

AN ANALYSIS OF THE INTEGRATED ENVIRONMENTAL PLAN
FOR THE MEXICAN-U.S. BORDER AREA

by

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Over the last three decades, foreign interests have been establishing manufacturing plants near Mexico's northern border. Attracted by favorable wage rates and a permissive regulatory environment, these industrial installations--called "*maquiladoras*"--numbered over 2,000 by 1993. One result of their activities has been a serious deterioration in the quality of the border environment. In reaction, the Mexican and U.S. governments jointly prepared a plan whose purpose is to clean up the myriad of environmental problems there. This study assesses this plan in light of the state of the border environment, concluding that it is incapable of fulfilling its mandate of cleaning

up the border region for a number of fundamental reasons, including its misdirected emphasis on end-of-pipe solutions, short-term focus, poor planning, and inadequate funding, as well as its failure to consider impacts from the likely imminent implementation of the North American Free Trade Agreement.

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CHAPTER I

INTRODUCTION

In the mid-1960s, Mexico enacted legislation easing restrictions on foreign manufacturers seeking to set up operations in Mexico's remote northern border area. Today, nearly three decades later, there are about 2,000 foreign installations in the region, employing half a million people.¹ As the sector bringing in the most foreign revenue after petroleum, the industrialization of the border region is widely regarded as an economic success story.

But it is a story with a dark side. Accompanying the economic development and jobs has been an alarming deterioration in the state of environment and human health. Today, the border area is by many measures the most polluted and unhealthy region of North America.²

In the late 1980s, the Canadian, Mexican and United States governments began discussing the possibilities for

¹Tom Barry, ed., Mexico: A Country Guide (Albuquerque, New Mexico: Inter-Hemispheric Education Resource Center, 1992), 272.

²Environmental Protection Agency Border Environmental Plan Public Advisory Committee, letter to Carol Browner, Administrator, U.S. Environmental Protection Agency, 22 July 1993.

the development of a liberalized multilateral trade pact. The purpose of a North American Free Trade Agreement (NAFTA) would be to increase cross-border trade, cooperation and investment.

In the ensuing political debate, the Mexican-U.S. border region began to draw an unaccustomed measure of international attention. Supporters of a trade agreement hailed the economic success of the border area as an example of the mutual benefits to be reaped from binational economic cooperation. Opponents pointed to the shocking environmental, health and labor conditions as evidence of the exploitation to be expected of profit-motivated foreign corporations establishing operations in a poor area with limited infrastructure and a permissive regulatory environment.

In order to dampen critical opposition to the proposed deal, in February 1992, Presidents Salinas de Gortari of Mexico and Bush of the U.S. unveiled a joint initiative whose purpose would be to clean up the shared border region.³ In addition to alleviating the results of past activities, the Integrated Environmental Plan for the Mexican-U.S. Border Area (the Plan) was to set the rules for ongoing and future industrial development. Its implementation was to ensure that foreign industrial

³Karen Tumulty and Larry B. Stammer, "Bush Unveils Mexico border Cleanup Plan," Los Angeles Times, 26 February 1992, A3.

operations in the border region would give proper and sufficient consideration to such noneconomic externalities as ecology and health.⁴

These are admirable, but--given the shocking state of environmental and health conditions in the border region--lofty goals. Indeed, the formidable power of the international corporate lobby in opposition to such fundamental changes may render their attainment all but impossible.

The current document is an attempt to determine if the Plan is sufficient to fulfill its mandate, namely, to effectively alleviate current and ongoing environmental and health problems in the Mexican-U.S. border region. An examination of the border region and conditions there will be followed by an outline of the Integrated Environmental Plan for the Mexican-U.S. Border Area. The subsequent discussion will seek to assess the extent of the Plan's capability for fulfilling its ambitious objectives, and will include suggestions for improvement where appropriate.

⁴United States Environmental Protection Agency and Secretaria de Desarrollo Urbano y Ecologia, Summary: Integrated Environmental Plan for the Mexican-U.S. Border Area (First Stage, 1992-1994) (Washington, D.C.: U.S. EPA, 1992).

CHAPTER II

THE BORDER REGION

The political boundary that separates Mexico and the United States, one of the world's longest at nearly 2,000 miles, stretches from the Pacific Ocean to the Gulf of Mexico. Although the eastern half of the border follows the bed of the Rio Grande, the western part is unrelated to topography, so cross-border climate and physical features are similar. With the exception of the lower Rio Grande Valley to the east, the region is one of high deserts colonized by drought-tolerant species of plants and animals. Several rivers, including the Santa Cruz, New, Tijuana, San Pedro and Colorado, cross the border. Groundwater aquifers which supply essential water for both human consumption and agricultural irrigation are likewise disrespectful of the boundary, as are desert ecosystems, airsheds and drainage basins.

For purposes of administration, "the border region" was defined in the 1983 Border Environmental Agreement between Mexico and the United States as the zone within 100 kilometers, or about 65 miles, on either side of the

political boundary.⁵ Due to the arid and generally harsh conditions, the area is rather sparsely populated. The 250,000 square mile border region, with its 9.5 million inhabitants, averages less than 40 people per square mile. About 9.2 million people--over 96% of the region's total human population--live in or near 14 of the complementary pairs of cross-border cities that characterize the region's uneven demographic distribution.⁶ This set of sister-city relationships helps to make the Mexico-U.S. border the busiest in the world, with over 200 million people crossing into the U.S. from Mexico every year.⁷

In spite of the international boundary that cleaves it politically, the border region is in many respects undivided. Here, national distinctions between climates, cultures, languages, political systems, and levels of economic development blur.

The Maquiladora Industry

In the early 1960s, changes in U.S. customs regulations opened the way for duty-free import of U.S. components sent

⁵Ibid., 6.

⁶United States Environmental Protection Agency and Secretaria de Desarrollo Urbano y Ecologia, Integrated Environmental Plan for the Mexican-U.S. Border Area (First Stage, 1992-1994) (Washington D.C.: U.S. EPA, 1992), 6.

⁷Ibid.

abroad for processing or assembly. At about the same time the so-called *bracero* program, authorizing U.S. growers to contract temporary farm labor from Mexico, was terminated. The result in Mexico was a sudden increase in unemployment along the northern border. These two factors, coupled with the increasing globalization of capitalist production, stepped up pressure on Mexico's traditionally inward-looking economic policies in the direction of increasing liberalization. In response, the Mexican government in 1965 instituted the Border Industrialization Program, providing for the establishment along the northern border of foreign-owned, labor-intensive, export-oriented assembly plants.⁸

Called *maquiladoras*, these export-processing installations are distinct from domestic manufacturers in some significant respects. *Maquiladoras* are exempt from protectionist tariff barriers, paying tariffs only on the value added to a product in Mexico.⁹ And because of their manufacture-for-export function, *maquiladoras* tend to generate costs rather than profits in Mexico, thus paying little or no Mexican corporate income tax.¹⁰

⁸Barry, 142.

⁹Interfaith Center on Corporate Responsibilities, "Maquiladora Standards of Conduct," Corporate Examiner 20 (1991): 4.

¹⁰Sidney Weintraub, A Marriage of Convenience (New York: Oxford University, 1990), 158.

The early years of the Border Industrialization Program saw a steady, though unspectacular, increase in the number of *maquiladora* plants. But in 1982, a significant devaluation of the peso began. The exchange rate went from as low as 24.5 pesos to the dollar in 1981 to 3,000 pesos per dollar a decade later¹¹--an erosion to less than 9% of former value for the embattled Mexican currency. By 1988, *maquiladora* workers were receiving an average wage, including benefits, of the equivalent of \$0.78 per hour,¹² a rate much lower than that for similar work in Hong Kong, Korea, Malaysia or Taiwan.¹³ *La crisis* has made Mexican laborers among the lowest-paid in the world.¹⁴ American companies moving operations to Mexico save an average of \$16,000 per worker each year, a savings figure that climbs much higher for more skilled or specialized workers.¹⁵

The opportunity for such significant savings, particularly in the case of labor-intensive production activities, has led to an explosion in the growth rate of

¹¹J. Michael Kennedy, "On Texas Border, Outlook for Air Quality is Murky," Los Angeles Times, 20 November 1991, pg.

¹²Weintraub, 16.

¹³Fay Crevoshay, "People of the Maquiladoras: They Dream of Building a Better Future," San Diego Business Journal, 4 May 1992, 19.

¹⁴Jane Juffer, "Dump at the Border," Progressive (October 1988): 87.

¹⁵Crevoshay, 20.

the *maquiladora* industry.¹⁶ For instance, General Motors, currently with about 50 assembly plants in Mexico, opened 12 new plants there in 1987. During that same year, GM closed 11 plants in the Midwest of the United States, terminating 29,000 U.S. workers.¹⁷ Since 1980 the number of *maquiladoras* had increased more than four-fold¹⁸ by the end of 1992 to some 2,100 plants employing 500,000 Mexicans.¹⁹ The *maquiladora* industry is today Mexico's leading source of foreign exchange after oil, accounting for one quarter of all manufactured exports.²⁰

Maquiladora activities include the production of a wide range of products, including electronic goods, textiles, auto parts, furniture, machinery, toys, sunglasses and false teeth, as well as a wide range of chemical products, including fertilizers and pesticides.^{21 22} Many of the largest corporations in the United States count *maquiladoras* among their operation facilities, including AT&T, Chrysler,

¹⁶Juffer, 87.

¹⁷Barry, 144.

¹⁸Interfaith Center, 7.

¹⁹Christopher Marquis, "The Free Trade Trade-off," Miami Herald, 1 June 1992.

²⁰Barry, 143.

²¹Interfaith Center, 7.

²²Sandy Tolan, "The Border Boom: Hope and Heartbreak," New York Times Magazine, 1 July 1990, 2.

DuPont, Eastman Kodak, Ford Motor, Foster Grant, General Electric, General Motors, IBM, ITT, Johnson & Johnson, Kimberly-Clark, Pepsico, RCA, Xerox and Zenith.^{23 24}

Environmental Regulation

Inexpensive labor is but one of the comparative advantages enjoyed by corporations with manufacturing facilities in northern Mexico. Another significant reason for the continuing border boom relates to environmental regulation. Since the inception of the Border Industrialization Program in 1965, U.S.-owned factories have operated here with little regulatory oversight. As infrastructural components from water supply to sewage systems have been increasingly overwhelmed by people in search of work in booming border areas, Mexican authorities with little political muscle, less money, and no plan, have presided over an environmental regulatory history of mismanagement and ineptitude.

There is a large body of evidence suggesting that some foreign corporations operating in Mexico's border region routinely take advantage of lax environmental regulation. The General Accounting Office, Congress' investigative arm, found that 78% of furniture manufacturers who have relocated

²³Interfaith Center, 11.

²⁴Barry, 144.

from Los Angeles to Mexico made the move because of California's pollution control laws.²⁵ In the category of hazardous waste, instances of grossly improper handling and disposal are commonplace. Officials of both governments acknowledge that, presumably due to treatment costs of up to \$1,000 per 55-gallon drum,²⁶ the vast bulk of toxic waste is simply dumped with little or no treatment.²⁷

In one case, General Motors contracted with Residuos Industriales Multiquim, a Mexican company, to dispose of several hundred barrels of its subsidiary's paint sludge at a hazardous waste site near Monterrey. But the site was still under construction, and the barrels never arrived. Multiquim dumped the drums in the desert.²⁸ When an investigative reporter discovered the clandestine dumpsite, Multiquim claimed the desert site was actually a temporary open-air dump. A dispute ensued. With the harsh light of publicity upon them, Mexico's agency for environmental protection revoked Multiquim's operating license. Meanwhile, General Motors claims that the wastes were not hazardous. Said GM spokesperson Jane Mott, "The paint

²⁵Kennedy, B7.

²⁶Nora Lockwood Tooher, "Deadly Fallout at the Border," (Providence, Rhode Island) Journal-Bulletin, 28 September 1992.

²⁷Marquis

²⁸Juffer, 2.

sludge was nonhazardous material in containers mistakenly labeled 'hazardous waste.' It was properly disposed of."²⁹ Multiquim has since regained its permit.³⁰

Such practices have become so widespread that clandestine dumpsites are common in industrial regions of the border. In Ciudad Juarez, for instance, there are more than 100 illegal dumpsites of hazardous waste, all of them in or near residential communities.³¹

Other evidence suggests that it is not a case of a few, but an overwhelming majority of *maquiladoras* that are defying the law with impunity. For instance, despite a Mexico-U.S. pact requiring all toxic wastes to be returned to the country of origin, only 11 of the more than 400 *maquiladoras* on the Texas-Mexico border in 1987 registered with the Texas Water Commission to return wastes.³² A 1986 study of 663 *maquiladoras* which were using toxic chemicals found that 20 of them--3%--had complied with the law by notifying the appropriate authorities of their intention to return their toxic waste to the U.S.³³ According to U.S. government records, the 1988 compliance rate for

²⁹Ibid.

³⁰Ibid.

³¹Ibid.

³²Ibid.

³³Interfaith Center, 7.

maquiladoras operating in Baja California and Sonora was 1%.³⁴ These figures are particularly unsettling in light of the fact that Mexico has little capacity to deal with hazardous waste. According to government officials as well as industry experts, Mexico is currently able to treat, store or recycle between 1 and 10% of all hazardous waste produced there.³⁵

In 1991, Mexican citizens paid an average of \$0.48 each for environmental protection, a rate less than 2% of their U.S. counterparts.³⁶ The result is that Mexican agencies charged with the responsibility of enforcing environmental laws lack utterly the resources required to fulfill their legislative mandate. Although enforcement of environmental regulation of the border region has recently been turned over to the Secretariat of Social Development (SEDESOL), in fiscal year 1992 the Secretariat of Urban Development and Ecology (SEDUE)--the smallest among all federal agencies with one of the smallest budgets--was the agency in charge of overseeing and enforcing environmental regulation. In 1991, the Ciudad Juarez office of SEDUE had one inspector

³⁴Barry, 272.

³⁵Laura Durazo, Dick Kamp, and Geof Land, Environmental and Health Issues in the Interior of Mexico: Options for Transnational Safeguards, (Bisbee Arizona: Border Ecology Project, 1993), 12.

³⁶Anders Ramberg, "Can Mexico Clean Up Its Act?" Los Angeles Times, 17 November 1991, B4.

who was responsible for 300 maquiladoras, as well the domestic plants in the region.³⁷ A typical SEDUE office was the one in Tijuana, Baja California, where a total of 12 inspectors were responsible for monitoring and enforcing environmental regulations on the nearly 1,000 industrial plants in the area. All 50 employees--including the 12 inspectors--were working at second jobs in order to make ends meet.³⁸ As recently as 1989,

SEDUE was entering enforcement agreements with plant operators whereby there would be no inspections for one or two years if the company agreed to meet certain milestones toward compliance during the intervening years. This has left companies free to pollute for intervening years with no monitoring.³⁹

Recently, the wide-ranging Secretariat of Social Development (SEDESOL) absorbed SEDUE and its environmental regulatory role, at least in part to appease critics of the latter agency for its chronic inability to fulfill its mandate of protecting the environment. But SEDESOL, evidently following the pattern set by its predecessor, "remains largely incapable of monitoring the many threats to Mexico's public health and environment or enforcing existing

³⁷Sanford J. Lewis, Marco Kaltofen, and Gregory Ormsby, Border Trouble: Rivers in Peril (Boston: National toxic Campaign Fund, 1991), iii.

³⁸Durazo, 21.

³⁹Lewis, iii.

environmental laws."⁴⁰ SEDESOL has no mechanism for seeing that new companies have completed environmental impact assessments before beginning operations, and like SEDUE before it, "the few inspectors SEDESOL has are spread thin, and their training is minimal."⁴¹

According to Gustavo de la Rosa Hickerson, a Ciudad Juarez lawyer, "The (Mexican) federal government doesn't protect its citizens. It protects industry."⁴² Julian Torres, SEDUE's air-quality control program director for Baja California, said that the role of SEDUE "has never been that of an enforcer, but rather that of an instructor on environmental policies to the private sector."⁴³ Publicly admitting that most industries in Mexico are not in compliance with national law, Santiago Onate, the head of Mexico's new environmental enforcement office, calls federal environmental legislation more of a "moral guide" for companies than a strict code of law.⁴⁴

But the history of compliance of the *maquiladora* industry suggests that, whatever "guide" to operation

⁴⁰Durazo, 21.

