CHAPTER IV PLANNING FOR THE FUTURE: URBAN & REGIONAL PLANNING IN THE SAN DIEGO-TIJUANA REGION

In May 2002, San Diego was the fourth annual Best Places for Business and Careers in the U.S. As "the most diversified high-tech economy in the U.S.", San Diego is ranked No. 1.

-- Forbes/Milken Institute

Neither Milken nor Forbes mentioned that we are also near the top of the United States in the cost of housing, or that many of those high-tech career-builders commute to San Diego jobs from homes in Riverside County and Tijuana. Or that the number of San Diego residents in poverty has risen in these boom times to more than 338,000, a figure that is far from the worst in the United States, but also far from best.

--Neil Morgan[84]

"Surviving in a city where average home prices are in the $400,000 range, and average salaries are $50,000 to $60,000---THAT takes creativity!"

—Lori Saldaña, in response to a 2002 study that found San Diego the third most creative city in the U.S.[85]

In 2002, San Diego was in the spotlight. A study by Carnegie Mellon Professor Richard Florida found San Diego to be the third most creative city in the United States, tied with Boston.[86] Another found the city to be the most diversified high-tech economy, and a magazine ranked La Jolla as the best place in America to live.[87] Despite all these praises showered onto San Diego, the region's long-time residents and observers remained cautious in greeting these cheerful news. They pointed out the prohibitive cost of housing, the rising number of the poor, and low social capital (i.e, the weak or absent sense of community).[88] Mr. Florida also expresses his concerns for the widening socio-economic gap between what he calls the creative class (the knowledge workers, i.e., those whose jobs require them to think) and the other classes. He urges the creative class to take initiatives to bridge the gap, by reaching out to other classes and by building up new kinds of social capital.[89]

In order for the binational region to enjoy sustainable growth as a community, it is imperative for the region's civic leaders to have a shared vision of the region's

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[84] Neil Morgan, "Fleeting chorus sings city's 'Finest' praises," The San Diego Union Tribune June 7, 2002.
[85] Lori Sardaña, quoted in Richard Louv, "S.D. lacks creativity in public sector," The San Diego Union Tribune June 16, 2002.
[86] Richard Florida (2002), The Rise of the Creative Class.
[87] Morgan, *op.cit.*
[88] Morgan, *op.cit,* and Louv, *op. cit*.
[89] Florida (2002), *op.cit.* pp.320-325.

future. In shaping this shared vision, civic leaders need to pay attention to regional planning issues—housing and urban sprawl, transportation, water and energy services—as well as economic competitiveness that makes it possible for the region to prosper and provide the services needed by its residents. How can we provide affordable housing without sprawl, transportation without traffic jam, water and energy services without pollution and prohibitive prices, and higher income-generating jobs, to the rapidly growing population of the binational region?

Some highly innovative initiatives are underway to answer these questions: the San Diego Association of Governments (SANDAG) has released a draft of its long-term planning study, Regional Comprehensive Plan for the San Diego Region, that offer guidance to planning the region's growth in the next three decades; another study, prepared with active participation of faculty members from the San Diego State University and entered for international competition for Sustainable Urban System Design in 2003, envisions the region 100 years from now; a network of the region's academics and community partners have facilitated dialogues between government agencies, communities, and academic institutions to ensure sustainable development in the region. As these studies offer a comprehensive overview of the region's urban planning and infrastructure needs, this chapter offers a brief summary of the present situation in the binational region, focusing on the common issues and challenges, as well as binational solutions, in San Diego and Tijuana.

Housing and Urban Sprawl

One of the main reasons people relocate is to find affordable housing that provides the quality of life they seek. It is not uncommon for firms to relocate to areas that offer affordable housing to attract skilled labor. Providing affordable and desirable housing for high-skilled labor is, therefore, one of the most important conditions for sustainable growth. In planning housing development, however, a sustainable region must balance the housing demands with the prerogative to protect the region's sensitive natural habitats. Neither San Diego nor Tijuana has succeeded in addressing this challenge so far. Still, Tijuana remains a more affordable option than San Diego, even with the burden of border crossing.

In both San Diego and Tijuana, the rapid population growth is one of the major reasons for growing demands for, and price hikes in, housing. San Diego's population is growing at an annual rate of 2.8%,[90] while Tijuana's grows at an annual rate of 4.9%. Growing demand for housing from the rapidly growing population in the region has resulted in a marked increase in home prices in

[90] San Diego Regional Economic Development Corporation, Regional Fact Sheet.

both San Diego and Tijuana as urban sprawl continues unabated threatening the region's last-remaining undisturbed habitats and ecosystems.

