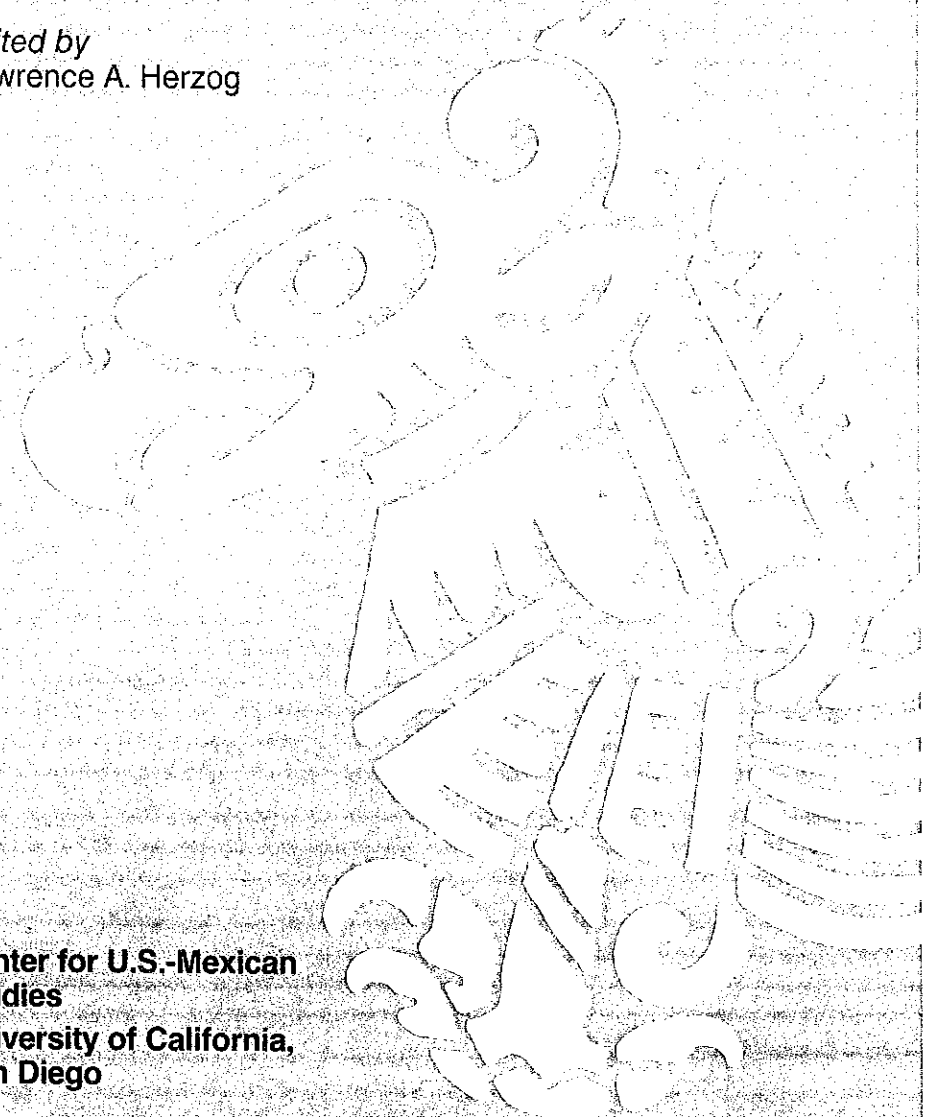
Monograph Series, 19

Planning the International Border Metropolis

Trans-Boundary Policy Options for the San Diego-Tijuana Region

edited by
Lawrence A. Herzog



Center for U.S.-Mexican Studies
University of California, San Diego

PLANNING THE INTERNATIONAL BORDER METROPOLIS:

Trans-Boundary Policy Options in the San Diego-Tijuana Region

edited by

Lawrence A. Herzog

Urban Studies and Planning Program
University of California, San Diego

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CENTER FOR U.S.-MEXICAN STUDIES
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FOREWORD

This book represents one of the first attempts by scholars and non-academic experts from both sides of the U.S.-Mexico border to define and discuss possible responses to the unique set of problems arising from the emergence of large, trans-border metropolitan areas like San Diego/Tijuana. Because these functionally integrated urban aggiomerations are divided legally and bureaucratically by an international boundary, and because of the vast differences in economic development, political systems, demographic patterns, and cultures that constrain decision-makers on both sides of the border, planning and problem-solving in these pockets of shared urban space have been exceptionally difficult and often politically conflictual.

Longstanding problems of air and water pollution, water supply, sewage disposal, traffic regulation, law enforcement, health care, and land-use planning have been exacerbated in the trans-border metropolitan areas by population growth rates that have far exceeded the national average in both countries during the past two decades. New threats to the trans-border ecosystem continue to emerge. For example, since the conference from which this book resulted was held, numerous cases of illegal toxic waste disposal on the Mexican side of the border have been documented. U.S. firms as far north as Los Angeles have been accused by both U.S. and Mexican officials of shipping toxic chemicals ranging from nuclear waste to printers' waste ink to illegal dumps and recycling operations in Tijuana and nearby Tecate.

In recent years, moreover, trans-border metropolitan areas have been on the "firing line" in conflicts between the federal U.S. and Mexican governments over such issues as illegal immigration, drug trafficking, and capital flight. Schemes now being discussed in Washington to deal aggressively with some of these larger problems, including militarization of the border, would have their most deleterious impacts within the trans-border metropolitan areas and could complicate enormously the pursuit of cooperative, binational approaches for management of localized urban growth and planning problems.

The special challenges faced by trans-border metropolitan areas along the U.S.-Mexico border have received surprisingly little attention in the scholarly literature concerned with the borderlands, and apart from moments of acute environmental crisis (e.g., massive sewage spills, floods, etc.), they have rarely been at the top of the agenda for bilateral negotiations between

the U.S. and Mexican governments. The affected state and local governments have formed a variety of task forces, commissions, and other entities to promote better communication among U.S. and Mexican public officials responsible for dealing with these problems within their own jurisdictions (the most recent entry is the City of San Diego's Department of Binational Affairs, created in 1986); but these efforts have proven to be more cosmetic than effective, because they lacked specific decision-making powers that could transcend the international boundary.

Not surprisingly, much of the discussion that occurred at the March 8, 1985 conference on "Urban Growth and Public Policy Options for the San Diego-Tijuana Region" held at the University of California, San Diego focused on the desirability and feasibility of a new kind of trans-border planning entity — one with independent decision-making and resource allocation powers, perhaps modeled on the trans-border regional planning agencies that have functioned successfully in several Western European nations for more than a decade. The elected and appointed public officials participating in the UCSD conference lost no time in pointing out what they considered to be insurmountable political obstacles to the creation of a formal trans-border planning and problem-solving authority for the San Diego-Tijuana region.

Yet, in the absence of such a mechanism, solutions to the problems besetting this rapidly growing metropolitan area — which already has a combined population estimated at 3.3 million — may become ever more elusive. As one of the Mexican scholars participating in the conference argued, the main obstacles to problem-solving are not technical nor informational: "Enough information exists to make border decisions for the next 200 years, yet the level of ignorance in decision-making on both sides of the border is, at times, appalling." Echoing his concerns, Professor Lawrence Herzog, the principal conference organizer and editor of this volume, asks: "If discussions of border planning remain purely technical, will the real task of solving common problems stagnate, as each nation wanders down its separate path?"

This book is intended to move discussion of these matters into the broader realm of public policy, politics, and culture, while not neglecting the task of careful scientific analysis and problem definition. The conference out of which it has grown brought together more than 100 persons, including public officials representing the local, state, and federal government of both Mexico and the United States, academic experts, journalists, community planners, and interested citizens of the San Diego-Tijuana community. It was organized under the auspices of the Center for U.S.-Mexican Studies and the Urban Studies and Planning Program at the University of California, San Diego, in collaboration with El Colegio de la Frontera Norte (COLEF) in

Tijuana. We are indebted to all of the participants in this forum, which featured discussions that were unusually intense, candid, and informative. And we especially appreciate the efforts of Professor Herzog in bringing this written record of the proceedings to publication.

Wayne A. Cornelius
Director
Center for U.S.-Mexican Studies

La Jolla, Calif., September 10, 1986

SAN DIEGO-TIJUANA: THE EMERGENCE OF A TRANS-BOUNDARY METROPOLITAN ECOSYSTEM

by Lawrence A. Herzog
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For nearly a decade now, the gradual juxtaposition of the social, economic, and environmental areas of influence of cities on either side of the United States-Mexico international boundary has been the subject of much debate and concern in academic and public-policy circles.[1] The urbanization of the international border region since the Second World War is well documented. Over the last two decades, growth rates in border cities in both the U.S. and Mexico have far exceeded their corresponding national averages. One important by-product of this urban expansion has been the emergence of trans-boundary metropolitan regions consisting of paired cities ("twin cities") at strategic locations along the two-thousand-mile-long international border. In several of these twin-city regions, one or both of the border cities rank among the largest metropolitan areas in their respective nations: Ciudad Juárez-El Paso, Mexicali-Calexico, and Tijuana-San Diego are the important examples. The border region also contains numerous small- and medium-sized sets of paired cities, and these areas present many of the same urban management problems facing the larger settlements.

The evolution of pockets of shared urban space along the international boundary has generated concern regarding the management of social, economic, environmental, and engineering problems in these binational settlement areas. Over the last decade, researchers have pondered the ways in which air and water pollution, water supply, health care, and land-use planning might be cooperatively managed in the international frontier

[1] Several important books address this subject, including: Ellwyn Stoddard, Richard L. Nostrand, and Jonathan P. West, eds., *Borderlands Sourcebook: A Guide to the Literature on Northern Mexico and the American Southwest* (Norman, Okla., 1983); John W. House, *Frontier on the Rio Grande: A Political Geography of Development and Social Deprivation* (Oxford, 1982); Stanley R. Ross, ed. *Views Across the Border* (Albuquerque, N.M., 1978); Joseph Nalven, ed. *New Scholar: Border Perspectives on the U.S./Mexico Relationship* 9:1-2 (1984).

region.[2] Concerns with the reciprocal impacts of water and air pollution or changes in land use arise from the recognition of the border corridor as an "ecosystem," a human habitat which contains both natural features (e.g., hydrological systems, air sheds, and land formations) and social conditions (consumer behavior, family structure, etc.) that transcend the man-made international political boundary. As one French border scholar has stated, "All boundaries are by their nature artificial and can only be viewed as an invention of the human mind. Lines may be a topographical convenience, they are not natural facts. Nature abhors lines."[3]

In fact, recognition of the border as an ecosystem preceded the appearance of large urban centers upon the frontier landscape. Following the 1848 drawing of the international border, the U.S. and Mexico entered into a series of treaties which recognized the ecological fragility of the borderlands and sought to provide a framework for managing the border environment. An 1884 treaty outlined the parameters for maintaining the boundary line in areas where geographic complications might arise — principally at the mouth of the Colorado River and along the Rio Grande. In 1944, this treaty was amended to include a third river basin, that of the Tía Juana River along the international border between San Diego and Tijuana.[4]

The Need for a Binational Public Policy Agenda in the San Diego-Tijuana Ecosystem

By the early 1970s, rapid urban growth on both sides of the San Diego-Tijuana border contributed to a gradual fusion of this twin-city complex into a single functional metropolis, an "international city" in which the two metropolitan areas became integrated along the international frontier. Historic and cultural ties that had existed for decades were combining with transboundary economic linkages to create an interdependent border metropolis. John Price, noting the growing cultural integration between San Diego and Tijuana during this era, labelled their relationship "international symbiosis."[5]

Cultural integration between San Diego and Tijuana also meant that the political lives of residents of each city were becoming intertwined. No longer could decisions made in one jursidiction be entirely divorced from those made in the neighboring jurisdiction. According to one planning report, commissioned by the City of San Diego in the early 1970s,

> San Diego thinks of itself as a border town, but in reality it is part of the functioning metropolitan region of San Diego/Tijuana . . . The relation between these two halves of the landscape, belonging to two separate nations and to two vastly different economies, goes far beyond this report. But we hope that officials and citizens will begin to see the division, to understand that it is critical, and that it is urgent that they attend to it.[6]

By the early and mid-1970s, the relationship between San Diego and Tijuana had transcended historical and cultural linkages. Economic ties — in the form of growing trans-border retail trade, tourism, industrial development, real estate transactions, and labor migration — were bringing the two border cities into closer contact. Economic linkages began to translate into functional interdependence as larger and larger volumes of goods, people, technology, and capital moved back and forth across the border on a daily basis.

The history of policymaking in the San Diego-Tijuana region during the last decade reveals that public-sector actors, particularly on the U.S. side of the border, recognized the emergence of the interdependent border metropolis and sought to address its implications for public policy. In 1976, a coalition of U.S. and Mexican institutions sponsored a bicentennial conference series called the "Fronteras Project" which brought together public and private officials from both sides of the border to describe the emerging interrelationship of the San Diego-Tijuana region.[7] The next year, construction began on a sixty-

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[2] The pollution-management problem is discussed by Richard C. Bath in "Health and Environmental Problems: The Role of the Border in El Paso-Ciudad Juarez Coordination," *Journal of Inter-American Studies and World Affairs* 24:3 (Aug. 1982):375-392; see also Niles Hansen, "Transborder Environmental Issues in the United States-Mexico Borderlands," *Southwestern Review of Management and Economics* 2 (winter 1982):61-78; and Howard G. Applegate, "Transnational Air Pollution," in *Ecology and Development of the Border Region*, ed. Stanley R. Ross (Mexico, D.F., 1983):127-138. Water supply questions are discussed in Steven P. Mumme's "U.S.-Mexico Groundwater Problems: Bilateral Prospects and Implications," *Journal of Inter-American Studies and World Affairs* 22:1 (Feb. 1980):31-55. Health-care issues are mentioned in an article by Ricardo Loewe Reiss, "Considerations on the Health Status Along Mexico's Northern Border," in *Views Across the Border*, ed. Stanley R. Ross (Albuquerque, N.M., 1978):241-255. Binational land-use planning is the subject of an article by Lawrence A. Herzog, "The Cross-Cultural Dimensions of Urban Land Use Policy on the U.S.-Mexico Border: A San Diego-Tijuana Case Study," *The Social Science Journal* 22:3 (July 1985):29-46.

[3] Paul Geouffre de la Pradelle, *La Frontière, Etude de Droit Internationale* (Paris, 1928):56.

[4] See C. I. Bevans, ed., *Treaties and Other International Agreements of the United States of America, 1776-1949*, vol. 9 (Washington, D.C., 1972).

[5] John Price, *Tijuana: Urbanization in a Border Culture* (Notre Dame, Ind., 1973).

[6] Kevin Lynch and Donald Appleyard, *Temporary Paradise? A Look at the Special Landscape of the San Diego Region: Report to the City of San Diego* (San Diego, 1974):38.

[7] See Fronteras 1976, *A View of the Border From Mexico: Proceedings of a Conference* (San Diego, 1976); and Fronteras 1976, *San Diego-Tijuana: The International Border in Community Relations, Gateway or Barrier?* (San Diego, 1976).

million-dollar light-rail transit line between downtown San Diego and the Mexican border. One important rationale for building the trolley was the growing interdependence between the two border cities.[8]

Two important government reports published in the late 1970s document the growing economic interdependence of San Diego and Tijuana. One study, commissioned by the State of California in cooperation with the federal Economic Development Administration, examined the future of economic sectors such as trade, tourism, and border industry in light of their associated planning problems — growth management, land use, energy utilization, environmental impact, and transportation requirements. The commissioning of this study shows that, at the highest levels of policymaking, officials recognized the environmental and planning implications of the economic interaction between San Diego and Tijuana, as well as the need to address this interaction in future policy strategies.[9] In 1980, a report commissioned by the San Diego County Board of Supervisors documented another controversial and misunderstood linkage between the two cities, the impact of undocumented Mexican workers in the county of San Diego.[10]

Planning and development near the international boundary (the south bay area of San Diego) perhaps best exemplify policymakers' awareness of the symbiosis between the two cities. As the cities became more integrated in social and economic terms, use of land and new construction close to the physical boundary line took on more importance. In the late 1970s, for example, channelization of the Tía Juana River in Tijuana generated the need for a policy response in San Diego, since the river's floodwaters spill across the boundary into the U.S. before emptying into the Pacific Ocean. That response came in the form of a dissipator ditch built to channel potential flood waters toward the Pacific Ocean. In 1980, heavy rains flooded the Tía Juana River estuary, causing severe property damage to landowners in the flood plain on the U.S. side of the border. This led some planners to wonder whether the dissipator ditch was sufficient to manage flood waters released from the Rodríguez Dam in Mexico. Development planning for the Otay Mesa in south San Diego also took on an international flavor, since it is adjacent to

[8] See Metropolitan Transit Development Board, *San Diego-Tijuana: One Region* (San Diego, Aug. 1977).

[9] Office of the Lieutenant Governor, State of California, and Economic Development Administration, U.S. Department of Commerce, *Economic Problems of the California Border Region, San Diego County* (Washington, D.C., 1978); see also Economic Research Bureau, San Diego Chamber of Commerce, "The Baja California-San Diego County Linkage," in *San Diego Economic Profile 1977* (San Diego, 1978).

[10] Community Research Associates, *Undocumented Immigrants: Their Impact on the County of San Diego* (San Diego, 1980).

Tijuana. The construction of a second border crossing into Tijuana at Otay Mesa became the basis for considerable interaction between planners from both countries.[11]

By the beginning of the present decade, the political implications of the growing symbiosis between San Diego and Tijuana began to emerge more clearly. Although citizens, bureaucrats, scholars, and elected officials on both sides of the border recognized the need for local coordination, the principle of national sovereignty continued to impede the formation of any truly binational form of boundary governance. Thus, decisions would persist within the framework of separate jurisdictions of San Diego and Tijuana. Given the fact that Mexico had lost the borderlands territory through armed conflict over a century earlier and the unequal character of the two nations' economies, what hope was there for developing mechanisms for mutual cooperation between the two cities? Price had noted earlier that:

> While cultural adaptation is a two way street in this case, with Mexican culture and society having an impact on America, the fact that America is the economically dominant partner predisposes that Mexican culture will change more than American culture and that Mexicans will generally be forced into socially sub-ordinate roles *vis-à-vis* Americans [sic].[12]

Cultural and political differences and national pride clearly pose potentially serious obstacles in the future management of this functionally unified metropolitan area separated by an international boundary.

By the early 1980s, the terms "binational planning" and "trans-border cooperation" had begun to appear in the print media and at public forums. Yet the notion of cooperative management in the region caused considerable confusion: many wondered about the meaning of the term, about whether it was desirable to have such cooperation, and about what form it might take. Although supporting binational planning was destined to become fashionable and had a visionary appeal to some, no one on either side of the border really knew whether cooperative mechanisms for managing the twin-city region were realistic. Some observers were convinced that such mechanisms would have to go far to transcend the narrow interests reflected in local power struggles and national political agendas; any kind of border cooperation, they felt, would ultimately require that both

[11] See Comprehensive Planning Organization, *International Border Crossing: Otay Mesa/Mesa de Otay* (San Diego, 1978).

[12] Price, *Tijuana: Urbanization in a Border Culture*, p. 174.

local governments convince their national leaders of the importance of bargaining with their neighbors.[13]

The above questions and concerns remain essentially unanswered in the mid-1980s. In the meantime, planning problems endemic to the San Diego-Tijuana ecosystem have grown in magnitude and intensity. Planners have yet to find a solution to the management of the Tia Juana River estuary in the event of a flood similar to that of 1980. Sewage spills from Tijuana's antiquated sewer system have seeped across the border into San Diego continuously during the 1980s, at times forcing local officials to quarantine south-bay beaches. Problems of determining police jurisdiction over crimes committed near the border have intensified of late, a matter which remains on the agenda of the two nations. Questions regarding land-use planning near the border are still important, particularly with respect to new facilities such as the second border crossing, the California Correctional Facility on Otay Mesa, and Mexico's New Tijuana Industrial Park on the Mesa de Otay, among others.

The unwieldy agenda of trans-boundary policy issues noted above and the many unanswered questions surrounding the resolution of trans-boundary problems in the San Diego-Tijuana area led to the organization in 1985 of a public forum for describing and discussing the region's planning problems. This volume documents the events of that public forum, which was held on March 8, 1985 at the University of California, San Diego. Titled "Urban Growth and Public Policy Options for the San Diego-Tijuana Border Region," the conference provided an opportunity for public officials to address the administrative problems associated with binational planning.

Part I of this volume, "Urban Growth and Trans-boundary Planning Problems in the San Diego-Tijuana Region," describes important planning problems in the San Diego-Tijuana metropolis, including land-use planning, sewage and public health, Tijuana's sewage and potable water systems, air pollution, and water supply and management. Part II, "Administrative Responses to Trans-border Planning Problems in the San Diego-Tijuana Region" includes the edited texts of presentations by elected officials and their representatives from jurisdictions on both sides of the boundary. Both sections include the proceedings of question-and-answer sessions as well as commentary by invited guests.

[13] See Lawrence A. Herzog, "Prelude to a Bi-national Planning Model: A Portrait of Land Development Decisions in the California Border Region," *New Scholar* 9:1-2 (1984):153-170; and Joseph Nalven, "Prophets of Boom, Prophets of Doom: The Future of Border Industrial Development in the San Diego-Tijuana Region," *Campo Libre* 2 (1984):153-187.

Discussions of trans-border land use and planning must transcend national sovereignty because some activities and land uses, such as hospitals and shopping centers, are inherently binational. This point is emphasized by Carlos Graizbord's in his emphatically Mexican perspective of "Trans-boundary Land-use Planning." Graizbord argues that the already measurable costs and benefits associated with land uses on either side of the border should be studied more carefully. He proposes a technical simulation model for systematically projecting the impact across the international border of various land uses. Kaare Kjos offers a view of land-use planning at the border from inside San Diego County government. Kjos believes that the County of San Diego has made its planning decisions largely without any understanding of Tijuana's planning process, particularly in the case of the Otay Mesa land corridor near the second border crossing.

Some of the environmental problems in the San Diego-Tijuana region have ignited considerable controversy and public outcry. Trans-border dialogue has been difficult, and pollution problems persist. As John Conway points out in his discussion of "Sewage and Public Health," contaminated waters seeping out of Tijuana's leaking sewage lines are leaving measurable quantities of disease-producing pathogens in the San Diego watershed. Technical solutions are necessary, but so is the political momentum to fund these policies and to implement them. The prospects for their immediate resolution, according to Conway, are poor. Bernardo Salcedo Leos's presentation on "Sewage and Potable Water Systems for Tijuana," highlights the Mexican government's enormous financial and political commitment to revitalizing and expanding Tijuana's water and sewer systems; the geographic and functional fragmentation of these systems has made modernizing the network expensive, time consuming, and very difficult to engineer. The problem of water is one of the greatest planning challenges facing Tijuana, as Philip Pryde points out in his discussion of the "Geography of Water Supply and Management in San Diego-Tijuana," a summary and analysis of the conditions that make water management so difficult in this region.

Air pollution poses another environmental problem for the twin-city region. Hal Brown's discussion of "Air Pollution Problems in the San Diego-Tijuana Air Basin" underscores some of the bureaucratic difficulties associated with the management of air in a common geographic basin. Brown's discussion seems representative of U.S. planners' frustration with and misunderstanding of the Mexican political system. The reactions of one Mexican panelist to Brown's observations illustrate the ticklishness of trans-border communication: in seeking to understand, we sometimes misunderstand; in our search for candor we may uncover sensitive matters that unleash feelings of national pride.

The bruised sensibilities of Roberto Sánchez, a step away from our desired objective of dispassionate dialogue, illustrate that planning the border region is not simply a technical matter or a "computer-modelling problem." Rather, as commentator Joseph Nalven surmised, it is a human and emotional problem as well, one which cuts across both cultural and political life. As Nalven suggess, the problem might be characterized by the term "invidious comparison" — a situation in which the examination of the region through the cultural lens of only one nation generates persistent tension. An important point of discussion emerges here: if discussions of border planning remain purely technical, will the real task of solving common problems stagnate, as each nation wanders down its separate path? What may be needed is a political mechanism to consider bicultural problems of the border zone.

Part II of this volume addresses these matters. In my opening remarks to the afternoon session of the March 8 conference, I invited the panelists to outline their vision of an administrative structure or approach appropriate to managing the San Diego-Tijuana border zone. As an alternative to the currently informal, piecemeal, and insufficient state of political interaction, I challenged the elected officials on the panel to consider the idea of a regional authority for the San Diego-Tijuana metropolitan area. Such a political entity might be given specific decision-making powers through a binational treaty similar to those used by trans-boundary planning agencies in Western Europe.

