

BORDER ENVIRONMENT COOPERATION COMMISSION

WATER TREATMENT PLANT PROJECT

DEL RIO, TEXAS

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BORDER ENVIRONMENT COOPERATION COMMISSION

Project Type

Water **Error! Bookmark not defined.** Wastewater **Error! Bookmark not defined.** Solid Waste **Error! Bookmark not defined.** Other

Error! Bookmark not defined.Closure **Error! Bookmark not defined.**Rehabilitation **Error! Bookmark not defined.**Expansion New **Error! Bookmark not defined.** Other

Public Sector **Error! Bookmark not defined.** Private Sector **Error! Bookmark not defined.**Public/Private Partnership

Project Title

CITY OF DEL RIO WATER TREATMENT PLANT PROJECT

Primary Applicant

Title: *City Manager*

Organization: *City of Del Rio*

Address: *P.O. Box 4234*

City, State, Zip Code: *Del Rio, TX 78841*

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Executive Summary

Description of the Project

Project Location

The proposed project is a new potable water treatment plant for the City of Del Rio in Val Verde County, Texas, which includes the treatment plant, replacement raw water intakes and pumps, replacement potable water ground storage tanks, and new treated water pump and transfer lines.

The City of Del Rio is located in the U.S./Mexico border region of southwestern Texas, within southeastern Val Verde County. Its geographic area covers approximately 27 square miles. It is located about 5 miles from the international border and approximately 153 miles west of the City of San Antonio. The international dam and reservoir, Lake Amistad on the Rio Grande, is approximately 9 miles to the northwest of Del Rio

The treatment plant site is located north of U.S. Highway 90 at Jack Lowe Street and San Felipe Springs Road just east of the existing San Felipe Springs raw water intake. The replacement raw water intakes and pumps will be located at the springs, and the replacement potable water ground storage tank site is located at Bedell Avenue and Barbara Way, approximately 1.3 miles northwest of the treatment plant site. The new treated water pump and transfer lines will be located along a route between the treatment plant site and the storage tank site. The area of impact is the entire City of Del Rio.

The proposed site for the Water Treatment Plant (WTP) is east of and immediately adjacent to the present location of the City of Del Rio's raw water pumping facility at San Felipe Springs. This location will eliminate the need to pump raw water from the supply point to a distant treatment facility site. The WTP property consists of about 20 acres of land bounded by Jap Lowe Street on the east, U.S. 90 Highway on the south, San Felipe Springs Road on the west, and private property on the north. The site is accessible by existing paved city streets, and is served by most local utilities including potable water, electric power, and natural gas supply. Sanitary sewer collection system will be extended to serve the plant site.

Environmental Issue

The environmental benefit to be achieved by implementation of this project is the risk reduction to the public health and safety caused by a potentially unsafe public water supply. However, no statistical or other evidence exists linking health problems to the currently unfiltered, disinfected water supply. The proposed project is being mandated by the Texas Natural Resource Conservation Commission (TNRCC) under the requirements of the Surface Water Treatment Rule (SWTR) of the Safe Drinking Water Act (SDWA). An additional benefit is the conservation of finite groundwater resources by the replacement of leaking existing potable water storage tanks and the elimination of additional potential contamination pathways.

The project presents both short-term environmental issues during construction, and a long-term environmental issue related to on-going operations of the proposed facility. These issues are addressed in the accompanying Environmental Assessment.

Project Alternatives

Project alternatives which were considered as responses to the human health needs and environmental issue were limited to treatment alternatives, project facility site locations, and alternative construction techniques. The "No-Build" alternative was not considered due to the fact that the TNRCC has mandated treatment of the City of Del Rio's water supply. Treatment alternatives considered include conventional filtration, direct filtration, and membrane filtration.

Compliance with BECC Criteria

1. General

a. Project Type

The proposed project is a new Water Treatment Plant for the City of Del Rio.

b. Project Location

The City of Del Rio is located in the U.S./Mexico border region of southwestern Texas, within southeastern Val Verde County. Its geographic area covers approximately 27 square miles. It is located about 5 miles from the international border and approximately 153 miles west of the City of San Antonio. The international dam and reservoir, Lake Amistad on the Rio Grande, is approximately 9 miles to the northwest of Del Rio. The project site is located north of U.S. Highway 90 at Jap Lowe Street and San Felipe Springs Road. The area of impact is the entire City of Del Rio.

The proposed site for the Water Treatment Facility is immediately adjacent to the present location of the City of Del Rio's raw water pumping facility at San Felipe Springs. This location will eliminate the need to pump raw water from the supply point to a distant treatment facility site. The site is accessible by existing paved city streets, and is served by most local utilities including potable water, electric power, and natural gas supply. Sanitary sewer will be extended to the site as part of the project development phase.

c. Project Description and Work Tasks

The project includes Study, Design, Construction, and Start-Up and Operations Assistance phases of a new Water Treatment Plant, the replacement of existing raw water pumping facilities, the replacement of existing ground storage facilities, and the expansion of distribution system pump and transfer facilities. Separate tasks are incorporated into the schedule and scope of this project for each phase.

d. Conformance With International Treaties and Agreements

This project conforms with all international treaties and agreements, including the North American Free Trade Alliance agreement.

2. Human Health and Environment

a. Human Health and Environmental Need

The proposed project addresses a critical human health need of reducing potential risks to public health by treating raw water from the City's water supply source, San Felipe Springs, which experiences periodic turbidity occurrences. Maximum allowable turbidity levels are defined by the federal Safe Drinking Water Act (SDWA) Surface Treatment Rule (STR) for surface waters and groundwater under the influence of surface water (as recently determined by the TNRCC for San Felipe Springs), as a gross indicator of water quality including potentially present pathogenic organisms. Implementation of this project will allow the treatment of the currently unfiltered, disinfected raw water supply for the City of Del Rio in order to reduce turbidity of the finished water to acceptable levels permissible under SDWA.

The environmental benefit to be achieved by implementation of this project is the conservation of the existing groundwater resource by eliminating ground storage tank losses from the City's water distribution system. The aged Bedell ground storage tanks to be replaced as part of this project are estimated to be losing up to 0.5 mgd (million gallons per day) due to structural leaks. In addition to the water resource lost by this leakage, a secondary human health risk is presented due to the potential for potable water contact with surface water contaminants at the tanks.

b. Environmental Assessment

An environmental assessment has been prepared for the proposed project. The environmental assessment process has examined the affected environment as it may be impacted by the construction and operation of the proposed Del Rio WTP. The assessment includes a records search of available local, state, and federal environmental databases to identify recognized environmental conditions both in and adjacent to the project site. The Environmental Assessment identifies probable positive and negative impacts of the project, including potential unfavorable transboundary effects which are minimal, consisting of slightly concentrated levels of pre-existing suspended solids (TSS) in San Felipe Creek and the Rio Grande River due to membrane filter backwash return flow, and mitigation measures to minimize or eliminate potential negative impacts. The assessment evaluates potential impacts of various construction methods and pipe routings to assess short-term environmental issues. The assessment also examines commitments of resources by the implementation of the proposed project, and compares alternatives available.

c. Compliance With Environmental/Cultural Resource Laws and Regulations

The proposed project complies with all applicable environmental and cultural resource laws and regulations. Except for this application for Border Environment Infrastructure Fund (BEIF) funding from the U.S. Environmental Protection Agency (EPA) through the North American Development Bank (NADBank) which requires certification by the Border Environment Cooperation Commission (BECC) and which has triggered the National Environmental Policy Act (NEPA) process, there are no other local, state, or federal requirements for the preparation of an environmental assessment (EA) or an environmental impact statement (EIS).

Included in the accompanying Environmental Assessment are sections dealing with, and satisfying, the requirements of the following environmental laws and regulations:

- CERCLA—Comprehensive Environmental Response, Compensation, and Liability Act, through CERCLIS Information System
- CAA—Clean Air Act, by determination of no air pollutants resulting from WTP operations
- CWA—Clean Water Act, through Section 404 permit application
- ERNS—Emergency Response Notification System
- FINDS—Facility Index System database
- HMIRS—Hazardous Material Incident Report System
- HWS—Texas State Superfund Quarterly Report
- LUST—Texas Leaking Petroleum Storage Tank list
- NFRAP—No Further Remedial Action Planned database
- NPL—National Priority List database
- NPL Liens—Federal Superfund Liens database
- PADS—PCB Activity Database
- RAATS—RCRIS Administration Action Tracking System
- RCRA—Resource Recovery and Conservation Act, through RCRIS Notifiers database
- SARA—Superfund Amendments and Reauthorization Act, through HWS and NPL
- SDWA—Safe Drinking Water Act, through compliance with TNRCC Administrative Order
- SWF—Texas solid waste disposal site Permit Application file
- TRIS—Toxic Release Inventory System
- TSCA—Toxic Substances Control Act database
- UST—Texas Petroleum Storage Tank List

The following cultural resource laws and regulations have also been addressed in the environmental assessment:

- Chapter 26 Rules of the Texas Antiquities Code, through an on-going archeological survey

3. Technical Feasibility

a. Appropriate Technology

Project alternatives which were considered as responses to the human health and environmental needs issue were limited to treatment alternatives, construction methods, and project facility site locations. The "No-Build" Alternative was not considered due to the fact that TNRCC has mandated treatment of the water supply. Treatment alternatives considered include conventional filtration, direct filtration, and membrane filtration.

