Border Environment Cooperation Commission

Improvements to the water and wastewater services in 15 colonias of the City of Laredo and Webb County, Texas

I. General Criteria

1. **Type of Project.** *The project consists of the extension of the City's distribution service as well as wastewater collection and treatment.*

2. **Project Location.** *All the 15 Colonias are in the Webb County, located directly across the Rio Grande River from Nuevo Laredo, Tamaulipas. The Colonias are grouped in two areas:*

Mines Road Area	*State Highway 359 Area*	
Los Corralitos	*Old Milwaukee*	*San Carlos Phase I*
Ranchitos Penitas West	*Los Altos*	*San Carlos Phase II*
Los Minerales	*Los Tanquecitos I*	*Ranchitos 359 East*
Antonio Santos	*Los Tanquecitos II*	*Laredo Ranchettes*
Ranchitos IV - Los Minerales Annex	*D-5 Acres*	*Pueblo Nuevo*

Currently, 3,725 persons live in these communities and it is estimated that for the year 2,016 the population will increase to 5,649 persons.

3. **Description of Projects and Tasks.** *The purpose of the project is to improve the water and sewer service to those Colonias residents. The total cost of the project is $21,581,262, of which $6,231,450 from Border Environmental Infrastructure Fund (BEIF) funds will be requested from the NADBank. The main project components are:*

Water distribution for Mines Road: Installation of 80,000 linear feet of 8" water line, 18,000 linear feet of 10" water line, one booster station, and a 50,000 gallon ground storage tank.

Water distribution for SH 359: Installation of 105,500 linear feet of 8" water line, 51,000 linear feet of 12", 31,100 linear feet of 16", a 250,000 gallon elevated storage tank, a 200,000 gallon ground storage tank and a booster station.

Wastewater collection and treatment for Mines Road: Installation of 68,500 linear feet of 8" gravity sewer, 3 lift stations, 5,200 linear feet of 4" force main, 6,350 linear feet of 6" force main, and 32 On-Site Sewage Facilities (septic tanks in Los Corralitos). A new 0.125 MGD Package Wastewater Treatment Plant is proposed for the Mines Road area.

Wastewater collection and treatment for SH 359: Installation of 98,800 linear feet of 8" gravity sewer, 6,500 linear feet of 12" gravity sewer, 24,150 linear feet of 15" gravity sewer, 3 lift stations, 2,200 linear feet of 3" force main, and 11,500 linear feet of 6" force main.

The City of Laredo has one water treatment facility in operation with a capacity of 60 MGD. According to the City of Laredo, the water treatment system average daily demand is estimated to be 25 MGD (42% of the plan capacity), which correspond to a 182 gallon per capita per day (gpcd) consumption into the city. The estimated Mines Road colonias and SH 359 colonias daily demand are 108 gpcd and 102 gpcd, respectively. The total average daily water demand with the colonias incorporation will be 50 MGD for year 2016.

The project includes the water and sewer connections. In addition, an application to the Texas Department of Housing and Community Affairs (TDHCA) Colonias Program will be submitted for the indoor plumbing facilities in 369 households.

4. **Compliance with International Treaties and Agreements.** *The project does not affect any international treaty between the two countries, since the potable water and sewerage services will only be expanded to the colonias in these communities. Final consultation with IBWC during the final design phase will ensure that international treaty obligations are observed.*

II. Human Health and the Environment

1. **Human Health and Environmental Needs.** *The city of Laredo, Webb County, Texas, has experienced tremendous population growth during the last decade. Because of inadequate land use management, areas to the east and northwest of Laredo have developed into large colonias without water and sewer services. The Texas Department of Health (TDH) has investigated the 15 colonias associated with this project and concluded in a report issued on March 31, 2000, that a nuisance dangerous to public health and safety exists in those areas.*

The proposed project addresses the health and safety issues considered in the nuisance finding of the TDH. Not only will the city water and sewer services provide convenience and a higher standard of living, but the following health concerns will also be significantly reduced or eliminated:

- *Gastro-intestinal threats due to contamination to potable drinking water stored in 55-gallon drums, plastic tanks, or concrete cisterns*
- *Physical health threats due to the strains of hauling water weighing 8.34 pounds per gallon*
- *Heat and dehydration effects from hauling water in 100 plus degree weather in summer months*
- *Disease vectors associated with open cesspools, pit privies and open surface-discharge of gray water*
- *Potential threats to ground water and to the Rio Grande by inadequate or non-existent sewer handling and treatment.*

Environmental Assessment. *Turner, Collie and Braden, Inc., the engineering consulting firm retained by Laredo/Webb County for this project, produced a study to analyze environmental effects of the project and assess the need for any mitigation needed. The Environmental Information Document (EID) is the supporting environmental analysis for the alternative recommending a WWTP in lieu of OSSFs for the Mines Road colonias, and is the document submitted to the BECC and to Environmental Protection Agency (EPA) for National Environmental Policy Act (NEPA) compliance related to NADB/BEIF financing.*

The EID points out that the United States Department of Agriculture's (USDA) Natural Resources Conservation Service classifies the soils in the Mines Road area generally as severe (unsuitable in their use with septic tanks), and the soils in the Los Corralitos colonia (also in the Mines Road area) as moderate, thereby supporting the preferred alternative of well-designed septic tanks for Los Corralitos, and a WWTP for the other Mines Road colonias.

The EID has been submitted to the EPA, and EPA has performed an independent EA based on the EID, a detailed review of the Facilities Engineering Plan, and other available information. EPA Region 6 (Dallas) concurred with the TWDB's determination that the proposed actions are cost-effective and environmentally sound, and has issued a Finding of No Significant Impact (FONSI) as of July 1, 2000. The EA and FONSI were available for public review and comment through July 30, 2000.

3. **Compliance with Ecological and Cultural Resources Laws and Regulations.** *As part of the environmental review, the EID considered any and all crosscutting environmental and cultural/historical laws, Executive Orders and regulations, including among others, Significant, Unique or Important Farmlands, National Natural Landmarks, Wilderness Protection, Wild and Scenic Rivers, Wetlands Protection, Floodplain Management, Fish and Wildlife Protection, Endangered Species Protection, Historical, Architectural, Archeological, and Cultural Sites, Air Quality, and Environmental Justice. The project is in compliance with all applicable environmental*

and cultural resource laws and regulations, assuming all future consultation, mitigation, and observance of restrictions are followed. Findings or restrictions of note and the mitigation required include the following:

Endangered and Protected Species. A biological survey identified the federally protected plant species Johnson's frankenia in the project area. The US Fish and Wildlife Service and the Texas Parks and Wildlife Department require that supervision of construction by a qualified biologist be done to avoid any impacts or takings of this plant. Similar care will be taken to protect riparian areas and thornbush habitats, as well as protection to be provided to river fish species Rio Grande shiner and Rio Grande darter, and the reticulate collared lizard.

Wetlands Protection and Floodplain Management. Several wetlands are identified in the National Wetlands Inventory around the proposed location of the WWTP and along areas where water and wastewater piping will be installed. Location and routing must be done with care to avoid impact on these wetlands. Additional consultation with the US Army Corps of Engineers will be required during the final design period to obtain the NPDES permit. Component systems of the project will be designed to avoid construction in floodplains to the extent practicable, but some scattered areas unavoidably occur in 100-year floodplains. Some sewer lines and three lift stations will be located within identified 100-year floodplain areas, and must be designed to overcome potential infiltration of floodwaters and discharges into floodwaters. A Floodplain and Wetland Management Notice has been issued. Care must also be taken to control any new development in floodplains, which construction of a centralized sewer system could potentially encourage.

► *EPA has three conditions to issuing grant assistance in this regard: 1) the sponsor shall agree, for the next 50 years after the date of the FONSI, to not treat any wastewater generated by new development located in floodplains/wetlands in the project area, 2) the sponsor must adopt and enforce suitable ordinances for effective administration of this restriction, and 3) any person, organization or entity with an interest in the preservation of the natural environment in 100-year floodplains in the project area may seek enforcement of the restriction through the courts if notice is given first to the sponsor and EPA Region 6 and neither entity initiates corrective action within 90 days. EPA reserves the right to waive restriction number one upon petition by the sponsor, or a case-by-case basis.*