Panel members unanimously rejected the notion of such a formal binational planning commission for the region. San Diego City Councilman Uvaldo Martinez felt that legal and political obstacles would prove insurmountable, and the lack of an adequate tax base would in any case impede the operation of such a commission. He suggested instead an economic development commission with a combined public- and private-sector staff, which would emphasize foreign investment in the border zone. County Supervisor Brian Bilbray and San Diego Mayor Roger Hedgecock concurred; both believed that a commission would better concentrate on the positive aspects of the shared economic growth of the area, rather than dwell on the negative issues of pollution and growth management. Pointing out that political power cannot presently be shared across the border, Mayor Hedgecock suggested that an economic development commission might strengthen trans-boundary communication and pave the way for a regional transborder authority in the future.

Neither of the Mexicans who spoke during the afternoon session cared to address the question of a proposed administrative structure, a circumstance which reveals one of the difficulties inherent in attempts to promote trans-border dialogue. Even in unofficial discussions, government officials confront severe limitations as to what they can articulate publicly. Jay Wilkinson, who represented U.S. Congressman Duncan Hunter, for example, could not respond to the proposal; he did, however, provide an overview of the wide scope of borderlands issues on the Congressman's agenda.

Those who did address the idea of specific administrative structures for the San Diego-Tijuana area agreed that informal rather than formal trans-border structures are more feasible at present. Robert Duckworth from the U.S. Department of Housing and Urban Development suggested that a working task force might be set up in the San Diego-Tijuana region to address economic development and urban-planning matters. He pointed out that in other border areas, especially in Texas, *comités* (informal commitees of public and private representatives from both sides of the border) have provided a structure from which to begin generating an administrative response to the problem of border planning. Such a response would represent a first step toward a more formal regional commission.

Yet, as commentator Gustavo del Castillo suggested, considerable cross-cultural barriers of misunderstanding and ignorance on both sides of the border still impede a working trans-border dialogue. The problem may be as much cultural as anything else: as del Castillo noted, there is enough information to reach decisions, but the understanding necessary to put that information into practice is insufficient. Norris Clement, however, was more optimistic: he places hope in the universities to provide a backbone of research and dialogue which will support future cooperative ventures.

During the next twenty years, the management of the international border zone will emerge as an important dimension of United States-Mexico relations and foreign policy. The proceedings of the Conference on Urban Growth and Public Policy Options for the San Diego-Tijuana Border Region, as reproduced in this volume, represent a snapshot of the trans-boundary dialogue surrounding this theme at a given moment in time. Neither the conference nor this book could hope to offer immediate solutions to border management problems as complex as sewage regulation or air pollution control. Instead, this volume presents the substance of discussions that began to reveal points of agreement, as well as areas of contention, between members of both nations sharing the urbanized boundary corridor.

A comment on editorial strategy should be made. Where possible, I have sought to preserve the spontaneity and flavor of conference discussions. In addition to the information and perspectives that emerged during the conference, one important characteristic of the cross-cultural dialogue was its dynamism. My intent has been to allow the outpouring of tensions and

emotion that occurred during these discussions to emerge in the text, while at the same time to strive for clarity and accuracy.

I would like to acknowledge the following individuals or institutions for their assistance in the organization of the conference and the publication of this volume: Dr. Wayne Cornelius, Director of the Center for U.S.-Mexican Studies, University of California, San Diego (UCSD), for encouraging me in this venture; Dr. Joseph Nalven of Community Research Associates in San Diego, for professional advice and editorial assistance; the Urban Studies and Planning Program, UCSD, for administrative assistance and support; the Center for U.S.-Mexican Studies, UCSD, for assistance in organization, promotion, and publication of this volume; Ricardo Anzaldúa, Publications Director of the Center for U.S.-Mexican Studies, UCSD, for editorial assistance; the Colegio de la Frontera Norte (formerly the Centro de Estudios Fronterizos de Norte de México), for assistance in inviting Mexican participants to the conference; and the Chancellor's Associates and Third College Provost's Office of UCSD for providing financial assistance for both the conference and the editing of this volume.

Part I:
URBAN GROWTH AND TRANS-BOUNDARY PLANNING PROBLEMS IN THE SAN DIEGO-TIJUANA REGION

TRANS-BOUNDARY LAND-USE PLANNING: A MEXICAN PERSPECTIVE

by Carlos Graizbord
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This paper examines land uses in the San Diego-Tijuana metropolitan area, a region which belongs to a binational urban system. Its main point is that trans-border land-use planning is a subject that has yet to be adequately considered by policy-makers and researchers on this continent. In its proper conceptualization, transborder land-use planning clarifies our understanding of international problems and conflicts such as pollution, suboptimal use of natural resources, inefficient land-use allocation, and duplication of services. Besides exploring the concept of trans-border planning, this paper will outline a desirable trans-border collaborative planning sequence and will briefly explain a tool proposed by CEFNOMEX for land-use monitoring, environmental planning, and growth management. We call the tool SIGET, for Sistema Geográfico de Información Transfronteriza (Trans-border Geographic Information System), which includes a databank that covers the southern part of San Diego and all of Tijuana.

Trans-border Land-use Issues

One of the first issues which arises in trans-border land-use planning is assessing the suitability of transborder natural resources for allocation to specific land uses. We know that when we are using strict ecological criteria, we should assign land to uses which correspond to its inherent attributes in terms of resources. For example, a certain attribute might make an area suitable for agriculture, but in the border region, the lack of coordination among decision-makers on each side of the boundary might result in a misallocation of the land area to another use. The designation of a nature park or a well-defined ecological area as a conservation zone should also be the subject of coordinated decision-making and management.

*In early 1986, CEFNOMEX was renamed El Colegio de la Frontera Norte. This report will refer to the instutition as CEFNOMEX, the name in use at the time of the conference.

A second pressing issue in land-use planning is the environmental impacts of various land uses. The air and water pollution caused by specific land-use designations are usually analyzed both after the fact and by economic sector along the border. As a result, we lose the context for analyzing the broader process of decision-making in land-use allocation. Rather than serving the purpose of problem-solving, sectoral studies of environmental damage are often used narrowly as political ammunition and thus do no more than increase friction. Land-use allocations on one side of the border can also have impacts on the other, such as when a park or conservation area in one jurisdiction provides an amenity in the other. Logically, then, land uses on one side of the border influence types of land development, as well as land prices, on the other. The analytical difficulties implicit in this interrelationship become even stickier when we consider damage to common property resources (such as environmental resources) or the benefits of clear air and water in the border region. Regardless of the innovativeness of the technique for measuring the value of such resources and benefits, assessments of this type must operate in cultural settings which on each side of the border are marked by contrasting perceptions, predispositions, and values.

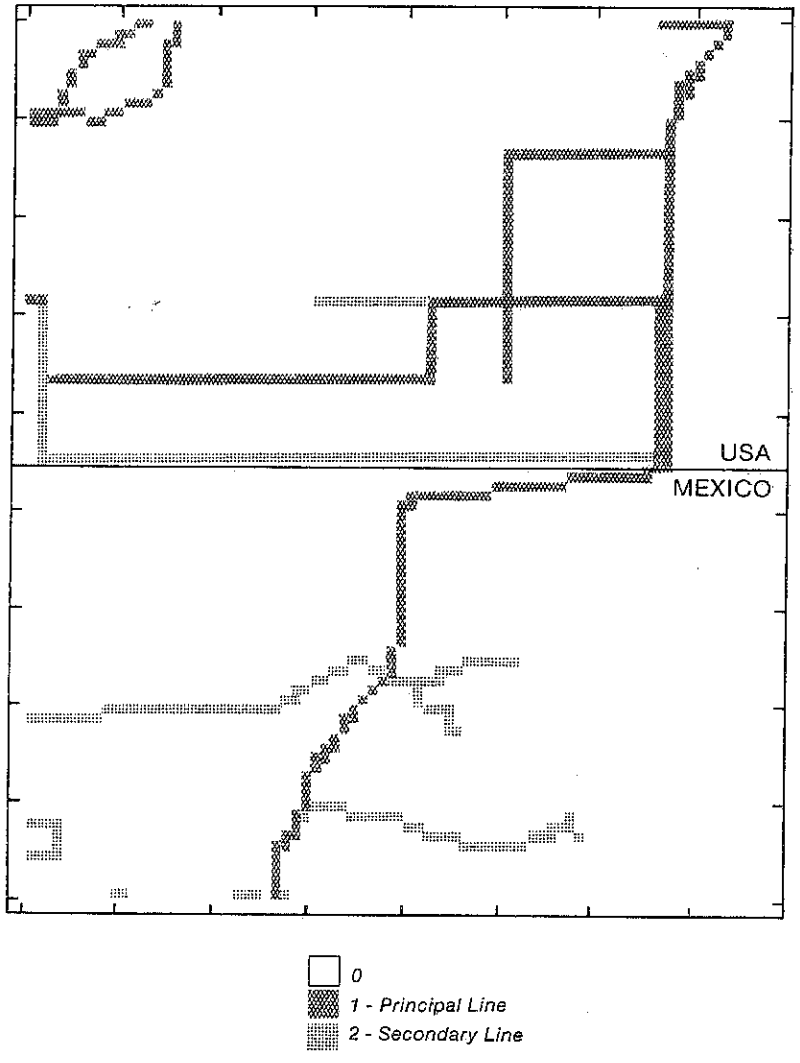
A third issue concerns the suboptimal use of natural resources. Different types of urbanization can harm a common natural resource that crosses the border. For example, when an aquifer's recharge area overlaps a high-density urban development zone on one side of the border, the tributary area of the aquifer may be reduced. In such cases, uncoordinated growth affects a common resource. Trans-border agriculture, to explore another example, exploits aquifers unevenly, with different technologies, under different systems of management, and within different legal frameworks. This not only causes conflict, but leads to the large-scale, inefficient exploitation of a vital resource due to a lack of binational planning and coordination. The case of El Paso-Ciudad Juarez is the most outstanding example.

Forests, geothermal energy, flora and fauna, air, water, and land all require joint management along the international border. The terms themselves suggest the proper conceptual context for planning the optimal use of resources. In considering the joint management of water, for example, we must give thought to the region-wide valuation of the common resource as well as to an assessment of the actors involved, the interaction of the legal and financial mechanisms for managing the quality and quantity of this resource, the water entering and leaving the region, and the possibilities of reusing it. A comprehensive plan must also consider both surface and subterranean water, must extend beyond particular projects such as sewage lines or treatment plants, and must recognize the broader regional context for water management. In practice, single projects are usually developed without any consideration of their binational implications.

A fourth area of concern involves the binational use of services and the duplication of infrastructure. We know that some services, like hospitals and parks, are already used binationally. That is, people from Tijuana might use a medical service in San Diego and tourists from the U.S. might use other services in Tijuana. The difficulty of accounting for such events poses three types of questions. First, how can we plan for providing services in the future or evaluate the present demand for them if we do not know how people actually use them? What do we really know about the activity patterns of the recipients when we make investments in facilities that may be used binationally? Secondly, since we have no joint accounting and budgetary system, how can we define who pays for what? Thirdly, do we really know the impacts, negative or beneficial, of investments in utilities or services when such investments have binational effects? Do we know how to allocate costs and benefits? Although the collaborative efforts that do exist generally originate on an informal, almost casual basis, they still represent a good example of concerted consultation, something that simply does not exist for land-use planning. San Diego firefighters, for example, are available to assist in Tijuana; some infrastructural and energy resources are shared and flow across the border. Electricity, for example, flows from Tijuana to California. Other infrastructural investments, such as those in roads and some public works, are duplicated — but need not be. Coordinated efforts might avoid such duplication.

A fifth element of the trans-boundary land-use planning process falls under the rubric of what we might call distortions. The borderline itself influences the location of certain economic activities, in part as a result of tariffs, but also as a consequence of its impact on production costs and market conditions. The border attracts (and possibly repels) specific industries. Research must be done on what conditions might attract labor-oriented industries, those with binational linkages, and those with particular market orientations. Such industries might be attracted to the border area by its special characteristics; others might choose to locate in the area to decrease the costs of pollution abatement by dumping wastes across the border, or even by locating operations in a country which allows higher levels of pollution. Location theory can help us analyze many activities in the border region. Some firms gain production advantages, while changes in border conditions create a dynamic process which eliminates certain activities and land uses. Another distortion is a "circuitry effect," which can be illustrated by examining the modifications in markets for products and services which occur as a result of border crossings. Border crossings concentrate the market area for certain goods and services in the crossing

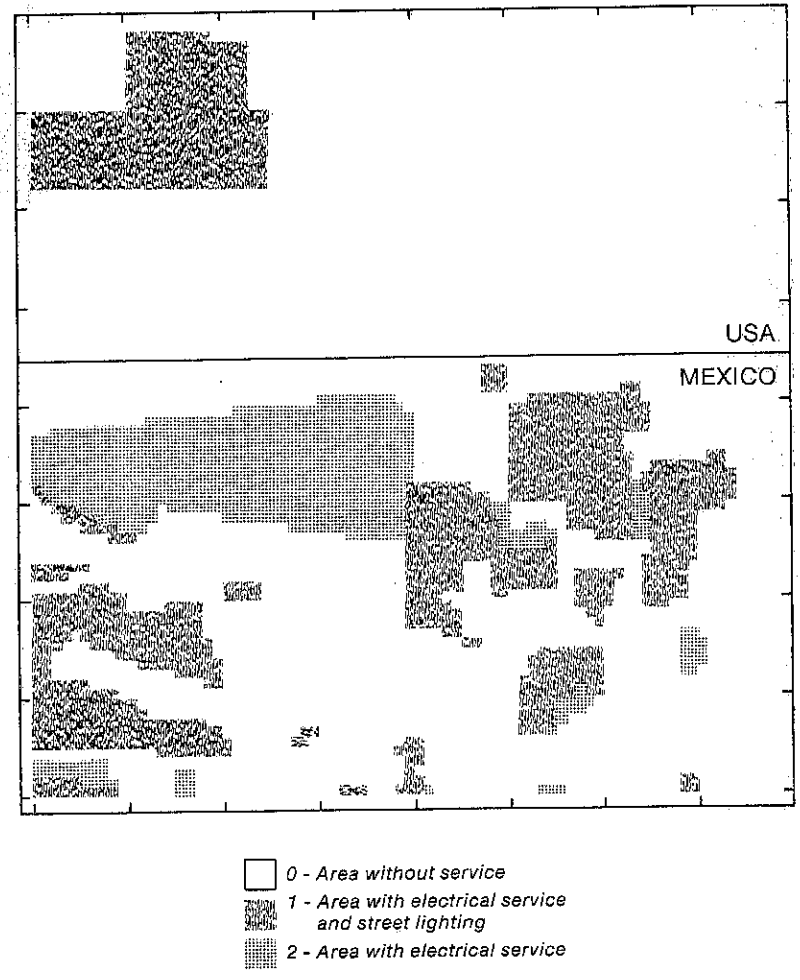
Figure 1
Water Lines in Otay Mesa



Project : SIGET
Date : November 1984
Scale : 100 meters
Variable : Water network

Identification : UATI-09
Place : Mesa De Otay/ Otay Mesa
Program : IN-SIGET

Figure 2
Electrical Service in Otay Mesa



Project : SIGET
Date : November 1984
Scale : 100 meters
Variable : Electrified areas

Identification : UATI-14
Place : Mesa de Otay/ Otay Mesa
Program : IN-SIGET

zone on one side of the border and reduce their market area on the opposite side of the border.

Finally, land-use planning must address the questions of growth management and the configuration of cities. Different growth-management policies create divergent urban configurations, all of which have their own trans-border regional impacts. For example, San Diego's very extended growth pattern has led to the inefficient use of transportation-related energy and higher levels of pollution. Its leapfrog developments contribute to high infrastructural costs and the wasteful use of water. Tijuana's urbanization pattern concentrates air pollution primarily within the densely-populated downtown area; per-capita water consumption is also very low. Common trans-border resources such as air and water are affected differently by each city, but the main point is that planning decisions in border cities create external regional impacts — such as air pollution — which cross the international boundary. No longer can we plan as if the city across the border does not exist.

Trans-border Collaboration

These U.S.-Mexico trans-border land-use problems occur in the largest binational urban system in the world, yet trans-boundary land-use planning is still almost non-existent. In the past we did not have organized and comparable trans-boundary data as a basic planning resource. The experts have neither adequately explored research modes for trans-border planning nor thoroughly studied the mechanisms and procedures necessary to promote collaboration. In order to address these issues, we at CEFNOMEX created a trans-border geographic information system (SIGET), which includes a data bank with comparable trans-border information on environmental, land-use, and spatial socioeconomic variables, as well as on land-use attributes.

In examining border problems, we confront particular decision situations and the need for bringing together planners from both countries. We know that conventional normative master plans would infringe upon the sovereignty of each country; simply put, neither country can tell the other what to do. We therefore implemented a method for continuous, interactive, day-to-day decision-making in long-term policymaking. Through this scheme, different interest groups, experts, and administrators could interact, various objectives and land-use decision models could be tested, and various scenarios could be created to predict areas of future conflict and consensus, with varying projections regarding range of impact.

A flexible tool with various modes of operation and application, SIGET is based on a method which reflects a conception of planning as a process rather than a series of discrete acts in time. In contrast to the problem-solving research mode, which identifies a problem, assumes shared objectives, and ends up with a single report after one or more years of work, SIGET permits planning which is adequate for growth management (a term that implies a continuous process). It takes into account the fact that different groups come into conflict and contributes to the immediate formulation of planning alternatives rather than producing a report after problems and objectives have already changed, with conclusions that have become obsolete. In developing SIGET, we hoped to provide a means for transforming the role of the planner from that of a reactive, passive player to that of a dynamic actor — preventive, evaluative, and managing.

SIGET's pre-analysis mode finds alternative sites for specific land uses and identifies project impacts by providing descriptions of conditions in the study area. In these direct applications, the system's data on wetlands, rare ecosystems, ownership patterns, etc. give instant bases for making decisions. Figures 1 and 2 show how SIGET simulates land uses in the border area. The system's evaluation mode directs attention to proper land-use allocations for specific natural subsystems within the national study area, illustrating the arbitrariness of the borderline as it divides ecosystems. The impact analysis mode helps define areas that are susceptible to damage by the spread of urbanization from one side of the border to the other and can illustrate the impact of demographic growth on infrastructure and services. The simulation mode is useful for defining the policies optimal for developing common resources; for example, it can test various border-area land-use scenarios so as to alert us to their future impacts; it can also test various policies for orienting residential development to show how we might avoid undesirable population configurations in this international urban system, which has one of the highest population growth rates in both countries. This mode also helps us understand how land-use decision processes evolve on both sides of the border, and with this understanding and the ability to simulate changing scenarios, we can not only predict future conflicts and prevent them, but also identify areas of consensus.

Collaborative planning can evolve through successive stages. A good first phase would involve informal or formal contacts, what we might call *concerted action,* to keep both parties informed about a problem in order to reach a common diagnosis; following that stage should come whatever *consultations* are necessary for formulating joint scenarios, bilateral evaluations, and tests of joint proposals, followed by proposals to elected officials and lead agencies for agreements and specific actions; the process should finally reach a point at which the two countries act together by pooling their human and financial resources to reach a common goal. This last step may well imply the formation of an international commission with some powers for

action, regulation, and the development of joint projects, including the provision of certain municipal services by one country to the other. The implementation of SIGET can help achieve the goals of the first two levels, and it can serve as a basis for achieving those at the third level.

SIGET is a very efficient tool. It encourages advisors, planners, and front-line staff to optimize their capacity and productivity, giving structured direction and integration to their interdisciplinary efforts; it saves unnecessary expenditures by obviating repetitious and isolated studies, and through its modes of operation it addresses the myriad problems involved in trans-border planning. Administrators, landowners, developers, and planners can interact through and benefit from the system. The SIGET team at CEFNOMEX has maintained ongoing, informal contacts with academic colleagues in the United States and has productively exchanged views with planning officials in both countries. We expect these links to solidify and to make possible more intense diagnoses and consultations, hopefully enabling us to minimize wasted effort and friction, and to fill the vacuum left by the lack of binational planning. We hope that it can help realize the potential of trans-border planning, which, quite beyond serving as a tool for avoiding conflicts, can help to reveal opportunities of mutual benefit.

TRANS-BOUNDARY LAND-USE PLANNING: A VIEW FROM SAN DIEGO COUNTY

by Kaare Kjos
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Does our planning space end at the border? Should our faces look to the north in continual ignorance and disregard for what is happening just a few miles south? Are the issues, the problems, and the opportunities local only, or do they extend beyond the international boundary? The answer, I think, is obvious. Just as sewage flows and the winds blow in total disregard of international boundaries, so should our planning efforts transcend the arbitrary line just a little bit to the south. In my discussion of these issues, I would like to begin with a brief historical perspective and then focus on a case history of land use, that of Otay Mesa, which epitomizes the theme of this conference.

In the space of several hundred years, San Diego has grown from a modest yet ambitious settlement of a few native souls to a bustling metropolis of almost two million people. We have become a sophisticated cosmopolitan area which is blessed, or cursed, by climate, nature, opportunities, and television programs that in certain seasons continue to attract massive migration from colder regions in the United States. We have an annual growth rate of 2.2%, one of the highest in the nation; but we cannot lock the gates, we cannot pull up the draw bridges. We must find other ways to house the many people who come, to employ them, to move them about, and to find them places for recreation, all the while attempting to preserve our community's sensitive and valuable natural resources. As we have witnessed this strong southwesterly migratory trend in the United States, a reflection of that pattern has appeared south of the border; a migratory movement from the interior of Mexico flows northwest, toward the same border region, but on the Mexican side of the line. Tijuana was just a small town in the early 1900s; it has since grown to a population of almost a million, and with a growth rate substantially higher than San Diego's, it is expected to pass us soon and to reach even higher levels by the turn of the century. Our region, although arbitrarily split, has become a gigantic magnet pulling almost unmanageable numbers of people from both sides of the border to this small area of convergence.

We are one region, the San Diego-Tijuana region, and our two communities do in fact seem to have more things in common than not: climate, vegetation, topography, exploding populations, strained resources and infrastructure, problems and opportunities. On this side of the border, I believe, local officials have to a large extent "missed the boat." For too long, we have ignored our very unique position and our rather unique opportunities. We need to learn what is happening on the other side of the border. We need to learn what plans are contemplated and why, and then to sit down and see what we can do to reach some form of cooperation and mutually acceptable solutions. With that background set, I would like to examine a case history of border planning, of Otay Mesa, which exemplifies what this conference is all about — the resources, the hopes, the opportunities, and the pressures.

From a traditional planning standpoint, Otay Mesa, as we define it, comprises some twenty thousand acres. It is bounded on the west by Interstate 805, on the north by the Otay River Valley, to the east by the San Ysidro Mountains, and to the south by the Mexican border. The area's predominant feature is the flat mesa which for years has supported significant agricultural production: tomatoes, celery, beans, lettuce. Yet, with the exception of a small area around Brown Field (which lies within the jurisdiction of the City of San Diego), most of the mesa remains undeveloped. The recently opened Otay Mesa border crossing has perhaps been the most significant catalyst to activity in the area that we have witnessed in many years.

Otay Mesa has been viewed in many different ways. Some say it is the mecca for future industrial parks and the answer to high unemployment rates in the South Bay area of San Diego, with a capacity to generate between 70 and 80, maybe 100 thousand jobs, if ever fully developed. Others see it as an area to make fast money. Some see the Mesa as an area of valuable resources seriously threatened by recent developments, some see it as an area without much real chance for industrial development; they consider it a place where nobody really wants to go, a place where it just does not make sense to concentrate as much attention as we have. Others take the diametrically opposite view and say, "No! This is not the end of the line; this is just a beginning; this is the hub of future economic activity, especially *international* economic activity."

The future of the Mesa may reflect some of these views, as well as others I have not touched upon. Whatever the outcome, a large number of players will be involved in reaching it. First of all, the City and County of San Diego have effective and immediate political jurisdiction over the Mesa; the federal government is involved because of the new border crossing; the state government is involved in building a correctional facility at this location; the Mexican government is involved at the federal, state and municipal levels; as a very concerned neighbor, the City of Chula Vista has a stake; and the California Department of Transportation, bankers, realtors, and speculators are all involved in advancing their own agendas; and they all have the "right answers." By considering these myriad opinions, we at the county of San Diego have been trying to devise plans that are both acceptable and realistic.

A brief chronology of activities on the U.S. side of the Mesa might be helpful here. The County of San Diego adopted its first general plan in 1967. At that time it designated most of this area, especially between Brown Field and the border, for medium-density residential use. The remainder was left for agricultural and other rural uses. County planners have since recognized the agricultural potential of Otay Mesa, but we have not received the political support to act on these assessments. In 1981, the City of San Diego adopted the Otay Mesa Community Plan as a first step in its design to annex portions of the Mesa. The City advanced the plan (which covered about 12 to 15 thousand acres) at that particular time because of increased activities south of the border and the then-pending border crossing. City planners felt that these developments promised new opportunities, and they wanted to "get a piece of the action."

