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WHAT NOW FOR THE TEXAS COLONIAS?

JOANN MATTHIESEN*

I. INTRODUCTION

Poverty is a way of life for many of the residents of the Texas-Mexico border area. According to the 1990 Census, of the 1.7 million people living on the United States side of the nearly 1,000 mile long¹ Texas-Mexico border, 35.7% live below the poverty level.² Almost half of all Texas children living along the border live in poverty.³ The lower Rio Grande Valley of Texas "has the distinction of leading the nation in [both] poverty and unemployment."⁴ The Texas border counties of Cameron, Starr, and Hidalgo report unemployment rates as high as 36% in some months,⁵ compared to 6% to 7% in the rest of Texas and the nation.⁶

The Texas colonias are "rural slums"⁷ located along the Texas-Mexico border. They are characterized by substandard housing, inadequate plumbing, absence of sewage disposal facilities, and lack of a safe potable water supply.⁸ Residents of the Texas colonias are "the poorest of the poor,"⁹ and often live in makeshift, overcrowded shacks, abandoned cars, or dilapidated trailers, jammed three or four to a tract no larger than an average size urban lot.¹⁰ Police protection, garbage

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1. See David L. Hanna, *Third World Texas: NAFTA, State Law, and Environmental Problems Facing Texas Colonias*, 27 ST. MARY'S L.J. 871, 872 (1996).

2. See LYNDON B. JOHNSON SCH. OF PUB. AFFAIRS, UNIV. OF TEX. (AUSTIN), COLONIA HOUSING & INFRASTRUCTURE: CURRENT POPULATION AND HOUSING CHARACTERISTICS, FUTURE GROWTH, AND HOUSING, WATER AND WASTEWATER NEEDS 1 (Preliminary Report) (1996) [hereinafter COLONIA HOUSING]; see also James E. Garcia, *Invisible Homeless*, AUSTIN AMERICAN STATESMAN, Jan. 30, 1996, at A1, available in WESTLAW, Allnews database, 1996 WL 3416542, at *2-*4. "State housing officials report the percentage of poor . . . households in border counties is among the highest in the state. In some border counties, as many as 75 percent of the households are classified as poor or extremely poor . . ." Garcia, *supra*, at A1, 1996 WL 3416542, at *4.

3. See COLONIA HOUSING, *supra* note 2, at 7.

4. Ida Hilda Acuña Patrick, *Quality of Life Perceptions Among Residents of Rural Unincorporated Subdivisions in Hidalgo County, Texas*, at iii (May 1990) (unpublished Ph.D. dissertation, Texas A & M University) (on file with the University of Houston Library).

5. See Irasema Coronado, *Legal Solutions vs. Environmental Realities: The Case of the United States-Mexico Border Region*, 10 CONN. J. INT'L L. 281, 285 (1995).

6. See COLONIA HOUSING, *supra* note 2, at 7.

7. OFFICE OF STRATEGIC MANAGEMENT, RESEARCH, AND DEV., TEX. DEP'T OF HUMAN SERV., THE COLONIAS FACTBOOK: A SURVEY OF LIVING CONDITIONS IN RURAL AREAS OF SOUTH AND WEST TEXAS BORDER COUNTIES 1-3 (1988) [hereinafter COLONIAS FACTBOOK] (quoting Frank Gibney, Jr., *In Texas, A Grim New Appalachia*, NEWSWEEK, June 8, 1987, at 27).

8. See Patrick, *supra* note 4, at 39, 41.

9. LYNDON B. JOHNSON SCH. OF PUB. AFFAIRS, UNIV. OF TEX. (AUSTIN), POLICY RESEARCH PROJECT REPORT NO. 18, COLONIAS IN THE LOWER RIO GRANDE VALLEY OF SOUTH TEXAS: A SUMMARY REPORT 5 (1977) [hereinafter COLONIAS IN THE LOWER RIO GRANDE].

10. See Garcia, *supra* note 2, at A1, 1996 WL 3416542, at *6.

collection, and municipal services are usually nonexistent.¹¹ Streets are typically unpaved,¹² unlit,¹³ and, during rainy periods, often impassable even by school buses¹⁴ or emergency vehicles. Raw sewage runs in open ditches and yards.¹⁵ Disease is rampant.¹⁶

In the late 1980s, public debate surrounding the passage of the North American Free Trade Agreement¹⁷ (NAFTA) resulted in increased public awareness of the environmental and social issues affecting the Texas-Mexico border and the colonias.¹⁸ Within the United States, the colonias became a popular symbol used by environmentalists, politicians, and the media for the problems confronting the border region and the perceived dangers inherent in the passage of NAFTA.¹⁹

This Article examines whether the state and international programs which grew out of the NAFTA debates have resulted in improved environmental and living conditions in the Texas colonias through the provision of basic water and sewer infrastructure. Part II provides an overview of the Texas colonias and the environmental and health problems facing colonias residents due to lack of adequate water and sewer services. Part III discusses various programs at the state and international level aimed at solving the water and sewer needs of the Texas colonias. Part IV proposes some possible local and international mechanisms for financing water and sewer infrastructure projects in Texas colonias. Part V provides a summary of the Article's conclusion regarding future steps which can be taken to help provide basic water and sewer services to the colonias and alleviate the environmental and health problems of the Texas colonias residents.

II. TEXAS COLONIAS OVERVIEW

In 1992 the Texas Water Development Board conducted a study (*1992 Study*) to determine the water and wastewater needs of the Texas colonias.²⁰ The *1992*

11. See Patrick, *supra* note 4, at 39, 41. See generally Karen Brando, *In New El Paso, Ugly Side of Old West Lives*, CHI. TRIB., Feb. 12, 1996, available in WESTLAW, Allnews database, 1996 WL 2642804, at *2, *3, *5.

12. See Garcia, *supra* note 2, at A1, 1996 WL 3416542, at *5.

13. See Brando, *supra* note 11, 1996 WL 2642804, at *5.

14. See Jo Ann Zuniga, *A Nun's Plea: Don't Drink the Water*, in LA FRONTERA-THE BORDER: AN ENIGMA FOR TWO NATIONS 22 (Univ. S. Cal., Ctr. for Int'l Studies eds., 1993).

15. See *id.*; HIDALGO COUNTY HEALTH DEP'T & UNIV. OF TEX. (HOUSTON) HEALTH SCIENCE CTR., HEALTH ASSESSMENT OF COLONIAS IN HIDALGO COUNTY, TEXAS 2 (Apr. 1996) [hereinafter HEALTH ASSESSMENT].

16. See COLONIAS FACTBOOK, *supra* note 7, at 1-3.

17. North American Free Trade Agreement (NAFTA), Dec. 17, 1992, U.S.-Can.-Mex., 107 Stat. 2057 (effective Jan. 1, 1994).

18. See Paulette L. Stenzel, *Can NAFTA's Environmental Provisions Promote Sustainable Development?*, 59 ALB. L. REV. 423, 427-28 (1995); John J. Audley & Eric M. Uslaner, *NAFTA, the Environment, and American Domestic Politics*, 4 N. AM. OUTLOOK 23, 29-32 (Mar. 1994). See generally Coronado, *supra* note 5.

19. See Stenzel, *supra* note 18, at 427-28; Audley & Uslaner, *supra* note 18, at 29-32. See generally Coronado, *supra* note 5.

20. See FACILITY NEEDS SECTION, TEX. WATER DEV. BD., WATER AND WASTEWATER NEEDS OF COLONIAS IN TEXAS Executive-Summary 1 (1992) [hereinafter *1992 Study*].

Study defined "colonias" as "substandard residential subdivision[s] lacking basic infrastructure such as water and wastewater services, and paved roads."²¹ The 1992 *Study* identified 1,193 colonias located along the Texas-Mexico border, within which 279,863 people resided.²² A 1995 update to the study²³ (1995 *Update*) identified 1,436 colonias, within which 339,000 people resided.²⁴ Many believe these numbers are conservative. In a 1995 *60 Minutes* segment, during which commentator Ed Bradley interviewed Texas Attorney General Dan Morales regarding the colonias problem, Morales estimated that half a million people live in the Texas colonias—a number roughly equivalent to the population of New Orleans.²⁵

However, because of the relative isolation of the Texas colonias and their scattered locations outside any incorporated area, it is difficult to obtain exact data regarding the number of colonias and colonias residents in Texas, or to narrowly define the characteristics of a colonia. Many commentators use a more expansive definition of colonias than that used by the Texas Water Development Board. A working definition of a "colonia" is a low-income residential subdivision, characterized by substandard housing, a lack of potable water, inadequate sewage and solid waste-disposal systems, inferior roads and drainage, extreme poverty, and Third World diseases.²⁶

Colonias are typically created by developers who obtain tracts of land at a low cost because the tracts have no water, sewer, or drainage facilities.²⁷ Developers subdivide the tracts into lots, and sell the lots to low-income, migrant farm workers.²⁸ The typical cost of a colonia lot is between \$3,000 and \$12,000.²⁹ Many colonia homes are constructed wall by wall on a cash basis,³⁰ with no mortgages or significant construction loans and little or no long-term debt.³¹ It is not unusual for families in a colonia to take up to ten years to build their homes.³² A typical colonia family of five might have a family income of only

21. *Id.*

22. *See id.*

23. TEX. WATER DEV. BD., WATER AND WASTEWATER NEEDS OF TEXAS COLONIAS: 1995 UPDATE 1 (1995) [hereinafter 1995 UPDATE].

24. *See id.* at 8.

25. *See 60 Minutes: The Other America* (CBS television broadcast, Oct. 8, 1995), available in WESTLAW, Allnews database, 1995 WL 2729807, at *3 [hereinafter *60 Minutes*].

26. *See* Hanna, *supra* note 1, at 879.

27. *See id.* at 882.

28. *See id.* at 883.

29. *See* COLONIA HOUSING, *supra* note 2, at 2.

30. *See* Susan Warren, *For Valley Poor, Credit Unions Open Doors to Home Ownership*, WALL ST. J., Nov. 22, 1995, at T1, available in WESTLAW, Allnews database, 1995 WL-WSJ 9909085, at *2.

31. As one commentator explains:

The majority of the respondents purchased a lot and built a one-room home to live in. As money becomes available, they lay a concrete slab somewhere on the lot to which they will add walls, little-by-little, and then a ceiling. Some of the homes take years to build, but they are completely paid for at termination. Some of the homes are left unfinished inside until money is available.

Patrick, *supra* note 4, at 39. (However, colonia residents may still owe long-term debt for the land on which their houses sit. *See infra* notes 72-75, 136 and accompanying text.)

32. *See* Garcia, *supra* note 2, at A1, 1996 WL 3416542, at *5.

\$10,000 per year, yet spend as much as \$2,000 per year on materials, while doing most of the labor themselves.³³ Because of this "patchwork," low-cost construction, many of the homes in the colonias do not meet minimum standards for safety or have facilities necessary for sanitation.³⁴

Life in the Texas colonias includes a daily "painstaking search for water and the constant threat of infectious disease caused by the lack of safe drinking water and proper sanitation facilities."³⁵ In some areas, residents have been known to travel thirty miles a day to obtain potable water from a community water supply for drinking and cooking.³⁶ Water is often stored in unlined, recycled oil barrels and other industrial containers, purchased from maquiladoras³⁷ or salvaged from garbage dumps.³⁸ During times of flooding, raw sewage runs into streets, open ditches, floodways, and eventually into the main drinking water sources.³⁹

According to the 1990 Census, an estimated 23% of Texas colonias households did not receive treated water.⁴⁰ In 1990, about half of the rural colonias dwellings and 20% of urban colonias dwellings had incomplete plumbing facilities.⁴¹ Even if a colonia household had access to treated water, 50% of all Texas colonias homes disposed of sewage by septic tanks, and 36% used cesspools.⁴² In some areas, colonia developers attempted to provide a community water supply by drilling private water wells for use by area residents.⁴³ However, as occurred in the Sparks colonia near El Paso, these wells often are unsafe due to fecal contamination from untreated sewage.⁴⁴

In addition to problems resulting from human waste, colonias residents also must deal with industrial and hazardous waste contamination from nearby maquiladoras.⁴⁵ Under NAFTA, new industries were expected to be located in the interior of Mexico, drawing workers away from the border area colonias.⁴⁶ However, a joint study prepared by the United States environmental watchdog

33. See *id.* at A1, 1996 WL 3416542, at *4-*6.

34. See *id.* at A1, 1996 WL 3416542, at *5.

35. Dan Morales, *Molly Ivins Can Say That, But Is It Correct?*, FORT WORTH STAR-TELEGRAM, Oct. 16, 1995, available in WESTLAW, Allnews database, 1995 WL 9298473, at *2.