Cultural Resources. Because most of the proposed construction will occur in already disturbed areas, the potential for adversely affecting significant archeological or historical resources is recognized as low. However, a cultural resources report by the consultants identified some potential conflicts in the area where the proposed WWTP will be located. Consultation with the Texas Historical Commission has taken place, and the THC concurs with the recommendations of the report, particularly with regard to two sites of significance in the area of construction. One site, located in the Los Minerales colonia of the Mines Road area, must be reinspected archeologically prior to construction. The other site, next to the Rio Grande and occupying an area that may be the preferred location of the WWTP, must be inspected and evaluated for eligibility for National Register and State Archeological Landmark status. If determined to be eligible, the site must be avoided or appropriately mitigated.

► *EPA is conditioning grant funding for the project upon full and adequate satisfaction of protection of these sites in accordance with the findings of the report, the recommendations of the THC, and regulations of the Advisory Council of Historic Preservation.*

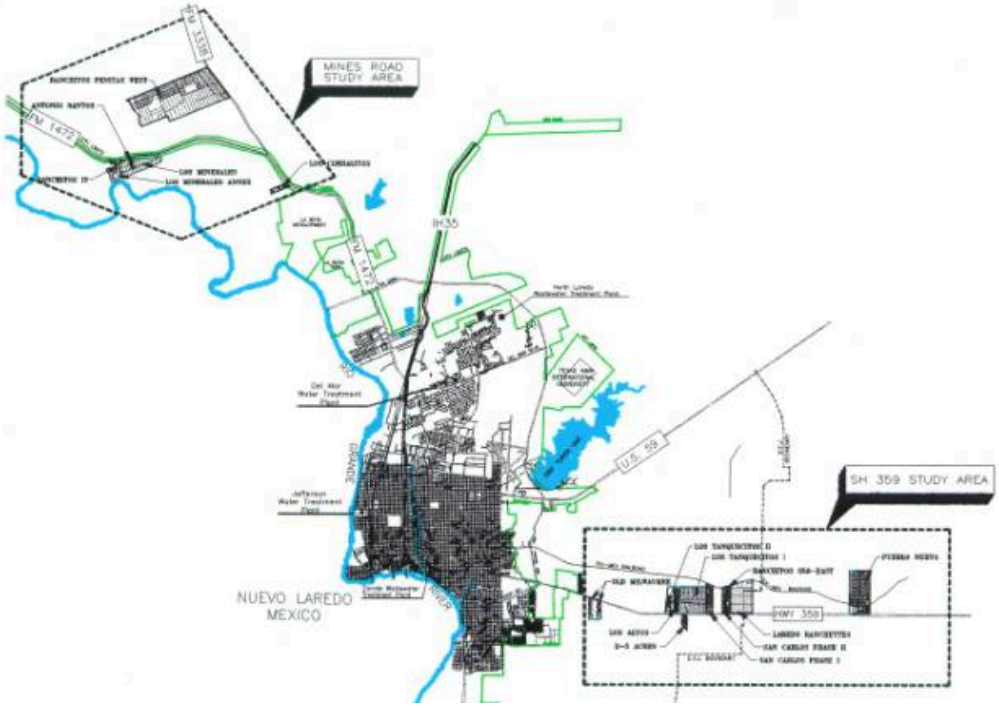
Water Resources (Surface Water). The city of Laredo obtains its water supplies from the Rio Grande. The project will eliminate the inadequate on-site wastewater disposal systems currently used in the project area as sources of surface water contamination. An EPA National Pollutant Discharge Elimination System (NPDES) General Permit will be required and Storm Water Pollution Prevention Plan must be developed and implemented. Consultation with the International Boundary and Water Commission (IBWC) on plans to locate the WWTP next to the Rio Grande with the outfall discharging to the river has taken place. The IBWC has indicated in a letter dated April 18, 2000, that an outfall permit may be required. Final consultation with IBWC for conformance with international treaty obligations will occur when final design and layout / surveying takes place. In addition, the city of Laredo indicates it will need to acquire an additional allocation of 658 Acre-Feet of municipal water rights from the Texas Natural Resources Conservation Commission (TNRCC) Rio Grande Watermaster for future water needs in the Laredo area.