What they did was to shift the emphasis of the county plan. In the early county plans, the central portion of the Mesa was allocated to residential uses. The city shifted those uses to the west and redesignated the central part of the mesa as an industrial area. The County Board of Supervisors directed its planning staff to evaluate the city's changes and, if we found them acceptable, to incorporate them into the County plan, now called the Otay Sub-Regional Plan. We went to the Board several times. We cooperated closely, and sometimes not so closely, with the private sector and succeeded in hammering out a compromise in August 1984. The plan, which represents the current status of land-use planning on the mesa, allocated the bulk of that flat mesa to industrial uses. Annexation is now just around the corner. The City Council recently approved the annexation, and since there were no protests, all that remain are formalities. We expect that within a month or so, this area will pass out of County jurisdiction and become part of the city.

A number of projects related to annexation are now pending. One is the Otay International Center (OIC), which will occupy some 450 acres adjacent to the new border crossing. The OIC will include typical border-related facilities: customs agencies, warehouses, restaurants, money exchanges, and so forth. The key to getting this facility approved was the costly extension of a sewer line, 11.2 miles in length. The line will tie into the Montgomery line, which links the area to the Highway 5 line and then north into the metro system, where sewerage will be treated (at the Point Loma facility). Completion of

construction of the line is expected in another year. Another pending project is a state correctional facility. The prison has been a long time in planning and may still be delayed. Again, there are problems with sewer lines. State officials are now close to an agreement with the City of San Diego to have a line extended down Johnson Canyon out of the valley so that it can hook into the OIC system. The County of San Diego is also looking at this area as a possible location for an honor camp.

Other than these projects, however, we will not see much development on the Mesa for a long time, at least for residential or other intensive purposes. The area may therefore be a good place to locate some necessary land uses to which nobody wants to be a neighbor — such as an off-highway vehicle (OHV) park. For ten or fifteen years, the County and the City have been struggling to find a location for such a facility, but nobody wanted it. We recognize that those who are avid users of such vehicles do need a place to go. We therefore chose a site at the extreme southeastern corner of the mesa, and with the strong support of the State and the County Board of Supervisors, an OHV park on the Mesa will probably materialize. Another possible use would be a Grand Prix track of 520 acres. Such a facility was recently phased out in Long Beach, and its promoters have been looking around for a new location. They looked first at Fiesta Island, but the idea did not catch on too well, and they are now considering Otay Mesa. The Border Patrol is as concerned about these projects as it is about any activity close to the border. No matter what happens on Otay Mesa, we will be entering into a dialogue with the Border Patrol, and we are going to have to confront that reality, hopefully to a happy resolution.

Most important of all that has been happening is the establishment of an inter-jurisdictional task force. For too long, each of the various jurisdictions has been operating in a vacuum, in too much disregard of what has been going on in neighboring communities, each looking out for itself, often at the expense of others. Fortunately, we are now seeing some change in that; we are starting to talk to each other through the task force, and although the committee is not yet officially sanctioned, it has been meeting regularly. The committee includes representatives from the cities of San Diego and Chula Vista, San Diego County, CalTrans, and SANDAG. Yet there is still one key member missing, and that is somebody from Mexico, from Tijuana.

However, let me point out that what we have done so far has not totally ignored or disregarded our neighbors to the south. When they adopted the Otay Mesa Community Plan, city officials did contact Mexican officials and did include the recommendations of a plan prepared by Mexico's National Institute for Community Development (NDECO), an agency which I understand no longer exists. The city's original plan called for a border crossing at the center extension of Harvest Road. After discussions wit Mexican officials, however, U.S. authorities agreed to move the crossing two thousand feet to the east to accomodate a proposed circulation system on the Mexican side.

County officials have also tried to establish channels of communication with public officials in Mexico. I first became involved in this effort several years ago. It is true, as Carlos Graizbord has said, that we cannot and should not plan for the other side. Still, it seemed ludicrous to me that San Diego County was about to undertake a planning effort involving thousands and thousands of acres, and our maps ended abruptly on the border line — they were just white on the other side. We were almost totally ignorant of what was going on just a stone's throw across the line. Se we succeeded in identifying our Mexican counterparts and held a number of very helpful meetings. One important group we interacted with was Promotora, the state and federal agency established in 1981 to plan and develop portions of Tijuana and Mesa de Otay. In these meetings we exchanged information, showed each other maps, and discovered that there are indeed some discrepancies, some things we simply did not know about. It seemed a good idea to continue this kind of exchange.

At about that time I learned one of my most valuable lessons in this kind of effort: that is, we do things very differently on the two sides of the border. Planning in Mexico is a much more centralized function, much more highly controlled at the federal level, than it is in the U.S. The two countries' political systems are also very different; in contrast to the U.S., where public agencies are fairly stable organizations, the players in Mexico keep changing. This was perhaps my greatest frustration. After I had finally identified a key group of people that I felt we could work with, federal elections occurred, and a year later state elections, and the staff disappeared. Replacing them has taken some time, and we now are in the process of identifying and reestablishing contacts.

We cannot give up. We cannot ignore either our interdependency or the golden opportunity to do something positive in what has somehow turned out to be the last frontier. As Congressman Duncan Hunter said in his remarks at the opening ceremonies for the new border crossing on January 24, 1985, "This is the time . . . to sit down and discuss . . . issues of mutual concern and interest." I could not agree more; but I also think that we have to be careful and realistic. We need to recognize our cultural and economic differences, limitations, and priorities. For example, while we in the United States take more or less for granted the importance of issues such as environmental protection and pollution, emerging nations that are still trying to feed and to employ their people may view such concerns as dispensable luxuries. At the same time, we must guard against placing too much emphasis on the border. Many see our proximity to

Mexico as a wonderful economic opportunity. However, we should not forget that the opportunities are still divided by an international boundary subject to political fluctuations and uncertainties.

There are things that we need to do and there are things that we are trying to do — dialogue, for one thing. We need more than political speeches. We need to talk to each other at all levels: low-key, informative, nonpolitical, nonthreatening. In this regard, we (Carlos Graizbord and his institute, the City of San Diego, and the County of San Diego) are now trying to organize a review committee — a low-key, nonpolitical, unofficial review committee that will meet periodically to discuss plans, pending projects, and developing trends on both sides of the border. As has become evident over the years, a large number of individuals, groups, and agencies involved in all kinds of activities have an interest in the border region. Yet many of them seem to operate in almost total ignorance of the others. They duplicate each other's efforts, and their interests overlap; it would be nice if we could somehow identify all these people, if there were some interest in coordinating some of their efforts, if we could make them a bit more effective.

In conclusion, I answer my opening question. Our planning world does not end at the border. We simply cannot afford to ignore what is going on to the south. Like it or not, we live in one region with shared problems and opportunities. If ignored long enough, problems such as sewage, water, and undocumented workers will belong to everyone. The opportunities are likewise mutual, but if ignored long enough, they may be lost. We have much to do, but with growing awareness and growing understanding, we can and we will.

SEWAGE AND PUBLIC HEALTH: THE SAN DIEGO-TIJUANA REGION

by John Conway
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I want to express some concerns about border sewage from a public health perspective. The topic has received almost daily attention in the media. Anyone who reads the newspapers and pays attention to television and radio is aware of the current concern about health risks associated with the surface discharge of waste water in the San Diego-Tijuana border region. That concern centers basically on *potential* risks, because there has thus far been no documented outbreak of disease. When waste water runs on the surface of the ground, it poses a health risk to individuals.

The potential problem results in part from occasional breaks in sewer lines in Tijuana which, together with the force of gravity, produce surface runoff on the U.S. side. The water, which crosses the border at Stewart's Drain, Cañon del Sol, Smuggler's Gulch, and Goat Canyon, is not in itself a great problem. What could be a problem is that people might come into contact with the surface waste water. Concern has been expressed, for example, about the health of undocumented Mexicans who cross this part of the border and end up working in restaurants in the U.S. Diseases originating in this contact with surface waste water might easily be transmitted as a result.

Additionally, parts of Tijuana have no sewer service; waste water discharged in these areas runs downhill across the border into the Tía Juana River Valley on the U.S. side. Again, people might utilize that water, and health problems could occur. In addition, since the Tía Juana River flows into the Pacific Ocean, the contamination of its waters poses a health risk on public beaches, which on occasion have had to be closed because of high bacteria counts. Related to this is the effect of contaminated water on the Tía Juana River estuary, a natural salt-water coastal sanctuary.

The waste water that flows into the Tijuana sewer system and is pumped up onto the western mesa runs down an open channel to the south for about 2.5 miles, where it flows across the beach into the ocean. This flow can reach a volume of up to about 10 million gallons per day. Obviously, people living south of the border are not immune to the problems of surface waste

water, and its impact on them must be severe, but we have no hard data to confirm this judgment.

An additional dimension of the problem is the discharge of Tijuana waste water into the United States for treatment at the Point Loma sewage treatment plant, a procedure which has been going on for a long time. This practice is absorbing some of the treatment capacity that San Diego, with its growth, could use. That waste water cannot be accepted into the San Diego interceptor for an unlimited time; San Diego will soon need to reclaim some of the excess capacity now being loaned to Tijuana.

Clearly, we have to do something with this sewage, and it has to be done in a way that does not adversely impact public health. If we just let it run on the ground, we will probably have a massive outbreak of some disease. This may sound like a doomsday prophecy, but we have good evidence to show that if sewage spills continue, we may have a serious health problem by the year 2020 or 2050. The waste water problem could be handled to alleviate potential health risks in three different ways, two of which are probably unacceptable. I raise them as possibilities in order to illustrate some of the more extreme scenarios, then I will propose what I think would be a reasonable solution.

First we could bury our heads in the sand and say, "O.K., we have a waste water problem, but we are not going to do anything about it." If we do so, the outcome will have the following parameters: San Diego's plant can now treat about 150 million gallons of sewage per day (mgd). By the year 2000, according to the Lowry Report prepared for the City of San Diego, the population of the San Diego metropolitan service area (excluding Tijuana) will have grown to slightly more than two million. Sewage flows from such a community would be about 200 mgd — that is, between 50 and 70 mgd more sewage than we are currently treating in San Diego. Tijuana's population, projected at slightly less than two million by the year 2000, would be generating about 90 mgd of sewage — around 70 mgd more than they are currently producing.

Those projections of increased sewage are probably high. Even if we halve the combined projections of increased sewage, however, we would still have about 70 mgd more waste water than we have today. That certainly exceeds the capacity of the San Diego plant, and it just as certainly exceeds any reasonable projections of sewage treatment capacity for Tijuana.

What kind of a problem do we have? What do we know right now about health and sewage? Unfortunately, although we have learned something about the problem, our knowledge is still deficient. We know that we have not had any massive epidemics of water-borne disease in San Diego, nor in Tijuana. However, according to an interview with a Tijuana physician in a KPBS television documentary titled "Aguas Negras," viral hepatitis A is endemic in Tijuana. It is also fairly well known that two parasitic, water-borne protozoan diseases — amebiasis and giardiasis — are prevalent. According to the County Health Department, pathogens found in ocean water samples included salmonella, vibrio parahemolyticus, adenoviruses, and enteroviruses. The point is that we have potential health problems. A growing volume of untreated sewage implies more pathogens, and ultimately, a potentially massive health problem.

The beaches on the United States side of the border have been closed for long periods in the Imperial Beach area, and on one occasion, beach closures due to contamination extended as far north as San Diego's Silver Strand. Beaches in Mexico are not closed, but that does not mean that the pathogens are not present, nor that Mexican bathers run no health risks. I am sure that the risks are present. If nothing is done, the increased production of waste water will exceed our ability to treat it, and more waste water will enter the Tía Juana River. It will have a severe impact on the national sanctuary and on public beaches. It is fair to predict that the beaches could be closed almost continuously.

Let us now consider the unlikely optimum situation in which we have unlimited resources. Let us suppose also that relationships between the United States and Mexico were such that unlimited cooperation could take place. The Lowry and Associates report recommended siting a waste-water treatment plant at the junction of Monument and Dairy Mart roads, a plant which could treat 130 to 150 million gallons daily, at a cost of 729 million dollars. It would have a long ocean outfall extending 27 thousand feet offshore. If it were to be built, this plant could treat all the waste water generated in Tijuana and the South Bay area of San Diego, including Otay Mesa, to the year 2000, and probably beyond. Building that plant is not a possibility at this time. The point, however, is that it might have solved a problem.

Let us take the speculative line of wishful thinking one step further. As a primary facility, the proposed plant would remove only a certain amount of the materials in the waste water that are detrimental to water quality and to public health. We could build a better plant by upgrading it to a secondary-treatment facility, which would provide better control and also disinfect the waste water. In addition, given sufficient capital, we could build sewers for all of Tijuana and tie them into this plant. Otay Mesa could be integrated into the system as well. We would have a situation in which no waste water would be discharged to the ocean or the Tía Juana River. (The Tía Juana River would probably be almost dry in such a scenario.) We could then take the processed waste water from this plant and discharge it five miles offshore. Every once in a while we might want to put a little water in the river, just to flush the estuary. The estuary does need a fresh water flush from time to time, though not a continual flow. Further, the

current discharge of waste water 5.6 miles downshore from the border in the Tijuana system would essentially cease. The new plant would require no pump or force main and no mechanical equipment, since everything would feed into it by gravity. This is a utopian situation, and I do not think it is realistic at this time.

Neither situation is probable. We are not likely to see the investment of massive resources in the construction of utopian waste-water treatment plants for the San Diego-Tijuana area. On the other hand, we will probably not witness a situation in which waste water runs perpetually on the ground, since social norms are likely to evolve in favor of protecting the environment. At least that is my hope. What will happen? I can only offer a rough prediction based on what I have been able to discern through interviews and secondary sources.

First, we have witnessed an announcement by Mexican officials that they plan to build a treatment plant 4 miles downshore from the canal conveyance system. (This is not the plant proposed for construction on the Alamar River.) It will offer primary treatment and be designed to handle about 30 million gallons a day, an amount equal to the total waste water currently generated in Tijuana. News reports indicate that this plant will be finished within a year or two, and it will likely have several impacts. First, when the force main in Tijuana now under construction is finished, it will hopefully eliminate some of the current problems with line breaks. The system will be putting the majority of Tijuana's waste water through primary treatment, then discharging it into the ocean. That will reduce somewhat the volume of sewage being pumped across the border and taken up to Point Loma. It will free up some of our capacity and will take care of some of our current problems with broken mains. We should not have the same problems we have had in the past at Stewart's Drain, Cañon del Sol, Smuggler's Gulch, and Goat Canyon.

Since man is fallible, and breaks and spills will inevitably occur, I would like to see two factible additions to Tijuana's new system. First, we on this side of the border have to ensure that if breaks and spills result from natural forces such as gravity, then runoff will be controlled through some sort of collection system. If we ever have a break, let us say in Smuggler's Gulch, and the waste water flows across the border, it could then be picked up by this conveyance system and taken down to Las Playas by the bull ring. From there it could be pumped on the side of the street in Tijuana back up to the mesa into the open conveyance channel. Current figures indicate that the city of Tijuana provides waste-water pick-up to about half the population. I would like to see the additional *colonias* in Tijuana receive waste water treatment. Recent loan approvals suggest that this will happen.

We would then start picking up waste water from some of those areas which are now encouraging surface discharge. That will keep it out of the Tía Juana River and remove the health threat which occurs when individuals walk through rivulets of waste water that flow from the hills into the *colonias* and ultimately into the river itself. Thus, in addition to the construction of a new sewage system in Tijuana, the existing infrastructure would have been expanded, and all of this would be integrated into a conveyance system on our side of the border.

As a third step, the United States could build on our side of the border a waste-water treatment plant much smaller than the one proposed in the Lowry report. A plant treating a third as much sewage as the proposed plant, probably somewhere between 40 and 60 million gallons a day, would do several things: it would serve as a waste-water treatment plant for Otay Mesa development, taking some of the pressure off the Point Loma plant; it would provide a convenient hookup into the conveyance system mentioned earlier; and it would provide an emergency connection to Mexico. If Tijuana's new system were ever to fail, we would have the same problems that we have today. Whenever Tijuana's system has a problem, its sewage must be moved against a gradient; if they have a pump failure, gravity again takes over. But if we keep our emergency connection, we could pick up Tijuana's runoff if they ever have to shut down their pumps for repairs. Furthermore, having a waste-water treatment plant near the border would enable us to reverse the flows of the conveyance system mentioned earlier. Instead of pumping runoff towards the area of Playas and back into Mexico, we could return it to the treatment plant on this side of the border.

All the contingencies would be covered if these plans could be realized, in a step-wise sequence, during the next fifteen to twenty-five years. It is important that we protect ourselves by putting in a conveyance system. If this can be done, the risk of water-borne disease in humans would essentially be eliminated. Rather than leaving waste water running on the ground, we would have a cooperative system to handle waste water from both sides of the border. If this comes to pass, surface discharge of waste water will no longer pose any risks to human health.

SEWAGE AND POTABLE WATER SYSTEMS IN TIJUANA

by Bernardo Salcedo Leos
Ministry of Urban Development and Ecology (SEDUE),
Mexicali, Mexico

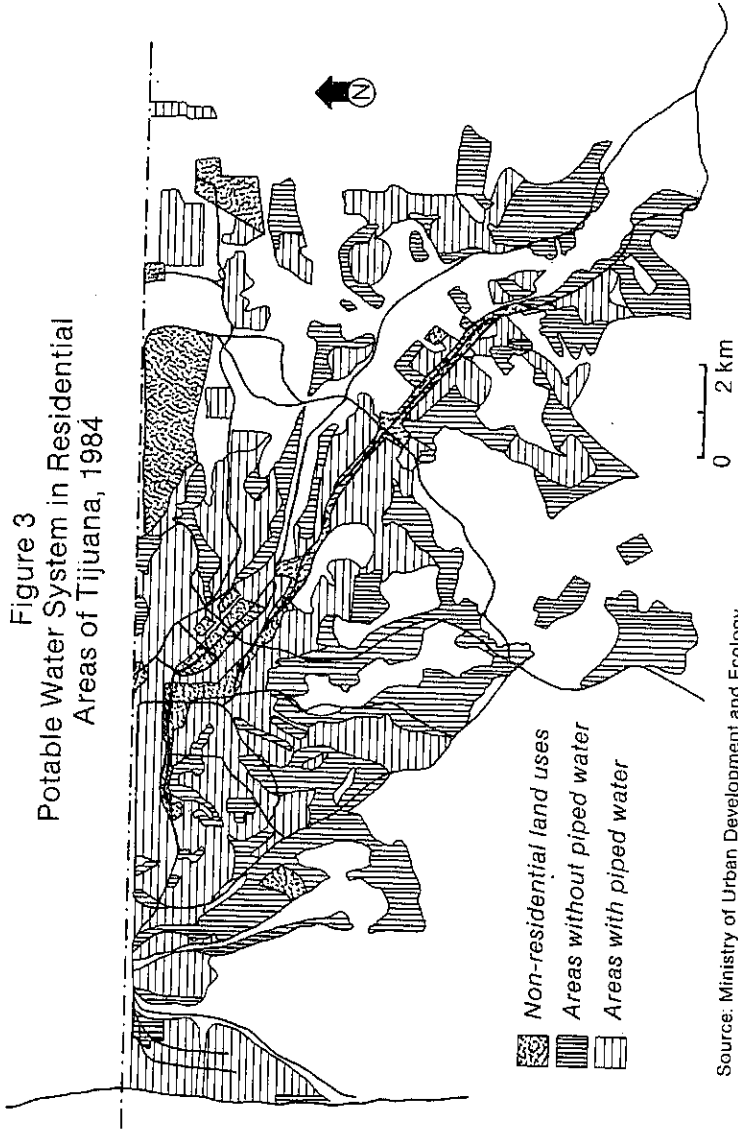
The topic which I am to address here today is the Integral Program for a Potable Water and Sewage System for Tijuana. A good deal of attention has focused on this topic recently; our last speaker has just outlined a number of relevant and very important aspects of our problems in this area.

Referring to the map of Tijuana's potable water system (see figure 3), let us consider some of the more important elements of that plan. The construction of a network to supply Tijuana with water began many years ago with the Abelardo Rodríguez reservoir, which captured water from the Tía Juana River before it entered the city. At the time of its construction, the reservoir provided the most reliable source of water for the city, but it has not proved reliable over the long term, especially during dry periods, which in this area can last up to twenty years. The reservoir's capacity is limited, and water levels fall dramatically in periods of scarce rainfall.

Subsequent moves to supplement Tijuana's water supply have included the construction of La Misión aqueduct to Tijuana and the drilling of wells throughout the Tía Juana River basin. The most recent effort to resolve Tijuana's water problems, one which may well prove adequate to supply the city over the long term, was the construction of an aqueduct to carry water from the Colorado River through the Mexicali Valley to Tijuana. Water from this aqueduct feeds into the Carrizo reservoir, which has a capacity of 30 billion cubic meters. This reservoir serves as an enormous holding area for water coming through the aqueduct, which subsequently continues through the pipeline to the Florido purifying plant. The Florido divides the stream into two channels to supply water to the city of Tijuana.

Topographic differences in altitude serve to facilitate the distribution of this water supply. The Carrizo reservoir, at a higher altitude, supplies the water-purifying plant through gravity flow. The second channel, again working via gravity flow, supplies other areas of the city. The entire system is supplied from two entry tanks, once again using the force of gravity. Altitude varies considerably within the system, but many areas of the city,

Figure 3
Potable Water System in Residential Areas of Tijuana, 1984



Source: Ministry of Urban Development and Ecology *Urban Development Plan of Tijuana* (Mexico, D.F.: 1984); map redrawn by A. Joulia Lagares

such as the Mesa de Otay, can receive water solely through gravity flows.

Another source of potable water for Tijuana is the Rodríguez reservoir, which supplies 600 liters per second to the city's purifying plant and supply networks. Five wells drilled at La Misión, located at highway level halfway between Tijuana and Ensenada, provide an additional 170 liters per second. At the Carrizo reservoir, structures designed to capture runoff water currently provide 340 liters per second. One final source of water is the desalinization plant in Rosarita. Because its production is not yet consistent or continuous, however, I have not included it in the final tally of water resources.

Thus, we can calculate Tijuana's current water supply at 1480 liters per second for a population of 750,000 — a serious shortfall by any estimate. Using the base population figure of 750,000 and assuming an average daily water consumption level of 300 liters per inhabitant, the city presently requires 2604 liters per second of potable water. Since much of the city has no water supply network, the deficit has not yet been viewed as critical. In some areas, moreover, water trucks provide additional inputs of water.

Figure 3 indicates the areas of Tijuana which are serviced with piped potable water. As revealed by the coding scheme on this map, the areas serviced by Tijuana's water distribution system are widely dispersed throughout the city. As a result, the supply system is highly fragmented. It actually consists of a series of minor independent subsystems which have developed piecemeal over time in response to changing demands. These subsystems were constructed around holding tanks built to supply a neighborhood, a housing complex, or other residential unit. Although linked, they do not constitute an integrated system capable of functioning in an articulated manner.

The two mains which carry water from Tijuana's principal water sources — the Rodríguez reservoir and La Misión aqueduct — meet at one point, thereby improving the efficiency of the city's water distribution network. Generally speaking, however, the system remains unarticulated, a fact which creates variations in water pressure that make it impossible to expand the system rapidly in areas where it is needed — e.g., to more-elevated areas ideal for rapid settlement, or to inner-city areas with empty lots available for development.

Figure 3 also shows the limits of Tijuana's current urbanized area. Comparing this area with that serviced by the water delivery system, we can see how much of the city remains without piped water service. In response to this situation, the federal government, together with the state government of Baja California, has determined to design an integral program to supply potable water to the city of Tijuana. This project would

provide water to the entire urbanized area and meet the needs of a population of 1,200,000, which represents Tijuana's projected population for the year 1995.

Let me say parenthetically that the city may nevertheless reach this figure well before that date. To minimize the negative consequences of our uncertainty about Tijuana's growth rate, we need to compare information from the Integral Program for Potable Water with the guidelines presented in Tijuana's urban development plan. Such a comparison will illustrate the degree of agreement between the water program and projected urban growth and will indicate how the water program can be optimally linked to future development patterns.

The project will combine a new network of water mains with the lines already in use to create a completely integrated and articulated potable water-supply system. The projected system would be capable of utilizing all of Tijuana's water sources, especially the Mexicali-Tijuana aqueduct, which together comprise a highly reliable water supply. Also included in the project are a number of components essential to the functioning of such a water supply system: purifying plants, holding tanks, pumping stations, etc.