36. See Garcia, *supra* note 2, at A1, 1996 WL 3416542, at *5.

37. See Xardiel Padilla, *A Mexican Activist: Defending the Voiceless*, in LA FRONTERA-THE BORDER: AN ENIGMA FOR TWO NATIONS 14 (Univ. S. Cal., Ctr. for Int'l Studies eds., 1993). "Maquiladora" refers to the procedure by which parts of products are produced in the United States or some other foreign county, then shipped to Mexico factories for further elaboration. The resulting product is usually shipped back to the United States. See SIDNEY WENSTRAUB, NAFTA: WHAT COMES NEXT? 42 (1994).

38. See Padilla, *supra* note 37, at 14.

39. See COLONIAS IN THE LOWER RIO GRANDE, *supra* note 9, at 10; TEX. DEP'T OF AGRIC., CHALLENGE OF THE COLONIAS: SMALL COMMUNITY WASTEWATER MANAGEMENT IN THE LOWER RIO GRANDE VALLEY 2 (1986) [hereinafter CHALLENGE OF THE COLONIAS].

40. See COLONIA HOUSING, *supra* note 2, at 4.

41. See *id.* According to the 1990 Census, 40% of rural Texas colonias homes and 15% of urban Texas colonias homes lacked complete kitchen facilities. See *id.*

42. See *id.* at 4.

43. See CHALLENGE OF THE COLONIAS, *supra* note 39, at 3.

44. See *id.*

45. See *id.* at 14.

46. See Karen Lowe, *Squatters Flock to U.S.-Mexican Border as NAFTA Fails to Deliver*, AGENCE FRANCE-PRESSE, Jan. 20, 1996, available in WESTLAW, Allnews database, 1996 WL 3791260, at *1.

group, Public Citizen, and its Mexican counterpart, *Red Mexicana de Acción frente al Libre Comercio*, reported that “[t]he economic boom created by NAFTA has caused a 20% increase in the number of workers in maquiladora factories along the border”⁴⁷ The increase in maquiladora operations along the border has caused a corresponding increase in border hazardous waste production. Meanwhile, the peso’s decline has increased disposal costs, creating an economic incentive for border dumping.⁴⁸ “Currently, 25% of industrial wastes from the border region—or 44 tons a day—is washed untreated into border area rivers and streams.”⁴⁹ In Ciudad Juarez, the largest Mexican city along the border, only 70 of 352 factories generating hazardous wastes reported proper disposal, according to the Mexican newspaper *Diario de Juarez*.⁵⁰ This hazardous waste contaminates aquifers, rivers, streams, and, ultimately, border drinking water.⁵¹ The Texas colonias and border area have a high incidence of anencephalic babies and babies with other neural tube birth defects.⁵² Studies indicate a possible link between the occurrence of anencephaly and toxic waste from neighboring maquiladoras.⁵³

Illegal dumping of hazardous waste impacts not just the border area drinking water supply, but also the effectiveness of existing and proposed border area sanitary sewer facilities. In order to effectively process residential wastewater, a delicate balance of bacteria is required to create an activated sludge process that “cleans” the wastewater.⁵⁴ Heavy metals and toxins which are dumped illegally into storm water and sanitary sewer drains⁵⁵ destroy bacteria required in the wastewater treatment process and prevent the wastewater treatment facility from adequately treating the sludge.⁵⁶ In addition, toxic waste may eventually destroy border area sewer and drainage lines.⁵⁷ According to Richard Boren, the El Paso coordinator for the International Environmental Alliance of the Bravo, “[w]aste drainage facilities [in the El Paso-Juarez area] are collapsing, . . . [some commentators] believe toxic waste is being dumped, and it is eroding the pipes.”⁵⁸

47. PUBLIC CITIZEN, NAFTA’S BROKEN PROMISES: THE BORDER BETRAYED 3 (Jan. 1996) [hereinafter PUBLIC CITIZEN]; see *Spotlight Story NAFTA: Public Citizen Says Border Pollution Has Worsened*, GREENWIRE, Jan. 3, 1996, available in WESTLAW, APN-GR database, at *4 [hereinafter *Spotlight Story*].

48. See PUBLIC CITIZEN, *supra* note 47, at 13; see also *Spotlight Story*, *supra* note 47, at *2.

49. *Id.*

50. See *Spotlight Story*, *supra* note 47, at *2.

51. See PUBLIC CITIZEN, *supra* note 47, at 13. “Moreover, the same water is used to irrigate crops” *Id.*

52. See *id.* at 22.

53. See *id.* at 23-25.

54. See *id.* at 13.

55. See *id.* “In an August 1995 *Excelsior* interview, Mexican Ecology Commission President Oscar Canton Zetina reported [that] ‘each year seven million tons of toxic wastes are, without control, illegally dumped in drains and marine waters.’” *Id.* (citation omitted).

56. See *id.*

57. See *id.* at 13-14.

58. *Id.* at 14 (omission in original).

Due to contaminated water and lack of sanitary sewer conditions, disease is rampant in the Texas colonias.⁵⁹ Hepatitis, salmonella, shigella, cholera, typhoid, and tuberculosis are common.⁶⁰ According to one estimate, 35% of all children raised in Texas colonias contract hepatitis by the age of eight years; 90% of all residents contract the disease by the age of thirty-five years.⁶¹ In 1989, the rate of tuberculosis in the colonias was two times that of the rest of the state, and appeared to be growing.⁶² The rate of hepatitis-A tripled between 1984 and 1991 and was two and one-half times higher in the Texas colonias and border areas than in the rest of the state in 1991.⁶³ Of great concern is the growth of drug-resistant strains of diseases, such as tuberculosis, occurring when colonia and other border residents fail to complete antibiotic treatments for disease,⁶⁴ and then migrate to other areas in both Mexico and the United States.⁶⁵ Texas Attorney General Dan Morales described the problems of disease in the colonias as "not a Texas problem . . . [but] a crisis of . . . potentially international scope."⁶⁶

In part due to social and cultural differences,⁶⁷ and in part because of extreme poverty,⁶⁸ most residents of Texas colonias live outside the traditional United States financial system.⁶⁹ They operate on a cash basis with no checking account, credit cards, or credit history.⁷⁰ Although a 1988 study estimated that approximately 85% of Texas colonia residents own their own homes,⁷¹ many do so under contracts for deed from a subdivision developer, where little or no down payment is required, no mortgage loan is necessary, but equity is delayed until full payment is made.⁷² In addition, if a colonia borrower misses a contract for deed payment, he or she can lose the property.⁷³ Unlike traditional mortgage loans, interest accrues on a contract for deed at a rate often double the traditional

59. A reason for the high disease rate has been explained as follows:

Soils here are generally clays with low permeability. Shallow water tables help carry pathogens to low areas where ponding occurs and children play. Flooding then brings the fecal wastes out of the privies and into the streets. As a result, many of these areas suffer disease problems that more closely resemble Third World conditions than those of the rest of contemporary rural Texas.

CHALLENGE OF THE COLONIAS, *supra* note 39, at 2.

60. *See, e.g.*, HEALTH ASSESSMENT, *supra* note 15, at 2; Zuniga, *supra* note 14, at 22.

61. *See 60 Minutes*, *supra* note 25, 1995 WL 2729807, at *2.

62. *See* HEALTH ASSESSMENT, *supra* note 15, at 16.

63. *See id.*

64. *See id.*; *see also 60 Minutes*, *supra* note 25, 1995 WL 2729807, at *5.

65. The Hidalgo County Health Department and the University of Texas Houston Health Science Center operate a mobile public health/primary health care van in Hidalgo County. *See* HEALTH ASSESSMENT, *supra* note 15, at 2. Curiously, despite high levels of disease identified in the area, including recent resurgence of diseases such as tuberculosis, in recent years the number of visits to the mobile health care van has been on the decline. *See id.*

66. *60 Minutes*, *supra* note 25, 1995 WL 2729807, at *4.

67. *See generally*, Patrick, *supra* note 4.

68. *See supra* note 2 and accompanying text.

69. *See Garcia*, *supra* note 2, at A1, 1996 WL 3416542, at *9.

70. *See id.*

71. *See COLONIAS FACTBOOK*, *supra* note 7, at 6-3.

72. *See Brando*, *supra* note 11, at *5.

73. *See id.* (property allowed to be "seized if a single payment is late").

mortgage loan rate, and precludes many residents from ever paying off their debt.⁷⁴ Furthermore, federal tax benefits available to homeowners with traditional mortgages, such as the deduction of mortgage interest, do not apply to interest paid on contracts for deed.⁷⁵

Due to the high cost of housing in many incorporated areas along the border, and the lack of traditional sources of financing, substandard colonias housing is the only viable housing option for many border residents.⁷⁶ In addition, despite the lack of adequate public services and the deplorable living conditions in the Texas-Mexico colonias, thousands of people, primarily United States citizens of Hispanic descent, see the Texas colonias as the first step toward the American dream of home ownership.⁷⁷

Although the environmental and social problems within the Texas colonias are not new, these problems did not receive widespread attention until discussion and debate regarding NAFTA began in the late 1980s and early 1990s.⁷⁸ Debate surrounding NAFTA "piqued and heightened" the interest of both state and federal politicians, as well as the general public, in the border area and the colonias.⁷⁹ As NAFTA discussions focused public attention on the colonias, significant state programs were implemented to improve the deplorable living conditions in the Texas colonias by providing basic water and sewer services.⁸⁰

III. PROGRAMS IMPLEMENTED TO ADDRESS THE COLONIAS PROBLEMS

A. State Programs

1. The Texas Economically Distressed Areas Program and The Colonia Plumbing Loan Program

Prior to the 1989 passage of Senate Bill 2⁸¹ by the Texas Legislature, the Texas Department of Housing and Community Affairs was the primary state

74. See Carlos Guerra, *Cut Developers Out of Pricy Colonia Loans*, SAN ANTONIO EXPRESS-NEWS, Oct. 25, 1995, available in WESTLAW, Allnews database, 1995 WL 9507240, at *2.

75. See *id.*

76. See generally *id.*; Garcia, *supra* note 2, at A1, 1996 WL 3416542.

77. Here in Texas, poor, hard-working immigrants scrape together enough money for a down payment on a piece of land. They want to own their own homes. It sounds like a good start to life in America, the way immigration is supposed to work. But the reality is this: Las Colonias present a frightening health crisis and a financial time bomb that are bringing the Third World well within the borders of the United States.