Membrane filtration was selected as the most appropriate technology for its ability to deliver high quality drinking water, its ability to support future demand growth, and for its ability to incorporate the development of potential alternate source waters. The membrane treatment process is also more flexible in responding to wide fluctuations in raw water quality (sudden surges in raw water turbidity) characteristic of the City's present raw water supply from San Felipe Springs.

b. Operation and Maintenance Plan

An Operations and Maintenance Plan will be prepared for the WTP and provided as part of the Start-Up and Operations Assistance phase of the project. Start-up and Operations assistance will be provided at the completion of the WTP construction phase, presently estimated to be in December, 1999.

c. Compliance With Applicable Design Regulations and Standards

The TNRCC will review the Construction Documents (Plans and Specifications) prior to advertisement for construction contract bids which is estimated to be in May, 1998. The TNRCC has been kept abreast of all conceptual design decisions during the study phase and of progress during the design phase. Facilities are being designed in accordance with the Texas Administrative Code (TAC) Chapter 290, Rules for Public Water Systems, and in accordance with applicable American Water Works Association (AWWA) standards. The selected treatment technology will best

achieve short term and long term compliance planning needs and current and anticipated rules of the federal SDWA.

4. Financial Feasibility and Project Management

a. Financial Feasibility

Revenue for project operations and for debt service is projected to come from water utility customer rate increases. This Step II application is being submitted in January, 1998 for certification to be considered for grant funds and/or direct construction grant funds to offset the immediate impact to the City of Del Rio's ratepayers. Without grant fund assistance, the City estimates customer water rates will increase on the order of 135 to 140% to service project capital debt and operating and maintenance expenses. The potential impact to the typical ratepayer would be a more than doubling of their current rates for water to a level nearly two and one-half times (240%) what they are presently paying.

b. Fee/Rate Model

The Fee/Rate model as proposed does produce the cash flow necessary to cover debt service as well as on-going operation and maintenance costs. However, the level of rate increase necessary, on the order of two and one-half times the existing rates (135 to 140% increase) would be a serious burden to the residents of the City of Del Rio, and especially to those residents of colonias in Val Verde County, many of whom are only recently receiving water utility services. The only identified alternative to mitigate these rate increases is any funding assistance from Federal agencies and/or other international organizations.

c. Project Management

The existing City of Del Rio Water Utility Department is considered to be sufficient to manage and operate the proposed membrane filtration Water Treatment Plant after receiving O&M training during the project start-up phase. Current operations staff includes several personnel with required state certification for operations of the proposed water treatment plant. It may be necessary to hire additional operators to staff the required 24 hour operation of the plant, however.

5. Community Participation

a. Comprehensive Community Participation Plan

A Comprehensive Community Participation Plan has been prepared. The plan was approved by the BECC on August 10, 1997, and is being complied with by the applicant. A Citizens' Steering Committee has been in place since August 12, 1997, and several committee meetings have been held in different geographic areas of the city to discuss the project with the public. Two additional Public Meetings have been scheduled for January 15, 1998 and January 22, 1998.

b. Report Documenting Public Support

The City submitted to BECC the documentation that shows the support from the public for the proposed project and the information of the public meetings held with this regard.

6. Sustainable Development

a. Definition and Principles

This project will adhere to the four basic principles of sustainable development by the integration of environmental, economic, and social needs. It will protect existing natural resources by the conservation and efficient use of groundwater, and it will protect human health and fulfill the need for a safe water supply. A dependable water supply with a capacity for existing and future needs will allow community development as needed. The project will monitor and manage residual stream discharges to protect existing surface water quality and existing wildlife species. Stakeholders on both sides of the international boundary have been provided the opportunity to participate in the decision-making process by a series of public meetings which have been advertised in local media channels.

b. Institutional and Human Capacity Building

The applicant, the City of Del Rio, currently has both the institutional capacity and the human capacity to administer this project, although staff resources may need to be increased for operations and maintenance of the proposed water treatment plant.

c. Conformance With Applicable Local/Regional Conservation/Development Plans

With the exception of a Capital Improvements Plan and a Transportation Thoroughfare Master Plan for the City of Del Rio, no other local or regional conservation nor development plans have been identified at this time. This project will conform to both the Capital Improvements Plan and the Transportation Thoroughfare Master Plan.

d. Natural Resource Conservation

Other than some already urbanized land, this project will not consume non-renewable resources. It will conserve groundwater resources by reduction or elimination of ground storage tank leaks.

e. Community Development

The implementation of this project will not aggravate demands on natural resources by artificially accelerating community development. However, the project is designed to accommodate historical community growth trends.

Project Tasks and Cost

Work Task	Cost (\$)	Timeframe	Task Executor
Study Phase	\$ 350,000.00	5 Months	Malcolm Pirnie, Inc.
Tech. Assist. Applic.	\$612,000.00	12 Months	Malcolm Pirnie, Inc.
Design Phase	\$2,163,700.00	6 Months	Malcolm Pirnie, Inc.
Construction Phase	\$36,974,300.00	18 Months	---
Start-Up Assistance	\$ 150,000.00	6 Months	Malcolm Pirnie/City

Total Project Cost \$ 40,250,000.00

Total Contribution from Applicant (Water Revenue Bonds) \$ 12,075,000.00

Total Contribution from Other Sources \$ 0

Total Contributions \$ 12,075,000.00

Total Financing Needed \$ 28,175,000.00

The City of Del Rio is submitting this Step II Application to the BECC for certification of this project as eligible to receive funds from the North American Development Bank (NADBank). This Step II application is for both construction grant funding and for rate subsidy transition grant funding from the EPA's BEIF funds.

List of Materials Provided to the BECC (with the Step II Form)

- 1) USGS 7.5 minute topographic quadrangle Maps (4) (ATTACHMENT 1)
- 2) State of Texas Highway Road Map (ATTACHMENT 2)
- 3) Environmental Assessment (ATTACHMENT 3) (Continued next page)
- 4) Comprehensive Community Participation Plan (ATTACHMENT 4)
- 5) Preliminary Engineering Report (PER) (ATTACHMENT 5)
- 6) Draft TNRCC Administrative Order (AO) (ATTACHMENT 6)
- 7) Malcolm Pirnie, TNRCC, and IBWC Correspondence, dated 6/12/97, 7/8/97, and 8/18/97 respectively (ATTACHMENT 7)
- 8) Financial Statements—Historical (ATTACHMENT 8)
- 9) Financial Statements--Pro-Forma, and O&M Budget—Pro-Forma (ATTACHMENT 9)
- 10) Contributions Timetable (ATTACHMENT 10)
- 11) Capital Costs (ATTACHMENT 11)
- 12) Sensitivity Analysis; break-even Analysis; and Fee-Rate Model (ATTACHMENT 12)
- 13) Historical Fee Schedule (ATTACHMENT 13)
- 14) Billing vs. Collection Efficiency (ATTACHMENT 14)
- 15) Organizational Structure and Legal Opinion (ATTACHMENT 15)
- 16) City of Del Rio Water Conservation Plan (ATTACHMENT 16)
- 17) Preliminary Cultural Resources Letter Report (ATTACHMENT 17)

1. GENERAL

a. Project Type

The proposed project is a new Water Treatment Plant for the City of Del Rio, which is being mandated by the Texas Natural Resource Conservation Commission. The city's water supply from the prolific San Felipe Springs which is unfiltered at present, but is disinfected with chlorine prior to distribution, has been ruled by the TNRCC to be Groundwater Under the Direct Influence of Surface Water, thus requiring filtration the same as a surface water supply.

b. Project Location

The City of Del Rio is located approximately 153 miles west of the city of San Antonio, and approximately 5 miles from the U.S./Mexico international border at the Rio Grande River. Thus the project lies within the 100 km. zone of the Border Environmental Infrastructure Fund eligibility. See the Texas Department of Transportation Highway Map, for regional location of the project area.

The proposed project will directly remedy a human health problem only for residents on the U.S. side of the international border. Thus the proposed project will not remedy a transboundary human health or environmental problem. Indirectly, however, it will also remedy a human health problem for residents on the Mexico side of the border when they are in the City of Del Rio.

c. Project Description and Work Tasks

1) Project Description

The proposed project is a new water filtration treatment plant for the City of Del Rio in Val Verde County, Texas, which at present does not filter its raw water supply but only disinfects prior to distribution. The project includes the water treatment plant, replacement raw water intakes and pumps, replacement potable water ground storage tanks, and new treated water pump and transfer lines.