Socio-economic and Environmental Justice. In accordance with Executive Order 12898 on Environmental Justice, the EPA conducted a basic analysis on the potential environmental impacts to low-moderate income and minority communities to develop and EJ index for the proposed project areas. On a scale of 1 to 100, where a score of 1 means that factors affecting minorities are considered to be in balance when compared to the state average, and 100 means factors are greatly unbalanced, the index for the Mines Road area was calculated at 10, and the SH359 area was calculated at 25. Both scores were interpreted by EPA to mean that the project does not pose a

disproportionate risk to minorities or low-moderate income, and that the project therefore meets the intent of the Economically Distressed Areas Program (EDAP) and Colonia Wastewater Treatment Assistance Program (CWTAP).

III. Technical Feasibility

1. **Appropriate Technology.** *This project will use basic technology for potable water and sewerage systems improvements including the construction of the Package Wastewater Treatment Plant.*



The City of Laredo obtains its water supply from the Rio Grande River, and it is the only Certificate of Convenience and Necessity (CCN) holder and nearby supplier of facilities that are adequate to serve the colonias in accordance with state design criteria for water and wastewater systems. According to the TNRCC, the City's total combined water rights of 40,596 acre-feet/year (approximately 36.24 MGD on an average daily basis) are held under Certificate of Adjudication No. 23-3997A. In addition, the City water treatment capacity can handle the additional services related with this project.

A gravity sewer wastewater collection system is proposed for all of the colonias in both the Mines Road and SH 359 planning areas with the exception of the Los Corralitos colonia. SH 359 wastewater flows will be conveyed to the City of Laredo's Chacon Creek Interceptor with ultimate treatment and disposal at the City's Southside Wastewater Treatment Facility. Flows for the Mines Road area will be collected through a system of gravity sewers, lift stations and force mains and conveyed to a proposed package plant at the intersection of FM 1472 and Santa Isabel Creek with a capacity of 0.125 MGD. The new WWTP process is a Complete Mix Extended - Aeration Activated Sludge Treatment.

2. **Operation and Maintenance Plan**. *The Design Engineer will develop Operation and Maintenance Manuals for each of the proposed improvements as well as providing O&M training to City personnel for the new WWTP. The Contractor is also required to develop a catalog of equipment installed and furnish replacement parts that are critical to the continued operation of the proposed facilities.*

3. **Compliance with Applicable Design Standards and Regulations**. *The project will comply with applicable design norms from the beginning of construction and will be regulated by the TNRCC and the guidelines established by the State of Texas and the Federal government. It should be noted that all designs for proposed improvements will be reviewed and approved by the TWDB Engineering staff. TWDB field personnel will inspect construction on a monthly basis. In addition, the TWDB will review and approve the O&M manuals and acceptance of each project as completed.*

IV. Financial Feasibility and Project Management

1. **Financial Feasibility**. *The total estimated cost for all the project components is $21,581,262, of which 49% are for the water supply components and the remaining 51% for the wastewater collection and treatment components.*

The funding agencies of the project are: The EDAP program of TWDB, Webb County and the NADBank. The sponsors of the project are requesting $6,231,450 in BEIF funds.

Funds Sources (USD)					
Area	Concept	TWDB EDAP	Webb County	NADBank	Total
Mines Road	Water Supply	2,891,314	83,560		**2,974,874**
Mines Road	Wastewater	128,850		4,627,150	**4,756,000**
Mines Road Sub-total		***3,020,164***	***83,560***	***4,627,150***	***7,730,874***
SH 359	Water Supply	5,963,017			**5,963,017**
SH 359	Wastewater	5,755,656	527,415	1,604,300	**7,887,371**
SH 359 Sub-total		***11,718,673***	***527,415***	***1,604,300***	***13,850,388***
TOTAL		**14,738,837**	**610,975**	**6,231,450**	**21,581,262**

The funds composition and its sources are in the next table:

2. **Tariff Model:** *The City of Laredo currently has a rate structure based on the monthly consumption of the households located into the City limits. The same rate will be applied for each of the 15 colonias included in the project. The current water supply rate structure is:*

