

## **Border Environment Cooperation Commission Jim Hogg County, Texas Closed Landfill Repair Project**

### **I. General Criteria**

#### **1. Type of Project**

Jim Hogg County sustained serious flood damage to its closed landfill site due to storms occurring in the fall of 2001. The landfill had been closed since 1997. Floodwaters of a dry riverbed (Mesquite Creek) cut a deep trench through the disposal area of the landfill, displacing tons of waste material, resulting in environmental and health risks. The County is required to maintain the integrity and effectiveness of the closed landfill and to prevent any surface run-on or run-off from eroding or otherwise damaging the closed site. The project includes recovery, segregation and disposal of the displaced landfill materials, and final cover improvements and Mesquite Creek channel repairs for final improved closure of the landfill. The cost of the project is estimated at \$1 million.

#### **2. Project Location**

The Jim Hogg County government is the project sponsor, with its County seat in Hebbronville, Texas. There are no incorporated municipalities in Jim Hogg County. The project site, a closed sanitary landfill, is located 1.6 miles northeast of Hebbronville, about 56 miles southeast of the City of Laredo, Texas which is located at the U.S./Mexico border opposite Nuevo Laredo, Mexico. The Jim Hogg County landfill was originally opened in 1976 in a dry streambed (Mesquite Creek), but with the implementation of Environmental Protection Agency Subtitle D landfill requirements, the County closed the landfill with approval of the Texas Commission on Environmental Quality (TCEQ) in 1997.

In the fall of 2001 Jim Hogg County experienced several major rain events that caused serious flooding in the area. Floodwaters cut a trench, approximately 1200 feet long, 30 feet wide and 15 feet deep through a disposal area of the landfill, displacing approximately 12,000 tons of waste material. This created a major environmental and health concern for the County, and the County immediately began moving livestock from adjacent properties to feedlots as well as securing the site from public access. The County spent over \$13,000 providing for emergency response to this problem and to stabilize the situation. After consultation with TCEQ, a plan was developed to collect the displaced waste and provide for repair and remediation of the site, which is the purpose of the project. The site is required to be maintained per TCEQ rules and regulations even though the landfill is closed.

With the closure of the old landfill in 1997, the County government provides twice-a-week solid waste collection services for County residents and operates a permitted transfer station located just east of Hebbronville. The County contracts the services of a private contractor for shipment of the County's solid waste in containers from the transfer

station to the Laredo City landfill. The County has an Interlocal Agreement with the City of Laredo for disposal of the solid waste in the City of Laredo landfill.

The County comprises an area of about 1,136 square miles, with a 2000 census population of 5,281 and 3.4% population growth over the previous 10 years. The County has 1,377 solid waste collection accounts, and 406 additional households that are not accounted for (i.e., not billed/non-payers). These 406 households reportedly dispose of their solid waste via other existing accounts, resulting in lost solid waste collection revenue. The median household income of County residents is \$25,833 according to available census data.

The location of the project is shown in the map below.



### 3. Project Description and Work Tasks

As a result of the serious flooding in the fall of 2001, floodwaters cut a trench approximately 1200 feet long, 30 feet wide and 15 feet deep through a disposal area of the County's closed landfill. The floods displaced approximately 12,000 tons of waste material. This created a major environmental and health concern and the County immediately began moving livestock from adjacent properties to feedlots as well as securing the site from public access. The County spent over \$13,000 providing for emergency response to this problem and to stabilize the situation.

In coordination and consultation with TCEQ, an Action Plan was developed to collect the displaced waste and provide for repair and remediation of the site. The plan is divided

into two phases. Phase 1 included the recovery, segregation and disposal of displaced landfill materials and disposal of any inert materials in an approved landfill site. Phase 2 included repairs to the disposal area of the closed landfill and restoration of final cover, in accordance with TCEQ requirements.