Human Health and Environmental Issues to be Resolved

The State of Texas regulatory body with the responsibility of protecting the water quality within the state, the Texas Natural Resource Conservation Commission (TNRCC), has determined that the City of Del Rio's raw water supply, San Felipe Springs, is Ground Water Under the Influence of Surface Water (GWUDI) based on brief, periodic, and irregular excursions of both turbidity levels and bacteriological levels.

Because of this finding, the TNRCC has imposed a requirement to treat the historically unfiltered, disinfected raw water, which is pumped from an artesian spring located below ground surface at the West Spring and from a surface withdrawal at the East Spring. This action is based on the federal SDWA requirement for filtration of surface water sources and GWUDI sources, associated with the need for reducing the risk to the public health which an untreated water supply might cause.

Because the City's existing Bedell ground storage tanks have been leaking drinking water (estimated between 250,000 and 500,000 gallons per day), the TNRCC has also incorporated repair or replacement of the ground storage tanks into an administrative Agreed Board Order which, once executed, has the force of law with correspondingly serious civil and monetary penalties for violation of its requirements. The draft Agreed Board Order calls for the filtration and primary disinfection of the City's water supply in accordance with the SDWA Surface Water Treatment Rule, and storage system improvements to be in place by about June, 1999.

Proposed Technology

The proposed technology for treatment of the raw water supply is membrane filtration. This alternative has been selected after careful consideration of other treatment alternatives, and the present as well as future needs of the community for a safe and dependable water supply.

Project Scope

The project includes a new 28 mgd treatment facility (expandable to 39 mgd), new raw water supply pumping facilities to replace the existing springs pump station, new treated water storage to replace existing deteriorated Bedell storage tanks, and new distribution system pump and transfer facilities.

Infrastructure

The existing water supply and distribution system includes raw water supply pumps, and chlorine and fluoride injection facilities at San Felipe Springs, ground storage and elevated storage tanks, and distribution system pumps and pipe.

2) Program of Project Work Tasks

The proposed project includes the Study and Facility Planning Phase, the preparation of a Financial Assistance Application, the preparation of an Environmental Assessment, the coordination of the NEPA process to a FONSI, a Comprehensive Community Participation effort, the Design Phase, the preparation of required permit applications, the Construction Phase, and the Start-up Assistance Phase. The estimated costs of the different tasks are shown in the table below.

All of the tasks shown are proceeding concurrently. The costs shown, and the time required for completion, are estimates only (where noted) due to the uncertainty of the final level of effort required.

Task	Description	Cost (\$)	Time	Executor	% Completion
1.0	Study and Facility Planning	350,000	5 Mo.	Malcolm Pirnie (MPI)	100
2.0	Financial Assist. Application BECC/NADBank	150,000 ₁	12 Mo. ₁	City/MPI	75
2.1	Environmental Assessment	400,000 ₁	3 Mo. ₁	City/MPI	80
2.2	NEPA Process	50,000 ₁	3 Mo. ₁	EPA/BECC	0
2.3	Community Participation Plan	10,000 ₁	5 Mo.	City/MPI	100
2.4	Report Documenting Public Support	2,000 ₁	1 Mo.	City/MPI	100
3.0	Design Phase	2,163,700 ₁	6 Mo. ₁	Malcolm Pirnie	75
3.1	Permits & Authorizations	(Incl. Above) ₁	6 Mo. ₁	Malcolm Pirnie	70
4.0	Construction Phase	36,974,300 ₁	18 Mo. ₁	--	0
5.0	Start-Up Assistance Phase	150,000 ₁	6 Mo. ₁	City/MPI	0

₁Task not completed as of 1/15/98—cost and schedule are estimates

3) Description of the Community

The current service area population estimate of 42,000 in 1995-96 was provided by the City of Del Rio Planning Department and verified by population projections by the Department of Rural Sociology of Texas A&M University. This figure is expected to increase to 46,500 by the year 1999, the projected year of the Water Treatment Plant start-up; and to 70,000 by the year 2020, which is the projected 25 year life span of the proposed project. These population projections are also from the Texas A&M University's population study, and reflect a conservative annual population growth rate of 2.153%.

Additional information regarding population growth and water demand projections may be found in Section 4.3 of the Preliminary Engineering Report (PER).

Water service is provided by the City of Del Rio to 100% of the population in the community for 24 hours a day. The City also provides wastewater collection and treatment to 90% of the population in the community for 24 hours daily. Solid waste collection and disposal services are provided by the City to 100% of the population in the community. Pick-ups are scheduled twice-weekly on alternating days for different areas of the city.

4) Project Alternatives

Several project alternatives were considered for this project, including alternate project site locations and alternative means of treatment and filtration of the raw water. However, the "No Project" alternative was not considered because of the pending Administrative Order from TNRCC.

The "No Project" Alternative

This Alternative was not considered because of the treatment mandate from the TNRCC as included in the Board's Administrative Order.

Alternative 1 (alternative selected)

Alternative 1 - MEMBRANE FILTRATION

Alternative Number 1, the selected alternative, consists of Membrane Filtration.

Description

The selected membrane filtration process is Ultrafiltration (UF). The process is relatively simple, and includes a pretreatment step such as straining to remove large particles, followed by particle removal to a size of about 0.02 μ m (\pm virus size) by the membrane units, and disinfection. It is described in more detail in Section 5.2.3, Membrane Filtration and Separation Processes, of the Preliminary Engineering Report (PER).

Site Suitability

The proposed site for the membrane filtration water treatment facility is adjacent to the raw water supply source at San Felipe Springs in the City of Del Rio, Texas. This site was selected because it eliminates the need for additional pump and transfer facilities between the raw water supply point and the treatment facility site. After vacating by its present user, the Texas Department of Transportation, it will be ideally suited to the proposed use.

The site is accessible from existing City streets and is served by local utility services including potable water, electric power, and natural gas supply. Sanitary sewer service will be extended to the site as part of the project development.

Human Health and Environmental Aspects

The required human health and environmental action is the design, construction, and start-up and operation of a water treatment facility prior to the Administrative Order compliance date of about July, 1999. This has been mandated by the Texas Natural Resource Conservation Commission (TNRCC), which will monitor the completion of the project within the given time frame. The reason for the required action is the protection of the public health, which may be at risk from surface water influences which affect the City's raw water supply. Periodic turbidity occurrences at the springs support TNRCC's classification of GWUDI for San Felipe Springs. Turbidity is recognized as a gross indicator of overall water quality related to particulate contaminants, which may include infectious/pathogenic organisms. This issue is discussed in more detail in Section 3.0, Finished and Delivered Water Quality Criteria, of the Preliminary Engineering Report (PER).

No Action, or the "No Project" Alternative, is not feasible due to this risk to public health and the potentially severe civil penalties which the TNRCC's Agreed Board Order may trigger for violation of its requirements.

The environmental effects of the selected alternative have been assessed by an Environmental Assessment. Because the proposed treatment facility site, the site of the existing ground storage tanks to be replaced, and the location of the new distribution system pumping and transfer improvements are all within urbanized areas, it is expected that the environmental impacts will be minimal.

Technical Aspects

The Technical Aspects of the selected Alternative, Membrane Filtration, are discussed in detail in Section 5.2.3 of the Preliminary Engineering Report.

Financial Aspects

Financing for this project is projected to come from municipal Water Revenue bonds. In order to reduce the impact to the water utility rate structure and to its ratepayers, the City Council has authorized this application to the BECC for both capital construction funds and for rate subsidy or transition funds.

Social Aspects

The project will benefit all water customers of the City's municipal water system. Additionally, the County of Val Verde and its consultant, CH2M, are currently in the Design Phase of a water supply project for colonias in the rural areas of the county, funded through the Economically Distressed Areas Program (EDAP) of the Texas Water Development Board (TWDB). These colonias at present do not have access to a drinking water supply and the residents purchase bottled water for drinking and cooking.

The colonias water supply project consists of extending the City of Del Rio's water distribution system to supply water to these areas. Consequently, the health of these colonia residents will also potentially be at risk without implementation of the City of Del Rio Water Treatment Plant Project.

Sustainable Development Aspects

This project will not consume non-renewable resources and will not impact the environment in any appreciable manner other than during the construction phase. Construction equipment shall be required to be as environmentally protective as practicable, including implementation of noise limitation measures and dust control measures.

In contrast, this project will assist in the conservation of resources by the reduction or elimination of potable water supply storage losses through the replacement of leaking ground storage tanks at the Bedell Street site.

Alternative 2 (alternative considered further but not selected)

Alternative 2 - CONVENTIONAL TREATMENT

Alternative Number 2, the alternative considered further but not selected, consists of Conventional Treatment.

Description

The conventional treatment process is applicable to a wide range of raw water qualities. The process usually includes the addition of a coagulant in a rapid mix step as the initial treatment, followed by flocculation and sedimentation, filtration, and disinfection. It may or may not include the addition of polymer prior to the filtration step, and may be varied by the bypassing of the sedimentation step or the application of high filtration rates as cost-saving methods during low turbidity periods. It is described in more detail in Section 5.2.1, Conventional Treatment, of the Preliminary Engineering Report.

