Border Environment Cooperation Commission

City of Uvalde Municipal Solid Waste Landfill Expansion
Uvalde, Texas

General Criteria

1. **Type of Project.** The project consists of the expansion of the city's Municipal Solid Waste Landfill (MSWL), by opening the second cell, and the replacement of the operation and maintenance equipment for the City of Uvalde, Texas.

2. **Project Location.** The City of Uvalde, the project sponsor, is located in Uvalde County in the State of Texas, approximately 55 miles north of the U.S./Mexico border, and is located inside the 62-mile border zone. The current population in the City of Uvalde is approximately 16,214, and the population is expected to reach 31,379 in the year 2025.

   Currently the landfill facility receives waste from the city of Uvalde, Uvalde County, Rocksprings and Garner State Park.

3. **Project Description and Work Tasks**

   The project consists of the expansion of the city's MSWL, by the construction of a second cell and the replacement of the operation and maintenance equipment. The MSWL will serve most of the County's existing population. In July 1985, the Texas Natural Resources Conservation Commission (TNRCC), formerly Texas Department of Health, issued a MSW Permit No. 1725 to the City of Uvalde to operate a 57.50 acre site, as a Type I Municipal Solid Waste Facility. The city acquired used equipment to operate and maintain the MSWL. The MSWL started operations in 1987. In 1994, the city initiated a permit modification to comply with the new Subtitle D federal regulations for MSWL facilities. The permit was granted by the TNRCC in 1996.

   The City's MSWL facility is divided into three stages or cells: Stage "A", which is the current operating cell; Stage "B", adjacent to cell "A", which is the cell currently being constructed; and Stage "C", adjacent to cell "B", which will be a future cell. The annual municipal solid waste volume accommodated at the City's facility is approximately 80,421 C.Y., including construction debris and compacted cover material. At this deposition rate, the remaining life of Stage "A" is approximately 12 months. The approximate projected useful life for Stage "B" is of 11 years, and 15 years for future cell "C". It is expected cell "B" will be ready to start operation by July 2001.

   When the City started operation of the MSWL, in 1987, the heavy equipment purchased for the operation and maintenance of the facility, was already used but in

good condition. At this time the City intends to replace all of the operation and maintenance equipment due to the fact the equipment has reached its useful life.

4. **Compliance with International Treaties and Agreements.** The project will not have any international impact, as all operations are monitored and approved by the TNRCC. The MSWL will not receive or send waste from or to other sites.

Human Health and Environment

1. **Human Health/Environmental Need.** The project will address human health and environmental concerns by providing adequate solid waste collection and disposal for the residents of the City of Uvalde and adjacent areas within the County of Uvalde.

   The existing City's Municipal Solid Waste Landfill (MSWL) facility was designed for three stages or cells, the first cell has a remaining life of approximately one year. In order for the City to continue utilizing its MSWL, a new cell must be constructed and in operation on or before the first cell is full and closed.

   The project will allow the citizens of Uvalde and the surrounding areas to continue to properly dispose of municipal solid waste. This project minimizes potential for illegal dumping in and around the city due to the proximity of the MSWL.

2. **Environmental Assessment.** The City was granted a permit to operate and maintain a MSWL Type I facility in 1985 from the Texas Department of Health, now incorporated into the Texas Natural Resource Conservation Commission (TNRCC), and began operation in 1987. In 1994, a permit modification was submitted to the TNRCC to comply with the new Subtitle D federal regulations for MSWL facilities. On March 31, 1995, the Subtitle D modifications received conditional approval from TNRCC with revisions required to the leachate and contaminated water plan and liner details. On July 15, 1996, TNRCC issued a letter to the City of Uvalde, accepting the submittal materials related to the leachate and contaminated water plan and liner details. According to the Permits Section, Municipal Solid Waste Division, TNRCC, the Class I Permit Modification to upgrade the City's MSWL facility to Subtitle D status was approved. Other permit modifications approved by TNRCC were the alternate daily cover and the landfilling method.

3. **Compliance with Environmental and Cultural Resource Laws and Regulations.** The project complies with all and Environmental and Cultural Laws and regulations based on the application of the Federal Subtitle D rules, the 30 TAC § 330 rules and TNRCC technical guidance.

Technical Feasibility

1. **Appropriate Technology.** After the city's MSWL facility was approved to operate in compliance with Subtitle D regulations, in 1996, a Site Development Plan was also part of the permit to modify the original Site Development Plan submitted in February 1985.