⁴¹Ibid.

⁴²Marquis, 2.

⁴³Fernando Romero, "Trade Pact Could Feed Mexico Pollution Woes," San Diego Union, 20 March 1992.

⁴⁴Durazo, 22.

practices in the border region that may exist, it is hardly a moral one. "The emerging global company is divorced from where it produces its goods," says Clinton Administration Labor Secretary Robert Reich. "It has no heart and it has no soul. It is a financial enterprise designed to maximize profits. Many of the people who inhabit it may by fine, upstanding human beings, but the organization has its own merciless logic."⁴⁵ Such merciless corporate logic, coupled with Mexico's hunger for foreign investment, has established a political context in which environmental regulation is subordinated to the more compelling desire to compete successfully in a global market for investment. In a worldwide economy where many countries may be in a position to offer very low labor costs to prospective investors, the promise of a nonpunitive--indeed permissive--regulatory environment in which to operate, becomes an attractive additional feature.

The Border Environment

Adverse effects on the environment and health in the borderland due to the short history of unsound practices of the *maquiladoras* is difficult to overstate. They continue, to a large extent, unchecked. It has been said that, in

⁴⁵Tolan, 2.

essence, between the United States and Mexico lies a third country: poor, dangerous and polluted.⁴⁶ The following anecdotal account provides a glimpse of the state of affairs that can be found among populated industrial areas of the border region:

We observed city streets lined with open canals of sewage and of chemical wastes. Some of these canals, flowing close to people's homes, contained high levels of volatilizing toxic wastes that will expose the residents to high risks of cancer, birth defects and other diseases. Children were observed playing in and along these canals. Livestock, including pigs and goats raised for food, were observed swimming in and drinking from canals that contained volatile organic chemicals. Residents were also observed fishing in waters that our testing showed to be severely contaminated with toxic wastes. Residents were seen storing drinking water in barrels previously used for chemicals. The residents of these neighborhoods currently lack even a basic Right to Know the chemicals they are being exposed to.⁴⁷

Following is a more detailed look at the state of the environment in the Mexican-U.S. border region.

Air

Most U.S. border cities are out of compliance for one or more air pollution criteria pollutants.⁴⁸ Although monitoring has been insignificant on the Mexican side for

⁴⁶Susan McAtee Monday, "Border Areas Breeding Health Risks," San Antonio (Texas) Light, 30 September 1991, 3.

⁴⁷Lewis, ii.

⁴⁸Durazo, 11.

lack of funding and political will, border air quality conditions there are known to be far worse. There are a range of factors that exacerbate the high levels of air pollution that characterize populated industrial areas of the border region. Incomes and standards of living for border residents of both countries is relatively low. Cars are older--in the Texan city of El Paso, twice as old as the U.S. average⁴⁹--and often inefficient due to a lack of costly maintenance. In areas of swelling population near *maquiladoras*, where services such as water delivery and sewage systems have become overwhelmed or are lacking entirely, people unable to afford heaters or electricity burn wood, cardboard, even old railroad ties, to cook food and heat homes.⁵⁰ Every day, trucks loaded with cardboard and other inflammables cross the border into Mexico. American garbage heats Mexican homes. Burning tires are a common source of energy for local brickmaking operations in towns such as Juarez, where there are hundreds of small brick factories.⁵¹

And then there are the *maquiladoras*. As is the case throughout the border region, "how the air (pollution) problems in the El Paso-Juarez corridor evolved can be

⁴⁹Kennedy

⁵⁰Ibid.

⁵¹Ibid.

directly equated to the success of the *maquiladora* programs."⁵² Their uncontrolled growth, along with that of the urban areas and settlements of *maquiladora* workers that have accompanied them, have led to enormous air pollution problems on both sides of the border. Copper smelters emit dangerous levels of sulphur dioxide and other poisonous gases, though exact amounts are unknown, due to minimal monitoring of emissions. When monitoring does occur, violations are often found to be extreme. In one instance, SEDUE found the smelter in Cananea, Sonora to be in violation of the 24-hour standard for sulphur dioxide on 134 occasions over a 28-month period.⁵³

Maria Theresa Mendez, a community leader concerned about toxic emissions from chemical factories near her Matamoros home, believes that, "some of the plants release substances in the early morning hours, such as 2 a.m. or 3 a.m. that form a vapor cloud that hangs over the area. In the morning, a white powder covers greenery, houses and automobiles."⁵⁴

A host of border-area health problems have been blamed on the extreme levels of air pollution that plague

⁵²Ibid.

⁵³Durazo, 10.

⁵⁴Gaynell Terrell, "Tragic Puzzle Grips Families on the Border," Houston Post, 17 May 1992.

industrialized border areas. Most spectacularly, perhaps, is the association between the chemical plants in Matamoros (users of large amounts of solvents with demonstrated links to gross birth defects) and the very high incidence in Matamoros and cross-border Brownsville, Texas, of anencephaly--babies born without brains. Though inadequate testing and monitoring have prevented establishment of a definitive cause-and-effect relationship to date, health officials in Texas believe that the problem is airborne.⁵⁵ A member of the Brownsville medical investigatory team noted that, "the anencephalic babies are just the tip of the iceberg. Anencephaly is not something you're going to miss --it's so blatant. But what about the kids with the other birth defects that aren't expressed so blatantly?"⁵⁶ The federal Centers for Disease Control and the Texas Department of Health are currently conducting a joint study.⁵⁷ The U.S. Environmental Protection Agency has also committed to investigating the issue.⁵⁸

Water

It is widely held that contamination and

⁵⁵Ibid.

⁵⁶Ibid.

⁵⁷Ibid.

⁵⁸Tooher, 28.

overexploitation of water resources are the most critical set of environmental problems in the border region.⁵⁹

That, indeed, "rising border populations and increased industrialization threaten to make the border zone uninhabitable."⁶⁰ And as with air quality issues, both U.S. and Mexican water supplies are at risk.

Like most other border towns and cities in Mexico, Nuevo Laredo has no sewage treatment, dumping 27 million gallons of raw sewage every day into the Rio Grande.⁶¹ The resulting 200,000 coliform bacteria per milliliter is some 1,000 times the acceptable level under Texas state law.⁶² Some stretches along the Rio Grande, "are so contaminated...that the water is unsafe to touch."⁶³ Even economic refugees desperate enough to leave families to cross illegally into the U.S. know better than to risk making contact with the river. Many pay a precious 30 cents to be pushed across in an inner tube.⁶⁴ In northern Baja California, a quarter buys a pair of hip-high plastic bags,

⁵⁹Barry, 271.

⁶⁰Ruben Hernandez, "Border Studied," Tucson (Arizona) Citizen, 15 July 1991.

⁶¹United States EPA, Summary, 12.

⁶²James E. Garcia, "Border River Laden with Wastes," Austin (Texas) American-Statesman, 29 September 1991.

⁶³Barry, 271.

⁶⁴John Holusha, "Trade Pact May Intensify Problems at the Border," New York Times, 20 August 1992, 3.

hawked by enterprising salespersons next to the Tijuana River, allowing crossers to avoid touching its vile waters.⁶⁵

The Nogales Wash, a river that flows from Mexico through Nogales, Arizona, is similarly contaminated by untreated sewage. Although rare effort is being made to deal with this problem, the planned \$10 million expansion of treatment facilities is now expected to prove inadequate in the face of the burgeoning population upriver.⁶⁶ This is particularly worrisome, as area wells have recently begun to become contaminated with pathogenic microorganisms.⁶⁷

The Tijuana River receives 12 million gallons of raw sewage from the city of Tijuana daily. This infusion has rendered the Tijuana River "unfit for any use. It is unsafe to go near the river in many places."⁶⁸ Beaches within several miles of where the river meets the Pacific Ocean have been closed for 10 years.

The American Medical Association has called the border a "virtual cesspool and breeding ground for infectious

⁶⁵Patrick McDonnell, "Foreign-Owned Companies Add to Mexico's Pollution," Los Angeles Times, 18 November 1991, A8.

⁶⁶John McQuaid, "Mexican Border Awash in Waste Controversy," New Orleans Times-Picayune, 24 June 1991.

⁶⁷United States EPA, Environmental Plan, 12.

⁶⁸Lewis, viii.

disease."⁶⁹ But even more egregious than the degradation of surface and groundwater systems by sewage and other organic contaminants, is the growing presence in waterways of hazardous wastes from *maquiladoras*.

The New River flows north from the Mexicali Valley through Calexico, California and on to the Salton Sea National Wildlife Refuge. Except for the additions of wastewater from *maquiladoras* and pesticide-laced agricultural runoff, the New River consists entirely of wastewater discharged by the 1 million residents of the Mexicali Valley in Baja California.⁷⁰ Notably, the river actually benefits from the millions of gallons of selenium- and pesticide-laden water which drains from Imperial Valley farms. The agricultural runoff is largely free of sewage, and its high volume acts to dilute the foul sludge.⁷¹

The New River is "a toxicological nightmare," according to San Diego State University water biologist John Conway.⁷² In one particularly poignant instance, its putrid waters,

⁶⁹Barry, 271.

⁷⁰Gary Polacovic, "A River of Poisonous Scum," (Riverside, California) Press-Enterprise, 6 January 1993.

⁷¹Ibid.

⁷²Ibid.

stripped the paint off a tractor-trailer rig that plunged into the river at Interstate 8 five years ago and contaminated its cargo of human sewage sludge. They would not let the driver reclaim his sludge because it was contaminated from the New River.⁷³

The Salton Sea National Wildlife Refuge where the New River finally empties is home to several endangered species, including brown pelicans, peregrine falcons and bald eagles, and a larger variety of birds than any other location in the West.⁷⁴ But rising salinity and toxic pollution from the New River are gradually exterminating wildlife.⁷⁵ As toxins accumulate in body tissues of animals, fish kills and bird kills are occurring with increasing frequency.⁷⁶

Over 100 toxic pollutants have been identified in the roiling slime of the New River, including vinyl chloride, acetone, PCBs, lead and mercury.^{77 78} Many of these substances are acutely toxic to humans and/or human carcinogens. The river also contains 28 varieties of virus and an unknown number of bacterial strains capable of causing a wide range of diseases, including typhoid,

⁷³Ibid.

⁷⁴Ibid.

⁷⁵Ibid.

⁷⁶Lewis, vii.

⁷⁷Barry, 271.

⁷⁸Lewis, vii.

cholera, hepatitis, meningitis, dysentery, and polio.⁷⁹ According to one U.S. Environmental Protection Agency official, the New River contains "every disease known in the western hemisphere."⁸⁰ U.S. residents are advised to not only not *touch* the water, but to not even *go near* the river.⁸¹ Foam blobs, some the size of houses, occasionally blow out of the river on windy days, splatting on people, cars, and the supermarket at the Calexico (California) Plaza. Lee Cottrell, health officer for Imperial County until 1989, says that the foam is loaded with bacteria and toxic substances.⁸² According to Phil Gruenberg, executive officer of the state Colorado River Basin Regional Water Quality Control Board, the New River is a major health threat. "If anyone comes into contact with the water, the likelihood of picking up a disease is extreme."⁸³

Although egregious, the state of the New River is not unique. For instance, it is the Nogales Wash that holds the singular distinction--to date--of having been so inundated with hazardous inflammables that the river actually caught

⁷⁹Barry, 271.

⁸⁰Lewis, vii.

⁸¹Ibid.

⁸²Polakovic

⁸³Ibid.

fire.⁸⁴ Virtually all rivers that flow through industrial border areas are similarly, if not always as extensively, contaminated, for reasons that are well understood. For instance, it is thought to be routine practice throughout the border region for *maquiladoras*, during rainstorms, to release stockpiled industrial detergents, solvents, heavy metals and petroleum products into local waterways.⁸⁵ Others evidently cannot--or do not bother to--wait for the cover of rain. A study of pollution in the border region by the National Toxics Campaign Fund of Boston commonly found concentrations of such toxic substances as xylene--which can cause lung, liver, kidney and brain damage--in open ditches draining from *maquiladoras*. Concentrations of these acutely toxic substances exceeded U.S. drinking water standards by as much as 53,000 times.⁸⁶ Other studies have found very high rates of disease. In San Elizario, Texas, for instance, the aquifer that supplies water to the town is so contaminated that 35% of children have contracted hepatitis A by age eight. Of those residents over thirty, 90% have contracted the disease.⁸⁷ But despite the severe threat to

⁸⁴Maggie Rivas, "Fuming Over Pollution," Dallas (Texas) Morning News, 29 September 1991.

⁸⁵Colum Lynch, "U.S., Mexico Confront a Toxic Legacy," Boston Globe, 15 June 1992, 7.

⁸⁶Toohar

⁸⁷Interfaith Center, 7.

human health,

the presence of toxic industrial pollutants in border waterways is not being monitored...While border waterways are monitored for sewage, and for conventional pollutants such as suspended solids, government-sponsored testing on both sides of the border omits monitoring for most of the toxic industrial pollutants.⁸⁸

The water contamination problems in the border area are not restricted to surface waterways. A high number of groundwater aquifers--upon which many residents rely for their daily water needs--are feared to be contaminated with organic and/or hazardous waste.⁸⁹ This is of particular concern, because groundwaters store contamination, and the process is often irreversible.⁹⁰ Once an aquifer is contaminated by persistent pollutants, the slow rate of groundwater cycling ensures that it will remain contaminated "permanently" (that is, in terms of any time scale meaningful to humans.)

Even when testing has shown a groundwater well to be contaminated, it may continue to be drawn from, at least by those with tanker trucks who may not use, but will sell the

⁸⁸Lewis, iv.

⁸⁹Dianna Solis and Sonia L. Nazario, "U.S., Mexico Take On Border Pollution," Wall Street Journal, 25 February 1992, A13.

⁹⁰Weintraub, 170.

water.⁹¹ The La Tomatera well in Nogales was tested in late 1990, and found to be contaminated with both sewage and industrial solvent. In mid-1992, trucks were still filling up with its water, and selling it to unsuspecting residents of poor and unserviced neighborhoods nearby.⁹²

The grim results of the few surface water and groundwater studies that have been done by non-governmental organizations--indeed the shocking state of regional waterways evident to all who see them--demonstrate the urgency of prompt and comprehensive action to begin to remedy the egregious condition of waterways in the border region.

Hazardous Waste

Though little is known about specific conditions of water systems in the industrialized border region, that sum of information appears voluminous next to the total available on toxics and hazardous waste disposal. But the little information that does exist is less than reassuring. Although it has not been fully documented, the extent of

⁹¹Nancy Cleeland, "A Border Boom Has Its Ugly Side, Too," San Diego Tribune, 16 February 1992.

⁹²Dick Kamp, Testimony presented at the United States House of Representatives Committee on Small Business, Subcommittee on Regulation, Business Opportunities, and Energy: North American Free Trade Agreement Hearing, 11 February 1992, at Nogales, Arizona.

toxic chemical pollution is known to be severe.⁹³

In further support of the theory of the attraction of a permissive regulatory environment to industries which might have difficulty complying elsewhere, fully 75% of *maquiladoras* discharged toxics in 1991.⁹⁴ Official Mexican government estimates for 1991 of the volume of toxic waste produced by *maquiladoras* (estimates which, for political reasons, are almost certainly on the conservative side) range between 16,500 and 55,000 tons per day,⁹⁵ for an annual total of up to 200 million tons.

Although this adds up to an enormous rate of hazardous waste production, under Mexican law this should not constitute a hazardous waste problem for Mexico. *Maquiladoras* are required to return imported hazardous materials and chemical wastes to the country of origin.⁹⁶ However, only a tiny percentage of these toxic wastes find their way back to the United States.⁹⁷ According to the U.S. Environmental Protection Agency, in 1988 less than 1% of *maquiladoras* reported sending their hazardous wastes back

⁹³Lewis, i.

⁹⁴Barry, 272.

⁹⁵Trina Kleist, "Mexico's Toxic Legacy," San Antonio Light, 1 November 1992.

⁹⁶Barry, 272.

⁹⁷Lynch

to the U.S.⁹⁸ So where does it all go?

