, and the problems that arise from these conditions, both at the regional and local levels (Ganster and Sánchez, 1999; Ganster et al., 2000; Liverman et al., 2002; Institute for Regional Studies of the Californians [IRSC], 2005). Conditions typical of arid zones, such as limited and rather localized water supplies, characterize the border region. The concentration of urban growth and economic activities along the border has put much pressure on the natural resources base of the region, which has negatively impacted both urban and rural areas. Some of the resultant problems include: water contamination, over drafted groundwater resources, air pollution, unsustainable practices regarding solid and hazardous waste management, impacts on ecosystems, etc.

Other analyses deal with the growing concern over environmental crises in the border region, and methods to cope with them. The signing of the North American Free Trade Agreement (NAFTA) in 1993 sparked a boom of cross-border initiatives in all levels of government that were aimed at mitigating environmental degradation (Clough-Riquelme, 2006). Some works have extensively documented the evolution of these efforts and their impacts as examples of how to approach problems in the border region. One such work deals with governmental initiatives between the U.S. and Mexico. The passage of NAFTA was accompanied by the creation of two agencies, the Border Environment Cooperation Commission (BECC) and the North American Development Bank.
Together, they created the platform for a totally new institutional context in which environmental management would proceed (Lara, 2000). A central theme of these institutions is they prioritize regional environmental concerns as well as encourage public participation and local involvement – features not found in existing binational institutions such as the International Boundary & Water Commission (IBWC).

Still another binational initiative was the implementation of the Border XXI/Frontera XXI Plan developed by the U.S. Environmental Protection Agency (EPA) and the Secretaría del Medio Ambiente y Recursos Naturales (SEMARNAT) in 1996, following the La Paz Agreement and the implementation of the Integrated Border Environmental Plan. The main feature of Border XXI/Frontera XXI is its focus on important local issues through the establishment of nine binational working groups: natural resources, information resources, environmental health, water, air, hazardous and solid waste, enforcement, pollution prevention and emergency response (Brown, 2003).

Through this environmental institutional landscape, local participants as well U.S. and Mexican federal government representatives were able to begin working jointly on binational environmental problems. While there has been criticism concerning the reactive rather than proactive nature of these initiatives, and although they have limited funding, they have provided much-needed visibility to binational environmental problems (Spalding, 2000). Border 2012, a modified version of Border XXI, offers a change of focus and more intensive participation of local and regional agencies, state governments and tribal governments (Brown, 2003). Still, the questions of the program’s funding capacity persist.

Another dimension of cross-border collaboration is the development of regional initiatives, stemming mainly from non-governmental groups (Brown, 2003; Brown et al., 2003; Clough-Riquelme, 2006; IRSC, 2005; Castro et al., 2006). The emergence of “international environmental nongovernmental organizations” has paralleled the evolution of binational federal institutions (e.g. NAFTA), and has resulted in dialogue between Mexican and U.S. counterparts. This cross-border collaboration is centered mainly on the two largest urban areas in the border region – San Diego-Tijuana and El Paso-Juárez – although other regions are gaining importance. The adoption of transboundary watersheds as the bases for study by many of these efforts extended these initiatives to other regions. Aside from the Tijuana River Watershed, other groups formed in the 1990’s, such as the Santa Cruz River Basin in Arizona and the Rio Grande/Río Bravo Basin Coalition (Brown, 2003).

Research done on transboundary cooperation networks found an important interorganizational network in the San Diego-Tijuana region, including high-profile transboundary partnerships and significant cross-sector interactions (Lara, 2000). However, despite the progress that this binational collaboration has accomplished over the years, there are still challenges to be overcome. First, there is the need for changes in governance, so that the limitations of binational agencies or authorities – whose knowledge, autonomy and decision making powers may be inhibited by mandates or practice – can be transcended. Second, data sharing needs to be enhanced to assure
effective planning. Third, horizontal communication needs to be improved. Fourth, financing capacity must reflect the reality of the border needs (Clough-Riquelme, 2006).