As required by the permit, following are some of technical issues addressed in this report:

Solid Waste Data

The Uvalde MSWL is used for the disposal of municipal solid waste and for waste consisting exclusively of brush and materials from construction-demolition activities. These wastes are generated from commercial establishments, light industries, institutions, offices, residences and construction site located primarily within Uvalde County, and consists of similar proportions of materials, paper, glass, metals, etc., as typical municipal waste. The solid waste is considered to have the following approximate compositions: metal 6%, glass 6.5%, fabric 2.5%, paper 48.5%, and trash and garbage 36.5%.

The city implemented a recycling program where containers for recyclable materials (i.e. glass, paper, plastics, cardboard, etc) are available to the public at a centralized location.

Landfill construction and operation is the same for both normal municipal solid waste and construction-demolition waste except for the frequency of soil cover. The municipal waste will be covered daily using an approved alternate daily cover (ADC) system, and the construction-demolition waste will be covered at least weekly with 6 inches of soil not previously mixed with solid waste.

Mixed waste (municipal and industrial) may be accepted for disposal at the site, except that Class I, industrial non-hazardous solid waste, may be accepted only if special provisions for such disposal and special handling procedures are approved by the TNRCC. Class I industrial non-hazardous solid waste, hazardous waste, or radioactive waste is not proposed for this site.

Landfilling Method

The site is being developed by excavating to an average depth of 15 to 20 feet below existing grade and filling to an average height of 45 feet above grade. Stage "A" consists of approximately 10.6 acres, Stage "B" approximately 7 acres, and Stage "C" approximately 11 acres.

Landfilling will be accomplished utilizing the modified trench method and the area fill method in all Stages, in accordance with the following schedule:

Stage	Sequence	Method	Comments
"A"	I	Modified Trench	Up to Top of Perimeter Berm
"A"	II	Area Fill	Above Top of Perimeter Berm
"B"	I	Modified Trench	Up to Top of Perimeter Berm
"B"	II	Area Fill	Above Top of Perimeter Berm
"C"	I	Modified Trench	Up to Top of Perimeter Berm
"C"	II	Area Fill	Above Top of Perimeter Berm

As indicated in the above table, solid waste will be deposited in Stage "A" in two sequences (Sequence I and Sequence II). Once Stage "A" is completed, solid waste will be deposited in Stage "B" in the same sequencing and finally Stage "C". Upon completion of stage "C", the landfill will be closed.

Access Control

Public roads will be utilized for access to the Uvalde MSWL facility. These roads are Highway 90 and F.M. 481 from the east, and F.M. 481 from the south, both roads have all-weather access.

Deposition Rate and Operating Life

The operating life of the site depends upon the volume of waste material ultimately requiring disposal and the rate at which the waste material is brought to the site for disposal. The design solid waste disposal rate utilized in this site application was approximately 80 tons per day and is based upon a city studies completed in 1982 and 1996. The compaction operation accomplished at this landfill is anticipated to obtain a waste material density of approximately 2.5 cubic yard/ton in place. Therefore, at the design waste disposal rate, 80 tons per day, approximately 80,400 C.Y. per year of space will be required for the solid waste.

The volume available for solid waste disposal is termed air space, and the approximately air space in the landfill is:

Stage "A"	575,941 C.Y.
Stage "B"	907,854 C.Y.
Stage "C"	1,244,268 C.Y.

Therefore, the estimated combined time for waste disposal capacity for all three Stages (Cells) is approximately 34 years.

Alternate Daily Cover

The original Site Development Plan for the Uvalde MSWL as submitted in 1985 called for daily cover of 6 inches of soil. However, in February 1994, the TNRCC authorized the use of tarpaulins as an alternate form of daily cover. Soil is currently being placed in 6 inch layers, once a week as a permanent form of cover. This alternate cover has increased the life of the Uvalde MSWL to the 34 years mentioned above.

Environmental Impact

The development of the Uvalde site for the disposal of municipal solid waste will not adversely impact on the environment or public health. The landfill is designed, constructed, and operated to confine the solid waste material and prohibit its release into the environment.

In addition, with the drainage modification plan, existing surface and groundwater will be further protected by site operating procedures which insure that there is minimal contact between any rainfall runoff and refuse, and that any water which does contact the waste, such as direct rainfall, will not be discharged from the site.

Other issues addressed in the report include provisions related to Wet Weather, Windblown Waste, Endangered Species, Special Waste, Fire Control Facilities, Subsidence, Closure Plan and Post-Closure Plan.