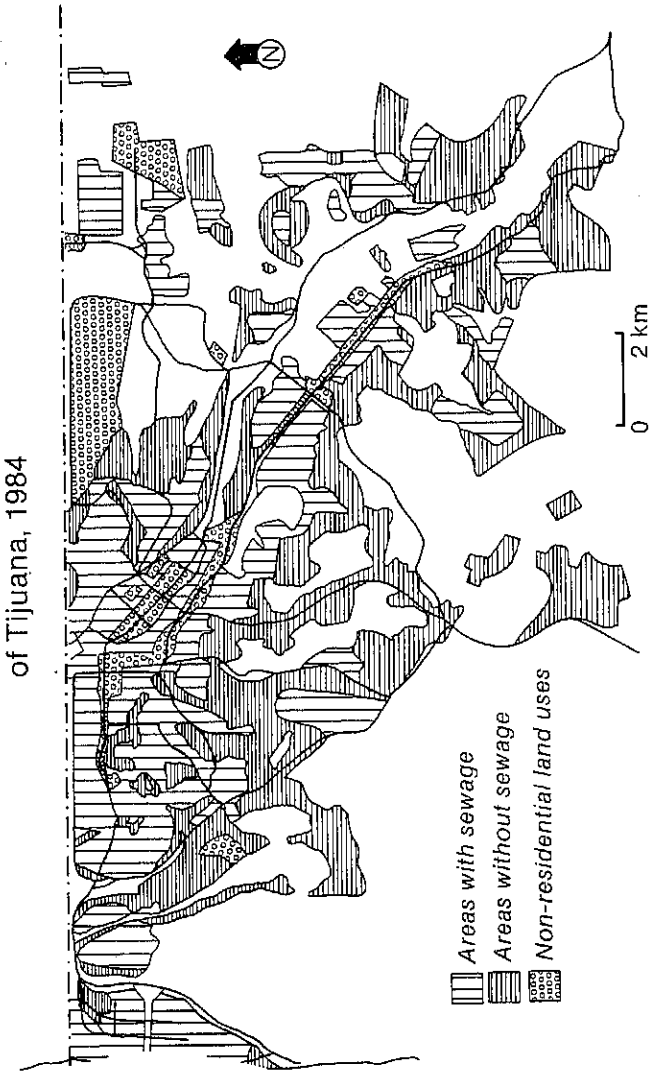
I will now turn to a discussion of the Integral Sewage System Program, a program closely linked to the potable water system, since supplying water and removing it after use are two aspects of the same process. The supply system is obviously directed toward distributing water, but it must be accompanied by a system for removing waste waters.

Figure 4 shows the area of Tijuana now served by sewage lines. Comparing this area with the boundaries of the urbanized region, we once again find a gap between the settled domain of the city and the smaller territory that is actually sewered. A substantial number of populated areas simply do not receive this basic service. Thus, just as we found with the water-delivery system, the sewage system is highly fragmented. Developing an integrated sewage system, like supplying potable water, involves using the city's topographic variations to remove sewage by the flow of gravity.

The system as it functions today comprises a series of channels which carry sewage from various sections of the city. The proposed program would reinforce some of the sewage channels and increase their capacity, as well as construct new lines to service those areas currently outside the sewage collection network. The proposed project also includes the construction of a series of requisite supports for the sewage program, including pumping stations, a sewage-treatment plant, and a mechanism for disposing of treated sewage.

The project would consist of two stages: In the first, all sewage would flow toward a pumping station, which would send

Figure 4
Sewer Service in Residential Areas of Tijuana, 1984



Source: Ministry of Urban Development and Ecology *Urban Development Plan of Tijuana* (Mexico, D.F.: 1984); map redrawn by A. Joulia Lagares

it under pressure (some in pipelines and some in open ditches) toward the city's sewage-treatment plant. After passing through a primary treatment process, the water would be appropriate for certain inland uses in areas where it would not reenter the Tía Juana River watershed. At this point, the treated water could be raised to high altitudes and released for reuse into closed basins for purposes such as inland forestation projects or agricultural irrigation near Rosarita. The treatment plant could be upgraded at some later time to treat the sewage more thoroughly and make the water appropriate for a wider range of uses.

The second stage in developing an integral sewage system involves the construction of an additional plant next to the Alamar River and dividing the system into two sections. Sewage from Otay Mesa and its immediate environs, areas which are projected for development, would flow to this second treatment plant, from which it would be released after treatment for use in crop irrigation.

We are fully aware of the trans-boundary problems that have arisen because of ruptured sewer lines and of problems relating to the emergency connection to pumping station No. 1, which now receives all of the city's residual water. This emergency situation has persisted far too long. The Mexican government is in the process of implementing its response, which will take the form of these new drainage and sewage systems for the city of Tijuana.

Translated by Sandra del Castillo

AIR POLLUTION PROBLEMS IN THE TIJUANA-SAN DIEGO AIR BASIN*

by Hal Brown
Air Pollution Control District,
County of San Diego

Tijuana and San Diego share a common geographical air basin. The daily interchange of air across the Mexico-U.S. border makes this an international basin requiring binational solutions to air-quality problems. Together, the two cities form a rapidly growing metropolis of more than three million people. Since we forsee deterioration in air quality, we know that we need a joint program to protect the health of this international community. In contrast to the maze of agencies that has emerged to deal with border-related problems regarding sewage and water, however, very few people are working on air pollution. Most air quality control work, in fact, is centered in San Diego County's Air Pollution Control District (APCD), a pathbreaking example of international cooperation which has indispensable functions, responsibilities, and goals in the area of regional environmental protection.

The initiative behind the APCD began some years ago, when we in the United States recognized that having clean air was a desirable goal. In response, Congress passed the Clean Air Act, thereby creating the Environmental Protection Agency, a federal agency which established air pollution control standards, primarily for health reasons. The Clean Air Act requires that each state prepare a "completion plan" for complying with its requirements, which in California led to the creation of APCDs for each major geographical basin. The San Diego air basin covers no U.S. jurisdiction outside San Diego county. By contrast, the south coast air basin of Los Angeles covers four counties, and that of San Francisco, seven. Because San Diego's APCD falls within San Diego County, it functions under the control of county government, and the County Board of Supervisors acts as the Air Pollution Control Board.

*A version of this presentation, titled "An Example of International Cooperation: The Tijuana-San Diego Air Quality Project," by Hal Brown and Virginia Bigler-Engler, is available at the Air Pollution Control District, County of San Diego, California.

When California established its districts, however, it failed to recognize that the southern portion of San Diego's air basin is in Mexico, and that geographically we are part of the San Diego-Tijuana international air basin, a *cuenca internacional*. The Santa Ana Mountains to the north, the Laguna Mountains to the east, and the Sierra Juárez Mountains to the south form a natural air basin facing the ocean to the west. Tijuana sits in a northward-facing canyon, and nighttime drainage winds transport its pollutants across the border into the United States, while daytime sea breezes reverse the process. When the sun goes down, the sea breeze stops, and the ground starts to cool; the air in contact with the ground then gets cold and drains downhill. Generally at night, the air from Tijuana drains out of the rivers (the Tía Juana River, Alamar River, and others) into the Tijuana Canyon, across the border into the United States, and out over the ocean. When the sun comes up in the morning, the sea breeze begins, and this air is carried back inland. On temperate days, a daytime exchange of air occurs between Tijuana and San Diego.

Our role at the local APCD is to achieve and maintain air quality standards in San Diego County. Our office is somewhat unique in that we not only prepare plans, but also execute the control strategies to make the plans work. Because we have to execute our own plans, we have a different perspective than most planning agencies. Yet we could clean up San Diego county and have not one pollutant coming out, but with Tijuana in our air basin and the problem of Los Angeles smog, what can we really do? Air does not recognize political boundaries.

Recognizing that conditions in Tijuana were going to affect the quality of the air that we breathe and exchange back and forth on a daily basis, we attempted to find out who our counterparts in Mexico are. However, we quickly encountered problems in developing a joint approach to air pollution control. They arose from the difficulty of reconciling the procedures of a centralized Mexican regulatory system with a decentralized local, state, and federal system in the United States. Once we had resolved this difficulty, a viable working relationship began, and we were able to establish the Tijuana-San Diego Air Quality Project.

Communication began, after some delay, with officials in Mexico City. In 1976, we met in San Diego with Mexico's senior air pollution official and his Mexico City staff. These government officials were from the Sub-Ministry for Environmental Improvement, at that time part of the Ministry of Health. For a week, we worked with these people and devised a classic plan of how to establish an air pollution control program for Tijuana. Of course, a classic plan that you can implement is something else.

After we technical planners had met and developed a workable plan, it was shipped off to Mexico City and Washington D.C. We bogged down talking about how to implement the plan and make decisions. In the United States, the federal government makes the laws, and the state government executes them and turns them over to local agencies. These local agencies then have to implement the plans, and they usually do. We devised a plan. We talked to our counterparts in Tijuana from Mexico's federal government, but their ideas do not filter up. They only filter downward, but actually there is no place to go downward. No one at the local level ever went up to Mexico City to suggest, "This is what you need to do." In Mexico, someone at a desk in the Sub-Ministry for Environmental Improvement makes a wide-ranging plan, and each city in Mexico has a set of these nice plans for all their activities. But they have no mechanisms with which to execute them. In fact, we have no mechanism for the United States and Mexico to talk to each other about them. The Environmental Protection Agency and the Sub-Ministry for Environmental Improvement signed an agreement to work together on border matters in 1978. It called for a policy meeting between the administrators of the EPA and the Sub-Ministry, to be followed by a technical meeting to put together a working plan and a second policy meeting in which the technical experts would react to policy issues. But we had so many real problems in execution that the agreement was never implemented.

An example that really brings home how planning is done from the federal district in Mexico comes from an architect friend of mine who was involved with the development of Cancún, a beautiful island off the coast of Yucatán. He was telling me all about great designs and so forth, and I said, "Yes, it's a beautiful place. How do you like it?" He responded, "I don't know. I've never been there." Here's a man, sitting up there creating massive plans, who has never been on the local scene. This is what was happening to us in the environmental area. All the decisions are made by the central government in Mexico City.

The federal representatives in Mexicali and Tijuana are part of the government's activities, but they have no role except to respond. If officials in Mexico City decide that they need something implemented in Tijuana, they telephone the local federal delegate, and say, "We want you to do so and so." While we were trying to work out the details of our international effort (after having concluded an agreement between the environmental agencies of the United States and Mexico), they would also call Washington, D.C., and say, "We told our man in Tijuana to do this, now you tell your man in San Diego to do this." The EPA officials in Washington would respond, "We can ask them if they would want to do that." Mexico City would say, "What do you mean *ask* them? We just told Tijuana, you tell San Diego."

It took us a long time, nearly two years of meetings, to explain that we at the local level make the planning and operational decisions. Then, Mexico City started talking to us directly, however much they thought it improper. They felt that talk from Mexico City should go to Washington, D.C. only. This is one of the big problems that face our two nations in addressing our shared border air pollution — sorting out who has responsibility for what.

Environmental studies of the Tijuana area, in the form of particulate monitoring, began in 1979. The international effort has been well documented and held up as a model for other border cities to follow. However, recent economic setbacks and the change of Mexican administrations have curtailed or caused indefinite delays in the project.

When Mexico changed administrations, we knew that Miguel de la Madrid would reorganize environmental protection activities in Mexico, and we were very hopeful that his government would establish a department for environmental improvement independent of the Health Ministry. What they did instead was to abolish the department of Public Works and Human Settlements (SAHOP) and establish a new agency called SEDUE, the Ministry of Urban Development and Ecology. Now they don't even have "environment" in the name of the agency. We are in the corner of ecology, which may be the right place because we have to operate on all portions of the ecosystem.

Not only is there a new administration, but when the environmental agency was abolished, three thousand people left their desks and projects sitting there. Some actually threw plans in the wastebasket. Ecology is a whole new ball game. Since the Sub-Minister for ecology is a biologist, it's just natural that all the major slots will go to biologists. What do they know about air pollution? Not too much. We want to educate them, but we found out that they are so worried about the ecology that addressing the issue of air pollution is going to take a long time. Trees have to be planted and the birds and the flowers must be saved.

Air pollution in the border region is a problem. It is not a massive problem, but it is an industrial health problem. One source of pollution that we have been working on with our counterparts in Tijuana since 1976 is lead smelting. I went to a lead smelter in the central La Mesa neighborhood. On both sides of the Tía Juana River, we observed workers chopping up batteries, taking the lead out, and melting them down. The batteries came from the United States, and the lead goes back to the United States for manufacturing. The operation would not be permitted in the United States, but regulations do not prevent it in Mexico. That, however, is another problem. After ten minutes, I had a headache from all the lead floating in the air, and I asked one worker how long people worked at the plant before their hair and fingernails fell out. "I don't know," he answered, I never heard of anybody working here over three months." People need jobs and they are desperate to take them. Once their health goes, though, they have to do something else immediately. This is a serious problem.

There was a further complication associated with this La Mesa site. Next door to the lead smelter is the largest *rastro* (slaughterhouse) in Tijuana, which has a dairy associated with it. The fumes from smelter operation were floating down to where the cows are and were being absorbed in the hay, making it almost certain that the cows ingest lead. The lead goes into the milk, which is consumed by children and adults in Tijuana. In this case something needs to be done quickly, yet it is difficult to resolve the situation on all levels.

Another problem involves a landfill near Rosarita Beach. Unlike our landfills, this one will accept any kind of refuse. Burning is prohibited at the dump, but the trash ignites through spontaneous combustion. Once, during a low-inversion southerly wind, this refuse ignited, and a black cloud descended on downtown Tijuana. The phenomenon was rather unique, and everybody noticed it. When he gets his canyon filled, the owner of the landfill is planning to plant it with prickly pears. He is going to harvest those prickly pears to make *nopalitos*. I do not know whether anyone would want to eat *nopales* from a dump with no controls upon its content, but how would they know? This is another area that needs to be looked at as a health problem associated with air quality.

We also must understand the economic meaning of these problems. We have to say, if Tijuana is going to be a beautiful city and attractive to tourists, we have to keep it from becoming another Los Angeles. Tijuana would like to be a good, clean city for tourists to visit repeatedly and for extended stays. Governor Roberto de la Madrid's theme was, "Don't spend three hours in Tijuana, spend three days." Tijuana may see that occur if it starts controlling air pollution.

At APCD we look at that as a goal to reach ten or twenty years from now, but we wonder: Where are we going to be on this uncontrolled road? We are trying to establish some monitoring of gases in Tijuana to see where we are. How bad is the air in Tijuana, Otay Mesa, downtown, and near the Rodríguez reservoir to the south? It may be great; it may be miserable. Five or ten years down the road, we will know if we are getting worse or better. By working with the federal agency (SEDUE), we are trying to establish some air pollution monitoring.

In 1983 the Presidents of the two nations signed an agreement similar to the existing environmental agreement. The administrator of the EPA was named coordinator for the United

States, and the Sub-Minister for Ecology was named coordinator for Mexico. The new agreement takes a major step beyond the last one. It has a section in which appendices can be written on air pollution, sewage, and water. It also provides a way of both formulating a plan and executing it, whereas the previous agreement gave us little more than a nice way of getting together.

In 1981 the APCD Board signed an agreement with the federal delegate for Baja California and also the Baja California State Chief. We had an excellent working relationship but never executed anything. Since the federal delegate lived in Mexicali, he wanted 90% of the environmental funds spent in Mexicali and distributed a little to Tijuana as a token recognition of its existence. This sort of inter-city rivalry has been important in environmental planning in Baja California.

Under the new environmental agreement, three technical meetings between the two nations have been held, the first in Tijuana in the spring of 1984. The first official face-to-face meeting between local APCD officials and Mexico City officials was scheduled for March 19, 1985. Since that time, we have had three-and-a-half years in which to try to get something going. We are going to start the educational process all over again by reminding the Mexicans that in San Diego we make our plans, and we have to execute them. By using that theme during the previous administration, we achieved a great deal of success in letting the local people speak. A federal delegate in Tijuana and a federal delegate in Mexicali gained input into what was happening locally and a voice in what happened in Mexico City. We feel it is critical. If the local people do not have input, then whoever is sitting at that desk in Mexico City and has never been to Tijuana might be responsible for reaching politically unfeasible or unrealistic decisions.

A GEOGRAPHY OF WATER SUPPLY AND MANAGEMENT IN SAN DIEGO-TIJUANA

by Philip R. Pryde
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San Diego State University

The discussion of water issues in the San Diego-Tijuana border zone can be divided under two main headings: flood control and incoming potable water for the region. Both topics are inherently binational, because, just as in the case of air pollution, we do not control cross-border movements of water. They occur whether anyone is doing anything about them or not. The basin of the Tía Juana River (see figure 5) is our main area of concern, particularly with respect to flood control. About 30% of the basin lies within the United States, and about 70% in Mexico. The primary tributaries that form the Tía Juana River are Cottonwood Creek and Río de las Palmas.

The basin of the Tía Juana River consists of four functionally differentiated regions. At the coast is the estuary, already mentioned as an area which the United States is trying to preserve in the form of a sanctuary. The flood plain of the river on the U.S. side is still used primarily as agricultural land up to the international border. On the other side of the border lies a third section of the river, the developed portion of metropolitan Tijuana up to Rodríguez Dam, an area currently undergoing urban renewal. Beyond Rodríguez Dam, areas of relatively sparse population on both sides of the border form the majority of the basin.

On the U.S. side, one major water-collecting area is Pine Valley, where the flow of Cottonwood Creek is impounded by Morena Dam and Barrett Dam below it. On the Mexican side, Tecate Creek flows through Tecate and into Cottonwood Creek further down. Beyond the city of Tecate lies the major portion of the Mexican basin, about which we have little hydrological information, since the area lacks meteorological gauges and gauging stations. Gauging stations on the United States side do monitor the flow of the Tía Juana River. An older one (see figure 6) shows what can certainly be called a low flow in the Tía Juana River. On the other hand, there are also high flows which can cause severe flooding problems on both sides of the border.

Unlike the flow of rivers in San Diego County, the flow of water through the Tía Juana River system is uncontrolled.

Figure 5
Basin of the Tía Juana River

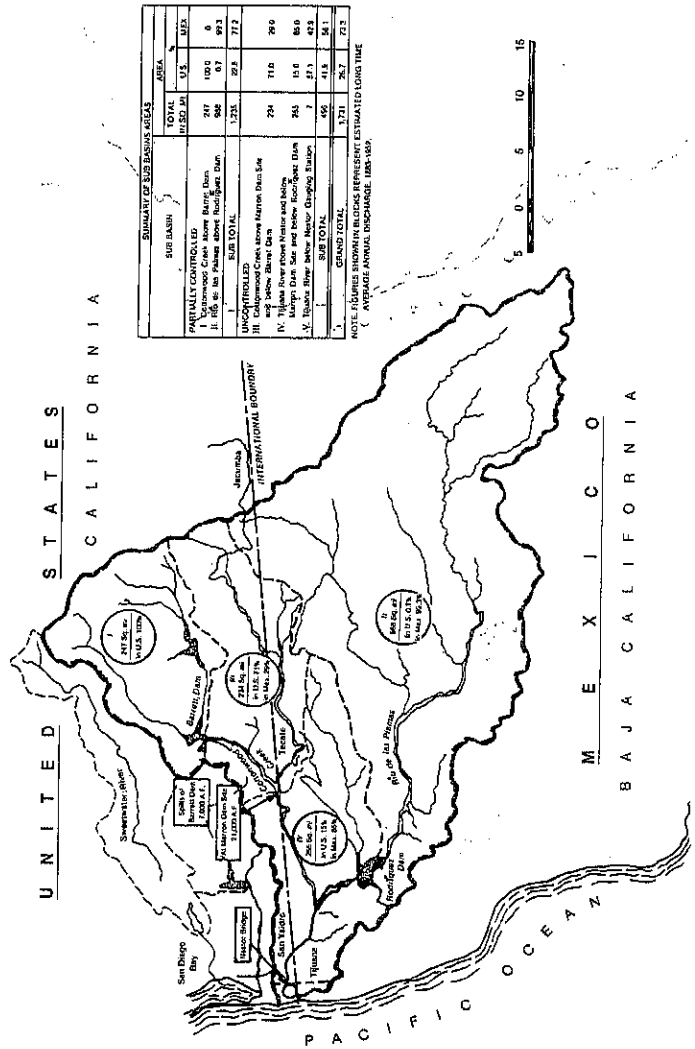
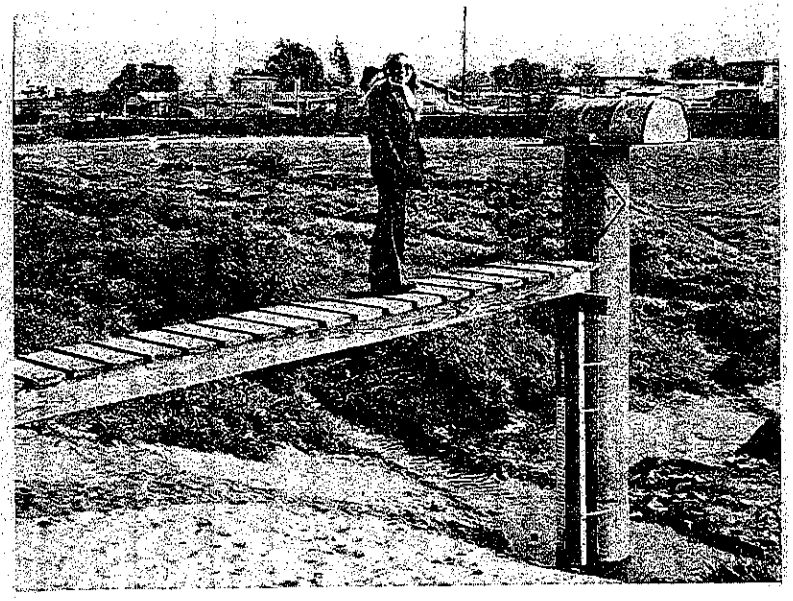


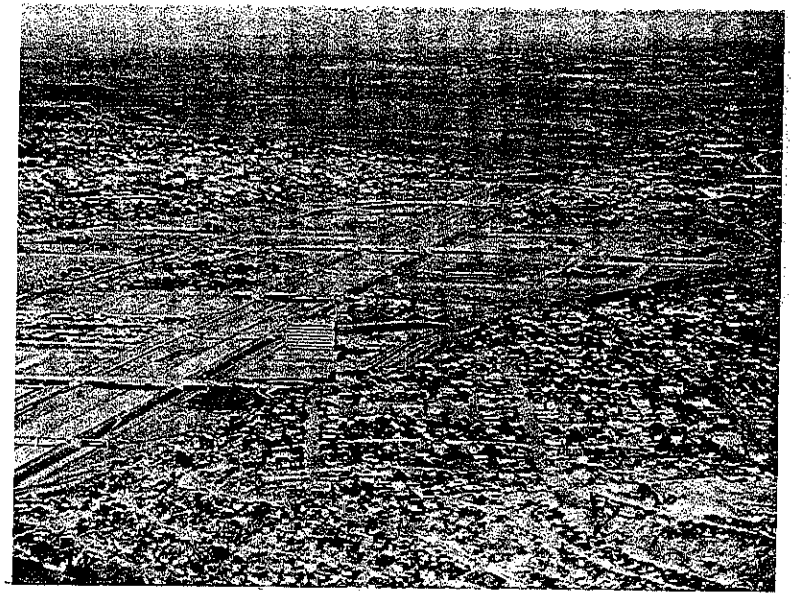
Figure 6
Gauging Station on the Tía Juana River



Rainwater falling in the southern Laguna Mountain area, and on the Mexican side, inland from Tecate, flows to the ocean uncontrolled by any dams. No dams control the flow of Tecate Creek into Cottonwood Creek below Morena and Barrett, nor are the flows into the Tía Juana River below Rodríguez Dam interrupted. The frequent major thunderstorms in that area produce runoff which flows to Tijuana and the United States unimpeded by any control structures such as obstructive dams. There is mainstream runoff, and some flows run across the land, carrying rocks and debris with them down toward the river. Sometimes road breaks occur, such as when the river broke across Dairymart Road on the American side.