Site Suitability

The proposed site for the conventional process water treatment facility is the same as the site for Alternative 1, adjacent to the raw water supply source at San Felipe Springs in the City of Del Rio, Texas. However, the site would need to be expanded to a larger area due to the size requirements of the sedimentation and filtration units. Thus, additional cost would be involved for land acquisition by the selection of this alternative.

This site location was selected because it eliminates the need for additional pump and transfer facilities between the raw water supply point and the treatment facility site. For this reason, the site is highly suitable for the proposed use.

The site is accessible from existing City streets and is served by local utility services including potable water, electric power, and natural gas supply. Sanitary sewer service will be extended to the site as part of the project development.

Human Health and Environmental Aspects

For Alternative 2, the same health and environmental issues of Alternative 1 were addressed.

This Alternative 2, Conventional Treatment, was rejected after further consideration due to its inability to easily adjust to large variances in raw water turbidity levels; the higher energy demands, the chemical addition requirements and sludge management which are a normal part of this treatment technology; and the consequently higher operating costs.

Technical Aspects

The technical aspects of this rejected Alternative 2, Conventional Treatment, are discussed in detail in Section 5.2.1 of the Preliminary Engineering Report.

Financial Aspects

Same as in Alternative 1.

Social Aspects

Same as in Alternative 1.

Sustainable Development Aspects

Same as in Alternative 1.

Alternative 3 (alternative immediately rejected)

Alternative 3 - DIRECT FILTRATION

Alternative Number 3, the alternative immediately rejected, consists of Direct Filtration.

Description

The direct filtration process is a modification of the conventional treatment process. However, it is generally applicable only to low turbidity raw water. This process includes the addition of a coagulant in a rapid mix step as the initial treatment, followed by flocculation, filtration, and disinfection. It eliminates the sedimentation step, and may or may not include the addition of polymer prior to the filtration step. It is described in more detail in Section 5.2.2 of the Preliminary Engineering Report.

Site Suitability

Same as in Alternative 1.

Human Health and Environmental Aspects

Same as in Alternative 1.

This Alternative 3, Direct Filtration, was rejected early in the alternative selection process due to its applicability only to high quality raw water, that is, raw water with consistently moderate turbidity levels (generally ≤ 10 Ntu).

Technical Aspects

The technical aspects of this rejected Alternative 3, Direct Filtration, are discussed in detail in Section 5.2.2 of the Preliminary Engineering Report.

Financial Aspects

Same as in Alternative 1.

Social Aspects

Same as in Alternative 1.

Sustainable Development Aspects

Same as in Alternative 1.

5) Project Justification.

Project Need

The need for the project is to reduce health risks for the residents of the City of Del Rio and some of the rural water utility customers of Val Verde County as well. The current status of the municipal water supply, periodically affected by high turbidity levels, requires that the raw water be treated to reduce potential health risks. At present the raw water supply from an artesian aquifer is classified by the TNRCC as groundwater under the direct influence of surface water (GWUDI), and is not filtered but is disinfected prior to pumping into the distribution system.

Consequences of Not Implementing the Project

The consequences of not implementing the project are twofold. The first and most important is that by allowing the potential risks to public health to continue, the possibility of acute health problems exists. The second is the penalties which may be imposed by the TNRCC on the City of Del Rio for non-compliance with the terms of the TNRCC's Agreed Board Order.

Human Health and Environmental Hazards

Human health impacts have already been addressed in the preceding subsections. Environmental hazards will not be created or increased by this project.

Needs of the Community

All communities, including the City of Del Rio, need a safe and dependable drinking water supply. In the past, the City has experienced occasional temporarily high levels of turbidity and periodic Coliform count, often following rainfall events on the upper reaches of the aquifer recharge area. Because the City's raw water supply is withdrawn from two separate areas of San Felipe Springs, the East Springs and the West Springs, and the increase in turbidity normally varies by an increment of time between the two sources, the City has historically avoided turbid water intake by varying its withdrawal rates from the two sources during turbidity occurrences. By its ruling that both sources of raw water, the East Springs and the West Springs, are groundwater under the direct influence of surface water, the TNRCC has imposed the requirement that all of the City's raw water must be filtered.

Best Alternative to Solve the Problem

The best alternative to solve the problem of rapidly varying, broad range turbidity levels is the selection of a treatment process which can handle these conditions in as cost-effective a manner as possible. The membrane filtration treatment process has demonstrated success at meeting these treatment needs, and has therefore been selected as the preferred alternative.

Transboundary Aspects

The project will benefit all residents within the service area of the City's municipal water system, including residents of several colonias in the rural areas of the county. Until recently, these colonias did not have access to a drinking water supply and the residents purchased bottled water for drinking and cooking.

The City of Del Rio has recently completed a project with the Texas Water Development Board in which they provided water and sewer service to the Cienegas Terrace Colonia. Cienegas Terrace is a colonia of about 400 lots with over half of them occupied. The water system that was in place was substandard and did not reach the full extent of the colonia. There were a number of wells used in the area in conjunction with a large number of septic systems on small lots that are just over 5,700 square feet. There was a grave health concern that prompted the TWDB to provide funds for the water and sewer project that was recently completed.

In the case of the Val Verde Park Estates Colonia, the lots are just under one half acre. There is no current sewer system available in the colonia. The sewer disposal is to septic tanks and cesspools. The water system in the colonia is undersized and of poor quality. The pipes are thin-walled and subject to breakage very often. The TWDB has assisted the City of Del Rio by providing grants to provide the replacement of the water system and installation of the water system. The most direct positive benefit for the recipients of the projects would be the disposal of sewer to a collection and treatment system and the distribution of water in lines sized adequately and not as subject to breakage as the current system.

As part of the TWDB projects for Val Verde Park Estates and Cienegas Terrace, there were provisions for connections to existing household on the date of application for the project. Any subsequent households that evolved after the project would be subject to application to the Community Development Program of the Texas Department of Housing and Community Affairs. The TWDB has developed the Colonia Plumbing Loan Program which enables the colonia residents to connect to the water and sewer lines as well as provides funds for the installation of plumbing for the residences. This program is currently being implemented very successfully by the County of Val Verde.

These colonias water supply projects include the extension of the City of Del Rio's water distribution system to supply water to these areas. Consequently, the health of these colonia residents will also be at risk without implementation of the City of Del Rio Water Treatment Plant Project.

Because Del Rio is located on the border, it is a center for retail and wholesale trade for citizens on both sides. In addition, there is some level of transboundary employment on both sides of the border. Without implementation of this project, citizens of Ciudad Acuña, Coahuila, Mexico, who come to Del Rio for shopping or employment are also exposed to the potential health risks arising from an untreated water supply. Indirectly, it will benefit citizens on the Mexican side of the border when they are in Del Rio.

There will be a minimal impact to the Rio Grande water quality from the membrane filter backwash discharge, expected to be on the order of 2.0 mgd. The membrane filters will require periodic backwashing several times per day. Under normal operation, the membranes concentrate suspended solids (TSS) on the reject side of the membrane and reject these solids with the backwash stream. There is no increase in the solids mass of the San Felipe Creek flow, only a concentration in the backwash discharge where it is discharged back to the stream. The operation of the membrane filters will have absolutely no effect on the dissolved solids (TDS) in the stream; they pass through the membrane filters and therefore the TDS content of the reject or backwash stream is exactly the same as the TDS content of the raw water in the stream.

The City has proposed in its discharge permit application to the TNRCC the direct return of membrane backwash effluent to San Felipe Creek based on "negligible net stream impact" from this discharge. In addition, alternate dewatering and disposal of solids would add \$1.5 to \$2.0 million capital and O&M costs to the project. TNRCC has agreed to the direct discharge permit concept. Texas Parks and Wildlife and the U.S. Fish and Wildlife have been consulted continuously and have initially concurred with the "negligible net stream impact" concept. This approach will cause two different impacts to the water quality of the Rio Grande River, dependent on the condition of the raw San Felipe Creek stream flow.