Phase 1 of the Action Plan was completed in 2003 with funding from the Texas Office of Rural Community Affairs (ORCA). Plastics, tires and metals were removed from the site and disposed of in a permitted site in Linn, Texas, and the remaining waste was to be put back into the landfill and covered with 18 inches of topsoil and seeded. The County is requesting financial assistance from the North American Development Bank (NADB) Solid Waste Environmental Program (SWEP) to implement Phase 2, which involves repairs to the channel side slopes and repairs to the landfill final cover. Below is the schedule of Tasks under the project.

**TASK SCHEDULE**

<b>Task</b>	<b>Completion Date</b>	<b>Remarks</b>
Phase I Design and Construction	January 2003	Completed
Design of Landfill Improvements (Phase II)	June 2004	Completed
BECC Project Certification	July 2004	
County Completes Grant Agreement w/NADB	September 2004	
County Advertises for Bids	August 2004	
County Awards Construction Contract	October 2004	
Construction Completed	April 2005	

The proposed project will address TCEQ requirements for appropriate repairs to the County's closed landfill. The landfill repairs will assure protection of the general health of the population. There is a concern for the risk of contamination to ground and surface water which support area livestock occupying the adjacent properties to the landfill, further downstream contamination in the event of flood runoff in the normally dry adjacent creek bed. The County must complete the repairs as soon as possible or be subject to TCEQ administrative penalties and potential TCEQ legal action.

**4. Compliance with International Treaties and Agreements**

TCEQ and the County have agreed to an Action Plan to address the objectives of this project. There are no international treaties or agreements governing this project.

**II. Human Health and Environment**

**1. Human Health/Environmental Need**

The proposed project will address environmental requirements of TCEQ for appropriate repairs to the County's closed landfill. The County faces continued liability for allowing potentially harmful health and environmental conditions to persist and possibly leading to soil, surface water, or ground water contamination of its landfill property or the adjacent

landowner's property. Future flood events could cause a reoccurrence of flood damage to the landfill, and this risk is heightened by the fact that the landfill is located in the 100-year floodplain. Human health hazards from solid waste include contamination of surface and ground water sources and potential spreading of disease. Dispersion of solid waste from flooding would have a negative environmental impact to surrounding natural features and land use.

## **2. Environmental Assessment**

Naismith Engineering, Inc. (NEI) prepared an Environmental Information Document (EID) for the project. The EID confirmed that the implementation of the project would have a beneficial environmental impact on the County's citizenry. Short-term environmental impacts will impact the area, including dust and noise from construction activities, but these will be minimized with use of standard construction specifications in observance with federal, state, and local laws. Since the construction area is greater than five (5) acres, a Texas Pollutant Discharge Elimination (TPDES) construction site storm water permit from the TCEQ will be required before construction can begin, to minimize potential runoff problems. The short-term impacts are far outweighed by the beneficial impact of having a landfill site that is able to accommodate significant rainfall events without impacting the integrity of the landfill itself. The improvements will reduce post-closure landfill costs, as well as reduce the potential negative impacts to surrounding soils, surface waters, and groundwater resources.

## **3. Compliance with Environmental and Cultural Resource Laws and Regulations**

The project complies with all environmental and cultural laws and regulations. In particular, the project complies with TCEQ's Chapter 330 rules, entitled *Municipal Solid Waste*, and an April 2, 2002 TCEQ-approved *Action Plan for County Landfill Repairs*. The County could potentially be fined by TCEQ for failure to comply with the approved landfill post-closure plan and failure to comply with the approved TCEQ Action Plan.

The draft EID was submitted to the Texas Historical Commission, the Texas Parks & Wildlife Department, the Federal Emergency Management Agency, the U.S. Army Corps of Engineers and the U.S. Fish & Wildlife Service for review and comment, and there were no objections to the project. The project impacts Mesquite Creek, thus a permit will be required prior to construction from the U.S. Army Corps of Engineers (USCOE) under Section 404 of the Clean Water Act. Under Section 404, activities that result in the discharge of dredged and/or fill material in water of the United States require a USCOE permit. Copies of these response letters are included in the EID.