Concept	*Charge*
Minimum charge for water use up to 4,000 gallons/month	*$7.50*
For each additional 1,000 gallons for the next 6,000 gallons	*$0.85*
For each additional 1,000 gallons for the next 10,000 gallons	*$0.90*

Based on the reported average monthly water use of 15,000 gallons/connection and current In-City water rates, the typical monthly water bill is calculated to be:

$7.50 + {(6,000 gal/mo.) x ($0.85/1,000 gal/mo.)} + {(5,000 gal/mo.) x ($0.90/1,000 gal/mo.)} =

$7.50 + $5.10 + $4.50 = *$17.10/month*

Additionally, the rate for the sewage service has the next structure:

Concept	*Charge*
Minimum charge for water use up to 4,000 gallons/month	*$8.50*
For each additional 1,000 gallons for the next 6,000 gallons	*$1.03*
For each additional 1,000 gallons for the next 10,000 gallons	*$1.08*
For each additional 1,000 gallons	*$1.14*

Similarly to the water bill calculation, a typical monthly sewage bill based on the reported average monthly water use of 15,000 gallons/connection is calculated to be:

$8.50 + {(6,000 gal/mo.) x ($1.03/1,000 gal/mo.)} + {(5,000 gal/mo.) x ($1.08/1,000 gal/mo.)} =

$8.50 + $6.18 + $5.40 = *$20.08/month*

So, the total monthly charge will be:

Concept (15,000 gallons)	*Charge*
Water Supply	*$17.10*
Sewage	*$20.08*
Total	*$37.18*

No rate study is developing because transition assistance is not needed.

3. **Project Administration.** *The Department of Utilities of the City will be responsible of the new services to the 15 colonias included in the project.*

V. Public Participation

Comprehensive Public Participation Plan. *The City of Laredo colonias wastewater steering committee and City of Laredo submitted a public participation plan to the BECC on May 3, 2000, which was approved on the 17th of that month. The plan comprises the development of a steering committee, meeting local organizations, providing project information to the public, holding public meetings and submitting a final report for the project.*

Steering Committee*: The steering committee was formed on April 6, 2000. Its membership is composed of Yolanda Lara, Self-Help Center Coordinator; Charlotte Chase, Director of Nursing, TAMIU; Sister Rosemary Welsh, Mercy Health Center; Miguel Trevino, Gateway Community Health Center; Deacon Gerardo Morales, San Carlos Mission; Rosalia Guerrero, Centro de Servicios Sociales Aztlán; Libby Rhodes and Toro Martinez, Texas A&M University Colonias Program; Edna Garcia, South Texas Council on Alcohol and Drug Abuse; Rafael Torres, Azteca Economic Development and Preservation Corporation; Rose Gonzalez, representative for Mines Road/Peñitas West; Apolonio Chavez, Chavez Grocery of Highway 359 area; Fernando Roman, City of Laredo Public Utilities Director; Webb County Commissioners Judith Gutierrez, and Miguel "Mike" Urdiales; Laredo City Councilmen Mario Alvarado and Alfredo Agredano, and Tomas Rodriguez, P.E., Webb County Public Utilities Director. The committee was responsible for the development of the public participation plan. It met six times throughout the public process. Assisting the steering committee were Alfredo Ramirez, Texas Secretary of State Colonia Initiatives Office, and Keith Kindle, of TCB, Inc., the consulting engineer.*

Local Organizations*: Local organizations contacted to present the project and solicit their support include: Mercy Health Center; Gateway Community Health Center; San Carlos Mission; Centro de Servicios Sociales Aztlan; Texas A&M University Colonias Program; South Texas Council on Alcohol and Drug Abuse; Azteca Economic Development and Preservation Corporation; Webb County and Laredo City Council. Letters of support have been submitted by local organizations and agencies.*

Public Information*: Copies of the Step 2 Application were available for review by the public at the City of Laredo Water Utilities Building and the City of Laredo Main Public Library. Local media contacted included television and print media. Public Access Channel 13 advertised the public hearing notice and television stations KGNS-8 (NBC), KLDO (Telemundo) and KVTV-13 (CBS) aired interviews with various members of the steering committee. The Laredo Morning Times also interviewed members of the steering committee followed concerning the committee's efforts on the project. The steering committee also conducted a door-to-door campaign in each of the Project Areas as well as distributing brochures about the project at local Self-Help, Health and Community Centers. Approximately 1,000 flyers and brochures were distributed to the public.*