60 Minutes, *supra* note 25, 1995 WL 2729807, at *3; see Patrick, *supra* note 4, at 39.

78. See Coronado, *supra* note 5, at 281.

79. See *id.*

80. See discussion *infra* Part III.A.

81. Water Supply and Sewer Services—Assistance for Economically Distressed Areas and Local Regulation Act, 1989 Tex. Sess. Law Serv. ch. 624 (West) [hereinafter Water Supply and Sewer Services].

agency involved in improving living conditions for the Texas colonias.⁸² However, the agency's focus to provide affordable housing to new residents of existing colonias did little to address the need for water and sewer services.⁸³ In 1989, with NAFTA discussions underway and increased attention being focused on the Texas border area, the 71st Texas Legislature enacted Senate Bill 2, creating the Texas Economically Distressed Areas Program (EDAP).⁸⁴

EDAP, administered by the Texas Water Development Board (TWDB), provides the main source of funding to bring water and sewer facilities to economically distressed areas⁸⁵ where present facilities are inadequate to meet the minimal needs of the residents.⁸⁶ To meet the eligibility requirements for financial assistance, an economically distressed area must be within an affected county.⁸⁷ Affected counties are counties that have a per capita income that is 25% below the state average and an unemployment rate 25% above the state average for the last three years or that are located adjacent to the Mexico-United States border.⁸⁸ Most of the Texas colonias meet the requirements to receive financial assistance under EDAP.⁸⁹

EDAP funds construction, acquisition, or improvements to water supply and wastewater facilities.⁹⁰ The program does not fund ongoing operation and maintenance of the facilities.⁹¹ Only political subdivisions, including counties, cities, non-profit water supply corporations, and water districts are eligible borrowers under EDAP.⁹² In order to qualify for EDAP funding, the county where the project is located must adopt model rules for the regulation of

82. See Telephone Interview with Vic Hines, Legislative Aid to Texas Senator Truan, Chairman of Texas Senate Subcommittee on Water and Chairman of Texas Senate Water Subcommittee on International Relations, Trade and Technology (May 31, 1996).

83. See *id.*

84. See Water Supply and Sewer Services, 1989 Tex. Sess. Law Serv. ch. 624, § 15.001 (West).

85. "Economically Distressed" areas are defined by statute to be areas where:

(A) water supply or sewer services are inadequate to meet minimal needs of residential users as defined by board rules;

(B) financial resources are inadequate to provide water supply or sewer services that will satisfy those needs; and

(C) the percentage of the dwellings occupied on June 1, 1989, to be served by financial assistance under this subchapter was at least:

(i) 80 percent; or

(ii) 50 percent, if the services provided by financial assistance under this subchapter can be provided by common or regional facilities in a cost-effective manner in conjunction with service provided to an economically distressed area as determined under the other provisions of this subdivision.

TEX. WATER CODE ANN. § 17.921 (West Cum. Supp. 1997).

86. See *id.* § 17.921(A).

87. See *id.* § 17.923.

88. See *id.*

89. See 1995 UPDATE, *supra* note 23, at 4.

90. See TEX. WATER DEV. BD., ECONOMICALLY DISTRESSED AREAS PROGRAM (summary pamphlet) (Mar. 23, 1992).

91. See *id.*

92. See TEX. WATER CODE ANN. §§ 17.921-17.925 (West Cum. Supp. 1997).

subdivisions,⁹³ aimed at preventing the expansion and creation of new colonias within the county.⁹⁴

In 1989, Texas voters approved \$100 million in bonds to partially fund EDAP.⁹⁵ An additional \$150 million in bonds was approved by Texas voters in November of 1991.⁹⁶ As of February of 1995, the TWDB had committed approximately \$205 million of the bond money for colonia-related water and wastewater improvements, representing 88 active projects, and serving 284 colonias with an estimated population of 120,000.⁹⁷ The TWDB reported that an additional 647 colonias, with an estimated total population of 135,000, were included in "facility planning studies" required for EDAP funding approval.⁹⁸

During the early months of EDAP, program administrators realized that bringing public water and sewer facilities to colonia areas was not, in itself, sufficient. Residents also needed additional financial assistance to install the necessary internal bathroom and plumbing facilities to connect to the public system.⁹⁹ In October of 1991, the TWDB enacted the Colonia Plumbing Loan Program.¹⁰⁰ Using a \$15 million grant from the Environmental Protection Agency, the TWDB, through the Colonia Plumbing Loan Program, provides low-interest loans, up to \$4,000, to Texas colonia residents.¹⁰¹ To be eligible for the Colonia Plumbing Loan Program loans, the colonia residents must reside within Texas counties that participate in EDAP.¹⁰² The Colonia Plumbing Loan Program finances: (a) plumbing connections to water and wastewater systems; and (b) installation of necessary plumbing improvements within the homes.¹⁰³ The TWDB grants loans from the Colonia Plumbing Loan Program to a requesting political subdivision, which then re-loans the funds directly to individual homeowners.¹⁰⁴ Through this program, low-income colonias residents within participating EDAP areas are provided the financial means to install the internal plumbing improvements necessary to receive service from the new public water and sewer infrastructure. The program, however, provides no funds to individual needy homeowners in counties not participating in EDAP.¹⁰⁵

93. See *id.* § 17.927(b)(6).

94. Discussed *infra* at Part III.A.2.

95. See 1992 *Study*, *supra* note 20, at Colonias Survey Description 1.

96. See *id.*

97. See 1995 *UPDATE*, *supra* note 23, at 1.

98. See *id.* at 1-2.

99. See 31 *TEX. ADMIN. CODE* § 370.24 (West 1996).

100. See 31 *TEX. ADMIN. CODE* §§ 370.0-370.61 (West 1996).

101. See *TEX. WATER DEV. BD., COLONIA PLUMBING LOAN PROGRAM* (summary pamphlet) (undated) [hereinafter *COLONIA PLUMBING LOAN PROGRAM*].

102. See *id.* To participate in EDAP, a county must adopt the Model Subdivision Rules. See *TEX. WATER CODE ANN.* § 17.927(b)(6) (West Cum. Supp. 1997). The Model Subdivision Rules are described *infra* Part III.A.2. As of 1995, fifteen counties have adopted the Model Subdivision Rules and otherwise are EDAP-eligible. See 1995 *UPDATE*, *supra* note 23, at 16.

103. See generally *COLONIA PLUMBING LOAN PROGRAM*, *supra* note 101; see also *TEX. WATER CODE ANN.* §§ 15.731-15.737 (West Cum. Supp. 1997).

104. See *TEX. WATER CODE ANN.* § 15.736 (West Cum. Supp. 1997).

105. See *Hanna*, *supra* note 1, at 908.

EDAP and the related Colonia Plumbing Loan Program have been successful in bringing water and sewer services to many of the Texas colonias and colonia homes.¹⁰⁶ In February of 1995, the TWDB released an updated study,¹⁰⁷ the *1995 Update*, on the water and wastewater needs of the Texas colonias. The *1995 Update* stated that “[a] substantial amount of progress has been made toward addressing the water and wastewater needs of colonias in Texas.”¹⁰⁸ Texas colonias with EDAP projects underway, together with colonias in the facility planning stage, represent nearly 65% of the Texas colonias and 75% of the Texas colonia population identified in the *1995 Update*.¹⁰⁹

However, EDAP has been criticized for not moving quickly enough through the approval and funding process.¹¹⁰ A 1993 study by the Office of the State Auditor reported that of the \$400 million appropriated for the TWDB’s EDAP program, less than 50% had been spent or allocated to projects.¹¹¹

To further complicate matters, in January of 1996, Craig Pederson, Executive Director of the TWDB, informed a group of state legislators that EDAP was “out of money.”¹¹² According to Pederson, in the past five years, the TWDB has spent or “earmarked” all of its available EDAP funds to provide water and sewer service to various Texas colonias¹¹³ through grants or loans. On April 15, 1996, the TWDB stopped accepting new EDAP funding applications,¹¹⁴ and although the Colonia Plumbing Loan Program is still accepting applications, its funds are only available to homeowners within participating EDAP counties.¹¹⁵

Although EDAP had provided water and sewer service to many of the Texas colonias, the problem is far from solved. According to the *1995 Update*, the cost to bring water and wastewater services to the remaining 25% of the Texas colonias population is an estimated \$425 million,¹¹⁶ approximately equal to the amount of EDAP funds already spent or allocated.¹¹⁷ The *1995 Update* identifies 305 additional colonia areas, with an additional 66,716 residents, which were not previously identified in the *1992 Study*.¹¹⁸ The average size of these newly identified colonias is approximately 35 dwellings with 150 residents.¹¹⁹ Because of the small, isolated nature of these additional colonias, the cost of providing them with water and wastewater services is extremely high. The TWDB is currently seeking an additional \$50 million in funding from the EPA

106. See 1995 UPDATE, *supra* note 23, at 10.

107. See *id.* at 5.

108. *Id.* at 1.

109. See *id.* at 2.

110. See Hanna, *supra* note 1, at 908.

111. See *id.*

112. See James E. Garcia, *State Money for Colonias Running Low*, AUSTIN AMERICAN-STATESMAN, Jan. 31, 1996, at B1, available in WESTLAW, Allnews database, 1996 WL 3416637, at *2.

113. See *id.* at B1, 1996 WL 3416637, at *1.

114. See *id.* at B1, 1996 WL 3416637, at *2.

115. See COLONIA PLUMBING LOAN PROGRAM, *supra* note 101.

116. See 1995 UPDATE, *supra* note 23, at 12.

117. See *id.* at 10.

118. See *id.* at 1.

119. See *id.* at 8.

for colonias projects.¹²⁰ However, according to the TWDB estimates, approximately \$350 million in Texas colonias funding must still be obtained.¹²¹

In the 1997 legislative session it is likely the Texas Legislature will consider enacting additional legislation to address colonias funding needs.¹²² Although Texas voters have previously approved two bond elections totalling \$250 million to fund EDAP, it is not clear how Texas voters will respond if the Texas Legislature calls an election to request voter approval for additional EDAP funding.¹²³ As media coverage of many of the Texas-Mexico border environmental problems has diminished with the passage of NAFTA, much of the public's interest in and awareness of colonias problems also appears to have diminished. Public and media attention must again be shifted to the problems of the colonias in order to generate sufficient voter support for additional authorization of EDAP funds.

2. Model Subdivision Rules

In implementing EDAP, the Texas Legislature recognized that along with bringing water and sewer service to existing colonias, the creation and spread of new colonias must be stopped.¹²⁴ To prevent creation of new colonia subdivisions and to insure "that minimum standards for safe and sanitary water supply and sewer services" are met, the Texas Legislature directed the Texas Natural Resource Conservation Commission and the TWDB to prepare zoning regulations (the Model Subdivision Rules) for adoption by affected counties seeking EDAP funds.¹²⁵ The Model Subdivision Rules "prohibit the establishment of residential developments with lots of five acres or less in the political subdivision without adequate water supply and sewer services"¹²⁶ and "prohibit more than one single-family, detached dwelling to be located on each lot."¹²⁷ Before filing an application for financial assistance through EDAP, the political subdivision in which the area lies must adopt the Model Subdivision Rules.¹²⁸ The Texas Attorney General's Office and the TWDB actively monitor compliance.¹²⁹ According to the *1995 Update*, fifteen of the twenty-eight Texas border counties eligible for EDAP funding have adopted the Model Subdivision Rules.¹³⁰

120. See Telephone Interview with Fernando Escarcega, Texas Water Development Board, Economically Distressed Areas Program Coordinator (May 31, 1996).

121. See 1995 UPDATE, *supra* note 23, at 12.

122. See Garcia, *supra* note 112, at B1, 1996 WL 3416637, at *2.

123. See John Williams, *Poll Finds Support Lacking for HISD Bond Election*, HOUSTON CHRONICLE, Mar. 31, 1996, available in WESTLAW, Allnews database, 1996 WL 5590026, at *4 (discussing public opposition to tax increases and public skepticism regarding efficient government spending).

