

Appendix U14

Borders

Appendix U14 Contents

Introduction

Existing Plans and Programs

Key Issues

- Access to Jobs and Housing

- Transportation

- Energy and Water

- Environment

- Habitat

- Watersheds & Water Quality

- Air Quality

- Economic Development

- Border Security and Military

- Protecting Regional Infrastructure

Borders

Introduction

The San Diego region's borders have traditionally been thought of as limited to the jurisdictional boundaries of San Diego county; however, over the years, our perceived borders have expanded. San Diego county increasingly has close ties to its neighboring counties; the Republic of Mexico, and the 18 tribal governments which are sovereign nations within our region. For this reason, SANDAG created the Borders Committee in 2001 to bring together elected officials and representatives from San Diego, Orange, Riverside, and Imperial counties, the Southern California Tribal Chairmen's Association, and Mexico, in order to address joint challenges and opportunities related to regional planning.

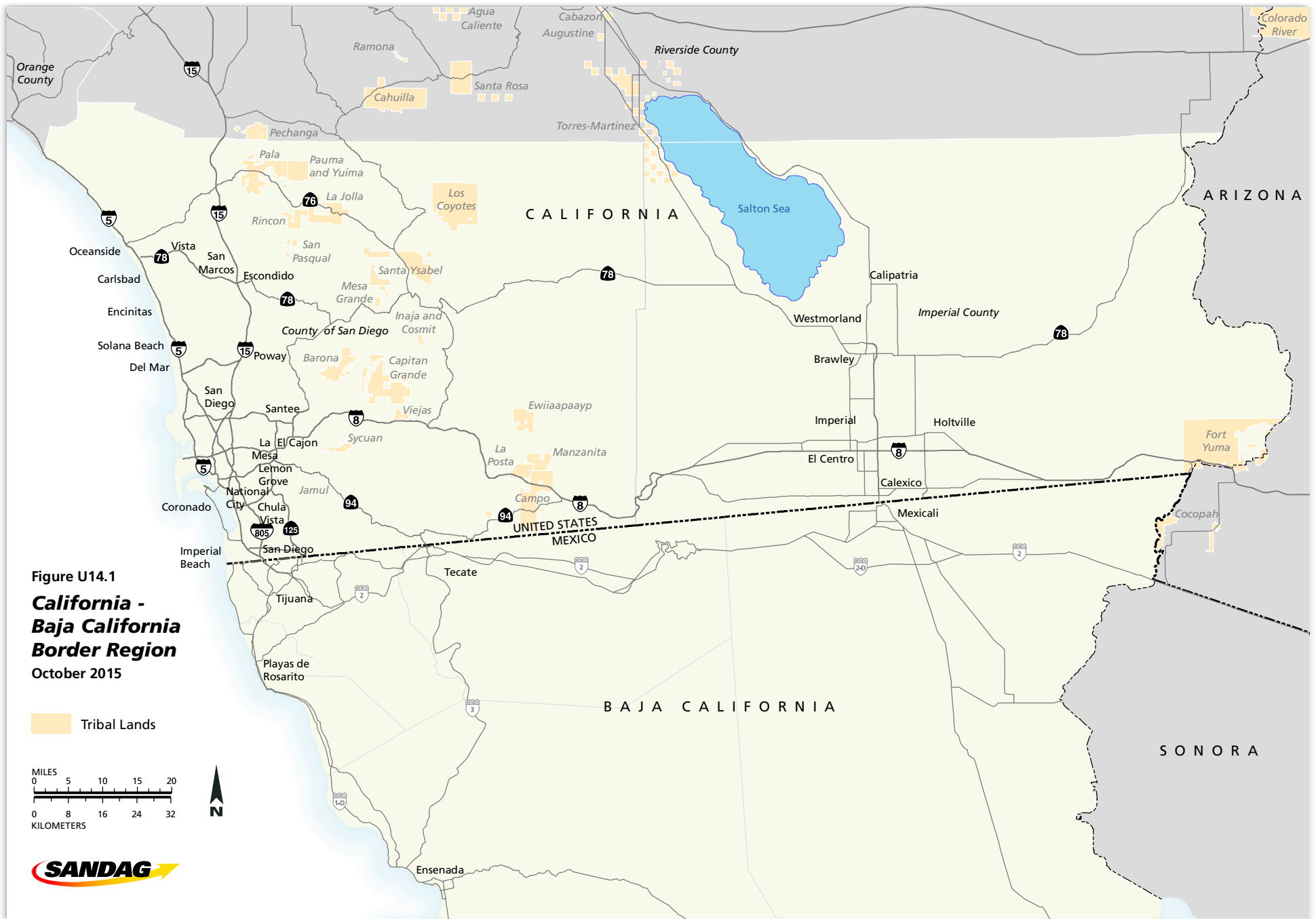
SANDAG and partner agencies collaborate within a geographic area that encompasses San Diego, Orange, Riverside, and Imperial counties, the 18 sovereign tribal nations, and the Tijuana-Tecate-Playas de Rosarito metropolitan zone in northern Baja California.

This focus on collaboration across jurisdictions, and even international boundaries, is consistent with the growing trend of the megaregion, which groups metropolitan zones into a combined geographical area based on interdependent relationships. Megaregions are characterized as a network of urban clusters and their surrounding areas, connected by the existing economic, social and infrastructure relationships, which are characteristic of the binational San Diego-northern Baja California region. Developing and marketing megaregions is an emerging approach not only to allow for a coordinated methodology to implement effective planning on an extended geographical scale, but also for increasing and leveraging the global competitiveness of a greater metropolitan area.

The San Diego region has been included in the California megaregion, which consists of five important metropolitan areas in terms of freight movement (Los Angeles/Long Beach, Sacramento, San Diego, and San Francisco/San Jose (Bay Area) in California as well as Las Vegas, Nevada). The four Californian metropolitan centers are located on or nearby the I-5 corridor.¹

With the rise in the last several years in interregional and international commuting, goods movement and linked industries, the San Diego-northern Baja California region is not only an increasingly important and interdependent trade and commuting corridor, but it is also poised to become an important binational megaregion with a distinct global competitive advantage. In fact, the Cali-Baja Binational Megaregion Initiative encompasses the entire California – Baja California, Mexico border region (San Diego and Imperial counties and Baja California in Mexico) as a globally unique binational location for business investments.²

Through collaborative efforts, the Borders Committee tackles a number of significant issues facing the region and its neighbors. It provides oversight for planning activities that impact the borders of the San Diego region (Orange, Riverside and Imperial counties, and the Republic of Mexico) as well as government-to-government relations with tribal nations in San Diego county.



Crossborder

The activities of the Borders Committee are considered from three perspectives: (1) the binational perspective with relation to our international border with Mexico; (2) the interregional perspective regarding issues with our Orange, Riverside, and Imperial county neighbors; and (3) the perspective of government-to-government collaboration with tribes within San Diego county boundaries, which are part of the region but are also sovereign nations, and thereby best discussed in the Borders context. This Appendix focuses on these three perspectives in regards to specific current border-related issues.

In 2004, the Borders Committee identified six critical planning areas around which to focus its collaborative efforts: (1) jobs/housing accessibility; (2) transportation; (3) energy and water supply; (4) environment; (5) economic development; and (6) homeland security. These six issue areas serve as the focus of this Appendix. Subsequent focus areas added more recently include climate change collaboration, active transportation, and public health.

Existing Setting

The San Diego region occupies a unique geographic position. Our boundaries are defined by mountains, deserts, and the Pacific Ocean; as well as the growing counties of Orange, Riverside, and Imperial; and the U.S.-Mexico border. Within our boundaries, we also have 19 federally recognized Indian reservations represented by 18 sovereign tribal governments and several military installations including Marine bases, Camp Pendleton and Miramar, and Naval Base Coronado.

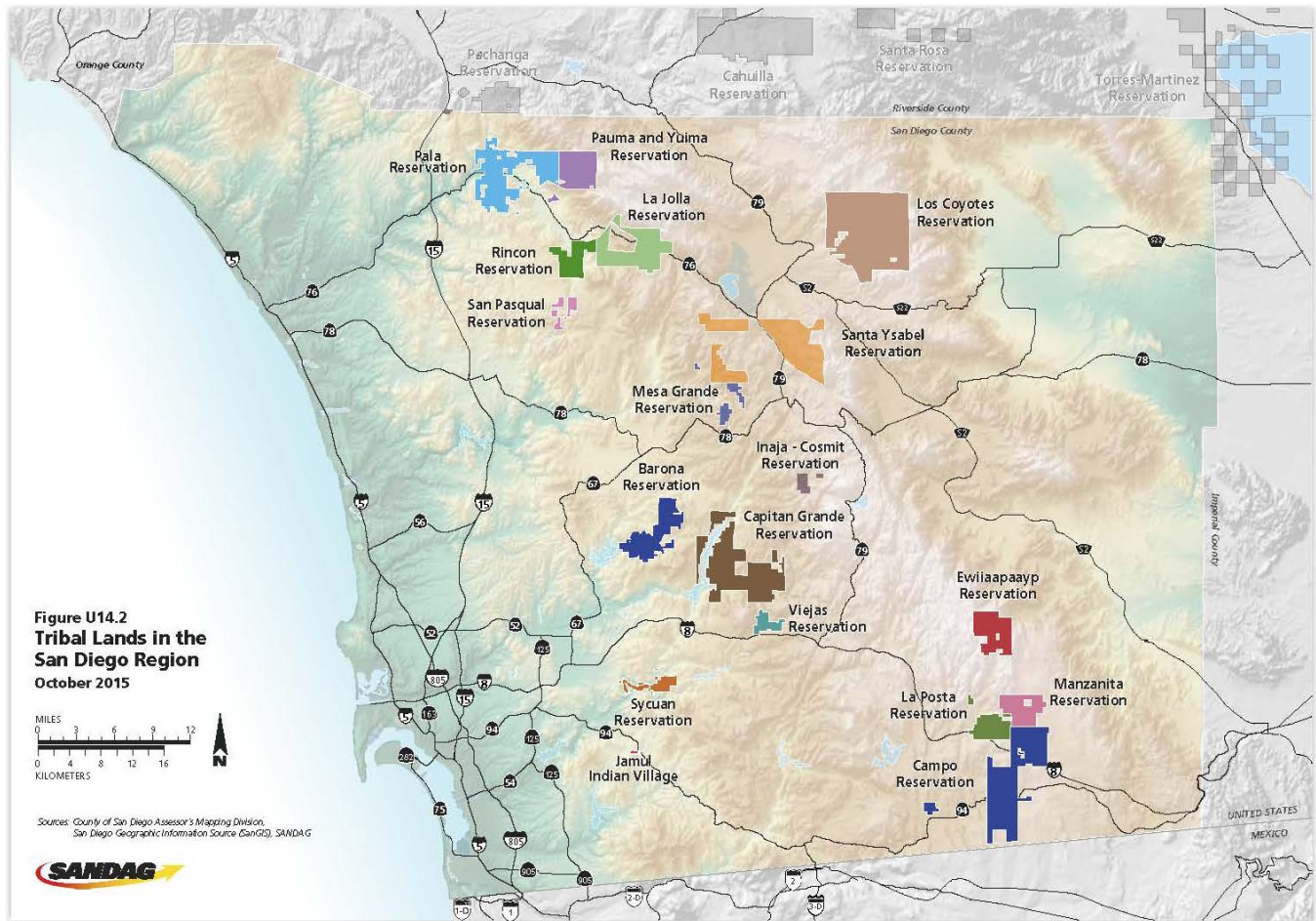
The region features diverse landscapes, politics, economics, languages, and culture. Therefore, it behooves us to make every effort to understand and consider not just our own future but also that of our geographic neighbors.

Binational perspective

Our regions are linked socially and economically, as demonstrated by the quantity of goods, services, and people that flow across our borders on a regular basis. Otay Mesa, our region's main commercial port of entry (POE), is the third busiest commercial crossing in trade value on the U.S.-Mexico border and ranks second for the greatest volume of truck crossings.³ The passenger POE at San Ysidro is the busiest international land POE on the U.S.-Mexico border, and one of the busiest in the world. In addition, the San Diego region imports up to 90 percent of its energy and approximately 80 percent of its water each year,⁴ and shares delivery systems for these resources with our neighbors to the north, east, and south. Therefore, infrastructure that crosses our boundaries, such as roadways, ports of entry, energy transmission lines, and water delivery systems, are issues of joint concern.

How we grow inevitably affects those around us, just as growth around us affects our region. Between 2000 and 2010, San Diego county's average annual population growth rate of 1.06 percent was similar to the U.S. national average of 0.92 percent and the Mexico national average of 1.4 percent. However, the growth rates in the Tijuana-Tecate-Playas de Rosarito Metropolitan Zone of Baja California were substantially higher.⁵

With a current combined border population of 6.3 million in San Diego and Imperial counties and the Tijuana, Tecate, Playas de Rosarito Metropolitan Zone and Mexicali in Baja California, the region is projected to add 1.3 million by 2030;⁶ our binational border region also faces a number of challenges. Among these challenges are the issues of long border crossing wait times, water quality and supply, energy supply, air quality, habitat preservation, natural disaster and emergency preparedness and response, and border enforcement. Since the terrorist events of September 11, 2001, crossborder issues have tended to be addressed with a heightened sensitivity to national security. Today, stakeholders on both sides of the border are collaborating to address these challenges in our border region in order to ensure a prosperous future by maintaining security at our international border, while still providing for the efficient flow of people and goods.



Source: SANDAG and Caltrans, 2014

Interregional perspective

How we grow inevitably affects those around us, just as growth around us affects our region. Between 2000 and 2010, San Diego and Orange counties' average annual population growth rates were similar to the U.S. national average of 0.92 percent. However, the growth rates in Riverside and Imperial counties were substantially higher.⁷

This growth increases the demand for local and imported resources, such as water and energy; creates a need for more infrastructures, such as housing and roadways; and places increasing pressure upon the natural environment. How we plan to meet these demands will affect those around us, and vice-versa. Coordinated interregional and intergovernmental planning is needed to alleviate potential conflicts, promote collaborative solutions, and protect the overall quality of life in our region.

Tribal perspective

The region is home to 19 Native American reservations represented by 18 tribal governments,⁸ the most in any county in the United States. Reservations have generally been established by Executive Order, and most of the land within the boundaries of reservations is owned by tribes and held in trust by the federal government. Native American reservations currently cover more than 116,000 acres, or approximately 4 percent of the region's land. Four tribal groupings make up the indigenous peoples of San Diego county: (1) the Kumeyaay/Diegueño, (2) the Luiseño, (3) the Cupeño, and (4) the Cahuilla.

The U.S. Constitution and treaties recognize Native American communities as separate and independent political communities within the territorial boundaries of the United States. Tribes are subject to federal regulations, but are not subject to local or state regulations, unless the U.S. Congress delegates implementation of federal law to the

state. Tribal governments operate much like those of local jurisdictions. In addition to the standard governmental functions of regulating, taxing, and delivering services, tribal governments act to preserve and protect tribal culture and the tribal community. Tribal governments are also responsible for the development, management, and operation of tribal economic enterprises.⁹

A number of planning issues surround these reservations. Reservations in San Diego county are typically in remote areas. Inadequate access to and from the reservations often results in a lack of employment opportunities, as well as insufficient health, social, and cultural services. In the 1990s, 14 of the tribes developed agreements to develop gaming facilities as a means of economic development. Today, eight tribes have functioning gaming facilities, giving San Diego county the greatest number of Indian gaming facilities in California. Gaming-related and other types of development have led to rapid economic growth for these tribes while also providing jobs and stimulating the regional economy. This growth has been accompanied by increases in traffic, jobs-housing accessibility issues, and the need for additional resources such as water and energy. Those tribes that do not have gaming facilities continue to have economic development, transportation, and infrastructure needs. Over the past ten years, SANDAG has developed a government-to-government framework for working with the region's tribal nations through a successful partnership approach. The tribal nations in the region have been actively involved in the last three cycles of the Regional Transportation Plan with their most intensive involvement in San Diego Forward (Appendix G: Tribal Consultation details the process for San Diego Forward).

Existing Plans and Programs

The SANDAG Binational, Interregional Collaboration and Planning, and the Tribal Liaison programs address important binational, intergovernmental, and interregional issues such as transportation infrastructure, economic development, and environmental planning and preservation.

The Borders Committee provides policy direction for planning activities that affect all the borders of the San Diego region (Orange, Riverside, and Imperial counties, Baja California, Mexico, and tribal nations). It advises the SANDAG Board of Directors on major interregional planning and policy matters and oversees two working groups: (1) the Committee on Binational Regional Opportunities (COBRO); and (2) the Interagency Technical Working Group on Tribal Transportation Issues.

Binational collaboration and planning

The SANDAG binational collaboration and planning program calls on a wide array of experts in this region to provide advice on important binational topics. COBRO serves as a working group to support the SANDAG Borders Committee and makes recommendations for actions by appropriate agencies. COBRO brings together representatives from cities, government agencies, businesses, academia, and other organizations located on both sides of the U.S.-Mexico border and is the region's only government-sponsored public advisory committee that is addressing the binational community since 1996. Following recommendations from the Borders Committee and input from COBRO, the SANDAG Board of Directors, and the Tijuana City Council, approved the Otay Mesa-Mesa de Otay Binational Corridor Strategic Plan(Plan) ¹⁰ in 2007. The Plan created a process for collaboration and established a framework for planning in the border region and resulted in a number of joint initiatives, including an annual joint meeting of the Borders Committee, COBRO, and the City of Tijuana. In more recent years, the annual joint meeting has expanded to include the municipalities of Tecate, Playas de Rosarito, and the State of Baja California. The City of Tijuana and the State of Baja California also have offices at SANDAG in order to better coordinate activities.

SANDAG works with many other public agencies, private organizations, and institutions (beyond COBRO) to address crossborder issues in a comprehensive manner. They include:

- Business organizations such as local chambers of commerce and economic development corporations.
- Academic institutions such as: California State University San Marcos; San Diego State University (SDSU); University of California San Diego (UC San Diego); University of San Diego (USD); Centro de Enseñanza Técnica y Superior (CETYS); Centro de Investigación Científica y de Educación Superior de Ensenada (CICESE); El Colegio de la Frontera Norte (COLEF); Universidad Autónoma de Baja California (UABC); and Universidad Iberoamericana (UIA).
- Public policy research centers such as: the Center for U.S.-Mexican Studies (UC San Diego); Institute of the Americas; Institute for Regional Studies of the Californias (SDSU); and Trans-border Institute (USD); as well as non-profit organizations such as the International Community Foundation (ICF), and the San Diego – Tijuana Smart Border Coalition.
- Multisectoral crossborder initiatives such as: Border 2020; the Smart Border Coalition; Tijuana Innovadora; the Binational Tijuana Watershed Advisory Council (BWAC); and the Tijuana River Valley Recovery Team.
- Local Consuls General offices of Mexico and the United States, which have played an important role in facilitating federal participation in important crossborder initiatives.