To control the river, Tijuana built a major flood channel, which is about the only realistic option a city has when a river is in the middle of a heavily developed urban area. That control structure extends to the border (see figure 7). Under the terms of an accord concluded through the International Boundary and Water Commission, the United States agreed to receive the flows from this channel and conduct them in such a way that they would not flow back into Mexico. However, for reasons arising on the northern side of the border, the U.S. was two or three years late in complying. Fortunately, because the delay occurred during a dry period, no problems arose between the time that

Figure 7
Flood Channel through the
City of Tijuana

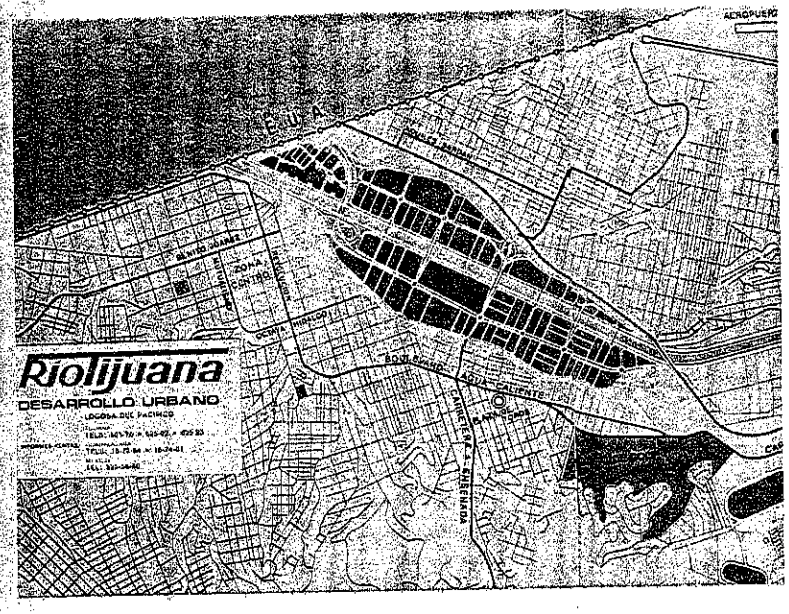


Mexico completed its channel and the time that we completed a dissipator system on our side.

Initially, plans in the U.S. called for a concrete flood channel which would connect with the channel coming out of the city of Tijuana, convey the flows roughly along the path of the river valley, place them in an interceptor sewer near Monument Road, and empty them into the ocean. The idea included developing the Tía Juana River valley on the American side with a major marina and other commercial developments. The plan was abandonded in the mid-seventies and was replaced by a plan which included the preservation of the estuary. The flooding problem on the American side was handled by what has been called the dissipator system at the border, a facility which receives, slows down, and spreads out any floodwater flows from Mexico. Under dry conditions, the dissipator utilizes a low-flow channel; under wet conditions, utilization shifts to the spreading basin that goes down to Dairymart Road, and beyond that into the normal flood plain of the river.

The Tijuana-San Diego flood control system is not complete. Construction is still needed on the Mexican side, and some works are being developed in the Cottonwood Creek (the

Figure 8
Map of RíoTijuana Redevelopment
Project Area



"Arroyo de Alamar") section of the city to complete flood-control plans there.

With regard to incoming fresh or potable water, the city of Tijuana has five sources, and they are not likely to be adequate in the very near future. From what we now know, Tijuana's population will probably soon exceed that of the city of San Diego. But the growth of Tijuana has been reviewed by others, so let me simply add that with respect to potable water supply, we must look at the gradual expansion of the physical area of the city up to the 1980s, with recent redevelopment projects indicating the future trajectory of the city's growth and modernization (see figure 8). All of this will require a lot of new water. Tijuana's sources have been Rodríguez Dam (see figure 9), which does not always have water (for example, during the dry period of the mid-1970s, the reservoir held very littler water); wells in the Tía Juana River itself; aqueduct flow from the river; the desalinization plant at Rosarita Beach (see figure 10); and finally, the most interesting and difficult source, the Colorado River.

The Colorado starts in the Rocky Mountains and flows southwest to Lake Mead, where it is stored for redistribution to each state in the river's enormous basin. Below Lake Mead, Davis Dam regulates the flow of water downriver for users in

Figure 9
Rodríguez Dam outside Tijuana

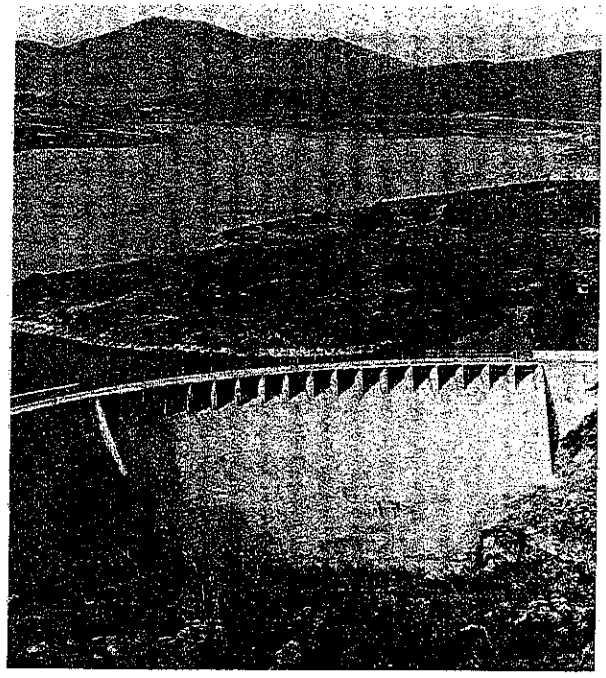
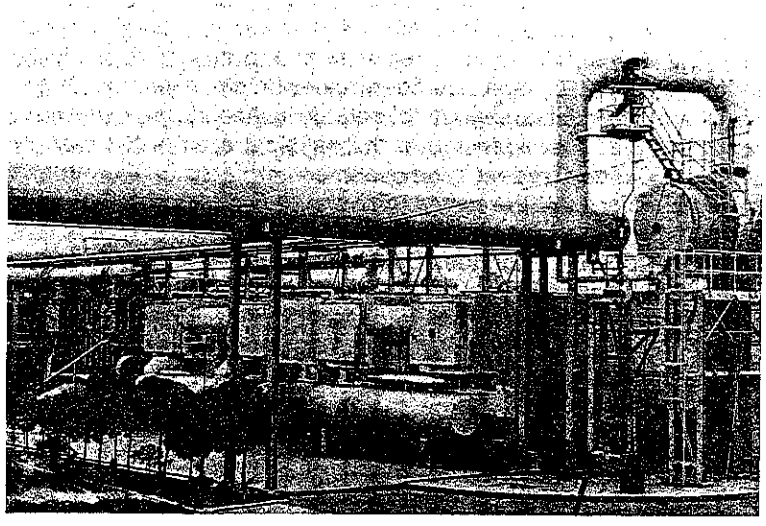


Figure 10
Desalinization Plant at Rosarita Beach



California and the Mexicali Valley. Imperial Dam diverts water into the Imperial Valley, and below Imperial Dam is Morelos Dam, which regulates the flow in Mexico. As you probably know, a 1945 treaty guarantees Mexico the right to a half million acre-feet of Colorado River water per year. Before that time, the United States had divided it up without considering Mexico's needs in any formal way. Beyond the Morelos Dam, the Colorado almost ceases to exist.

On the Mexican side, there is extensive irrigation throughout the Mexicali Valley. A satellite picture (included here as figure 11) clearly shows the extensive irrigation on both sides of the border. The El Centro-Calexico-Mexicali metropolitan area appears on the map as a gray area, and below there the river becomes essentially a conveyance for used irrigation water.

With respect to the Colorado, Tijuana's main concern centers on the construction of the previously mentioned Río Colorado Aqueduct. Although it will convey only about a tenth as much water as the Colorado Aqueduct on the U.S. side, this is a major undertaking, because it requires raising the water over terrain whose altitude is more than twice the level of the U.S. canal. When completed, this feat of engineering will provide Colorado River water to Tijuana on a daily basis (see figure 12).

Another source of potable water in Tijuana, which has already been used, is emergency water conveyed through the U.S. system to the city of Tijuana. The system for doing so, constructed some years ago, draws from San Diego's Colorado River water, which originates in the reservoir behind Parker Dam. After crossing the mountains through the Colorado Aqueduct, the water is diverted out of the main channel near the city of Hemet and toward San Diego. Final diversion of water into the San Diego aqueducts occurs out of the storage facility at Otay Reservoir or lower Otay (see figure 13). From lower Otay it was very easy to convey water to Tijuana as part of Mexico's legal allocation of Colorado River water. Supplying Tijuana in this way only required crossing Otay Mesa, a distance of about seven miles and a very easy connection to make into the Mesa de Otay on the Mexican side. Diverting water in this way became possible in the 1970s, and has been used at various times since, depending on the supply of water.

On the U.S. side, the Central Arizona Project now threatens the water supply of the San Diego region. Through this project, Arizona is reclaiming its legal right to some water that California has come to rely upon. It will not affect water supplies to Mexico or to Tijuana because the 1945 treaty makes Mexico the first claimant on its one-half-million acre-feet, regardless of what happens on the U.S. side. Mexico therefore has a preferential claim to this water, which amounts to a guarantee that they will receive it. The Central Arizona Project, much of it now built, will

Figure 11
International Border at Mexicali
(Imperial Valley in the U.S. at left)

probably start conveying water to Tucson and its surrounding areas by 1986.

I will close by emphasizing three important points. The first concerns ground water. Both Mexicans and Americans take ground water from the bed under the Tía Juana River, yet we know very little about the quantity of water available from that aquifer. What we need to know more than anything else is its sustained yield: how much can be removed without depleting the aquifer? This important question is presently unanswered. Furthermore, we need to know more about the quality of the water in the basin. Both sides have the ability to pollute that aquifer, and we really need to know more about the quantity and quality of its water in order to avoid doing so. So far, little research has been done on this subject.

Secondly, since San Diego is already heavily dependent on Colorado River water and Tijuana soon will be, we must also concern ourselves with the quality of Colorado River water. Most discussions of the issue tend to focus on quantity — how much we can "steal" from Arizona, how much someone can sell us, and so forth. However, water quality is also becoming a major

Figure 12
Sign along the Route
of Mexico's Colorado Aqueduct

Figure 13
Lower Otay Reservoir in San Diego County

factor in the equation, partly because of increasing salinity. For a number of reasons, the Colorado has tended to get saltier over time, a phenomenon which very much concerns Mexicans, particularly agriculturalists in the Mexicali Valley: if salt levels in their soils increase any further, they are going to face severe problems in crop cultivation. Another dimension of the water-quality issue is the presence of major pollutants in the river. Oil-shale development in Colorado and Wyoming, since it would take place within the Colorado River basin, could affect Colorado River water and get into our drinking fountains in San Diego and Tijuana.

The third concern, which is not so much a problem as an interesting possibility, is compact sales of water. According to recent reports, San Diego has been negotiating with people in Colorado to build a dam on the upper river so that they might sell up some of Colorado's river water. This ignites considerable controversy in a state where water is more precious than blood. Most Coloradoans would rather come to San Diego and sell their blood than give up their water. Nonetheless, such bargaining raises the interesting possibility that water might be bought and sold between agencies that function outside the formal Colorado River Compact. According to that agreement, we could take Arizona's water as long as they weren't using it; once they have the ability to use it, however, the Compact prohibits their selling it to us. In the future, water might be bought and sold among various agencies and jurisdictions, perhaps including the city of Tijuana. That possibility deserves careful examination by a metropolis with enormous demands for water on the one hand, and scant current supplies of it on the other.

COMMENTARY

Roberto Sánchez
Centro de Estudios Fronterizos del Norte
de México (CEFNOMEX), Tijuana

The question I would like to address is how we can attain joint management of growth in the Tijuana-San Diego metropolitan area. Planners and policymakers from the two communities clearly have many problems in common, and at the same time must struggle with the tremendous political and economic gap that separates the two cities and countries. From past experience, we know that it is very difficult to resolve these differences. We cannot move away. Unlike a married couple, who can get a divorce when problems arise, and unlike neighbors who can move away from eacy other, we are neighbors who simply cannot be separated. That is fundamental, and it cannot be forgotten.

Before I listened to the talks today, I thought it would be best to remain optimistic by pointing to the positive aspects of the twin-cities/border relationship. Yet my sense of the morning discussions is that there is some cause for pessimism. Our differences at times seem overwhelming, and my pessimism today is born out of the ongoing problem of communication across the border.

However, let me dwell on one positive issue for a moment, if only to give an optimistic dimension to this talk. I speak of energy. For several years, the United States and Mexico have maintained an agreement to support each other by exchanging electricity across the border. The San Diego-Tijuana area has a unique advantage in this respect, because Tijuana's electrical supply system is not connected to the national electricity network. Normally, if a community in Mexico wished to connect its system or supply electricity across an international border, one section of the national network would have to be disconnected in order to maintain the system's overall output of kilowatts. Tijuana's independence from the national network thus permits electricity exchanges across the border, from San Diego to Tijuana and from Tijuana to San Diego. The agreement between Mexico's *Comisión Federal de Electricidad* (Federal Electricity Commission), and the San Diego Gas and Electric Company calls for supplying 150 megawatts of power to San Diego, as well as 70 megawatts to the Southern California Edison Company.

This one area of cooperation demonstrates that we can work together. In other areas, however, basic disagreements have surfaced in the talks we have heard this morning, and I would like to address them.

I must say that I felt guilty as I listened to Mr. Brown's talk on air pollution in the border region. I felt guilty being a Mexican. He gave the impression that we on the Mexican side of the border are just a bunch of ignorant people who cannot appreciate the way that things are done in the U.S. It was rather disturbing to listen to his experience with the Mexican bureaucracy. I am not saying that everything is perfect in Mexico; but we could also point out deficiencies in both the U.S. system and the San Diego system. The United States is not a paradise.

Mr. Brown's comments offer a clue as to why the two cities or the two nations often fail to reach agreements on border-related issues. His comments seem to suggest a closed mind. To resolve common problems, it would seem, a different attitude is needed. If we do not try to understand each other and to have mutual respect, then we will not be able to engage in joint decision-making. It is a mistake, for example, to say, "We even tried to educate them." We in Mexico recognize that our technical deficiencies are substantial; but describing the problem in this way may lead to resentment, which in the end creates more problems then it resolves, especially in the area of trans-border communication.

I am not sure that the air pollution discussion brought to light all of the major considerations. For example, it was mentioned that Tijuana is a key source of pollution: This is true. We know that Tijuana generates pollution, but I wonder — and unfortunately I do not have the data to answer the question — what is San Diego's *principal* source of pollution? Is it Tijuana? Or does it come from Los Angeles? Or does it come from San Diego itself?

I would also like to comment on Mr. Conway's presentation regarding health problems and sewage, particularly with respect to the responsibility of the people who make technical decisions. All technical decisions have a political context which cannot be separated from the technical aspects of these decisions. I am concerned that Mr. Conway did not address the political consequences for Mexico and Mexicans of the television program which spoke of people who cross the border through zones flooded by sewage. What will television audiences think when they see this? They will think that people crossing the border from Mexico are a public enemy: they may be contaminated; they may have to be evacuated; they have to be treated like enemies. That is very dangerous, and that also may be the wrong point of view to take in seeking an agreement on common problems.

I would also like to raise some considerations regarding discussions of data that perhaps are not entirely reliable. For example, to make projections of Tijuana's sewage-treatment requirements in the year 2000 based on a population estimate of two million assumes that this unproven population projection is correct. In fact, it is unlikely that Tijuana will have two million residents by the end of the century.

If we want to find solutions to some of the problems we have addressed here, we have to start thinking along new lines. It is encouraging that some of the people talking here have open minds. I hope that the decision-makers who speak this afternoon will demonstrate similar tendencies, but I remain somewhat discouraged at the moment.

Joseph Nalven
Community Research Associates, San Diego

I would first like to address Carlos Graizbord's presentation on land use. The recent history of efforts to conceive of the border as a computer-modelling problem have generally faltered on problems of data consistency. Although projects that collect their own data may overcome that problem, variations in data and measurement still impede technical discussions of more general trans-border issues.

That problem is further complicated by what we might call the issue of standards — what this morning's discussants think of as "how things are done on the other side of the border." We thus encounter the "rationality problem." For example, it has been suggested on this side of the border that the transfer of Colorado river water through San Diego would be more "rational" because it is less costly to "wheel" (transfer) water through our system to Tijuana than to pump it over the mountains from Mexicali. And that since gravity carries the sewage downhill, having a binational treatment plant on this side of the border would be less costly and therefore more "rational" than installing pumping stations to lift sewage some 375 feet on the Mexican side of the border.

That is how the problem of invidious comparisons begins — with the question of whose way is better. The answer to that question ultimately turns on which way is quicker or less costly — and hence more "sensible." I first confronted this issue quite innocently when I began comparing air pollution problems in Tijuana and San Diego. After reading an early draft of my paper on the topic, the Tijuana delegate of Mexico's Sub-Ministry for Environmental Improvement gave me some interesting feedback: he said, "Joe, you can say the same thing in two ways. You can say, 'I like my coffee black,' or you can say the same thing negatively: 'I do not like cream in my coffee.'" He was disturbed by

my direct comparisons of pollution levels in Tijuana and San Diego. If we look at the question in terms of the progress that Tijuana has made with respect to the rest of Mexico and with respect to its previous condition, then we can readily see how much it has improved. However, once we compare Tijuana with San Diego, we are immediately struck by the vast differences between the two cities; from the perspective of the federal environmental delegate in Tijuana, highlighting these differences can be humiliating. So, the challenge is to present comparative data in a binational regional framework while at the same time avoiding the problem of invidious comparison.

Once we venture beyond the technical level, we move to the question of reciprocity and of implementing an action program. At this point, obviously, technical and policy considerations intermingle. For example, the question of reciprocity surfaces in Section 115 of the Clean Air Act. That legislation commits the U.S. to assume responsibility when it pollutes a foreign nation if that country reciprocates by adopting the same provision with respect to us. That policy was developed during the Carter administration to address the problem of acid rain in U.S.-Canadian relations. Under this clause, the Carter administration determined to work toward cleaning up pollution in the United States that was having negative impacts in Canada. However, the Reagan administration rescinded that decision in 1981. Although the intent behind Section 115 was not directed toward Mexico, it nevertheless has major relevance with regard to air pollution along the U.S.-Mexico border. It raises serious questions about the meaning of reciprocity and its impact on the development of any cooperative programs on air pollution. These questions have not, as far as I could determine from discussions with EPA officials in Washington, D.C., been given any sort of serious consideration.

The sewage issue also evokes the question of reciprocity. Before Congress releases any funds for handling the international sewage problem, President Reagan must confirm that Mexico is to some degree participating in the project. Leaving an area of discretion regarding the degree of Mexico's participation has tremendous importance in terms of the diplomacy required for us to resolve this problem with some mix of policy and technology appropriate for both the U.S. and Mexico. This morning's discussions have clearly shown how difficult it has been to achieve a resolution that meets with both sides' sense of reciprocity and fairness.

I would like to conclude by commenting that discussions of the binational border region (such as the one we are now engaged in) reflect the North-South dialogue between the industrialized nations of the North and the underdeveloped nations of the South. In the case of relations between the U.S. and Mexico, the border has created local wrinkles in that dialogue which have become important enough to stimulate the organization of conferences such as this one; I hope that this trans-border dialogue can produce a base of knowledge that will improve U.S.-Mexican relations and assist in joint policymaking.

Hal Brown
Air Pollution Control District, County of San Diego

If I in any way indicated that Mexicans are ignorant, I apologize. Maybe I should say that I like black coffee instead of saying that I don't like cream in my coffee. What I was trying to say is that in 1976, those of us in the U.S. who make plans and try to execute them understood neither Mexico nor what its Environmental Agency did. It boils down to a matter of educating each other — not our educating you. A one-way education would be a waste of time. I will say that San Diego and Tijuana are the only major cities on the U.S.-Mexican border in which government environmental agencies even talk to each other directly. It does not happen in El Paso or Laredo. We have an excellent relationship with the people in Tijuana. I hope my comments on the centralization of the Mexican government bureaucracy were not seen as a criticism of Mexico's political system. I was speaking about our ability to work together. Our differences are something to be recognized and overcome, and that is what we are trying to do.

QUESTIONS AND ANSWERS

Q. I have a question for Dr. Conway. Assumptions about per-capita sewage generation in Tijuana and San Diego vary greatly, by a factor of perhaps 3 to 4. The figure for San Diego is about 100 gallons per capita per day, while for Tijuana it is about 25, more or less. If these figures are right, I can guess why, but I am not absolutely sure. Could you comment on that?

A. John Conway: Your estimates are right. It is my understanding that people in Tijuana are much more frugal with water and as a result, sewage is more concentrated. That is an advantage in terms of ease of treatment.

Q. Why aren't the sewage and potable water systems in the southeastern area of Tijuana connected to each other? Did the government build them, or was it done by private companies?

A. Bernardo Salcedo Leos: Tijuana's sewage and potable water systems were both constructed gradually over a long period. They expanded into different areas as the city developed, and lines built to service these areas were tied in to the closest sewer main at the time of construction. As the city's population has grown, pipes with larger diameters have been required to service the increasing number of inhabitants. Not until recently did the city produce an urban development plan which addresses all aspects of urban development. One of these aspects is infrastructure, which includes the potable water supply, drainage, electricity, paved streets, street lighting, etc. Other factors addressed in the plan include the environment and housing — in short, the plan integrates all aspects of urban development in Tijuana. After being drafted, approved by the city council, and promulgated by the State governor, the plan appeared in published form in the official news bulletin, as well as in a more widely circulated newspaper, to maximize its dissemination to the public. Officials have already designated the areas reserved for future urban growth, and they are currently in the process of formulating specifications concerning land use. I raise these points in response to comments regarding Mexico's failure to follow through with development plans. In the past, our lack of a democratic and comprehensive national planning system may have caused such an outcome, but the present administration has now institutionalized such a system by enacting legislation to direct the development process.

Q. Could someone comment on differences in standards and the consequences of such differences? I am particularly interested in how lower environmental standards in Mexico may be used to

enhance American companies' profits; and if the resulting pollution has impacts on the United States, who will be held responsible?

A. Carlos Graizbord: The question addresses the case of an American firm that locates in Mexico and pollutes. The socioeconomic realities of this border yield the peculiar problem of defining who pollutes, what the pollutants are, and how to gather the information necessary to solve such problems, especially at the diplomatic level. These very sensitive points urgently need to be addressed.

A. Roberto Sánchez: That question about pollution is very interesting and very basic. Many of the industries located along the border are U.S.-owned. So, who is to blame for pollution which travels from one side of the border to the other, and how should it be addressed? How will we deal with problems for which both sides bear direct responsibility? I think that is a major area in which the two countries — and the two cities — might come to an agreement.

A. Hal Brown: Some U.S. environmental standards — basically quality standards or guidelines — are also being applied in Mexico. We cannot do anything about the stuff already in Tijuana, but we are cooperating in the management of new growth by providing Tijuana's environmental agency with tentative guidelines about controls. This has produced some interesting and encouraging results in cooperative environmental management. For example, we have a very serious problem with a polluter in San Diego's South Bay area that persisted until the owner got tired of our telling him to clean up his act and threatening to close him down. Thinking that Tijuana's standards were not as tight as those in San Diego, he went to the environmental office in Tijuana to find out what he needed to do to locate his operation in Otay Mesa. The environmental engineer responded by saying that even though Mexico had no national environmental standard applicable to his ease, Tijuana would set its own — which would require him to have to same controls as in San Diego. Since he was not going to gain anything by packing up and moving across the border, he spent the money necessary to clean up his act in San Diego. This is the sort of local cooperation that we are trying to achieve.

Q. Does anyone want to venture a working estimate of Tijuana's population and its rate of growth?

A. Roberto Sánchez: It is very difficult to talk with any confidence about the size of Tijuana's population. One major reason is that Tijuana is a "pass-through" city. The size of the transient population is just incredible. However, it does seem that Tijuana's growth rate is decreasing. Fewer people seem to be arriving in Tijuana than were coming ten years ago. Other urban centers along the border offering access to the United States at less distance from points of emigration in Mexico have become major points of attraction. As Jorge Bustamante has pointed out, Mexico's economic situation has played a significant role in this change: people are finding it difficult to gather enough resources to travel all the way to California or even to Tijuana. Let me add that we should be careful when dealing with these data because it is difficult to distinguish between what is real and what is imaginary.

A. Lawrence A. Herzog: According to the recently published Urban Development Plan for Tijuana, the State of Baja California's official plan for the *municipio* of Tijuana, the city's 1984 population is eight hundred twelve thousand, four hundred four. The same document projects Tijuana's population in 1990 at one million, one hundred twenty-nine thousand, and in the year 2000 at one million, eight hundred thousand. These figures imply an annual growth rate of 5.6%, more than twice the growth rate of San Diego.

At a session on the demographics of the border region held in the fall of 1984, the Mexicans in attendance disagreed with each other about the present populations of Tijuana and Mexicali. The census people from Mexico city said that growth rates had declined because in-migration has subsided, and natural increase alone now accounts for almost all the growth of these cities. Representatives from Mexicali and Tijuana argued that in-migration from the interior of Mexico is still considerable and that the growth rates and projections from the national census did not reflect local realities.

There is no doubt that the population of Tijuana is difficult to measure. Properties often go unregistered with the local *municipio,* and a transient population regularly moves back and forth between the interior of Mexico and jobs in the U.S. Many of them cross the border without legal documents and are therefore difficult to monitor. For all these reasons, the literature on Mexican border cities also contains substantially divergent estimates of Tijuana's (and Mexicali's) current population. My sense from having talked to professionals who deal with the area regularly is that Tijuana's population is presently close to one million.