There are some extraordinary legal loopholes allowing companies to avoid the cost of returning certain types of toxic wastes. For instance, the binational agreement of 1987 allows corporations to "donate" their wastes to charities--which then can sell them to unlicensed Mexican recycling plants.⁹⁹

But legal remedies are rarely sought. According to the Environmental Defense Fund, 80% of hazardous materials shipped to Mexico are "lost" by the company responsible.¹⁰⁰ But government officials and industry experts estimate that Mexico has the capacity to treat, store or recycle only 1-10% of all hazardous waste produced in Mexico,¹⁰¹ leaving a great deal unaccounted for. And these low treatment capacity figures do not include the estimated 8 million tons per year of toxic wastes illegally transported by U.S. firms into Mexico for disposal.¹⁰²

Such dangerous and often persistent substances have to go somewhere; and their presence is often so odious that it can be hard to miss. Some 1992 estimates put the number of

⁹⁸Lewis, i.

⁹⁹Juffer, 1.

¹⁰⁰Jim Carrier, "On Both Sides of Border, Third World Filth Festers," Denver Post, 20 October 1991.

¹⁰¹Durazo, 12.

¹⁰²Barry, 273.

illegal industrial dumpsites of hazardous waste in Mexico at 18,000.¹⁰³ So illegal dumping is evidently one popular solution to the hazardous waste disposal problem for *maquiladoras*. Others include stockpiling wastes at plant sites, selling them to questionable Mexican "recyclers," or flushing them down sewers or into open canals,^{104 105} eventually leading to dry washes and rivers and, due to the trend of most border-area drainage basins, often northward to the United States.

Because of the large percentage of modern *maquiladoras* that are in highly technical industrial sectors such as electronics and chemical production, commonly-used hazardous substances include caustics, organic solvents, petroleum products and heavy metals.¹⁰⁶ It is the use of these types of substances which leads to the production of the great volume and wide range of hazardous wastes in the border region. Such abuses are responsible for "countless pesticide poisonings, workplace accidents, chemical spills, public health threats and environmental emergencies."¹⁰⁷

Even standard sewage treatment facilities, in the few

¹⁰³Kleist, "Toxic Legacy."

¹⁰⁴Barry, 272.

¹⁰⁵Sanford J. Lewis, i.

¹⁰⁶Ibid., vii.

¹⁰⁷Durazo, 11.

places where they are being planned, are not only incapable of dealing with non-organic toxic waste. They can themselves be incapacitated, even "destroyed," by such hazardous substances.¹⁰⁸ According to the National Toxics Campaign, a \$200 million sewage plant planned for treating Tijuana River water is threatened by the amount and kind of toxic industrial pollution that currently constitutes the river. The 9% petroleum content of river samples is enough to kill essential bacteria of the treatment process, which would incapacitate the plant.¹⁰⁹ Other, more hazardous substances present in the Tijuana River can be capable of corrosion of plant structures and other debilitating effects.

Creeks and rivers tested by non-governmental organizations are routinely found to contain toxic wastes, often in large numbers and at dangerous concentrations. Over 100 toxic pollutants have been detected in the New River, including PCBs, vinyl chloride, acetone, trichloroethylene, perchloroethylene, and nitro-benzene.¹¹⁰ Many of these are acutely toxic to humans, or known carcinogens. Water samples from a creek running through the

¹⁰⁸Steve LaRue, "Sewage: Threat Cited for Proposed Plant," San Diego Union, 23 May 1991.

¹⁰⁹Ibid.

¹¹⁰Lewis, vii.

town of Ejido Chilpancingo, a small working-class *barrio* downriver from an industrial park whose tenants include Mobil Oil and Pepsi, contained lead levels at 100 times acceptable levels, as well as dangerous concentrations of such chemicals as zinc, cadmium and chromium.¹¹¹ A series of site studies in 1991 by the National Toxics Campaign Fund of Boston discovered a disquieting pattern of hazardous substance abuse by maquiladoras, including:

- severe contamination with the pesticide pentachlorophenol at a site near a plant owned by Preservation Products, Inc. of Idacon, Houston. This substance had accumulated in soil at 14,300 parts per billion (ppb), a level comparable to that considered a hazardous waste in sludges in the U.S.
- a xylene discharge flowing from property owned by Stepan Chemicals of Northfield, Indiana, at a concentration of more than 52,000 times the U.S. drinking water standard.
- a xylene concentration adjacent to a plant owned by General Motors in excess of 6,300 times the U.S. drinking water standard, and methylene chloride (a suspected carcinogen) at 215,000 times the U.S. ambient water quality criterion.¹¹²

Such examples of serious contamination are not unique. Rather, says former National Toxics Campaign trade and environmental specialist Craig Merrilees (now with the Citizen Trade Campaign in California,) "[w]hat this testing proves is that violations of the law are routine in Mexico

¹¹¹Lynch

¹¹²Lewis, v.

and that it is U.S. companies that are violating those laws."¹¹³ The evidence appears to indicate that flagrant dumping of hazardous wastes--into sewer pipes, open canals that may flow through human communities, local creeks or clandestine dumps--is business-as-usual for some, perhaps many, foreign companies in the border region.

Human Health

Matamoros, Mexico, and Brownsville, Texas, are sister cities, just across the border from one another at the mouth of the Rio Grande. Colonia Rio Bravo is a neighborhood in Matamoros. It used to be the city dump. There are no sewers in Colonia Rio Bravo, nor is there electricity; the one water faucet in the neighborhood is shared by the forty-five families who make their home here. The families of Colonia Rio Bravo live in shacks made of scrap wood and plastic tarp, over mud or dry-cracked clay, depending on the time of year. Every rainy season, when puddles rise to waist-high rivers, a few homes wash away.

A man who works for the local Fisher-Price *maquiladora* has carefully placed broken toys and other plastic scraps around his house, in order to cover up the mud. Another couple and their four children are saving to buy fill dirt,

¹¹³LaRue

in order to raise the level of their house. In the meantime, they live and sleep on wooden pallets spread over the floor. Without the pallets, there would only be the mud.

Next to the family outhouse, two of the children dig in the mud for clams. Any success will augment the family's evening meal. The children who live here often have gastrointestinal diseases, says Maria Guadalupe Torres Martinez, a local labor organizer. Conditions here, she says, are "ripe for cholera."¹¹⁴

In areas where wood scrap is not available for building homes, other materials suffice. Down the slope from a *maquiladora* industrial park on the outskirts of Nogales, cardboard liberated from plants' trash bins is the dominant wall and roofing material of the ramshackle community. Most common is a thick, tan cardboard, on the side of which is boldly stamped, in English, warnings that the former contents can release hazardous fumes. In the home of Juan Ramos, as in those of most residents here, stands a yellow, 55-gallon drum for household water storage. Stamped on its side--in English--is a bright orange label identifying its former contents as fluorocarbon solvent.¹¹⁵ The vapors of

¹¹⁴Toohar

¹¹⁵Robert Suro, "Border Boom's Dirty Residue Imperils US-Mexico Trade," New York Times, 31 March 1991, 14.

fluorocarbon solvent, if inhaled, are fatal. Another drum, also storing drinking water, says, "Alpha metals. Laboratory controlled printed circuit fab chemicals. This container hazardous when emptied."¹¹⁶

In the working-class neighborhood of Chilpancingo, in Tijuana, residents complain about fumes and contaminated water released by *maquiladoras* nearby. "When I'm outside washing at home, I get a bad headache from the odor," says Eladia Hernandez, picking her son up from school.¹¹⁷ Across the schoolyard is a class vegetable garden, where young carrots soak in fluid that has leaked from nearby concrete pipes. The pipes originate at the *maquiladoras* in an open ditch that flows on through the middle of the community. Many of the residents of Chilpancingo blame the plants for the open sores, skin rashes, runny noses and teary eyes that are so common, especially among the children.

Resident Alfredo Cano Lopez says that rainy periods, rather than a cleansing relief, are when the factories release their wastewater. The water rushes down gullies, through Chilpancingo, and on into the Tijuana River. "The government tells us the (waste)water is not dangerous," Cano says. "But sometimes it smells really bad and the people

¹¹⁶Juffer, 88.

¹¹⁷Crevosshay, 19.

end up with sores on their bodies."¹¹⁸ Mother Teresa, who had come to Tijuana to minister to the poor, remarked publicly that the conditions of suffering and deprivation that she found there were as bad as any she has seen anywhere.¹¹⁹

Said Adolph Kahn, retired veterinarian and resident of Laredo, Texas, about the nearby Rio Grande, "It's like living next to Calcutta."¹²⁰ With tests by Texas state authorities registering counts of coliform bacteria at 200 times the recommended maximum level for swimming; with hepatitis rates in nearby San Elizario, Texas at five times the national average; with bits of fecal material floating lazily by, parallels with Calcutta seem apt.¹²¹ In fact, a University of Texas study found that 90% of San Elizario residents were infected with hepatitis by age 35.¹²² The rate across the border is believed to be higher.¹²³

But one need not look to Mexico to find extremely high levels of waterborne diseases. The border town of Nogales,

¹¹⁸Jo Ann Zuniga, "Maquiladoras Bring Pollution Along With New Prosperity," Houston Chronicle, 9 February 1992.

¹¹⁹Ibid.

¹²⁰Cleeland

¹²¹Ibid.

¹²²John McQuaid, "Mexican Border Awash in Waste Controversy," New Orleans Times-Picayune, 24 June 1991.

¹²³Sanford J. Lewis, iv.

Arizona bears a hepatitis rate that is four times worse than San Elizario's, at twenty times the national average.¹²⁴

Most of those infected live near the Nogales Wash, a stream that meanders from Nogales, Mexico into the heart of sister city Nogales, Arizona. Here, a recent study claims, "everyone (has) been exposed to hepatitis at least once by the time he or she (is) 20 years old."¹²⁵ When Santa Cruz county did their own study of the Nogales Wash--where children routinely play--they found levels of fecal bacteria at levels 4,000 times higher than is considered safe for human contact.¹²⁶ The county also found live polio viruses and other viruses and parasites in high numbers.^{127 128}

"These people don't worry about their children coming home with runny noses and scratched knees," said Dr. Sam Nixon, president of the Texas Medical Association. "They worry about tuberculosis, gastroenteritis and hepatitis. Diseases we used to refer to in history books make headlines in today's newspapers."¹²⁹

¹²⁴Suro, "Border Residue."

¹²⁵Ibid.

¹²⁶Solis

¹²⁷Ibid.

¹²⁸Ruben Hernandez, "Grass-roots Border Alliances Form," Tucson (Arizona) Citizen, 9 November 1991.

¹²⁹Don Finley, "U.S., Mexico Eye Creation of Border Health Plan," San Antonio Express News, 26 October 1991.

The American Medical Association is hardly known for its wild-eyed environmentalist positions. But pollution is so severe and infectious disease so conspicuous that the AMA has called the U.S.-Mexican border "a virtual cesspool and breeding ground for infectious disease."¹³⁰ Although this is a dismal, unfortunately accurate description of many industrialized areas of the border region, it fails to give any indication of health hazards beyond those related to non-hazardous contaminants. The wide variety of toxic chemicals and their eventual hazardous waste by-products improperly disposed of by *maquiladoras*, are capable of a wide and horrifying range of human health responses. Included are various birth defects, cancer, as well as lung, liver, kidney, and brain damage--effects that are hardly surprising, given the amounts and concentrations of toxic substances known to be associated with some of the ailments routinely identified downwind and -stream from *maquiladoras*.¹³¹

In the last few years there has been a high rate of mental retardation and physical deformities among children born to women in Matamoros, near Brownsville. A grass-roots investigation found the common link: All the mothers of the damaged children were working at a *maquiladora* owned by

¹³⁰Barry, 271.

¹³¹Ibid., 272.

Mallory Capacitors of the United States at the time that they became pregnant. So far, sixty-seven afflicted children have been identified.¹³² Some of the mothers of *los ninos de Mallory*--as the young victims have come to be called--want to pursue action against the company, a legal remedy that is proving difficult. Not only has Mallory since left Mexico, but, through the corporate shell game, has changed its identity several times.¹³³

Due to circumstances and good investigative work, the link between *los ninos de Mallory* and the cause of their tragic condition seems to have been clearly, if not legally, established. Most often, this is not the case. "There are literally hundreds of thousands of chemicals (the *maquiladoras*) are generating that we're not testing for," says Dave Buzan, supervisor of the water quality unit of the Texas Water Commission. "Our river sampling is not oriented toward finding wastes produced by *maquiladoras*."¹³⁴

The National Toxics Campaign has called the U.S.-Mexican border region "a two-thousand-mile Love Canal."¹³⁵ This may be an accurate characterization with regard to

¹³²William Greider, "How We Export Jobs and Disease," Rolling Stone, 3 September 1992, 41.

¹³³Juffer, 87.

¹³⁴Ibid.

¹³⁵Greider, 41.

health threats from hazardous agents, but it is nonetheless misleading in two important respects: Dangers to health at toxic "hot spots" in the border region are anything but geographically contained; and in the case of Love Canal, the federal government took responsibility for cleanup, as well as at least some form of compensation for those adversely affected. Neither of these features of Love Canal is present in the border region.

Clearly, there are acute health risks associated with hazardous materials for those who actually work in *maquiladoras*. For instance, women who work in the *maquiladora* industry "give birth to babies weighing considerably less than babies of women working in other industries."¹³⁶ Another study of female *maquiladora* workers in Nogales, Sonora, found that the incidence of low birth weight babies (more than half of whom were born prematurely) was almost three times higher than among babies whose mothers worked in the business or service sectors¹³⁷

--and then there are cases like that of *los ninos de Mallory*. But one need not work in or live downriver from a *maquiladora* in order to suffer ill effects.

"Those of us living along the border have not yet begun to see the health problems taking root now that will spring

¹³⁶Durazo, 19.

¹³⁷Interfaith Center, 7.

out in five, ten, fifteen years as children develop and more people die of cancer at forty," says Dr. Rene Salgado, director of Latin America health care for Project Concern International.¹³⁸ "The smoke and the water (from the *maquiladoras*) gets in the blood," says the principal of the school in Chilpancingo. "What do we need--to show dead children or those with deformities before we get reforms?"¹³⁹ Perhaps, although recent experience indicates that, in the face of powerful corporate interests, even such stark evidence as dead and birth-deformed children may not be enough to bring about reform. In the sister cities of Matamoros and Brownsville, chemical contamination of the Rio Grande has been linked to dozens of cases of a rare and tragic birth defect.¹⁴⁰

Anencephaly is the term for babies born with significantly underdeveloped brains, or no brain at all. The most severely affected die. Survivors live lives of paralysis and dependency. Mexico has the highest rate of anencephaly in the world, but in recent years the rate in the Matamoros-Brownsville area has been several times higher than the national average.¹⁴¹ Most of the mothers who have

¹³⁸Zuniga, "Maquiladoras."

¹³⁹Ibid.

¹⁴⁰Romero

¹⁴¹Durazo, 19.

given birth to these babies live within three miles of the Rio Grande. Indeed, three of the anencephalic births were to mothers living on the same block.¹⁴² Although the U.S. Environmental Protection Agency has announced the commencement of a two-year study, critics believe this may be as much a stalling tactic as an effort to provide a basis for action.¹⁴³

This suspicion of a lack of concern on the part of officials is reinforced by a protocol for studying anencephaly from the Secretariat of Health. It coldly and specifically cautions investigators that, because of the importance of the impending North American Free Trade Agreement and media attention on the anencephaly issue, there should be "a dispelling of doubts over Mexico's capacity to properly handle industrial toxic waste,"¹⁴⁴-- and this in a region where 80% of all hazardous materials shipped there are "lost" by the corporations responsible;¹⁴⁵ where the presence of toxic industrial pollutants in border waterways is not even being monitored;¹⁴⁶ where there is capacity to treat an estimated

¹⁴²Toohar

¹⁴³Ibid.

¹⁴⁴Durazo, 19.

¹⁴⁵Carrier

¹⁴⁶Lewis, iv.

16% of municipal and industrial wastewater;¹⁴⁷ where the capacity to treat, store or recycle hazardous waste is less than 10%--by some estimates as little as 1%--of all hazardous waste there produced.¹⁴⁸ In light of these data, efforts toward a "dispelling of doubts over Mexico's capacity to properly handle industrial toxic waste," as the health agency's protocol suggests, is deeply immoral.