Past research has rightfully focused on the hurdles – both at the conceptual and operative levels – that must be overcome before effective binational mechanisms can be devised, as well as the possible methods of scaling those hurdles. At a very abstract level, some researchers point to the existence of human barriers that need to be transcended before more sustainable development can take place along the border (Herzog, 2006). Such obstacles are: fear images (the international border fence, 9/11, prejudices, etc.); the ideology of consumption; the growth of the maquiladora industry and the effects it produces on the environment; the tourism-oriented business boom and its resulting environmental degradation; the social polarization of city dwellers and the effects on the poor; the “placelessness” of cities, that is, the fallout from the anarchic and chaotic postmodern urban structure; and the nature of the cities’ infrastructure on both sides of the border. Others identify the border region’s jurisdictional fragmentation and uneven development obstacles that stem from the economic, social, cultural and political differences between the two countries. The problems most frequently identified are poverty, social injustice, “growth machine politics,” mass consumption and environmental degradation (Pezzoli, 2006). Only a progressive approach to cross-border regionalism – one that is critical, open-minded and creatively constructive – can overcome these barriers.

Some authors advocate the concept of watershed councils (Consejos de Cuenca) as an innovative and efficient framework for approaching the common problems among binational watersheds (Brown and Mumme, 2000, Brown, 2003). The concept was introduced in Mexico’s Ley de Aguas Nacionales (Law of National Waters –LAN) of 1992 as the operative tool for implementing the precepts of the law within Mexican territory. Some of the binational collaborative experiences laid the ground for promising conceptual scenarios in which the functional reach of Consejos de Cuenca may be enhanced. However, because of the centralized nature of Mexican institutions, Mexico still possesses a number of socio-cultural and political barriers that would prevent binational watershed councils from becoming a reality. Alternative policy frameworks suggest the application of transparency principles for policymaking institutions to ensure community needs are met. Also, major changes to rules at the implementation and operational levels need to be made that would allow a greater number of people to participate in the water resources policy debate and have the opportunity to influence policy (Brown and Mumme, 2000).

The idea of a binational mechanism has been discussed by other researchers at the local/transboundary level (i.e. Ramos, 2006). However, many point to the challenge that a truly intergovernmental agenda imposes on the actors involved on each side of the border, particularly Mexican governmental actors. The Tijuana River Watershed and the processes developed to create the vision for it can be used to explore the barriers to establishing a transboundary mechanism of cooperation (IRSC, 2005; Castro et al., 2006). Some of the critical questions that need to be addressed are: a) How can the management capacity of local Mexican policy be improved? b) How can stakeholders
create interest in the U.S. for developing a transborder management mechanism? c) To what extent do Mexican environmental issues affect the quality of life for San Diego residents, governments and entrepreneurs? d) How can government inertia on both sides of the border be reduced?

The researchers highlight the need for the different levels of government of both countries to recognize the complexity of transboundary issues and their responsibility to find solutions for them. The researchers identify vision, leadership, drive, as well as technical and strategic capacity as the factors required to move forward with transborder planning. Finally, they point to the need to strengthen the management and policy making capabilities of Mexican government agencies at the local and state levels.

In 2006, the eighth Border Institute, an annual binational conference organized by the Southwest Consortium for Environmental Research and Policy (SCERP), convened a group of specialists to discuss methods for enhancing collaborative planning and operation of transboundary watersheds along the U.S.-Mexican border region. Many of the findings from the conference (see www.scerp.org) reflect the views described in this report.

The perspectives of the above researchers, led to the following points:

- Environmental conditions along the U.S.-Mexican border are critical.
- The critical environmental conditions along the U.S.-Mexican border are reflected in the deterioration of available natural resources, and ultimately in the quality of life for residents of the border region.
- While natural and geographical characteristics of the border region along with population growth and urbanization are reasons for the deterioration of the quality of life in the area, this deterioration is also due to the economic, social, cultural and political differences that persist between the U.S. and Mexico.
- In the 1990s, local and regional levels of government significantly increased their involvement in solving the problems affecting their communities.
- The evolution of a binational institutional framework was notable, even though it remained basically reactive rather than proactive in nature, and faced limitations on the areas covered and funding.
- Although the evolution of the binational institutional framework was considerable during this period, it lacked proactive efforts for prevention and planning and only reacted to existing problems. This framework continues to be limited in the scope of issues it covers and in funding, particularly on the Mexican side.
- There are a number of binational collaborative enterprises along the border, stemming mainly from non-governmental and academic groups, but these efforts have not transcended into formal binational organisms or planning efforts with the required involvement of governmental representatives.
- There are still barriers to creating a successful binational collaborative model, due in large part to the many differences that separate the U.S. and Mexico.
- Though the idea of the transboundary watershed is conceptually sound, the asymmetries between the two countries continue to inhibit the likelihood of truly binational collaboration.
Recommended Actions:

- Establish an ad-hoc model of governance, through existing binational authorities with the necessary leadership, autonomy and technical and decision-making capacity.
- Call upon the governmental actors in each country to acknowledge the importance and complexity of transboundary issues and their respective duties to act.
- Increase the dissemination of information and data-sharing to assure coordination and the attainment of goals in a context of binational collaborative planning.
- Strengthen local and regional capacity on the Mexican side of the border.
- Guarantee the availability of appropriate funding to ensure the success of projects undertaken on both sides of the border.

PART THREE: SURVEY AND ITS METHODOLOGY

A survey was developed to determine expert opinions on transborder planning and to determine the status of binational planning efforts that are already under way in the U.S.-Mexican border region. For the survey, a list of questions was developed to determine if formulas or institutions exist that would allow binational planning to take place in the U.S.-Mexican border region. In light of the objectives of this report and given that there is a vision document for the Tijuana River Watershed, the selection of participants for the survey needed to include representatives from the San Diego-Tijuana region, as well as others in the U.S.-Mexican border region with expertise in transboundary issues.

After careful consideration, 30 people from both the U.S. and Mexico were identified as appropriate individuals to respond to the survey. Some were government officials, others were academics and some were activists and representatives from the private sector. All had experience and a working knowledge of the U.S.-Mexican border and could add insight into the research. Of the 30 people contacted, 19 responded (Attachment A), nine were from the U.S. and ten were from Mexico. The interviews were done in person, by phone or by e-mail. The participants were asked the same four open-ended questions, which were designed as a guide to keep the answers focused on the U.S.-Mexican border region. If the interviewee was from the San Diego-Tijuana region, the questions were focused on San Diego and Tijuana and more particularly the Tijuana River Watershed. For participants outside the San Diego-Tijuana area, the questions were focused on the need for binational planning along the U.S.-Mexican border region. The questions were the following:

1) Do you think binational planning has advantages for the San Diego/Tijuana (U.S./Mexico) border region? If yes, why?
2) Why have we not been able to conduct binational planning up to now? What obstacles impede binational planning?
3) What needs to be done or what steps need to be taken for binational planning to take place between the San Diego/Tijuana (U.S./Mexico) border regions? What are the advantages?
4) What area along the U.S/Mexico border is the most suitable to begin a binational planning pilot program?

The responses were processed and analyzed in an effort to capture the varied responses and perspectives. In order to compare the similarities and differences in the responses, a matrix (Attachment B) was developed.

SURVEY RESPONSES

The analysis of the survey responses led to the development of a table that highlights the most important points (Attachment D), which were grouped according to their similarity. A discussion of the answers to the survey occurs below.

1) Do you think binational planning has advantages for the San Diego/Tijuana (U.S./Mexico) border region? If yes, why?

Answers to this question revolved around the concepts of cooperation, sharing and collectiveness and how these concepts could benefit the region. In the first place, the survey respondents inferred that cooperation makes sense. There are benefits attached to cooperation such as: economic advantages (cost effectiveness), capacity and trust building. Also, cooperation enhances strengths, and facilitates the identification of issues and priorities of mutual concern. Sharing plans and information can also collectively benefit the region. Finally, cooperation can allow stakeholders to focus holistically on the problems of the region so that integrated planning may be undertaken.

Another advantage that the respondents see in binational planning is the growth of funding opportunities. There is also the view that binational planning will drive the federal governments to commit to resolving environmental issues.

2) Why have we not been able to conduct binational planning up to now? What obstacles impede binational planning?

The views of the respondents in this section were very similar. Most respondents considered the differences between the U.S. and Mexico, as well as the intergovernmental dissimilarities of each country, as the primary reasons for the lack of binational planning. There was a general consensus that differences in political systems, language and cultural, as well as the stereotypes that U.S. and Mexican populations hold about each other, are major impediments to binational planning. Respondents also pointed to intergovernmental and international sovereignty issues, the lack of binational mechanisms or structures for planning, the absence of a mutual vision or agenda, the lack of political will and leadership, different priorities for each country, the lack of information sharing and a short term planning focus in Mexico. As for the California/Baja California region, the respondents pointed to a widespread, incorrect belief that Baja California is not that important to San Diego’s economy.
Regarding intergovernmental differences, the respondents claimed that the U.S. and Mexican federal governments do not stress local border issues and federal funds and authority are deficient at the local levels.