Under normal conditions which occur 99.5% of the time (based on the raw water data presented in the PER), the turbidity level at the springs is < 1.5 Ntu (≤ 3 mg/l TSS based on the historical 2:1 ratio of TSS:Ntu). For a combined springs and creek flow of 60 mgd with an assumed annual average WTP withdrawal of 20 mgd and a resulting 40 mgd downstream flow, and with membrane recovery of 90% (i.e., 10x concentration of membrane backwash solids) the following stream impacts result:

- Backwash stream = 2 mgd @ 30 mg/l TSS
- Downstream flow = 38 mgd @ 3 mg/l
- Combined San Felipe Creek impact = 40 mgd @ 4.3 mg/l TSS (negligible impact)
- Rio Grande River base flow = 1,800 mgd @ 3 mg/l TSS;
- Rio Grande River impact = 1,840 mgd @ 3.03 mg/l TSS (negligible impact)

USGS Water Resources Data—Texas, Vol. 2, Surface Water: 1988-1996

During the remainder of the time, approximately 0.5%, and using conservative assumptions based on limited historic data during turbidity events as presented by the raw water data in the PER, the following stream impacts will occur. A springs turbidity spike of ≤ 200 Ntu (≈ 300 mg/l TSS based on the historical 1.5:1 ratio of TSS:Ntu @ elevated turbidity) and a ≤ 30 minutes duration is assumed. For a combined springs and creek flow of 60 mgd (which is actually likely to be greater after rainfall events typically associated with turbidity occurrences), assume a 20 mgd WTP withdrawal with a 40 mgd resulting downstream flow, the following stream impacts will occur:

- Backwash stream = 2 mgd @ 3,000 mg/l TSS
- Downstream flow = 38 mgd @ 300 mg/l TSS
- Combined San Felipe stream impact= 40 mgd @ 435 mg/l TSS (Short-term transient impact)
- Rio GrandeRiver base flow = 1,800 mgd @ 3 mg/l TSS (assuming no corresponding turbidity occurrence in Rio Grande)
- Rio Grande River impact = 1,840 mgd @ 12.39 mg/l TSS (compared to 1,860 mgd @ 12.58 mg/l TSS without the WTP withdrawal during the assumed turbidity event)

The above analysis shows that for the great majority of the time, approximately 99.5% of the total, there will be negligible impacts to both San Felipe Creek and Rio Grande River TSS solids levels. During a very small proportion of the time, approximately 0.5% (one-half of one percent), there will be a minimal impact of very short duration on the level of San Felipe Creek TSS, and a negligible impact on the TSS levels of the Rio Grande. In addition, the proposed backwash effluent discharge system includes constructed riparian wetlands at each of the two stream returns to enhance system performance, improving the natural stream conditions by removing TSS through filtration/sedimentation in the wetlands. The expected result is an actual decrease in suspended solids returned to the stream.

Net Environmental Benefit Onsite and Offsite

Regardless of the alternative selected, this proposed project will not consume onsite non-renewable resources and will not impact the environment in any appreciable manner other than during the construction phase. Construction equipment shall be required to be as environmentally protective as practicable, including implementation of noise limitation and dust control measures.

In contrast, this project will assist in the conservation of resources offsite by the reduction or elimination of potable water supply storage losses through the replacement of leaking ground storage tanks at the Bedell Street site, thereby reducing demands on finite groundwater resources.

Health Statistics or Other Studies

No health statistics or other epidemiological studies showing a connection between the unfiltered water in the City of Del Rio's system and health problems within the population are known to exist. The TNRCC has ordered the filtration of the City's raw water as a preventive action taken as a preventive measure which is based on the Surface Water Treatment Rule (SWTR) of the federal Safe Drinking Water Act (SDWA) of 1974. The Administrative Order (AO) by TNRCC effectively states that unless the City of Del Rio provides water treatment of its drinking water by the established effective date, the residents shall be potentially exposed to unacceptable health risks, and the City may face civil as well as criminal penalties under both state and federal laws for failure to comply with the AO.

d. Conformance with International Treaties and Agreements

Consultation with the International Boundary and Water Commission

The U.S. Commissioner of the International Boundary and Water Commission, Hon. John W. Bernal, was notified by letter dated August 18, 1997. No other communication has taken place.

Copies of the Environmental Assessment for this proposed project have been circulated to both the U.S. Section and the Mexico Section of the IBWC.

2. Human Health and Environment

a. Human Health and Environmental Need

The human health issue addressed by this project is the elimination of potential risks to public health and safety caused by periodic high turbidity in the untreated raw water supply. This has been mandated by the AO issued by the TNRCC to be on-line by approximately July, 1999. The environmental issue addressed is the conservation of natural resources through the reduction and elimination of potable water losses from the City of Del Rio's ground storage tanks, and stricter enforcement of the City's Water Conservation and Drought Contingency Plans.

This project will provide a high level of public health protection by eliminating potential health risks through the treatment process selected, membrane filtration, which is a physical barrier to contaminants. Environmental protection will be provided by close monitoring of process residual stream discharge to San Felipe Creek to prevent surface water resource contamination. Mitigation efforts have been incorporated into the membrane filter backwash discharge process to minimize impacts to San Felipe Creek's habitat for endangered and threatened aquatic species.

There are no statistical, epidemiological, or other data connecting health problems to the currently unfiltered, disinfected water supply of the City of Del Rio. The proposed Water Treatment Plant is being mandated by the TNRCC under the requirements of the Surface Water Treatment Rule of the Safe Drinking Water Act.

Baseline data on raw water quality is provided in Section 1.0 of the PER. The data shows that for 99% of the time, the raw water quality from San Felipe Creek is well within drinking water parameters of the SDWA. Excursions of higher turbidity levels occur only during a very small time interval, usually a matter of hours, following intense rainfall events on the upstream reaches of the watershed. Finished Water Criteria are also provided in Section 3.0 of the PER

b. Environmental Assessment

An Environmental Assessment is required under the U.S.' National Environmental Policy Act (NEPA) because the City of Del Rio is applying for Border Environment Infrastructure Funds (BEIF) for both construction grant funds and transition rate subsidy grant funds for this project by the submittal of this Step II application for certification to the Border Environment Cooperation Commission (BECC). BEIF funds are federal funds budgeted by the U.S. Congress to the Environmental Protection Administration (EPA) which has authorized the funds to be administered through the BECC and the North American Development Bank (NADBank).

The project is located completely in the U.S. and thus will directly benefit U.S. residents only. Indirect benefits will accrue to Mexico residents when they are in the City of Del Rio for business, shopping, or entertainment purposes. For this reason, the project is not likely to have a significant transboundary impact. A marginal impact of a slight decrease in the level of solids in the Rio Grande from the San Felipe Creek flow contributed at the confluence is also likely.

An environmental assessment has been requested by the BECC which is intended to satisfy the requirements of the National Environmental Policy Act (NEPA) and which will assist in the determination of a Finding of No Significant Impact (FONSI) by the EPA.

Although no significant transboundary impacts are likely from this project, the City of Del Rio is only 5 miles from the international border and serves as a retail, wholesale, and employment center for residents on both sides of the border. While primary beneficial impacts are limited to the U.S. side, there will be secondary beneficial impacts on the Mexico side, also from reduced risk to public health and safety. There is also a very low possibility of minor impact to the Rio Grande water quality which is a transboundary issue.

The environmental assessment process has examined the affected environment as it may be impacted by the construction and operation of the proposed Del Rio WTP. The assessment includes a records search of available local, state, and federal environmental databases to identify recognized environmental conditions both in and adjacent to the project site.

The Environmental Assessment identifies probable positive and negative impacts of the project, including potential unfavorable transboundary effects which are minimal, consisting of slightly concentrated levels of pre-existing solids in San Felipe Creek and the Rio Grande River, and mitigation measures to minimize or eliminate any negative impacts. The net effects are a slight decrease of solids in the Rio Grande under normal stream conditions. The assessment also examines commitments of resources by the implementation of the proposed project, and compares alternatives available. The title of the document is Draft Environmental Assessment, Del Rio Water Treatment Plant.

An archeological/historical survey has been underway since September, 1997, and was completed in January, 1998.

The project will not have direct short-term or long-term impacts, either positive or negative, on the integrity, biological diversity, and sensitive environmental habitats of the existing ecosystem. No undeveloped land use is being converted by this project at this time. Potential cumulative effects of the project to sensitive environmental habitats may occur due to periodic increased levels of existing solids discharged to San Felipe Creek during periods of high turbidity in the raw water supply. However, these will only take place periodically, normally following rainfall events on the upstream watershed, when the solids level of the San Felipe Creek is already high, and Texas Parks and Wildlife (TPW) and U.S. Fish and Wildlife have indicated satisfaction with the City's plan to alternate these higher levels of solids to the East and West Springs. The TPW initially concurs that the threatened or endangered aquatic species which inhabit the San Felipe Creek will not be compromised by these discharges, and consultation is ongoing with U.S. Fish and Wildlife for a final approval of proposed mitigation strategies both during construction and in the long-term during operation of the Water Treatment Plant.

Human health of U.S. residents will experience a direct positive impact from this project, both long-term and short-term, as well as cumulatively, because of the availability of a safe and dependable water supply. Indirectly, human health of Mexico residents will also benefit when they are in the City of Del Rio. The effects are discussed in greater detail in the Environmental Assessment document already mentioned.

The environmental benefits of this project will be increased conservation of limited regional groundwater resources through the elimination of leaking potable water ground storage tanks and increased enforcement of the City's Water Conservation Plan. Any risks to existing endangered and threatened aquatic species in San Felipe Creek from the discharge of membrane filter backwash effluent during the operation of the proposed Water Treatment Plant have been mitigated by incorporating riparian constructed wetlands at the discharge point prior to the effluent release to the stream.

Costs of the project are expected to be paid by the City's water utility ratepayers, which will experience a 130% to 140% increase in rates. For this reason the City is applying for construction grant and rate subsidy grant funding through BECC.