San Diego

According to the 2000 census, there are close to 1 million housing units in the County of San Diego; 45,000 are vacant or for seasonal, recreational use; 44% (443,216) are rented and 55% (551,461) are owner-occupied.[91] By comparison, the nationwide homeowner rate is estimated at 67%. The median price in San Diego is estimated at $402,000 for a single-family home (December 2003).[92] A used home's median price was $339,000 in 2002 for a single family home.

Given that the median household income in the San Diego County is approximately $47,067, owning a home is, for many residents, a vanishing (American) dream.[93] Even renting is not an easy option as exemplified by the rising home prices in some of San Diego's most economically disadvantaged communities such as Barrio Logan, National City, City Heights, Lemon Grove and Chula Vista, all communities with growing Hispanic/Latino and immigrant/migrant populations (see Table 11).

Table 13: Median Home Prices in South San Diego County

Community	Zip Code	Median Price-2003	Change Since 2002
Barrio Logan	92113	$250,250	35.3%
National City	91950	$289,000	32.6%
City Heights	92105	$282,000	28.2%
Lemon Grove	91945	$315,000	26.0%
Chula Vista South	91911	$342,000	25.7%

Source: San Diego Union Triune (2004); DataQuick Information System[94]

Over the last few years, at any given time, there were only 600 available rental units in the San Diego region, that is, 1.4% vacancy rate. The average rent in San Diego County in 2002 was estimated at $1,100.[95] A two-bedroom apartment in Chula Vista rents for $900 per month. In order to afford this level of rent, it requires an estimated income of at least $21 per hour ($45,200 per year) or two individuals at $10.50 per hour, which is 260% over the federal poverty level

[91] SANDAG, *Housing Occupancy* (Census 2002)
[92] Roger Showley, Lori Weisberg, "County Housing Prices on a Tear in '03," San Diego Union Tribune, January 15th, 2004, AI
[93] SANDAG, *Profile of Economic Characteristics* (Census 2002)
[94] Showley and Wiesberg
[95] San Diego Union-Tribune /MarketPoint Realty Advisors (11.17.02)

(FPL). The disparity between prevailing wages and the price of homes in San Diego has produced a housing crisis, as in most urban areas in California.

In response, the City of San Diego recently passed the Affording Housing Initiative, in which the city hopes to issue $55 million in bonds underwritten by tax revenue generated by redevelopment, largely in downtown San Diego. In theory, the bonds would finance as many as 2,185 housing units over the next three years. However, the actual homes' cost three years from now is hard to predict. Further, supplying 2000 affordable homes will not meet the housing needs of the majority of low- and moderate-income workers.

In the City of San Diego, the Housing Commission, established in 1979, helps house more than 40,000 low income San Diegans each year through a variety of programs. It owns and manages 1,850 public housing units, provides rental assistance for almost 9,000 families, offers financial assistance for qualifying first time homebuyers, and renders both financial and technical assistance to low-income families whose older homes need rehabilitation. In addition, the Commission collaborates with businesses and investors to provide affordable housing in return for income tax credits and other incentives, and it works with nonprofits to help them achieve the housing components of their programs.

Of the total 20,000 people on the Housing Commission's waiting list, 31% percent are Hispanics. This figure does not take into consideration that the vast majority of recent and/or undocumented immigrants would not sign up for the Section 8 housing assistance payment program (which helps low-income families and individuals pay their rent) for fear of deportation or interrupted naturalization process. The vast majority of recent Mexican immigrants rent apartments, and often two or more families or single men live in one bedroom.
In addition to the rising prices of homes, San Diego confronts the problem of urban sprawl. As housing price rises, families with children look for suitable homes in areas further from the coastal city centers, where houses are relatively more affordable. As more homes are built, what was once a rural area becomes increasingly urbanized, resulting in urban sprawl. It is generally understood that urban sprawl leads to longer commute time both for parents (work) and for children (school), decreased revenues for city centers (which negatively affects public services, in particular education), and the loss of the rural environment.