The Matamoros-Brownsville anencephaly issue is further illustrative of the utter disregard on the part of pollutants for political sovereignty. "It's amazing how people in the U.S. could ever feel safe when massive environmental contamination is happening on the other side of an imaginary political line," says Marco Kaltofen, author of a study of *maquiladora* industry water pollution.¹⁴⁹ Of course, it is the conditions of poverty--with their own seeming tendency to spread and perpetuate--that increase the susceptibility of a community to the hazards with which such conditions are associated. Referring to the "considerable Third World in El Paso," Laurence Nickey, health director for El Paso County, Texas, says, "We have poverty, undereducation, a general lack of sanitation, a lack of potable water and a lack of sewage disposal. These are time

¹⁴⁷Solis, A13.

¹⁴⁸Durazo, 12.

¹⁴⁹Lynch

bombs."¹⁵⁰

Usually because it is all that is available, water contaminated with sewage and unknown concoctions of hazardous waste is widely used for local food crop irrigation in both countries throughout the arid border region.¹⁵¹ But health risks from border-area pollution are not restricted to those unfortunate enough to live there. When heavy rains cause rivers to flood, contaminated water can spread over nearby crops destined for U.S. markets. Voicing one legitimate concern, border-pollution study author Marco Kaltofen says, "It's out the drain one day, on your dinner table in New York a week later."¹⁵²

Public health specialists also fear that border packing houses may be creating another link between sewage contaminants, hazardous wastes and the U.S. food supply.¹⁵³ Many viruses and bacteria, including cholera and typhoid, do not die when frozen. So these border food warehouses store and ship "produce and seafood chilled in ice that may be laden with parasites and viruses."¹⁵⁴ In Nogales, for example, a number of the one hundred wells from which the

¹⁵⁰Carrier

¹⁵¹Holusha, 3.

¹⁵²Lynch, 7.

¹⁵³Solis, A13.

¹⁵⁴Ibid.

water for packing ice is drawn are suspected of being contaminated. Patrick Zurick, deputy director of the Santa Cruz County, Arizona Health Department, says that it is "unclear" how many packing houses in other cities have had their wells tested.¹⁵⁵

There have been a number of instances of food contamination in the U.S. in recent years for which the Centers for Disease Control has suspected packing ice from Mexico. In Kentucky, 220 people acquired hepatitis A from eating tainted lettuce thought to have been contaminated from ice.¹⁵⁶ Salmonella-laced cantaloupe--also suspected of having been infected via border ice--sent a scare through 23 states in the summer of 1991.¹⁵⁷ Fully one half of winter produce consumed in the U.S. goes through such border warehouses.¹⁵⁸ And, of course, groundwater contamination--thus the number and severity of contaminated wells--increases steadily.

For residents of the border region--Mexicans and Americans alike--daily life offers a harrowing array of dangers to health, ranging from immediate to long-term, from odious to insidious, from well-documented to as-yet-

¹⁵⁵Ibid.

¹⁵⁶Ibid.

¹⁵⁷Ibid.

¹⁵⁸Ibid.

undiscovered. Poor, often desperate people, willing to do whatever it takes to support their family, coupled with transnational corporations enamored of this land of cheap labor and spotty environmental regulation, are the main ingredients in the volatile mix that continues to degrade--at ever-increasing rates--the already-disastrous state of the environment in the border region. And the ill effects due to unsound industrial practices are not restricted to the immediate environment of border residents. The almost exclusively export-oriented nature of corporate and agricultural activities there provide the potential for wide-ranging distributions of pollutants and contaminants.

There is an uncommon level of agreement, even among some industry advocates,¹⁵⁹ that such devastating environmental and health conditions are a direct result of the rate of unplanned growth of the *maquiladora* industry, the permissiveness of the regulatory environment, the nature of the activities in which many of these plants are engaged, and the general absence of a stake in the local community on the part of owners and operators.

Summary

Suddenly overcrowded communities whose sewer, water and

¹⁵⁹Toohar

other systems have been overwhelmed by displaced people in search of work; moderate to extreme poverty, and the ignorance, the desperation, and the short-term decision-making that is characteristic of people trying to cope under such conditions; high concentrations of industrial plants using very toxic substances, and producing very hazardous wastes in abundance; profit-motivated transnational corporations with little sense of responsibility for the local community, operating in an extremely permissive regulatory environment: Such is the set of interrelated circumstances that has led to the disastrous state of environmental and health conditions that today characterize the Mexican-U.S. border region.

CHAPTER III

THE ENVIRONMENTAL PLAN FOR THE
MEXICAN-U.S. BORDER REGION¹⁶⁰Incentives for Implementation

The proposed North American Free Trade Agreement (NAFTA) is a comprehensive set of treaty provisions that, if implemented, would gradually reduce tariffs and other impediments to the flow of goods, services, and investment capital among Canada, Mexico and the United States.¹⁶¹ In late 1990, the executive branches of the U.S. and Mexican

¹⁶⁰ Much of the information in this chapter is based on information contained in:

United States Environmental Protection Agency and Secretaria de Desarrollo Urbano y Ecologia, Integrated Environmental Plan for the Mexican-U.S. Border area (First Stage, 1992-1994) (Washington D.C.: U.S. Environmental Protection Agency, 1992); and

United States Environmental Protection Agency and Secretaria de Desarrollo Urbano y Ecologia, Summary: Integrated Environmental Plan for the Mexican-U.S. Border Area (First Stage, 1992-1994) (Washington D.C.: U.S. Environmental Protection Agency, 1992).

Due to the high frequency of reference to these two documents in this chapter, only direct quotes and other select passages will be indicated by footnote reference.

¹⁶¹ Lewis, 826.

governments--both strong NAFTA proponents--began to perceive an increasingly well-organized, broad-based and articulate opposition to the concept of liberalized trade and investment.¹⁶² Though not necessarily against the basic concept of a North America-wide zone of liberalized trade, many groups opposed specific aspects of the proposed agreement. With primary concerns overlapping only at the margins, advocates for consumer rights, labor groups and environmentalists in all three countries began to network and organize in common opposition to NAFTA.¹⁶³

It may be that some measure of concern for the deteriorating state of the environment in the border region on the part of the Bush and Salinas administrations prompted the announcement of the Integrated Environmental Plan for the Mexican-U.S. Border Area.¹⁶⁴ Rhetoric from the executive branches of both governments would certainly suggest so.^{165 166} But the timing of the initiative smacks strongly of political expediency. In order to stem what was beginning to be seen as an expanding threat to eventual NAFTA ratification, then-president George Bush and Mexican

¹⁶²Ruben Hernandez, "Cyanide in Nogales Wash," Tucson Citizen, 27 March 1991.

¹⁶³Ibid.

¹⁶⁴U.S. EPA, Plan, I-1.

¹⁶⁵Ibid., I-1.

¹⁶⁶U.S. EPA, Summary, 2.

president Carlos Salinas de Gortari announced, in November, 1990, the establishment of a plan intended to address environmental issues in the Mexican-U.S. border region.¹⁶⁷ The border area in particular became the target for remedial cleanup for several reasons related to the pending NAFTA. Bilateral cooperation on environmental cleanup in the region could be held up as a demonstration of the seriousness of commitment to environmental concerns on the part of both federal governments. And proactive movement on the issue could provide an example of smooth and mutually beneficial action on a previously contentious set of environmental (and public relations) problems. Indeed, one of the highlights of the Plan is the establishment of the Cooperative Enforcement Strategy Workgroup, whose mandate is to serve as a formal mechanism for shaping bilateral environmental enforcement efforts in both countries.

Perhaps most importantly, the dismal state of the border region has been held up by NAFTA opponents as an example of the degradation to be expected from trade agreements that do not include provisions for environmental protection.¹⁶⁸ The fear is that any such trade agreement between countries so disparate in wealth will inevitably lead to exploitation; that the desperate state of the border

¹⁶⁷U.S. EPA, Plan, I-1.

¹⁶⁸Rivas

region provides but a glimpse of a much more harrowing future if the struggle to liberalize trade prevails. But a well-publicized binational commitment to a funded plan--adequate or otherwise--to "clean it up," might serve to seriously weaken this position. By appearing to proactively address perhaps the principal rallying concern of the groups opposing the agreement, key actors within the environmental community could be satisfied or co-opted,¹⁶⁹ thereby rendering the loosely organized but increasing effective coalition a seriously debilitating--if not fatal--blow.

In any case, in spite of the eventual fate of the North American Free Trade Agreement itself, the Integrated Border Environmental Plan (the Plan) seems to have achieved a life of its own.¹⁷⁰ Enough momentum has been generated on environmental and health issues at the border that, even according to the Environmental Protection Agency, some sort of border environmental plan appears headed for implementation, whether or not NAFTA is ratified.¹⁷¹

At a meeting in late November, 1990, presidents Bush and Salinas

instructed the authorities responsible for environmental affairs in their countries to prepare a comprehensive plan designed to periodically examine

¹⁶⁹Monday, "Border Areas."

¹⁷⁰Rivas

¹⁷¹Monday, "Border Areas."

ways and means to reinforce border cooperation...with a view to solving the problems of air, soil, and water quality and of hazardous wastes."¹⁷²

The directive called for a plan to be prepared jointly by the U.S. EPA and Mexico's environmental agency, the Secretaria de Desarrollo Urbano y Ecologia (SEDUE), with input from interested groups and individuals in both countries at seventeen public meetings throughout the border area.

Goals and Objectives

The purpose of the Integrated Environmental Plan for the Mexican-U.S. Border Area is to improve the environment, and to provide for the sustainable protection of human health and natural ecosystems in the region. Toward these ends, the presidents emphasized that the plan was mandated to be comprehensive, oriented toward solving environmental and human health problems, and subject to periodic review. Preparation and implementation of the Plan is to involve the participation of governments (municipal to national,) businesses, academic institutions, and environmental organizations. Of course, due to the vast scope of environmental problems in the region, many of the activities to be undertaken as part of the Plan are but preliminary

¹⁷²U.S. EPA, Summary, 2-3.

steps in a series of actions toward achieving results in the border region.

In order to meet the broader goals of improvement and protection of human health and border ecosystems, the Plan calls for a commitment to these four more specific objectives:

- 1) Strengthening enforcement of existing laws;
- 2) Reducing pollution through new initiatives;
- 3) Increasing cooperative planning, training, and education; and
- 4) Improving understanding of the border environment.

The achievement of these objectives is expected to lead to "measurable improvements in environmental quality of the border area."¹⁷³ And with their improved understanding of the border environment, Mexico and the U.S. plan to refine and strengthen cooperative efforts during the second stage of the Plan (1995-2000).

1) Strengthening Enforcement of Existing Laws

Mexico, like the United States, has enacted federal legislation to protect the environment. And in many cases, Mexican laws protective of the environment are stricter than their U.S. counterparts. The problem in Mexico continues to

¹⁷³Ibid., 20.

be a lack of enforcement. Toward improving compliance with Mexican environmental laws in the border region, the Plan invokes a number of initiatives. First--and most visibly--the Mexican government initiated both a fourfold increase in the number of SEDUE inspectors and an expansion of a similar size in their operational budget between 1989 and 1991. Upgrades in work stations included new computers and data banks to facilitate information-sharing among field stations, as well as across the border with U.S. counterparts.

In order to fortify cooperative effectiveness for improving compliance rates of industry, the EPA and SEDUE have formed a formal workgroup, the mandate of which is to develop a coordinating strategy to enhance enforcement. The Cooperative Enforcement Strategy Workgroup will meet periodically to review and help coordinate enforcement activities. The group will serve as a formal mechanism for shaping cooperative enforcement efforts at the border.

So as to better support one another's enforcement activities through better understanding of the other's legal system, regulatory approaches, and enforcement methods, greater efforts will be made to engage in shared activities, such as training visits, workshops, seminars, field exercises, and temporary personnel exchanges. In recognition of the importance of timely information to compliance enforcement, new mechanisms will be developed for

exchange of information on regulated facilities and the transborder movement of pollution.

Greater efforts will also be aimed at coordinating enforcement activities between the two agencies. This means conducting them in a cooperative and, where appropriate, concurrent manner, communicating enforcement accomplishments, and engaging in cooperative targeting, such as coordinating to protect particularly sensitive ecosystems of mutual interest.

2) Reducing Pollution Through New Initiatives

The Plan commits the two governments to several projects aimed at improving--or at least reducing the rate of degradation of--the environment of the border area, in the following categories of concern:

Treatment of Wastewater

There is to be an increase in support for the construction of wastewater treatment facilities in several areas of the border region. This will consist of the expansion, completion or rehabilitation of international facilities in areas including Nogales/Nogales, Tijuana/San Diego and Nuevo Laredo/Laredo. Mexico plans to initiate or expand treatment systems in the Mexican centers of Matamoros, Reynosa, Piedras Negras, Ciudad Juarez and

Mexicali. In the United States, federal and state funds will go to low-interest loan programs for construction of water supply, distribution, and wastewater treatment systems in colonias. Other monies will be made available as loans to connect private homes in these communities to water mains and sewer systems.

Pretreatment of Industrial Wastewater

With recognition that untreated industrial wastewater can seriously degrade the ability of wastewater treatment facilities to treat sewage, the Plan includes a commitment to provide for source control and pretreatment of industrial wastewater. Toward this end, the Plan states that industrial pretreatment will be required as a precondition for use of binational facilities. In particular, the binational International Boundary and Water Commission (IBWC) is to work with SEDUE and EPA to design source control and pretreatment programs for the areas of Tijuana/San Diego, Nogales/Nogales, and Nuevo Laredo/Laredo. Raw wastewater is to be monitored and characterized by the IBWC, both in order to ensure that pretreatment programs are effective, and to test for compliance of industrial facilities with Mexican and U.S. environmental law.

Protection of Drinking Water Supplies

Noting the human health threat that drinking water currently poses for border residents, the Plan calls for IBWC to develop an inventory of sources, quality, and treatment processes for water at existing facilities in all pairs of sister cities at the border. Based on this inventory, the Mexican and U.S. governments will determine the "priority needs" for drinking water treatment and distribution systems in their respective countries. State and federal loans will be made available to colonias on the U.S. side to construct drinking water systems and to fund residential hook-ups to those systems.

Initiation of Multimedia Industrial Source Controls

In an effort to control toxic releases from large industrial facilities--with special emphasis on the two highly-industrialized centers of Tijuana and Ciudad Juarez--EPA and SEDUE will work to identify the largest potential emitters of toxic pollutants into all environmental media. Those facilities will then be asked to submit data on their estimated toxic releases. "It will then be possible," according to the Plan, "to target enforcement actions and voluntary pollution prevention programs on the facilities

posing the greatest public health risks."¹⁷⁴ In addition to the near-term environmental and health benefits, agencies will be able to estimate the total amounts of toxic pollutants being emitted in the targeted areas. This will constitute the first step toward the eventual goal of establishing a comprehensive toxics release inventory for the border area.

Improvement of Solid and Hazardous Waste Disposal

Mexico is to construct new landfills and expand solid waste collection capacity in several border cities through the purchase of new containers, collection vehicles, and heavy equipment. There will be further effort to improve cooperative efforts to detect illegal cross-border movement of hazardous wastes, and to "encourage" proper waste disposal. A binational computer tracking system will expedite the coordination of hazardous materials and toxic waste information, with SEDUE and EPA developing a border-wide surveillance tracking system to "detect and stop" illegal shipments of hazardous waste. SEDUE will further work to encourage whistle-blowing and a greater involvement by the public in the reporting of illegal dumping.

¹⁷⁴Ibid., 24.

Setting Aside Land in Mexico for Low-Income Housing

It is recognized that environmental problems in rapidly-growing urban areas are exacerbated by the high rate of settlement of immigrants from the interior of Mexico in unplanned communities where services such as roads, sewer lines and drinking water systems do not exist. To ease this problem, SEDUE will buy land that is to be set aside and used for the construction of low-income housing. The total area of land to be accumulated for such "territorial reserves" in Mexican border cities is expected to exceed 3000 hectares.