Many other community-based, environmental, and issue-specific entities are also engaged in crossborder collaboration and problem solving.

Transportation infrastructure in the border region is critical to both Mexico and the United States. SANDAG coordinates a number of comprehensive planning efforts to improve U.S.-Mexico border transportation and infrastructure. Border-related transportation projects are included in the Transportation section of this Appendix.

Other crossborder efforts include plans and policies to improve water quality and supply, develop and expand energy resources, and protect marine and terrestrial habitats.

Innovative leadership among governments, agencies, and other stakeholders in northern Baja California and Southern California has helped improve transportation infrastructure, enhance economic competitiveness, and work toward a more sustainable environment for the region.

Interregional collaboration planning

The Borders Committee includes Imperial county as a voting member, and Orange and Riverside counties as advisory members. In 2010, the Board of Directors approved the Southern California Association of Governments (SCAG) as the newest advisory member of the Borders Committee. The neighboring counties of Orange and Riverside are two of the six counties included in SCAG. SANDAG coordinates with these counties on regional transportation, land use, and environmental issues to explore opportunities for collaboration.

One of SANDAG's model interregional programs is the Interstate 15 (I-15) Interregional Partnership (IRP). The IRP was a voluntary partnership among elected officials representing communities along I-15 formed in 2002. Three regional government agencies (SANDAG, SCAG, and the Western Riverside Council of Governments [WRCOG]) met for several years to address the jobs/housing imbalance that caused increasing traffic congestion between San Diego and Riverside counties. The IRP successfully competed for funding from the California Department of Housing and Community Development (HCD), as well as Caltrans, to study the situation and develop a set of interregional strategies to address it.

The I-15 IRP model has influenced other collaborative interregional planning efforts including the Otay Mesa-Mesa de Otay Binational Corridor Strategic Plan (Strategic Plan) that follows similar principles to the I-15 IRP as it focuses on planning and effective collaboration related to four key issue areas: (1) transportation; (2) economic development; (3) housing; and (4) environmental conservation.

Tribal collaboration and planning

As tribal reservations continue to develop and interregional planning issues become more related to surrounding jurisdictions rather than only to federal and state agencies, the need for establishing a government-to-government framework at a regional level became increasingly apparent. Tribes operate under independent constitutions, have their own systems of governance, and establish and administer their own laws. This sovereign status of tribal governments dictates that the United States and all agencies operating within it are expected to engage in government-to-government relationships with Native American tribes. Government-to-government interaction with Native American tribes should follow the principles of coordination, cooperation, and consultation.

Over the past ten years, SANDAG and the SCTCA have developed a government-to-government framework to engage in planning dialogue and action at the regional level. The success of this model has demonstrated that by working collaboratively, public agencies and tribal governments can create a mechanism for timely, meaningful, and effective involvement of tribal governments in the regional and transportation planning process.

The core of the framework is an ongoing dialogue among key stakeholders at the regional level. Today, all three principal transportation planning agencies in the region have tribal liaisons: (1) SANDAG; (2) Caltrans; and (3) the county of San Diego. Intertribal organizations play a key role as facilitators for this regional government-to-government framework. SANDAG has a strong working relationship with two key intertribal associations: (1) the Southern California Tribal Chairmen's Association (SCTCA); and (2) the Reservation Transportation Authority (RTA).

It is through the Borders Committee that SANDAG has been pursuing government-to-government relations with tribal governments in the region. In 2005, the SCTCA joined the Borders Committee as an intertribal council of governments to engage in a dialogue on tribal planning issues. Following the 2006 San Diego Regional Tribal Summit, the SCTCA and SANDAG signed a historic Memorandum of Understanding (MOU) in which the SCTCA joined SANDAG with representatives on the Board of Directors and all Policy Advisory Committees. Tribal leaders are now part of the regional decision-making process at a policy level, offering a tribal perspective to complex regional issues.

At a technical level, the Interagency Technical Working Group on Tribal Transportation Issues was formed to serve as a forum for tribal governments in the region to discuss and coordinate transportation issues of mutual concern with the various public planning agencies in the region, including SANDAG, Caltrans, the county of San Diego, and the transit operators. In partnership with the RTA, the Working Group monitors and provides input on the implementation of the strategies and planning activities related to transportation, which were mutually developed through the 2006 San Diego Regional Tribal Summit and reviewed and revised at each subsequent Summit (2010 and 2014).

For the last ten years, the principal area of consultation and collaboration with tribal nations at the regional level has been in tribal transportation; however, through the process of developing San Diego Forward: The Regional Plan (Regional Plan), SANDAG and the tribal nations have been exploring other policy areas of mutual interest that coincide with the borders framework.

Key issues

Access to Jobs and Housing

The growth projected for the San Diego region over the next 35 years is a function of economic expansion and job creation, a continued influx of people moving to the area, and natural population growth within the area. However, home construction in the San Diego region has not kept pace with population growth. Building permit issuance has fallen from nearly 20,000 units in 2003, to just over 5,000 units in 2011. While 138,500 new housing units were built in San Diego county between 1990 and 1999, and another 138,000 were built between 2000 and 2009, only about 2,700 were built between 2010 and 2012, most of which are apartment units, as opposed to for-sale housing, thereby limiting the availability of housing choices in all price ranges.¹¹

Consequently, housing prices have risen, making home ownership difficult for much of the population. The median house value in San Diego has grown 93.82 percent since 2000, while median household income has only grown by 28 percent.¹² As of the third quarter of 2013, only 27 percent of homes sold in San Diego county were affordable to a family earning the median annual income of \$60,330.¹³ As a result, many people who are employed in the region have moved to neighboring regions, including southwestern Riverside county, Imperial county, and Baja California, in search of homeownership.

According to SANDAG's Regional Housing Needs Assessment for 2010-2020, the pace of residential building permits in San Diego county over the last five years is about half of what the region now needs each year in order to adequately supply housing for the growing population. If we continue to build homes at a slower pace than we add people, interregional commuting is likely to increase. This imbalance will result in the worsening of four trends we see in the region today: (1) high housing costs; (2) low vacancy rates; (3) more persons per household ("doubling up"); and (4) an increase in long-distance interregional commuting by the region's employees who seek less expensive housing in surrounding areas. Census data from 1990 and 2000 indicate that the number of people commuting from Riverside county almost tripled in the last decade and a more recent survey found the flow of interregional commuters to be increasing steadily.

Long-distance commuting, both interregional and from within the region, puts a tremendous strain on our roads, freeways, infrastructure, and personal lives. Seventy-six percent of workers in San Diego county drove to work alone in 2012, and this number has remained relatively stable since 2006. In addition, 5 percent of commuters in San Diego county are estimated to commute from outside of the region.¹⁴ While some amount of interregional commuting will always occur, providing additional housing capacity in key locations within the more urbanized areas of the region could assist in reducing the projected increases in interregional commuting and provide more housing and transportation choices to our residents.

Binational perspective - jobs/housing

While it is well known that many Mexican residents cross the border on a daily basis to work, recreate, shop, and attend schools, it is less well known that many Americans also reside in Mexico and cross the border daily for these same purposes. Based on a demographic estimate from El Colegio de la Frontera Norte from a decade ago, 50,000 to 60,000 U.S. legal residents live in Tijuana alone. Between 2011 and 2013, an average of over 28 million U.S. citizens crossed the border from Mexico into the San Diego region annually through the San Ysidro and Otay Mesa POEs.¹⁵ According to the SANDAG 2011 Crossborder Travel Behavior Survey, of Baja California residents crossing into the United States through one of the three POEs in the San Diego region, 26 percent of respondents indicated the primary reason for crossing the border was for work. This binational housing and job market relationship places daily pressure upon the border ports of entry and its related infrastructure; commute times can be long and unpredictable.

Although the population growth rate for the northern coastal urban areas of Baja California has slowed down (it dropped from 5.8 percent between 1990 and 1995 to 2 percent from 2005 to 2010), Tijuana's population is expected to reach over 2 million by the year 2030, a 33 percent increase from its current population of over 1.5 million people.¹⁶

The housing deficit in Tijuana has been met by self-constructed houses for many decades. However, the current housing demand in that city is overwhelming existing capacity and this situation is causing sprawl and an overflow of self-constructed housing that is sometimes unregulated and crops up along the eastern edges of the city. This type of growth can be challenging to human health and affect open space preservation, public safety, and a myriad of other issues. Given the need to expedite the process of building new housing units, the City of Tijuana and the National Chamber of Housing Promotion (*Cámara Nacional de la Industria de Desarrollo y Promoción de Vivienda* or CANADEVI in Spanish) agreed in early 2014 to promote the modernization of outdated municipal building regulations, which inhibit new construction. The agreement should be ratified by the Committee on Housing Development in order to expedite the government's goal to build 12,000 new homes in Tijuana in 2014. This is parallel to new federal policies implemented by the new Secretariat of Agrarian, Territorial and Urban Development (*Secretaría de Desarrollo Agrario, Territorial y Urbano* or SEDATU in Spanish) that are intended to reorganize urban development into more dense and compact areas.

Housing costs have a significant impact on daily mobility. The average market value of a single-family home in Tijuana in 2013 was 1,089,286 pesos or roughly 83,200 U.S. dollars.¹⁷ Compare this to a median priced home in San Diego in 2014 of \$440,000,¹⁸ and it becomes obvious why many would choose to live south of the border and commute to their jobs in the United States. This disparity is a factor of the overall national economy of each country and will not likely be resolved in the near future.

Similar to the partnership created with southwestern Riverside county, a partnership could be developed with authorities in Mexico, to address the issues surrounding jobs and housing accessibility in the binational region.

Interregional perspective - jobs/housing

Access to jobs and housing between San Diego and its neighboring counties continues to be an important issue related to the cost of living and quality of life. Although housing is generally more affordable in Riverside and Imperial counties than in San Diego county, the higher transportation costs due to long commuting distances impact the actual cost of living. Other related impacts include increased emissions of air pollutants and greenhouse gases which cause human health effects and can adversely affect water quality and habitat, further diminishing the overall quality of life in the region.

Interregional planning efforts (like the I-15 IRP) focused on the more active interregional I-15 corridor and have resulted in increased accessibility between San Diego and Riverside counties. The IRP developed and implemented a number of short- and long-term strategies in the areas of transportation, economic development, and housing, designed to increase housing opportunities in job-rich areas, promote job creation in housing-rich areas, and reduce traffic congestion. The Riverside county Transportation Commission (RCTC) recently constructed one high occupancy vehicle (HOV) lane in each direction in western Riverside county along I-15 between I-215 and State Route 74 (SR 74). In addition, the I-15 IRP led to the creation of a preliminary Smart Growth Concept Map for selected cities in southwestern Riverside county modeled after the SANDAG Smart Growth Concept Map. These planning efforts aim to increase jobs and housing access and are part of a long-term strategic plan to address job accessibility in southwestern Riverside county. A study conducted by the I-15 Interregional Partnership observes that:

“Increasing numbers of long distance commuters — generated by land use decisions — will have serious impacts on transportation, our environment, and general quality of life. Increased air pollution, increased stress in commuting, and decreased leisure time reduce the quality of life in an area where many residents must commute long distances by automobile. For many, a jobs-housing imbalance means they cannot choose to live near where they work.”¹⁹

Although interregional trips increased in the early 2000s, the number of trips between San Diego county and its neighboring counties remained stable from 2005 to 2012. Transportation systems in the San Diego region are showing stable traffic volumes in the northern region of San Diego along the I-15 corridor. According to Caltrans, there were 137,000 average daily highway vehicle trips along the stretch of I-15 connecting the two regions in 2014.²⁰ The I-15 Managed Lanes completed in the San Diego region have reduced delays and helped optimize the overall capacity of the I-15 corridor, improving access between San Diego and Riverside counties. In addition, commuter buses from Murrieta/Temecula – provided by the Riverside Transit Agency (RTA) – and SANDAG-sponsored vanpools provide alternative options for commuters from Riverside county to employment destinations in San Diego county.

Tribal government perspective - jobs/housing

The tribal gaming facilities are now major employers in the region, yet their involvement in the region’s commuter services program (iCommute) is limited. In the I-8 corridor, Barona, Campo, Sycuan, and Viejas, have approximately 6,000 total employees. In the SR 76 corridor, Pala, Pauma, Rincon, and San Pasqual have a total of almost 5,000 employees. It is estimated that each gaming facility attracts a daily count of anywhere from 6,000 to 12,000 guests. The tribal governments invest extensively in the San Diego region. Statistics show that the Indian gaming industry, as a whole, purchases approximately \$263 million in goods and services annually. Although many tribal members now live on the reservations, non-tribal employees travel from all over the region and other counties, including Riverside, Imperial, and Orange counties, to jobs on the reservations. These commutes would be considered ‘reverse’ commutes as urban residents are travelling to rural employment opportunities.

SANDAG, and the Reservation Transportation Authority, led two transportation planning efforts to address this reverse commute issue. The first was a study to determine the critical transit connections needed. The Tribal Transit Feasibility Study (2008) provided the technical basis for the Working Group to pursue funding to implement its recommendations. The RTA has applied successfully from FY 2007, to the present, for approximately \$2.1 million in operating funds. Although the RTA received the highest level of funding for each cycle as a consortium, the awards were significantly less than the total project costs to fund the entire plan. The Working Group discussed the options available and decided to focus the funds on supporting an enhanced service of one of the North county Transit District (NCTD) routes (388/389) which runs from the Escondido Transit Center through Valley Center to Pala to create an express portion of the route that would run on the I-15 corridor from the Escondido Transit Center to Pala, completing a service loop and permitting those on the SR 76 corridor to take an express bus to and from the Escondido Transit Center.

In addition to the operating funds provided by the FTA Tribal Transit Program, the RTA received a \$1.2 million capital improvement grant in FY 2009 under the American Recovery and Reinvestment Act of 2009. The RTA, in coordination with Caltrans, NCTD, Metropolitan Transit System, and SANDAG, constructed a bus stop at the Park-and-Ride at I-15 and SR 76. In addition, the RTA made enhancements to bus stops along rural routes (864, 888, 891, 892, and 894). Enhancements included replacing or installing bus stop signs or poles, installing solar lights, and adding new stops.

The second project was in Transportation Demand Management. Several years ago, SANDAG, the RTA, and the SCTCA collaborated on an assessment of the needs of tribal employers and developed a strategy to meet their needs, and SANDAG assisted the RTA in developing a business/marketing plan for establishing a Tribal Transportation Management Association (TMA) that would collaborate with the SANDAG iCommute Program. The tribal TMA, a private, nonprofit, member-controlled organization would provide the institutional framework for the recommended TDM programs and services that were developed as a result of the study. Six tribal enterprises participated in the study and completed commute surveys in their facilities, including: (1) Pala, (2) Pauma, (3) Rincon, (4) Viejas, (4) Sycuan, and (5) Santa Ysabel. This area of transportation continues to have tremendous potential.

Transportation

Regional transportation facilities and services connect to larger transportation systems beyond the San Diego region's boundaries. These connections have become more important with the rise in both interregional and international commuting and goods movement in the last several years.

San Diego and the rest of Southern California are home to major U.S.-Mexico trade corridors where goods pass through the region on their way to markets throughout the country and the world. Our transportation systems are also greatly affected by interregional commuting patterns and general travel.

As growth continues in this region and the surrounding areas, maintaining major transportation systems will be an even greater challenge. To address these issues, SANDAG periodically develops and updates a Regional Transportation Plan, which is the blueprint for addressing the San Diego region's travel needs through the year 2050, including highway improvements, transit, bike, and pedestrian paths, all working together to increase our mobility.

An estimated 39,000 Riverside county residents commute to San Diego jobs using I-15.²¹ The U.S. Census Bureau lists the Riverside county-to-San Diego drive as one of the top "mega commutes," with an average driving time of 1 hour, 42 minutes. The San Diego region completed 20 miles of Express Lanes on I-15 between SR 163 in San Diego, and SR 78 in Escondido. The Riverside county Transportation Commission proposes the addition of freeway lanes. The Southern California Association of Governments (SCAG) (the regional planning agency in the Los Angeles region) proposes safety, speed, and capacity improvements to the Los Angeles-San Diego-San Luis Obispo (LOSSAN) corridor; the California High-Speed Rail Authority proposes high-speed rail services connecting the San Diego region to a state-wide high speed rail system.

Binational perspective - transportation

The main formal mechanism through which binational transportation planning is coordinated by California and Baja California is the California-Baja California Border Master Plan (BMP). The California-Baja California BMP is a bilateral effort to collaborate on the planning and delivery of projects at land port of entries and the transportation infrastructure serving them. Its "area of influence" includes San Diego and Imperial counties in California, and the municipalities of Tijuana, Tecate, Playas de Rosarito, parts of Mexicali, and the urban area of Ensenada in Baja California. The California Department of Transportation (Caltrans), in partnership with the Secretariat of Infrastructure and Urban Development of Baja California (*Secretaría de Infraestructura y Desarrollo Urbano del Estado de Baja California* or SIDUE in Spanish) and the U.S.-Mexico Joint Working Committee (JWC) led the development of this Plan in 2008, which was updated in 2014. Within this framework, short-, mid-, and long-term POE and transportation projects are analyzed and prioritized.

Figure U14.3
Planned New Ports of Entry (POE)



There are six existing international land POEs in our region connecting Baja California, Mexico to California through San Diego and Imperial counties, while a seventh is planned at Otay Mesa East and a crossborder passenger connection to the Tijuana International Airport has begun construction (as shown in Figure U14.3). These international POEs accommodate millions of crossings every year, including pedestrians, personal vehicles, buses, and trucks and trains carrying cargo. To accommodate the dynamic border transportation system and keep pace with population and trade growth and binational commuting, projects are underway to improve access to border crossings, improve POE connectivity with transit and active transportation networks, expand border crossing infrastructure, improve freight rail service, increase the efficiency of commercial vehicle crossings, and continue to expand programs such as the Secure Electronic Network for Travelers Rapid Inspection (SENTRI), Global Entry, Customs-Trade Partnership Against Terrorism (C-TPAT), and Free and Secure Trade (FAST) that expedite border crossings for pre-screened participants and for cargo.

Ports of Entry and Related Infrastructure

In 2014, more than 47.5 million individuals and 19 million vehicles crossed the border northbound into our region from Mexico to the United States through the three POEs between San Diego and Baja California; that breaks down to approximately 122,500 individuals and 52,700 vehicles crossing northbound every day.²² The physical infrastructure and administrative resources at existing border POEs are already strained. Anticipated increases in population growth, and international trade, will place even greater pressures on the existing infrastructure.