# **III. Technical Feasibility**

## **1. Appropriate Technology**

As stated above, the County implemented Phase 1 of the project using \$207,435 from a \$350,000 grant from the Office of Rural Community Affairs (ORCA). Phase I of the project was completed in January 2003, including separation of displaced waste materials

and removal of debris including plastics, metals and tires. The Phase I project area has been restored with topsoil and seeded.

Using ORCA funds, the County contracted Naismith Engineering, Inc. to develop the details of Phase 2 of the project. Two alternatives were considered for Phase 2 of the project. The first alternative considered involved removing all remaining original landfill materials and transferring the waste to an approved landfill site; thus, clearing the original streambed and allowing for a natural water flow. This alternative would have an immediate positive environmental impact. County residents would no longer run the risk of future potential solid waste exposure and the existing streambed could be converted for natural land usage. However, this alternative is not cost effective. The closest landfill able to take waste from the Jim Hogg County landfill is located 88 miles in Linn, Texas in Hidalgo County. The costs associated with excavating over 26 acres of waste, and transporting the waste to a landfill and paying disposal fees, at an estimated total cost of \$12 million, is exorbitant, and this is not a cost that the County or its residents would be able to absorb.

The second alternative, and the selected alternative, involves the reshaping the breached channel section of the landfill to allow future drainage to occur without further damage. Debris in the channel created by the storm waters will be segregated and disposed of, along with repairs to the channel side slopes, and repairs to the final cover. The site has been surveyed and plans approved by TCEQ have been prepared for the channel slide slope repairs. The banks of the dry channel (Mesquite Creek), which were damaged by floodwaters, will require stabilization and will be rebuilt to natural bank height. Off-site fill material will be used to build-up these areas.

According to TCEQ regulation §330.253(b)(3) all closed landfills must maintain an erosion layer (cover) at least 6 inches in depth capable of sustaining native plant growth. Work associated with the repair of the existing landfill cover will include excavating and compacting fill material. Fill material will be properly compacted and field density testing will verify proper compaction levels. Newly formed bank areas will be properly re-vegetated with local vegetative seeding. Riprap and matting will be used to facilitate erosion control until natural vegetation is established. Reshaped areas will have a hydraulic capacity at least as great as prior sections replaced. The straightening of channel and smoothing of channel banks will result in increased flow capacity. Since stream straightening may increase erosion due to increased flow, erosion controls will be utilized.

No new technologies are associated with the proposed project. All elements of the proposed project will only involve typically accepted construction materials and techniques as described above.

## **2. Operations and Maintenance Plan**

The project will not require the development of a typical Operation and Maintenance Plan because the landfill will continue to be closed after completion of the repairs. The Construction Contractor will be required to observe State and Federal Safety Laws during construction of the improvements. The County and the construction engineer must accept

the entire project as completed to their satisfaction before the Contractor can receive final payment.

The construction plans have been approved by TCEQ, and upon completion of all project work TCEQ's Region 15 office will provide on-site confirmation and inspection to assure compliance with the Action Plan and TCEQ regulations.

Since construction activities will disturb more than one (1) acre, storm water discharges from the project will have to comply with Texas Pollutant Discharge Elimination System (TPDES) of the TCEQ. TPDES regulations require the implementation of storm water controls for all sites disturbing more than one (1) acre and require additional permit coverage for all sites disturbing more than five (5) acres. The project will require a TPDES storm water permit. The measures outlined in the permit should prevent adverse impacts from storm water discharges associated with the proposed project. The project specifications will require the contractor to dispose of all construction wastes in observance with federal, state, and local laws.

**3. Compliance with Applicable Design Standards and Regulations**

All improvements must comply with TCEQ regulation §330.253 pertaining to closure of municipal solid waste landfills (MSWLF) after October 9, 1993. TCEQ has approved the Action Plan, has reviewed the plans and will monitor the project's progress via regular communication with the County as required by the TCEQ Action Plan.