Public Meetings*: A total of 7 public meetings were held. Three meetings were held in the Pueblo Nuevo, Larga Vista and Los Altos colonias of the Highway 359 area, and three more in Los Corralitos, Ranchitos Peñitas and Los Minerales colonias of the Mines Road area. The BECC required public meetings were held at the San Carlos and Peñitas West colonias on June 1and 15 respectively. Over 600 people attended all seven meetings. One hundred and ninety exit surveys distributed at the June 1 and 15 public meetings show that 185 (97%) support for the project including the rate component.*

VI. Sustainable Development

1. **Definition and Principles.** *The proposed project complies with BECC's definition of Sustainable Development: "Conservation oriented social and economic development that emphasizes the protection and sustainable use of resources, while addressing both current and future needs, and present and future impact of human actions."*

The project is in general compliance with the definition as follows:

- *It has been developed with protections for water resources, floodplains, cultural resources, and threatened, endangered and protected species*
- *It is conservation-oriented because it incorporates the city's Water Conservation Plan*
- *It addresses current need for services in colonias outside of the city limits, yet discourages future unregulated colonia growth*
- *It improves the impact of current human activity on the environment while at the same time eliminating further degradation to the environment.*
- *It has a positive economic impact because it will strengthen property values in the affected colonias. Increased value will mean better chances for homeowners to access credit, improve their lives, and increase their net worth.*
- *Social impacts are positive because the colonia properties are added to the tax base of the area, allowing for increased social services and improvements to schools.*

Principle 1: The project is centered on the needs of the residents of the colonias in Webb County outside the city limits of Laredo, Texas.

Principle 2: The rights of the residents to adequately raise their standard of living and develop their properties are recognized and underlie the reasons for undertaking the project.

Principle 3: Environmental protection is integral to the project.

Principle 4: Stakeholders have been involved and have had the opportunity to participate in the decision-making process. This not only includes the local residents, but also local, regional, state, and federal agencies with statutory interest and standing in the issues at hand.

2. **Institutional and Human Capacity Building.** *The project will add to Laredo's institutional capacity for providing sewerage service by providing an additional wastewater treatment plant for the Mines Road colonias. In addition, the city will be adding 900 new rate-paying customers to its revenue stream.*

   The city's Southside Treatment Plant was recently expanded to increase capacity and quality of effluent to 20/20 standards (BOD & TSS). Using the current excess capacity of this WWTP to treat the projected sewerage flows from the SH 359 area will increase the efficiency of the plant. Furthermore, the proposed Chacon Creek Interceptor (a separate project from the BECC project) will be used to collect the flows from the SH 359 area and route the wastewater to the Southside Treatment Plant.

3. **Compliance with Local/Regional Applicable Conservation and Development Plans.** *The project conforms to the following local and regional plans:*

- *City of Laredo/Webb County Interlocal Agreement.*
- *Stricter subdivision ordinances/regulations (Model Subdivision Rules) for new subdivision development in the Extra-territorial Jurisdiction (ETJ) of the city of Laredo.*
- *The City of Laredo, Texas Wastewater Master Plan of 1996.*
- *TWDB Comprehensive Assessment of the Water and Wastewater Facility Needs of Colonias in Texas, 1992a.*
- *TWDB Water for Texas – Water and Wastewater Needs for the Colonias of Texas, 1992b.*
- *TWDB Water for Texas: A Consensus-Based Update to the State Water Plan, Vol. II, 1997.*

4. **Natural Resource Conservation.** *Water Resources. The project will eliminate the inadequate on-site wastewater disposal systems currently used in the project area as sources of potential ground and surface water contamination.*

The City of Laredo has developed a Water Conservation Plan that will now be applicable to the 15 colonias affected by this project.

5. **Community Development.** *The improvements will support the projected growth and development within Webb County and on the outskirts of the city of Laredo. Projected growth would be managed through future zoning and planned municipal annexation. The adoption by the city of the Model Subdivision Rules will allow the city to regulate growth within these areas and supply services as needed.*