San Ysidro POE

The U.S. General Services Administration (GSA) is executing a major expansion and reconfiguration project to improve the San Ysidro POE, which is the busiest POE in the region, and one of the busiest in the world. The San Ysidro POE handled an estimated 59 million bidirectional crossings in 2014.²³ As shown in Figure U14.4, the reconfiguration project calls for north and southbound capacity improvements for vehicles and pedestrians, including primary booths, a secondary inspection area, administration space, and pedestrian processing facilities on the existing eastern side of the port, and the addition of a western facility at Virginia Avenue (Ped West). Improvements to southbound capacity also are part of the project. When completed, the POE will increase its capacity from 24 to 34 northbound lanes, with a total of 63 inspection booths. The number of northbound pedestrian lanes will increase from 13 to 22 lanes on the eastern side of the POE. In addition, there is a temporary connection of the I-5 with the El Chaparral POE on the

Mexican side. When the realignment of I-5 is complete, it will terminate at Camino de la Plaza to provide direct access to Virginia Avenue on the U.S. side, and will increase the number of southbound vehicle lanes from five to ten, as well as ten new northbound and two reversible pedestrian processing lanes. Once the expansion project is complete, the increased capacity is projected to reduce the long border crossing delays at this POE.

GSA also will implement a new intermodal transit center at Virginia Avenue. The current concept envisions a transit center that will be able to accommodate taxis, buses, jitneys, pedicabs, and private vehicles dropping off and picking up passengers. The future Virginia Avenue Transit Center will be located on the west side of the pedestrian bridge and will connect travelers to the San Ysidro Blue Line Trolley station. This \$8 million project is jointly funded by GSA and Caltrans using Coordinated Border Infrastructure program funds administered by the Federal Highway Administration. The facility is a collaborative effort that involves the federal government, Caltrans, the City of San Diego, MTS, and SANDAG.²⁴

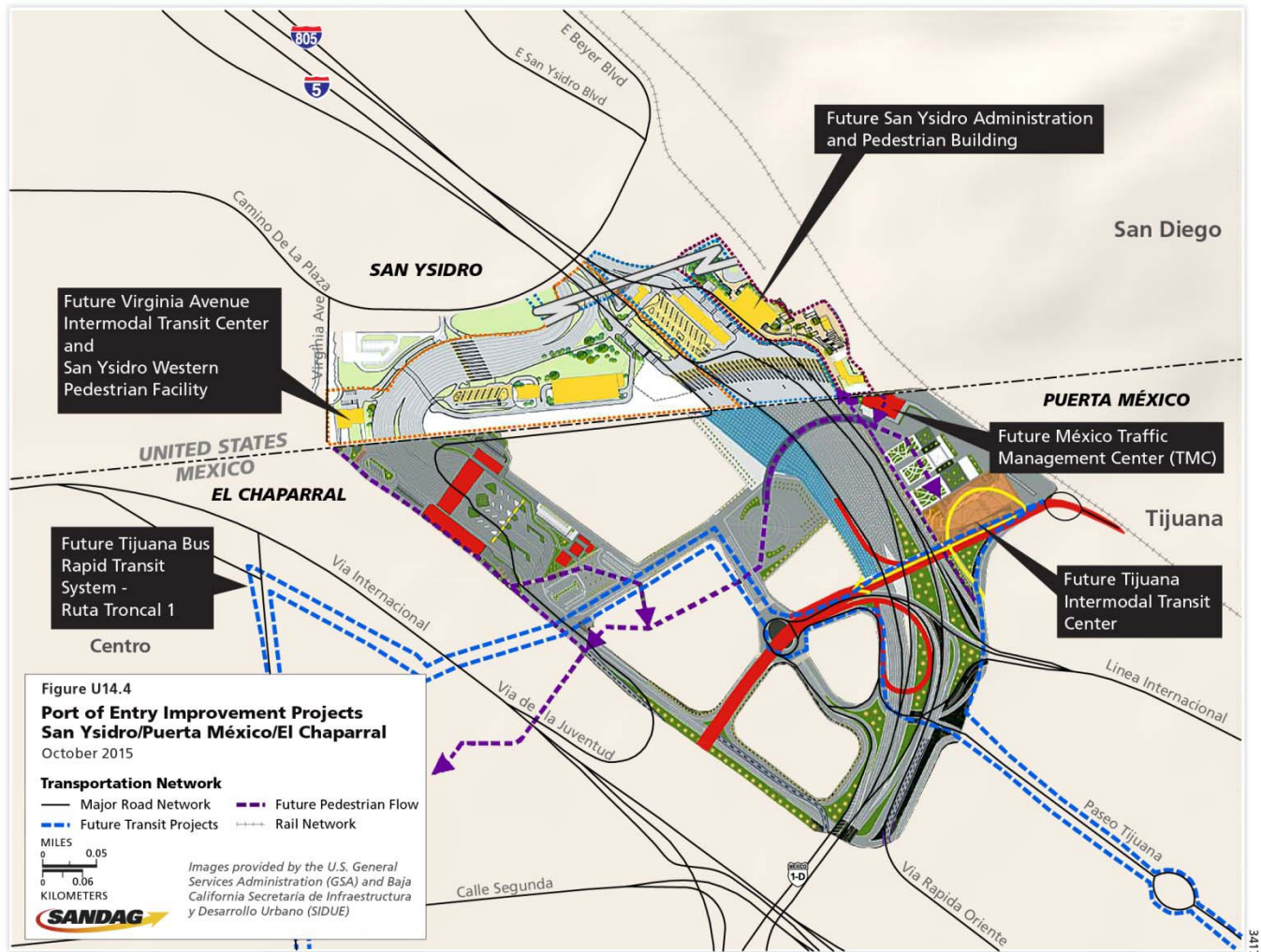
Otay Mesa POE

Similar to the pressures on the busy San Ysidro POE, the number of commercial crossings at the Otay Mesa POE is staggering. In 2014, more than 810,000 trucks passed northbound through the port, which is historically the highest level of commercial crossings.²⁵

The increase in commercial truck traffic since 1995 is related to the implementation of the North American Free Trade Agreement (NAFTA), which has spurred substantial growth in trade between California and Mexico. Mexico has become California's number one export market, purchasing nearly \$25.5 billion of California exports in 2014.²⁶ Similarly, imports from Mexico to California have increased dramatically. On a regional level, two-thirds of Baja California's exports are destined for the United States. In turn, San Diego is among the top ten U.S. exporters to Mexico. In 2014, over \$39 billion in goods moved between the United States and Mexico through the Otay Mesa and Tecate POEs alone, which is more than a 400 percent increase since the implementation of NAFTA.²⁷ The vast majority of total trade between California and Mexico is transported by trucks, thus placing an enormous strain not only on the commercial POEs, but also on local road and highway networks.

Local governments and authorities responsible for transportation infrastructure have begun to plan or construct new projects to link the ports of entry infrastructure with local transportation systems and trade corridors in order to facilitate continued growth in binational trade.

In April 2009, the Department of Homeland Security (DHS) was awarded approximately \$21.3 million of American Recovery and Reinvestment Act (ARRA) funds for some initial Otay Mesa POE modernization projects. These funds were used to cover the cost of land acquisition and a portion of the design for an expansion project, which would make improvements to both commercial and non-commercial portions of the existing port. In July 2009, the U.S. GSA awarded the Architecture and Engineering design contract for the Otay Mesa POE Modernization project. This began a design phase that reached 60 percent completion before funds were depleted. Completion of the Port's design, an Environmental Impact Statement for the project, and construction are subject to the availability of funding that has not yet been authorized by Congress. The upgrades are expected to cost \$120 million.



Source: Mexican Secretariat of Infrastructure and Urban Development (SIDUE) and U.S. General Services Administration, June 2014

Tecate POE

The Tecate Land POE in San Diego county is a multimodal inspection facility that provides service for pedestrians, passenger vehicles, buses, commercial vehicles, and freight rail (the rail line crosses at Campo, located east of the POE). Two rail projects, one on either side of the border, have been proposed to modernize and double-stack the crossborder rail line, which would increase the market potential of this route for international and interstate movement of goods (additional details can be found in the Multimodal Issues section). Mexico also plans to construct a new cargo POE, which would expand the cargo inspection facilities at the Tecate POE, as well as a new road to facilitate traffic to and from the POE. The POE is currently operational for pedestrian and passenger vehicle inspections on the U.S. side of the border for 18 hours a day, from 5 a.m. to 11 p.m. Efforts are underway to expand or adjust the hours of operation of pedestrian and passenger inspections at this POE in order to facilitate increased travel.

Future Jacumba POE

In 2000, SANDAG conducted a feasibility study for a new border crossing that would link Jacumba in San Diego county and Jacumé in the Municipality of Tecate, Mexico. This study recommended that California and Baja California government agencies continue planning and coordination efforts to identify and reserve right-of-way for inspection facilities and connecting roadways to allow for the development of a future POE. The Secretariat of Infrastructure and Urban Development (SIDUE), Baja California's state planning agency, also has considered this location for a future POE

in its long-range planning work to improve access for passenger vehicles and trucks that travel between Baja California and locations east of San Diego.

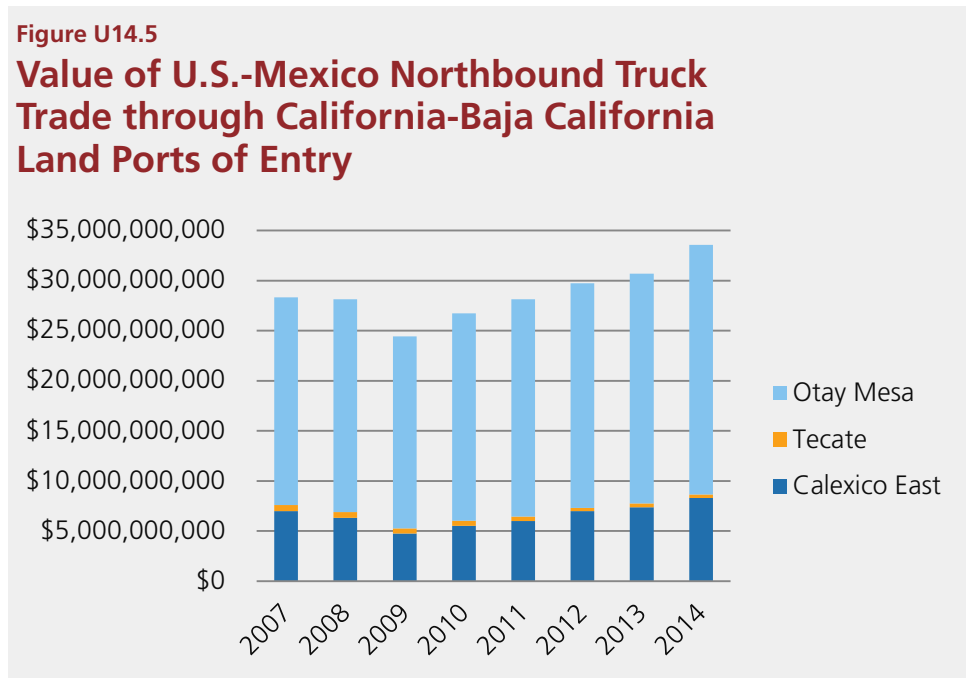
Future Otay Mesa East POE

The development of a new POE, Otay Mesa East (Mesa de Otay II on the Mexican side), is underway and will provide an alternate entry for vehicles and commercial traffic approximately two miles east of the existing Otay Mesa commercial crossing. Otay Mesa East will be linked to SR 905 and SR 125 through the construction of SR 11 toll road. This port will also connect to the Tijuana– Tecate toll road, and the Tijuana-Rosarito corridor, a highway in Baja California that connects the coastal area of Rosarito to the east of the Otay Mesa POE. SR 11 and the POE are anticipated to be open to traffic in late 2017. (See Figure U14.3)

As growth continues in this region and the surrounding areas, maintaining major transportation systems around our POEs will be an even greater challenge.

Key Trade Corridors

Improvements to our regional transportation infrastructure will strengthen trade corridors in the region. In 2014, more than 1.1 million trucks crossed northbound at the California-Baja California border, carrying more than \$30 billion in freight imports, as shown in Figure U14.5. A significant portion of freight that enters the California POEs from Mexico is destined for outside of the region; just over 10 percent of goods that enter San Diego county stay in the county, while the majority are headed for other counties in California, as well as other nearby border states, and even to states as far east as New York. Regarding goods that enter Imperial county, only about 1 percent stays there, while the rest is transported to other parts of California, the Midwest, or the East Coast.²⁸



Source: U.S. Department of Transportation, Bureau of Transportation Statistics, Transborder Surface Freight Data, 2015

Given the nationwide benefits of maintaining these key market entry routes and improving infrastructure for trade that flows through San Diego from Mexico, we need support from the State of California and the rest of the nation in securing funding for trade corridor infrastructure in the international border zone. These corridors include I-5, I-805, I-15 and SR 125 as the primary north-south corridors, and SR 94, I-8, SR 905, and the future SR 11 as the region’s east-west corridors.

The southbound truck route through these corridors is just as significant, since trucks crossing into Mexico through the San Diego region supply many of the components or raw materials needed for the thriving advanced manufacturing industry along the border. The Maquiladora Industry Program was established in Mexico in the mid-1960s to create jobs demanded by the increasing border population and to bring the Mexican national production system to the international market. Northern Baja California has developed competitive commercial and manufacturing industries that are linked to companies on the United States side of the border in San Diego and Imperial counties. This “in-bond” manufacturing industry takes advantage of complementary resources on both sides of the border in order to jointly produce goods – from automobiles and flat screen televisions, to medical instruments. Today, of the 5,050 maquiladoras in Mexico, more than 900 maquiladoras are in Baja California, 62 percent of which are located in Tijuana.²⁹ These depend on local transportation systems to move supplies quickly and efficiently. Maintaining efficient transportation systems to facilitate this movement of goods throughout the region is critical to continued economic growth locally and nationally.

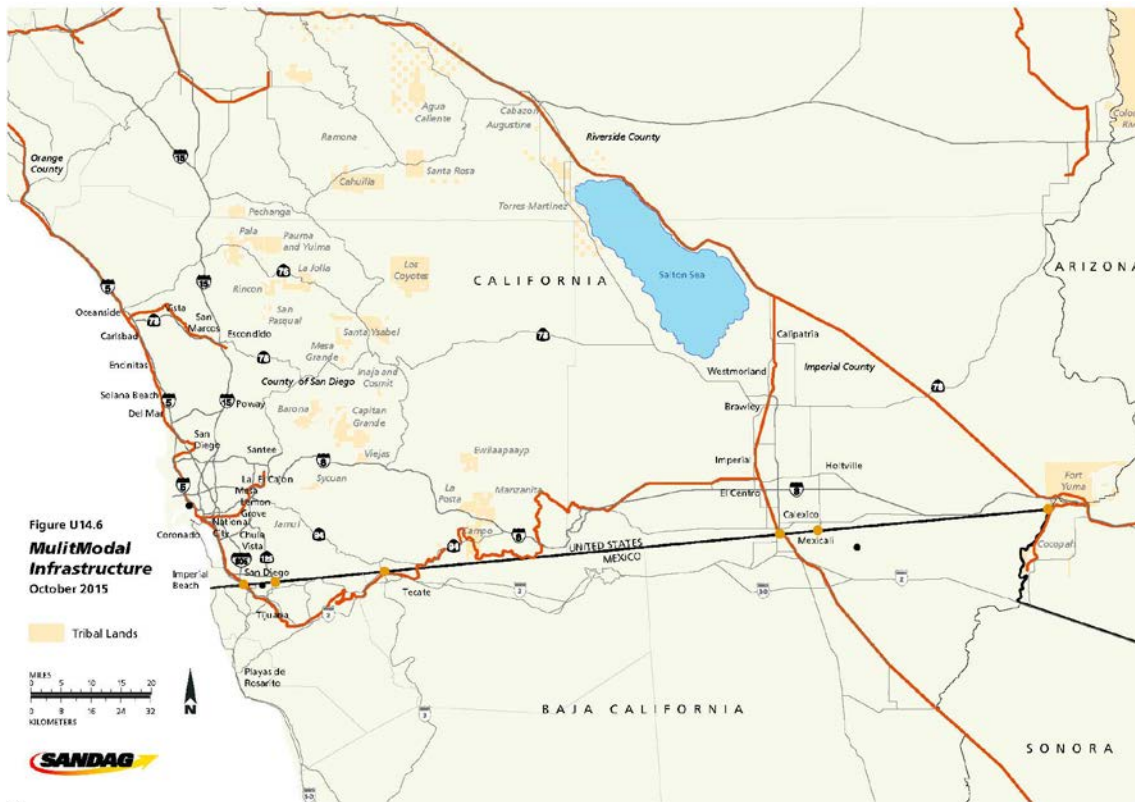
Multimodal Issues: Rail Freight, Maritime, and Airports

Significant opportunities for binational collaboration exist in the area of freight rail transportation along the California-Baja California border, as shown in Figure U14.6. The existing binational railroad, the San Diego & Arizona Eastern (SD&AE) Railway, runs southeast from San Diego into Tijuana and Tecate, and then into the Imperial Valley. The SD&AE links Tijuana and San Diego with the rest of the railroad networks in the eastern part of both countries. The “Desert Line” of the SD&AE runs from the international border between Tecate into Plaster City in the Imperial Valley where it joins the Union Pacific Railroad. The Desert Line was out of service from 1983 until 2004 when it was reopened. However, due to deteriorating conditions, the railroad ceased all revenue freight on the Desert Line in 2008. In December 2012, SD&AE entered into a 50-year operating lease for freight service with the Pacific Imperial Railroad (PIR) company. The lease requires that certain operating goals and repairs take place within a specific time frame. PIR’s reconstruction plan of the Desert Line segment of the railroad, which includes assessing the condition of 57 bridges, performing necessary repairs, and testing trains was approved by the Metropolitan Transit System (MTS), which owns the U.S. portions of the SD&AE lines, in August, 2014.

It is expected that rehabilitating and upgrading the eastern section (Desert Line) of the SD&AE will substantially improve the international and interstate movement of goods from this region, as well as provide greater access to agricultural products from the Imperial County by providing a much needed link for supply and finished products between the United States and Mexico.

In Mexico, the State of Baja California announced in September 2014 that there are plans to spend \$15 million in federal funds on rebuilding sections of the 44.4-mile Tijuana-Tecate Short Rail Line. Under a contract with the Baja California agency, Administradora de la Via Corta Tijuana-Tecate (ADMICARGA), Baja California Railroad has committed to invest \$20 million in repairs and upgrades to the line over the next five years. The rehabilitated Tijuana-Tecate line would carry passenger traffic, which is important for tourism, as well as commercial cargo; thereby, expanding Baja California’s ability to send goods across the border through rail.

It is anticipated that once the crossborder rail connection to the maquiladora industry in northern Baja California is reestablished, it will provide exporters an alternative to transporting goods by truck, which will in turn increase efficiency and relieve freight network congestion.