The environmental standards and objectives of the affected area which are to prevent loss or impact to sensitive habitat are expected to be met by this project which will provide a safe, dependable supply of drinking water to the community.

The proposed project does not have significant transboundary effects, other than the minimal one of solids levels contribution by the San Felipe Creek discharge at the confluence with the Rio Grande River. The net effect of this is normally a positive one. The combined flow of San Felipe Creek and the Rio Grande River result in a lowering of total suspended solids level in the Rio Grande River.

Because this Step II Application is for certification of eligibility to be considered for federal funds, the requirements of this Number 4 above (and Numbers 1, 2, and 3) must be met. The required Environmental Assessment under Numbers 1 and 4 has been submitted under separate cover. The environmental assessment process has examined the affected environment as it may be impacted by the construction and operation of the proposed Del Rio WTP. The assessment includes a records search of available local, state, and federal environmental databases to identify recognized environmental conditions both in and adjacent to the project site.

The Environmental Assessment identifies probable positive and negative impacts of the project, including potential unfavorable transboundary effects which are minimal, consisting of slightly concentrated levels of pre-existing solids in San Felipe Creek and the Rio Grande River, and mitigation measures to minimize or eliminate any negative impacts. An analysis of TSS levels shows that for the great majority of the time, approximately 99.5% of the total, there will be negligible impacts to both San Felipe Creek and Rio Grande River TSS solids levels. During a very small proportion of the time, approximately 0.5% (one-half of one percent), there will be a minimal impact of very short duration on the level of San Felipe Creek TSS, and a negligible impact on the TSS levels of the Rio Grande. In addition, the proposed membrane filter backwash effluent discharge system includes constructed riparian wetlands at each of the two stream returns to enhance system performance, improving the natural stream conditions by removing TSS through filtration/sedimentation in the wetlands. The expected result is an actual decrease in suspended solids returned to the stream.

The assessment also examines commitments of resources by the implementation of the proposed project, and compares alternatives available.

c. Compliance with Applicable Environmental and Cultural Resource Laws and Regulations

The proposed project has complied, or will comply, with all necessary environmental and cultural resource laws. The current status of compliance is indicated in the Table, REGULATORY COORDINATION SUMMARY of this document.

REGULATORY COORDINATION SUMMARY						
Plan or Regulation	Description	Contact	Date Application Submitted	Date Returned/ Approved	Status/ Remarks	Proof of Conformance or Steps Needed for Conformance Attached?
Preliminary Engineering Report (PER)	Draft Conceptual Design Document	David Laughlin, TNRCC	6/30/97	07/22/97	Approved	See TNRCC Letter dated 07/22/97

<i>Final Engineering Report (FER)</i>	<i>Final Design Document</i>	<i>David Laughlin, TNRCC</i>	<i>3/31/98</i>	<i>4/15/98¹</i>	<i>In Preparation—Pending completion of design documents</i>	<i>Need Completion of Design By Malcolm Pirnie-- Need Approval By TNRCC</i>
<i>Environmental Assessment</i>	<i>Environmental Impact Assessment Document</i>	<i>A. J. Lander, BECC</i>	<i>1/30/98</i>	<i>3/21/98²</i>	<i>Response to BECC review comments</i>	<i>Need BECC Certification—To be considered 3/31/98</i>
<i>Comprehensive Community Participation Plan</i>	<i>Citizens Steering Committee Activities</i>	<i>T. Williams, BECC</i>	<i>08/08/97</i>	<i>08/10/97</i>	Approved	<i>See BECC FAX dated 08/10/97</i>
<i>Public Meetings</i>	<i>Citizens Steering Committee</i>	<i>F. Sanders</i>	<i>01/22/98</i>	<i>1/30/98</i>	Approved	<i>Report included in Revised BECC Step II Application</i>
<i>Report Documenting Community Participation</i>	<i>After Public Meetings</i>	<i>O. J. Valdez, Malcolm Pirnie</i>	<i>1/30/98</i>	<i>1/30/98</i>	Completed	<i>Report included in Revised BECC Step II Application</i>
<i>Texas Historical Commission</i>	<i>Antiquities Permit</i>	<i>James E. Bruseth Tex. Historical Commission</i>	<i>12/18/97</i>	<i>01/19/98</i>	Approved	<i>See Texas Historical Commission letter dated 1/19/98</i>
<i>Step II Application</i>	<i>Financing Application Certification</i>	<i>J. Rangel, BECC</i>	<i>01/30/98</i>	<i>3/31/98³</i>	<i>Response to BECC comments</i>	<i>Need BECC Certification—To be considered 3/31/98</i>
<i>Discharge Permit Application</i>	<i>Direct Discharge Backwash Process Water</i>	<i>TNRCC</i>	<i>3/31/98</i>	<i>6/15/98⁴</i>	<i>Need control of Site by City—Land trade w/TxDOT</i>	<i>Need Review and Issuance of Permit</i>
<i>NPDES Permit</i>	<i>Process Discharge</i>	<i>USEPA</i>	<i>3/31/98</i>	<i>6/15/98⁴</i>	<i>In Preparation</i>	<i>Need Review and Issuance of Permit</i>
<i>NPDES Permit</i>	<i>Construction Stormwater Discharge Permit</i>	<i>USEPA</i>	<i>3/31/98</i>	<i>6/15/98⁴</i>	<i>In Preparation</i>	<i>Need Review and Issuance of Permit</i>
<i>USCOE 404 Permit</i>	<i>San Felipe Creek Crossing</i>	<i>USCOE</i>	<i>08/14/97</i>	<i>10/09/97</i>	Approved	<i>See COE Letter dated 10/09/97</i>
<i>IBWC</i>	<i>U.S. Section comments on EA</i>	<i>Mr. Yusuf E. Farran IBWC</i>	<i>2/2/98</i>	<i>3/4/98⁵</i>	<i>Under Review</i>	<i>Comments to be included in Final EA</i>

REGULATORY COORDINATION SUMMARY											
Plan or Regulation	Description	Contact	Date Application Submitted	Date Returned/ Approved	Status/ Remarks	Proof of Conformance or Steps Needed for Conformance Attached?					
<i>IBWC</i>	<i>Mexico Section comments on EA</i>	<i>Ing. Luis Antonio Rascon CILA</i>	<i>2/2/98</i>	<i>3/4/98⁵</i>	<i>Under Review</i>	<i>Comments to be included in Final EA</i>					
<i>U.S. Fish and Wildlife Service</i>	<i>Comments on EA</i>	<i>Wm. Seawell USF&W Austin, TX</i>	<i>01/26/98</i>	<i>3/2/98⁶</i>	Tentative Approval <i>Telephone consultation with Mr. Nathan Allen 12/19/97</i>	Mitigation Strategies Acceptable--Need EA Review Comments					
<i>U.S. Army COE</i>	<i>Comments on EA</i>	<i>Wayne A. Lea COE Ft. Worth, TX</i>	<i>1/30/98</i>	<i>10/09/97</i>	Approved <i>See COE Letter of 10/09/97 and Tel-con w/ Mr. Presley B. Hatcher 2/4/98</i>	Pipe Crossing Acceptable See COE Letter dated 10/09/97 <i>Per Tel-con of 2/4/98, COE does not need to review EA</i>					
<i>Texas Parks and Wildlife</i>	<i>Comments on EA</i>	<i>Dave Buzan TP&W Austin, TX</i>	<i>01/21/98</i>	<i>3/2/98⁷</i>	Approved <i>Telephone consultation with Mr. Dave Buzan 1/22/98</i>	Mitigation Strategies Acceptable--Need EA Review Comments					
<i>TNRCC</i>	<i>Comments on EA</i>	<i>Kathy Beyer TNRCC Austin, TX</i>	<i>2/5/98</i>	<i>2/26/98⁸</i>	<i>Under Review</i>	<i>Need EA Review Comments</i>					
<i>Texas Historical Commission</i>	<i>Comments on EA</i>	<i>Debra Beene THC Austin, TX</i>	<i>1/27/98</i>	<i>1/27/98</i>	Approved <i>Telephone Consultation with Ms. Debra Beene 1/27/98</i>	Clearance For Construction— <i>See THC Letter dated 1/19/98 Per Tel-con of 1/27/98, THC does not need to review EA</i>					

NEPA	EPA	Oscar Cabra, EPA Reg. VI	2/11/98	3/21/98 ⁹	Determination of No Significant Impact	Required by Step II application-FONSI expected 3/21/98
Building Permit	Water Treatment Plant	City of Del Rio Del Rio, TX	5/31/98	6/15/98	Contractor required to obtain	Contractor to apply for—upon bid award and Issuance of Permit By City
Construction Documents	Bid Package	M. Roetzel, Malcolm Pirnie	5/1/98	5/1/98	Design Phase in Progress	Completion of Design Phase by Malcolm Pirnie
Operations Plan Documents	Start-Up and Operations Assistance	M. Roetzel, Malcolm Pirnie	10/1/99	11/1/99	Start-Up Assistance Phase Not Authorized	To be prepared by Malcolm Pirnie after construction phase

Notes:

1The Design Phase is expected to be complete by 3/31/98 in order to prepare construction documents and bid packages by 4/30/98. Upon completion of the Design Phase, the Final Engineering Report will be submitted to the TNRCC for review and approval, which is expected to require approximately 2 weeks. Mr. David Laughlin, P.E., TNRCC Plans Review and Rate Design Team, is the contact person and may be reached at P.O. Box 13087, Austin, TX 78711-3087; Tel. 512/239-6960; FAX 512/239-6972; or at <DLAUGHLJ@tnrcc.state.tx.us>. The environmental standards to be met are the mitigation of any potentially unfavorable impacts to threatened or endangered species or habitat from the construction and operation of the proposed project.