124. See Telephone Interview with Vic Hines, *supra* note 82.

125. See TEX. WATER CODE ANN. § 16.343(a) (West Cum. Supp. 1997).

126. *Id.* § 16.343(d).

127. *Id.*

128. See *id.* § 16.343(g).

129. See *id.* § 16.354.

130. See 1995 UPDATE, *supra* note 23, at 16. Only residents within these fifteen counties are therefore eligible for the Colonia Plumbing Loan Program, discussed *supra* notes 100-106 and accompanying text.

In 1993, the Texas Legislature authorized the Texas Attorney General and county district attorneys to prosecute both developers who violate the Model Subdivision Rules and border counties that fail to enforce them.¹³¹ To date, the Texas Attorney General's Office "Colonias Strike Force" has initiated eighty-eight colonias-related lawsuits and obtained millions of dollars in judgments.¹³² Enforcement of the Model Subdivision Rules has proven difficult. In numerous cases, developers have filed bankruptcy or have hidden assets to avoid paying judgments and providing services required under the Model Subdivision Rules.¹³³ Nevertheless, in a 1993 lawsuit, *In re D & A Realty, Inc.*,¹³⁴ the Texas Attorney General's Office used the power of the federal bankruptcy court to force an unscrupulous developer to provide services to two colonia subdivisions in Rio Bravo and El Cenizo, Texas.¹³⁵

All of the residents in the Rio Bravo and El Cenizo subdivisions had acquired their property through contracts for deed, which conveyed title to the property only after all payments had been made.¹³⁶ The Texas Attorney General's Office proposed a unique bankruptcy reorganization plan in which a state-run, non-profit housing corporation¹³⁷ would purchase all of the contracts for deed and other executory contracts of the developer, using money loaned by the Texas Department of Housing and Community Affairs.¹³⁸ Each colonias resident was given the opportunity to convert their contract for deed into a deed of trust, and some of the developer's other assets were conveyed to the state-run, non-profit corporation.¹³⁹ The non-profit corporation then financed the cost of constructing a new wastewater treatment plant, to be operated by Webb County, to stop the flow of raw sewage into the Rio Grande.¹⁴⁰

131. See Hanna, *supra* note 1, at 911.

132. See *id.*

133. See Phillip True, *Trouble with Colonias Rules Cited-Border Officials Vow to Get Laws Changed to Grant Variances*, SAN ANTONIO EXPRESS-NEWS, Oct. 23, 1994, at A22, available in WESTLAW, Allnews database, 1994 WL 3540152, at *4; see also Robert Elder, Jr., *AG Uses Bankruptcy to Help Residents*, TEX. LAW., Jan. 30, 1995, at 28.

134. 179 B.R. 831 (Bankr. S.D. Tex. 1994). The developer also had been sued by: the Texas Water Commission for Water Code violations; the United Independent School District for deceptive trade practices involving a defective sewer system; Webb County for an illegal landfill; the Rio Bravo subdivision for cesspools resulting from a collapsed wastewater treatment plant; and the family of a deceased El Cenizo city worker for wrongful death due to fumes in a manhole near the collapsed wastewater treatment facility. See *Court Confirms First Plan Ever Proposed by a State Entity*, 27 Bankr. Ct. Dec. (LRP) No. 16, at 1 (Sept. 5, 1995) [hereinafter *Court Confirms*]. See also Elder, *supra* note 133, at 28.

135. See *In re D&A Realty, Inc.*, 179 B.R. at 836-37. See generally Elder, *supra* note 133 (discussing D & A Realty, its bankruptcy, and Texas Attorney General Morales' "Colonias Strike Force").

136. See *Court Confirms*, *supra* note 134, at 2. Hal F. Morris, bankruptcy attorney for the Texas Attorney General's Office, calculated that "if a resident put \$100 down and made monthly payments of \$100 on a loan with 12 percent interest, there was no way he or she could ever pay off the principal balance." *Id.*

137. See Elder, *supra* note 133, at 1, 29.

138. See *Court Confirms*, *supra* note 134, at 3.

139. See *id.*; see also Elder, *supra* note 133, at 28, 29.

140. See *Court Confirms*, *supra* note 134, at 3-4.

Unfortunately, in a similar case, the Texas Attorney General's Office was not as successful. In *State v. Blas Chapa*,¹⁴¹ an action filed against a developer in El Paso County for construction of illegal colonias subdivisions, a last minute settlement was reached wherein the developer agreed to pay \$21.6 million to a state-created, non-profit organization similar to that involved in the *In re D & A Realty, Inc.* bankruptcy case.¹⁴² The money was to be used to construct water and sewer infrastructure to serve the colonias subdivision.¹⁴³ However, despite the settlement agreement, the developer failed to pay the \$21.6 million to the state's non-profit organization, and the Attorney General's Office has been unable to locate assets to seize in payment of the settlement amount.¹⁴⁴

Despite the difficulties of enforcement and collection, the Model Subdivision Rules have been successful in stopping the creation of new colonias subdivisions in counties which have adopted the Rules and are enforcing them.¹⁴⁵ Although the 1995 Update identified over 400 more Texas colonias than were listed in the 1992 Study, most of these areas apparently are not new colonia developments, but were overlooked at the time of the 1992 Study.¹⁴⁶ The TWDB reported in its 1995 Update that as the result of adoption of the Model Subdivision Rules, proliferation of new colonias in adopting counties had virtually ceased and the "establishment of new colonias is not a significant or widespread problem."¹⁴⁷

Nevertheless, growth within existing colonias appears to be increasing.¹⁴⁸ One reason is that a variety of loopholes are inherent in the Model Subdivision Rules. These loopholes have allowed developers to continue developing colonia subdivisions under a grandfather clause, or by obtaining waivers and extensions of compliance.¹⁴⁹ According to the 1995 Update, continued growth of existing grandfathered colonias subdivisions "poses the greatest single potential for increased numbers of colonias residents without adequate water and wastewater service."¹⁵⁰

Grandfathered colonia subdivisions are subdivisions that were legally platted prior to the enactment of the Model Subdivision Rules.¹⁵¹ In 1995, the Texas Legislature adopted House Bill 1001,¹⁵² which strengthened the platting requirements of the Model Subdivision Rules and attempted to close some of the loopholes.¹⁵³ Under House Bill 1001, any developer who subdivides land into

141. Because *State v. Blas Chapa* was settled before a judgment was rendered, no opinion was published. However, this case is cited in Hanna, *supra* note 1, at 912.

142. See Hanna, *supra* note 1, at 912.

143. See *id.* at 913.

144. See *id.*

145. See 1995 UPDATE, *supra* note 23, at 16.

146. See *id.* at 1.

147. *Id.* at 17.

148. See *id.* at 2.

149. See Hanna, *supra* note 1, at 917.

150. 1995 UPDATE, *supra* note 23, at 2.

151. See *id.*

152. See TEX. LOC. GOV'T CODE ANN. §§ 232.021-232.042 (West Cum. Supp. 1997).

153. See *id.*

lots for sale or lease, must file a plat with the county in which the property lies.¹⁵⁴ County approval of the plat “depends upon whether it complies with the subdivision requirements established to prevent unscrupulous developers from creating more [c]olonias.”¹⁵⁵

Unfortunately, House Bill 1001 provides for a waiver or extension of the platting requirement for “unoccupied”¹⁵⁶ lots or residences, or where compliance would be “impractical.”¹⁵⁷ In addition, House Bill 1001 allows a developer seeking plat approval to post a bond to guarantee future installation of water and sewer facilities required by the Model Subdivision Rules.¹⁵⁸ The amount of such bond is an amount that the County Commissioners’ Court determines will “ensure compliance” with the Model Subdivision Rules.¹⁵⁹

Many colonias developers are “rich and powerful people”¹⁶⁰—judges, county commissioners, and other state political leaders¹⁶¹—with the financial resources and political connections to influence discretionary determinations made at the county and state level regarding the amount of the required bond, the “impracticability” of providing water and sewer services, and the likelihood of state or county enforcement action.¹⁶² Thus, corruption and political influence impede enforcement efforts and attempts to close the loopholes which continue to make the development of additional colonias possible.¹⁶³ Texas Attorney General Dan Morales stated in his *60 Minutes* interview that political ties held by illegal developers make the fight to enforce the Model Subdivision Rules in Texas more difficult—it is, he said, “an uphill battle.”¹⁶⁴

Critics of Texas’ Model Subdivision Rules enforcement efforts claim that the law, though well-intended, may eventually force more people into homelessness and worsen the health and environmental conditions along the border by reducing the supply of affordable housing.¹⁶⁵ Because the Model Subdivision Rules mandate higher building standards they also mandate higher housing costs.¹⁶⁶ Professor Jorge Chapa, of the University of Texas Lyndon B. Johnson School of Public Affairs, estimated that the number of residents along the Texas-Mexico border who need low-income housing will double by 2010 to over 700,000 people.¹⁶⁷ Since the passage of NAFTA, a tremendous “boom” has occurred

154. *See id.* § 232.023(e).

155. Hanna, *supra* note 1, at 917.

156. TEX. LOC. GOV'T CODE ANN. § 232.026(b) (West Cum. Supp. 1997).

157. *Id.* § 232.042(c).

158. *See id.* § 232.027.

159. *See id.*

160. *60 Minutes*, *supra* note 25, 1995 WL 2729807, at *9.

161. *See id.* at *9.

162. *See generally* Morales, *supra* note 35, 1995 WL 9298473, at *3; *60 Minutes*, *supra* note 25, 1995 WL 2729807, at *9.

163. *See 60 Minutes*, *supra* note 25, 1995 WL 2729807, at *9.

164. *Id.* at *15.

165. *See* Garcia, *supra* note 2, at A1, 1996 WL 3416542, at *7. (This argument is similar to the argument(s) made against the implied warranty of habitability principle in United States property law.)

166. *See id.*

167. *See id.* at A1, 1996 WL 3416542, at *3.

along the Texas-Mexico border, as new industry and maquiladoras locate along the border to take advantage of the trade incentives provided in NAFTA.¹⁶⁸ This boom in border business, together with the prohibition against new substandard colonias housing through enforcement of the Model Subdivision Rules, has driven border housing costs up and resulted in a severe strain on the area's already limited supply of affordable housing.¹⁶⁹ As a result, some commentators claim that homelessness and the number of residents seeking shelter in substandard colonias housing are increasing.¹⁷⁰

To date, the major focus of Texas' efforts to eliminate and upgrade the Texas colonias has been on the border area, specifically those affected counties that qualify for funding under EDAP.¹⁷¹ The Texas Senate Subcommittee on Water has expressed concern that as the availability of affordable housing along the border decreases, colonia subdivisions may begin to develop "one county in" from the border, as border residents travel further north in search of low-income housing.¹⁷² Because the Texas Attorney General has authority to enforce the Model Subdivision Rules and related platting, water, and sewer requirements only in affected counties along the Texas-Mexico border, the Model Subdivision Rules are ineffective in stopping the possible northward migration of colonias.¹⁷³ Therefore, additional state legislation is required to expand the authority of the Texas Attorney General to enforce the Model Subdivision Rules beyond the Texas border counties.¹⁷⁴

3. Alternative Funding

In addition, alternative sources of funding for increasing affordable housing along the border must be found.¹⁷⁵ The border boom and Texas' efforts to prevent growth of colonia subdivisions have occurred simultaneously with nationwide budget cuts for federal housing and other social programs. Since 1980, the annual budget for the federal Department of Housing and Urban Development has decreased by over 26 percent.¹⁷⁶ In order to avoid "legislating people into homelessness" and compounding the social and environmental problems already in existence in the colonias, additional state and federal funding

168. See PUBLIC CITIZEN, *supra* note 47, at 5.

169. See Garcia, *supra* note 2, at A1, 1996 WL 3416542, at *7. In 1995, Laredo, Texas was the largest city in south Texas' Webb County, the second fastest growing city in the nation, and the second least affordable place to live in the United States, despite higher than average unemployment and poverty rates. See *id.*

170. See *id.* In a Texas Senate Committee hearing on International Relations, Trade, and Technology, Texas Senator Judith Zaffirini, a strong supporter of the state's efforts to assist colonias residents, urged the state to carefully review the effects of revisions to colonias legislation, in order not to "pass laws to force people into homelessness." Matt Flores, *State Told to Provide Colonia Housing*, SAN ANTONIO EXPRESS-NEWS, Jan. 13, 1996, available in WESTLAW, Allnews database, 1996 WL 2819488, at *2 (quoting Texas Senator Judith Zaffirini).