As part of the integral project, the City of Uvalde plans to replace the following equipment:

EQUIPMENT	QUANTITY	BUDGETED AMOUNT
Paddle Wheel Scrapper	1	$299,706

Compactor	1	$221,005
Commercial Garbage Truck	2	$230,000
Residential Garbage Truck	2	$270,000
Grapple Truck	1	$85,000
Brush Dump Body Truck	2	$80,000
Roll-off Truck	1	$95,000
Track Loader	1	$260,000
Low Bay Equipment Trailer	1	$50,000
¾ Ton Pick-up	1	$25,000
TOTAL		**$1,615,711**

2. **Operation and Maintenance Plan.** An operation and maintenance plan is included in the facility plan. The final operation and maintenance plan must be prepared during final design and completed and approved by the TNRCC prior to initiating operations in the MSWL facility.

3. Compliance with Applicable Design Standards and Regulations. The proposed MSWL expansion was developed to comply with all requirements of Subtitle D Modification from TNRCC.

Financial Feasibility and Project Management

1. Financial Feasibility. The NADB is currently performing a financial evaluation to determine the financial feasibility of the project. This analysis will determine what level of grant Uvalde can receive from this institution and what the impact of the proposed project on user fees would be under different grant arrangements, as described below. The findings of the analysis will be presented to the City during the second public participation meeting, which has been scheduled for the last week of April 2001.

The following table summarizes the estimated construction cost and purchase of equipment for the proposed project.

Estimated Capital Cost
Uvalde Municipal Solid Waste Landfill Expansion

ITEM	USD
Construction of Stage "B"	$ 1,316,432
Geotechnical Services	$ 130,000
Construction Inspection	$ 120,000
Contingency	$ 100,000
Landfill Equipment	$ 1,615,711
Professional Services	$ 130,000
TOTAL	$ 3,412,143

To this date, the City of Uvalde has secured funds by issuing Certificates of Obligation for the construction and expansion of the landfill, and the purchase of equipment.

Proposed Funding Sources

Source	Amount (US$)	%
Certificates of Obligation	2,915,000	85.4
NADB-SWEP Grant	500,000	14.6
Total	3,415,000	100 %

The City of Uvalde is requesting SWEP Grant funds to the NADB in the amount of $500,000 to purchase the following equipment:

PROPOSED EQUIPMENT PURCHASED WITH SWEP FUNDS

Description	Cost
Paddle Wheel Scraper	$ 299,706
Track Loader	$ 260,000
TOTAL	$ 559,706

City of Uvalde will be responsible for additional cost of equipment

2. Fee Rate Model: A fee rate model is being prepared by the NADB as part of the financial analysis. This model will be utilized to determine the impact on user fees of the proposed project under several combinations financial assistance.

It is important to point out that NADB has worked very closely with the city of Uvalde and the city's financial advisor develop a detailed rate study. The study may recommend revisions to the city's rate structure.

PROPOSED RATES

YEAR	2001 thru 2003	2004 thru 2010
Monthly residential rate	$ 8.00	$ 8.80
Monthly non-residential rate	$ 10.94	$ 12.03

3. **Project Operation and Management**. The project will be managed by the City of Uvalde, which has been managing successfully the operation of the existing MSWL facility during several years. The City has the authority to adopt utility rate adjustments, thus

giving itself the authority to impose rates, fees and charges. The operation of the MSWL facility is to be self-supporting from the fees and charges levied against their users.

Public Participation

Comprehensive Public Participation Plan. The City of Uvalde submitted a public participation plan to the BECC December 7, 2000, and was approved on the 14th of that month. The plan comprises the development of a steering committee, meeting local organizations, providing project information to then public, holding public meetings and submitting a final report for the project. A summary of activities carried out in fulfillment of the plan is presented below.

Steering Committee: The steering committee was formed form the City Planning Committee composed of Julian Contreras, Educator and Vice-Principal; Nancy Zapata-Meandro, Private Business; Caroline Jones, Real Estate; Juanita Garcia, Real Estate; Jesus V. Garcia, Contractor; Jack Easley, Developer; and Albert Mirelez; of the Appraisal District. The Solid Waste Superintendent, Juan Aguilera, completes the committee. The committee developed the outreach strategies and attended the public meetings.

Local Organizations: Local organizations contacted include the Kiwanis Club; Knights of Columbus; Lions Club; Uvalde Area Development Foundation; Uvalde Board of Realtors; and Uvalde Consolidated Independent School District. Letters of support were received from several of these and other organizations.