**IV. Financial Feasibility and Project Management**

**1. Financial Feasibility**

The total estimated cost for the project is \$1,000,000 as shown below.

**PROJECT COSTS & FUNDING SOURCES  
FOR JIM HOGG COUNTY LANDFILL CLOSURE**

Sources	Action Plan		Total Funds	%
	Phase 1	Phase 2		
ORCA Disaster Relief Grant Program	\$207,435	\$142,565*	\$350,000	35%
North American Development Bank (NADB) Grant	----	\$400,000	\$400,000	40%
Jim Hogg County Commercial Loan	----	\$250,000	\$250,000	25%
<b>Totals</b>	<b>\$207,435</b>	<b>\$792,565</b>	<b>\$1,000,000</b>	<b>100%</b>

\* Includes: EID preparation, public participation, engineering, construction and administrative costs for Phase 2.

Based on the initial financial assessment of the County's solid waste operations by Naismith Engineering, Inc., it was clear that even with substantial increases in the current low consumer tariffs, those tariffs would not be sufficient to cover O&M and the additional costs of the project. Thus, the County was required to implement various actions to assure viability and sustainability of the County's solid waste management operations. These actions included the

following items, which were passed by two County Commissioner Court Resolutions of May 10 and May 24, 2004.

- § Raise the average solid waste tariff from \$8 per month to \$13 per month.
- § Improve collection rates by obtaining an agreement with the local water district to include solid waste bills with water bills. The County is attempting to obtain an agreement with the Water District, but regardless, the County plans to institute legal action against non-payers via *Court Summons* to be implemented by the County constables.
- § Establishment of a separate line item in the County's annual budget to identify projected revenues and expenditures of the solid waste system. The line item would identify projected revenues from tariff collections and tax revenues that are needed to supplement tariffs to meet O&M requirements – both tariff collections and tax revenues to be transferred to a Solid Waste Enterprise Fund.
- § Establishment of separate County Solid Waste accounts under the Solid Waste Enterprise Fund for collection and payment of debt service, reserves and for O&M of the system.
- § The approved Implementation Schedule requires adoption of the annual budget for the Solid Waste Enterprise Fund by August 30, 2004, and implementation of the Solid Waste Enterprise Fund within the new fiscal year – starting October 2004.

Basic assumptions of the financial analysis included a projected increases of six percent per annum for contracted hauling services and O&M costs, and 6% annual increases in tax assessed values related to the supplemental revenue required to meet solid waste management O&M and debt service requirements. The population growth in Jim Hogg County was projected to continue at a low rate of 0.335% annually – the recent historical 3.4% 10-year growth.

Considering the project is a one time cost for closed landfill repairs with no recurring O&M requirements, per se, the financial analysis for the project was based the requirements for the County to improve management and financing of solid waste management and pay for the commercial loan required for the closed landfill repairs.

The final financial analysis, taking into consideration all the above, showed that the project was financially viable and the County's financial accounting and management of its solid waste management system will be improved. The proposed financial structure for the project is considered reasonable and sound.

## **2. Fee Rate Model**

A fee rate model was prepared as part of the financial analysis and combinations of financing were reviewed, including with and without a NADB grant. It was determined that with or without a NADB grant, a rate increase would definitely be required. In fact, even with a rate increase, revenues would still need to be supplemented from the County budget to cover O&M costs and debt service.

The County Commissioners Court passed a Resolution increasing the avg. rate from \$8 per month to \$13 per month, and also approved the budgeting of tax revenues to cover the shortfalls to cover all solid waste management costs and debt service.

The 62.5% increase in the average rate to \$13 per month was set as a minimum increase to be in line with more prevalent rates in the area. Existing solid waste disposal rates in nearby Counties and communities is shown below. It should be noted that Jim Hogg County has twice weekly pickup for residential customers while most, if not all, of the towns listed below have only one pickup per week.