171. See Garcia, *supra* note 112, at B1, 1996 WL 3416637, at *1.

172. See Telephone Interview with Vic Hines, *supra* note 82.

173. See TEX. WATER CODE ANN. § 16.341(1), § 16.343(b)(2)(f) (West Cum. Supp. 1997).

174. See Telephone Interview with Vic Hines, *supra* note 82.

175. See Garcia, *supra* note 2, at A1, 1996 WL 3416542, at *11.

176. See *id.* at A1, 1996 WL 3416542, at *7.

and private initiatives for affordable housing must be developed. Although the primary focus of this Article is on programs aimed at bringing water and sewer service to the Texas colonias, unless adequate programs are implemented to provide shelter, medical care, and educational opportunities to colonias residents, the environmental problems inherent in communities of extreme poverty will persist.

B. International Programs

In 1993, when Environmental Protection Agency Administrator Carol Browner visited the Texas border area, she was "deeply disturbed by the environmental conditions suffered by United States citizens living there."¹⁷⁷ The trip persuaded her of the importance of NAFTA and of its accompanying side agreements as a means to provide the tools to address the lack of environmental infrastructure along the border.¹⁷⁸ Proponents of NAFTA, like Administrator Browner, hailed it as "more protective of the environment than any other international agreement or treaty ever before entered into by the United States."¹⁷⁹ However, NAFTA did not start out to be an environmental agreement or to address the environmental problems of the colonias. When environmentalists in the United States first proposed including environmental provisions in NAFTA, they were met with opposition from both the United States and Mexican governments.¹⁸⁰ Many business interests were opposed to including environmental provisions in NAFTA out of fear that the environmental provisions would dilute the agreement's trade and investment provisions.¹⁸¹ Other commentators argued that NAFTA's multilateral trade provisions were, in themselves, a vehicle for environmental protection because they helped to eliminate poverty by improving market access.¹⁸² As the NAFTA debate continued, the influence of both United States and Mexican environmentalists on the NAFTA provisions grew.¹⁸³

The catalyst for including environmental provisions in NAFTA was the "border cesspool,"¹⁸⁴ caused by twenty years of unregulated commerce along the Mexico-United States border.¹⁸⁵ The 1963 Border Industrialization Program between Mexico and the United States created an opportunity for foreign (predominately United States) business "to reduce labor costs by relocating just south of the border in exchange for increased investments and foreign revenue

177. *North American Free Trade Agreement: Hearing Before the House Comm. on Merchant Marines*, 103rd Congress 1st Sess. (1993) (testimony of Carol M. Browner, Administrator, Environmental Protection Agency), available in WESTLAW, US TESTIMONY database, 1993 WL 747677, at *13.

178. *See id.*

179. Stenzel, *supra* note 18, at 426.

180. *See* WEINTRAUB, *supra* note 37, at 73.

181. *See id.*

182. Studies indicate that developing countries begin to protect their environment when their per capita income starts to exceed \$5,000 annually. *See* C. O'Neal Taylor, *Fast Track, Trade Policy, and Free Trade Agreements: Why the NAFTA Turned Into a Battle*, 28 GEO. WASH. J. INT'L L. & ECON. 1, 122 (1994).

183. *See* WEINTRAUB, *supra* note 37, at 74.

184. Audley & Uslander, *supra* note 18, at 27.

185. *See id.*

badly needed in Mexico.”¹⁸⁶ As a result of this program, more than 1,500 maquiladoras employing more than 500,000 people sprung up within twenty kilometers of the border.¹⁸⁷ Populations in the cities along the border boomed from three million in 1980 to six million in 1990.¹⁸⁸ The combination of rapid industrialization, population explosion, and inadequate infrastructure resulted in extensive ecological deterioration of the border area.¹⁸⁹ This “border cesspool” became a symbol of the environmental and social degradation that can result from unregulated border trade and industrial development. Environmentalists used this symbol as their “ticket” into the NAFTA negotiations and as leverage to gain inclusion of environmental protection provisions in the NAFTA package.¹⁹⁰

1. The NAFTA Environmental Agreements

a. The Integrated Environmental Plan

Early in the NAFTA debates, most environmental groups were staunchly opposed to NAFTA’s passage.¹⁹¹ Faced with growing criticism that border environmental issues were being left behind in the “fast track” NAFTA negotiations, United States President George Bush and Mexican President Carlos Salinas de Gotari met in Monterrey, Mexico to discuss environmental problems along their common border.¹⁹² Although President Bush did not include environmental issues in the NAFTA trade negotiations with Mexico and Canada,¹⁹³ in November of 1990 President Bush and President Salinas instructed their countries’ respective environmental agencies, the United States Environmental Protection Agency (EPA) and the Mexican *Secretaria de Desarrollo Urbana y Ecología* (SEDUE), to design a separate plan from NAFTA to address environmental problems on both sides of the Mexico-United States border.¹⁹⁴ Out of this effort came the Integrated Environmental Plan for the Mexico-United States Border Area¹⁹⁵ (Border Plan). The Border Plan uses the framework established by the Water Treaty of 1944¹⁹⁶ (the 1944 Water Treaty) between Mexico and the United States and the 1983 Border Environmental Cooperation Agreement¹⁹⁷ (the La Paz Agreement) to strengthen cooperation between the two countries for the protection of human health and the environment

186. *Id.* at 27.

187. *See id.* at 28. Twenty kilometers is approximately equivalent to 12.4 miles.

188. *See id.*

189. *See id.*

190. *See id.* at 29.

191. *See id.*

192. *See* M. Diane Barber, *The Legal Dilemma of Groundwater Under the Integrated Environmental Plan for the Mexican-United States Border Area*, 24 ST. MARY’S L.J. 639, 644 (1993).

193. *See* Audley & Uslander, *supra* note 18, at 29; *see also* Coronado, *supra* note 5, at 3.

194. *See* Barber, *supra* note 192, at 644.

195. *See id.* at 645.

196. *See* Treaty Respecting the Utilization of Waters of Colorado and Tijuana Rivers and of the Rio Grande (1944 Water Treaty), Feb. 3, 1944, U.S.-Mex., art. 25, 59 Stat. 1219 (effective Nov. 8, 1945).

197. Agreement on Cooperation for the Protection and Improvement of the Environment in the Border Area (La Paz Agreement), Aug. 14, 1983, U.S.-Mex., 22 I.L.M. 1025.

within the border area.¹⁹⁸ Although the Border Plan is not a treaty and lacks enforcement mechanisms and funding, it sets out a comprehensive strategy for the protection of human health and the environment within the border area through cooperation between the EPA and the *Secretaria de Desarrollo Social* (SEDESOL), Mexico's successor to SEDUE.¹⁹⁹

In the spring of 1991, Congress granted President Bush the authority to begin negotiating NAFTA on a "fast track."²⁰⁰ To gain Congressional support for the "fast track" negotiations, President Bush agreed to obtain input from environmentalists on key provisions of the agreement, and to "not do anything to hurt existing environmental health and worker safety laws."²⁰¹ He did not agree to include environmental agreements in the NAFTA trade provisions.

b. The North American Agreement on Environmental Cooperation

As the 1992 United States presidential election approached, both President Bush and then-presidential-candidate Bill Clinton used their respective positions on NAFTA to distinguish themselves to voters. Clinton voiced support for the "idea" of NAFTA, but stressed that NAFTA failed to adequately protect workers and the environment.²⁰² Clinton committed himself, if elected, to negotiate "supplemental agreements" to NAFTA to protect the environment and workers.²⁰³

Following President Clinton's election, he appointed his campaign manager, Mickey Kantor, to coordinate the NAFTA negotiations.²⁰⁴ Unlike the Bush administration, President Clinton, through Kantor, solicited input and support from the environmental community, and invited environmentalists to meet with him for routine briefing sessions regarding the NAFTA negotiations.²⁰⁵ Although there was dissension among the environmental groups regarding the environmental objectives of NAFTA, in September of 1993, one year after the original NAFTA text was completed, Kantor announced the completion of supplemental NAFTA agreements regarding labor and environmental issues.²⁰⁶ The environmental side agreement was entitled the "North American Agreement on Environmental Cooperation between the United States, Canada, and Mexico" (Environmental Side Agreement).²⁰⁷ This agreement made the cooperative effort between Mexico and the United States, envisioned in the Border Plan, a binding, legal reality.

198. See Barber, *supra* note 192, at 645 n.18, 686.

199. See Claire E. Guglielmi, *Impact of NAFTA on U.S.-Mexican Environmental Border Issues*, HOUS. LAW., Sept.-Oct. 1993, at 32.

200. See Audley & Uslaner, *supra* note 18, at 30.

201. *Id.*

202. See *id.* at 32.

203. See *id.*

204. See *id.* at 33.

205. See *id.* However, "[w]ithin a short period of time . . . it became clear that Ambassador Kantor's willingness to respond to environmental concerns had its limits." *Id.*

206. See *id.* at 34.

207. North American Agreement on Environmental Cooperation (Environmental Side Agreement), Sept. 13, 1993, U.S.-Can.-Mex., 32 I.L.M. 1480.

The Environmental Side Agreement details the terms of the NAFTA parties' obligations to "foster the protection and improvement of the environment"²⁰⁸ in the border areas, and to preserve "the well being of present and future generations."²⁰⁹ The Environmental Side Agreement creates a Commission for Environmental Cooperation, governed by a council of representatives from the United States, Canada, and Mexico to oversee the implementation of the goals and recommendations set forth in the Agreement.²¹⁰ The Environmental Side Agreement recognizes the right of each country to choose its own level of environmental protection, and does not attempt to harmonize environmental standards among the three countries.²¹¹ It does *require* enforcement by each country of whatever environmental laws and regulations that country has enacted.²¹²

In the event that enforcement action is not taken by any of the parties to the Environmental Side Agreement, any other party may file a "submission" with the Secretariat of the Council requesting enforcement action.²¹³ In order to invoke the arbitration and dispute resolution process set out in the Environmental Side Agreement, a NAFTA party must allege that there has been a "persistent pattern of failure" by another NAFTA party to enforce its environmental laws effectively.²¹⁴ If the parties are unable to resolve their dispute through direct consultation, the Commission, upon a two-thirds vote, appoints an arbitral panel to mediate the dispute.²¹⁵

2. The NADBank and BECC Agreements

Within the NAFTA package was an additional side agreement, entitled the "Agreement between the United States and Mexico Concerning the Establishment of a Border Environment Cooperation Commission and a North American Development Bank"²¹⁶ (NADBank Agreement). The NADBank Agreement created the Border Environment Cooperation Commission (BECC), "to help preserve, protect and enhance the environment of the border region in order to advance the well-being of the people of the United States and Mexico."²¹⁷ The goal of the BECC is to assist state and governmental entities in coordinating environmental infrastructure projects in the border region,²¹⁸ and to help develop public and private financing for border environmental infrastructure projects.²¹⁹ The BECC's board is comprised of representatives from the public and private

208. *Id.* at 1483.