Even though it is projected that all the land zoned for development will be used up in the next fifteen years,[96] the homes being built are in large part detached single-family residences, which use more land per unit than multi-family

[96] "Sustainable Urban System Design for the Greater San Diego-Tijuana Binational Metropolitan Region" p.7.

residences. This means that, if the current pattern of development continues, San Diego will not be able to provide housing for all of its growing population. Already, the housing crisis has pushed some San Diego workers south of border in search of affordable housing. However, given that Tijuana itself has the problem of housing shortage, this move does not offer a long-term solution to the region's housing shortage problem. Joint planning between San Diego and Tijuana is urgently needed in order to avoid the flight of firms and skilled workers from the region due to its inability to provide housing.

Tijuana

An estimated 40,000 workers reside south of border and commute to San Diego,[97] which means that Tijuana and the environs contribute to the provision of affordable housing for San Diego workers. Some of these workers are able to purchase homes that they cannot afford in San Diego. In fact, a recent study[98] found that, among residents of Tijuana, those who work in the U.S. have a significantly higher rate of home ownership: while less than 70% of men and women who work in Tijuana own their homes, 72.6% of men and 79.6% of women who work in U.S. own their homes. Given that minimum wages are more than 10 times higher in San Diego than in Tijuana,[99] the higher rate of homeownership among Tijuanenses working in San Diego is not surprising.

However, for many, securing a place to live is a challenge: one study suggests that Tijuana has housing shortage of as many as 50,000 units.[100] Even when one can find a place to live, the quality of affordable housing in Tijuana can be quite low. According to Tijuana's planning agency, IMPLAN, approximately half of the urbanized area in Tijuana originated as squatter settlements. Some squatter settlements have been regulated and basic infrastructure has been provided, but about 30-40% of the area remains squatter housing without proper title and without basic infrastructure such as electricity, potable water, and sewage.[101] By one estimate, about 60% of Tijuana's urban development is

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[97] "Sustainable Urban system Design for Greater San Diego-Tijuana Binational Metropolitan Region," p. 6.

[98] Luis Escala Rabadán and German Vega, "Cross-Border Commuters in the Tijuana-San Diego Region: Insights from Case Studies" presented at Center for U.S.-Mexican Studies, University of California, San Diego, November 14, 2003.

[99] "Sustainable Urban system Design for Greater San Diego-Tijuana Binational Metropolitan Region," p. 5.

[100] "Sustainable Urban system Design for Greater San Diego-Tijuana Binational Metropolitan Region," p. 10.

[101] The City of Tijuana and the State of Baja California are working proactively to prevent the creation of colonias populares and have successfully stopped 14 land invasions in 2001-2002. They are also working to relocate up to 1,000 people that are currently in communities that are in high risk zones that are vulnerable to flooding and landslides. Source: Sandra Dibble,

taking place on former *ejidos* (communal lands used for agriculture or grazing) that are rapidly being privatized to accommodate new housing units, "many with substandard infrastructure and communal amenities."[102]

Land shortage has created tension that has in some occasions led to direct occupation of federal lands. CORETT (Comisión para la Regulación de la Tenencia de la Tierra) is the federal agency in charge of regulating land. Some occupied lands are legalized through the CORETT, and, once they are legalized, have rights to the public services. The occupied lands that are not legalized do not receive any public service such as electricity and sewage, or paved roads. In Baja California, a state agency, Immobiliaria Estatal, is responsible for buying up vacant land and making it available to poor residents for housing. However, critics argue that the agency sets prices that are too high and charge high interest rates.[103] For many workers, their income is too low to qualify for a housing loan.[104] Fundación Esperanza is a Tijuana non-profit organization that operates community-based loans funds to finance self-help home building and renovation. The loan funds have had great success, but are very small in scale.

In contrast to the squatter communities that characterize Tijuana's hillsides, in the coastal area, affluent and middle class U.S. citizens are purchasing an increasing number of well-appointed homes. These U.S. citizens are attracted to Baja California for the lower costs of homes, as well as for affordability of amenities such as servants, life style and beachfront locations.[105] In other areas of Baja California, too, the lower cost of housing is attracting U.S. citizens to the south of the border: according to SANDAG, the cost of a 710-square foot, two-bedroom, one-bathroom home in Tijuana cost about $26,000, compared to the median house price of $312,000 in San Diego in 2001.[106]

While U.S. citizens benefit from the much lower costs of housing in Baja California, their impact on Baja California's residents and environment is mixed. On one hand, construction provides jobs in Baja California, but on the other hand, the purchase by U.S. citizens of Baja California properties is likely to drive the prices too high for Baja Californianos to afford a home in this area. Baja California does not have sufficient housing for its own residents, and unplanned