Public Information: Copies of the proposed Facility Plan and were available at the City Hall and after hours at El Progreso Library. Project informational flyers were available in City Hall, El Progreso Library, the local Permit Office and the Utility Department. Public notices were posted in the Uvalde Leader News, City Hall, and use of the City's own public channel to advertise the public meetings.

Public Meetings: Three public meetings were held on January 9 and 16, and April 30, 2001. The first two meeting covered the technical aspects and the third meeting the financial aspects were presented. It was announced that the rate increase would be $0.80 for domestic users and would take effect until 2003.

Sustainable Development

a. 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:

1) "human beings are at the center…they are entitled to a healthy and productive life in harmony with nature". This principle is addressed by the purpose of the project, which is to address health risks associated with the present inadequate capacity of the existing MSWL facility. Healthier lives and better living conditions will result from this project.

2) "The right to development…equitably meet…needs of present and future generations." The construction and expansion of the MSWL facility will accommodate growth projected through the year 2025, while addressing a critical need today.

3) "…environmental protection shall constitute an integral part of the development process…" All environmental parameters have been met. The City of Uvalde has been careful to ensure that natural resources are protected, plant and animal species of concern are not impacted, and cultural heritage issues are recognized. Also, the city has implemented a recycling program where containers for glass, paper, plastics and cardboard are available to the public at the city's recycling center.

4) "The stakeholders…must be part of any related activity." Stakeholders have been a part of the process since the early part of the project development. Public participation and outreach programs have ensured that public input has been received, considered and employed.

b. Institutional and Capacity Building

The new expansion will continue to provide the capacity of the City to provide necessary quality of life services for its residents. In order to minimize the additional operational burden to the City, the technology chosen is the required of typical facilities in use today. The project will allow the City to meet all regulatory requirements relative to Solid Waste disposal. Additionally, the project includes the purchase of necessary equipment for the efficient operation of the MSWL facility, brush pick-up and handling, and trash pick-up and handling as well. This equipment will replace the already worn out equipment being used at this time, and that has reached its useful life.

c. Conformance with Applicable Local and Regional Conservation and Development Plans

State legislation and rules from the TNRCC require development of a Site Operation Plan to be in place in order to start operation. This project meets all the requirements of the approval process.

d. Natural Resource Conservation

As mentioned above, the TNRCC requires a Site Development Plan addressing equipment, site security, traffic control, vector control, contaminated water, wet weather operations, waste composition, waste control, special waste, fire protection, wind control, cover application, leachate and methane monitoring. Also, recommends improvements to the city's recycling program.

The implementation of the project will enable the City of Uvalde to keep collecting and disposing adequately the solid waste generated in the community, it will minimize the risk of polluting soil and ground water, and will allow for the purchase of the appropriate equipment to operate the landfill. Also, the recycling program will be improved by providing for the pick-up of recyclables throughout the city, that will contribute to the natural resources conservation.

e. City Development.

The expansion of the MSWL facility will comply with state solid waste and health regulations, and is beneficial to the City. Other aspects of the project will specifically enhance the quality of life, such as improving the recycling program. Furthermore, the new expanded facility will further reduce the risk of public exposure to debris spread uncontrolled throughout the County.

List of Documents

1. Original Permit No. 1725 issued by the Texas Department of Health (now TNRCC). Permit issued on July 12, 1985.

2. Original TNRCC subtitle D Status Permit.
   Municipal Permit No. 1725 conditional approval by TNRCC issued on March 31,1995.
   Final permit approval issued July 15,1996.

3. Alternate Daily Cover approval issued by TNRCC on February 4, 1994.

4. Change to Sequence of development from 'Modified Trench ' to 'Area Fill' method.
   Approved by TNRCC October 10, 1996.

5. Revisions to Landfill Gas Management Plan, approved by TNRCC on July ` 24,1997.

6. Class I Permit modification- Soils and Liner Quality Control Plan, approved by TNRCC on September 26,1997.

7. Modifications to Final Contours for Drainage Improvements, approved by TNRCC on July 1, 1999.

8. Certificates of Compliance for the following:

   --Airport Location
   --Floodplain Location
   --Wetland Location
   --Faulting Location
   --Seismic Impact Zone Location

9. Cell "B" Final Design, Construction Drawing and Specifications dated August 8, 2000.

10. Annual Financial Reports 1994-1999.

11. Final Closure and Post Closure Plans dated January 25, 1995.