Improvement of Air Quality

Mexico plans to improve roads, bridges, traffic circulation, and public transportation systems, with emphasis on heavily-congested urban areas, in order to reduce particulate matter. Dirt roads in a number of centers in the border area will be paved, and capacity at several border crossings will be expanded.

In three pairs of sister cities--Ciudad Juarez/El Paso, Mexicali/Calexico and Tijuana/San Diego--SEDUE and EPA will work to develop strategies to control all major sources of air pollution. Through source data collection and modelling, SEDUE and EPA will work with state and local agencies to develop detailed air quality control strategies.

Borderwide Promotion of Pollution Prevention

Acknowledging that past efforts to protect the environment have focused on treatment and disposal of pollutants after they have already been generated ("end-of-pipe" strategies,) efforts under the Plan will be aimed at pollution prevention. A new organization, the Pollution Prevention Workgroup, will coordinate activities, including: the "special effort...to encourage industrial facilities on the U.S. side of the border to enlist in the project";¹⁷⁵ the "encouragement" of U.S. owners of facilities on the Mexican side "to apply their pollution prevention activities in Mexico as well as the United States.";¹⁷⁶ the "encouragement (of facilities) to voluntarily reduce their emissions of...pollutants by a specified amount and by a specified time."¹⁷⁷

Participating businesses will be offered a technical assistance program, consisting of training, information, university-based technical resource centers, and demonstration projects. The two agencies will also work to develop model pollution prevention and recycling demonstration projects for local communities, "engaging local businesses, schools, and communications media in a

¹⁷⁵Ibid., 27.

¹⁷⁶Ibid.

¹⁷⁷Ibid.

coordinated, cross-media strategy to prevent specific kinds of pollution in specific communities."¹⁷⁸ These projects are to be shared with other communities and replicated if and when appropriate.

3) Increasing Cooperative Planning, Training and Education

In 1983, Mexico and the U.S. signed the binational Border Environmental Agreement. It was the first formalized effort on the part of the two countries to begin to face environmental and human health degradation due to the unplanned growth of economic activity at the border. As part of that agreement, a series of joint planning, training and education programs were established, targeting emergency preparedness, response personnel, government officials, the private sector, and the general public.¹⁷⁹ During the first stage of the Plan, SEDUE and EPA will work to substantially expand these programs as follows:

Emergency Preparedness and Response Personnel

The agencies will broaden planning, training and education efforts related to chemical accidents and emergencies. Included will be contingency planning in local

¹⁷⁸Ibid.

¹⁷⁹U.S. EPA, Plan, 10.

communities, provision of information and data related to hazardous chemicals, and encouragement and support for local action groups. Detailed schedules will be drawn up for the development of contingency plans for each of the eleven pairs of sister cities. Data and information needed for effective and coordinated response to spills and other accidents will be improved, kept current, and made available to government officials, non-governmental organizations, and the general public. Contingency plans and public information will be modeled after the United Nations' Awareness and Preparedness for Emergencies at the Local Level program (APELL).

As part of the effort to encourage participation by the private sector and the general public, local action groups will receive support, and industrial facilities will be asked to make relevant information--such as types, quantities and locations of hazardous chemicals--available to response officials, as well as to provide equipment that would be useful to a community in the event of a chemical emergency. As part of this effort, the Mexican government will establish an environmental contingency loan fund to expedite emergency response, and the bilateral Joint Response Team will develop a data base of chemical hazards, spills and accidents in the border area, to be made available to the public.

Government Officials

In addition to expanded training for environmental enforcement personnel, SEDUE and EPA will expand ongoing training of Mexican and U.S. customs officials in the identification and tracking of hazardous materials and wastes. Also, working with the transportation agencies in both countries, SEDUE and EPA will assess regulations regarding transboundary movements of hazardous materials and wastes, toward improving the safety of their transport.

The Private Sector

The two agencies will initiate several educational programs aimed at the private sector dealing with the handling and disposal of wastes. This effort will be part of a training and education program for commercial and industrial waste generators. They will also continue to publish a bilingual document of regulatory requirements for the proper handling and disposal of hazardous wastes. These materials and services will be publicized throughout the border region.

The Public

The National Environmental Education Act of 1990 requires EPA to join with Canada and Mexico in the

development of environmental educational materials and activities. In keeping with the directives of the Act, the two agencies will develop bilingual environmental education materials to be distributed in local schools, and participate in the design of projects to foster international cooperation in addressing border environmental issues.

SEDUE and EPA will also develop public service messages to be distributed to news media in the border area. These bilingual messages will foster and encourage private actions, like water conservation, waste minimization, and basic sanitation, that individuals can take to help protect the border environment.

4) Improving Understanding of the Border Environment

SEDUE and EPA will concern themselves with generating information on the current quality of the environment of the border region that will help to define activities during the second stage of the Plan (1995-2000).

Waste-Related Studies

In addition to working to improve estimations of quantities and more accurately determining sources and destinations of hazardous wastes, the agencies will collect information on sites being used now--legal and illegal--for

treatment and/or disposal. This information will be used to assess capacity toward determining how processing needs can be met legally. The EPA will expand its use of U.S. surveillance technology for identifying illegal disposal sites in Mexico to aid enforcement efforts.

Groundwater and Surface Water Monitoring Programs

Working with the International Boundary and Water Commission, SEDUE and EPA will identify regional groundwater aquifers and determine if and to what extent such aquifers are contaminated or threatened. The three agencies will compile an inventory of shared groundwater resources, as well as a projection of estimated future demands. They will also establish an inventory of possible and likely contamination sources toward a characterization of trends in the quality variation of transboundary groundwater. Such information can be used, if necessary, to develop groundwater pollution control strategies.

These three agencies, in conjunction with the Texas Water Commission, plan to improve the pollution monitoring network on the Rio Grande between Ciudad Juarez/El Paso and Matamoros/Brownsville. This monitoring program will help in the assessment of pretreatment measures of industrial effluent, as well as aid in the identification of possible sources of pollution.

Pesticide Information Exchange

SEDUE and EPA will exchange information on the human health and ecological risks of pesticides used in the border region. Many of the pesticides imported into Mexico are manufactured in the United States. Due to language and other barriers, they are often used improperly. EPA will continue to assist SEDUE in the analysis of products and residues, the training of chemists, and the management of joint quality assurance programs. In addition, the agencies will develop cooperative programs to help train farmers, applicators, and dealers in the proper use and disposal of agricultural pesticides.

Comparative Risk Assessment

At the end of 1994, in conjunction with local agencies on both sides of the border, SEDUE and EPA will review efforts and results of the first stage of the Plan. On the basis of this comparative risk assessment, they will set priorities for activities during the second stage of the Plan (1995-2000). Non-governmental organizations, the private sector and the general public will be invited to participate in this review and priority-setting exercise.

Periodic Reports on Border Environmental Quality

Stating their understanding of the value of an informed public, as well as claiming to recognize a basic right to know, the two agencies plan to compile the aggregate border environmental data collected as part of this Plan. Along with that already being collected by various agencies in the U.S. and Mexico, the information is to be published periodically and distributed widely in the border area.

Public Participation

Calling "essential" the participation of border residents in planning and activities related to protection of the border environment, both agencies will concern themselves with ensuring public involvement in the various stages of the Plan. In the U.S., the EPA has already established a formal Border Plan Public Advisory Committee whose mandate it is to provide public input. Although the anticipated Mexican counterpart has yet to be set up, municipal Ecological Committees consisting of representatives from unions, non-governmental organizations, professional and trade associations and the media, are providing input from the Mexican side.

State and local governments are being encouraged to provide working-level advice and expertise through participation in the various binational workgroups

established under the 1983 border agreement. This level of involvement will be aimed at coordinating the technical expertise and economic resources of federal, state, and local governments.

SEDUE and EPA also claim to encourage the continuing cross-border interaction of organizations and individuals sharing mutual concerns at the local level. The two agencies will invite grass-roots participation and advice when addressing local environmental issues, as well as solicit input from other government agencies, trade associations, and non-governmental organizations with responsibilities related to the protection of public health and ecological resources in the border area.

Funding

The Salinas Administration has committed to spending a minimum of \$460 million on border environmental efforts during the first three-year phase of the Plan (1992-1994). As late as September, 1992 (less than two months before defeat in the U.S. presidential election) the Bush Administration pledged \$379 million through 1994.¹⁸⁰ Other funding sources include border state and local governments of both countries, and U.S. and Mexican private sectors. Due to the uncertainty of the Bush Administration

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commitment, as well as uncertainties in the size and extent of eventual contributions from various governments and private donors, no final funding figure can be calculated with confidence.

Estimates are that the Mexican Government spent \$147 million in 1992 under the Plan as follows: wastewater treatment -- \$60 mil; road improvement -- \$40 mil; public transportation -- \$19.4 mil; solid waste management -- \$16.6 mil; and territorial reserves -- \$11 mil.¹⁸¹ By community, the breakdown looked like this: Tijuana -- \$28 mil; Ciudad Juarez -- \$26 mil; Mexicali -- \$17 mil; Nuevo Laredo -- \$16 mil; Reynosa -- \$14 mil; Matamoros -- \$13 mil; Nogales -- \$7 mil; Piedras Negras -- \$6 mil; San Luis Rio Colorado -- \$6 mil; and other municipalities along the border -- \$14 mil.¹⁸²

In the United States, the emphasis has been placed on wastewater treatment facilities and drinking water. The majority of fiscal year (FY) 1993 funding--some \$105 million--is slated to go for San Diego and Tijuana/San Diego wastewater treatment. Other U.S. federal government spending for FY 1993 includes \$2.7 million in personnel costs to be used for air quality monitoring, technical assistance, emergency planning and response, environmental

¹⁸¹U.S. EPA, Plan, V-50.

¹⁸²Ibid., V-51.

education, and other activities in the border area. There is also funding for regional environmental projects to be carried out by other agencies, including \$30 million for the International Border and Water Commission for water-related facilities, and \$2 million for the Department of Health and Human Services for public health projects. FY 1993 further includes \$5.4 million for credit and loan guarantees for environmental projects.¹⁸³

Other U.S. financial support will come from state and local governments. In California, \$5.3 million of state funds have been slated for the planned Tijuana/San Diego sewage treatment facility. Another \$1 million in California state funds have already been spent for a temporary sewage diversion project for the Tijuana River. Further state funding is being considered for the New River. In Texas, \$100 million in revolving loan funds have been allocated for the water needs of colonias along the border in that state, with an additional \$150 million for like projects recently approved by state referendum. Other Texas state funds will go to support a portion of the \$44 million Nuevo Laredo/Laredo binational sewage treatment facility.

Of contributions sought from the private sector, the most substantial involve the partial funding of publicly financed projects. For instance, the local maquiladora

¹⁸³Ibid.

industry association is expected to cover 30% of the cost of a \$70 million wastewater system in Ciudad Juarez, the balance of funding for which will come from the Mexican Government, the State of Chihuahua, and Ciudad Juarez.¹⁸⁴

¹⁸⁴Ibid.

CHAPTER IV

ANALYSIS OF THE INTEGRATED BORDER ENVIRONMENTAL PLAN

The extent of the environmental degradation in the Mexican-U.S. border region--as reflected in the sheer size, complexity and range of efforts designed to deal with its many aspects--makes analysis of any such plan a challenging proposition. Adding to the difficulty is the uncertainty in funding totals--in spite of the lists of proposed expenditures by category and region above--that will eventually be brought to bear. But the cost of any given environmental cleanup is likewise notorious for imprecision, so even precise funding numbers might not go far in detailing what may or may not be achievable.

But proposed funding levels for a project can say a great deal about the extent of commitment of the proposer. And the amount sought for a program, viewed in the context of other levels, can speak to its priority, or relative importance, on the part of the project's authors. In the case of the Bush Administration, the pledge was for \$379 million for FY 1993 and FY 1994.¹⁸⁵ With the altered

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priorities and fiscal constraints of the new Clinton Administration, this figure can be expected to change. Nonetheless, assessments will be based on Bush Administration commitments as the only U.S. Government figures available at this time. Because the political fate of President Salinas through the end of 1994 is less uncertain than was that of Citizen Bush, Mexican figures will be taken as given.

Reactions to the Plan

In an analysis of the Integrated Border Environmental Plan, the fundamental question must be this: Does the Plan appear sufficient to effectively deal with the set of factors that has led to the devastating human health and environmental problems so prevalent in the border region, to the extent that such conditions can begin to be alleviated? The answer, according to some, is a qualified "yes."

Environmental Protection Agency spokesperson Luke Hester, acknowledging the "horrendous problem" of border pollution, senses that "there is movement. There's progress."¹⁸⁶ "It's at least a step forward," he offers.¹⁸⁷ Hester's former superior, then-EPA Director William K. Reilly, sees the Plan as building on several

¹⁸⁶Lynch, 7.

¹⁸⁷Cleeland, A-3.

years of bilateral environmental cooperation between the two countries. According to then-Director Reilly, it "lays the foundation for a historic pollution control effort in the two nations."¹⁸⁸ Jorge Garces, executive director of the Border Trade Alliance, an industry group, calls the Plan "a good beginning," although, he qualifies, "the U.S. should come up with more (money.)"¹⁸⁹

But even such lukewarm votes of approval as these, from officials of the author agency and promoters of border industry, are notable by their rarity. Reactions to the Plan have been overwhelmingly critical. Although the barrage of negative comment ranges from specific to general and covers a wide variety of themes and issues, most fall into one of several general categories of concern.

One area of perceived weakness is the lack of an "action-forcing mechanism" to require industry to comply with Mexican or U.S. environmental laws.¹⁹⁰ Although former-EPA administrator Reilly insists that adequate safeguards are in place, he nonetheless concedes that the Plan does not include any means by which the United States can enforce environmental rules in Mexico.¹⁹¹ Pollution

¹⁸⁸Tyrone Meigan, "Mexico, U.S. Plan Cleanup," Dallas Morning News, 2 August 1991.

¹⁸⁹Solis, A13.

¹⁹⁰Lynch, 7.

¹⁹¹Toohar

prevention and enforcement programs in the Plan have been disparagingly described as "vague and voluntary,"¹⁹² as lacking teeth, as "superficial."¹⁹³

There is argued to be a misplaced emphasis on "end-of-pipe" solutions, both in terms of technical emphasis and budget allocation. Critics point out that efforts to prevent problems from occurring are often more effective--and less costly--than cleaning up afterwards.¹⁹⁴

An oft-cited shortcoming is that the Plan does not bring into consideration any likely impacts of a North American Free Trade Agreement, if one were to come into effect. EPA officials defend their silence on possible environmental consequences of NAFTA by insisting that the Plan is to be put in place regardless of the fate of the trade pact. Critics, like Texas Governor Ann Richards' spokesperson Sandra Martinez, counter that ignoring the impact of increased commercial activity that might be expected to result from successful implementation of the proposed trade agreement "is shortsighted at best and misleading at worst."¹⁹⁵

There is also a common suspicion that the sudden

¹⁹²Dick Kamp, Subcommittee Testimony, 5.

¹⁹³Rick Dower, "U.S., Mexico Pledge to Clean Up Shared Border," San Diego Business Journal, 6 July 1992, 11.

¹⁹⁴Kamp, Subcommittee Testimony, 4.

¹⁹⁵Monday, "Health Risks."

official government concern for the border environment has more to do with mollifying--and thus helping to silence--environmentalists critical of a liberalized trade agreement than any new-found environmental ethic. Proponents of this view expect that implementation of NAFTA will lead to an erosion in environmental standards in both countries, with accelerating and broad-based degradation in human health and environmental conditions.^{196 197}

Several lines of criticism relate to aspects of the document's scope. J. Michael McCloskey, chairman of the Sierra Club, calls the Plan "short-sighted," because it is designed to deal only with existing problems, failing to provide longer-term strategies for increasing funding and program expansions if and when impacts of free trade extend throughout Mexico.¹⁹⁸ In a joint position paper, the city of Nogales and the county of Santa Cruz, Arizona, criticized the Plan for "failing to identify the range of environmental and health problems" in the border region.¹⁹⁹ And the focus on sister-city areas has been faulted for failing to grant proper attention to problems outside of these targeted

¹⁹⁶James E. Garcia, "Trade Casts Light on Environment," Austin American-Statesman, 29 September 1991.

¹⁹⁷Monday, "Health Risks."