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"Evictions on Tijuana hill turn messy Outcry follows; critics question city's motives," San Diego Union Tribune, August 21, 2002, B1

[102] "Sustainable Urban system Design for Greater San Diego-Tijuana Binational Metropolitan Region," p. 10.
[103] Information obtained from Mexican Labor News and Analysis 7(1), January 2001. "Baja Police Arrest Mexican Housing Activists," by David Bacon.
[104] A comment from Carlos Graizbord, June 2002.
[105] Rey, et.al (1998), 137.
[106] SANDAG (2003), Regional Comprehensive Plan, p. 175.

urban growth continues to expand eastward. According to a 2003 study, Tijuana "will lose most of its ecologically sensitive and agricultural lands by 2025."[107] If U.S. citizens and workers continue to look for affordable housing in Baja California, this demand might drive the housing prices higher, pushing more Baja Californianos out of the formal housing market into unplanned developments, accelerating the destruction of the sensitive habitats and agricultural lands.

Transportation

As the binational region's population continues to grow, providing an adequate transportation infrastructure becomes increasingly more challenging. In San Diego, responding to the prevailing mode of transportation for the region's resident (i.e., travel by private vehicle), the public sector has mainly focused on expansion and maintenance of roads and freeways. Although the eastward extension of the trolley is underway, discussion of other possibilities for expanding the public transit system, such as the expansion of the trolley service northward into La Jolla and North County, and southward into Tijuana, more frequent services for Coaster, or construction of higher-speed rail system, has only recently begun in RTP (regional transportation plan), also called Mobility 2030. San Diego transportation planner, Alan Hoffman has also put forward the concept of a "bus rapid transit," (BRT) system that would make better route connections throughout the County and potentially draw more riders than a trolley in the Mid-Coast corridor.[108]

SANDAG coordinates comprehensive planning efforts included in the RTP and collaborates with governments and other stakeholders in northern Baja California.[109] The Mobility 2030 is an ambitious regional plan to develop the region's transportation system to integrate freeways with public transit systems. It also takes into consideration the importance of linking land use and transportation policies, to promote a "smarter, more sustainable land use."[110]

According to the census, the average commuting time for San Diego County residents in 2003 was 25 minutes, which was slighter longer than the national average (24.4 minutes) and shorter than California's average (26.6 minutes).[111] According to SANDAG (2002), the City of San Diego, with an average commute time of 22.3 minutes, had the shortest commute of the 10 largest cities in the

[107] "Sustainable Urban System Design," p. 7.
[108] Ristine, Jeff, "Critics pushing for Mid-Coast bus route," San Diego Union Tribune, December 18, 2004
[109] SANDAG (2003), Regional Comprehensive Plan, p. 174.
[110] SANDAG (n.d.), pp. 1-2.
[111] U.S. Census Bureau (2001), slide 9.

United States.[112] However, traffic congestion is still a problem on San Diego's freeways, as well as at the port of entry from Mexico as exemplified by the growing border delays at both San Ysidro and Otay Mesa. In addition, with a rapid population growth, more cars will be on the road. Since many of the new single-family homes are being built in areas away from San Diego's center, more commuters will be commuting longer distances. This development will likely increase the average commute time for everyone, but especially for those residents who live farther from the city center where jobs are located, particularly those living across the border in Tijuana.

In addition to meeting transportation demands of commuters, San Diego/Tijuana region must keep up with the increasing freight traffic that passes through the commercial ports of entry in the region. In 2002, according to the SANDAG, over 725,710 trucks passed northbound through the Otay Mesa port of entry, representing approximately $20 billion dollars worth of freight. Between 1995 and 2001, the number of commercial trucks crossing the border at Otay Mesa increased 58%. The Otay Mesa port ranks third in terms of the dollar value of trade that passes through along the U.S.-Mexico border. The freight traffic is expected to continue to grow rapidly through 2030.[113]

In response to the growing freight traffic, a new port of entry at East Otay Mesa is under development. Highways to connect these ports more efficiently with business and employment centers are also being expanded or developed. The binational region also needs to expand its container facilities to accommodate goods that are transported through the ports.[114] The local governments alone will not be able to shoulder all the expenses involved in these developments, however, and are seeking funding from neighboring counties that also benefit from the cross-border trade. After all, only about 20% of goods transported through the ports in San Diego are destined to San Diego; about 60% heads to other counties in California, and another 20% travels to out of state.[115]