209. *Id.*

210. *See id.* at 1485-86.

211. *See id.* at 1483.

212. *See id.* at 1483-84.

213. *See id.* at 1488.

214. *See Taylor, supra note 182, at 67.*

215. *See id.*

216. Agreement Concerning the Establishment of a Border Environment Cooperation Commission and a North American Development Bank (NADBank Agreement), Nov. 16, 1993, U.S.-Mex., 32 I.L.M. 1545.

217. *Id.* at 1548.

218. *See id.*

219. *See id.* at 1548-49.

sectors of both the United States and Mexico, as well as representatives from the EPA and SEDESOL.²²⁰

Under the NADBank Agreement, funding for projects certified by the BECC comes primarily from the North American Development Bank (NADBank).²²¹ The NADBank was created under the NADBank Agreement to provide financing for border environmental infrastructure projects certified by the BECC.²²² To implement the initial border environmental goals set out in the NADBank Agreement, the United States and Mexico each agreed to contribute \$225 million over a four-year period to capitalize the bank.²²³ The money is to be used for loans or financial guarantees to finance certified border environmental projects.²²⁴

In order for a project to obtain financial assistance through the NADBank, the BECC must certify the project.²²⁵ Projects located within 100 kilometers of either side of the Mexico-United States border are eligible for certification; projects located outside this region may be certified if the BECC, with concurrence of the EPA and SEDESOL, determines that the project remedies an environmental and health problem within the 100 kilometer area.²²⁶ The environmental project's sponsor must submit an environmental assessment for review by the BECC to determine if the project meets the BECC's goal of a "high level of environmental protection"²²⁷ for the border area.²²⁸

As of August 23, 1996, the BECC had certified eight projects, and was in the process of reviewing sixty-nine additional requests for certification.²²⁹ As of September 15, 1996, the NADBank had not yet funded any of the projects certified by the BECC.²³⁰ The first NADBank financing, in the form of a \$500,000 guarantee, is expected to be completed shortly.²³¹ This guarantee will secure 50

220. *See id.* at 1551.

221. *See generally id.* at 1556-57.

222. Specifically, the NADBank was created to "strengthen cooperation among interested parties and to facilitate the financing, construction, operation and maintenance of environmental infrastructure projects in the border region." NADBank Agreement, *supra* note 216, at 1547.

223. *See* PUBLIC CITIZEN, *supra* note 47, at 70.

224. *See* NADBank Agreement, *supra* note 216, at 1556-57.

225. *See* BORDER ENV'T COOPERATION COMM'N, GUIDELINES FOR PROJECT SUBMISSION AND CRITERIA FOR PROJECT CERTIFICATION 1 (Sept. 1995) [hereinafter GUIDELINES].

226. *See id.* at 1. One hundred kilometers is equivalent to 62 miles.

227. *Id.* at 9.

228. *See id.* at 5, 7-9.

229. *See* DRAFT BORDER ENV'T COOPERATION COMM'N, PROJECT LIST FOR PUBLIC INFORMATION 1-13 (tbl.) (Aug. 23, 1996) (on file with author) [hereinafter PROJECT LIST]; NORTH AMERICAN DEVELOPMENT BANK, UPDATE OF CERTIFIED PROJECTS (July 23, 1996) [hereinafter CERTIFIED PROJECTS]. The BECC representatives stated that, as of November 14, 1996, a total of twelve projects had been certified by the BECC, and fifty-seven other projects were in the process of being reviewed for certification. Telephone conference with Drew Magratten, Administrative Assistant for Environmental Program, BECC (Nov. 14, 1996).

Only a minority of the certified or proposed BECC projects are on the Texas-Mexico border or are colonia projects. *See* PROJECT LIST, *supra*, 1-13 (tbl.); CERTIFIED PROJECTS, *supra*.

230. *See* Telephone Interview with Lisa Roberts, General Counsel for North American Development Bank (June 27, 1996).

231. *See id.*; CERTIFIED PROJECTS, *supra* note 229.

percent of a \$1.1 million loan from the Laredo National Bank to construct sewage treatment facilities for the City of Matamoros, Mexico.²³²

The BECC has been criticized for certifying only eight projects as of August, 1996,²³³ and the NADBank has been criticized for not funding any projects since its establishment.²³⁴ Environmental groups claim that the BECC only certifies projects which are "financially feasible" and the NADBank only approves loans to creditworthy borrowers, thereby excluding the poorest, most needy areas of the Texas-Mexico border from access to NADBank funds.²³⁵ However, on July 18, 1996, the BECC certified its first Texas colonia project.²³⁶ This project, spearheaded by the El Paso Interreligious Organization (EPISO), will provide septic service to colonias in El Paso County.²³⁷ The BECC provided technical assistance to the EPISO and the colonias in the preparation of grant and other funding applications for the project.²³⁸ Spokespersons at the BECC indicate that the EPISO will not seek funding through the NADBank for the colonias project, preferring instead to seek less costly community block grants or other grant funding.²³⁹

Under the NADBank Agreement and related guidelines, the NADBank has no authority to provide below-market rate loans or grants to financially distressed borrowers, such as the colonias.²⁴⁰ Much like a private lender, "to protect Bank resources," the NADBank grants loans only to "creditworthy entities" at a market interest rate aimed at "preserving the Bank's . . . credit rating."²⁴¹ Because of the strict lending requirements placed upon the NADBank under the current provisions of the NADBank Agreement and NADBank guidelines, NADBank financing will likely not be feasible for financially distressed colonia areas.²⁴² Of the eight projects certified by the BECC²⁴³ and eligible for funding by the

232. See Telephone Interview with Lisa Roberts, *supra* note 230; CERTIFIED PROJECTS, *supra* note 229.

233. See generally Hanna, *supra* note 1, at 927 n.129, n.130 (discussing BECC's "internal controversies," and "bureaucratic and implementation difficulties").

234. See PUBLIC CITIZEN, *supra* note 47, at 70.

235. See *id.*

236. See Interview with April Lander, BECC Representative, in Juarez, Tex. (Sept. 13, 1996); PROJECT LIST, *supra* note 229, at 10 (tbl.); CERTIFIED PROJECTS, *supra* note 229.

The BECC certified its first colonia project on January 18, 1996. See PROJECT LIST, *supra* note 229, at 1-13 (tbl.); CERTIFIED PROJECTS, *supra* note 229. This first colonia project is in Douglas, Arizona. See PROJECT LIST, *supra* note 229, at 3 (tbl.); CERTIFIED PROJECTS, *supra* note 229.

237. See Interview with April Lander, *supra* note 236.

238. See *id.*; CERTIFIED PROJECTS, *supra* note 229 (NADBank and BECC will assist EPISO to assemble half of the \$110,000 required by the EPISO project.). See generally NORTH AMERICAN DEVELOPMENT BANK, LOAN AND GUARANTY POLICIES AND OPERATIONAL PROCEDURES FOR PROJECTS CERTIFIED BY THE BORDER ENVIRONMENT COOPERATION COMMISSION (July 15, 1996) [hereinafter LOAN AND GUARANTY POLICIES] (NADBank, in addition to providing financing, also may provide technical assistance.).

239. See Interview with April Lander, *supra* note 236.

240. See LOAN AND GUARANTY POLICIES, *supra* note 238, at 3-11, 14-17.

241. *Id.* at 3.

242. See PUBLIC CITIZEN, *supra* note 47, at 70. Even creditworthy United States borrowers are likely to find the rate of NADBank financing to be at or above the rate at which they could obtain financing from the private sector or through the issuance of tax exempt debt. See Interview with Arturo Nunez, Director of Project Analysis, North American Development Bank, in San Antonio, Tex. (Sept. 4, 1996).

243. One of the eight projects certified by the BECC must be reconsidered for BECC certification because

NADBank, as of July 23, 1996, only two were pursuing NADBank financing;²⁴⁴ the others, such as the EPISO colonia project, are pursuing cheaper sources of funding from private lenders and grant/loan programs.²⁴⁵

Although it is doubtful that many of the Texas colonias projects meet the current financial feasibility requirements of the NADBank, the BECC's involvement with colonias, such as in the EPISO Project, highlights the international nature of colonias problems. Clearly, the ultimate solutions to these problems require financing and cooperation from both sides of the Mexico-United States border. BECC representatives state that their organization will provide assistance in locating funding for colonias on both sides of the border,²⁴⁶ even though the projects will likely not qualify for NADBank financing. Because so many of the colonias areas have neither the technical expertise to pursue funding on their own, nor the resources to pay for outside technical assistance, BECC assistance is crucial to colonias seeking financing for environmental infrastructure projects. In October of 1996, the BECC received a \$10 million grant from the EPA to fund a program providing technical assistance for environmental projects in low-income border areas, such as the Texas colonias.²⁴⁷

Representatives of the NADBank acknowledge that many potential borrowers for border environmental projects require low-cost financing. In recognition of the fact that the NADBank interest rate may not be a cost-effective or feasible source of financing for many low-income border environmental projects, the NADBank is seeking an additional \$20 million in funds from the EPA to "buy down" the NADBank interest rate.²⁴⁸ This "buy down" may allow more borrowers, including colonias, to qualify for NADBank project loans.

It is too early in the life of either the NADBank or the BECC to accurately evaluate either organization's effectiveness in addressing the needs of the Texas colonias. If, as with the EPISO colonia project, the BECC provides financing coordination and technical assistance to colonias borrowers, which enables them to receive financing through the NADBank or other sources, the BECC will fulfill a valuable purpose. With the Texas EDAP program currently out of funds to assist Texas colonias,²⁴⁹ more Texas colonias will likely seek assistance and financing through the BECC and the NADBank, and more pressure will be placed upon the NADBank to make funding available to Texas colonias borrowers. Inherent in the NADBank Agreement is a recognition that the NADBank and

the project must change its entire design in an attempt to reduce its estimated \$8 million dollar cost. See CERTIFIED PROJECTS, *supra* note 229 (Wastewater Treatment Plant, Ensenada, B.C. project).

244. See CERTIFIED PROJECTS, *supra* note 229.

245. See Interview with April Lander, *supra* note 236.

246. See *id.*; see also LOAN AND GUARANTY POLICIES, *supra* note 238, at 2, 18; GUIDELINES, *supra* note 225, at 4.

247. See Telephone Interview with Hector Gonzalez, Program Manager for Strategic Development, BECC (October 17, 1996). As currently envisioned, if construction financing is ultimately obtained for a project, the technical assistance funding would be repaid to the BECC, together with a small amount of interest. See *id.* If the project is not ultimately funded or constructed, the BECC funding would not be repaid. See *id.*

248. See Telephone Interview with Hector Gonzalez, Program Manager for Strategic Development, BECC (June 27, 1996).

249. See *supra* note 112 and accompanying text.

public funding alone are not sufficient to solve the problems of border areas such as the colonias:

[T]o the extent practicable, environmental infrastructure projects should be financed by the private sector. [B]ut, . . . the urgency of the environmental problems in the border region requires that the Parties be prepared to assist in supporting these projects²⁵⁰

Investment by private lenders and grant organizations, in addition to NADBank capital and other public funds, also is essential. Using NADBank capital to guarantee loans from private lending institutions, as in the case of the Matamoras project noted above,²⁵¹ may be an effective way to leverage NADBank funds to address more projects in areas on both sides of the border, including the Texas colonias.

IV. ALTERNATIVE MECHANISMS BEING EVALUATED

As discussed above,²⁵² Texas' EDAP program has been successful in bringing water and sewer service to some of the Texas colonias. However, the program currently is out of funds for additional colonias improvements.²⁵³ The cost of providing water and sewer service to the colonias not yet participating in EDAP is astronomical.²⁵⁴ Although it is likely that some additional public funds will be available (either as the result of additional state appropriations, Texas voter authorization, or EPA or community block grants), alternative public and private sources of funding, including NADBank financing, are required to provide all existing Texas colonias with water and sewer service.