**Local Solid Waste Rates**

County	Rate
Brooks County	No charge to residents
Zapata County	\$10.63
Starr County	No collection; \$1.00 tipping fee
Municipality	Rate
Webb County (City of Laredo area)	No collection; <1ton \$30.00 or \$65.00/ton tipping fee
Freer	\$27.54; every two months
San Diego	\$14.10/month
Falfurrias	\$14.50/month
Benavides	\$16.09/month

**3. Project Operations and Management**

The County government provides collection services for residents and manages a transfer station with 7 employees. A private company under a contract with the County handles the hauling of waste from the transfer station to a sanitary landfill for disposal. The County has a one-year agreement with the City of Laredo, about 56 miles away, for disposal in their TCEQ-approved landfill with a tipping fee of \$30/ton, effective December 8, 2003. In January of 2004 the County signed a new 3-year hauling contract with the firm of *Southern Sanitation*, of Laredo, Texas, which reduced contract rates from \$499/mo. to \$300 /mo. for equipment fees, and from \$425 per trip to \$350 per trip. The hauling contractor provides one 20-ton container for the hauling.

**V. Public Participation**

**1. Public Participation Plan**

Public involvement relating to solid waste began in Hebbronville 1997 when the county began the closure of their existing landfill. The public process was reactivated after 2001 when the closed landfill was damaged by floodwaters and the county was under orders to remedy the problem. To achieve certification and access funding, the county submitted a public participation plan that was approved in March 2004. In a small town like Hebbronville, where 90 percent are Hispanic extended families, the bulk of the public's participation happened in the local organizational meetings and individual contacts by the steering committee and county staff.



## **2. Local Steering Committee**

The Steering Committee was formed in January 2004 by businessman Noel Guerra, Chair; Rachel Segovia, educator and social worker; Clark Rossi, local airport board member; Joe R. Stacy, county commissioner; Ruben Escobar, of the local non-profit sector and Erasmo Montemayor, a regional agricultural agency liaison.

Steering committee members will continue to serve the county as an advisory committee to study and recommend changes to cut back on expenses and streamline operations to the financial structure of the solid waste department.

## **3. Meetings with Local Organizations**

Presentations on the project were made to the American Association of Retired Persons, Senior Citizens Nutrition Center; American Legion; Lions Club, and the local Catholic Parish Council. Businesses were also contacted. This consultation process, they were advised that it was being done to make sure the people of town understood the County's position and to request support for its efforts to get certified. The business sector responded with four support letters of support out of thirty-two requests contacts made.

## **4. Public Access to Project Information**

The Environmental Report and the Facility Plan were available at the courthouse and the local library during and after work hours. A bilingual fact sheet with basic technical, environmental, proposed rate increases and public participation components of the project was mailed to about 1700 customers. The 30-day public meeting notice was published in the local newspaper and TV. Local newspapers published five articles on the project beginning April. These articles explained the nature of the problem, the dates of the public meetings as well as notifying the public of the potential rate increases. Neighboring *rancheria* residents of Agua Nueva, Altavista, Guerra, Randado and Thompsonville were informed of the project, even though they are not part of it.

During the organizational meetings and individual contacts the residents of Hebronville expressed a number of concerns. "... if rates have to go up I have no problem." Others expressed: "...rates are too high already!" and "...we are behind the average trash rate according to the paper". Yet others remarked "...you need to make sure that those who don't pay their trash bill should pay up."

The bulk of the public information and involvement came through the local organizational meetings, individual contact, media information and the mailed fact sheets. From these efforts survey results yielded forty-four surveys all in support of the project.

## **5. Public Meetings**

A public meeting to present the environmental assessment was held in February 2004. The BECC required meetings were held in April and June 2004. The county commissioners held an additional two meetings to inform the residents of the proposed \$4-5 dollar increase per month. Attendance at the meetings was limited. The public involvement method that proved better for Hebronville was at the local organization

level, via local media and individual contact. This is where most of the public contact and feedback took place and support for the rates and overall project expressed.