Another transportation infrastructure that needs urgent attention is a new or upgraded regional airport. The largest commercial jets cannot fly into San Diego International Airport's one short runway, greatly limiting the ability of San Diego travelers to take non-stop flights or international flights directly from San Diego. As San Diego International Airport approaches its full capacity, some expect that San Diegans will have to rely on Tijuana's airport,[116] although the

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[112] Ristine, Jeff, "S.D.'s average commute time is 22.3 minutes," San Diego Union Tribune, February 26, 2004.
[113] SANDAG (2003), Borders Chapter, pp. 10-11.
[114] David Shirk, personal communication, February 5, 2004.
[115] SANDAG (2003), Borders Chapter, p.11.
[116] Patrick Osio, "Tijuana's Airport is Turning Private," San Diego Metropolitan Magazine, January 1998.

recent (October 2003) decision by San Diego's airport agency, the County Regional Airport Authority, rejected the idea of linking San Diego and Tijuana's airports and developing a binational airport facility.[117] It is expected that studying the potential sites for a new airport in San Diego will take more than two years,[118] which would mean that construction would not begin until or after 2007.

One of the main challenges of the region, in terms of transportation infrastructure, is the border crossing, especially with the tougher security measures instituted after 9/11. Although frequent crossers can obtain the SENTRI pass and avoid the terribly long wait that tourists and occasional crossers must endure, the traffic jam starts well before the border crossing, and affects everyone. Heightened security concerns after 9/11 require a thorough inspection, further compounding the border delay problem. While an increased level of security check is a universal phenomenon along the U.S.-Mexican border, the fact that the San Diego-Tijuana border is the nation's busiest means that it is affected by the new security measures much more than other borders, simply because of the sheer quantity of people and goods that must be inspected at this border.

[117] San Diego Regional Economic Development Corporation (EDC), "Seven Sites Selected for Airport Study," EDC website (last accessed 3/8/04), http://www.sandiegobusiness.org/article_template.asp?ArticleID=197
[118] Ibid.

Securing Water Supply: An Imperative both for San Diego/Imperial Counties and for Baja California

Securing a stable supply of water for the foreseeable future is another challenge for Southern California and Baja California. Both are expecting a rapid population growth and subsequent rapid growth in demand for water, while global warming is likely to reduce the supply of water to the region.[119] Both rely heavily on imported water, which often exceeds 95% of water supply in the region. Baja California is even more dependent on Colorado River water than San Diego: in 2000, Baja California drew 96% of its water supply from Colorado River,[120] compared to San Diego's approximately 59%.[121] In California, demand for water is expected to rise by 2.2 to 4.2 million acre-feet (AF) annually to over 66 million AF by 2020.[122] In San Diego, the demand is expected to grow from 695,000AF in 2000 to 813,000AF in 2020 (that is an 118,000 AF increase).[123] In Baja California, the demand will almost double, from 86,000AF in 2000 to 169,000AF in 2020 (that is, 83,000AF increase).[124] If the consumption and supply pattern remains the same, Tijuana will face severe water shortages within a decade.

How can the region secure its water supply? One answer has been to transfer water from Imperial Valley. Some of the Colorado River water allotted to Imperial County has already been transferred to San Diego. There is also a plan to transfer Colorado River water from Imperial Valley to San Diego, but scientists and local residents fear that this transfer will lead to a major environmental disaster at Salton Sea, since the Sea's salinity is already very high. In addition, these transfers happen only after lengthy negotiations and must complete a rigorous environmental impact review.

Although the challenge of supplying sufficient water is daunting, it is, at the same time, an opportunity for innovative approaches to water supply. For example, in San Diego, reclaimed water is increasingly being used for irrigation. Given that about half of the San Diego-Tijuana binational region's fresh water is used for non-drinking purposes (landscape irrigation, commercial enterprise, and industrial processing, among others),[125] use of reclaimed water is a model that can be replicated in Baja California. Another feasible option for water conservation is to improve water supply lines (pipes and aqueducts). This

[119] For example, California's State hydrologist estimates that mountain runoff (which depends on snowfall) has decreased 12% between 1906 and 2001. Information obtained from Lau (2002).
[120] Frahm (2001), P.13.
[121] Frahm (2001), p. 7.
[122] Information obtained from the Legislative Analyst's Office webpage (http://www.lao.ca.gov/cgres2.html) last accessed on 5/5/03.
[123] Frahm (2001), p.9.
[124] Frahm (2001), p.14.
[125] "Sustainable Urban System Design," p. 9.