¹⁹⁸Lynch, 7.

¹⁹⁹Rivas

zones.²⁰⁰ Another criticism related to scoping surrounds the subject of health, with critics taking issue with the treatment of public and occupational health concerns as external to the Plan.²⁰¹

But perhaps the most fundamental criticism of the document is that it is not, in fact, a "plan" at all. It has been called "a compilation of 'wish lists,'"²⁰² "a list of projects that were already in the planning stages,"²⁰³ a "plan to plan,"²⁰⁴ lacking "any timetable or resources to tackle the mess."²⁰⁵ According to Robert A. Sanchez of Tijuana's Border College, "(i)t looks like a book to avoid a plan."²⁰⁶

From the point of view of many observers, some of the Plan's fundamental weaknesses are due in large part to the manner in which the document was developed. In spite of the input sought at the several public meetings held in the border region, the Plan was primarily "designed from the top

²⁰⁰Bret Bradigan, "Health Group to Make Noise Over Forgotten Border," Sierra Vista Herald/Bisbee (Arizona) Review, 16 April 1992.

²⁰¹Kamp, Subcommittee Testimony, 4.

²⁰²Environmental Committee, 4.

²⁰³Ramberg, B4.

²⁰⁴Kamp, Subcommittee Testimony, 4.

²⁰⁵Solis, A13.

²⁰⁶Ibid.

down, instead of the bottom up."²⁰⁷ Public comment was solicited only after the document had achieved its final structure, and was well on its way to completion.

And then there is the issue of funding. Lloyd Bentsen, as chairman of the Senate Finance Committee, applauded the Bush administration's decision to increase funding as part of the Plan, tempering his approval with the remark that the amount is "certainly...not enough to get the job done. The question is whether it will get us off to a good start."²⁰⁸ Leaving that possibility open demonstrated more generosity than most analysts have shown. Craig Merrilees, former co-director of the Fair Trade Campaign, a U.S. coalition of environmental, labor, farm, consumer and church groups, says that the cleanup allocation is sorely inadequate, as well as unfair. "The President (Bush)'s plan lets polluters off the hook and soaks taxpayers for the cleanup," he says.²⁰⁹ A congressional staffer, identified by the Los Angeles Times only as a "prominent Democratic legislative aide," called federal funding proposals "a drop in the bucket when you look at what the needs are down there."²¹⁰ Studies at the University of Texas put cost estimates for border cleanup at

²⁰⁷Rivas

²⁰⁸Leubsdorf

²⁰⁹Tooher

²¹⁰Tumulty, A3.

\$18 billion.²¹¹ Others, described as "credible experts," have put the figure at \$50 billion.²¹² Adequate funding, complains Mary Kelly, executive director of the non-profit Texas Center for Policy Studies, is simply not forthcoming. "The plan seems to rely on a 'try a little harder' approach within the institutional framework for bi-national cooperation," says Kelly.²¹³

This brief list of perceived weaknesses provides some idea of the types of problems commonly identified by critics of the Integrated Border Environmental Plan. Following is a closer analysis of the more serious among them.

Legal and Institutional Issues

Monitoring

Among the most important requirements for an effective environmental strategy in the border area is the establishment of efficient and coordinated mechanisms for the gathering and disseminating of information. Availability of accurate and timely data on the state of conditions is a necessary requisite of any efforts toward effecting positive change. While such information can be

²¹¹Ibid.

²¹²Ibid.

²¹³Monday, "Health Risks."

used as a basis for bringing penalties and sanctions, it also provides the means by which public scrutiny, moral suasion, and voluntary initiatives can be brought to bear.²¹⁴

The Plan needs to mandate programs that will provide information about groundwater, surface water, air, and toxics on a routine and timely basis. Due to the rate of depletion and/or quality deterioration of groundwater reserves in many areas of the border region, groundwater monitoring programs should be developed with some urgency. Airshed toxicity data should be routinely included in air monitoring under the Border Clean Air Act provisions.²¹⁵ For their value in helping to illuminate health trends and longer-term effects, health baseline studies of border communities should also be a part of the Border Plan. In order to most effectively coordinate monitoring and information efforts, a scoping process needs to be put in place that will allow effective participation on the part of residents of border communities.

The Plan should include provision for the sharing of technical environmental monitoring assistance and training on the part of the U.S., in order to develop laboratory and equipment capability and technical expertise on the Mexican

²¹⁴Environmental Committee, 4.

²¹⁵Kamp, EPA-SEDUE Testimony, 5.

side of the border. Indeed, EPA should already have drawn appropriations to provide monitoring assistance in Mexico under the 1990 Clean Air Act.²¹⁶

Right to Know

Both for the purpose of applying public pressure on polluting establishments, as well as to provide the basis for informed decisions for safeguarding their own health, Freedom of Information/Right to Know initiatives for border residents need to be introduced. As Tim Atkeson of the EPA has stated, public disclosure principles, as embodied in Right to Know legislation, form the basis to judge and democratically implement any public protection program.²¹⁷

A Right to Know proposal, developed by Mexican and U.S. academics and advocates including Dick Kamp of Border Ecology Project and Michael Gregory of Arizona Toxics, seeks to

build...upon Mexican law to create public disclosure in Mexico while developing provisions that track polluters fleeing from the U.S. to Mexico by requiring the release of information on U.S. environmental "bad actors."²¹⁸

In the name of public disclosure and public participation,

²¹⁶Ibid.

²¹⁷Kamp, U.S. Trade Testimony, 5.

²¹⁸Ibid.

this Right to Know proposal seeks to integrate monitoring with planning of infrastructure, as well as the establishment and maintenance of an "easily comprehensible" Geographic Information System (GIS) map series, to make such information accessible to citizens, groups and regulators.²¹⁹

The Border Ecology Project has suggested that an effective GIS system in the border region might include inventories of hazardous materials, locations of pollution "hot spots," emergency response information, as well as data regarding sewage systems and clean and contaminated wells. Once such a system is established, other pertinent information could easily be put on-line as it becomes available. The GIS system could be made accessible through community libraries and city and town halls.²²⁰

In the name of public safety, as well as to provide for accurate and effective scrutiny of industrial operations on the part of legal authorities and public advocacy groups, this and other information on environmental hazards and risks must be made available to the public on a timely basis. In addition to the data made available through the GIS system outlined above, such information should include, but not be limited to, the kinds and amounts of hazardous

²¹⁹Ibid.

²²⁰Ibid.

materials handled and released from nearby facilities, pesticides used in local agriculture, as well as applicable emergency preparedness training and equipment.²²¹ Other required information might include environmental compliance histories of corporations and individuals now operating or seeking to invest in the border area.²²²

Of course, little such information--at least in any publicly disseminable form--currently exists. But the pressure needed to begin to develop systematic methods for monitoring and recording such data, as well as the distribution networks required to make them routinely available, will evolve most effectively under the public pressure that will follow establishment of Right to Know legislation.

Enforcement

Monitoring--finding out the "who, when, where and how much" of industrial pollution--is the obvious and important first step toward any kind of effective program to curtail the horrendous levels of environmental abuse that have become standard business practice in the border region. But bitter experience shows that monitoring without enforcement is about as effective at reducing unsound practices on the

²²¹Ibid., 4.

²²²Ibid.

part of industry as no monitoring at all.²²³ Of course, with an environmental enforcement budget per capita in Mexico of less than 2% of the comparable per capita expenditure in the U.S.,²²⁴ little in the way of enforcement is possible. Such fiscal constraint, coupled with the hunger for foreign investment dollars, has led to the development of a political climate in which little action is taken against industrial polluters.²²⁵

Recent signs indicate that pending U.S. congressional decisions on the North American Free Trade Agreement, by increasing president Salinas' sensitivity to Mexico's image abroad, has led to decreasing levels of tolerance for industrial polluters. Though this may be signalling a real shift in attitude on the part of Mexican authorities toward corporate environmental abusers, the magnitude of the problem frankly renders such marginal gains insignificant. It will take more than a new official attitude for effective enforcement to begin to have an impact on the "business-as-usual" conditions of environmental abuse in the border region. The Integrated Border Environmental Plan must include a strategy for restructuring enforcement mechanisms and procedures, in order to build a much stronger

²²³Durazo, 19.

²²⁴Sanford J. Lewis, iii.

²²⁵Ibid.

correlation between violations and sanctions.

Stringent Penalties

There are currently no means by which Mexican or United States citizens can enforce environmental rules in Mexico. There is no action-forcing mechanism available to regulatory authorities in the U.S. by which corporations operating on foreign soil can be compelled to behave in an environmentally sound manner. With Mexico's notoriously poor enforcement record, coupled with transnational corporations' dismal history of environmental irresponsibility in Mexico in general and the border region in particular, the appeal by the EPA for manufacturers to take voluntary steps to contain illegal dumping and reduce the use of toxic materials rings hollow. For some--perhaps many--companies operating in the cut-throat world of corporate competition, fines and other sanctions for violations are simply costs of doing business. In such cases, the most effective means for a regulatory body to achieve appropriate behavior on the part of the regulated is to make it too expensive to do otherwise--to make "doing the right thing" also the economically rational thing. Accordingly, much more stringent penalties for non-compliance with standards and other violations need to be put in place, in order to compel recalcitrant polluters and

other environmental offenders to "do the right thing," even if for the wrong reasons. Dick Kamp, director of Border Ecology Project, calls for a "hammer" that would require that trade sanctions be applied to violators of environmentally protective legislation.²²⁶

A Foreign Environmental Practices Act (FEPA)

The Plan should provide for the EPA or another appropriate U.S. federal agency to have its power expanded to allow legal action to be taken against U.S. corporations causing environmental harm or violating occupational or public health norms in Mexico (and other countries.) That is, U.S. federal law should be extended to apply to U.S. corporations, regardless of the location of their operations, with respect to both sanctions and regulatory constraints on environmentally harmful activities. Such a Foreign Environmental Practices Act could be modeled after the Foreign Corrupt Practices Act.²²⁷ The principle would apply in all regulatory instances, with the exception of jurisdictions where the regulatory environment is more stringent than that which would be provided by U.S. federal law. In such cases local requirements would need to be satisfied. (Of course, this last point--that the local

²²⁶Kamp, U.S. Trade Testimony, 6.

²²⁷Ibid., 7.

regulations of a signatory jurisdiction that are more restrictive/protective than umbrella legislation should be legally enforceable--has been strenuously argued by proponents of "free" trade to constitute a non-tariff trade barrier, and thus in violation of the principles of trade liberalization so aggressively sought by the current federal administrations of Mexico and the U.S. Although any useful exploration of the issue is beyond the scope of the current discussion, suffice it to say that the principle of supersession of locally protective legislation has much to commend it, with regard to issues of both sovereignty and environment.)

In order to facilitate implementation of a "highest regulatory standard" principle, an appropriate time span, similar in concept to a 10-year tariff phase-out period, can also serve as the basis for a environmental regulatory phase-in period.²²⁸ New facilities would be required to meet the new standards upon start-up. Existing facilities would be permitted to use a specific grace period, but only within the constraints established by an incremental phase-in strategy developed in conjunction with--and approved by--regulatory authorities.

²²⁸Ibid.

"Bad Actor" Provisions

Regulatory efforts could be greatly enhanced with the inclusion in the Plan of a mandate to investigate and maintain international environmental legislation compliance histories of corporations or individuals making efforts to invest in the border region.²²⁹ In the past, such federal "bad actor" provisions have been limited to the tracking and regulation of hazardous waste.²³⁰ This strategy should be expanded under the Plan to include histories of all environmental violators, in order to provide a basis for special vigilance of repeat and/or flagrant offenders, and to help guard against the flight of less environmentally responsible companies to Mexico.²³¹

Regulatory Coordination

In a capitalist economy, corporate investors and officers are compelled to risk decisions in a competitive business environment characterized by uncertainty and instability. When the consequences of regulatory violations are inconsistent (even tending, perhaps, to the non-existent,) corporate decision-makers have long demonstrated

²²⁹Kamp, EPA-SEDUE Testimony, 4.

²³⁰Kamp, U.S. Trade Testimony, 6.

²³¹Ibid.

an inclination to take advantage of the slack. But when the regulatory environment is reliable, is applied with consistency, the "level playing field" tends to induce resigned decision-makers to comply in order to avoid the predictable penalties. Given this dynamic, the importance of achieving such regulatory consistency is clear.

Due in large part to the multi-jurisdictional nature of the Mexican-U.S. border region, growth has occurred in a regulatory environment devoid of coordination or common technical standards. The result has been duplication, inefficiency, and inadequate communication among enforcement agencies, both between the two countries and across lines of jurisdictional responsibility, from the local level to the federal.²³² In order to break through the regulatory morass, it is essential that the Plan mandate a much higher level of binational, interagency and cross-jurisdictional coordination in the gathering and dissemination of information for monitoring and enforcement.²³³

In this context, states and municipalities/localities--those official entities "closer to the ground"--must play a more active role in enforcement. According to the EPA Border Plan Public Advisory Committee,

(i)t cannot be overemphasized that even the strictest

²³²Environmental Committee, 4.

²³³Ibid.

rules will not be effective unless state and local officials on the Mexican side have community-based participation, resources, and capability to perform well.²³⁴

The Border Environmental Plan Public Advisory Committee calls for EPA to further facilitate the involvement of states and localities through the Plan by providing model ordinances, public meetings, workshops, and technical training.²³⁵

More stringent penalties, "bad actor" provisions, action-forcing mechanisms, a highest-regulatory-standard principle, enhanced coordination in enforcement efforts from local to federal authorities under a Foreign Environmental Practices Act, in conjunction with the public pressure stemming from concerned community leaders made aware of new or ongoing problems due to implemented Right to Know legislation, could together have a significant effect on the way that environmentally-sensitive business and planning activities are monitored and enforced in the Mexican-U.S. border region.

Binational Enforcement Committee

In order to maximize the cumulative effectiveness of

²³⁴Ibid.

²³⁵Ibid.

such a host of approaches and strategies for enforcement of environmental and health regulations, the Plan needs to provide for a coordinating committee whose purpose it will be to oversee their implementation and coordination. In order to ensure adequate representation of the various major stakeholders in the border region and its economic exploitation, members of this Binational Enforcement Committee are to be drawn from communities, labor, government, business, and environmental groups, from both sides of the border.

The committee's mandate would be to oversee the establishment of the range of enforcement initiatives, both in order to streamline their implementation, and to monitor and evaluate their ongoing effectiveness. Recommendations and suggestions of the committee are to be reported to appropriate enforcement authorities on a regular and timely basis. Findings of the committee would also be made available to the public.

Planning

The burgeoning emphasis on trade liberalization--manifest for the Mexican-U.S. border region in the negotiations surrounding the North American Free Trade Agreement and the focus on the area that NAFTA negotiations have brought to bear--is responsible for the vast

uncertainty about the future and what it holds for the border region. In this dynamic context, existing institutions (such as the International Boundary Water Commission) and existing binational agreements (like the La Paz Agreement of 1983) are proving increasingly incapable of fulfilling their mandate of providing oversight and coordination in environmental protection efforts in the border area.²³⁶ In the existing political and economic climate of the region, Congressional appropriations and funding requests "are driven by the incidence or creation of emergencies, and by the size and political influence of the border states' Congressional delegation."²³⁷ And although NAFTA, if and when it comes into being, promises to establish trilateral institutions mandated to provide some level of environmental oversight, their necessarily continental scope will far exceed that which would be appropriate for the unique regional concerns of the border region.²³⁸

Border Environmental Oversight Commission

Needed is a binationally-mandated institutional framework designed to guide ongoing economic and community

²³⁶Ibid.

²³⁷Ibid., 6.

²³⁸Ibid., 4.

development toward the condition of ecological sustainability for the border region. To develop the institutional structures necessary for this transition, as well as to provide guidance and coordination for the ongoing application of such a sustainable-development framework, the EPA Border Environmental Plan Public Advisory Committee has called for the establishment of a binational commission.²³⁹

In the view of the EPA-appointed committee, the commission would have a wide range of obligations under the deceptively simple mandated responsibility of "the protection of the environmental quality of the border region."²⁴⁰ It would have "oversight jurisdiction" of surface and groundwater quality and apportionment, air quality, hazardous material and toxic waste management, and other categories of concern at the border that qualify as environment- and/or health-related. Potential roadblocks to the establishment of such a committee include the need for international agreement, action of Congress, as well as sufficient funding. But its guiding presence would go a long way toward enhancing the likelihood of environmentally sustainable economic development in the border region.²⁴¹

The commission would build upon the achievements of the

²³⁹Ibid., 5.