As this issue illustrates, the data problems mentioned by various panelists are extremely important, they demonstrate again the difficulty of understanding urban growth and planning for it in the complex international border zone.

Q. Does the figure of eight hundred ten thousand in 1984 include the transient population?

A. Lawrence A. Herzog: The *Plan de Desarrollo Urbano de Tijuana* estimates population using contracts for electricity from the *Comisión Federal de Electricidad* and multiplies this by an index of per-unit occupancy. By using this method, planners

estimated the present urban population of Tijuana at about 800,000.

A. Philip R. Pryde: Inaccurate population figures can cause serious problems, but we should keep in mind that a more relevant variable is per-capita use of resources. For a variety of reasons — demographics, age structure, and so forth — a million people in Tijuana will have much less impact on resource use than would a million people in the U.S. Thus, comparing per-capita resource use is perhaps more important than just comparing size of population.

Part II:
ADMINISTRATIVE RESPONSES TO TRANS-BORDER PLANNING PROBLEMS IN THE SAN DIEGO-TIJUANA REGION

OVERVIEW

by Lawrence A. Herzog
Urban Studies and Planning,
University of California, San Diego

As we have seen, the problems of population expansion and physical growth in the San Diego-Tijuana region include land-use management, air pollution, water supply, water quality, and sewage management. Furthermore, although these problems may originate in either San Diego or Tijuana, they are seldom limited to one side of the border; because the physical environment functions independently of man-made political boundaries, the effects of urban growth often spill across the international borderline into the neighboring jurisdiction. Thus, the entire bicultural or international border metropolis shares a set of planning problems which we might therefore label "trans-frontier spillover effects" or, in the language of microeconomics, "trans-frontier externalities."

Sewage is of course an obvious case, but it is not the only one. Studies of air pollution in the south coast air basin, for example, clearly show that, given certain atmospheric conditions, smog originating in the Los Angeles-Orange County urban corridor can and does flow south along the coast and into Tijuana. Water also spills across the border. During heavy winter rains, the flow of water out of the mountains to the east of the Tijuana-San Diego metropolis has created a critical flooding problem in the Tía Juana River estuary and could potentially inundate major portions of the Tía Juana River valley on the U.S. side. Land-use planning also raises considerations that need to be taken into account on both sides of the political boundary. The construction of airports, correctional facilities, industrial parks, and other facilities near the border requires joint land-use coordination. As Carlos Graizbord has shown, such cooperation can begin with exchanges of technical information.

But the long-term question remains: what would be the best system for managing planning problems like sewage, land use, and water supply in the San Diego-Tijuana region? Let us circumscribe this question for a moment by briefly filling in some background. The only existing formal bilateral agency that addresses border planning problems is the International Boundary and Water Commission (IBWC). Originally established by an 1889 convention between the United States and Mexico as a committee to oversee boundary issues, the commission had its

functions expanded by a 1906 treaty to include management of Colorado and Rio Grande River waters; a 1944 treaty added responsibility for management of the Tía Juana River. The IBWC currently oversees water quality management, flood control, and boundary mapping. Its success, according to an unpublished State Department document, has resulted from "precise mandates and technical, essentially non-political modus operandi."

Much unilateral border development and border management has been done outside the IBWC on each side of the border, but not jointly. In the last decade, the governments of both countries have created separate agencies to deal with border issues. After the Mexicans created a regional economic development commission called CODEF, for example, the United States established a counterpart for it, the Southwest Border Regional Commission. Similarly, separate urban planning agencies exist on each side of the political boundary. In Mexico, the agency currently in place is called SEDUE (the Ministry for Urban Development and Ecology), and in the United States we have the Department of Housing and Urban Development and the Environmental Protection Agency. Additionally, local urban planning agencies have sprung up on both sides of the boundary.

Aside from the IBWC, however, most existing mechanisms of cooperation are informal, consisting mainly of entities such as advisory working groups. The U.S.-Mexico Border Health Association, the Joint Commission on Cultural Cooperation, and the Joint Trade Commission are good examples. Inter-parliamentary meetings between U.S. and Mexican legislators take place annually, and the Binational Commission, created in 1981, brings together the U.S. Secretary of State and Mexico's Minister of Foreign Relations.

Yet none of these bodies provides a formal decision-making mechanism to resolve common planning problems. Most decisions on matters of mutual concern are made through global bilateral arrangements which haven't always worked. The State Department document mentioned earlier explains the failure of these agreements by pointing to "exaggerated expectations, vaguely defined goals, jurisdictional disputes or bureaucratic jealousies." So the questions still remain: what can be done; should anything new be done?

We could begin to answer these question by clarifying some of their dimensions. First of all, we need to make a distinction between informal dialogue and formal decision-making. Informal dialogue, consisting of unofficial working discussions between officials on both sides of the border, has dominated most efforts at trans-boundary cooperation between the two countries (with the exception of the IBWC). Such informal discussions are easy to arrange and pose few threats to elected officials. On the negative side, informal exchanges on a variety of issues ranging from criminal-justice policy to sewage and air pollution control have shown that this kind of discussion simply does not produce concrete policy decisions. By contrast, formal decision-making mechanisms like the IBWC, backed up by legislative mandates and treaties between the U.S. and Mexico, have more staying power. Their findings and recommendations logically result in more concrete policy decisions. Some examples of the success of the IBWC in promoting cooperation in the border region include a resolution of the crisis caused by the increasing salinity of Colorado River water, decisions regarding boundary definition, and, up until recently, control of water quality in the region. However encouraging its example, we must recall that the International Boundary and Water Commission is unfortunately the only permanent decision-making body capable of reaching decisions regarding the international boundary.

Secondly, we must recognize that the United States and Mexico have different political systems, distinct political cultures, and disparate levels of economic development. Although we do have a great deal in common, the cities of San Diego and Tijuana remain attached to these national political cultures, and each side must respect its neighbor's rights of sovereignty.

Third, we must take into account the distinction between global, national-level decision-making and local decision-making. Many decisions about the border region are made in the national capitals of the U.S. and Mexico by government agencies and elected officials. Conflicts between local and federal considerations sometimes emerge in each nation. Three forms of national-level decision-making affect boundary issues: treaties, which are the most potent decision-making mechanisms, in that they produce a binding policy decision; presidential meetings, which often lead to the signing of various kinds of agreements (such as the accord concluded in August 1983 in La Paz, Baja California, through which Presidents Reagan and de la Madrid created a framework for environmental cooperation); and meetings between legislators from each country. Despite all these mechanisms, cooperation remains difficult. Again quoting from the State Department document mentioned earlier, "there is often the perception along the border that bureaucrats in the two capital cities are out of touch, disinterested or not understanding of border matters." This leads us to recognize once again that there are no easy answers in dealing with these kinds of issues.

As a final thought, we might consider the way in which international border planning problems are handled in another part of the world — Western Europe. For more than a decade, Western European nations have worked with an administrative structure which they refer to as "trans-frontier planning." This approach involves national governments and members of the European Economic Community, who recognize that planning for the border regions is crucial to the well-being of nations, in

terms of both their economies and their public health, as well as to prevent political conflicts between nations. The Council of Europe, located in Strasbourg, France, has set up a Convention on Transfrontier Cooperation, an agreement which has created legal mechanisms for cooperative planning. The Convention facilitates treaties and contracts which allow national and local governments to set up international commissions with decision-making power backed by national governments. Among the examples of this kind of commission are the regional planning agency along the Franco-Swiss border (the "Regio Basilensis"), which deals with air pollution and land-use planning in that area; the Upper Rhine Valley Planning Conference (a cooperative effort of West Germany, France and Switzerland), which addresses the problems of industrial growth and pollution in the upper Rhine valley region; and the "Euregio," an autonomous regional association of municipalities along the border between West Germany and the Netherlands.

Obviously, as a setting in which to consider borderland cooperation, Western European border regions are rather different from the United States-Mexico border. Clearly, both history and the difference in relative levels of economic development distinguish the U.S.-Mexico border region from the Western European case. Yet the European example of trans-boundary cooperation nonetheless provides food for thought about how our border management schemes might be restructured. For example, the idea of creating trans-boundary regional commissions as formal decision-making entities with legal powers of enforcement and implementation offers the prospect of enabling U.S. and Mexican officials to reach concrete policy decisions in the border region.

Thus, as we contemplate potential administrative responses to trans-border planning problems in the San Diego-Tijuana region, we might begin by asking ourselves whether the creation of a San Diego-Tijuana regional commission is possible or realistic. Such a commission could be created through a treaty between the United States and Mexico, much like the International Boundary and Water Commission, and powers over land use, water quality, sewage management, and air pollution could be allocated to it. It might be composed of two or three appointed commissioners from each nation, who could range from local elected officials to heads of federal and state agencies. This proposed administrative structure would not represent a magical solution to the complex planning problems in the border zone; I offer it as an idea for discussion and debate as we forge ahead with our dialogue on the U.S.-Mexico border.

REMARKS

Uvaldo Martinez
Councilman, Eighth District, City of San Diego

It is a rare occasion when academics and politicians get together. It seems that we politicians occupy a world of action, fitting theories to our actions, while academics live in a world of ideas, fitting actions to theories that we seldom need. Academics have had little success in politics, and politicians are not known for succeeding in academia. This calls to mind William Buckley's comment that he would rather be governed by the first two thousand names in the Boston telephone directory than by the faculty of Harvard University. Thus it is fitting that we, the representatives of two groups that often have little affection or even respect for each other, should meet to discuss two other entities with similar problems, San Diego and Tijuana.

Before I address the problems caused by the growth of our region, let us acknowledge that we on the local level are little more than spectators at international games played by the United States and Mexico. The debt crisis, drug smuggling, Central America, inflationary pressures, our different economic systems, and a host of other problems have made it very difficult even to identify the causes and the effects associated with some of the international problems that have spilled into our region. Yet we often do not even have the luxury of sorting out those pieces. When sewage spills onto our beaches, for example, we have to react to it as a local health problem, not an international crisis.

The challenge before us thus becomes one of trading off optimal solutions for those that are feasible. There are optimal solutions, but they are so unrealistic that it might be better to call them responses rather than solutions. The proposal to create a planning commission for the San Diego-Tijuana region — a body that would actually have regulatory control over land use in the border region — is interesting. However, even the thirteen jurisdictions on the U.S. side that make up the San Diego region currently refuse to give up such power to our local regional planning agency, SANDAG (San Diego Association of Governments).

Yet what makes finding solutions even more difficult is the fact that the issues are further complicated by two sets of cultural constraints that have very little in common. But if we did find an area where our constraints overlap and optimized it, what would the solution look like? I submit that it would not look like

a regional trans-boundary planning authority. The legal and political obstacles on both sides of the border would be so great, and the areas of potential cooperation so small, that a planning authority would be doomed from the start. To begin with, no tax base would support the land-use decisions made by such a body. Secondly, past experience provides no grounds for optimism: whether the issue has been building a border crossing, prohibiting truck traffic, or extending the trolley across the border, the federal, state, and local authorities on both sides of the border have demonstrated no significant ability to overcome those obstacles. Planning authorities sound like great ideas, in part because planning is the thing that government likes most; unfortunately, planning is also the thing that government does worst.

There are alternatives to planning authorities. A joint economic development commission, for example, would be a much more effective tool for dealing with our trans-border problems. Economic development could be the driving force that propels land-use decisions and public facilities financing. An economic development commission would attract a much broader range of players with more financial resources and political clout. Politicians have had more than enough time to solve the problem; now perhaps we should give our businessmen a chance.

No matter what we create — commissions, boards, or laws — they will not be enough to solve our border problems. We have to find a way to break the cycle of distrust that has plagued relations between our areas and countries. We need some visible sign that we are ready to stop conducting business as usual and begin to do what is necessary to solve border problems. Mexico took an important step in that direction about a year ago when it announced that it would relax foreign investment regulations and permit some companies to invest in Mexico without requiring majority ownership by Mexicans. However, when IBM recently requested permission to build a wholly owned subsidiary in Mexico, the government rejected its proposal. As a modest suggestion, I propose that as part of a regional economic development commission Mexico should designate an area near the border in which foreign companies could make limited investments without being forced to have Mexican partners. In return for this relaxation of legal investment requirements, the investors could be required to build roads or make other public improvements. By taking such action, Mexico could realize dramatic and immediate improvements in land development and public finances.

I understand the Mexicans' tremendous suspicion of foreign investment, but Mexico's only alternative to foreign debt is foreign investment; and I would argue that direct foreign investment is much more productive than loans to the Mexican government. For this reason, such an experiment is surely worth a try. No matter what we do, no attempt to solve our border problems will be satisfactory unless we try to transcend our constraints.

Last year, when I was in Washington to brief President Reagan before his summit with President de la Madrid, representatives from all of the border cities let the president know that they are suffering from the same regional problems as we are. What an opportunity for us here in San Diego to be first in development and cooperation! I hope we can start here today.

Brian Bilbray
Supervisor, County of San Diego

Many of us in both the local political and private arenas perceive centralized authority as insensitive to local problems. That judgment applies not only to national government, but to state government as well, and even to the board of directors of a college. We see centralized authority as lacking the sensitivity or the awareness to make as sound a decision as those who are closer to the issue. This problem obviously affects our discussions of the border region.

When we talk about border problems, we also need to address the many benefits to be derived from open exchange across the border. Too often we conceive of trans-border issues in terms of how much worse things can get: we forget what might be lost if problems are mishandled. We must be pro-active to preserve the benefits of our trans-border relationship.

We also have to recognize that the costs and benefits of trans-border interactions affect different areas within the region in different ways and to varying degrees. For example, the economic benefits of border-related transactions are very high in a community like San Ysidro. The benefits to an area like Coronado, on the other hand, tend to be a little lower and the problems therefore seem a little greater. The same thing happens on the other side of the border. Those of us in San Diego tend to forget that the benefits and disadvantages of the border relationship have varying impacts in different areas of Tijuana.

As somebody who has been involved with these issues for a long time, I am very concerned with what I call the "awareness factor." Residents of the border region tend to assume that their understanding of local issues is shared by the public at large more than it really is; they thus become frustrated when the federal government misunderstands local needs. An equally unfortunate situation emerges when we take for granted the workings of our state and federal agencies. Understanding is a two-way street.

Another issue that comes to mind is that, unlike Western European nations, the United States and Mexico have totally separate governmental structures, with no parliamentary body that brings the two countries together. Moreover, we have very different cultural approaches and attitudes that often lead to nationalistic myopia. Too often, we on the American side of the border look at Mexico and say, "Their awareness of the American situation is not high enough." Yet Americans in fact have an equally naive perception of Mexican attitudes. Aside from differences in attitudes and approaches to certain issues, a lack of sensitivity on both sides of the border sometimes makes it hard to understand the reasons why our neighbor's priorities differ from our own. In the future, the ability to relate the situation on one side of the border to that on the other side is going to be critical, not only for solving a lot of problems, but also for preserving the long-standing benefits of trans-border relations that we would like to see endure.

Councilman Martinez hit on a very good point, namely, the vast cultural differences and vast governmental differences between the two nations. The essentially English approach to local government in the United States contrasts starkly with the Spanish traditions of Mexico. For example, it was very interesting to me that Mexican negotiators used the term "sovereign" in reference to the city of San Diego, a term that would not be used in the United States. The use of that term offers a striking reminder that perspectives are quite different on the other side of the border. The most important reason why most border-related discussion has been conducted locally and very casually is that our two systems do not mesh together very well. The very centralized approach on the Mexican side of the border is very effective in certain instances and very ineffective in others; it has certainly led to a situation in which local negotiations tend to favor those on the U.S. side. In the future, centralized negotiations between federal agencies will receive increasing emphasis, which will favor the Mexicans. For example, our federal government currently cannot make a commitment on behalf of the city of San Diego with regard to sewage-treatment capacity, while Mexican negotiators can make some very strong commitments; that situation leaves the U.S. at a disadvantage in that kind of negotiation. Every system has its pros and cons, depending on the situation and the vehicle being used.

Councilman Martinez raised another point with which I agree thoroughly. Our mutual interests in the border region can probably be better described economically than any other way. While the border divides us politically and maybe culturally, our economy remains very much tied together. That united economy, I think, is perhaps the key that we are looking for, the place where we can find a common ground on which to build.

Roger Hedgecock
Mayor, City of San Diego

We in the San Diego-Tijuana border region confront a unique situation in terms of the sheer magnitude of the population. The San Diego side already has nearly two million inhabitants, and by the end of the century, I suspect, nearly four million people will be clustered around this border region. Our water supplies will be piped over long distances, the vital goods and services for both metropolitan centers will be imported from distant points, and the two cities will have similar problems in the administration of everyday public services.

Given these shared problems and concerns, it seems to me, our communities do not respect each other enough. There is not enough understanding; there is not enough knowledge; there is not enough communication. I myself recognize that I should, as the mayor of the city, be able to give this talk in Spanish, but I cannot. Yet the very fact that we hold this kind of meeting helps us begin to overcome the barriers between us.

I would like to direct my remarks toward several dimensions of today's discussions. First of all, we who work at the local level on both sides of the border are overshadowed by both national governments and the international arena in which those governments operate. That is not going to change. Our two communities are part of different nations, each of which works out its values and interests in the international community of nations in its own way. The best thing we can do locally is to make sure that our national representatives understand what is going on here.

In the past, we on the north side of the border have had difficulty getting our federal representatives, particularly in the federal bureaucracies, to understand what goes on here. It is difficult for people who live three thousand miles away to understand what we are about, particularly when we are changing so fast: large numbers of people are moving into the region, while at the same time fundamental changes such as the high-tech revolution have stirred our economy over the last fifteen years. Even for us, these sudden events have created difficulties of understanding and adaptation — we should certainly not be surprised that people in the national government three thousand miles away also have difficulty understanding us. As a first step, we need to make sure that our federal government knows specifically what our concerns are, how we hope to solve our problems, and what we are doing locally to accomplish that.

Next we must consider the alternatives that might lie ahead. As I thought about them, I remembered that when I was on the Board of Supervisors some six years ago, one way in which we tried to inform our federal representatives was by

creating a task force on border problems. That was the first time that a local government on the U.S. side had formally attempted to cultivate understanding of border issues. At that time, informed citizens, some of whom are present again today, examined several border-related problems and prepared a report designed to help us and our federal representatives understand such border issues as the employment problem, water, and sewage.

Although that was a very primitive effort, I am very proud to have been part of it, because now, at institutes like this, many studies later, many, many conferences later, a lot of these issues can be discussed in a sophisticated way. I think that we have come this far because we began with the determination that at least we must understand what is going on.

Finally, I want to comment on Larry Herzog's proposal for a trans-border authority. I think that he offered the proposal to stimulate our thinking about these problems and how to solve them. The idea would be to create a San Diego-Tijuana regional planning authority with administrative power over land use, sewage, water quality, and other regional matters. In response, I must agree with Uvaldo Martinez. We need to be realistic. There are two nations, two political systems. It is unlikely that institutionally we are going to be able to share political power across that border. I think those realities are too strong to overcome, at least in our lifetime.

We ought not to begin by focusing on the negatives. People often suggest that we begin by working on solving problems like sewage or the employment of immigrants. I think that we would be better served by examining the incredible economic interrelatedness which really links our two regions. Since that is a positive fact for both economies, perhaps we should utilize that fact as a force to institutionalize some of our relationships.

For instance, both communities are hard at work in opening up Otay Mesa. Mesa de Otay on the Mexican side is a magnificent development, a mixed industrial and residential development around Tijuana's airport. On the U.S. side a similar kind of mixed-use development — a three-to-four-thousand acre industrial area complemented by many hundreds of acres of residential lots — is only now being conceived and planned to begin in this decade. As part of this plan, we on our side of the border envision the creation of seventy to seventy-five thousand jobs in the next twenty to twenty-five years. The better we coordinate inputs of labor and capital in this area between our two countries, the more jobs we are going to create on both sides of the border, and the better off we are going to be.

What institutions could help us create that reality? On the U.S. side, a free-trade zone might be an appropriate tool to consider. Such an area might, in the future, be expanded to include areas on the Tijuana side of the border. If labor, capital, goods, and services could flow more freely across the border than they do presently, then we will have begun to put into place an economic foundation for the kind of political cooperation envisioned in Larry Herzog's proposal for an international authority. Before we can create such a body, we need to stress positive trans-border relationships, particularly the positive economic relationships that can and will exist — and can continue to grow — between the two countries.

In the meantime, as we grow larger and closer together, and as we share more and more common problems and common opportunities, it is absolutely essential that we continue to hold discussions like this one; whether in this or another forum, we must become personally knowledgeable about each other and about the other nation's problems, so that we can share potential solutions. The institutionalization of this kind of discussion should take the form of a broad-based body of people — from both the public and the private sector — who could meet periodically. The mayors of several cities along the Mexico-United States border already sponsor such groups.

On behalf of the Mayor's Office and the City Council, I would like to note that we are more aware than ever that the solutions to some of our problems, as well as the realization of some of our dreams, are as related to success on the Mexican side of the border as to success on our own side. We should come out of these kinds of meetings with a determination to institutionalize conversations like these that build respect, communication, and understanding. Then, perhaps, we can in the future begin thinking about creating a regional trans-border authority.

Julio Torrescoto Mazier
Deputy Director of Planning for Municipal Public Works,
Municipio of Tijuana

I felt fortunate this morning to hear several speakers put forward interesting technical arguments regarding trans-border problems. This afternoon, we have benefited by hearing several speakers discuss possibilities for approaching and solving those problems. One of this morning's speakers said that he had come here with an open mind and considerable optimism. And although the morning discussion gave him second thoughts, I continue to feel optimistic. Furthermore, we must keep our minds open when approaching border planning problems. We have to recognize that, although a line divides us, we face a set of common problems. One of our very important common interests, as Mayor Hedgecock has already pointed out, is our economy. We have to recognize that we live in the same community. I can't really think of Tijuana and San Diego as two

different communities, because whatever benefits San Diego benefits Tijuana, and vice-versa. Goods, services, and people flow across the border continuously, just as water and air do. This constant flow of people and services, whether perceived as good or bad, has to influence and affect our two communities.

If we begin by understanding these basic facts, then we have to recognize that sharing a common area means sharing the struggle to find solutions to the problems which arise in that area. If we accept that, then we eventually have to arrive at some sort of a program or workable plan that can unite rather than separate us. Most of our problems are man-made, and whatever is done by man can be repaired or corrected by man.

Some of today's panelists have said that the border that divides us is not going to be easy to cross because of differences in our political systems, in our ways of doing things, and in our cultural environments; we have to deal with those things and understand them. Someone said this morning that dealing with people across the border is an educational process. That is quite true. We have to educate you about how we do things down there, and we have to learn how you do things on this side of the border.

Some of us are fortunate in having been able to keep in touch with what you are doing on this side, and we think we understand how you do things. We think we understand how you think. Sometimes when you start talking about things and really getting to know what people are thinking, you come to realize that you were mistaken; you might think that you know how we think and what we are going to do, but this is often not true. Unless we recognize that, we will never be able to solve our common problems.

One big problem in the area of diplomacy is that so much gets lost in translation. I wanted to deliver this address in Spanish, but then I realized that many of you cannot speak the language. We must not forget that language barriers continue to impede our trans-border communication.

Several agencies handle development planning in Mexico. We have established a planning mechanism for our urban system, which begins at the federal level with the national master plan. To accompany the national plan, we have master plans for state urban development and master plans for most of our cities, including the cities of Tijuana and Mexicali. These documents give us a working basis from which we can talk with planners on this side of the border and provide some information as to what we think we are going to do in the near future.

We now have concrete plans and know what we will be trying to do up to the year 2000. If we can get our ideas across and learn what you are trying to do, we can — not on a formal or official level, but on a very informal basis — keep each other informed and try to coordinate our plans. I do not mean that we should try to impose on you what we are trying to do, nor will we do what you think we should do. However, with enough information exchanged informally through forums like this, we can get together and start coordinating our information and plans. From such a beginning, we should be able to get something useful and productive for both communities.

It is very easy to talk about problems. Someone said this morning that people in Mexico City have tried to solve our problems without ever coming to Tijuana. I am optimistic because I know that a lot of you have been to Tijuana; but I would hate to have to find out how many of you have not been there. It is clear that one of our main problems is that we do not know each other. Some people in San Diego know of our problems by reading the newspapers and watching television. This is not the way to really get a feel for our problems. If you want to know what the city is like, come down and visit us. This is not a commercial; I'm saying this because we come to San Diego more often than you visit Tijuana. Those visits are good for us, because we find out what you are doing here and get a lot of ideas. I think that you could benefit in the same way.