Maritime transportation at our local ports plays an important role in the region’s transportation system as well. The Ports of San Diego and Ensenada are vital links to national and international networks, moving millions of metric tons of cargo every year. The Ensenada Port expanded its Customs House in 2013, and is currently expanding its navigation areas. Its port gates are being modernized and are expected to be complete in 2015, and its Multiple Use Terminal II is being expanded, which is expected to be complete in 2016.³⁰

While the Port of San Diego also has expansion plans, its growth must occur within its fixed existing footprint. Given this restriction, its business plan includes terminal optimization, making the port more environmentally sustainable, and supporting the U.S. Department of Transportation’s America’s Marine Highway (AMH) Program, which is an initiative to divert truck traffic to move cargo by water instead, where market conditions favor such a diversion.³¹ In order to accommodate the growing trade from the Pacific Rim that is destined for the West Coast, the ports of Ensenada and San Diego work together to coordinate their respective strategic agendas. The two ports are also key partners in regards to cruise ship and recreational boating business. The economic impact of cruise ship business is substantial, generating \$1 million in local economic benefits when a cruise ship makes a port of call stop, and \$2 million for home port cruises.³² Part of any port’s ability to attract new cargo depends on the region’s ability to move those goods from the waterfront to destinations both within and outside of the region. Therefore, efficient transportation systems in the form of roadways, land POEs, railways, and air cargo facilities are key complements for a port’s successful growth.

Our region possesses an extensive system of private, commercial, and military airports; however, the regional passenger and cargo facilities are close to reaching their maximum capacity. The San Diego County Regional Airport Authority (Airport Authority) is responsible for planning to meet the future projected passenger and air cargo needs. The Airport Development Plan (ADP) is the master-plan for the San Diego International Airport and identifies improvements that will enable the airport to meet demand through 2035, which is when it is estimated that the airport’s single runway will reach capacity for passenger activity. The ADP aims to improve access to the airport,

develop terminal facilities to accommodate future demand, optimize the productive use of the airport property, and evaluate parking and ground access needs.

The City of San Diego operates Brown Field, which is a general aviation airport located 1.5 miles north of the U.S.-Mexico border in the community of Otay Mesa. This airport is classified as a reliever airport for San Diego International Airport (SAN), serving general aviation aircraft that might otherwise use the congested air carrier airport facility. In October 2012, the San Diego City Council approved the redevelopment of Brown Field. The project calls for building Metropolitan Airpark, a four-phase commercial development that will take place over the next 20 years will cover about 331 acres of the city-owned, 880-acre facility near the U.S.-Mexico border. The first phase calls for a 116,875-square-foot fixed-base operator facility for private aircraft, 10 large-aircraft hangars, 45 small-plane hangars and solar-powered storage and support facilities, with a restaurant and other commercial elements. The expansion project would improve and modernize airport operations and ensure that long-term aviation needs are met in the region.

In Baja California, the Tijuana and Mexicali airports have been partially privatized to improve operations, and these airports serve passengers from both sides of the border. In fact, approximately 4 million passengers use the Tijuana International Airport (TIJ) each year, and more than half of them cross the U.S.-Mexico border through land POEs. As part of the solution to strained regional air capacity and congested land POEs, a project is underway to build a crossborder airport facility between Tijuana and San Diego (Cross Border Xpress). The Cross Border Xpress project is led by a public-private partnership and would enable ticketed airline passengers who pay a toll to travel between TIJ and San Diego, California. The passengers will cross the border via an enclosed, elevated pedestrian bridge with two divided corridors to separate north- and southbound pedestrians. The Cross Border Xpress will consist of a main building in Otay Mesa on the U.S. side of the border housing U.S. Customs and Border Protection (CBP) inspection facilities, along with shops and services to accommodate travelers; an approximately 390-foot pedestrian bridge from the main building on the U.S. side connecting into TIJ's passenger terminal on the Mexican side; and parking facilities and areas for car rentals and potentially bus service on the U.S. side. TIJ's airport facilities are in the process of being renovated to accommodate the pedestrian bridge and build customs processing facilities. The Cross Border Xpress is expected to open in late 2015 and investors anticipate that it will serve approximately 2 million passengers annually who would normally need to cross the border through the San Ysidro or Otay Mesa POEs. Usage of this facility is forecasted to increase to nearly 5 million by 2030.³³

Public and Active Transportation

Expanding public transportation networks, as well as improving facilities for pedestrians and people on bikes, are critical areas of focus in transportation planning. Not only are public and non-motorized transportation essential parts of the overall transportation system, but they are increasingly important given their environmental and public health benefits.

Public Transportation

MTS operates three Trolley lines and a network of bus lines that served an all-time high of 95 million passenger trips in fiscal year (FY) 2014. The Blue Line, which connects downtown to the U.S.-Mexico border at San Ysidro, continues to be the service with the highest ridership, with over 15 million passenger trips in FY 2014. In northern San Diego county, passenger light rail services are provided by the North County Transit District; the COASTER commuter train serves eight stations between Oceanside and downtown San Diego and the SPRINTER trains run east-west between Oceanside and Escondido. Many projects are underway to expand public transportation services across the county, including the following projects that provide increased connectivity in the border region: the Mid Coast Corridor project which will extend the terminus of the Blue Trolley line from the Old Town Transit Center to UC San Diego and University City; and the implementation of a Bus Rapid Transit (BRT) service called the South Bay *Rapid*. When

completed, the South Bay *Rapid* will span a 21-mile route connecting the Otay Mesa POE to downtown San Diego via eastern Chula Vista. Additionally, the route will provide access to other regional transportation options.

Recently, the Municipality of Tijuana announced the creation of the Tijuana Integrated Mass Transit System (*Sistema Integral de Transporte Masivo de Tijuana* in Spanish) to develop and operate the new mass transit service known as Ruta Troncal, which is included as a committed project in the National Transportation Infrastructure Investment Program and financed through Mexico's Mass Transit Program (*Protram, Programa de Transporte Masivo* in Spanish). The system will include two BRT trunk routes and a number of feeder routes. According to the plans, Route 1 will start in downtown Tijuana, connecting to the San Ysidro-Puerta México-El Chaparral POE via a dedicated lane on Paseo Centenario, and extending to the east of Tijuana along the Tijuana River channel to the right of the Express Lane or *Vía Rápida*. Route 1 will extend for about 17 kilometers in one direction, and will have 36 stations, 3 transit centers, 11 new pedestrian bridges, and 3 new vehicle bridges. Twenty feeder routes will connect with Route 1. There will also be 46 160-passenger articulated buses and 100 45-passenger buses, all of which will use liquefied natural gas (LNG). The city estimates this system will save users 50 percent on total transit fares, and 60 percent on travel time. The implementation of the first route is anticipated to be complete by late 2015. The second route is planned to be implemented next and will connect the Otay Mesa-Mesa de Otay POE with southwestern Tijuana.

Active Transportation

Active or non-motorized transportation is any mode of transportation that is powered by human energy, primarily walking and biking. The San Diego Regional Bike Plan (Plan) is a guide for the region through 2050 and proposes a vision for a system of interconnected bike corridors, support facilities and programs to make biking more practicable and desirable to a broader range of people. One of the bike routes included in the Plan's Early Action Program, which identifies 42 of the highest priority projects to be implemented first, is the *Border to Bayshore* route that will connect the San Ysidro border area to the Bayshore Bikeway. Planning for this route is expected to begin in 2015.³⁴

In terms of binational collaboration on active transportation, one of the most prominent joint efforts in the San Diego-Baja California region is the Bike to Work Day and the "*Tijuaneando en Bici*" sister events. Bike to Work Day is a national event celebrated annually in the United States on the third Friday in May, as part of National Bike Month. In San Diego, the event is organized by the SANDAG iCommute program, in conjunction with local jurisdictions, businesses, and several partners.

Beginning in 2011, the City of Tijuana joined the San Diego region each year in celebrating Bike to Work Day with its *Tijuaneando en Bici* program. The event encompasses bike rides on three bike paths and also includes a border crossing event at the San Ysidro POE, including a pit stop to assist people on bikes who crossed the border from Mexico, and concludes with an active transportation public forum in Tijuana.

"*Tijuaneando en Bici*" has become an important element of a larger Comprehensive Mobility Program currently being developed by IMPLAN, which includes a section on bike mobility. With input from local bike groups, IMPLAN has identified 24 kilometers of basic "trunk" routes with a metropolitan and binational scope, and 18 kilometers of feeder routes for transportation with recreational and tourist purposes throughout Tijuana. These routes connect to public spaces and public transportation services. It also has outlined locations for bike share and bike rental programs, bike parking and lockers.

Through the creation of these safe and efficient protected bike paths, increased biking infrastructure, and public awareness and incentive programs, the goal is to increase biking as a mode of personal transportation so that it comprises 5 percent of total personal travel in the Tijuana metropolitan area. By implementing mass transit and active transportation projects, the city expects that the use of private motorized vehicles will be reduced.

Another effort to improve pedestrian and bike mobility in our border region is a study that was led by the Imperial county Transportation Commission (ICTC), entitled the *Pedestrian and Bicycle Transportation Access Study for the California-Baja California Land Ports of Entry*.³⁵ The overarching goals of this study was to analyze existing conditions and to identify access improvements for people walking or biking across the six land POEs that connect Imperial and San Diego counties with Baja California. SANDAG, Caltrans, and the State of Baja California (SIDUE) also were active partners of the binational Agency Working Group that provided input to the study, along with other Mexican partner agencies. The study area is a one-mile radius around each POE, extending on either side of the border. The study gathered data and identified proposed solutions from previous studies as well as border crosser surveys, walking audits, and feedback from border travelers, community groups, and public agencies. The study identified 102 projects or policy recommendations in San Diego and Imperial counties, and municipalities of Baja California to improve POE facilities, infrastructure and connectivity for pedestrians and people on bikes that travel through the POEs. The final report was adopted by the ICTC Board of Directors on February 25, 2015.

Interregional perspective - transportation

Highway Improvements

In 2010, the I-15 IRP completed three phases of work and developed strategies to address the transportation issues resulting from commutes from southwestern Riverside county to San Diego county for work. Recent and ongoing improvements include widening projects to accommodate Managed/HOV Lanes and general-purpose lanes. The I-15 Managed Lanes project created a 20-mile Managed Lane facility between SR 163 and SR 78. It features movable barriers, multiple access points to regular highway lanes, and direct access ramps for buses and other HOVs. North of SR 78, the construction of four toll lanes are included in the revenue constrained plan which would be financed by tolls collected on that facility. Currently, this project is phased in 2050. Riverside county has constructed one HOV lane in each direction on I-15 between I-215 and SR 74.

As part of the I-15 IRP, the RCTC and SANDAG will continue to implement the HOV/Managed Lanes System with the goal of closing the gap at the county line. The I-15 IRP identified transit priority treatments and transit infrastructure development to support possible future BRT and commuter express on the I-15 and I-215 corridors.

In Imperial county, a number of improvements are planned or underway to address passenger and commercial vehicle transportation. In 2012, the Brawley Bypass Project in Imperial county was completed. The new bypass relieves traffic congestion and improves the flow of international goods between California and Mexico by providing an alternate route for commercial trucks and motorists around Brawley. The project constructed an 8-mile expressway around the city of Brawley from SR 86 north of Brawley to south of the eastern junction of SR 78 and SR 111. New bridges were also added at the New River and Union Pacific Railroad crossings along with an interchange at the junction of SR 78 and SR 111.

Improvements and expansions are planned for SR 98 and SR 111, an upgrade is planned for I-8 from Forester Road to SR 111, and highway extensions are planned for SR 7 and SR 115. Imperial county officials emphasize that these efforts are part of a comprehensive approach for improving intra-county agricultural and recreational travel, as well as interregional, interstate, and international travel.

Key Trade Corridors

In the San Diego region, I-5, I-15, and SR 125 are the major north-south corridors that accommodate significant volumes of commercial trucks, while SR 94, SR 905, and I-8 are important east-west connectors to these corridors. These north-south and east-west trade corridors serve both domestic cargo as well as international trade routes. Commercial traffic flows and trade corridors are discussed in the *Binational Perspective* section above.

Intercity Passenger Rail Corridors

Pacific Surfliner intercity passenger rail service for the region is operated by Amtrak along the Los Angeles – San Diego – San Luis Obispo (LOSSAN) rail corridor. The 351-mile long LOSSAN corridor is the second busiest intercity rail corridor in the nation with more than 2.7 million annual passengers. The LOSSAN Rail Corridor Agency is a Joint Powers Authority originally formed in 1989 that works to increase ridership, revenue, capacity, reliability, coordination, and safety on the coastal rail line between San Diego, Los Angeles and San Luis Obispo. It is governed by an eleven member Board of Directors composed of elected officials representing rail owners, operators, and planning agencies along the rail corridor.

High-Speed Rail

The California High-Speed Rail Authority is the lead agency responsible for planning, funding, constructing, and operating the state's high-speed rail system that will connect Los Angeles with San Francisco via the Central Valley with extensions south to San Diego and north to Sacramento. Initial funding for the project was approved by California voters in 2008. Downtown San Diego will be the southern terminus with a station in Escondido and connected to downtown Los Angeles via the Inland Empire.

Rail Freight

Rail freight in the San Diego region is transported via the Burlington Northern Santa Fe (BNSF) and the San Diego and Imperial Valley (SDIV) railroads. The BNSF operates on the coastal rail line and a branch line between Escondido and Oceanside. The SDIV moves freight on the San Diego & Arizona Eastern (SD&AE) Railway between San Diego and Tijuana. *Administradora de la Vía Corta Tijuana-Tecate* (ADMICARGA) moves freight between Tijuana and Tecate, and the Pacific Imperial Railroad will move freight between Tecate and the Imperial Valley. The SD&AE Desert Line is in the process of being repaired in order to reopen freight operations linking San Diego to El Centro through northern Baja California and east San Diego county (see *Binational Perspective* above).

Airport

The Airport Authority completed the expansion of SAN Terminal 2 in August 2013. The expansion included adding 10 new gates, a dual-level roadway and additional airport parking, which will meet the airport's needs until it reaches 20-21 million passengers annually. Currently, the Airport Authority is developing an Airport Development Plan (ADP) that reviews potential options for further expanding passenger and air cargo capacity through 2035, including considering the future of Terminal 1 as part of the ADP process. The Airport Authority has formed a citizen's advisory committee, a technical committee of which SANDAG is a member, and also provides ongoing input to SANDAG in relation to plans for an intermodal transportation facility that will connect to the airport. Airport Authority staff anticipates that the planning process will be complete in 2015 and its environmental review in 2017.

Tribal government perspective - transportation

For the last ten years, the principal area of consultation and collaboration with tribal nations at the regional level has been in tribal transportation. For the 2030 RTP, a set of objectives was established for tribal transportation planning. Through the consultation process, including a survey of tribal transportation needs, a joint technical workshop to analyze the results, and a policy-level summit, a set of cooperative strategies to improve tribal transportation were

developed between the SCTCA and the SANDAG Board of Directors. For the 2050 RTP/SCS these strategies were revisited, analyzed for progress made, and prioritized (for details see Appendix G – Tribal Consultation).

There are four primary transportation-related policy areas that were considered in San Diego Forward: The Regional Plan as a result of the consultation process with tribal governments, and these have continued as areas for future collaboration: roadway infrastructure, funding, transit, and information sharing/data gathering. A timeline of activities within several strategic areas that have taken place since the 2010 Tribal Summit are included in Appendix G, Attachment 5 – Collaborative Milestones). The matrix highlights the collaborative nature of all of the various efforts. In some cases tribal nations took the lead, while in other areas the county, Caltrans, SANDAG, or the RTA led the effort. For more details, refer to Appendix G – Tribal Consultation.

Energy and Water

The San Diego region and its neighbors are highly dependent upon both energy and water resources from outside the region. Therefore, diversifying our energy and water resources is a priority of the San Diego region, our neighboring counties, and the municipalities in Baja California.

Energy supply and demand

Energy is fundamental to the San Diego and Baja California regional economies and the quality of life for the communities. Energy lights, heats, and cools homes and offices; runs businesses and industrial machines; delivers and heats water; and impacts nearly every facet of daily life. Abundant amounts of electricity (from renewable and nonrenewable sources) and natural gas are required.

Current trends indicate that San Diego regional electricity consumption will grow by up to 55 percent by 2050 due to increases in population, housing and the number of electronic devices used by families and businesses. Per capita consumption is projected to remain flat through 2020 due to advances in energy efficiency and distributed generation, and then grow by approximately 15 percent by 2050.³⁶ Similarly, energy demand in Baja California is anticipated to grow by 5 to 8 percent annually for the next ten years³⁷ and is expected to continue to increase.

Binational perspective - energy supply and demand

Baja California, which is geographically cut off from the mainland of Mexico, is connected to the energy grid system of the western United States through transmission lines across the California and Arizona borders. Therefore, Baja California's energy future is more closely tied to that of the United States than to that of Mexico. Consequently, both opportunities and challenges exist for crossborder energy generation, transmission, and coordination in the binational region. The anticipated growth in the population and economy of the border region will require continued efforts to plan and implement coordinated energy solutions.

Traditionally, the California-Baja California border region has relied on imported energy from outside sources delivered via gas pipelines, oil trucks, and power transmission lines to meet its energy demand. As a result, an important binational energy market has developed, as a number of power plants have been built or are planned in the California-Baja California region. Baja California depends mainly on natural gas to generate electricity, about a third of which is exported to California. San Diego Gas & Electric (SDG&E), which is a subsidiary of Sempra Energy, operates two binational transmission lines that connect the California electric grid with the federal Mexican transmission system in Baja California. Together, these two lines are capable of exporting 800 megawatts of electricity from Baja California to California. Baja California exports electricity to California through these lines and from power plants near the binational border.

Baja California's electricity sector is the primary consumer of natural gas, representing 93 percent of the state's total consumption in 2009.³⁸ However, Baja California is not connected to Mexico's natural gas pipeline system and

therefore does not have access to domestic natural gas. Sempra Energy owns and operates two bidirectional pipeline systems that transport natural gas into northern Baja California. Until 2007, regional consumption was entirely supplied by imports from the southern United States through pipelines that transport LNG. In 2008 the region began to diversify its supply with the entry into operation of the LNG terminal in Costa Azul, which is 30 km from Ensenada and is owned by Sempra.