A. Local Control of Water and Sewer Utilities

Municipal and state agencies are currently evaluating several creative financing proposals for the Texas colonias. Prior to 1995, counties in Texas had very limited authority to own or operate water or sewer utilities.²⁵⁵ Recognizing the need for county participation in providing water and sewer service to the colonias, the Texas Legislature passed a bill in 1995 authorizing "affected count[ies]"²⁵⁶ to "own, operate, or maintain a water or sewer utility"²⁵⁷ This bill, which became effective on June 16, 1995, has not yet been widely used. Nevertheless, for the first time, it provides clear legal authority for counties to construct and operate water and sewer facilities to serve a colonia.²⁵⁸ As discussed above, the

250. NADBank Agreement, *supra* note 216, at 1547.

251. See *supra* note 232 and accompanying text.

252. See discussion *supra* Part III.A.1.

253. See *supra* note 112 and accompanying text.

254. The cost of providing services to the remaining 25% of colonias residents is approximately equal to the cost to bring service to the other 75% of colonias residents. See 1995 UPDATE, *supra* note 23, at 10, 12; see also discussion *supra* notes 116-117 and accompanying text.

255. See Telephone Interview with Vic Hines, *supra* note 82.

256. TEX. WATER CODE ANN. § 16.341 (West Cum. Supp. 1997).

257. TEX. LOCAL GOV'T CODE ANN. § 412.015 (West Cum. Supp. 1997).

258. See *id.* Counties are often the only local governmental entity within whose jurisdiction a colonia lies.

involvement of Webb County in the operation of the construction of a sewage treatment plant was an integral part of the successful bankruptcy reorganization plan in *In re D & A Realty, Inc.*²⁵⁹

B. The Texas Interlocal Cooperation Act

Texas border counties, working together with rural water supply corporations or water districts, can also provide a mechanism for financing water and sewer improvements in some Texas colonia areas that would not otherwise have sufficient tax base or financial resources to independently finance the project. Under the authority of the Texas Interlocal Cooperation Act,²⁶⁰ counties can contractually agree to annually rebate to a rural water district or water supply corporation a portion of the tax revenue received by the county as a result of increases in assessed value following the construction of water and sewer improvements in colonias areas.²⁶¹ The rural water supplier can then issue bonds to finance the construction of infrastructure to serve a colonia, secured, in part, by revenues from user fees and a pledge of the contractual county tax rebate.²⁶² This structure creates financial leverage from projected growths in assessed values, while causing the users of the services to be the primary source of repayment of the project financing. There are, however, some affected areas where more direct support from the county may be available.

C. School Fund Revenues and Relocation

Webb County Commissioner Rick Reyes is credited with an innovative proposal that would allow earnings on revenues from Texas county permanent school fund lands to be used to guarantee loans to create low-income housing for Texas colonias.²⁶³ Forty-three colonias, with approximately 16,353 low-income residents, are currently located in Webb County.²⁶⁴ Despite Webb County's high poverty and unemployment rates, the cost of living in its largest city, Laredo, was the second-highest in the nation in 1995.²⁶⁵ Permanent school fund lands were granted to each county in Texas, including Webb, by the Republic of Texas in 1839 and 1840.²⁶⁶ The revenue from these lands is dedicated to finance the operations of county school districts.²⁶⁷ Typically, the original grant to the counties consisted of four leagues of land, or approximately 17,000 acres.²⁶⁸ Webb County, and many other counties throughout the border area, still retain

259. See *supra* notes 134-140 and accompanying text.

260. TEX. GOV'T CODE ANN. §§ 791.001-791.030 (West 1988 & Cum. Supp. 1997).

261. See Telephone Interview with David Ellis, Associate Director Research, Center for Housing and Urban Development, College of Architecture, Texas A & M University (May 24, 1996).

262. See *id.*

263. See Telephone Interview with Vic Hines, *supra* note 82.

264. See 1995 UPDATE, *supra* note 23, at App. A (Estimated Colonia Needs By County (Webb County)).

265. See *supra* note 169.

266. See Becky Stern, *Judicial Promulgation of Legislative Policy: Efficiency at the Expense of Democracy*, 45 Sw. L.J. 977, 980-81 (1991).

267. See *id.*

268. See Telephone Interview with Rick Reyes, Webb County Commissioner (June 27, 1996).

title to a large portion of this land.²⁶⁹ Webb County currently holds title to approximately 13,000 acres, much of which is leased for farming, agricultural, or oil and gas production.²⁷⁰ The Texas Constitution mandates that income generated from permanent school fund lands be deposited by the county into a separate account.²⁷¹ The amount of these funds which the county is allowed to use annually for public education purposes also is dictated by the Texas Constitution.²⁷² Webb County currently has approximately \$10 million in its school-fund-land-income-generated account.²⁷³ Because the annual amount Webb County is permitted to withdraw from this account for school district purposes is less than the total annual interest earnings, the fund continues to grow.²⁷⁴ Commissioner Reyes is actively working with the Federal National Mortgage Association and the federal Housing and Urban Development Department to implement a program which would allow Webb County to invest the interest earnings from this fund in low-income housing bonds, which would generate lease purchase or mortgage financing for low-income residents in Webb County.²⁷⁵ Commissioner Reyes, through Texas State Senator Judith Zaffirini, has requested a Texas Attorney General's Opinion regarding the legality of using the funds for such a purpose.²⁷⁶

Although Webb County's proposed school-fund-revenue program does not bring water and sewer services to the Texas colonias, it does provide, through low-income housing incentives, a mechanism to relocate Texas colonias residents to areas where adequate water, sewer, and environmental infrastructure already exist.²⁷⁷ In some cases, the cost of relocating residents and providing subsidized housing may be significantly less than the cost of constructing water and sewer infrastructure.²⁷⁸ In such situations, it would be appropriate to use EDAP funds to supplement low-income housing programs, and encourage relocation of colonias residents, rather than to construct water and sewer infrastructure that is economically unfeasible. If the Texas Attorney General's response to the Webb County opinion request is favorable and Webb County succeeds in implementing the school revenue fund program, it could become a model for other Texas border counties holding title to permanent school fund lands to use in addressing some of the problems of their colonias.

D. Water Conservation, Sewage Projects, and Binational Mechanisms

In some Texas colonias areas, assistance from the county will not be sufficient—international solutions are required to solve colonias border

269. *See id.*

270. *See* Telephone Interview with Rick Reyes, *supra* note 268.

271. *See* TEX. CONST. art. 1, § 5.

272. *See* Telephone Interview with Rick Reyes, *supra* note 268.

273. *See id.*

274. *See id.*

275. *See id.*

276. *See id.*

277. *See id.*

278. *See* Telephone Interview with Vic Hines, *supra* note 82.

environmental problems. As Professor Jorge Vargas, with the Environmental Law Program at the University of San Diego, stated, "[a]rtificial boundaries are irrelevant where the environment is concerned."²⁷⁹ Border pollution and environmental problems do not conform to international boundary lines, nor do many of their solutions.

1. Water Use

On both sides of the Texas-Mexico border, the Rio Grande-Rio Bravo provides the primary source of water.²⁸⁰ The TWDB projects that by the year 2040, the Rio Grande and its associated tributaries and aquifers will not be able to meet all the demands placed on them by water users on the United States side of the river.²⁸¹ Because Texas law gives municipal water uses priority over agricultural uses, of a total projected shortfall of 338 million cubic meters per year by 2040, "[t]he bulk of the shortage—211 million cubic meters—will fall on the agricultural users."²⁸²

Much of the land on both sides of the Texas-Mexico border is used in agriculture.²⁸³ Except in the El Paso-Juarez area, as discussed below, if water is used efficiently, there will be a sufficient quantity available to serve the lower Texas and Upper Mexico Valley.²⁸⁴ Currently, much of the surface water withdrawn from the lower Rio Grande is used in agricultural irrigation.²⁸⁵ This water is often diverted through open irrigation ditches and canals, and through outdated, unlined, and leaking pipes.²⁸⁶ Due to evapotranspiration, percolation, and leaks, much of the water withdrawn from the Rio Grande is lost prior to use.²⁸⁷ Vic Hines, Legislative Aid to Texas Senator Carlos Truan, Chair of the Texas Senate Subcommittee on Water, estimates that a mere ten percent improvement in the technology used for water diversion by the Texas-Mexico Valley's agricultural community would double the amount of water available for valley municipal and industrial users.²⁸⁸ By reducing water loss through improved technology and the implementation of a strong water conservation and education program, a sufficient water supply would be available for most of the Texas-Mexico Valley.²⁸⁹ However, to ensure that a sufficient source of water is available to serve both sides of the Texas-Mexico border, water conservation improvements must be implemented immediately and given funding priority by

279. LA FRONTERA-THE BORDER: AN ENIGMA FOR TWO NATIONS inside back cover page (Univ. S. Cal., Ctr. for Int'l Studies eds., 1993) (quoting Professor Jorge Vargas, Environmental Law Program, Univ. of San Diego).

280. See generally DAVID J. EATON & DAVID HURLBUT, CHALLENGES IN THE BINATIONAL MANAGEMENT OF WATER RESOURCES IN THE RIO GRANDE-RIO BRAVO 14-20 (Lyndon B. Johnson Sch. of Pub. Affairs, Univ. of Tex. (Austin) 1992).

281. See *id.* at 12.

282. *Id.*

283. See *id.* at 7 (discussing various agricultural uses along the Rio Grande-Rio Bravo).

284. See Telephone Interview with Vic Hines, *supra* note 82.

285. See *id.*

286. See *id.*

287. See EATON & HURLBUT, *supra* note 280, at 28.

288. See Telephone Interview with Vic Hines, *supra* note 82.

289. See *id.*

the Texas state government and the federal governments of both the United States and Mexico.

2. Bilateral Water Conservation Mechanisms

In the El Paso-Juarez border area, even with the most stringent of water conservation techniques, water shortages are likely to occur.²⁹⁰ The 1906 Convention between the United States and Mexico²⁹¹ "requires the United States to 'deliver to Mexico a total of seventy-four million cubic meters of water annually,' except in times of extraordinary drought . . ."²⁹² Historically, the United States has withdrawn seventy-nine percent of the flow that reaches El Paso-Juarez.²⁹³ Curiously, even in years when the actual flow of the Rio Grande should have allowed more water to reach Juarez, Mexico's withdrawal did not increase.²⁹⁴ From 1939 to 1946 it appears that the United States may have simply withheld flow from Mexico, once the seventy-four million cubic meter requirement of the Convention had been satisfied.²⁹⁵

In recent years, however, under the supervision of the International Boundary and Water Commission (IBWC), a binational commission created by the 1944 Water Treaty between the United States and Mexico,²⁹⁶ a more equitable allotment of the river's flow with Mexico has been achieved.²⁹⁷ Nevertheless, Mexico has not captured and withdrawn the additional water.²⁹⁸ "Mexican officials attribute . . . [this] to the fact that the Acequia Madre Canal, the Mexican diversion canal off the Rio Grande in Ciudad Juarez, is old and small and during days of extremely high flow, Mexico has to let water go undiverted because the canal is full to capacity."²⁹⁹ The capacity of the Acequia Madre Canal in Mexico is not sufficient to capture the additional water. Enlargement and improvement of the Acequia Madre Canal is required to improve the volume of water that can be withdrawn in Juarez and surrounding areas along the Mexican side of the river, without threatening American water users.³⁰⁰