## VI. Sustainable Development

### 1. Definition and Principles

The project is consistent 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 impacts of human actions*" and with the four principles:

Principle 1. "*Human beings are at the center of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature.*" This principle is addressed by the project. The proposed repairs to the damaged closed landfill will protect the general health of the population against the possible spread of disease associated with displaced waste that threatens human health.

Principle 2. "*The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations.*" The proposed improvements and repairs to the closed landfill will have environmental benefits to both existing and future residents. Repairs and well-designed closure to the breached area of the landfill will address the immediate threat, as well as potential future threats, to local residents.

Principle 3. "*In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.*" The project was prepared to meet the requirements of the National Environmental Policy Act. The environmental assessment and design of the repairs to the damaged closed landfill was made available for public review and comment and approved by TCEQ. The project assures protection of natural resources and plant and animal species of concern and no cultural heritage issues are affected.

Principle 4. "*The stakeholders, i.e. the groups and individuals impacted by, and having an impact on development projects, must be part of any related activity.*" The County residents have been informed and involved in the development of the project. Community groups and affected residents were invited to be involved with the Public Participation Committee and outreach efforts were undertaken to educate the public on the project, especially due to the

2004, the County passed a resolution to improve solid waste tariff collection, explore enforcement rules relating to illegal dumping, including monitoring and fines, and promotion of solid waste reduction and recycling practices for residential and commercial customers.

### **3. Conformance with Applicable Local and Regional Conservation and Development Plans**

The project is in conformance with the TCEQ approved Action Plan developed by the County, per TCEQ regulation §330.253 pertaining to closure of municipal solid waste landfills (MSWLF) after October 9, 1993. The Plan addresses necessary actions to all environmental issues associated with the closed Jim Hogg County landfill.

### **4. Natural Resource Conservation**

The proposed project only involves repairs and improvements to the present site of the closed County landfill. No additional land acquisition is required, and the adjacent drainage area of the dry creek bed will be improved and protected.

### **5. Community Development**

The repair of the closed landfill area is required to protect local residents against the human health and environmental risk of existing conditions. Without the repairs, future flood events would simply cause a reoccurrence of damage to the landfill and dispersion of solid waste, with associated human health hazards from solid waste contamination of surface and ground water sources and potential spreading of disease. The proposed project protects the community from a potential health hazard, thus improving the quality of life and development of the local community.

### **Available Documents**

- § Naismith Engineering, Inc., “*BECC Project Certification Document, Jim Hogg County Landfill – Final Cover & Channel Repairs,*” May 2004 (Includes project description, technical, environmental, financial and sustainable development analyses).
- § Naismith Engineering, Inc., Layout, Cross-Sections, Contract Documents and Specifications, Financial Tables and Schedule for “*Re-Establishing Damaged Cover, Jim Hogg County Landfill MSW Facility Permit No. 506-AE, Hebbbronville, Texas,*” June 2004.
- § Naismith Engineering, Inc., “*Environmental Information Document,*” May 2004.
- § Jim Hogg County Commissioners Court Resolution of May 10, 2004 “Adopting the Attached Action Plan for Solid Waste Service.”
- § Jim Hogg County Commissioners Court Resolution of May 24, 2004 establishing new \$13 avg. rate for trash Collection.

- § National Bank of Hebbbronville March 12, 2004 letter to NADB advising of credit availability to the County for the landfill repair project.
- § *“Interlocal Government Agreement Between Jim Hogg County and the City of Laredo Regarding disposal of Garbage And Landfill Fees And Mandated Fees,”* January 12, 2004.
- § March 26, 2004 Jim Hogg County and *Southern Sanitation* solid waste hauling agreement.
- § Jim Hogg County *“Public Participation Plan”* for Landfill Closure Project, March 2004.