It is expected that natural gas demand in Baja California will increase by an average of 2.4 percent per year, and by 2018, it is anticipated that total U.S. exports of natural gas to Mexico will increase by more than 100 percent.³⁹ Some of the increased exports to Mexico could be delivered via the El Paso Natural Gas system's southern mainline pipeline, which supplies the San Diego area and is currently underutilized. Given that the Southwest natural gas supply basins are relatively abundant, supplying the projected growth in exports to Mexico through this pipeline is viable. There are recent supply constraint concerns in the San Diego region due to the closure of the San Onofre Nuclear Power Plant in 2012, which reduced overall energy supply in the region, thereby increasing the demand for natural gas to replace the loss of nuclear power. To address this issue, SoCalGas and SDG&E are exploring options for expanding capacity of an existing pipeline, as well as building a new one that would connect SoCalGas' northern and southern systems.⁴⁰

On the renewable energy front, the California-Baja California border region has a number of large-scale solar and wind projects and potential for more. The concentration of solar radiation is very high in both states, making them convenient locations for producing energy through solar technology. In fact, California leads the nation in terms of its solar and wind markets, supported not only by weather conditions, but also because of supportive energy policies. Established in 2002 under Senate Bill 1078, and expanded in 2011 under Senate Bill 2, California's Renewables Portfolio Standard (RPS) is one of the most ambitious in the country, requiring 33 percent of total procurement to come from renewable energy sources by 2020. California ranked number one in the United States in 2014 in terms of megawatts of solar energy capacity installed.⁴¹ With regard to wind power generation, California ranks second in the United States for wind power installations.⁴² San Diego in particular is also making great progress toward contributing to meeting the RPS goals, with 32.1 percent of SDG&E retail electricity sales generated from renewable sources in 2014.⁴³ In Mexico, there are also three areas with high wind intensity, one of which is in the mountainous areas of Baja California, giving the border region strategic potential for the development of sustainable wind energy.⁴⁴

Between 2010 and 2012, two wind turbine installations became operational in the mountains of La Rumorosa, close to Mexicali in Baja California. To add to this existing wind power capacity, Sempra is developing *Energía Sierra Juarez*, a wind energy project that will install 47 wind turbines about 70 miles east of San Diego and just south of the U.S.-Mexico border. The wind power project will connect to the existing Southwest Powerlink at SDG&E's proposed ECO Substation in eastern San Diego county via a new crossborder transmission line. There are several additional wind energy projects that are being considered in Baja California, most of which are planned for export purposes.

In the near future, the interdependent energy relationship between Baja California and the southwestern United States, and specifically California, may change significantly. Mexico has plans to connect Baja California to the national electricity grid sometime in the next ten years. This connection would entail constructing an asynchronous link with an approximate transmission capacity of 300 megawatts in its first phase, and would effect changes in Baja California's now isolated energy market.⁴⁵

The increase in regional energy generation could provide more opportunities for regional self-reliance, represent significant investment in the regional infrastructure, and encourage the use of cleaner-burning fuels than some existing plants in the binational region.

COBRO and the regional energy working group

Continued coordination between California and Baja California can help identify common issues, interdependencies, policies, and actions to address energy planning and infrastructure on both sides of the border. Two SANDAG forums for continued discussion are the Committee on Binational Regional Opportunities (COBRO) and the Regional Energy Working Group (EWG). COBRO organizes an Annual Binational Event to address a variety of border issues. In 2009 and 2010, the binational event addressed challenges, opportunities and strategies for crossborder climate change collaboration. Energy, as the largest contributor to greenhouse gas (GHG) emissions, played a significant role in the events.

The EWG is comprised of elected officials, business organizations, environmental groups, regional universities, and transportation and energy industry experts and meets monthly. The EWG oversaw development of the SANDAG Regional Energy Strategy (RES), which is the San Diego region's energy policy blueprint to improve quality of life through increased use of clean energy supplies in an efficient manner. Reducing energy use through conservation and efficiency has the co-benefits of reducing GHG emissions and utility bills, while improving the localized economy and air quality. The RES contains 11 goals, including an Energy and Borders Goal, which is to "integrate energy considerations into existing and future collaborative border initiatives."⁴⁶

Interregional perspective - energy supply and demand

The Regional Plan incorporates the recently updated [Regional Energy Strategy \(RES\)](#)⁴⁷, which addresses our regional energy needs through 2050. This strategy includes goals that: promote energy efficiency and conservation; support the development of renewable energy resources; reduce water-related energy use; increase the deployment of alternative transportation fuels and vehicles; reduce energy demand through transportation and land use planning; develop indigenous renewable sources; and integrate energy considerations into existing and future collaborative border initiatives.

Interregional collaboration and consensus among the jurisdictions in the region is necessary for the region to diversify its fuel sources, expand renewable energy resources, and address environmental and climate-related pollutants from transportation. Similarly, this consensus should be sought with our neighboring regions as well, to establish a coherent energy plan that examines and addresses potential impacts on our neighboring counties.

The SDG&E Sunrise Powerlink Transmission Line project is an example of how interregional planning can help achieve energy goals. The Sunrise Powerlink is a 117-mile-long 500-kilovolt transmission line connecting the El Centro area of Imperial county to northwestern San Diego county. This project is consistent with the RES goals in that it increases transmission system capacity as necessary to maintain required reliability and to promote better access to renewable resources and low-cost supply. This transmission line serves as an example of interregional energy planning as it provides the infrastructure capacity and access to renewable energy resources that can help achieve RES goals.

Tribal perspective - energy supply and demand

Tribal governments across the country have been developing energy projects with varying degrees of success and difficulties in recent years. With the federal Energy Self-Determination Act in 2005 came the ability to establish Tribal Energy Resource Agreements (TERA). Under a TERA, a tribe may enter into leases and business agreements for the purpose of energy resource development on tribal land including the exploration for, extraction of, or other development of the energy mineral resources of the Indian tribe located on tribal land, including, but not limited to, marketing or distribution; construction or operation of electric generation, transmission, or distribution facility located on tribal land; and a facility to process or refine the energy resource developed on tribal land.

Under an approved TERA, a tribe may grant rights-of-way for purposes of energy resource development on tribal land or for construction or operation of a pipeline or electrical transmission or distribution line serving an electric generation, transmission or distribution facility located on tribal land, or a facility located on tribal land that processes or refines energy resources developed on tribal land.

How tribal nations and SANDAG could work together to address energy reliability and independence and the development of clean, alternative, and reliable energy resources is an area for further consideration.

Looking to the future, developing more indigenous energy sources can strengthen grid reliability in Southern California. While the San Diego region does not possess large amounts of fossil fuels or natural gas, there is potential for the development of renewable sources such as solar photovoltaics (PV), wind, and geothermal in various parts of Southern California. Likewise, reducing demand by making gains in energy efficiency reduces environmental impacts.

Water supply

Most of the water used in all of Southern California and northern Baja California is imported from outside sources. This dependence on outside sources is cause for both conflict and cooperation. Whether used predominantly for agricultural purposes, as in the Imperial and Mexicali valleys, or needed to meet urban demand, increasing pressure is being placed upon these supplies as the population and economy continue to expand. Because water (like energy) is an integral component for a healthy economy, we should consider water reliability not just for ourselves, but for our neighbors as well. A failing neighboring economy can negatively affect our own region.

Water authorities in the San Diego region, as well as its neighboring regions, are addressing water reliability issues for the future through a number of strategies. In order to reduce conflict, a cooperative approach will be necessary to assure water reliability for the entire region.

Binational perspective - water supply

San Diego and Imperial counties and the municipalities in Northern Baja California all rely heavily upon water delivered from the Colorado River. Colorado River water is brought to the western portion of the border region through two aqueducts, one on each side of the border. Water systems in San Diego and Tijuana-Tecate are united through an emergency connection, which can deliver water to Mexico in case of a failure of the delivery system on the south side of the border.

The 1944 U.S.-Mexico Water Treaty⁴⁸ signed by both countries assures water allocation to California and Mexico. Based upon the treaty, California's allotment is 4.4 million acre-feet (AF) per year, while Mexico's is 1.5 million AF per year. Of the allotted amount, the great majority of the water on both sides of the border is dedicated to agricultural production, while the urban areas make up their water supply with a mix of Colorado River water, other imported supplies (on the U.S. side), and local supplies such as groundwater, surface water captured in local reservoirs, and recycled water.

However, because of rapid economic and population growth along the border, both regions are facing increases in demand and therefore are exploring new ways to secure increased water resources for the future. A study released in 2012 by the U.S. Bureau of Reclamation predicted a possible shortage of three billion cubic meters by 2035. In an attempt to overcome the projected water deficit that the Colorado Rivers Basin will face in the next 20 years, the United States and Mexico signed an amendment to the 1944 Treaty, called Minute 319. Minute 319, which will be in effect in 2017, calls for saving water through conservation improvements and gives Mexico a small amount of additional water in an attempt to restore the once fertile Colorado delta region. Likely options for assuring long term water reliability in this arid region include a mix of increased conservation, maximization of local supplies, water

recycling, and desalination (for more information regarding long-term water planning in the San Diego region, please refer to the Building the Foundation chapter).

In fact, the San Diego County Water Authority (Water Authority) is incorporating seawater desalination into its water supply portfolio. Desalination facilities are already in operation treating brackish groundwater from underground aquifers in the county. In addition, there is a desalination plant under construction in Carlsbad in San Diego county that is expected to be completed by 2016. The plant will be the largest in the Western Hemisphere and will meet 7 percent of the San Diego region's water demand.⁴⁹ The Water Authority is also planning the Camp Pendleton Desalination Project, which could produce 100-150 million gallons per day (mgd). In 2012, the Border Environment Cooperation Commission (BECC) certified a project for a desalination plant in Ensenada, Baja California. The plant is scheduled for completion in 2016 and is expected to supply water to 96,000 people in the municipality. As the only municipality in the state that does not receive water from the Colorado River, therefore depending largely on aquifers for its supply, the plant will be an important step toward sustainability for the area.

In terms of binational efforts, the Water Authority is participating in a binational feasibility study of a large-scale desalination plant that would be constructed in Playas de Rosarito. The objective of this study is to evaluate the potential for constructing a desalination plant with a capacity of up to 75 mgd. The water supply from this project could be made available to U.S. and Mexican water users, and would help augment Colorado River supplies.

Imported Water Quality

A significant issue related to the allocation of Colorado River water is water quality, or salinity. Water from the river is used many times over. It is drawn out, used, treated, and discharged back into the river by many users before it has reached its southernmost destination. This results in a deterioration of the water quality, producing high levels of salinity by the time it reaches Mexico. High salinity levels make it difficult to grow certain crops, and can damage municipal and household pipes and fixtures.⁵⁰ The 1974 Colorado River Basin Salinity Act authorized the construction, operations, and maintenance of works in the Colorado River Basin to control the salinity of water delivered to Mexico. The salinity problem has been the object of several studies and investigations, and numerous surveys of salinity sources and control measures have been pursued over the years by the U.S. Department of Reclamation, the U.S. Geological Survey, the EPA, the Water Resources Council, the Colorado River Board of California, the Basin States, and several universities.

Water Infrastructure

While both sides of the border face increasing water demand, existing water conditions differ on each side of the border. For example, per capita water use in Baja California is much lower than that of the San Diego region. The average per capita rate in Tijuana is 125 liters/day or 33 gallons/day,⁵¹ while the rate in San Diego county is 150 gallons/day.⁵² San Diego's geographic service area is nine times greater, representing 1,420 square miles (3,678 square kilometers) as compared to a service area of 152 square miles (392 square kilometers) in the Tijuana- Playas de Rosarito area.

Another major difference is in the existing infrastructure of each area. The San Diego region has very well developed water delivery systems; 100 percent of the population has access to potable water. Tijuana's infrastructure has been unable to keep up with the massive growth in that city. As a result, not all of the city's population has water delivery infrastructure. It is estimated that in 2012, 95.9 percent of the population had potable water coverage,⁵³ constraining the poorest segment of the population to purchase water liter by liter, thereby spending a significant amount of their per-capita income on this basic human necessity.

Similar to its water delivery system, San Diego’s wastewater collection system is capable of handling 100 percent of the wastewater generated. However, even the great efforts made in Tijuana, its wastewater infrastructure only serves approximately 90 percent of the population.⁵⁴ This has significant implications on the city’s ability to collect, recycle, and reuse existing resources and leads to negative water quality and human health, especially in times of rainy weather.

Tijuana’s Master Plan for Water and Wastewater Infrastructure

The U.S. Environmental Protection Agency (EPA) Border Environment Infrastructure Fund (BEIF), working through BECC and the North American Development Bank (NADB) with Mexico’s National Water Commission (Comisión Nacional del Agua, or CNA in Spanish) has supported a number of wastewater-related projects in Baja California. In conjunction with the state Public Services Commission (Comisión Estatal de Servicios Públicos de Tijuana, or CESPT in Spanish), the agencies developed the Tijuana 20-year Master Plan for drinking water and wastewater facilities and improvements to the wastewater collection system throughout the city. The Master Plan is a long-term planning project that will investigate alternatives for meeting Tijuana’s water and wastewater infrastructure needs over the next 20 years. The EPA estimates that Tijuana has \$1.2 billion in needs to meet the sewage infrastructure that will support its projected population in 2023. The Master Plan considers the following: potable water resources, including water reuse alternatives; potable water infrastructure; wastewater collection and conveyance; and wastewater treatment infrastructure, including pretreatment of industrial wastewater.

The Master Plan is an important step in averting a water crisis in the northern Baja California region. Given the proximity of our populations, the integration of significant sectors of our economies, and the social and cultural ties that we share, it is important for San Diego to support efforts in Tijuana and the entire northern Baja California region to upgrade the water supply and collection system.

Binational Conveyance Study

One example of a potential approach to ensure water reliability in the binational region is shared infrastructure across the border. The water authorities for San Diego county and Baja California concluded a binational study in 2002 to analyze the alternatives of transporting water from the Colorado River through a joint aqueduct. This study included technical information from both sides to evaluate the possibilities of a binational aqueduct and proposes alternative routes. However, it appeared that implementation of the proposed aqueduct was unlikely because Baja California’s impending water needs were more immediate than those of San Diego. Therefore, Mexican authorities decided to expand their own aqueduct, the Rio Colorado- Tijuana Aqueduct and commissioned a project in 2007 to build approximately forty miles (64.4 km) of pipeline, and increase the capacity of six existing pumping plants. The aqueduct began operating at full capacity in 2011.

Interregional perspective - water supply

The Water Authority currently delivers approximately 80 percent of the region’s water supply primarily through purchases of imported supplies from the Metropolitan Water District (MWD) and through purchases of conserved agricultural water from the Imperial Irrigation District (IID). MWD imports its supply from two main sources, the Colorado River and the State Water Project (which is pumped from the San Francisco Bay/Sacramento-San Joaquin River Delta through the California Aqueduct). The reliability of these two supplies directly affects the reliability of San Diego’s overall water supply mix. The Water Authority is meeting approximately 20 percent of the region’s water demand by diversifying water sources through local supplies from surface water, groundwater, recycled water, and conservation.

Imperial Irrigation District Water Transfer Agreement and All American Canal and Coachella Canal Lining Projects

A key element in the Water Authority's diversification strategy is the Imperial Irrigation District (IID) Transfer Agreement, which allows the Water Authority to purchase conserved Colorado River agricultural water from the Imperial Valley. The transfer agreement was approved in October 2003 after many years of complex negotiations among the water agencies and the state and federal governments. Starting in 2003, the Water Authority purchased 10,000 AF, which will increase each year to 200,000 AF in 2021. In October 2003, the Water Authority was also assigned Metropolitan's rights to 77,700 AF per year of conserved water from projects that lined the All American Canal (ACC) and Coachella Canal (CC). These projects reduced the loss of water that occurs through seepage and that conserved water is delivered to the Water Authority. This provides the San Diego region with an additional 8.5 million AF of water over the 110-year life of the agreement. The ACC lining project, which was completed in 2009, faced opposition in Mexico given that Mexican farmers in the Mexicali Valley have depended for decades on the seepage from the All American Canal to recharge the aquifer and provide water to their wells.

The transfer agreement and lining projects are key elements of California's plan to live within its current Colorado River water allocation of 4.4 million AF. The aptly named "California 4.4 Plan" promises six other western states that California will stop using more than its allotted portion of the Colorado River. California has routinely taken surplus water from the Colorado River amounting to approximately 5.2 million AF annually. The transfer allows the San Diego region to receive more water from the IID and therefore less water from the MWD, making it possible to reduce MWD's withdrawals from the Colorado River.

This agriculture to urban transfer of Colorado River Water will not only help the State stay within its 4.4 million AF allotment but will also reduce Southern California's dependency on water supplies from the State Water Project, which will greatly benefit other users of that water supply.

Tribal government perspective - water supply

Most tribal reservations in San Diego county are outside of the San Diego County Water Authority's boundaries and are, therefore, reliant on groundwater.⁵⁵ This groundwater dependency has led to some conflict between some tribes with gaming facilities and nearby rural residents who claim that their groundwater supply is being depleted by on-reservation developments. At the same time several tribes claim that non-tribal neighbors are taking their groundwater for commercial purposes. Several tribes are investigating alternative water supply options such as receiving water from the Otay and Padre Dam Water Districts.⁵⁶ The tribes along the San Luis Rey River formed a Water District and sued the federal government for violating their water rights. They claim that Vista and Escondido have long usurped water that should have been available to the tribes. They won the litigation in 1988 but are still waiting for the water. The issue of groundwater and different rules applying to tribes and the surrounding communities will become an increasingly important issue.

Environment

Ecosystems know no political boundaries. Flora and fauna, air, water, and the pollution that affect them are transverse through a system not restricted by national borders or political governance. Environmental issues are best addressed at a larger landscape level or ecosystem basis. To protect habitat, we should consider open space corridors in order to address the movement of species and ecosystem processes across a region. To address water quality, we should use a watershed perspective. To understand air quality, we need to understand air basins. Habitat corridors, watersheds, and air basins define a respective geographical area in which a particular ecological system functions. Our borders do not follow these lines, but our management of environmental issues should.

The San Diego region has made great strides in habitat management through the Multiple Species Conservation Program (MSCP) and the Multiple Habitat Conservation Program (MHCP). The region must now work to link these

efforts with similar efforts in the surrounding regions, and encourage similar consideration of open space planning where needed. Likewise, this region is responding to challenges in water quality through a mixture of responses within jurisdictional boundaries and by collaborating across jurisdictional lines within larger watershed areas.

Regarding clean air within the State of California, air quality is governed by a system that considers the basin level. However, this approach has not been successfully applied to the international boundary where environmental issues may cross the border, but regulation and enforcement do not.

Habitat

Binational perspective - habitat

With the rapid economic and social development in the binational border region, finding the balance between new development and the conservation of the environment is an important challenge.

The border region is home to habitat significant for the conservation of species of flora and fauna, including coastal sage scrub and chaparral vegetation. Because of the varied climate, topography, and vegetation, the region is one of the most ecologically diverse in the world.

Conservation biologists know the ecological area that encompasses much of Southern California and northern Baja California as the “California Floristic Province.” In its entirety, the province runs from northern Baja California north to the California-Oregon border. The Province is considered one of the world’s 25 hotspots for biodiversity conservation, with a large number of threatened and endangered species and habitats, including 24 species of flora and fauna currently identified under threat of extinction on the Mexican side of the border.⁵⁷ Places considered as “hotspots” are areas that harbor the highest concentrations of species (especially those species that do not exist in any other part of the planet, which are referred to as endemic species).