2Part of the BECC certification process requirements is an Environmental Assessment of the project which essentially meets the NEPA guidelines, including a "Finding of No Significant Impact" (FONSI) by the lead agency. Because the funding being applied for by the City of Del Rio originated as Border Environment Infrastructure Funds (BEIF) from EPA, currently being administered by NADBank, the FONSI is expected to come from EPA. The contact person at BECC is April J. Lander, Environment and Sustainable Development Manager, BECC, Blvd. Tomas Fernandez No. 7940, Torres Campestre 6o. piso, Cd. Juarez, Chih. C.P. 32470; and may be reached at Tel. (01152-16) 29-23-95; FAX (01152-16) 29-23-97; or at <alandar@cocefinterjarez.com>. The environmental standards to be met are the mitigation of any potentially unfavorable impacts to threatened or endangered species or habitat from the construction and operation of the proposed project.

3The BECC Step II Application is expected to be considered by the BECC Board at its scheduled meeting of 3/31/98. The contact person at BECC is Juan Rangel, Evaluation Project Director, BECC, Blvd. Tomas Fernandez No. 7940, Torres Campestre 6o. piso, Cd. Juarez, Chih. C.P. 32470; and may be reached at Tel. (01152-16) 29-23-95; FAX (01152-16) 29-23-97; or at <jrangel@cocefinterjarez.com>. The environmental standards to be met are the same as the previous note.

4The TNRCC will not accept Discharge Permit Applications unless the applicant can demonstrate control of the site for the proposed facility. It is not necessary that the Design Documents be complete. The City of Del Rio is finalizing a land swap agreement with the Texas Department of Transportation to trade land owned by the City for the proposed site of the WTP owned by TxDOT. The land swap documentation is being processed at the TxDOT HQ in Austin, TX at present and is expected to be complete by 3/15/98; therefore the Permit Application is expected to be submitted by 3/31/98 as shown. The TNRCC then has 30 to 60 days to review the application and issue the permit, which makes the Approved date 6/15/98 as shown. If the TxDOT land swap is not finalized by 3/15/98, the City will request a "Letter of Intent" from the TxDOT. The contact person at the City is Juan J. Aguirre, Assistant City Manager, City of Del Rio, 109 W. Broadway, Del Rio, TX 78840; and may be reached at Tel. 830/774-8310. FAX 830/774-8542; or at <jaguirre@webnology.com>. The environmental standards are the same.

5The IBRC/CCLA is reviewing the EA at present. Because there are no significant transboundary impacts nor water quality impacts to the Rio Grande River expected from the proposed project, the review is expected to be completed before the date shown. The contact person at the IBRC U.S. Section is Terrell E. Farrow, Principal Engineer, Environmental Management Division, The Customs Bldg. C. Suite 110, El Paso, TX 79902; and may be reached at Tel. 915/514-6700. FAX 915/514-6880. The contact person at CCLA (IBRC Mexico Section) is Ing. Luis Antonio Rioson, Principal Engineer, P.O. Box 10525, El Paso, TX 79902; and may be reached at Tel. (01152-16) 18-99-42; FAX (01152-16) 15-99-43. The environmental standards are the same.

6The U.S. Fish and Wildlife Service has indicated that the proposed mitigation strategies are acceptable. The EA is under review at the present time. Review comments are expected by the date shown. The contact person at U.S. Fish and Wildlife Service is William Beavel, 10731 Burnet Road, 6208, Austin, TX 78738; and may be reached at Tel. 512/490-0807; FAX 512/490-0874. The environmental standards are the same.

7The Texas Parks and Wildlife Department has indicated that the proposed mitigation strategies are acceptable. The EA is under review at the present time. Review comments are expected by the date shown. The contact person at the Texas Parks and Wildlife Department is Dora Rioson, 4200 South School Road, Austin, TX 78744; and may be reached at Tel. 512/912-7012; FAX 512/707-1158. The environmental standards are the same.

8The TNRCC is reviewing the EA at present. Review comments are expected by the date shown. The contact person is Karly Reyes, Office of Policy, TNRCC, P.O. Box 13087 MC 301, Austin, TX 78711-3087; and may be reached at Tel. 512/239-6120; FAX 512/239-4908. The environmental standards to be met are the same as noted previously.

9The EPA has been requested to issue a determination of environmental impact by the proposed project. A determination is expected by the date shown. The contact person is Oscar Cabra, Region VI, EPA, 1445 Ross Avenue, Dallas, TX 75202; and may be reached at 214/865-2758.

3. Technical Feasibility

a. Appropriate Technology

1) Project Specifications

A Master Plan has been completed and approved by the TNRCC by letter dated 7/22/97. The Master Plan is incorporated in the Preliminary Engineering Report. A full copy of this document has been provided to the BECC as of 10/07/97.

A conceptual design report has also been completed. It is titled Preliminary Engineering Report and is the same document referenced in the previous item, above.

The preliminary design is currently nearing completion. It is approximately 75% complete, and consists of construction drawings and project specifications. Upon completion, these will become the Bid Document package for the construction of this project.

The useful life of the proposed project is estimated to be 20 years.

Water Supply

Growth Analysis

The proposed project is a Water Supply project which includes the pumping, filtration, storage, and distribution of the City of Del Rio's municipal water supply. Growth analysis and demand projections have been discussed above in section 1.c.3) of this application and in more detail in Section 4.3 of the PER. Using a conservative annual growth rate of 2.153%, the current population of Del Rio of 42,000 is expected to increase to 46,250 by 1999 when the water treatment plant is expected to go on-line, and to 70,000 by 2020, the end of the planning period.

Consumption Rates

Using recorded daily and monthly pumping figures from 1995-96 and a population of 42,000, the average daily consumption rate was determined to be 290 gallons per capita per day (gpcd). On the same basis, the peak daily demand was determined to be 550 gpcd.

Although the City of Del Rio has implemented a Water Conservation Plan as of 1991, it has not significantly impacted per capita water consumption rates as shown by the immediate past 2 years (1995-96) of historical data. For this reason, the average consumption rate used for capacity projections was held at 290 gpcd as required by State of Texas design criteria for public water systems.

Characteristics of the Production Source

The City of Del Rio's drinking water supply source is the artesian San Felipe Springs located within the city limits at the eastern side of the city. The San Felipe Springs consist of two springs--the East Spring and the West Spring. These springs feed the San Felipe Creek, which empties into the Rio Grande about 6 miles to the south. The San Felipe Springs have provided the City of Del Rio a prolific drinking water source for hundreds of years and are expected to continue to be the City's primary water source far into the future.

The City's existing water supply and distribution system consists of water supply pumps at San Felipe Springs, chlorination and fluoridation facilities at the springs, ground storage and elevated storage tanks, and distribution system pumps and piping. The primary springs pumps transfer water to three concrete water storage tanks at the Bedell Street site, to the U.S. Highway 90 East site, and to a standpipe at the State Highway 277 South site. Water is also transferred from the Bedell tanks by secondary booster pumps to the Agarita storage tanks located toward the north side of Del Rio. Service to Laughlin Air Force Base (AFB) is provided by separate pumps and transmission piping owned and operated by the Base, located at the East Spring pumping station

Water Quality Analysis

The City of Del Rio historically has monitored the turbidity, water temperature, and pH of untreated San Felipe Springs water on a daily basis for over 10 years. The most recent two years' historical data was analyzed by Malcolm Pirnie to characterize trends. The mean turbidity level for the period was 0.78 NTU for the West Spring and 0.65 NTU for the East Spring. Turbidity ranges for the West Spring and East Spring were 0.15 to 101 NTU and 0.16 to 93 NTU, respectively. While increased turbidity occurrences have been typically associated with significant rainfall events during the Spring and Fall months, also the seasonal times of higher rainfall, several turbidity events have occurred during dry weather periods, suggesting possible subsurface disturbances (collapse, settlement, etc.) in the karstic limestone waterbearing formation. Additionally, while both springs tend to respond to influencing rainfall events, turbidity magnitude, duration, and appearance (color) typically differ between the springs, suggesting some degree of independent hydrogeologic relationship between the East and West springs.