²⁴⁰Ibid.

²⁴¹Ibid., 6.

International Boundary and Water Commission and the La Paz Agreement. Nested among existing entities to facilitate coordination and information-sharing, the new commission would link all the organizations currently with environmental interests there. These include, from the Mexican side, the Secretariat of Social and Environmental Affairs (SEDESOL), the Secretariat for External Relations, the Secretariat of Agricultural Resources and Hydrology, and the Secretariat of Health; U.S. institutions include the Environmental Protection Agency, the Department of Justice, the Department of the Interior, and the Department of Health and Human Services. International organizations such as the International Boundary and Water Commission and the newly-established North American Commission on the Environment would likewise come under its organizational jurisdiction. Non-governmental organizations, as well as groups at the state and local level with concerns that include the environment of the border region, would also be included.²⁴²

The EPA Public Advisory Committee recognizes the myriad ways that such a committee could conceivably be organized, but nonetheless specify one structure for discussion. There would be

two chairs, one each appointed by the Presidents of

²⁴²Ibid., 5.

Mexico and the United States; representatives of federal agencies; and members appointed by governors of the border states, or through some other mechanism such as the Border Council of Governments that would assure the representation of border communities.²⁴³

Besides having oversight jurisdiction for all planning activities and projects in the region, the commission would provide technical assistance, direct the timely distribution of moneys to areas with acute environmental and health needs, and assure effective public input into border activities and development. To optimize the effectiveness in its important work, the commission would need to be a recipient of all current and historical border environmental data available.

Its mandate would include the provision of all such data to the public on a facile and timely basis. Educational workshops, public hearings, working groups, open commissions meetings, as well as availability of all written business of the commission, would guarantee the direct participation of citizen groups and individuals.²⁴⁴

Day-to-day activities of the commission would include assisting in planning and implementation of community infrastructural projects, as well as ensuring "implementation of commitments to monitoring, pollution prevention and remediation, resource protection and related

²⁴³Ibid.

²⁴⁴Ibid.

obligations."²⁴⁵

This presents a challenging--even daunting--set of tasks and objectives. But damage in the border region has been so profligate due to environment- and health-deteriorating activities having been allowed to go on for so long that, with all indications pointing to an increase in the rate of growth of industrial activities, a less ambitious mandate for the lead steering commission for environment- and health-related matters in the region would frankly fall short of urgent current and future needs.

Planning Timeline

The organizational basis for the commission's work to coordinate development activities at the border should be in the form of a "medium-term" plan--of, say, twenty-five years--moving forward in five-year increments.²⁴⁶ Although the Plan as it is now written describes activities and goals in terms of dated "stages" (ie., First Stage [1992-1994],) they seem to function as vague guidelines rather than as the firm benchmarks of the rigorous planning framework required.

Difficult, perhaps, will be the need to overcome the aversion on the part of powerful economic conservatives in the political sphere and the private sector to such ideas so

²⁴⁵Ibid.

²⁴⁶Ibid.

clearly at odds with the fundamental principles of laissez-faire. But ideological resistance notwithstanding, a firm and realistic planning timeline is needed, both to provide coherence for those working to move forward, as well as an objective yardstick by which to judge the timely success of programs and projects prescribed under the Plan.

Border Residents

One often stated weakness of the Plan involves the scarcity of references to residents of border region communities. To some critics, this paucity of documented discussion is a reflection of the general lack of sufficient consideration of the nature and extent of possible and probable impacts of the Plan on border residents. Given the profoundly negative health impacts of industrial growth in the border region, improvements in the area of health are of particular concern to advocates of an improved Plan. Critics also see issues of participation, right-to-know legislation and information availability, education, emergency preparedness, as well as general quality-of-life considerations as topics of import to border residents that have been less than adequately addressed.

Health

There is no disputing the vast depth and array of

negative impacts that have resulted from the corporate indifference to residents that has characterized the decades-long period of border industrialization. Chronic exposure to air and water pollution, toxic waste, pesticides, contaminated drinking water and hazardous materials; the lack of adequate sanitation facilities and infrastructure; the absence of decent housing and garbage removal; the inadequacy--sometimes absence--of educational and health care services; underpaid jobs and unsafe--sometimes dangerous--working conditions; it is hardly surprising that infant mortality, illness and death are far more prevalent in the Mexican-U.S. border region than anywhere else in the United States (with the possible exception of some Native American reservations.)²⁴⁷ In the face of such stark poverty and disenfranchisement, the EPA's Border Environmental Plan Public Advisory Committee calls for "a far greater emphasis on environmental health problems than has previously existed."²⁴⁸

It has been suggested that environmental impact assessments in the border region include the identification and assessment of public and occupational health conditions, as well as strategies for addressing them.²⁴⁹ To help

²⁴⁷Ibid., 7.

²⁴⁸Ibid.

²⁴⁹Kamp, EPA-SEDUE Testimony, addendum B, 4.

raise border health issues toward the level of awareness and resource allocation it deserves, Laura Durazo et al. have called for renaming (and suitably reorienting) the North American Commission on the Environment (NACE), the North American Commission on Health and the Environment (NACHE).²⁵⁰

In order to get a better picture of the current state of health of border residents, resources need to be allocated for the collection and aggregation of baseline health data for the border area.²⁵¹ Along this line, Dick Kamp of Border Ecology Project has argued the need for the establishment of an oncological registry.²⁵² The establishment of some such systematic and centralized baseline information network would be of great benefit, both for the purpose of directing health funding efficiently, and to use as a yardstick against which future changes--positive and negative--could be measured. Kamp's oncological registry might go a long way toward helping to establish the sources of health problems by helping to track the causes of cancers and other serious diseases so prevalent in the region.²⁵³ Such comprehensive information bases can

²⁵⁰Durazo, 17.

²⁵¹Environmental Committee, 8.

²⁵²Zuniga, "Watchdog."

²⁵³Ibid.

further shed light on the cumulative and/or synergistic effects of cross-media exposure, thereby helping to direct funds and resources more effectively.

Public Participation

Planning the Plan

Among the most common criticisms of the Plan is the low level of input that has been sought from citizen organizations and other representatives of residents of the border region. The series of SEDUE/EPA public meetings held in border communities notwithstanding, the various drafts and final document are to a large extent the product of a top-down exercise on the part of Mexican and U.S. federal agencies.²⁵⁴

This is in spite of a dawning realization on the part of some government organizations of the importance and value of meaningful public participation in the development of comprehensive and far-reaching government legislation.²⁵⁵ That local public input can result in better decision-making is as much due to the special insight into the nature of particular needs and problems of those "on the ground," as for the greater level of support--and thus success--that

²⁵⁴Rivas

²⁵⁵Ibid.

locally influenced (as opposed to externally imposed) changes can expect to receive.

In the case of the Integrated Border Environmental Plan--the set of initiatives that will set the tone and provide the substance for all environmental and health initiatives for the entire Mexican-U.S. border region for the foreseeable future--such an approach is particularly short-sighted. The bewildering range of interwoven environmental and human health problems, shadowed by the daunting presence of powerful corporate forces poised to resist fundamental change, presents a formidable challenge to those seeking it. Only the most effectively designed legislation can hope to challenge such entrenched self-interest, and only a Plan inspired by wisdom born of bitter experience can hope to provide effective solutions.

Continuing Participation

Of course, due to the everchanging nature of the challenges that an effective Plan will be required to address, ongoing input from border residents will have to be assured. In order to institutionalize continuing local oversight, the Border Ecology Project has suggested that local/regional representational councils be created as the basis for an

integrated border environmental council legally

empowered to have joint cooperative (control) over the IBEP and authority to meet with EPA and SEDUE (SEDESOL) regularly to identify problems, seek funding and resources, and generally be a partner in the effective implementation of the plan--including monitoring and enforcement where possible--on a local/regional level.²⁵⁶

Both the local representational councils and the border-wide council must be able to work on a bilateral basis with all levels of government. As non-profits, monies to support their operations could come from a variety of sources, such as insured bonds, federal and state allocations, levies on border investment, maquiladora corporate foundation grants, as well as any foundation grants and donations.²⁵⁷ Such a varied set of funding sources would help ensure fundamental independence from government and corporate interests. With such freedom from political influence, coupled with their binational nature, the councils would be able to "avoid the political discomfort of one government attempting to dictate to another government how money should be spent."²⁵⁸

Councils would act as advocates for local needs, and would allocate funds by council-wide vote. In order to provide effective representation for all border communities, the Border Ecology Project suggests representation based on

²⁵⁶Kamp, EPA-SEDUE Testimony, 2.

²⁵⁷Kamp, Subcommittee Testimony, 7.

²⁵⁸Kamp, EPA-SEDUE Testimony, 2.

geography rather than population.²⁵⁹ Such ongoing input from residents of the border region would go a long way in guiding the development of effective and meaningful border environmental and human health legislation.

Public Access to Information

Residents know intimately--from sometimes bitter experience--the nature of the problems they face, and are thus the ones best situated to begin the process of solving them. This is the basis of the argument for "bottom-up" development of the Plan and other remediative measures. But one needs more than just intimate knowledge of the squalor of one's own existence to begin to have an impact. Nor is it enough to simply invite those affected to provide input to the process of designing plans for remediative action. Access to the legislative process is critical, but it will prove valuable and effective only if it is predicated on appropriate and timely information of applicable statute law and legislation, avenues of funding, local organizations, and any number of other appropriate informational categories.

Noting that right-to-know policies are promoted in the Plan, the EPA-appointed Border Environmental Plan Public Advisory Committee calls for their implementation in

²⁵⁹Ibid., 7.

practice, with strong efforts to "encourage their adoption and observance" in Mexico.²⁶⁰ But simply making information publicly available is not enough to ensure its timely and effective utilization. In recognition of the unique social, political, economic, and ecological conditions of Mexican-U.S. border communities, the EPA-appointed Border Environmental Plan Public Advisory Committee further calls for vigorous and aggressive public information and education programs:

Reaching greater segments of the population requires a bilingual, multimedia notification program that includes public-service announcements in the electronic and written press, publications commonly read by ethnic minorities, and postings at places that are attended by these groups such as churches, union halls, jobsites, and public buildings.²⁶¹

And, the Committee adds, participation by border residents in environmental planning and decisionmaking would be further enhanced by the establishment and support of border community educational and legal assistance programs.²⁶²

"Earth Literacy" in Public Education

The future of any community is, to a significant extent, in the hands of its children. As such, the quality

²⁶⁰Environmental Committee, 8.

²⁶¹Ibid., 7.

²⁶²Ibid.

of public education is of vital importance in determining the quality of that future. But great and fundamental difficulties characterize public education in the border region--not the least of which, in Mexican communities as well as *colonias* on the U.S. side, is sorely inadequate capacity. Alleviation of some of these difficulties may, for the most part, be beyond the scope of the Plan. But efforts to "promote and facilitate earth literacy in educational curricula and community outreach, especially to K-12 teachers," are not.²⁶³ The Plan should provide the means and direction for the establishment of programs, both in and out of school, to help children living in the border area to learn about their environment.²⁶⁴

Funding

Money Politics

There are about as many different figures on the estimated cost of "cleaning up the border" as there are estimates, ranging from some \$5 billion²⁶⁵ to \$50 billion.²⁶⁶ In addition to the set of problems being so

²⁶³Ibid., 10.

²⁶⁴Ibid.

²⁶⁵Kamp, Subcommittee Testimony, 5.

²⁶⁶Tumulty, A3.

extensive and the cost of any given remediation so difficult to pin down, such a wide range of assessments reflects the uncertainty about just what "cleaning up the border" really means.

What is clear is that the combined funding proposed by the Mexican and U.S. federal governments is about one order of magnitude lower than the lowest of the cleanup cost estimates--which, in turn, is another order of magnitude below the highest. That, together, is two orders of magnitude (comparable to, say, having \$100 and needing \$10,000.) And according to J. Michael McCloskey, chairman of the Sierra Club, "(t)he amount of monies needed to do the job down there is many magnitudes higher."²⁶⁷ Given such enormous discrepancies between the estimated costs and the amounts pledged, then-President Bush's statement upon unveiling the Plan, that "(w)e have a joint plan of action to correct these problems and we've made the financial commitment to get the job done,"²⁶⁸ carries a decidedly hollow ring.

Although wide apart on many aspects of the Plan, critics and supporters alike largely agree that proposed federal funding is sorely inadequate to the task of effectively implementing the border-cleanup portion of the

²⁶⁷Ramberg, B4.

²⁶⁸Tumulty, A3.

Plan.²⁶⁹ It is widely conceded that, even if the political will existed at the highest levels to adequately fund border cleanup, the enormous cost would simply be too great--both economically and politically--to be shouldered by the public sector alone.^{270 271}

The reluctance on the part of the Mexican and U.S. federal governments to face up to fiscal reality must surely reflect the politically unpleasant truth of the matter: If the stated objective of "cleaning up the border region" is really to be accomplished (a very big "if,") the Integrated Border Environmental Plan will have to be funded to a very significant extent by the industrial operators who have benefited by their border presence, and who, frankly, are the ones ultimately responsible for having created this host of environmental and human health problems requiring such extensive and expensive remediation.²⁷² Political prudence--that is, not daring to offend the mighty corporate business lobby--prevents politicians and their representatives from publicly coming to grips with this fiscal reality.

Yet it seems logical to most observers (including many

²⁶⁹Ibid.

²⁷⁰Sanford J. Lewis, 32.

²⁷¹Environmental Committee, 1.

²⁷²Ibid.

within the business community) that those who benefit by their presence in the region and the use of its facilities can reasonably be expected to contribute in some significant measure to its upkeep. To those planning to continue to enjoy its unique opportunities for the foreseeable future, this position might even seem sensible from a business standpoint.

Yet however reasonable, it has its detractors. Perhaps three decades of virtually unfettered industrialization has created a mentality among some that ecological and social rules do not apply in the border region. At any rate, some industry officials, commenting on the suggestion that the private sector contribute to border cleanup and public works projects, say they "don't know how that might play in the home office."²⁷³ Carlos de Orduna, general director for Sanyo Manufacturing's Tijuana operations and past president of the Western Maquiladora Trade Association, says that the *maquiladoras* were set up to save costs for the parent company. So if the cost of doing business rises too high--such as if businesses are required to finance pollution cleanup and prevention--that could defeat the purpose.

Says Border Ecology Project director Dick Kamp, "(t)he argument that imposing ecological tariffs or social user fees would constitute an impediment to free trade comes

²⁷³Dower, "Mexico Pledge."

close to being immoral."²⁷⁴ But at the Border Environmental Assembly and Colloquy in Santa Fe, New Mexico in June 1992, an unnamed attendee recognized that, "Mexico is really worried. If you push industry too far, they may leave."²⁷⁵

Analysts unencumbered by political considerations have tended to suggest some combination of funding schemes, though for the most part even they have proved unwilling to attempt the arithmetic. Both tendencies--the offering of lots of financing ideas and a reluctance to see how the numbers might actually add up--appear to reflect some appreciation for the frightfully large figures involved.

Funding Mechanisms

So how are such large fiscal requirements to be met? In addition to the expenditure of public monies, including grants and low-interest loans for such purposes as monitoring programs and development of infrastructure, a number of suggestions have been advanced to narrow the gap. Ideas for such private sector funding sources range from compensatory investment charges on transnational industries,²⁷⁶ to "debt-for-nature swaps,"²⁷⁷ to appeals

²⁷⁴"Free Trade Forum," Twin Plant News, January 1993, 2.

²⁷⁵Dower, "Mexico Pledge."

²⁷⁶Kamp, EPA-SEDUE Testimony, 5.

for corporate philanthropy.²⁷⁸

As a reality check on the possibilities for fruition within the Plan of the various funding approaches suggested, it should be remembered that precious little discussion of the concept of corporations as funding sources for border cleanup is to be found in documents generated by the business sector. The following ideas spring from the work of groups and individuals motivated by impulses rather more noble than profit maximization, such as justice, human dignity, and a concern for our collective future.