improvement may increase the water supply by about 34,000 acre-feet, or more than a third of the projected growth in demand in Baja California by year 2020.[126] In addition, the binational region can be the frontrunner in developing saltwater desalination technology and can benefit greatly, thanks to its easy access to the Pacific Ocean and its abundant solar energy. Given that water shortage is already a problem in many poor countries, and that per capita world fresh water supply is predicted to decline by one-third in the next 20 years,[127] being a leader in saltwater desalination technology can bring much economic benefit to the region beyond securing the region's water supply.[128]

Finally, bringing San Diego and Imperial Counties to the negotiation table with their Mexican counterparts (the municipalities of Tijuana, Tecate and Mexicali, as well as their respective citizens and representatives) would facilitate a region-wide consensus on sharing the region's water to make the most productive use out of the limited supply.

Energy Supply Without Pollution : A Binational Challenge

Both San Diego and Tijuana depend almost totally on imported energy resources from outside the region. As the region's population grows, demands for energy will inevitably grow. Demand for energy is expected to grow much more rapidly in Tijuana than in San Diego. According to Sweedler (2002), a rapid increase in energy use is common in developing countries, as higher living standards typically lead to more energy consumption. The current projection is that demand for power in Baja California will double the 2002 level in a mere 10 years.[129] Since Baja California is not connected to Mexico's energy supply infrastructure, it is highly dependent on energy supply from the United States. However, California itself relies heavily on imported energy, making the binational region highly vulnerable to sudden energy shortages and price hikes, as California experienced in 2000-2001. In Tijuana, too, businesses have been negatively affected by occasional blackouts, and some investors have named this as one of the issues Tijuana must resolve in order to attract more investment.[130] Innovative approaches, including development of new or renewable sources of energy and cooperative agreements with extra-regional entities to ensure stable supply, must be sought and implemented in order to

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[126] Frahm (2001), p.17.

[127] "World Supply to Drop One-Third in 20 Years, U.N. Says," UN Wire (online news service of United Nations Foundation), March 5, 2003. Available at http://www.unwire.org/unwire/20030305/32412_story.asp (last accessed 3/1/04).

[128] In fact, the "Sustainable Urban System Design" study predicts that saltwater desalination technology would be a major export for the region in 2103 (p. 28).

[129] Sweedler (2002).

[130] "Alarm bells rang by Japanese firms in Tijuana," Hispanic Vista, October 19, 2000. Available at http://www.hispanicvista.com/html/001019bsd.html (last accessed 12/3/03)

dispel the concerns that the region is unable to supply sufficient and reliable energy and water resources.

In order to fully meet the increasing demands for energy, the region needs to increase the energy supply and/or invest in "sustainable practices to reduce energy demand."[131] One way to increase the energy supply is by building more power plants and/or natural gas terminals, if it wants to avoid further dependence on imports. Several new plants are being built or planned in the California-Baja California border, mostly on the Mexican side. These plant sitings have raised concerns about the safety of the power plants, as well as their environmental and health impacts. Many communities near these plants or planned sites have groups organized against these energy facilities.

While their concerns are warranted, not building these plants can affect the region's residents and economy in very negative ways in the near future, unless the region's businesses and residents change their energy use pattern and reduce their demand for energy. A constructive and innovative approach, as advocated by Sweedler (2002), is cross-border energy planning. Cross-border planning recognizes that San Diego and Tijuana form an integrated energy market, and that the binational region's environment is impacted by energy facilities on both sides of the border. Cross-border energy planning would lead to a unified, cross-border environmental impact assessment, which assures Baja California residents the same air quality as California residents enjoy. It would also create a cross-border emissions trading system. Under this system, companies that reduce emissions can sell their "right to pollute" to other companies that cannot or do not reduce emissions. Given that there are ample opportunities for emission reduction in Baja California at lower costs than in California, the same amount of investment for emission control can reduce pollution to a much greater extent with inclusion of Baja California in this trading system. In these ways, cross-border energy planning will make it possible to develop "a safe, secure, affordable and environmentally sound energy supply, for residents on both sides of the border."[132]