Binational Conservation and Restoration Efforts

Significant opportunities exist for collaborative approaches to conserving portions of the province across the California-Baja California border. In 2002, the Tijuana River Estuarine Research Reserve (TRNERR) and the Tijuana City Council signed a Memorandum of Understanding (MOU) regarding the creation of conservation easements that would reduce environmental impacts on the TRNERR.

The United States and Mexico signed the first binational conservation easement in 2003. The easement protects the highest peak in Tecate, known as Cerro Cuchumá to the native Kumeyaay Indians, who consider the mountain sacred. This chaparral-covered mountain supports endemic plants and other species protected by Mexican law. The approximately 819 hectare easement restricts land uses to those consistent with the conservation of its biodiversity, such as research.

Also in 2003, environmental conservation organizations from both sides of the border collaborated to form the Las Californias Binational Conservation Initiative. The aim of the Initiative was to promote coordinated efforts to establish binational habitat corridors and protect biodiversity in the region. The Initiative made recommendations for specific actions to take in order to protect the region’s natural resources and outlined a conservation network that would preserve the ecological integrity of the borderlands. The network proposed by the Initiative is partially based on an analysis launched by The Nature Conservancy, the Conservation Biology Institute and Pronatura, which identified areas with large, intact wilderness areas that represented regional biodiversity patterns and possessed irreplaceable resources and key landscape linkages that could ensure compatibility between human land use and wildlife movement and ecological processes. The Nature Conservancy has been involved in a number of land acquisitions that

would expand protected natural areas in the transborder region in eastern San Diego county and Baja California, including studies and plans to maintain binational landscape linkages for bighorn sheep and mountain lions.

Another notable binational conservation effort in the border region was the formation of the “Biodiversity Along the Border” Committee in 2006. At its September, 2006 meeting, the California Biodiversity Council (CBC) decided to create the Committee in order to identify next steps in addressing crossborder biodiversity and water quality issues. The Committee was comprised of representatives from government agencies and non-government organizations from both sides of the border and met four times in 2007. The committee also created two work groups, one of which was the Las California Work Group, whose mission was to preserve crossborder habitat linkages in the California-Baja California borderlands through binational cooperation. The work group explored ways to continue the work of the Las Californias Binational Conservation Initiative.⁵⁸

In 2008, the Mexican Ministry of the Environment and Natural Resources (*Secretaría de Medio Ambiente y Recursos Naturales* or SEMARNAT in Spanish), the California Environmental Protection Agency, the California Department of Food and Agriculture and the State of California signed an MOU on Environmental Cooperation in order to promote and carry out broader collaborative activities with regard to environmental issues, including wildlife and habitat conservation.⁵⁹

In 2009, the State Commission for Public Services in Tecate (*Comisión Estatal de Servicios Públicos de Tecate* or CESPETE in Spanish), the La Puerta Foundation (*Fundación La Puerta*, in Spanish) and BECC collaborated to restore wetlands adjacent to the Alamar River. The restored wetlands introduce plant species that help cleanse the river’s water, create areas for groundwater recharge, help reducing flooding, and provide refuge and food for resident and migratory birds.⁶⁰

A binational seabird population restoration effort was launched on the Baja California Pacific Islands in 2011 with funds from the Montrose and Luckenbach Trustee Councils and the Government of Mexico and support from partner conservation organizations on both sides of the border. The partnership began work in January 2012 on Coronado, Todos Santos, San Martín, San Jerónimo, Natividad, Asunción, and San Roque Islands, targeting seabird species that face threats from non-native species, nest and burrow destruction, and disturbances from lights and other man-made structures. Restoration projects use decoys, mirrors, and broadcast calls and songs to increase social interactions and construct artificial nests to improve nesting opportunities. On San Jerónimo, two boardwalks have been installed providing paths for fisherman to avoid human disturbance to nesting habitats.⁶¹ The partners also conduct habitat restoration, reduce human disturbance and artificial light, and support environmental education in surrounding communities. This binational project will benefit seabird populations in both countries for years to come.

Binational conservation efforts present many challenges, including population growth and rapid development and differences in land ownership, legal framework, financial resources and existing conservation patterns. Despite these challenges, local, state and federal agencies and non-governmental organizations from both sides of the border have come together and continue to work collaboratively on conservation planning and habitat restoration.

Interregional Perspective - Habitat

In 1991, the California Legislature enacted the Natural Community Conservation Planning (NCCP) Act. This act created a program to provide counties in Southern California with long-term regional protection of natural vegetation and wildlife diversity while allowing compatible land uses and appropriate development and growth. The program started with five counties that included San Diego, Orange, Riverside, San Bernardino, and part of Los Angeles. While each county is undertaking its own habitat planning efforts, the NCCP Program provides the criteria for ecosystem planning by focusing on preservation of an entire ecosystem versus preservation on a species-by-species basis. The U.S. Fish and Wildlife Service (US FWS) and California Department of Fish and Wildlife (CDFW) are mandated to assure

that these planning efforts are integrated across counties and implemented by the various jurisdictions. Therefore, the planning oversight for interregional habitat protection lies at the state and federal levels.

The local Multiple Species Conservation Program (MSCP) and the Multiple Habitat Conservation Program (MHCP) are consistent with the NCCP guidelines and meet the requirements of the NCCP Act (for more information regarding habitat planning in San Diego county, please refer to Chapter 2). Similar planning efforts in the counties of Riverside, Orange, and Los Angeles have applied the same standards and criteria to ensure the compatibility and integration of these systems across county lines. The NCCP has now expanded to now include 13 counties that include a plan area of 11,023,166 acres throughout California.⁶² As part of the program, the region and most counties implementing the NCCP participate in the California Habitat Conservation Planning Coalition. The purpose of the coalition is to increase the effectiveness and promote conservation plans in California. The coalition does this through lobbying, seeking funding solutions and promoting collaborative based solution.

Along our eastern border with Imperial county, most of the land is public land, including the Anza Borrego State Park, the Cleveland National Forest, and other areas owned and managed by the Bureau of Land Management (BLM). Therefore, there is less concern that this habitat will be lost to development or other disturbances. Nonetheless, the County of San Diego has outlined the future development of the MSCP East which will address conservation and development pressures in these areas. In addition, efforts are underway with the Desert Renewable Energy Conservation Plan which will help provide effective conservation of desert ecosystems while allowing for the appropriate development of renewable projects.

Tribal Perspective - Habitat

Tribes are invested in environmental and habitat conservation, but they are often not included in planning efforts. Tribal concerns, values, and impacts are not broadly known. While most conservation planning is done from a species and biological perspective, tribal conservation planning comes from a cultural perspective. Certain plants and animals have great cultural significance to local tribes, but do not necessarily fit the definition of an endangered species.

Tribal lands are often considered open space by state and local planners seeking to 'preserve' this land or include it in conservation and endangered species habitat plans. Tribes have sovereign authority over the development of their land. No assumptions should be made.

Each tribe has their own habitat conservation concerns based on where their land is located and what kind of development plans they have in place. Some tribal lands come more into contact with larger municipalities than others do and the considerations then become more complex. Some examples of projects with the tribes include creek realignment, wetlands restoration projects, habitat restoration along San Luis Rey and Trujillo Creek and Oak tree monitoring partnerships with California Native Plant Society.

Positive actions toward inclusion of tribal conservation values have occurred as a result of SB 18 enacted in 2005 which requires local jurisdictions to consult with tribes when amending their general plans and elements. The challenge for tribes is that consultation is an unfunded mandate. Often small non-gaming tribes cannot afford to spend limited resources and staff time on a consultation process.

Tribal governments are eligible for and have applied for the land management and monitoring funds in the Environmental Mitigation Program. It should be noted, however, that some grants to other organizations have benefitted the tribes. An example is the grant to Wildlife Services to control a feral pig problem that was affecting areas of the unincorporated area, including several tribal reservations.

Watersheds & Water Quality

Binational perspective - watersheds & water quality

Besides sharing an important ecological region, San Diego, Tijuana, and Tecate share the Tijuana River Watershed, which encompasses approximately 1,750 square miles, one-third of which lies in the United States and two-thirds in Mexico as shown in Figure U14.7. The watershed runs 50 miles north-south and 70 miles east-west before draining into the Tijuana Estuary and the Pacific Ocean on the U.S. side of the border. The estuary became part of the U.S. Department of Commerce's National Estuarine Sanctuary Program in 1982, and was designated a National Estuarine Research Reserve (TRNERR). The watershed is one of the most important wetland/salt marshes remaining in Southern California and was designated a "wetland of international importance" by the United Nations' Ramsar Convention on Wetlands. The TRNERR protects and manages the natural and cultural resources of the Tijuana River Estuary, including endangered plants, fish and wildlife, by focusing on research and education along with compatible recreation and resource use.⁶³

Significant binational efforts have been made and are currently underway to address myriad issues throughout the watershed. The Tijuana River Watershed Binational Vision Project was established in 2002 to provide a framework for the many activities, projects, and research being conducted about the health of the watershed. Represented by a consortium of organizations and individuals including scientists, urban planners, academics, GIS specialists, community stakeholders, the Binational Watershed Advisory Council (BWAC) was formed with funding from the State of California, the County of San Diego, and San Diego State University to provide guidance for the Binational Vision Project by developing baseline information and a binational vision for the state of the watershed.

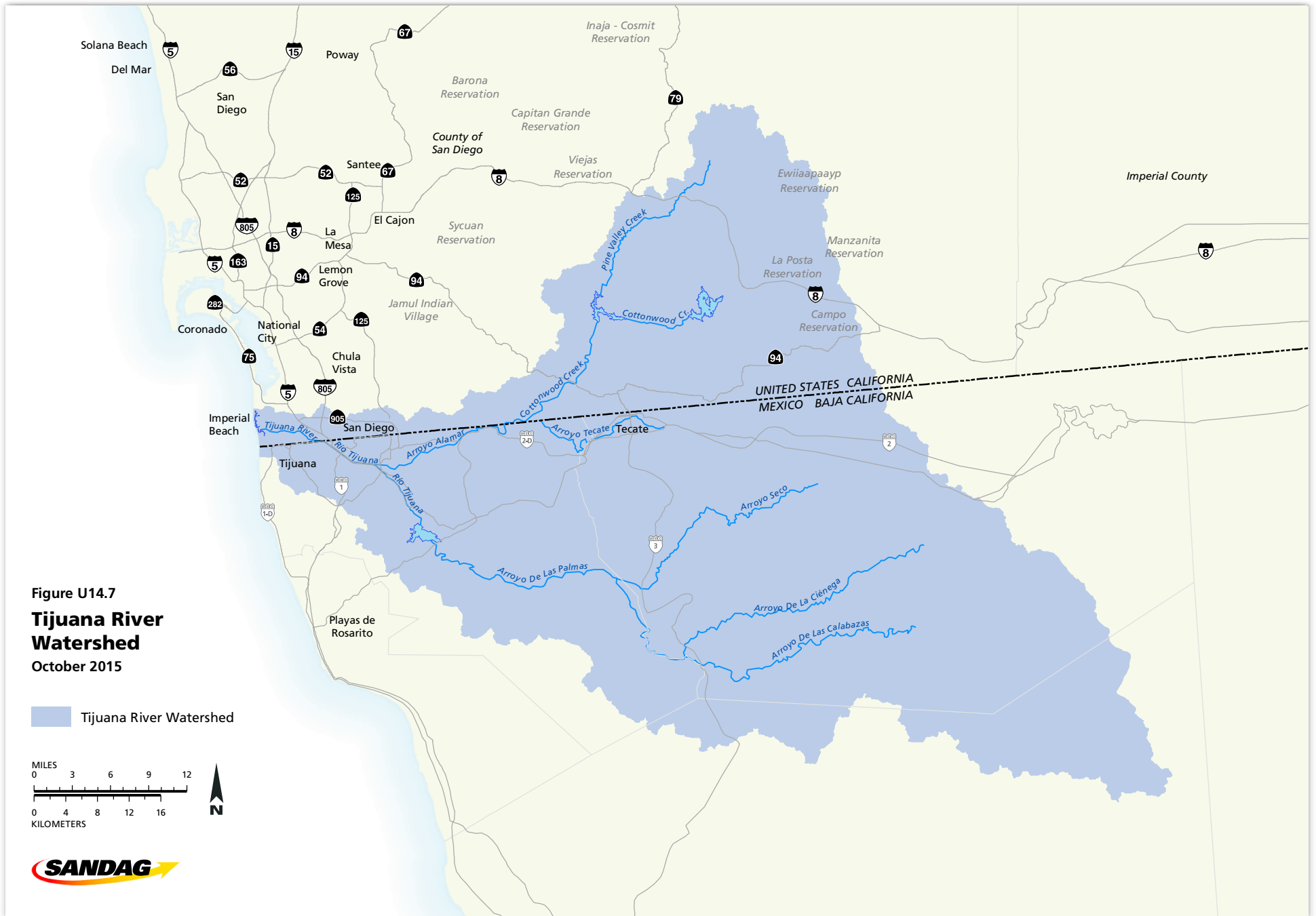
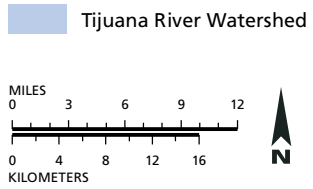


Figure U14.7
Tijuana River
Watershed
 October 2015



3277

Following the establishment of the BWAC, the EPA proposed that the Border 2012 Water Task Force for the Tijuana River Watershed be formed from the existing Advisory Council and interested stakeholders. The Border 2012 Task Force has focused on devising strategies and options for implementing that vision on the ground in order to meet the goals and objectives of Border 2012. The goals and vision established remain a part of Border 2020. Under the goal of improving access to clean and safe water, two objectives specifically relate to the Tijuana River Watershed: to “work bi-nationally to identify and reduce surface water contamination in transboundary waterbodies and watersheds;” and to “provide the public with timely access to water quality data in binational water bodies and watersheds in a readily understandable, web-based format.”⁶⁴

One of the most visible issues affecting the westernmost portion of the watershed (which lies in the urbanized areas of Tijuana and San Diego) is that of sewage and other toxic pollutants entering the Tijuana River on the Mexican side of the border. These flows eventually cross the border and pass through the Tijuana Estuary before entering the Pacific Ocean. Unmitigated, the pollutants cause numerous beach closures and pose serious human health threats on both sides of the border.

A major contributor to this problem is insufficient sewage collection infrastructure in Tijuana. To address this, the Tijuana Sewer Rehabilitation Project, known locally as “Tijuana Sana” (Healthy Tijuana), was certified by the Border Environment Cooperation Commission (BECC) and launched in 2002. Under Tijuana Sana, Baja California’s Public Services Commission, CESPT rehabilitated or replaced 160 miles of deteriorated wastewater collection pipe in the city over a four-year period.⁶⁵ CESPT continues to fund wastewater rehabilitation projects annually. In addition, the U.S. EPA is currently pursuing a continuation of the project, which is undergoing a public review process and would rehabilitate or replace 5.5 miles of collector lines and 47 manholes.⁶⁶

Also, the EPA is currently pursuing two wastewater collection system expansion and improvement projects in Baja California that were certified by BECC in 2012; one in Playas de Rosarito, and one in Tijuana. The projects will require a total investment of \$4.69 million and will benefit over 120,000 people.⁶⁷

Another regional effort to minimize the amount of raw sewage that flows across the border was the construction of the International Wastewater Treatment Plant (IWTP), which was funded through the U.S. EPA and the Mexican government. The plant was completed in 1997 and is operated by the International Boundary and Water Commission (IBWC) on the U.S. side of the border, though both the United States and Mexico share in plant operation and maintenance.⁶⁸ The IWTP treats up to 25 million gallons a day (mgd) of Tijuana’s sewage, and has capacity for 100 mgd. The IWTP operates a dry weather diverter in the Tijuana River to collect up to 13 mgd of flow directly from the river and takes overflow sewage from the treatment system in Tijuana that would otherwise flow down the Tijuana River, through the TRNERR and be discharged untreated directly into near shore waters and beaches of south San Diego county and Playas de Tijuana. The plant does not divert any flows from the river during wet weather. The original IWTP treated the sewage from Mexico to an advanced primary level, which technically does not meet standards set by the Clean Water Act in the United States. The plant was upgraded, and came online in 2010 to treat sewage at a secondary level (which meets U.S. requirements).

The Biodiversity Along the Border Committee, formed by the CBC in 2006, created a Tijuana River Estuary Issues Work Group to address the environmental degradation of the Tijuana River Watershed. The work group identified strategies to improve the ecosystem health of the estuary, including the need for sewer systems for neighborhoods upstream of the estuary, new or retrofitted water diverters at the water treatment plant on the border, sediment basins on both sides of the border, and solutions to stop the flow of trash and tires into the estuary.⁶⁹ The work group’s strategies were well aligned with the TRNERR’s activities. The Reserve leads Stewardship and Watershed Programs that includes activities with Mexican agencies and organizations focused in urban canyons near the Reserve.

Among the main concerns addressed by the Watershed Program are erosion in the canyon which leads to sediment buildup that threatens native species, as well as pollutants, trash and invasive species entering the Reserve. Through various binational activities that rely on community volunteers, ongoing projects to clean up trash, build retaining walls with waste tires, as well as working to secure conservation easements, the TRNERR engages a broad range of stakeholders in the San Diego-Tijuana border region to reduce the environmental impact of human development on the watershed and preserve its beauty and natural resources.