User Fees

Variously referred to as "green taxes,"²⁷⁹ or "user fees,"²⁸⁰ the user-pay principle offers a means by which industrial interests directly benefiting from the use of infrastructure installations could be accordingly taxed. One such scheme would allow Mexican municipalities to charge users to finance and operate projects like sewage and water treatment plants.²⁸¹ Infrastructure plans could contain fee schedules projected to put facilities on a financially

²⁷⁷Solis, A13.

²⁷⁸Dower, "Mexico Pledge."

²⁷⁹Garcia, "Trade."

²⁸⁰Sanford J. Lewis, 32.

²⁸¹Kelly, 48.

self-sustaining basis.²⁸² EPA's Public Advisory Committee suggests the extension of public grants to communities

where previously prepared planning, cost-sharing, and pay-back arrangements based on user-pays principles warrant the construction of projects that will resolve pre-existing problems and will be ultimately self-sustaining.²⁸³

User fees also allow for a measure of flexibility. If it is desired to, for instance, tax *maquiladoras* but not Mexican domestic manufacturers, fees could be levied only on goods manufactured in Mexico by U.S.-owned firms and sold in the United States.²⁸⁴

Another suggested system of user fees would require that pollution dischargers pay permit fees in order to help fund industrial enforcement and monitoring efforts.²⁸⁵ It is unclear, however, whether user fees to support regulatory activities might not be challengeable as non-tariff trade barriers in the liberalized business environment under a North American Free Trade Agreement.²⁸⁶

²⁸²Environmental Committee, 5.

²⁸³Ibid., 7.

²⁸⁴Garcia, "Trade."

²⁸⁵Sanford J. Lewis, 32.

²⁸⁶Kelly, 48.

Binational Border Bonding Authority

A widely discussed funding arrangement involves bond sales. One approach would seek new surcharges on corporate parents of *maquiladora* installations, with the money raised to underwrite bond sales.²⁸⁷ The proceeds would be used to pay for infrastructure development--chiefly wastewater treatment plants, clean water systems and housing--and would provide a means for encouraging *maquiladora* participation in public capital construction projects.²⁸⁸ One such pilot project is currently underway in Ciudad Juarez, where a municipal sewage treatment facility is being built with partial *maquiladora* funding.²⁸⁹

A binational border bonding authority could also be responsible for coordinating certain other bonding requirements for foreign-owned installations. For instance, *maquiladoras* might be required to post bond as a form of financial assurance of guaranteed response to any potential environmental or health damage they may cause.²⁹⁰ The size of commitment that such a bonding authority would require of a given operation would be based on the perceived extent of

²⁸⁷Dower, "Mexico Pledge."

²⁸⁸Dower, "Pending Agreement."

²⁸⁹Dower, "Mexico Pledge."

²⁹⁰Kamp, EPA-SEDUE Testimony, 5.

potential damage of its particular products and processes. Another suggestion is for manufacturing facilities in the border region to be required to post bond to cover costs of regular--perhaps biannual--medical tests for employees.²⁹¹

A number of these suggestions for bonding mechanisms, such as the posting of bonds by border operators against future potential damage of their products or activities, have merit and could prove beneficial in the limited areas for which they are intended. But although it will likely have some limited value as a financing mechanism, it does not seem likely that bonding will play a principal role in funding the border region back to a condition of environmental health.

Debt-for-Nature Swaps

Another idea that has been discussed in connection with the need for the financing of infrastructure projects in border communities is called "debt-for-nature swaps."²⁹² It is based on the concept of debt-for-equity, under which a company planning a capital investment in a particular country buys existing loans to that country from an international lender or bank, at a negotiated percentage of the face value of the loan. The company then exchanges this

²⁹¹Ibid.

²⁹²Garcia, "Trade."

debt with the debtor government for an amount of that nation's currency greater than the face value of the loan. The currency so obtained is used toward the project. In debt-for-nature swaps, an organization raises funds outside the debtor country to purchase some of the country's debt from a bank at a discount. The loans are then exchanged for bonds or local currency, which are then directed to fund the purchase of sensitive or endangered lands. In the case of the border region, a similar scheme would allow corporations operating *maquiladoras* to use the purchased debt to finance local community infrastructure projects.²⁹³

However, there are potential problems associated with debt-for-equity swaps. For one, their effectiveness may be compromised by limited demand. Although this particular difficulty might be solvable under the Plan by legally compelling corporations to seek and engage in such arrangements, some U.S. banks holding Mexican government debt have in the past shown a reluctance to participate.²⁹⁴ And it would be unreasonable--legally and morally--to require private banks to sell loans at a discount when their inclination is not to do so. Secondly, debt-for-equity swaps have been known to contribute to the debtor country's currency inflation rate in cases where the government has

²⁹³Kelly, 48.

²⁹⁴Garcia, "Trade."

simply printed additional currency to finance the buy-back of the loan.²⁹⁵ A third difficulty specific to debt-for-environmental-protection swaps lies in ensuring that the currency so obtained is actually used for the funding of the environmental protective efforts or beneficial projects for which the mechanism is intended.²⁹⁶

In spite of these difficulties, the debt-for-nature-swap principle shows a promise of contributing at least marginally to the development of beneficial infrastructure in the industrialized border region.

Corporate Philanthropy

Corporate philanthropy (a funding idea that even survived the editors of the San Diego Business Journal, no less) has enjoyed some limited discussion in terms of relieving desperate conditions in the region.²⁹⁷ But by definition, unilateral and benevolent activities provide at best only indirect benefit to the philanthropic corporation or industry. As such, profit-motivated organizations can realistically be expected to engage in only inexpensive, low-level efforts, such as providing uncontaminated water containers to local residents or supplies to neighborhood

²⁹⁵Kelly, 48.

²⁹⁶Ibid.

²⁹⁷Dower, "Mexico Pledge."

health clinics.

This is not to suggest that any and all such services are not needed. On the contrary, it is further testament to the state of desperation in the border region that even such simple efforts would be gratefully received. So corporate philanthropy may have some limited role to play in impacting environmental and human health problems in the border region. As such, philanthropic efforts on the part of corporations or industries should be officially encouraged, coordinated and assisted under the Plan.

Further Possibilities for Funding

Among the many other suggested sources of funding for positively impacting environment and health in the industrialized border region, several warrant discussion here. One is the recommendation by the EPA's Public Advisory Committee for the creation of "special fees based on commerce and trade"--essentially a transaction tax on corporate commercial activity--to act as a source of grants and low-interest loans to border cities for environmental management projects.²⁹⁸ Another idea would see the imposition of countervailing duties on products "to compensate for the lower production costs of companies that

²⁹⁸Environmental Committee, 7.

operate in an ecologically unsustainable manner."²⁹⁹ In addition to the funds generated, such a scheme--if effectively calibrated--would carry the added benefit of contributing to the elimination of the "pollution haven" attraction that currently prevails in the border region.

In addition to multinational corporate investment in the border region, other international funding sources should be sought, including foundations and international banks.³⁰⁰ Most beneficial in terms of coordination, according to the Wall Street Journal, might be the establishment of a development bank modeled after the Eastern European Bank of Reconstruction and Development.³⁰¹ But opponents to this plan point out that such a scheme is in effect a public subsidy of private pollution which, quite frankly, amounts to a stark reversal of the polluter-pay principle. Trust funds, utilizing private industry investment to address problems exacerbated by inadequate infrastructure, could provide a more workable mechanism for the generation and coordination of foreign-based funding.³⁰² The Plan might also place greater emphasis on the possibilities of seeking investment from venture

²⁹⁹Gregory, 2.

³⁰⁰Kamp, EPA-SEDUE Testimony, 5.

³⁰¹Solis, A13.

³⁰²Kelly, 48.

capitalists and private capital markets for development.³⁰³

In addition to the bonding scheme discussed earlier, cleanup of spills and like environmental problems could be expedited (or at least undertaken and accomplished) by the use of a contingency fund that could be set up under the Plan. U.S. Senator John McCain has suggested the establishment of such a fund in the amount of \$10 million, to be used to "remediate acute environmental problems generated in either country that affect either country."³⁰⁴ Given the extent of real and potential damage, such a sum is barely a token. But accompanying it could be a requirement that corporations whose installations can be shown to be at fault for health or environmental damage in the region be responsible for reimbursement to the fund.³⁰⁵

The Plan should include a means for developing mechanisms--non-profit trusts, for instance--to ensure that funding is applied locally.³⁰⁶ Such a scheme would boost accountability by increasing the transparency of the flow of funds, so money would be more likely to get where it is intended to go. It would also aid in the tracking of existing and developing environmental problems from

³⁰³Dower, "Mexico Pledge."

³⁰⁴Kelly, 49.

³⁰⁵Ibid.

³⁰⁶Kamp, EPA-SEDUE Testimony, addendum B, 5.

transnational operations to facilitate monitoring,
prevention, control and remediation.³⁰⁷

³⁰⁷Ibid.

CHAPTER V

CONCLUSION

The Plan and NAFTA

If the North American Free Trade Agreement is implemented, foreign industrial activities in Mexico will greatly increase, with *maquiladora*-type operations expanding into areas far beyond the border. It seems logical to expect, in spite of the presence of side agreements purportedly designed to allay such concerns, that this expansion will be mirrored by a similar spread in the deplorable health and environmental conditions with which these facilities are so closely associated.³⁰⁸ Given the inevitability of this conclusion--and the ammunition to critics that it provides--it is curious that the U.S. and Mexican administrations have opted to do so little to address these problems at the border. Cynics would expect cleanup of the border region, the area so representative of the type of arrangements to be expected under NAFTA, to be approached with official diligence--at least until the trade

³⁰⁸Herbert, 6.

agreement is safely signed and sealed. Instead, there has been decidedly little action to address border health and environmental problems associated with the *maquiladoras*.

Indeed, the decision on the part of the Salinas and Clinton administrations to eschew what seems a logical opportunity to dampen their opponents' thunder by taking steps to deal with the unpleasantries of the *maquiladora* program is ominous. If such an obvious and immediate benefit as the silencing of NAFTA critics is insufficient to compel effective action on border health and environmental issues, what hope is there for environmentally responsible expansion of foreign industrial activities once the trade agreement is ratified? It may be that the administrations' reluctance to initiate such alleviative steps stems from the fear that any such action--not only expensive, but more importantly, offensive to the sensibilities of *laissez-faire*--would constitute an intolerable precedent. After all, the sole reason for a firm moving their operations to Mexico is to lower production costs. Increasing one's expenses by paying decent wages or handling wastes responsibly works exactly counter to this singular end.

Such is the focus of health and environmental concern if NAFTA is ratified. Of course, whether or not the trade agreement passes Congressional muster and is implemented, the problems of the border region will persist--indeed

continue to worsen--until effective measures to alleviate them are sufficiently funded and undertaken. Whether or not NAFTA is successfully brought to reality by the Salinas and Clinton administrations, this is the basis of the urgency for an effective Plan.

Summary of Needed Changes

As argued above, the Plan in its current manifestation is woefully inadequate to its task. As the overwhelmingly critical tone of the majority of responses suggests, there are deep and fundamental changes that the Plan must undergo in order to become an effective instrument for improving environmental and health conditions in the devastated border region. The more serious structural problems include the short-term focus, the too-narrow scope, and the tendency to concentrate attention on populated areas to the exclusion of others. Further, the Plan ignores possible impacts of the impending trade agreement, places too great an emphasis on end-of-pipe solutions to pollution problems, and has a tendency to treat public and occupational health issues as external to its mandate.

To a large extent, many of these fundamental weaknesses inherent in the Plan are a function of yet another structural problem--the lack of timely and meaningful input from non-corporate stakeholders in its formation. The top-

down nature of the development of the Plan, with SEDUE/EPA's invitation for merely token, after-the-fact input from border residents, goes a long way in explaining the fundamental problems which characterize it.

And in light of the paltry levels of committed government funding, the criticism that the Plan is more a "wish list" than a plan can only be seen as valid.³⁰⁹ Alleviation of these very serious structural shortcomings would require no less than a wholesale re-writing of the Plan, based on real, meaningful, early input from residents of the border region.

There are also thematic difficulties, the correction of which would engender less than fundamental revision. On the subject of monitoring, the Plan needs to mandate programs that will lead to the generation of information pertinent to environment and health, and make it available to agencies and the public on a routine and timely basis. In conjunction, Right-to-Know initiatives, especially in Mexico, need to be legally mandated.

Fundamental legal reform is a necessary requisite of effective regulatory enforcement of border industrial activities. The imposition of "bad actor" provisions; more stringent, timely, and consistent sanctions against violators; action-forcing mechanisms; a highest-regulatory-

³⁰⁹Environmental Committee, 4.

standard principle; enhanced enforcement coordination; the extension of U.S. legal sanctions and regulatory restraints to include U.S. corporations operating in Mexico (a Foreign Environmental Practices Act); in conjunction with the pressure resulting from the presence of an informed public due to the implementation of Right to Know legislation, would have a significant impact on enforcement of vital protective legislation in the border region. All of these enforcement changes should be implemented under the Plan. It must also include provision for a coordinating Binational Enforcement Committee, both in order to optimize the cumulative effectiveness of the changes listed above, as well as to ensure adequate representation of all categories of stakeholders of effective regional enforcement. In addition, a Border Environmental Oversight Commission having oversight jurisdiction over all major projects and activities and the distribution of government funds would augment efforts for sustainable development. The effectiveness of such a commission would be enhanced by a medium-term development timeline--of, say, twenty-five years--to act as both a guide to planners and a yardstick against which to measure rates of progress.

At the heart of the health issue is the decades-long history of industrial activities and practices in the border region and the deeply degraded environmental conditions that they have spawned. Rather than avoid issues of health as

the Plan does now, there needs to be a much greater emphasis on environmental health problems. Requiring environmental impact assessments to include identification and assessment of public and occupational health conditions and strategies for addressing them would go a long way toward raising border health issues to an appropriate level of awareness. The establishment under the Plan of a centralized baseline health information network would serve to direct health funding efficiently, act as a yardstick against which future health changes could be compared, and shed light on synergistic effects of exposure to pollutants. These changes would also lead to more efficient resource allocation.

Of course, such planning and institutional measures in and of themselves will only marginally impact health conditions and the entrenched industrial mismanagement which is responsible. Truly effective reorganization can come about only through meaningful allocation of effort and resources to the structural problems that such newly-gathered information can help to define and clarify. In addition to the benefits for health, the kind of information that such measures provide would go a long way toward bringing attention and giving support to the urgent calls for much-needed change in the way that business is conducted in the Mexican-U.S. border region.

Whatever the virtues of the Plan, few if any are

achievable in the absence of the ability to pay. This makes the attainment of adequate funding fundamental. Yet regardless of which cost estimate for meeting the objectives of the Plan one chooses to embrace, there exists a vast difference between funds needed and funds secured. This means that the task of finding adequate monies, which will require a combination of many of the suggestions outlined above, has only just begun.

There will need to be an input of public monies-- federal, state and local, from both sides of the border-- significantly greater than have so far been committed. Governments need to come to grips with this reality and allocate funds accordingly. The establishment of a binational border bonding authority to coordinate the funding opportunities that the various bonding mechanisms provide should also be mandated under the Plan. And ominous threats of desertion notwithstanding, it is the industrial operators who, as the principal beneficiaries, the primary polluters, and the sector with the greatest ability to pay, will have to provide the bulk of the funding. Although numbers are difficult to ascertain at this time, amounts forthcoming must be sufficient to remedy injustices of the past, as well as provide the means for the legal, institutional and infrastructural groundwork to stem their ongoing occurrence.

As it now stands, the Integrated Environmental Plan for

the Mexican-U.S. Border Area is insufficient to fulfill its ambitious objectives of alleviating health and environmental problems of the Mexican-U.S. border region. If the structural and thematic changes outlined are incorporated in a new Plan that is both designed from the bottom up and bestowed with sufficient funding, it is conceivable that its goals of cleaning up the border region and setting it on a new, prosperous and sustainable course could be achieved. In light of the impending trade agreement and the significant increase of foreign industrial installations that its ratification--if achieved--will engender, it is vitally important that the changes discussed above be pursued with urgency.

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