One other area where increased binational cooperation can be very effective is in the research and development of renewable energy resources in the region. In addition to geothermal fields in Mexicali, there are other possible renewable sources of energy in Baja California such as micro-hydroelectric, biomass, wind, solar, and tidal energy.[133] These renewable sources have remained unexploited largely due to the availability and relatively low costs of fossil fuel, and the high initial costs of renewable energy projects. The high

[131] "Sustainable Urban System Design," p. 24.
[132] Sweedler (2002).
[133] Sweedler (1999), 16.

capital costs are especially problematic for developing countries with lack of capital, and Mexico is no exception. For U.S.-based enterprises, however, Baja California can be an ideal place to experiment with new renewable energy-related technologies at lower costs than in California. By leading the way for renewable energy production, the binational border region can also become the center for research and development in this sector, creating many high-skill, high-income jobs for the region.

Finally, the binational region can conserve energy by lowering demands, and here, too, binational collaboration in energy management will be more effective than uncoordinated action by each local government. Educating the region's businesses and residents of the benefits of energy conservation, as well as of the available energy-saving technologies, encouraging development of technologies and designs for maximum energy efficiency, and implementing regulations that favor energy efficient buildings and technologies are some of the steps the region's local governments can and should take jointly.[134]

Toward a Shared Vision: Innovative Initiatives for Long-Term Regional Planning

As mentioned in the introduction, the region's leaders have already begun to join forces in envisioning an integrated, cross-border regional planning. On the government side, the SANDAG has conducted many studies on regional planning and has advocated for long-term growth planning. Its most recent study, the Regional Comprehensive Plan, urges the region's leaders in government, private sector, and academia, to envision the region in 2030 and to prepare and carry out a comprehensive regional plan to achieve equitable, environmental, and economic prosperity in the region.[135] The Plan is guided by the principles of smart growth and sustainability. In particular, it recommends that local and regional planning integrate land use and transportation policy decisions, and that local and regional planning be coordinated to a higher degree so that the integrated land use and transportation policies can achieve their full positive effects. [136] The Regional Comprehensive Plan also contains a section on investment strategy, thus facilitating further dialogue among government agencies and the private sector for concrete steps to be taken to ensure that the Plan is fully implemented.

While there are some emerging civic initiatives in private sector,[137] many of the other initiatives have been led by the region's various academic institutions. For

[134] Concrete proposals for energy demand reductions can be found in "Sustainable Urban System Design" pp. 24-28.
[135] SANDAG (2003), Regional Comprehensive Plan, p. 1.
[136] SANDAG (2003), Regional Comprehensive Plan, p. 1. The executive summary and the full report is available from SANDAG's website, www.sandag.org.
[137] Some examples are the Civic Initiative, led by the San Diego Council of Design Professionals, and the Quality of Life Coalition, a collective initiative of economic development and business

example, at San Diego State University, dialogues with academics from Baja California dates back to the 1970s. The creation of the *Institute for Regional Studies of the Californias* in 1983 facilitated further cross-border collaboration and focused research on transborder issues, with strong emphasis on regional planning. More recently, the International Center for Communications at San Diego State University has partnered with the KPBS and the San Diego Union Tribune to launch a five-year program to create a forum for civic-engagement for the region's residents, called *Envision San Diego*. Combining online dialogues with face-to-face interactions, it encourages people to discuss issues ranging from civic leadership, creativity of the region's workforce and the role of education, transportation and housing, to global competitiveness.[138]

In 2003, San Diego State University's faculty members played an important role in preparing "Sustainable Urban System Design for the Greater San Diego-Tijuana Binational Metropolitan Region," a study that envisions the binational region 100 years from today, and lays out steps that must be taken in order to achieve the goal of a sustainable urban region. The study's vision is showcased in a DVD presentation, and the study's authors at SDSU are in the process of making these DVDs available for local groups, both in San Diego and Tijuana. The DVD demonstration aims to encourage long-term thinking, which, the study's authors believe, requires looking beyond the international border.

At the University of California, San Diego (UCSD), the *San Diego Dialogue* did much over the past decade to facilitate community based dialogue on a wide range of binational planning issues particularly pertaining to cross border traffic delays and its impact on the region's economic competitiveness and quality of life. Through UCSD's Department of Urban and Regional Planning, *the Regional Workbench Consortium* has also spearheaded bringing together educational institutions such as SDSU, CICESE, COLEF and UABC from Mexico, non-profit organizations, government agencies, and industry partners.