Jay Wilkinson
Assistant to Congressman Duncan Hunter,
United States House of Representatives,
Forty-Fifth Congressional District

I want to talk briefly about various border-related issues to provide some idea of what we at the congressional level do and who we interface with. Our district, the 45th Congressional District, comprises about 580,000 people. It includes Coronado, Imperial Beach, Nestor, a portion of San Ysidro, Spring Valley, La Mesa east to the San Diego county line, El Cajon north to the Riverside county line, basically all points east of Interstate Highway 15, and all of Imperial County. In other words, since we have the entire California-Mexico border within our district, we are very interested in meetings like this — meeting with people like you, hearing your ideas, and getting your thoughts — because we are involved.

Some of the issues that we are currently working with are considered minor, while others are more serious. However, every issue has a constituency for which that issue is major. I realize that this conference is about the San Diego-Tijuana region, but I want to give an idea of the scope of the border issues facing our office. For example, we have an alien cattle problem in the Tecate-Campo area. Mexican cattle sometimes insist on crossing the barriers. We have asked the United States Department of Agriculture to work with the Mexican government to try to put in

a stronger fence and, in many areas, to build a fence where none currently exists.

The recent, widely publicized closing of the border crossing at Tecate is another example of a very serious local matter, particularly to residents of Tecate, currently a city of about 62,000 inhabitants. Fortunately, by talking to the U.S. Customs Service, we were able to use our influence to re-open the border. I called the Municipal President of Tecate immediately, and Mayor Moreno was very pleased to learn about our efforts to resolve that difficult situation. Although we did not work with Mexican Customs officials in that situation, we did work closely with the Tecate Chamber of Commerce, and we were able to get people across the border within 24 hours.

The proposed off-road vehicle park in Otay Mesa is a county matter, of course, as is the proposed San Diego International Raceway, projected for construction on county property right up against the border. However, a hundred thousand people might move into that area, which does concern us, so we are working with the Border Patrol, as well as with the county, with regard to these projects. The Border Patrol is concerned as to whether these developments will interfere with their apprehension of illegal immigrants from the Mexican side.

Another Border Patrol matter which gravely concerns residents of Campo is the proposed relocation of the Border Patrol's Campo headquarters to Tecate. The departure of Border Patrol agents presently residing in that area might cause an economic loss in Campo, so we have been discussing that matter with the Border Patrol as well.

In Imperial County, the United States Navy proposed the placement of 315,000 acres of prime recreational land under Navy authority, which would have prohibited the use of that area by recreational vehicles. Working with the Bureau of Land Management for three months, we were able to satisfy all parties concerned and to reach an acceptable solution. Regarding the New River in Imperial County, probably the most toxic river in the United States, we face an absolutely disastrous situation. Even worse than the interruptions in the river's flow are the chemicals, the toxins, and the carcinogens that get dumped in it. We are working very closely with the Mexican government, the Environmental Protection Agency, and the International Boundary and Water Commission on that issue.

Calexico has one of the highest, if not the highest, unemployment rates in the United States. To try to remedy that situation and boost the community's economic base, we work very closely with a group calld the Southwest Border Action Project.

The possibility of closing the Virginia Street border crossing is a very serious matter to the city of San Diego because San Ysidro is part of the city. If the Virginia Street crossing were closed completely and all traffic, including truck traffic, were diverted to Otay Mesa, it could affect the economic situation in San Ysidro. We are working on this with U.S. Customs, the Immigration and Naturalization Service, and Councilman Martinez, and we have asked SANDAG to issue a report on the matter.

Regarding Tijuana's sewage, I, along with a cross-section of community representatives, spent two hours this morning participating in what I thought was a very informative session. I am now very optimistic about the sewage proposal put forward by the Mexican government.

Mayor Hedgecock mentioned that the federal government is three thousand miles away. Although that is very true, it should not blind us to the fact that Mexico's federal government is 2,600 miles away, which probably causes difficulties in Tijuana that are similar to ours. As you pointed out, not everyone from Mexico City whose work involves Tijuana comes to visit. How often has President de la Madrid been there? How often has President Reagan been to San Diego? (Twice, by the way, in the last six months — because he's running for re-election.)

Air pollution is another big problem that concerns us greatly. With the density of population in this area, we could be our own smog producers, even if Los Angeles and Orange Counties didn't send it down. The situation is further complicated by the fact that our regulations and restrictions in the United States differ from Mexico's. For better or worse, we have a smog control act here.

When we look at our maps, county zoning maps, for example, they tell us that natural formations like Spring Canyon, in the Otay Mesa area, end at the border. Spring Canyon does not end at the border. That darn canyon keeps on going. Smuggler's Gulch, which on our maps stops at the border, keeps on going into Mexico. All these things have a great bearing on what we are doing. I very much appreciate the opportunity to attend this meeting, and I believe that we *will* reach solutions to our problems. Regarding a trans-border regional planning commission, I am not prepared to speak on that. As I have pointed out, we already deal with a tremendous variety of agencies, and I believe that we are now working much more closely with the Mexican government, particularly on sewage and water problems, than we have in the last forty years. We are very optimistic about our future relations.

Robert P. Duckworth
Assistant to the Secretary of Community Relations,
U.S. Department of Housing and Urban Development

For the last three or four years, I have been working on something called the U.S.-Mexico Agreement on Urban

Development and Housing. The purpose of that agreement was to exchange technical information in the area of housing and urban development. Another part of the same agreement deals with the same issues, but with special emphasis on the border region. When this agreement was signed at the presidential level several years ago, many of us in Washington had no idea what we were really dealing with. We had no idea that the border was more than two thousand miles long, that some thirteen cities are situated on the U.S. side, that some five to six million people live in the region, or that this is in fact the most heavily populated border in the world. But over time, we began to learn these things and began to develop some sensitivity about questions of urban development in the Southwest. Under the border-program portion of the agreement, we arranged a number of informal meetings and work sessions along the border, basically to improve communication. We in Washington thought back then that all you needed to do was to communicate. When we attended those border meetings, we discovered that people along the border had already been communicating in a variety of ways and did not even realize how well they were doing it.

In several cities where we held meetings, we were asked what kind of policymaking mechanisms work best in terms of urban development. We think that, based on our experiences, working *comités* (committees), working groups, or task forces are the best devices for urban development. Creating an institution to address a whole range of problems along the entire border, such as the regional trans-border authority suggested by Larry Herzog, is very difficult. First of all, such bodies include only public-sector representation — someone from Washington, the states, or the local government, but never anyone from the private sector. That kind of mechanism therefore lacks the key element that makes this country run: the private sector, imports. The task forces that we have set up in some cities like Laredo and El Paso comprise both public- and private-sector individuals. Secondly, the proposal for a trans-border regional planning authority is just not politically realistic. By the time you arrive at a politically acceptable mechanism, you will not be able to solve your problems. All attention will be focused on how to create that mechanism and on the institutionalization of the regional commission's work.

By forming working *comités*, on the other hand, you can begin to engage in informal communication as we are doing today and as we do through our bilateral urban development agreement. From the informal, building up to a more formal relationship, whatever that turns out to be, will be much easier. We think that such a formal mechanism would probably include private and public officials from many areas who would meet together and work with their counterparts on the Mexican side of the border. At no place along the border do we have such a regional group, and I do not think it would work right now.

With respect to economic development, we should recall that during the several years in which the border agreement has been operational, we have seen three devaluations and a progressive deterioration of the border economy. Participants in our informal sessions and even in our joint county working groups had great difficulty focusing on any issue other than the border region's economic problems. As we struggled to think about physical planning solutions to urban development, we discovered, along with some of our counterparts in Mexico City and in some of the border towns, that what drives a community is its economic development. From a community's economy come the jobs, housing, and revenues that support the services which ultimately sustain the community.

In the last year or so, we have begun to orient our urban development agreement more and more toward economic development. Councilman Martinez proposes an economic development commission. Maybe you in this part of the country should consider such a proposal, but consider one which includes private-sector representation, and think about it as a long-range goal, not as a first solution to your urban problems. You have to work into that kind of mechanism by taking advantage of some of the opportunities for improved communication that we discussed this morning.

The first step in planning for urban development along the border is to agree about what the numbers are. As we saw this morning, the academics, or rather the studies done thus far, do not have the numbers straight. We did not know whether the reports about sewage-treatment capacity were accurate and we did not have accurate projections of the future populations of these areas. Without such information, solving this area's urban development problems will be even more difficult.

Planners tend to see themselves as the driving force behind urban development. They are not. We cannot take ourselves so seriously that we start to think that we can solve all the problems of development. When we consider solutions to a problem, we have to include the whole community. The urban-development envelope consists of many, many players. We planners may be capable of solving many of these problems, but we cannot do it by ourselves; we must do it together.

Let me take this meeting one step further by suggesting the formation of a working group with our counterparts on the Tijuana side. To do so, you must first identify the information you have to work with, then identify your opportunities for communication. From there, a constructive step might be to act on the concept of "preventative planning" introduced by Carlos Graizbord: find out what your problems will be four or five years

from now and tackle those first. The task force that I envision, which should involve the private sector as well as public officials, has a great many opportunities to identify what those problems might be. If there is to be such a task force, it should be chaired, as is the case in other border-area twin cities, by the mayors of Tijuana and San Diego, because decisions are going to made here, by local officials with the greatest authority, and not in Washington. I do not foresee the creation of a regional commission in the near future, but setting up a task force seems a realistic intermediate step.

According to the second stanza of the Mexican national anthem, "the destiny of Mexico is shaped by the finger of God." Our destinies, the destinies of each area along the border, will be shaped by the people in this room — local politicians, urban experts, and citizens. You will shape the Tijuana and the San Diego of tomorrow. Right now, you are at an historical crossroads, facing a choice between pushing in a positive direction or failing to take advantage of some obvious opportunities. These discussions need to take a step forward toward the formation of a working task force, followed by a more institutionalized structure, whatever that may be, involving the private sector and the mayors of both cities.

If this is to be an historic watershed, you will make it so by becoming the first generation along the border to crystallize urban development concerns into concrete actions: you have begun the process by holding this meeting, and you can sustain it by continuing to hold these sorts of discussions in the future. If we plant the tree, a little Chinese proverb tells us, future generations may enjoy its fruit. The destiny of the cities along this two-thousand-mile border is in the hands of people like you — not in Washington, but in local energy and commitment to what you want your cities to become.

Jorge Swain
Minister of Human Settlements and Public Works (SAHOPE), State of Baja California*

The authority of the state regarding the regulation of human settlements is specified in the 1976 General Law on Human Settlements and the 1979 Law on Urban Development for Baja California. Tijuana is one of the most problematic of Mexico's urban centers because of its explosive demographic growth, due primarily to immigration. Among the many consequences of this accelerated growth rate is the emergence of densely populated settlements in areas topographically unsuited to support them. Not surprisingly, these communities suffer from a lack of public services, housing, and infrastructure, and they display irregular patterns of land tenure. The primary objective of Tijuana's Urban Development Plan is therefore to provide federal, state, and municipal authorities with the technical and legal tools necessary to set guidelines for ordering and regulating the city and its urban growth. This plan does not pretend that it will solve Tijuana's socioeconomic problems; rather, it focuses on establishing basic directives for a more rational distribution of people and activities within the area. The plan also attempts to establish norms for controlling land use by specifying reserve areas and the land uses and development measures permitted within various areas of the city. Regional and sectoral guidelines to be developed later will allow more precise planning and regulation. The legal foundations of Baja California's urban development plan can be found in amendments to articles 27, 73, and 117 of the Mexican Constitution; in Mexico's General Law on Human Settlements; in the Urban Development Law for Baja California; and in the state's planning law. The new urban development plan evolved from goals and policies which the National Development Plan set as essential measures for the regulation of human settlements.

Tijuana is ranked within Mexico's National Urban System (SUN) as one of the major cities receiving state services. Of the eleven natural zones defined in Baja California's development plan, Tijuana straddles two: the Mediterranean Strip (region 6) and the Continental Shelf (region 11); it forms part of the integrated urban system of Baja California and the Baja California border zone, one of the country's top ten priority areas for development. Tijuana has also been designated as a priority population center under Mexico's policies of consolidation and regulation. In addition, Tijuana is a key urban center in national plans and sectoral programs for development, such as PRODEIN (Program for Integrated Development), a program to stimulate the spatial decentralization of industrial activities.

The urban development portion of Baja California's development plan outlines a strategy for population redistribution and defines a framework for regional planning activities, a tool for regulating human settlements which meets the requirements of article 28 in Baja California's urban development law. The regulatory policy produced within this framework would ideally reduce the rate of population growth in the area, thus improving economic and social efficiency. Although state- and national-level programs and projects for Tijuana presume a decreasing growth rate for the city, we must remember that population growth in Tijuana is determined by external factors, making it very difficult to slow the rate of growth, at least over the short term.

*Editor's note: These comments represent a translated, edited version of those read by Mr. Swain from the *Abridged Version of the Urban Development Plan for Tijuana.*

Among the antecedents in Tijuana's local planning history is a law which established plans for regulating the city and defined the municipal government's authority in this regard — limits which have now been exceeded in some respects. Tijuana's municipal urban development plan focuses on integral and balanced urban development as an overall objective and includes as a short-term goal the complete implementation of Tijuana's official Urban Development Plan.

The development plan currently in effect aims to optimize the regulation and orientation of human settlements with respect to the existing urban structure, the characteristics of the population, and the city's resources and potential. It also includes plans to incorporate infrastructure into the present organization of the urban area, including the provision of vehicular transportation networks, energy resources, water supply and removal systems, and construction which supports productive activities. The plan encourages improvements in residential areas, especially in marginal zones, so as to assure the distribution of goods and services to all the city's inhabitants. By facilitating the optimal use of urban land, the plan aims to ensure a fair distribution of services to the urban population and to implement a spatial integration of settlement areas.

Other objectives in the plan include: adapting the city's road system so as to channel traffic both around and through the city, optimizing traffic flow and decreasing the risk of accidents; regulating the use of natural resources in order to preserve the physical environment and the scenic beauty of the area, while preventing the ill effects of overexpansion; controlling the magnitude and direction of physical expansion within the urban area so as to adapt it to the natural environment and to the limitations for extending the urban infrastructure, while avoiding the occupation of inappropriate zones; setting guidelines for the expansion, improvement, and utilization of the city's current and projected infrastructure to facilitate the consolidation of areas already urbanized or in the process of urbanization; fomenting industrial development appropriate to the city's socioeconomic and environmental context; and, in the short term, concentrating growth in areas within current urban boundaries, rather than expanding into groundwater recovery areas or other areas of equal ecological importance. The plan also attempts to establish Tijuana's potential for urbanization and to outline the stages of future land development over a minimum of the next six years.

Tijuana's urban development plan is most concerned with the impact of Tijuana's urban growth, reflecting the fact that the city is under direct pressure to modify current land usage. The most important factors noted in the plan which might affect the city's efforts to address this problem include regulation of neighboring communities, politico-administrative boundaries, installed infrastructure, natural growth trends, and potential natural and scenic resources. With regard to the first factor, the plan notes that with the exception of Rosarita, which lies on the geographically unifying coastal corridor and is linked to Tijuana by the Ensenada freeway, no neighboring population center is large enough to affect Tijuana's growth.

The two major boundaries which define Tijuana's planning space are the international border on the northern edge of the city and the western city limit near the coast. Tijuana's major infrastructural feature is a transportation network which reflects the proposed system for regional integration: the network includes the Mexicali-Tijuana and the free Tijuana-Ensenada highways, the Tijuana-Ensenada scenic route, the Abelardo L. Rodríguez international airport, and the Tijuana-Tecate railroad. One of Tijuana's principal problems in growth management has been that natural growth has tended to occur in hilly areas where pronounced inclines impede the provision of infrastructure and services. The sole exception to this general trend is the growth of Otay Mesa, northeast of Tijuana. Finally, Tijuana encompasses a wide range of areas with potential for recreation and tourism, including beaches, canyons (La Presa and La Misión), the Rodríguez and Carrizo reservoirs, and the scenic overlooks in El Mirador and Cerro Colorado — scenic and recreational areas with a total area of some 477 square kilometers. These, then, are some contextual factors that contribute to Tijuana's dynamic character and to the complexities involved in implementing a feasible urban development plan.

Translated by Sandra del Castillo.

COMMENTARY

Gustavo del Castillo
Centro de Estudios Fronterizos del Norte
de México (CEFNOMEX), Tijuana

Today's speakers seem to agree that certain problems are inherent in the Mexican system. They have encountered, for example, difficulties in identifying which actors they have to deal with; these difficulties occur every six years, when the actors seem to disappear — or move from one office to another — with the change in presidential administrations. Furthermore, we have heard complaints that the high degree of centralization in the Mexican government thus tended to inhibit local authority and state autonomy.

These problems affect not only U.S. planners, but practically every resident of Mexico as well. We have the same problems, and solving them is simply a question of sitting down and learning the new name of the agency or official you need. That is the nature of the Mexican system, and you cannot change it. You just have to sit down and learn who's who, where, and at what time. I am not going to talk about those problems, but I did want to mention that we have to learn to live with our political and cultural differences.

If we accept certain premises about U.S.-Mexico urban growth policy, then we can draw a number of useful conclusions from them. I would like to offer four premises about border development which I believe have important consequences: first, the United States will always outdistance Mexico in terms of the amount of resources that it can direct toward the solution of border problems; second, no important decision made on either side of the border can compromise or even appear to compromise national sovereignty, as the events surrounding the sewage question attest; third, coordination between and within agencies often does not exist — or is at best conflict-ridden — on both sides of the border (some people might argue that good coordination exists among SANDAG, CALTRANS, the communities of the San Diego area, etc., but I consider that assertion very debatable); and, finally, our ignorance about decision-making on both sides of the border is appalling — in most cases, actors in neither country actually know whom to deal with or what will be the consequences of dealing with a particular actor on the other side of the border.

Let me address some of the consequences of these premises. First, development in the United States is obviously facilitated by the amount of resources available for that purpose; in return, people in the United States often expect an equivalent amount of Mexican resources to be invested in solving a problem. Such thinking is utopian. Mexico could never invest resources at the same level that the United States does, much less at a time when economic crisis abounds.

With respect to decisions which compromise national sovereignty, the primary question centers on defining which decisions will be considered as sovereignty-threatening and which will not. In other words, what decisions can be made locally? How and when, and under what conditions, will local officials decide that certain decisions are within their purview? This issue is particularly relevant to Mexican decision-makers, who function under a very centralized state. How the new politics of political reform and decentralization will affect the question of local autonomy is still open. The 1983 agreement between Presidents de la Madrid and Reagan outlined some areas in which decision-making can take place locally, without the necessity of national-level intervention, but in the past, local officials have demonstrated an inability to respond to such opportunities.

One consequence of the lack of coordination between agencies is that the best decision-making takes place with a minimum number of agencies involved. We might therefore try tackling those problems which do not require inter-agency coordination. When a solution cannot be reached by dealing on a one-to-one agency basis, you run the risk of getting lost in local administrative politics.

Lastly, we often complain about the lack of information relevant to decision-making. But if we actually sat down and began to make decisions with the information that we already have, we could make decisions for the next two hundred years. The information available is sufficient to make a lot of decisions, yet they are often not made for completely different reasons. Some of the problems that Carlos Graizbord outlined earlier, such as the standardization of information which he attempts to accomplish through his geographical information system, can be dealt with.

The clearest example of ignorance in decision-making came during the devaluation crisis of 1982, when local officials on the U.S. side of the border, together with the press, began to speak openly about the "crisis" that existed along the border. Many of these officials actually went so far as to say that the decreases in sales tax and revenues caused by the crisis would force reductions of public services on the U.S. side. That is, they just assumed that certain erroneous information circulated by the press was actually correct. Currently, attention is focused on the question of sewage treatment. The decision-making dilemma caused by this problem became evident when local officials in San Diego sought solutions from local officials in Tijuana; they could not possibly get these solutions because local officials in Tijuana perceive the problem as an international matter — not just a problem of local resistance in Tijuana.

Thus, the consequences of our premises are rather clear. We could inject other premises into the discussion, but I think I have probably touched on the most significant ones.

Norris Clement
Institute for Regional Studies of the Californias,
San Diego State University

I would like to address three issues: the idea of a San Diego-Tijuana regional planning authority, the role of universities, and the historic perspective that ought not to be forgotten in our discussions of border problems and solutions.

It is obvious that nobody here is going to accept the idea of a regional planning authority, probably because of the many administrative and economic difficulties attached to such a gigantic undertaking. By implication, then, most of us here must believe that informal mechanisms work better than formal mechanisms. This debate — about whether formal or informal planning mechanisms for collaboration are best — has been going on among planners on both sides of the border for a long time. This afternoon's panelists have suggested the formation of an economic development commission, as well as the institutionalization of an informal public-private forum in place of a regional San Diego-Tijuana planning authority. Let us examine these suggestions further.

The history of local trans-border relations reveals that a public-private trans-border business dialogue was initiated between the Chambers of Commerce in the two cities (CONACO in Tijuana and the Chamber of Commerce in San Diego). This dialogue continued for several months and then just kind of petered out. The people who participated felt that it was helpful, but the problem is, how do you keep something like that going? Councilman Martinez and Supervisor Bilbray both suggested that economic development is a much more natural enterprise than a formal planning institution because business is conducted all the time. They suggest also that business relations generate more complementarities and less conflict. Therefore, we should have an economic development commission and maybe not worry too much about relations between the public sectors on each side of the border.

To a certain extent, the economic structures of San Diego and Tijuana do share more complementarities than conflict. In industry, production on the U.S. side tends to be more capital intensive, while in Mexico it is labor intensive. The tourism sector provides clear evidence of complementarities. The San Diego Convention and Visitors Bureau is convinced that our proximity to Tijuana attracts more tourists to San Diego, and Tijuana's tourism experts think similarly. But in the service sector and in commerce generally, there are areas of competition. Just think about what happens each time that we have a devaluation: shoppers from the Mexican side stay away from this side. When the peso becomes overvalued, they come back over to this side, and we do not shop as much or engage in as many tourist activities in Tijuana.

Competitiveness might also arise in industry. Councilman Martinez postulated that we suggest to the Mexicans that they establish a so-called "foreign investment zone" along the border, in which foreigners could be one-hundred-percent owners of productive facilities and organizations. As I interpret that suggestion, the councilman is recommending something more than the assembly plants *(maquiladoras)* now in operation — he is suggesting that Mexico allow foreigners to own plants which actually transform goods. If Mr. Martinez's suggestion were implemented and General Dynamics took advantage of the opportunity and moved three or four thousand jobs from San Diego to Tijuana, that suggestion might not come up again at the next of these forums. That idea presents possibilities for indirectly exporting jobs from San Diego to Tijuana — a controversial notion, indeed.

The idea of institutionalizing a public-private forum is a good one. At least one other agency suggested that idea to Mayor Hedgecock or his staff, and I would like to see his administration implement it. However, such a group should exist side-by-side with an active economic development commission which would work on solving problems which arise from economic development. In other words, public-sector coordination is necessary, and the original suggestion for some sort of an institutionalized forum including both the public and the private sectors still has its merits. Conflicts can arise between the two public sectors, as has been suggested, but they can also take place between the public and private sectors. One thing that I will never forget from my own personal experience on the border occurred while we were talking with the manager of the Plaza Mayor shopping center when it first opened about seven years ago. Standing in front of the now defunct Alpha Beta store, he looked across at the groups of *indocumentados* staging their daily game with the Border Patrol. Then, looking at the almost empty store, he said: "Now, here is a real contradiction. I'm trying to get people from Tijuana over to shop in my store, and the Border Patrol is trying to keep those people away." That kind of conflict points out the need for coordination between the private and public sectors, and the institutionalization of this kind of forum would be a very positive first step.

Also, to inject an historic perspective, let me remind you that we do have a Commission of the Californias, located in southern California. The Commission of the Californias has a spotty reputation. Under the current administration, it is doing more of what the present state governor wants to do — that is, concentrate more on economic development. At the same time, the problems of asymmetry that exist in the Commission of the Californias portend similar difficulties in other kinds of institutionalized arrangements.

Just because we institutionalize a public-private forum does not mean that it will accomplish what we want it to do. A sense of the history of such efforts will help us to overcome many difficulties, and this sense of history is provided by institutions of higher education.

Universities can carry out three functions, very often jointly or in some sort of collaborative or parallel manner. The various institutions represented here all have interlocking *convenios* or agreements, through which we work together on various projects. Of these three functions that I think that we can perform in harmony with the private and public sectors, the first is to provide a neutral ground for discussion. In this conference, for example, we are providing an informal mechanism through which public, private, and technical people can express and share their ideas.

Second, we can conduct studies about technical, historical, political, economic, social, and administrative aspects of the region, as well as about attitudes toward trans-border planning. Dr. Graizbord raised some of these possibilities earlier. We at San Diego State are also working with CEFNOMEX on a study that will hopefully show how the *municipio* of Tijuana and administrative structures of the county and city of San Diego have evolved in the postwar period, as well as the kinds of interactions that have taken place over that period. The Border Atlas project on administrative aspects of the region is another good example. These studies will increasingly help us to expand awareness about the border in the public sector and among the politicians that we have with us today. They will provide more data upon which to base decisions.