Why should Texas residents and the United States be concerned with Mexico's ability to divert surface water from the Rio Grande? Both El Paso and Juarez supplement their surface water usage with groundwater pumping.³⁰¹ Whereas surface water usage is governed by treaties between the two nations, groundwater pumping is limited only by the amount of water each side of the border can cost-effectively withdraw from the aquifers.³⁰² The result is that once-rich aquifers

290. See EATON & HURLBUT, *supra* note 280, at 20.

291. Distribution of Waters of Rio Grande (1906 Convention), May 21, 1906, U.S.-Mex., 34 Stat. 2953.

292. EATON & HURLBUT, *supra* note 280, at 14 (quoting the 1906 Convention, *supra* note 291).

293. See *id.*

294. See *id.* at 16.

295. See *id.*

296. See 1944 Water Treaty, *supra* note 196.

297. See generally EATON & HURLBUT, *supra* note 280, at 18.

298. See *id.*

299. *Id.*

300. See *id.* at 28.

301. See *id.* at 41.

302. See *id.* at 18.

are being depleted at such a rapid rate that severe shortages are anticipated in the area within the next forty years.³⁰³ Because both sides of the Mexico-United States border share the same aquifer, as one area is forced to increase its ground water pumpage to supplement its surface water supply, the amount of water available for colonias and non-colonias residents on both sides of the border is diminished.³⁰⁴

The City of El Paso recently implemented significant water conservation measures.³⁰⁵ El Paso has successfully started an innovative water recharge process whereby sewage effluent is treated and injected back into the ground to replenish the aquifer.³⁰⁶ However, El Paso's recharge and water conservation benefits are fully offset by the growth and increased pumpage in Juarez.³⁰⁷ Employment in the area's maquiladora industry has led to higher personal incomes in Juarez.³⁰⁸ Studies show that per capita water usage also increases as personal income and living standards improve.³⁰⁹

In order to ensure that a sufficient water supply, whether from surface water or groundwater, is available for both sides of the border, binational monitoring and management must be enforced.³¹⁰ Unless binational mechanisms are implemented to preserve the border's scarce water supply and ensure that sufficient clean water is available to serve residents of both sides of the border, further efforts to bring water and sewer infrastructure to the colonias are pointless. Binational water and sewer projects, implemented under the supervision of the BECC or the IBWC, can provide this coordinated management.

3. Sewage Treatment Projects

In 1989, a binational sewage treatment project was used effectively to solve water quality problems in the Laredo-Nuevo Laredo area caused by lack of sewage treatment facilities.³¹¹ The joint construction project was authorized pursuant to the 1944 Water Treaty.³¹² Article 3 of the 1944 Water Treaty

303. *See id.*

304. The problem may be exacerbated by the inadequate treatment of colonia wastewater. *See Barber, supra* note 192, at 647-48. This untreated effluent eventually finds its way back into the aquifers, significantly damaging water quality. *See id.* at 648, 652; *see also* discussion *supra* note 51 and accompanying text.

305. *See* EATON & HURLBUT, *supra* note 280, at 20.

306. *See* Teddy W. Borawski, Jr., An Alternative Proposal to the Conversion of Area 4 to a Surface Water Supply as Presented by the City of Houston in Response to the Harris-Galveston Subsidence District Mandate Beginning in the Year 2002 4 (Jan. 1994) (unpublished proposal) (on file with author).

307. *See* EATON & HURLBUT, *supra* note 280, at 20.

308. *See id.*

309. *See id.*

310. It is likely . . . that in international practice the areal unit of this coordinated management will be neither the river basin or the aquifer, but an artificial unit comprising both or parts of both, whose boundaries will be determined by the range of mutually felt effects of water use.

Barber, supra note 192, at 688 (quoting Professor Ludwik A. Teclaff, *Principles for Transboundary Groundwater Pollution Control*, 22 NAT. RESOURCES J. 1065, 1065 (1982)) (omission in Barber).

311. *See* EATON & HURLBUT, *supra* note 280, at 92.

312. *See* 1944 Water Treaty, *supra* note 196; EATON & HURLBUT, *supra* note 280, at 93.

provides that Mexico and the United States "agree to give preferential attention to the solution of all border sanitation problems."³¹³

Recommendation No. 4 of Minute No. 261,³¹⁴ adopted by Mexico and the United States under the authority of the 1944 Water Treaty, provides that for each border sanitation problem,³¹⁵ the IBWC must prepare a Minute for the approval of the two governments, in which there would be included "identification of the problem, definition of conditions which require solution, specific quality standards that should be applied, the course of action that should be followed for its solution, and the specific time schedule for its implementation."³¹⁶ Recommendation 6 of Minute No. 261 further provides that the IBWC shall implement the development plan as follows:

[t]hat in each case where the approved course of action provides that a border sanitation problem be jointly corrected by the two Governments, the [IBWC] develop the plans and designs for the works necessary therefore, as well as the division of work and costs between the two countries, submit them for approval of the two Governments, and upon such approval, each Government through its Section of the [IBWC] proceed to carry out the construction, operation and maintenance, with the greatest speed and timeliness possible.³¹⁷

In 1989, using the Minute procedure described above, the IBWC approved construction of a joint sewage treatment plant located in Nuevo Laredo, Mexico to improve water quality in the Rio Grande-Rio Bravo.³¹⁸ Because of inadequate sewage treatment facilities, the city of Nuevo Laredo was discharging approximately twenty-three million gallons per day of raw untreated sewage into the Rio Grande.³¹⁹ Both the United States and Mexican governments recognized that continued contamination of the Rio Grande posed serious health risks for residents on both sides of the border, and threatened the viability of the river as a future water supply.³²⁰ Each country agreed to pay one-half the cost of a sewage treatment plant to provide service to Nuevo Laredo.³²¹ The United States and Mexico agreed to contribute approximately \$11 million each, and the State of Texas agreed to contribute an additional \$2 million.³²² The project was completed in April of 1996 and now serves the entire population of Nuevo

313. 1944 Water Treaty, *supra* note 196, art. 3; *see* Joint Measures to Improve the Quality of the Waters of the Rio Grande at Laredo, Texas/Nuevo Laredo, Tamaulipas, IBWC Minute No. 279, Aug. 28, 1989, U.S.-Mex., 11701 T.I.A.S. 1 [hereinafter Minute No. 279].

314. Recommendations for the Solution to the Border Sanitation Problems, IBWC Minute No. 261, Sept. 24, 1979, U.S.-Mex., 31 U.S.T. 5099, 5101 [hereinafter Minute No. 261].

315. *See id.* at 5100.

316. Barber, *supra* note 192, at 685-86; *see* Minute No. 261, *supra* note 314, at 5099-5102.

317. Minute No. 261, *supra* note 314, at 5101.

318. *See* Minute No. 279, *supra* note 313; EATON & HURLBUT, *supra* note 280, at 92.

319. *See* Interview with Fernando Roman, Interim Director of Utilities, Utilities Department, City of Laredo (July 5, 1996); *see also* Minute No. 279, *supra* note 313, at 10.

320. *See* Minute No. 279, *supra* note 313, at 10-12.

321. *See* Interview with Fernando Roman, *supra* note 319; *see also* Minute No. 279, *supra* note 313, at 5.

322. *See* EATON & HURLBUT, *supra* note 280, at 93.

Laredo.³²³ Although the facility provides no sewer service to residents on the United States side of the border, both the quality of water in the Rio Grande and the border environment of Laredo-Nuevo Laredo have dramatically improved.³²⁴

4. Financial and Technical Assistance and Relocation

With the creation of the BECC in November of 1993,³²⁵ and the existence of the highly capitalized NADBank,³²⁶ binational border projects will likely occur with increasing frequency. Whether they can be used to address the environmental infrastructure needs of extremely low-income areas, such as the colonias, remains to be seen.

Although the Laredo project was a success, in practice such projects are extremely difficult to implement for the benefit of small, poor, remote colonia areas. Binational projects require significant upfront engineering and financial feasibility assessments and environmental studies, as well as coordination and cooperation of two sovereign nations. Most of the colonias simply do not have access to the necessary technical resources nor the financing to acquire them. As discussed above, the BECC is currently developing a grant/loan program to provide technical assistance and support to the border area during the early planning stages of a project.³²⁷ Such a program, when implemented, would provide colonias with the resources needed to evaluate construction and financing options for water and sewer projects and access funding available for such projects.

Although the NADBank, to date, has done little to address the problems of the Texas colonias,³²⁸ preliminary efforts are underway whereby the NADBank, working together with the TWDB, may become a workable financing mechanism to assist Texas border communities, such as the colonias, with environmental infrastructure projects.³²⁹ In an August 2, 1996 Memorandum,³³⁰ TWDB staff requested authority to "pursue a working relationship with [the] NADBank and develop working procedures for potential expanded cooperative efforts in the future."³³¹ The Memorandum outlined a proposal whereby the NADBank would provide \$1 million per year in interest-free capital to the TWDB, which the TWDB would leverage to create \$3 million in loanable funds in the first year.³³² The money would be used to establish a tax-exempt loan program to assist small

323. See Interview with Fernando Roman, *supra* note 319.

324. See *id.*

325. See NADBank Agreement, *supra* note 216, at 1545, 1548.

326. See PUBLIC CITIZEN, *supra* note 47, at 70.

327. See *supra* note 247 and accompanying text.

328. See Hanna, *supra* note 1, at 921.

329. See Memorandum from J. Kevin Ward, Texas Water Development Fund Manager, to Texas Water Development Board (Aug. 2, 1996) (on file with author) (memorandum regarding Discussion on Accessing NADBank funding).

330. See *id.*

331. *Id.* at 3; see also Agenda Title Sheet, Presentation by J. Kevin Ward, Texas Water Development Fund Manager (Aug. 15, 1996) (on file with author).

332. See *id.* at 2, App. (NADBank Proposal Analysis-Scenarios Analyzed).

border communities, such as the colonias, with border environmental infrastructure programs.³³³ Although the amount of funds initially proposed is small,³³⁴ and a number of issues remain to be addressed,³³⁵ the proposed program evidences the beginnings of "cooperative efforts"³³⁶ between the NADBank and TWDB, whereby the NADBank could play a significant role in remedying the binational border environmental problems of the colonias.

Ultimately, it may not be possible to provide water and sewer service to some colonias areas, due to lack of available water supply or economic unfeasibility. In those situations, low-income housing incentives must be provided to encourage relocation of colonias residents to other areas where infrastructure and natural resources are available.

V. CONCLUSION

Significant progress has been made on the Texas side of the United States-Mexico border in preventing growth of new colonias, and upgrading environmental conditions in existing ones. However, much remains to be done.³³⁷ Additional sources of funding must be identified and secured to replenish the depleted Texas EDAP funds. The BECC and NADBank must increase their level of involvement in providing technical assistance and funding to colonia areas, and must actively promote their services to colonia residents and governmental officials, many of whom may be unaware of the organizations' existence. Through the BECC, IBWC, and other international commissions, binational solutions to international border problems, including the problems of the Texas colonias, must be implemented. The NADBank has the resources and capital to finance these solutions, and must be authorized through appropriate amendments to the NADBank Agreement and NADBank lending guidelines to do so. For the sake of individuals, and the United States and global environment, environmental "border cesspools" such as the Texas colonias must be upgraded and ultimately eliminated.

333. *See id.* at 2.

334. *See id.* at 3.

335. For further evaluation of the impact of NADBank capital on the tax exempt status of TWDB funds, *see id.*

336. *Id.* at 3.

337. As Cathy Bonner, Executive Director of the Texas Department of Commerce, reminded a group of United States businesspeople in Mexico City, "it doesn't help to leave the neediest people of our state at the station as we advance on [the NAFTA] economic train." *Quotes of the Week*, TEX. WEEKLY, Aug. 17, 1992, at 6.