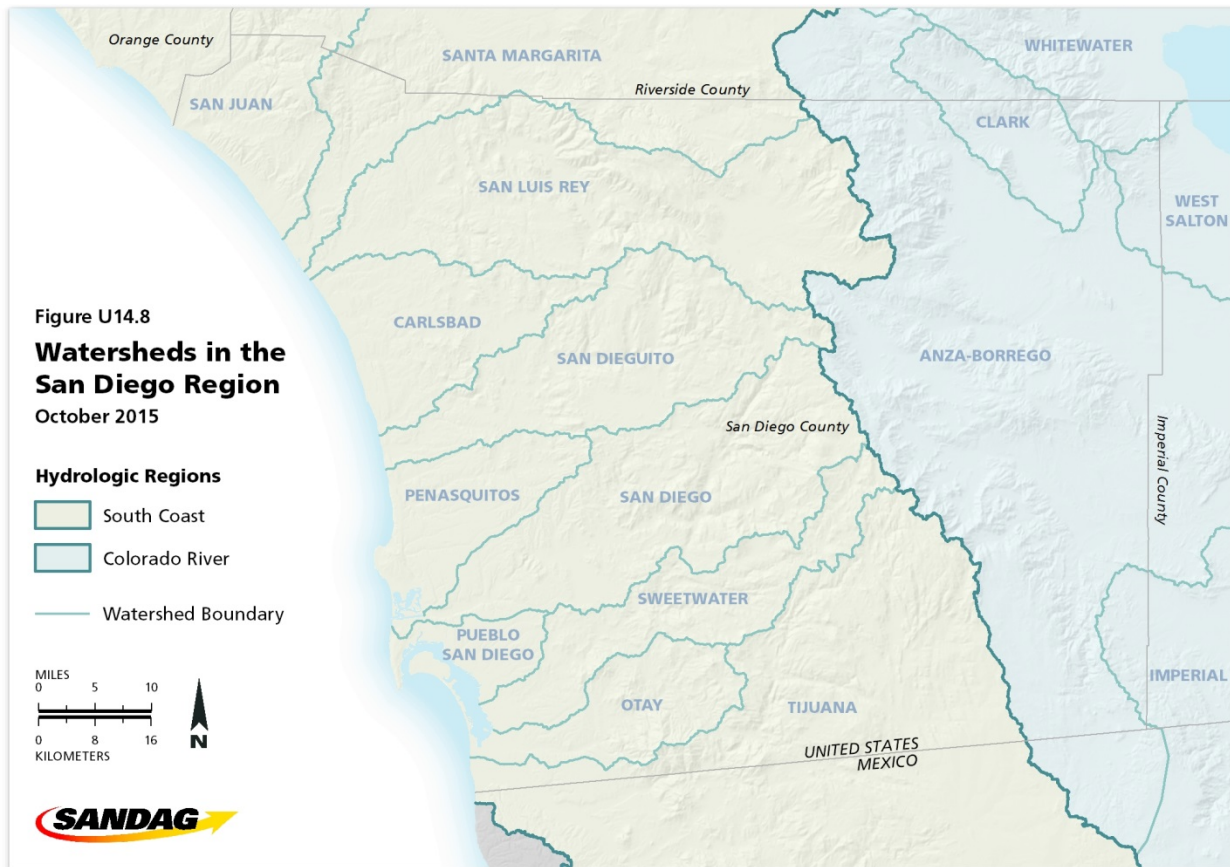
In addition, through the Tijuana River Valley Recovery Team, which was established in 2008, many local agencies and organizations collaborate in an effort to address the problem of not only toxic sewage, but also sediment and trash that flows from Mexico across the border in the Tijuana River watershed, as well as habitat recovery and protection of sensitive species. To further these efforts, the IBWC and its Mexican counterpart, *Comisión Internacional de Límites y Aguas*, or CILA, convened the first binational meeting in 2013 to begin discussions to develop a new binational treaty amendment to the 1944 U.S.-Mexico Water Treaty. The new amendment or minute would set up a framework to work to solve the problem of trans-border flow of trash, sediment, and wastewater from Tijuana into the River Valley and estuary.

Interregional perspective - watersheds and water quality

The San Juan and Santa Margarita watersheds lie along our northern border with Orange and Riverside counties as shown in Figure U14.8.

The Santa Margarita Watershed encompasses approximately 750 square miles, most of which lies in southwestern Riverside county, but drains into the area of Camp Pendleton and ultimately discharges through San Diego county into the Pacific Ocean. Due to growth in the eastern areas of the watershed, the lower area of the watershed (Marine Corps Base Camp Pendleton) has experienced flood problems, increased erosion, and high levels of pollutants. Development in the valleys of the Santa Margarita Watershed, which includes the areas of Temecula, Lake Elsinore, and Hemet, will continue to negatively affect the lower reaches of the watershed where development has not occurred.

The San Juan Watershed covers 496 square miles in San Diego, Orange, and Riverside counties. Approximately 150 square miles (30 percent) of this area is located in northwest San Diego county, almost entirely within Camp Pendleton. There are five hydrologic areas in the San Juan Watershed, two of which, the San Onofre and San Mateo hydrologic areas, are within San Diego county. Due to the nature of the hydrological areas, development within the watershed in Orange county has not adversely affected San Diego county such as has occurred in the Santa Margarita Watershed.



Source: USGS, National Hydrography Dataset, 2015

Tribal government perspective - watersheds & water quality

While tribal sovereignty has led many to believe that tribes do not have to adhere to environmental regulations in their developments, in truth, tribal governments' relationship to the federal government in environmental matters is similar to that of states. They act as the authority delegated to implement federal environmental laws within their respective jurisdictions. They may enact regulations more stringent than the federal government's rules, as California has done in many areas, or default to federal regulation. Tribes must prepare environmental impact statements in accordance with the National Environmental Policy Act (NEPA), and these reports must include the consideration and potential mitigation of off-reservation impacts.

Air Quality

Binational perspective - air quality

Air quality along the U.S.-Mexico border has traditionally been dealt with separately in each nation; however, it is understood that the border region includes a number of cities that share common airsheds and the designated regulatory air basins of California do commingle with air on the Mexican side of the border.⁷⁰ As development continues along the border, air pollution from one side of the border may have negative effects on the other side, posing serious environmental and health risks.

Air pollution in northern Baja California and San Diego is largely caused by motor vehicle traffic. Vehicles are a major source of air pollution by releasing ozone precursors, volatile organic compounds (VOCs) and particulate matter (PM) directly into the air. When vehicles drive on unpaved roads, they add to the problem by emitting dust into the air. According to U.S. EPA criteria, San Diego county does not meet federal clean air standards for ozone.⁷¹ At the State level, the San Diego air basin is designated non-attainment for ozone and the fine particulate matter (PM_{2.5}) standard.⁷² Tijuana does not meet the standards for ozone, carbon monoxide or PM.⁷³

Air pollution caused by vehicles idling at the land POEs is another air quality issue facing the San Diego-Baja California border region. Vehicle emissions during long border crossing wait times contribute to the San Diego county greenhouse gas (GHG) emissions inventory, and affect the quality of air in the binational region, which can negatively impact public health as well. Based on a study examining fiscal year 2009, GHG emissions for all three border crossings in the region, emissions are estimated at 80,000 metric tons of carbon dioxide equivalents (CO₂Eq), which accounts for 0.5 percent of total on-road transportation emissions in San Diego county.⁷⁴ On a per vehicle basis, the majority of these emissions can be traced to commercial crossings of heavy duty diesel trucks at the Otay Mesa POE. Of the total 80,000 metric tons of CO₂Eq, 45 percent is caused by idling vehicles.⁷⁵ The U.S. EPA conducted a Truck Stop Electrification Study in 2009 which explored options for eliminating heavy-duty diesel trucks idling at the Otay Mesa commercial crossing. The study estimated that 8,500 metric tons of CO₂ could be diverted from the atmosphere each year by reducing idling time from 90 to 22.5 minutes.⁷⁶

In the San Diego region, all 19 jurisdictions have completed inventories of GHG emissions from government operations and from the community as a whole. In addition, BECC has worked with the Center for Climate Strategies to complete GHG inventories for all six Mexican border states. At a state level, California has been a pioneer in climate change policy with the California Global Warming Solutions Act of 2006 (AB 32), and the Sustainable Communities and Climate Protection Act of 2008 (SB 375). AB 32 requires California to reduce its GHG emissions to 1990 levels by 2020, a reduction of approximately 15 percent below emissions expected under a “business as usual” scenario. SB 375 supports the State’s climate action goals to reduce GHG emissions through coordinated transportation and land use planning with the goal of more sustainable communities. In 2012, Baja California was one of the first states in Mexico to publish its state climate change law, which will support the implementation of Mexico’s national climate change plan. Baja California’s program will receive technical assistance from BECC also established a Climate Change Council.⁷⁷

With regard to binational collaboration, at a national level, Presidents Barack Obama and Felipe Calderón established the U.S.-Mexico Bilateral Framework on Clean Energy and Climate Change in 2009. The Framework created a mechanism for political and technical cooperation and information exchange and promotes efforts that are part of the EPA Border U.S.-Mexico Environmental Program (Border 2012 and Border 2020). A San Diego/Tijuana Air Quality Task Force was formed under Border 2012. Although the Task Force was disbanded in 2012, one of the EPA’s Border 2020 Program’s five Policy Fora is Air Policy, and includes specific goals for improving air quality in the border region. In addition, an MOU on Environmental Cooperation between California EPA, the California Department of Agriculture, the California Resources Agency and the Mexican Ministry of the Environment and Natural Resources (*Secretaría de Medio Ambiente y Recursos Naturales* or SEMARNAT in Spanish) was signed in 2008 and climate change was identified as one of the priority areas of action.

The California Air Resources Board (CARB) still maintains an active collaborative relationship with SEMARNAT and the Ministry of Environmental Protection (*Secretaría de Protección al Ambiente* or SPA in Spanish) to work on border air quality issues. One of the principal joint efforts underway is maintaining the Baja Air Quality Monitoring Network, which measures PM 10, PM 2.5, ozone and other pollutants in Tijuana, Playas de Rosarito, Tecate, and Mexicali. In addition, CARB and the Bureau of Automotive Repair are assisting SPA in implementing its smog check program. There have been efforts to explore the possibility of using binational emission reduction credit trading between the United States and Mexico as a way to help meet national GHG reduction goals. By trading GHG emission credits, overall costs could arguably be reduced; however, there are significant challenges in regards to harmonizing the national systems in order to link them and allow international trade.⁷⁸

In 2015, SANDAG, in partnership with Caltrans and the Imperial County Transportation Commission (ICTC), will begin a study to evaluate air quality impacts of border delays at the California-Baja California land POEs, including greenhouse gas emissions from idling vehicles. Additionally, the study will estimate and update the economic impacts of border delays at these POEs.

Interregional perspective - air quality

Smog from San Diego's neighbors to the north can affect our air quality. Ozone precursor emissions are transported to San Diego from the South Coast air basin during Santa Ana weather conditions. The South Coast basin comprises the metropolitan areas of Orange, Riverside, Los Angeles, and San Bernardino counties. Winds blowing toward the southwest transport the South Coast's polluted air out over the ocean and the sea breezes bring it onshore into San Diego county.

The San Diego region air quality has improved greatly since 1988 when San Diego exceeded the State one-hour ozone standard on 160 days. In 2014, San Diego exceeded that State standard on only 3 days. The San Diego air basin is still a nonattainment area for the National Ambient Air Quality Standard for ozone and the San Diego Air Pollution Control District continues to work with business and industry to meet state and federal standards.⁷⁹

Tribal perspective – air quality

Their reservations lie within the boundaries of San Diego county but tribes are subject to federal, not state, environmental laws. Air quality has always been a significant issue to tribes. Concerned about environmental projects on the perimeter of its reservation, the Pala Band of Mission Indians is the first tribe to apply for the "Treatment as a State" under the Federal Clean Air Act in March of 2007. In 2008, after more than a year of public comment and review, EPA officially designated the Pala Band as an "affected State" under the Act.

As an affected state, the Pala Band now must be notified of any Title V permit applications for a source that may impact air quality on the Pala Reservation or is within a 50-mile radius of the Reservation. The Pala Band then can submit written recommendations to the permitting authority regarding the permit and its terms and conditions. Other tribes are following suit to have a voice in the issue of air quality in the region.

Economic Development

San Diego, combined with neighboring counties and northern Baja California, has the necessary scale and diversity to compete in the global marketplace. Likewise, this region, while separate in many ways from the Los Angeles area, does recognize our ties to our neighbors to the north as a way to access both domestic and international marketplaces.

Interregional and binational perspective - economic development

Benefiting from our Geographic Location

San Diego's location on the U.S.-Mexico border offers many distinct opportunities, including economic opportunities in terms of crossborder manufacturing, trade, commerce and tourism. Capitalizing on these requires a positive and productive relationship with the federal government of Mexico, as well as with Mexican state and municipal governments. From a geographical perspective, San Diego occupies an advantageous position. Its proximity to Mexico is a prime example, as is its access to other world markets, such as the Pacific Rim and Central and South American markets, making it one of the country's best places to do business. In order to benefit from our geographic position, however, continued collaboration is needed to become more competitive in attracting and retaining export-based enterprises, developing binational industrial clusters, and leveraging the trade potential of our binational region.⁸⁰

Due to San Diego's advantageous seaport location and abundant outdoor activities and tourist attractions, its economic development was for many years largely based upon the military defense industry, related manufacturing,

and tourism. Although San Diego has diversified its economy in the last two decades, the defense industry and tourism are still huge economic drivers in the region. The entertainment and hospitality industry accounts for almost 150,000 jobs.⁸¹ More than 33 million visitors each year spend nearly \$8.4 billion in this region.⁸² The San Diego region is also home to a number of military installations that form the core of the U.S. defense establishment in the southwest. Its presence supports intelligence, analysis, research and development, manufacturing, and construction, accounting for 302,000, or 22 percent of the region's total jobs and an estimated \$24.6 billion in direct spending in San Diego County in Fiscal Year 2013.⁸³

Beyond the military and tourism, the San Diego regional economy has expanded to include additional sectors that are significant economic drivers. In fact, San Diego has transformed itself as home to a diverse set of knowledge and research based high-technology industry clusters. From information and telecommunications technology to medical devices to biotechnology and pharmaceuticals industries, the San Diego region is at the forefront of innovative industries that bring new money to the region by exporting goods and services.⁸⁴

Many of the industry clusters in the San Diego region are actually binational in nature. San Diego's location has allowed it to rely heavily on the large labor force available in Mexico, while Baja California's economy has benefited from employment opportunities in San Diego. Mexico has implemented various strategies to bolster economic development along its northern border, the most well-known being the manufacturing industry developed through the maquiladora program (or in-bond industry). The maquiladora industry plays a very important role in the region in that it not only generates employment opportunities in Baja California, but also in San Diego, as is demonstrated by the number of transnational corporations with sister facilities north of the border. Employment in the maquiladora industry in Baja California doubled between 1991 and 2004. In Tijuana, employment in the sector reached its peak in 2008 with over 200,000 people employed. Since then, employment has decreased slightly, and there are currently about 180,000 employed by 560 maquiladora companies in Tijuana, 11 percent of Mexico's total number of plants.⁸⁵

By taking advantage of research and development hubs in San Diego, and advanced manufacturing capabilities in Baja California, goods are jointly produced, and cross the border many times before becoming finished products. This phenomenon of joint production is evident in the fact that Mexican exports to the United States actually contain 40 percent of U.S. content, which greatly exceeds the U.S. value-added of any other foreign imports.⁸⁶ This manufacturing interdependence has huge implications for the local, regional and national economy, given the enormous scale of U.S.-Mexico trade.

The border crossings are the main conduit for the economic relationship of the San Diego- Baja California region. Close economic ties between the two areas are clearly demonstrated through the movement of people and goods across the international border and by economic activity along the border. The dollar value of bilateral trade that passed through the POEs connecting San Diego county and Baja California was more than \$40 billion in 2014. In addition to trade, crossborder tourism, commerce and commuting are also important factors of the regional economy. For example, there were over 14 million Mexican tourists to the United States, and they spent approximately \$10.5 billion.⁸⁷ Similarly, tourism in Baja California is a key source of revenue, and anecdotal evidence suggests that northern Baja California is filling some of the affordable housing gap in San Diego, thereby increasing the commute of people who live on one side of the border and work on the other.

As mentioned previously, congestion and delays at our California-Baja California land POEs hamper economic growth in the region on both sides of the border, resulting in losses of tens of thousands of jobs, millions of crossborder trips, and billions of dollars of income every year.⁸⁸ Projects underway to improve trade corridor infrastructure and expand the capacity of POEs in our region will help decrease these forgone opportunities. In addition, the use of more efficient technology at the POEs is also being explored in order to continue safeguarding the border while allowing

the efficient flow of people and goods. In order to be globally competitive, San Diego and its neighboring counties and Mexico will need to approach market access issues collaboratively as a region. Moreover, the region should also focus its attention on developing a highly-qualified workforce specialized in the skills needed for growing industries. If we take advantage of our geographic location and our shared resources, the San Diego-Baja California region has great potential to succeed in highly competitive international markets.

Tribal government perspective - economic development

Tribal economic development is complex because laws apply differently to tribal governments than they do to states, counties, and cities. In particular, the laws regarding taxation create the greatest level of confusion. Unlike federal, state, and local governments, tribal nations do not have the ability to act as a taxing authority. For example, tribes are not able to levy income taxes or property taxes. Tribes can levy sales and excise taxes but federal policy makes it difficult for most tribes to utilize tax exempt financing options (generally available to states) to fund construction of government infrastructure.

Gaming is a traditional social activity among many tribal nations; however, tribal gaming enterprises expanded exponentially nationwide in the early 1990s as a result of the passage of the Federal Indian Gaming Regulatory Act (IGRA).⁸⁹ Although several tribes in the San Diego region already had bingo facilities by the 1990s, most of the tribes had developed or had agreements to develop gaming facilities as a means of economic development. San Diego county now has nine tribal gaming facilities, which is the greatest number of Indian gaming facilities in any county in the United States.

Gaming-related and other types of development have led to rapid economic growth for a number of tribes, while also providing jobs and stimulating the regional economy. In the San Diego region, statistics show that the Indian gaming industry as a whole has created more than 10,000 jobs in the region, resulting in a \$1 billion industry with approximately \$263 million in goods and services purchased annually and \$500 million in payroll. It should be noted, however, that poverty levels among the Native American population remain below the national average, and some gaming tribes have been much more successful than others.

Each local tribe has their own plan for economic development and diversification. There are many markets being explored such as renewable energy, ecotourism, waste management, recreational facilities and more for essentially state-run enterprises. Some tribes choose to run their own businesses, while others select contractors to operate their enterprises. Some tribal business ventures have been off-reservation such as purchases of small businesses, historic buildings, golf courses, and land. There are some cases where tribes can support local jurisdictions through a contracting process, such as fire protection.

There are also tribal businesses on tribal land. The businesses tribes choose to develop often times are dependent on the location of the reservation and availability of space. Some examples of businesses that local tribes run, other than gaming facilities, include motocross race tracks, campgrounds, wind/energy projects, gas stations, restaurants, shopping centers, and ballparks. Many tribes bring outside businesses onto their land under varied business agreements.

Border Security and Military

The terrorist events of September 11, 2001, led our nation to re-examine national security both within and along our borders. The resulting decisions made in Washington, D.C. directly affect the people living in communities throughout the Southern California-northern Baja California region. While we support our nation's efforts to safeguard our borders, we must also ensure that in implementing such measures, the quality of life in the region is not significantly diminished.

San Diego's position as home to the busiest binational land POE in the world places us on the frontline of national security efforts. Likewise, our significant local defense industry places great responsibility upon this community for implementing those policies instrumental to safeguarding America.

The international border

The existing three land POEs, and the addition of the future Cross Border Xpress and Otay Mesa East POEs connecting the San Diego region with the state of Baja California allow our communities to interact, our economies to thrive, and our cultures to meld. Our region needs a border management system that facilitates travel and trade opportunities while protecting the U.S. from potential terrorist threats. A seamless information-sharing system that allows for coordinated communication among border authorities and the broader law enforcement and intelligence gathering communities is also necessary.