3.) What needs to be done or what steps need to be taken for binational planning to take place between the San Diego/Tijuana (U.S./Mexico) border regions? What are the advantages?

These respondents identified the steps that are necessary to bring about binational planning and they stressed the importance of enhancing the federal governments’ participation in binational planning. Mechanisms proposed included the formalization of Consejos de Cuencas for the transborder region. Others suggested building on existing binational models (i.e. BECC, Border XXI, BWAC, etc.) as an initial step. Still others recommended the need to assess the legal, political and institutional factors that limit or slow the creation of binational planning entities and processes. Also, respondents suggested that binational planning should be developed as a separate discipline.

At a more specific level, recommendations included the need to: build binational consensus with all stakeholders, recognizing common priority concerns, interests and benefits; create binational private/public partnerships; identify funding sources, including focusing on projects with funding already available; identify policy gaps; build capacity; and gather all information dispersed throughout universities. Furthermore, other proposals favored the implementation of pilot binational projects.

4.) What area along the U.S/Mexico border is the most suitable to begin a binational planning pilot program?

The consensus of the interviewees was that the San Diego-Tijuana region and more specifically the Tijuana River Watershed is the most suitable spot along the border for a binational planning pilot project. Among the reasons cited are the following: the nature of the TRW as a sub-watershed that is defined and that is at a manageable scale; work has been done on the TRW with emphasis on urban problems for both sides of the border; groups and actors within the region have experience with binational cooperation.

The answers also pointed to a number of advantages for the San Diego-Tijuana area, such as: the dynamics of the two cities, which do not exist anywhere else along the U.S.-Mexico border; its demographics (over 5 million people in the region); its identity as a manufacturing center; its diversity; its strong economy. A few respondents suggested other city-pairs with the potential for the implementation of a pilot project, such as El Paso-Juárez and Ambos Nogales.

Over all, the survey responses paralleled what the research indicates. Both refer to the importance of cooperation as the underlying basis for successful transborder planning. Concerns were voiced about the difficulty of working in different political, language and cultural systems. These are roadblocks that require patience, understanding and special attention to joint planning to move forward. And yet, the federal governments must be
involved from the very beginning of a binational planning project. There was a sense that watershed planning would be an excellent choice for such a project and the survey respondents and research suggest that the TRW is a superior candidate.

PART FOUR: CONCLUSIONS
In this paper, the authors used academic evidence to review the different perspectives on the impediments to implementing a transboundary planning agenda for the TRW. This paper also includes the ideas and recommendations of a select group of experts on U.S.-Mexican border issues for overcoming existing barriers to transboundary planning. Though this exercise is by no means conclusive, it provides a solid basis from which to draw some conclusions.

Both the reviewed literature and the survey responses demonstrate the continuous and impressive efforts of various societal and academia sectors, which should be acknowledged. These sectors have proposed and advanced new methods, both conceptual and operational, that can help create a workable transboundary collaboration framework. These sectors have also sparked exploration of and discussion about innovative solutions to the persistent barriers to binational planning at the border. Perhaps the most interesting similarity between the literature and the interview results (and an important point) was the consensus that transborder planning is vital for the sustainability of the U.S.-Mexican border region.

Furthermore, the work led the researchers to conclude that the differences – which may take many forms within federal, local and operative levels – between the U.S. and Mexico continue to prevent real transborder collaboration from taking place. Jurisdictional fragmentation within each country should be addressed through changes in governance so that the local and international barriers and obstacles that exist among the three levels of both countries’ governments can be overcome. These proposed intergovernmental changes will impose great challenges to each country and will require vision, leadership and commitment from their officials. We can begin by:

- Bringing the federal governments into the discussions about what needs to be done to solve the border’s environmental problems, especially transboundary problems.
- Building on existing binational models. One of the objectives of the TRW vision project was to assemble local and regional representatives from San Diego and Tijuana in order to increase communication.
- Continuing to reinforce opportunities to link the decision making process to local initiatives.
- Bringing together local and regional representatives who have concerns for the problems of their region.
- Promoting communication and information exchanges among all those involved in transboundary work (not merely academics).
- Raising funding for ongoing projects and related activities so that fundamental progress can take place on binational projects.
Policy will need to be developed or in some cases changed to deal with issues facing border communities, such as the environment, water management and urban development. There is a need for greater public education to make San Diego/Tijuana residents aware of their interdependence. Local governments must enhance their role in convincing and encouraging the federal governments in both Mexico City and Washington, D.C. to create systems that will hasten future agreements or vehicles for conducting transboundary planning.

Both the academic evidence and the survey results point to the need for data sharing. Much research is taking place in universities on transborder planning, but the information is not being sufficiently disseminated nor is it reaching decision makers. This important information needs a wider distribution to border communities to enhance and assure effective planning efforts.

At this time, decision makers move forward with recommendations, policy or projects without the benefit of the ideas and concepts of ongoing academic research on transborder planning. The lack of communication and exchange between researchers and decision makers under serves the regional planning process and creates risks for environmental harm to neighboring jurisdictions. Limited available funds can be used more effectively if decisions are based on regional priorities and not simply on the short-term goals of elected officials.

Lack of funding was an often-repeated concern in the academic publications and in the surveys. Although some might argue that funding is currently being provided through the work of the IBWC, Border 2012 and BECC, that work is not consistent with the long range, transboundary, comprehensive planning that is needed to manage transboundary watersheds in a sustainable manner. In fact, the work of these agencies, project by project, arguably adds to problems associated with piecemeal planning, which can hinder opportunities for broader, long-term planning.

The progress made by BWAC in developing the TRW vision document is far from sufficient. Further research is needed to determine the feasibility of a truly transboundary mechanism that would allow transborder planning with a watershed focus.

ATTACHMENTS
Attachment A-Survey Participants
Pete Silva
Metropolitan Water District

Jesse Hereford
Border Trade Alliance

Ronald Kramer
U.S. Consul General in Tijuana

Hector Vanegas
SANDAG

Mary Kelley
Do you think binational planning represents advantages for the San

- It creates benefits for both sides of the border and all actors involved
- Economic competitiveness requires sister cities to work together
### Diego/Tijuana region? If so, why?

- Information is not complete when it stops at the border
- Binational planning will help identify funds necessary for building infrastructure
- It helps eliminate piecemeal planning
- Management of shared resources demands cooperation
- Progress in cooperation is needed at a regional/watershed level
- Binational planning is a matter of economics and quality of life issues
- Improving infrastructure and preventing pollution on the border can bring benefits to the region
- If we are not planning binationally then we are not accomplishing the things that can be accomplished
- Economic and physical issues can be resolved if we look at the S.D/Tijuana area as a single region with a shared vision
- Cross-border agreements can be reached between agencies, even if you start the process informally
- Joint planning for one region is less expensive than for two separate planning processes and more can be done in a shorter amount of time
- If issues and priorities of mutual concern can be identified, then there is a basis for resolving them
- Binational planning processes help build capacity and identify strengths, resources and opportunities that would otherwise not be recognized
- It helps build trust
- Sharing a binational watershed and natural resources requires sharing plans
- Hydraulic and hydrological or environmental issues are as worthy of international agreements as trade and immigration issues
- SANDAG is moving toward binational planning with the Otay Mesa/Mesa de Otay Corridor plan under way