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agencies, environmentalists, and others. Cited in Richard Louv, "2004: San Diego's year of civic revival?" SignOnSanDiego.com, October 26, 2003.

[138] For more information, visit the Envision San Diego website, www.signonsandiego.com/communities/envision/

Regional Workbench Consortium

The Regional Workbench Consortium (RWBC) was created in 1999 to promote collaborative research, outreach and education for sustainable development in the Southern California-Northern Baja California transborder region. Its main focus is the San Diego-Tijuana city-region and coastal zone. Its mission is to "create innovative research-learning partnerships, planning support systems, and educational tools to enable sustainable city-region development." Sustainable development, as the RWBC and many others argue, requires integrated approaches to meeting social equity, economic, and environmental objectives. The National Science Foundation (NSF) characterizes the RWBC as a type of "knowledge-action collaborative"—that is, a civically engaged research partnership dedicated to linking science and technology to policy and planning.

The RWBC is a web-based network of academics and community partners, including university, industry, government and community-based organizations. Funded by the Superfund Basic Research Program of University of California, San Diego (UCSD), its leading participants are UCSD-based researchers from the Urban Studies and Planning Program and from the San Diego Super Computer Center. Other participants represent a wide range of interests from both sides of the border, including NGOs. On the Mexican side, key partners include two leading academic institutions based in Northern Baja California—the Colegio de la Frontera Norte (COLEF) and the Centro de Investigación Científica de Educación Superior de Ensenada (CICESE). On the U.S. side, founding members include participants from UC San Diego, San Diego State University, Scripps Institution of Oceanography (SIO), and the Telesis Corporation, among others. A full list of partners is on the RWBC web site <http://regionalworkbench.org>.

The RWBC is being developed in the spirit of several discipline-specific researcher interfaces such as the Biology Workbench (National Center for Supercomputing Applications), the Sociology Workbench (San Diego State University), the Environment Workbench (NASA), and the Scientist's Workbench (Cornell). All of the RWBC's research projects, bibliographic guides, tools, award-winning multimedia narratives, TV documentaries, and other resources are available on the Web site as noted above.

As of November 2003, the RWBC has twelve ongoing projects. Of these, five are projects to improve accessibility and quality of environmental, social and geographical information in the region, as well as to promote the use of this information for regional planning, policy and educational purposes. Two are

specifically aimed at a sustainable management of Tijuana River Watershed, and two seek to support collaborative planning and management of the San Diego River Watershed. Two projects are San Diego specific, one backward looking and one forward looking: the former is a project that provides historical information on regional planning in San Diego that will be made available in digital form, and the latter is aimed at creating a "Conservation Resource Network" to coordinate and provide technical assistance to NGOs working in the area of land conservation, as well as to serve as a liaison between NGOs and government agencies. One project seeks to improve the quality of life in a low-income human settlement in Tijuana by creating and implementing collaborative redevelopment and investment strategy.

The RWBC's Regional Planning Committee is providing advice for the San Diego Association of Government's (SANDAG) Regional Comprehensive Plan, which addresses both local and interregional issues to promote the increased utilization of cutting-edge information and visualization technologies for regional planning and decision-making.

Conclusion

All the above issues make the case even stronger that the binational region needs a clear vision of its future, to ensure not only the economic competitiveness, but also the livability of the region and to maintain and even improve the quality of life. In the end, it is the residents and the special geographic characteristics of this binational region that make this region so attractive to investment and businesses. If the region loses the charm it now has for many of its residents, the "creative class" will eventually decide to move to other, more livable cities and regions. If the region fails to take full advantage of its special geographical characteristics, i.e., being situated on the U.S.-Mexico border and facing the Pacific Ocean to take advantage of commerce with Asia and Latin America, its competitiveness will also suffer.

In order for the binational region to enjoy sustainable growth and prosperity, then, the region's leaders must look beyond the national borders of Mexico and United States, of county and municipality borders of San Diego and Tijuana, but primarily, they need to start working more closely together to construct a vision of the future of this binational region. Most, if not all, of the issues discussed in this chapter are binational in character, or have impact beyond the national border, and thus require binational solutions. Initiatives taken by the **San Diego State University's Institute for Regional Studies of the Californias**, **University of California, San Diego's Regional Workbench Consortium**, and Tijuana's non-profit organization **Planificación** all indicate that the region is indeed moving in this direction. However, a more active involvement of the region's leaders in public

and private sectors in shaping this vision must take place in order for this vision to become reality in the near future.