The efficient use of technology for pre-screening and information collection is critical in light of limited resources at our border. According to the White House, "...extensive pre-screening of low-risk traffic [allows] limited assets to focus attention on high-risk traffic. The use of advanced technology to track the movement of cargo and the entry and exit of individuals is essential to the task of managing the movement of hundreds of millions of individuals, conveyances, and vehicles."⁹⁰

In this region, a number of programs are already in place to facilitate this movement. These programs include SENTRI (Secure Electronic Network for Travelers Rapid Inspection) for individual crossers and FAST (Free and Secure Trade) for commercial activity.

The Department of Homeland Security

To better protect the United States from a potential threat and to better secure our borders, in 2002, Congress authorized the creation of the Department of Homeland Security (DHS). DHS has five homeland security missions: (1) prevent terrorism and enhancing security, (2) secure and manage our borders, (3) enforce and administer our immigration laws, (4) safeguard and secure cyberspace, and (5) ensure resilience to disasters. DHS combined 22 different federal departments and agencies into a unified, integrated cabinet agency. The department is organized under several directorates and offices. Of these, the U.S. Customs and Border Protection (CBP) plays the most active role in managing our local ports of entry (land, air, and sea).

Military in the San Diego region

San Diego remains home to the largest concentration of military forces in the country, and plays an even more valuable role in the National Defense Strategy as the "Rebalance to the Pacific" emerges. San Diego homeports over 60 percent of the ships of the U.S. Pacific Fleet and over one-third of the combat power of the U.S. Marine Corps. There are over 100,000 active-duty Navy and Marine Corps personnel assigned to the ships and bases in the San Diego region and approximately 25,000 Department of Defense civilian employees. The unique relationship between the military and the San Diego region exists nowhere else in the country. The presence of Department of Defense (DOD) facilities, personnel and equipment generates a significant economic impact on the San Diego region that far outpaces other industries in the area.⁹¹

U.S. Navy

The Navy has an amazingly wide complex of commands and operations in the region. As of 2014, the Navy employed 49,095 active duty military personnel and 19,775 civilians.

The principal Navy bases in the San Diego region are the Naval Base Coronado (Naval Air Station North Island/ Naval Amphibious Base Coronado), the Naval Station San Diego, the Naval Regional Medical Center, the Naval Submarine Base, the Space and Naval Warfare Systems Command, and the Naval Weapons Station Fallbrook. Locally-based

aircraft carriers include the USS Carl Vinson and the USS Ronald Reagan — all home ported at North Island Naval Air Station.

In addition, Navy Region Southwest is the major command that provides the highest level of base operating support and quality of life services for all operating forces and shore activities in the Southwest Region. Naval Region Southwest is based in downtown San Diego at the Broadway Complex. The Shore Group supports command groups, including military recruit centers, the Fleet and Industrial Supply Center, Navy Antisubmarine Training Center, U.S. Coast Guard activities, the Naval Facilities Engineering Command, Navy Public Works, and all other Navy bases in the Naval Region Southwest.

U.S. Marine Corps

The United States Marine Corps has 121 command groups based in the San Diego region, employing 51,431 active duty military personnel and 3,598 civilians as of 2014. The major Marine bases are Marine Corps Base Camp Pendleton, Marine Corps Air Station Miramar and the Marine Corps Recruit Depot.

The Marine Corps Base Camp Pendleton occupies 125,000 acres of largely undeveloped land and approximately 200 square miles of terrain north of Oceanside. The stretch of shoreline along the base (17.1 miles) is the largest undeveloped portion of coastal area left in Southern California. Camp Pendleton provides training facilities for many active-duty and reserve Marines, Army, and Navy units, as well as national, state, and local agencies. More than 60,000 military and civilian personnel work daily on the base, which is the home of the 1st Marine Expeditionary Force, 1st Marine Division, 1st Force Service Support Group, and many tenant units. Camp Pendleton has 67 command groups with 40,000 service members and 4,000 civilian employees in 2014.

The Marine Corps Air Station Miramar (MCAS Miramar) is a 23,065-acre installation located in the northern part of the City of San Diego. The mission of MCAS Miramar is to provide facilities, services and materials to support operations of the 3d Marine Aircraft Wing, Marine Aircraft Group 46, and other Naval aviation units. MCAS Miramar had 48 command groups with approximately 11,845 active duty military personnel and 1,811 civilian employees as of June 2014.

The Marine Corps Recruit Depot San Diego (MCRD) is one of two Marine recruit training bases in the United States. The base has 388 acres north of downtown San Diego. The MCRD has six command groups and 2,000 personnel in 2014 and is the Corp's oldest West Coast installation.

The military is tightly woven into the social and economic fabric of the San Diego region. The Navy/Marine Corps team, coupled with the local defense industry, affords this region continuing opportunities to enhance our quality of life. As regional planning becomes ever more complex it is important to understand the mutual impacts of the military and city and regional planning. For the past several years the SANDAG Board and Department of Defense have discussed opportunities to collaborate. In 2012 the Board agreed to form the San Diego Regional Military Working Group (MWG). The MWG provides a collaborative forum for the various branches of military to coordinate programs, address issues of concern, and determine the best ways in which the military can support regional prosperity, while the region supports the effective operations of the military.

Protecting Regional Infrastructure

Just as our economies and societies are linked throughout the region, many of our public facilities and environmental assets are connected and would be adversely affected by disruptions on either side of the border. Earthquakes, floods, mudslides, tornados, hurricanes, wildfires, and hazardous materials spills or releases, which are often secondary effects of natural disasters, all pose a significant risk to the millions of people living in the U.S.-Mexico border region, as well as the ecosystems and wildlife. Joint response capabilities are critical when disasters or emergencies occur

along the border. On a government-to-government level, some institutional frameworks are in place to coordinate U.S.-Mexico binational response to natural disasters on a national level. Nonetheless, residents of the border region often rely on more informal, localized responses to organize binational cooperation in the absence of comprehensive formal agreements, especially when fast and effective real-time response is needed.

In San Diego county, overall county response to disasters is coordinated through the Unified San Diego County Emergency Services Organization, Office of Emergency Services (OES). The organization is comprised of the 18 cities within the region and the County of San Diego and provides for a single operational area for coordination of disaster activities. This office coordinated with the EPA to develop a crossborder contingency plan for the sister cities of San Diego and Tijuana. This plan addresses such issues as hazardous materials management, bioterrorism, and joint preparedness activities. Another binational effort in the San Diego region to address natural disasters is the Border Agency Fire Council (BAFC), which was formally created during the 1996 fire season. BAFC members established a Mutual Assistance Agreement that includes dispatching and resource utilization procedures that enable participating agencies to work cooperatively to suppress fires and take appropriate actions on other emergency situations along the U.S. - Mexico border. In addition, the Binational Integral Flood Alert System in the Tijuana River Basin was established in 2003 in order to provide real-time data to emergency managers in the United States and Mexico in order to protect at-risk populations from the negative impacts of flooding of the Tijuana River. In the same vein, after the 2003 and 2007 fires it became apparent that tribal nations were not in the interoperability loop which had dire consequences for them and for other rural populations. After the 2010 San Diego Regional Tribal Summit, several tribes formed the Intertribal Long-term Recovery Foundation and have been working with the County OES to coordinate emergency preparedness.

Endnotes

- ¹ Federal Highway Administration, Literature Review of Organizational Structures and Finance of Multi-jurisdictional Initiatives and the Implications for Megaregion Transportation Planning in the U.S., submitted by Georgia Tech Research Corporation, October 2011.
- ² Calibaja Mega-Region Initiative (calibaja.net/cbdb/p/), accessed October 2014).
- ³ U.S. Department of Transportation Research and Innovative Technology Administration Bureau of Transportation Statistics, August 2014.
- ⁴ San Diego County Water Authority (sdcwa.org/san-diego-county-water-sources), accessed October 2014.
- ⁵ 2000-2010 average annual growth rates: Tijuana: 2.5; Tecate: 2.6; Playas de Rosarito: 3.5. Based on census data from Mexico's National Institute of Statistics and Geography (Instituto Nacional de Estadística, Geografía e Informática or INEGI in Spanish) and the U.S. Census Bureau.
- ⁶ San Diego-Baja California Border Region Atlas (2014).
- ⁷ Based on census data from Mexico's National Institute of Statistics and Geography (Instituto Nacional de Estadística, Geografía e Informática or INEGI in Spanish) and the U.S. Census Bureau.
- ⁸ Barona and Viejas have joint power authority over the uninhabited Capitan Grande reservation. Recently, Pechanga incorporated additional Trust land in a transfer of open space from the Bureau of Land Management (BLM); its boundaries now extend into the San Diego region.
- ⁹ Source: State of California Department of Transportation, "Transportation Guide for Native Americans," November 2002.
- ¹⁰ Otay Mesa-Mesa de Otay Binational Corridor Strategic Plan, 2007 (http://www.sandag.org/programs/borders/binational/projects/draft_strategic_plan_0507.pdf).
- ¹¹ U.S. Census Bureau American Community Survey.
- ¹² 2000-2012 U.S. Census American Community Survey.
- ¹³ Based on U.S. Census Bureau, 2012 American Community Survey data on median earnings for full-time year-round workers in San Diego County.
- ¹⁴ U.S. Census Bureau 2013 American Community Survey.
- ¹⁵ Based on crossing data from U.S. Customs and Border Protection.
- ¹⁶ Plan Municipal de Desarrollo, Ayuntamiento de Tijuana, 2011-2013, and Consejo Nacional de Población (Proyecciones de la población de los municipios de México 2010-2030).
- ¹⁷ Sociedad Hipotecaria Federal, S.N.C., (SHF), del Banco de Desarrollo de México.
- ¹⁸ DQ News, Core Logic Data Quick, December 2014.
- ¹⁹ I-15 Interregional Partnership. "Existing Conditions Report." San Diego, CA. March 2003.²⁰ Caltrans, Performance Measurement System (PeMS), accessed March 2015.
- ²¹ U.S. Census Bureau American Community Survey.
- ²² U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, Border Crossing/Entry Data, based on the U.S. Department of Homeland Security, Customs and Border Protection data.
- ²³ U.S. Department of Transportation Research and innovative Technology Administration Bureau of Transportation Statistics.
- ²⁴ Virginia Avenue Transit Center Fact Sheet, accessed August 2015, [http://www.gsa.gov/portal/mediald/231975/fileName/Virginia_Avenue_Fact_Sheet_\(1\).action](http://www.gsa.gov/portal/mediald/231975/fileName/Virginia_Avenue_Fact_Sheet_(1).action).
- ²⁵ U.S. Department of Transportation Research and innovative Technology Administration Bureau of Transportation Statistics.
- ²⁶ Foreign Trade Division, U.S. Census Bureau.
- ²⁷ Foreign Trade Division, Census Bureau, U.S. Department of Commerce.
- ²⁸ SANDAG Comprehensive Freight Gateway Study, 2007.
- ²⁹ Mexico's National Institute of Statistics and Geography (Instituto Nacional de Estadística, Geografía e Informática or INEGI in Spanish) (2014).
- ³⁰ Presentation by Administración Portuaria Integral de Ensenada, S.A. de C.V. (February 7, 2014).
- ³¹ Unified Port of San Diego.
- ³² Ibid.

-
- ³³ Press Release “Unprecedented Border Crossing Between San Diego and the Tijuana International Airport Breaks Ground -- “Cross Border Xpress” to Provide Safe, Direct Access from San Diego into TIJ”, (Stephanie Saathoff, ssaathoff@theclayco.com).
- ³⁴ SANDAG Proposed Regional Bike Plan Early Action Program Report, 2013.
(http://www.sandag.org/uploads/meetingid/meetingid_3488_16569.pdf)
- ³⁵ <http://www.imperialctc.org/border-study>.
- ³⁶ SANDAG Regional Energy Strategy Technical Update, 2014.
- ³⁷ Based on data from the State of Baja California Secretariat of Economic Development, Energy Infrastructure and Housing, investinbaja.gov.mx (2014).
- ³⁸ Baja California: Perfil Energético 2010-2020 (energiabc.gob.mx/files/public/pdf/PerfilEnergeticoBC2010-2020.pdf).
- ³⁹ Ibid.
- ⁴⁰ 2013 Integrated Energy Policy Report (energy.ca.gov/2013publications/CEC-100-2013-001/CEC-100-2013-001-CMF.pdf).
- ⁴¹ Solar Energy Industries Association.
- ⁴² American Wind Energy Association.
- ⁴³ California Public Utilities Commission.
- ⁴⁴ The State of the Border Report: A Comprehensive Analysis of the U.S.-Mexico Border, The Border Research Partnership, May 2013.
- ⁴⁵ 2013 Integrated Energy Policy Report (energy.ca.gov/2013publications/CEC-100-2013-001/CEC-100-2013-001-CMF.pdf).
- ⁴⁶ SANDAG Regional Energy Strategy, 2014.
- ⁴⁷ http://www.sandag.org/uploads/publicationid/publicationid_1906_18560.pdf.
- ⁴⁸ The legal name of the treaty is “The Utilization of Waters of the Colorado and Tijuana Rivers and of The Rio Grande.”
- ⁴⁹ San Diego County Water Authority. sdcwa.org/seawater-desalination, (2014).
- ⁵⁰ U.S. Department of the Interior, Department of Reclamation.
usbr.gov/projects/Project.jsp?proj_Name=Colorado+River+Basin+Salinity+Control+Project (April 19, 2011).
- ⁵¹ Mexico’s State Commission of Public Services in Tijuana (Comisión Estatal de Servicios Públicos de Tijuana, or CESPT in Spanish).
- ⁵² San Diego County Water Authority.
- ⁵³ Mexico’s National Institute of Statistics and Geography (Instituto Nacional de Estadística y Geografía, or INEGI, in Spanish).
- ⁵⁴ Border Environmental Cooperation Commission, 2012.
- ⁵⁵ “San Diego County Water Authority regulations contain prohibitions on providing Water Authority water to areas outside of its boundaries or to non-Water Authority member agencies. Contractual service agreements between special districts and third parties are subject to LAFCO review and approval.” Local Agency Formation Commission (LAFCO).
- ⁵⁶ County of San Diego “Update on Impacts of Tribal Economic Development Projects in San Diego County, April 2003.
- ⁵⁷ “Biodiversity on the U.S.-Mexican Border,” World Watch Magazine, November/December 2004 Issue.
- ⁵⁸ California Biodiversity Council Biodiversity Along the Border Committee Final Report.
- ⁵⁹ calepa.ca.gov/Border/Documents/2008/021308MOU.pdf.
- ⁶⁰ Otay Mesa-Mesa de Otay Binational Corridor Strategic Plan 2007-2012 Progress Report.
- ⁶¹ United States Fish and Wildlife Service, October 2014.
- ⁶² nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=15329.
- ⁶³ Tijuana River National Estuarine Research Reserve.
- ⁶⁴ epa.gov/border2020/goals-and-objectives#goal2.
- ⁶⁵ epa.gov/region9/border/infrastructure/tijuana-river-basin/docs/TJ-River-Basin-Area-Environmental-Assessment.pdf.
- ⁶⁶ epa.gov/region9/nepa/epa-generated/tijuana-ww/tijuana-ww-draft-environmental-assessment.pdf.
- ⁶⁷ Border Environment Cooperation Commission 2012 Annual Report.

-
- ⁶⁸ The IBWC is an agency established by the governments of the United States and Mexico to resolve those differences that arise from the application of their boundary and water treaties.
- ⁶⁹ California Biodiversity Council Biodiversity Along the Border Committee Final Report. (<http://biodiversity.ca.gov/Meetings/AlongtheBorder/finalreport.pdf>)
- ⁷⁰ U.S. Environmental Protection Agency epa.gov/border2020/air-policy-forum.
- ⁷¹ San Diego County Air Pollution Control District, Air Quality in San Diego 2013 Annual Report.
- ⁷² San Diego Air Pollution Control District, Air Quality in San Diego 2013 Annual Report.
- ⁷³ San Diego Air Pollution Control District; and Southwest Consortium for Environmental Research and Policy Monograph Series, no. 10, "Improving Transboundary Air Quality with Binational Emission Reduction Credit Trading."
- ⁷⁴ Greenhouse Gas Emissions Due to Vehicle Delays at the San Diego-Tijuana Border Crossings, Suzanne Louise Barzee, 2010.
- ⁷⁵ Ibid.
- ⁷⁶ Truck Stop Electrification and Anti-Idling as a Diesel Emissions Reduction Strategy at U.S.-Mexico Ports of Entry, 2009.
- ⁷⁷ Ley De Prevención, Mitigación y Adaptación Del Cambio Climático Para el Estado de Baja California.
- ⁷⁸ Linking National Cap-and-Trade Systems in North America, Matthew Bramley, P.J. Partington and Dave Sawyer, December, 2009; and Southwest Consortium for Environmental Research and Policy Monograph Series, no. 10, "Improving Transboundary Air Quality with Binational Emission Reduction Credit Trading."
- ⁷⁹ San Diego County Air Pollution Control District, Air Quality in San Diego 2013 Annual Report.
- ⁸⁰ San Diego Regional Economic Prosperity Strategy, 2008; Traded Industry Clusters in the San Diego Region, December 2012; Brookings Institute Global San Diego Export Plan, Metro Export Initiative, 2012.
- ⁸¹ Traded Industry Clusters in the San Diego Region, December 2012.
- ⁸² San Diego Tourism Authority, San Diego County Visitor Industry General Facts, 2014.
- ⁸³ San Diego Military Advisory Council, 5th Annual Military Economic Impact Study, 2013.
- ⁸⁴ Traded Industry Clusters in the San Diego Region, December 2012.
- ⁸⁵ Mexico's National Institute of Statistics and Geography (Instituto Nacional de Estadística y Geografía, or INEGI, in Spanish), May 2014.
- ⁸⁶ U.S. Chamber of Commerce, NAFTA Triumphant: Assessing Two Decades of Gains in Trade, Growth, and Jobs, 2012.
- ⁸⁷ U.S. Department of State, U.S. Relations with Mexico. state.gov/r/pa/ei/bgn/35749.htm (September 10, 2014).
- ⁸⁸ SANDAG Economic Impacts of Border Wait Times Study, 2007.
- ⁸⁹ The IGRA was the result of a legal battle between the Cabazon Band of Mission Indians and the State of California over the issue of the definition of sovereignty. The State claimed that Cabazon was violating state anti-gambling laws, while the tribe asserted its sovereign right to pursue its own economic interests. In 1987, the United States Supreme Court ruled in favor of Cabazon, prompting Congress to pass a federal gaming regulatory act to define how gaming should be conducted nationwide and what role the states should have in that activity.
- ⁹⁰ White House. Securing America's Borders Fact Sheet: Border Security. whitehouse.gov/homeland/01.html.
- ⁹¹ San Diego Military Advisory Council, 6th Annual SDMAC Military Economic Impact Study, 2014.