### Why have we not been able to do binational planning up to now? What obstacles impede binational planning?

- Different political systems-Mexico has a centralized form of government
- Mexican “municipios” find it difficult to generate the needed revenue
- Planning is a local issue for U.S. cities and counties while in Mexico, because it is a border area, the federal government has jurisdiction
- Local communities in Mexico cannot interfere in decisions that have an international impact
- Lack of attention from federal governments to local issues
- Natural resources issues can bring about sovereignty concerns for Mexico
- Neither Washington D.C. nor Mexico City have
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<tr>
<th>What steps need to be taken for binational planning to become a reality along the U.S./Mexico border?</th>
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<tbody>
<tr>
<td>• Build consensus for the development of an integrated long-term vision by working with regional planning organizations-SANDAG, IMPLAN and the federal governments through the Border Liaison Mechanisms</td>
</tr>
<tr>
<td>• Seek federal government participation to ensure buy-in and success</td>
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<tr>
<td>• Use existing agencies as examples-BECC, NADB, IBWC and their sister agencies in Mexico and/or create a new transborder entity if necessary</td>
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<tr>
<td>• Include stakeholders from both the U.S. and</td>
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shown concern for the border region
• Difficulties of working with the three levels of government from both the U.S. and Mexico
• Ongoing political changes make long term planning difficult
• Elected officials have a short term approach to decision making
• Lack of long term planning or planning in general
• Urban planning is new for Tijuana (10 years) while in San Diego it has been in use for many years
• There are no formal binational mechanisms and structures available for planning
• Lack of initiatives, leadership and political will by public officials for participating in binational meetings
• Many public officials do not value or recognize the importance of binational planning
• Asymmetry is a challenge and problems and priorities are different, which can polarize interests
• Fragmented knowledge about the regions common issues
• Language barriers and cultural differences
• Lack of funding sources for implementation of a planning processes
• Anti-Gringo sentiment in Mexico and negative attitudes against Mexico in San Diego
• Mexico does not like to ask for help
• San Diego lacks knowledge of Baja California’s importance to its economy
• Much talk about binational planning but in reality each community is only interested in solving its own concerns
• There is no mutual vision or agenda
• Lack of coordination between private and public efforts
Mexico from the beginning and use established networks to disseminate information
- Evaluate the legal, political, institutional and cross-border feasibility of creating a Joint Advisory Committee for Water Management between Tijuana and San Diego under the La Paz Agreement
- Establish a conceptual framework for cross-border collaboration
- Binational planning should be treated as an issue in itself and not as part of a larger planning processes
- Evaluate the political will of the Mexican Federal Government for adopting a binational focus on the issue of water
- Formalize a the Consejo de Cuenca, an entity recognized under Mexican Law for the Mexican part of the watershed, and have that be the basis for establishing a binational entity; this would bring to the table federal and state decision makers and government recognition and resources
- Seek strong political leadership
- Identify issues where both the U.S. and Mexico will benefit, where San Diego and Tijuana have shared problems, such as polluted beaches, Estuary, etc.
- Identify a single common priority and conduct a pilot project
- Conduct planning issue by issue
- Ensure priorities are addressed for all parties and try to find coincidences between the diverse interests so that they can be linked to social priorities.
- Focus on issues where funding is available and choose projects that make a difference
- Identify policy gaps and develop policy options for both the U.S. and Mexico in relation to the priorities identified
- Identify capacity building needs
- Identify and gather all available information using universities as partners
- Use the vision to develop a business plan that includes strategies that will unite, not polarize, and develop a time table
- Use a goal oriented approach, be pragmatic, create private/public partnerships
- Increase knowledge and raise awareness among San Diego residents about the importance of Tijuana to the region
- Develop a publicity campaign to promote the image of a single region and to encourage a sense of belonging for people on both sides of the border.
- Learn how to use Border Security as an advantage and not as an obstacle

San Diego/Tijuana region and more particularly the
What area along the U.S./Mexico border would be the most suitable for binational planning?

Tijuana River Watershed is the most suitable area along the border for a binational planning pilot project to take place. The major reasons for this are:

- It is a defined sub-watershed
- Its scale is manageable
- Work has been done on the watershed with emphasis on urban problems for both sides
- There is existing binational cooperation on the TRW

Advantages of the San Diego/Tijuana area:

- Population
- Manufacturing center
- Diversity
- Strong economies
- Tourism dollars
- Demographics-over 5 million people in the region
- Dynamics of the two cities that do not exist anywhere else along the U.S.-Mexican border

Attachment C-Academic References


Attachment D-General Reference

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**Autor:** David J. Eaton, David Hurlbut.
**Editor:** U.S.- Mexican policy Studies Program
**Año:** 1992
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**Autor:** José Luis Trava Manzanilla, Jesús Roman Calleros, Francisco A. Bernal R.
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**Editor:** COLEF
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**Autor:** Roberto Sánchez Rodríguez
**Editor:** COLEF
**Año:** 1990
**Área General:** Medio Ambiente
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