Third, we can design and carry out traditional educational exchange programs for students, faculty, and staff — a process which is taking place already — in order to create practical awareness of how systems and structures across the border work. Studying in a university and doing internships in the community is an excellent way for both Mexicans and North Americans to learn about their neighbors' structures and habits.

Special courses on border problems, history, and so on are very important for public and private officials and technicians involved in border issues. The bottom line is that a great deal of collaboration is already going on in the academic sector.

As Mr. Duckworth noted, a lot more collaboration exists than we are aware of: documenting and analyzing both successful and unsuccessful instances of trans-border collaboration is another job of the universities. Such efforts will produce some of the elements necessary for the successful development of more formalized mechanisms of cooperation along the border.

Lawrence A. Herzog
Urban Studies and Planning,
University of California, San Diego

Two threads of thought seem to have emerged in this afternoon's session. First of all, the panelists strike me as generally optimistic. I am not sure that such optimism is grounded in fact, but it is nevertheless there, or at least it has been verbalized. For the most part, the panelists have emphasized the positive, rather than the negative, aspects of the San Diego-Tijuana border relationship. Politicians and policymakers would rather talk about economic development and cooperation in economic development than about cooperating to reach immediate solutions to such local problems as sewage management, land-use coordination, and regulation of water-supply systems. Secondly, they favor continuing the present system of informal working relationships, possibly expanding this into something like a trans-border task force, over the notion of creating any kind of formal cross-border mechanism resembling the one in Western Europe. Such a task force may well be appropriate to our current place in the history of U.S.-Mexico relations. As Mayor Hedgecock surmised, sharing political power across the border is quite unlikely at this point in time.

Those two important positions surfaced in today's dialogue. Where we are headed, I am not sure. This session reminds me of a document given to me by a key member of the State Department involved in planning issues for the border region. The title of the document included the phrase "Border Cooperation." Here, I thought, I was finally going to see, in print, a concrete reaction to border-management problems, and a statement reflecting the State Department's perception of the proper administrative response to these problems. The document outlined all the problems of border cooperation and their history; on the final page, a short concluding paragraph left the issue of finding the answer to these problems with the reader and noted that there seems to be no clear answer. So, too, with us; the answers remain for us to unravel.

QUESTIONS AND ANSWERS

Q. I am delighted that one of the Mexican panelists emphasized the problem of resource constraints on the Mexican side. It has always struck me that members of the general public on this side of the border who discuss sewage problems have almost no awareness of a resource constraint on the Mexican side. Most people are only vaguely aware that Mexico is suffering an economic crisis, and they find it difficult to understand why Mexico's responsiveness to problems that are very high on our agenda must be so limited. Facing national economic collapse and intense pressure from all of its external creditors, including the New York banks, to reduce government expenditures, Mexico's reluctance to build a new sewage system for Tijuana is understandable.

Let me discuss two specific questions related to this issue. First, how have recent changes allowing greater decentralization actually affected Tijuana's ability to pay for the extension of basic urban services and for future improvements? We know that changes have been made on paper, but how much material difference have they actually made and what resources are now available to be applied to these problems?

Secondly, to the extent that Tijuana is still heavily dependent upon the state and federal governments in Mexico to finance basic improvements in urban services, how would you assess the adequacy of the financial support that is likely to be forthcoming from the federal government to meet Tijuana's most pressing urban development and service extension needs?

A. Julio Torrescoto Mazier: Regarding the first question, as to what material difference the modifications to the Constitution have made in the municipality of Tijuana, the straightforward answer would be, we still do not know. The reason is this: the Constitution was amended in 1983, the State Constitution was amended in 1984, and only as of November 1984 did we initiate the mechanisms for applying the law in the city of Tijuana. So, as of March 1985, the municipality has had only four months in which funds have been available to work on these problems. First, we are now in the process of receiving monies from property and land-purchase taxes that used to be federally controlled. We are in the process of restructuring our municipal land office so as to be able to administer it in such a way that it will really let us know what our land-tax base is. Right now, the land office is still in the hands of the state government, so the city is not really certain about the size of its land-tax base. That

is why we honestly do not know. We assume from available information that we can increase our revenues by raising those two taxes by about tenfold for several reasons that we need not explore now, because they have been very low in the past.

As to your second question, it has up to now been the responsibility of the federal government to support the cities and the states with expenditures for sewage and water resources. Even though the Constitution now states that it is the obligation of the municipalities to tender water and sewage services, it has not been that way for a long time. Since the federal government has most of the resources, it customarily financed such expenditures. They are then either administered by federal agencies or by state agencies, as is the case in Baja California right now. They might in the future be administered by the cities, but this is still in the offing and will not happen in the immediate future. The projects mentioned — the sewage system for the city, the water treatment plants, the water system, and the aqueduct — were developed with federal resources and they will be paid for by the users, of course.

Q. Does the city of Tijuana have major projects on the drawing boards right now that are being delayed because of inadequate funds from the federal government?

A. Julio Torrescoto Mazier: No. No projected activities already on the books have been suspended. Certain projects have a time line within which the government has promised to provide monies for completion. Let me add that most of our municipal projects are modest by your standards. For instance, right now we're building a new City Hall, which is our largest municipal project. That is going to cost us on the order of one thousand million pesos (4.5 million dollars), perhaps a little more. That is the single largest project that we have underway right now. Some of the other projects within the city, such as those involving road construction, are under control of the state government, while the water and sewage projects will be built by the federal government. Most schools are put up by the state government. So, the projects on our municipal drawing boards are very modest projects, and the lack of government funds has not held them up.

Q. Can someone from Mexico comment on the funding situation for sewage treatment in Tijuana?

A. Julio Torrescoto Mazier: The federal and state governments have the funds for starting the pumps to open up the new 40-million-gallon-per-day transporting system within 30 days. Within twelve months, we will have the capacity to treat twenty million gallons of raw sewage daily. Officials are currently developing a time line, but they may end up sidestepping this issue. But they have already presented time lines that have never been presented before, and the funding for building a twenty-million-gallon-per-day treatment facility is available and ready to go now. Merely saying that we are ready to move is itself a significant change in direction.

Q. Criticism of planning on the Mexican side seems really to focus on the problem of federal power and centralized authority. In fact, that issue seems to have dominated the latter part of today's discussion. I would like to know how much of the problem is equally caused by the centralized federal power of the United States. Certain problems in planning, it seems to me, result from the action or inaction of the U.S. federal government. Consider, for example, immigration. The federal government has completely failed to do anything about the contradiction between the number of workers in the Southwest and the number we are allowing into the country for immigration, but how do you plan for the unplanned? Another major problem in planning concerns trade. How can Mexico develop certain types of industries along the border on Otay Mesa if U.S. federal trade restrictions and tariffs would prevent those products from crossing the border? I think that, just to be fair, we need to be a little more self-critical in terms of recognizing the problems that our federal government introduces into the planning process.

A. Gustavo del Castillo: One thing that I wanted to mention is that, surprisingly, when major problems arise on the U.S. side of the border, local officials seldom sit down and try to work out solutions locally: they go to Washington for the solution. U.S. officials themselves seemingly see their great-grandfathers up in Washington as being able to solve the problems. Often they are not even going to Washington for help, but to get Washington to pressure Mexico City to do something. In this sense, even the idea of informal local cooperation is sometimes a great sham. That is, local politicians play the imperialist by going to Washington and then to Mexico City when they need to solve a local problem.

A. Brian Bilbray: As a locally elected official and somebody who obviously has been involved in trans-border communications, I think I have to take the other tack. I once made the mistake of going to a meeting about the sewage issue at the City Hall in Tijuana and had the presidente municipal tell me that I could not talk to them — I had to go to the State Department. The cities of Imperial Beach and Tijuana are adjacent, with all the social communication which that implies; so when we have a local issue, I'd like to try to approach the problem like we would a problem between San Diego and Chula Vista or between Imperial Beach and Coronado. But when we've tried to do so, we are told, "We really do not have the authority to even discuss the issue with you." Someone who is used to amicable local interchange is shocked by such a response and might end up getting "burned."

We seem to have taken the wrong approach in past negotiations. We have tried to make local communication very formal and very technical in an attempt to find concrete answers at the local level. Agencies of the federal government such as the IBWC, on the other hand, want to approach communication more informally. Even with an organization like the Commission of the Californias, the federal government is almost obsessed with the social, or shall I say the diplomatic, aspect of it, rather than the nuts-and-bolts mechanics of it.

In the last couple of months, I have seen a reversal that has made me very optimistic. Those of us at the local level are talking in more general terms, about concepts, and the federal governments are getting away from the concepts and the general terms and are talking specifics. They are sitting down across the table from engineers and talking about specific problems and specific answers, right down to the details that have traditionally been discussed by local officials who really did not have the authority to implement them.

I am now much more optimistic than I have been in the past because of the transformation of the players that I have observed. On certain stages — for example, the International Boundary and Water Commission, to use a familiar whipping boy — our agencies have traditionally "copped out" of the responsibility for solving problems. We have constantly heard that the IBWC exists to identify issues, not to solve them. But that binational agency was created specifically to address those problems and find the answers, so those of us in the local arena have helped change their posture by identifying the issues and the problems. Now, the IBWC finally seems to be grappling with the hard questions of where the concrete is going to be poured, where the dirt is going to be pushed, who is going to do what and where. Because of this change in mode, we are going to see unheard-of things like a pipeline which will link up at the border without problems of size and capacity.

I personally witnessed that modification in Mexico City this month. I wish we had films to show you the modification and the very frank communication that went on across the table. The diplomats finally reached the point of discussing substance instead of worrying about form, and I think that the entire process benefited.

Q. I want to follow up on those remarks. The problem seems to be: Where does the buck stop? The Southwest Border Regional Commission, along with its approximate counterpart agency on the other side of the border, was supposed to take the lead on these kinds of issues. They were supposed to act as a clearinghouse, taking an issue after it had been identified by people like you in the local community, and then identifying the appropriate local, state, and federal agencies with responsibility in that issue area. But once they were established, they were treated like the new guy on the block: nobody wanted them around. Did the buck ever get to the Southwest Border Regional Commission?

A. Robert Duckworth: My experience with the Southwest Border Regional Commission suggests that it was a toothless organization. It had no specific authority for projects along the border and ended up being a study organization that made regional economic planning studies on a very wide basis, but never got into on-site problems. It just never did that. It was given neither authority nor respect, and it therefore never delivered. It was the only Title V Commission that was international or could have been, but it never fulfilled its promise. As a result, when the Reagan administration came into office and eliminated the Title V Commissions the Southwest Border Regional Commission could not stand on the one thing that could have saved it — its international record.

Discussion

Brian Bilbray: What happened was that the organization became obsessed with form. Let us consider another organization — the IBWC. Despite all the changing players and the different types of games, the IBWC has built up a decades-long commitment among people who have worked together, who have communicated for a long time; and who probably know each other better than anyone else who has ever engaged in trans-border dialogue. There is a definite sense of common purpose in the work done by that agency, in which events have naturally progressed in a positive direction. For a while, the agency seemed to be falling apart, but the change in administrations has improved mutual awareness, despite the political differences between the two countries. But that is just the tip of an iceberg of other changes in U.S.-Mexico relations. Mexico City has become very aware of the water issue for Tijuana; and because of that, they have naturally become much more aware of the need for them to emphasize the issue of sewage treatment which benefits us all.

I would like to emphasize my strong feelings about what went across at the IBWC meeting in which engineer was talking to engineer. We need to have the diplomats, as talkers, start the ball rolling — then we can let the doers communicate and coordinate. In that IBWC meeting, we saw the diplomats sort of pull back and allow the engineers and technicians to develop answers to the problems, rather than taking up time going through the song-and-dance rituals of diplomacy.

Remigia Bermúdez (Assistant to the Mayor, City of San Diego): I would like to make several comments, especially regarding the Southwest Border Regional Commission. The problem with the Commission was not whether or not it would produce. The problem was political. The Commission was a pet project of the

Democratic administration of Governor Jerry Brown, and it competed with the Commission of the Californias, a creature of Lt. Governor Mike Curb, a Republican. The problem we confronted was that, even though we had the same goal in mind, we could not achieve it if we were fighting amongst ourselves.

In response to criticisms of the Southwest Border Regional Commission, let me say that it did produce. It developed a series of border programs, including cultural exchanges in education as well as art, and it worked with other agencies on questions regarding the development of the border area. In the United States, that was our function. If we are going to do anything for the border, we have to plan our own side of the border. I am not saying that it should start there, but rather that we ought to allow the neighboring nation the opportunity to produce what it feels is necessary for itself. In the meantime, we can continue the dialogue. Eventually we will be able to reach a middle ground.

With regard to questions of centralization, I wonder if perhaps we have heard some exaggeration of the differences between the U.S. and Mexican political systems. The federal government in the U.S. is more responsive now, but not of its own accord. The U.S. government has become more responsive because we at the local level have been pressing for it. Government officials are there to represent us and to do their best for us, but if we do not challenge them, they will not respond. The symposia that have taken place, the lead role assumed by academia, the failure of the Commission of the Californias to produce what we wished it would, and the demise of the Southwest Border Regional Commission all contributed to the change in attitude of the federal government. But the main reason why we in San Diego see them as more technically competent and more responsive is that we at the local level have not let them off the hook. Based on everyday, face-to-face dealings, I can say that we in the offices of the City of San Diego have not let EPA off the hook; we have not let the State Department off the hook, nor our congressmen, nor assemblymen, nor any others. They come to us with proposals that they think are going to work, but if they are not good for us, we do not allow them to be implemented. The reason why we go to the federal government is because of protocol, out of respect for Mexico. Mexico sees these issues as international problems that must be dealt with at the federal level — and sometimes we do, too. The City of San Diego, for example, sees the sewage problem as a federal issue. As a federal issue, it must be addressed at the federal level. Also, formal channels of international communication have been established and must be respected. Until we either reach a different level of communication or Mexico decentralizes its system, we cannot talk a different game. Right now, we have to do the best that we can and continue going forward within established networks and ongoing processes of dialogue.

Q. We recognize the limitations on Mexico's resources and the differences between their priorities and ours, yet it seems that we suddenly have made a tremendous advance on the sewage question. What happened? You alluded to an answer when you noted that they have a greater interest and a greater understanding of the whole water situation and how that ties into the sewer situation. But what really took place to produce all that change on the part of the Mexicans?

A. Brian Bilbray: Americans are very naive to Third World concepts. We are a very naive nation. We take things for granted and think that our perceptions are shared universally, but they are not. Priorities have to be set individually, and they change often. They change on this side of the border, and they change over there. And awareness has changed. Resources have been made available and the Mexicans have modified their priorities. There has been the awareness that there is something to gain or lose by action or inaction. Of all the public officials who have spoken about this issue, I probably have been the worst pessimist. But now I think that the next two years will tell whether or not we are actually going to be able to grab this tiger by the tail and hang on to it.

Discussion

Kaare Kjos: I am burning with a comment here that has to do with land-use planning. Let's not throw out the baby with the bath water, the bath water being some sort of formal regional commission. The baby — regional planning — is still terribly important.

When you drive around here you see signs all the time that say: "Let's not Los Angelize San Diego," or La Jolla, or whatever it may be. What is the objection? The objection is that we do not want to form a vast melting of communities, all without character, one going into the next. The reason we object to that is because of the tremendous amount of waste involved, the tremendous externalities, and the tremendous costs imposed on individuals by a structure over which they have no control. These individuals typically are not present when planning decisions affecting their communities are made. I do think that we need some form of regional planning. For example, the serious consideration being given to the construction of an off-highway-vehicle (OHV) park and a big industrial park right against the international boundary is a sign of insensitivity to what goes on across the border. That plan was devised without any thought of what the people on the other side might say. In fact, it almost taunts people living on the other side. It says: "We put it here because nobody wants to live near it. There is a fence and the people on the other side cannot object because it is outside their local jurisdiction."

Brian Bilbray: In a similar vein, Tijuana's international airport is sitting there, while at the same time Americans are saying that they do not want San Diego's international airport to be located on Otay Mesa. People are concerned about the flight pattern in the Otay region; but right across the border you have Tijuana's flight pattern, and anybody who knows that airport's runway configuration is worried about the impact.

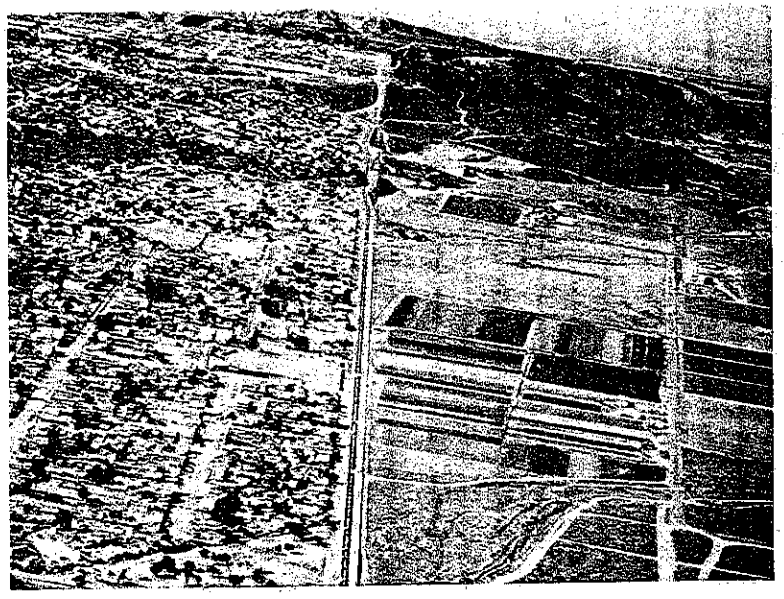
Kaare Kjos: I am not saying that insensitivity all runs in the same direction; moreover, the kind of vehicle park that we are talking about is a temporary use that can easily be changed. However, we must keep some sort of informal dialogue going, not only on the economic front but also on land use and land planning. Such discussion absolutely must take place in a very informal atmosphere, where technical people can forget about political constraints; they must be able to really sit down together and devise some sort of planning approach about which they can feel enthusiasm and even some passion — the way very few things produce passion these days. Once they have devised such a plan, even though it may be very preliminary, they can address the more difficult problem of how to implement it. At that point the two sides would take very different approaches toward implementing their plans. But the problem always comes down to presenting plans to politicians: the higher up they are, the bigger their egos, and the greater the challenge in using one's enthusiasm to sell them on an idea and convince them that it is really theirs. On the Mexican side, the plan may well be called the de la Madrid plan, and on the U.S. side it may be called the Bilbray plan or the Hedgecock plan. That is how things would get going, and it is absolutely essential that we take steps to continue such dialogue on land-use matters.

Brian Bilbray: I wish we had an aerial photograph of the border to demonstrate how dramatic a scene it is.* Tijuana's development pattern actually touches the borderline. Their development literally follows the boundary line. While on the U.S. side, growth has basically been concentrated away from the border, almost as if the boundary line were something to be avoided. The only place that development really touches the border is in San Ysidro proper, and only for a distance of less than three hundred yards — thus, less than a quarter-mile of urban San Diego abuts the border.

At one time, one border plan placed an international university on the border, but that has not materialized so far. We still do not have a university on the border where our brothers from the south can walk across and talk to us in a common room. They have to drive twenty miles north. Maybe that reflects a problem

*Editor's note: We have included an aerial photograph of the region as figure 14.

Figure 14
Aerial View of International Border



of attitude. Is the border going to repel interests from each country, or should it be drawing us together?

A. Kaare Kjos: I appreciate your concern about what appears to be insensitivity regarding the location for the proposed OHV park. However, I tend to disagree with you. This proposal has not been developed in a vacuum, nor without communication across the border. We have made informal efforts, right along the lines of this afternoon's discussion, about exchanging ideas on an informal level. We have met several times with our Mexican counterparts at CEFNOMEX and also at state and municipal offices in Tijuana to discuss these plans, to exchange plans, and to get their feedback.

I also mentioned the establishment of the inter-jurisdictional task force that now is meeting on a more-or-less informal basis but which hopefully will be formalized soon. That group includes representatives from the city, the county, Chula Vista, SANDAG, CALTRANS, and so forth. As I pointed out, we still do not have representatives from the south side of the border, but we intend by our meeting next month to invite several representatives from south of the border to attend. That meeting will take up developments along the borderline, setbacks, what should occur, the concerns of the Border Patrol, and so forth. I would like to think

that we are now sensitive, that we have begun the dialogue, and that we fully intend to continue that dialogue.

Brian Bilbray: Let me give you just one example of a naive approach to the border, an idealistic approach to trans-border cooperation that demonstrates the lack of a true awareness of the dynamics of the area. It is Friendship Park. Friendship Park, for those of you who do not know, is a border park located in the most southwesterly corner of the continental United States. The concept behind the park was a cooperatively run open region between Mexico and the United States, a place where residents of both countries could mingle in a recreational environment. A nice idea on paper, the park did not take into consideration the differences between the two countries in population impacts, recreational needs, and desires for open space. When the park was opened, the adjacent area consisted basically of commercial activities on the Mexican side and open space on the other. By the time the park opened, however, the great demand for this type of facility in Tijuana created pressure on the facilities of the north and almost destroyed the park; in self-defense, the United States built a big, ugly fence with barbed wire to keep people out. We ended up having to put immigration agents there to control access across the border at that location. Without faulting anyone, we can note that all the landscaping was destroyed because the facility was overburdened, an aspect of the project that nobody had foreseen. Out of our basically very naive approach, we now have a beautiful green space surrounded by a ten-foot barbed-wire fence — certainly not the greatest symbol of friendship.

Q. Perhaps there is some way to consider the Western European approach to trans-frontier cooperation in the U.S.-Mexico border context. There is not such a vast difference among their economies as there is here, and perhaps that is the factor of greatest influence on our border. Is the European model more applicable to the border between Canada and the United States? Are we not yet at that level?

A. Lawrence A. Herzog: There are significant economic differences between the poorer nations of southern Europe — such as Yugoslavia, Italy, and Greece — and the nations of northern Europe, yet they have been able to create this kind of cooperative mechanism. We could identify the reasons for the success of Western European border planning ventures if we had more time.

However, after having listened to the panelists' discussion and comments, I am encouraged about the idea of a regional commission. Although we have not resolved the many contradictions and problems built into the social system of the border region, we definitely have a sense, a snapshot in time, of what people think should be done about them. History will tell us whether or not the perspectives developed here will work.

The problems of protocol, the questions about funding and national sovereignty, and the conflicts within each nation, between bureaucracies, and over the appropriate responses to different kinds of border problems all leave open the possibility of some kind of trans-border cooperative mechanism that would force nations to make compromises, or at least to resolve some of their internal contradictions. Through today's dialogue we have brought an increasingly complex picture into sharper focus. Let us hope that better cooperation and more fruitful policy negotiations ensue.

ABOUT THE PARTICIPANTS

Brian Bilbray is Supervisor of the First District of the County of San Diego. Prior to becoming County Supervisor, he was Mayor of the City of Imperial Beach and has long been an active local participant in U.S.-Mexico border affairs.

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John Conway is Associate Professor in the School of Public Health, San Diego State University. He has authored numerous papers and has participated in local media discussions and conferences regarding sewage contamination in San Diego's South Bay area.

Gustavo del Castillo is Assistant to the Director of the Centro de Estudios Fronterizos del Norte de México (CEFNOMEX) and has written several scholarly works on U.S.-Mexico relations in the areas of agriculture, trade, and the border.

Robert Duckworth is Special Assistant to the Assistant Secretary for Community Development, U.S. Department of Housing and Urban Development. He has been a key actor in the U.S.-Mexico Agreement on Urban Development and Housing.

Carlos Graizbord is Head of the Department of Urban and Environmental Studies at the Centro de Estudios Fronterizos del Norte de México (CEFNOMEX). He is developing a computerized simulation model for studying land use in the border region.

Roger Hedgecock was, at the time of the conference, Mayor of the City of San Diego. Before that he served as a San Diego County Supervisor and he has long been an active spokesman on border issues, including the development of Otay Mesa, the transit system, and the rights of undocumented Mexican workers.

Lawrence A. Herzog is Coordinator of the Urban Studies and Planning Program, University of California, San Diego. He has written a number of scholarly articles on U.S.-Mexico border urbanization and has actively participated in the Tijuana-San Diego trans-boundary dialogue.

Kaare Kjos is a Senior Planner for the County of San Diego. He has been active in meetings with Mexican officials on border planning issues and formerly worked as a Peace Corps volunteer in Bolivia.

Uvaldo Martinez is a Member of the City Council of San Diego representing the Eighth District, which includes communities lying along the border. Formerly a planner and environmental consultant, Martinez has taken an active interest in border relations.

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