The mean and median temperatures for the West and East springs are all within 0.2o F of 74oF. Over the two year period, 90% of the data for the West and East springs fell within the ranges of 70oF to 78oF and 70oF to 77oF, respectively.

The median pH values for the West Spring and the East Spring were 7.08 and 7.07, respectively.

Water Conservation Program

The City of Del Rio has a Water Conservation Plan and Drought Contingency Plan in effect which was adopted in 1991. Generally, it encourages water conservation by various practices, including the replacement of bathroom fixtures with low-flow models. During periods of drought, voluntary conservation methods are replaced by enforced conservation methods which provide for various civil or monetary penalties for violators.

Pollution Prevention Program

The City of Del Rio also has water pollution prevention requirements built-in into its Plumbing Code and Subdivision Ordinance which prohibit cross-connections of water supply and sanitary and storm sewers and require air gaps between points of contact of city water and other water storage reservoirs.

Well-head Protection Program

The City of Del Rio Water Utility Department maintains 6 foot chain-link perimeter fencing topped with 3-strand barbed wire at all of its well-head and water storage tank locations to prevent accidental or deliberate contamination of its drinking water supply. All sites are graded to drain stormwater run-off away from the location of the well and well pumps.

2) Technical Process

A complete description of the treatment technology evaluation and selection is included in Sections 5.4 and 5.5 of the Preliminary Engineering Report. Several treatment alternatives were evaluated, including the "no build, no project" alternative, the conventional treatment alternative, the direct filtration alternative, and the membrane filtration alternative. A description of each of these follows.

The no-build, no project alternative was the first to be rejected due to the requirement imposed by the TNRCC's Board AO, which requires that a water treatment process be in place by approximately July, 1999.

The conventional treatment process is applicable to a wide range of raw water qualities. The process usually includes the addition of a coagulant in a rapid mix step as the initial treatment, followed by flocculation and sedimentation, filtration, and disinfection. It may or may not include the addition of polymer prior to the filtration step, and may be varied by the bypassing of the sedimentation step or the application of high filtration rates as cost-saving methods during low turbidity periods. It is described in more detail in Section 5.2.1, Conventional Treatment, of the Preliminary Engineering Report.

The direct filtration process is a modification of the conventional treatment process. However, it is generally applicable only to low turbidity raw water. This process includes the addition of a coagulant in a rapid mix step as the initial treatment, followed by flocculation, filtration, and disinfection. It eliminates the sedimentation step, and may or may not include the addition of polymer prior to the filtration step. It is described in more detail in Section 5.2.2 of the Preliminary Engineering Report.

The other treatment process considered, membrane filtration, consisted of the process known as Ultrafiltration (UF). The process is relatively simple, and includes a pretreatment step such as straining to remove large particles, followed by particle removal to a size of about 0.02 μ m (\pm virus size) by the membrane units, and disinfection. It is described in more detail in Section 5.2.3, Membrane Filtration and Separation Processes, of the Preliminary Engineering Report (PER).

Based on the needs of the community and the nature of the raw water supply characteristics, the treatment technology selected was membrane filtration, or Ultrafiltration. It was judged to be the more flexible of the various alternatives in its ability to deal with widely varying levels of turbidity, and the easiest to operate and maintain.

b. Operation and Maintenance Plan

1) Start-Up and Operations Plan

Start-Up operations assistance is part of the project scope and schedule. An Operations Plan is currently being developed. At the present time, it is expected that construction completion and start-up of operations will take place about the latter part of 1999.

2) Contingency Plan

The Operations and Maintenance (O&M) Manual to be provided as part of the Start-Up assistance will include Contingency Plans for operations problems.

3) Safety Plan

A Safety Plan which includes OSHA requirements shall be part of the O&M Manual.

4) Quality Assurance Plan

A Quality Assurance Plan will be prepared as part of the Start-Up Assistance work scope.

5) Pollution Prevention Plan

A Pollution Prevention Plan will be provided by the construction contractor. It will include a Stormwater Pollution Prevention Plan (SWP3) required for the NPDES Permit.

4. Financial Feasibility and Project Management

a. Financial Feasibility

Revenue to cover project operations, debt amortization, and operation and maintenance costs has been projected to be sufficient if derived from rate structure increases. However, the size of increase required, on the order of 130% to 140%, will more than double the existing water rates and may cause severe hardship on many of the utility's customers.. For this reason this BECC Step II Application for certification is being submitted for eligibility to receive grant funds.

1) Financial Statements - Historical

Financial statements in the form of audited Financial Reports for the last 5 years are available. These annual financial reports were prepared by the City of Del Rio's Finance Department, using generally accepted accounting principles. The latest, for Fiscal Year 1996, has been submitted to BECC on October 9, 1997. The 1996 Audit Report is available under separate cover.

The annual financial reports include a balance sheet, income statement, statement of sources and uses of funds, and all accompanying footnotes. They also include the auditor's report, signed by the Finance Director of the City of Del Rio.

2) Financial Statements - Pro Forma

Pro-Forma financial statements with income statement projections extending throughout the life of the loan, and including a sources and uses statement for the project, using constant values, have been prepared and are attached to this document.

The annual revenue streams from the project, net of the costs of effective operations and maintenance, have been projected at a level of at least 1.2 to 2.0 times the annual debt service required for this project.

The source and amounts of additional funding required to complete this project has been shown on the accompanying schedules and budgets as municipal bond funds to be secured by the City of Del Rio.

3) Financial Structure of the Project

Information relating to the capital amount to be contributed by the applicant, the City of Del Rio, is attached to this document. The attachment includes a timetable of cashflow needs and projections. The total amount of grants under various scenarios is also shown, thus providing the ability to estimate the required rate structure increases necessary to finance this project. The scenarios vary the amount of grant to be obtained.

Because the funds being applied for are grant funds, no collateral or other security package is attached to this application.

4) Capital Improvement Plan

A plan showing fixed and variable costs and detailing investments, land, equipment, and other types of fixed assets for the years 1992-96 has been prepared. This information, along with the correspondent Balance Sheet; a Statement of Revenues, Expenses, and Changes in Retained Earnings; and a Statement of Cash Flows, is attached. The figures were obtained from the City of Del Rio Comprehensive Annual Financial Report (CAFR for those years.) A copy of the complete CAFR for 1996 was submitted to the BECC on October 9, 1997.

Also included in this document is the investment timetable showing the required capital expenditures for each major item of this proposed project and the time projected for their availability . This table also summarizes the total capital cost for each major item.

Projected (Pro-Forma) income projections expected from the operation of the Water Utility Department for the years 1998-2004 have been generated and included as part of this document. The Part I of those figures is a projection of O&M expenditures requirements for two alternate membrane filter treatment processes.

5) Operations and Maintenance Budget - Historical

The most recent 5 year historical budget for operation and maintenance is included in this document. It shows the amounts expended annually for the years 1992-96 for personnel, supplies, contract and other services, etc.

6) Operations and Maintenance Budget - Pro Forma

The City submitted the Pro-Forma operation and maintenance budgets in constant values for the first 6 years of operation of this proposed project. These figures include amounts for equipment replacement.

7) Sensitivity Analysis

A sensitivity analysis which includes consideration of the impact to this proposed project from such changes as the increased revenue from Laughlin AFB and new customers, and the reduction in the monthly water customer base amount from 3,000 gallons per meter to 2,500 gallons as a conservation measure has been prepared and is included in this document.

This analysis also shows the economic conditions existing in the community and which will affect the ability of water utility rate payers to absorb the necessary 130% to 140% rate increase to cover the debt service for this proposed project.

A detailed line item analysis of revenues and expenditures is also provided, which indicates the scale of the rate increase necessary for each water utility customer class in order to cover the cost of this proposed project.

8) Financial break-even Analysis

An analysis of revenues required to recover the required debt service costs and operation and maintenance costs for the proposed Water Treatment Plant was developed. The minimum rate increase required for the present customer base is between 130% to 140%. This means that the typical water utility customer should expect a monthly water bill of almost two and one-half times the present cost (240%). For example, if a typical customer pays \$22.00 for water at the present time, the new rates required for debt service and O&M would mean a monthly water bill of \$52.80. This represents an economic hardship for many households in the City of Del Rio, and for this reason the City is applying for grant funds through this BECC Step II Application.

9) Demographic and Economic Information of the Proposed Service Area

Demographics

Current water utility service demands are used to predict future service demands, both for the year 1999 corresponding to scheduled WTP startup, and for the year 2020 corresponding to a 25 year facility planning period. Future demand predictions assume that per capita usage will remain unchanged throughout the planning period.

Future population predictions are based on data provided by Texas A&M University, Department of Rural Sociology, and presented in Appendix G of the PER. A downward adjustment from the predicted year 2020 population of 74,741 is assumed, allowing for rural county population not expected to be incorporated as a part of Del Rio's water utility service area. The assumed year 2020 utility service population is 70,000.

The projected service population of 46,500 for the planned 1999 WTP startup is derived by linearly interpolating between the current 1995-96 service population and projected 2020 service population. Total system demands (MGD) are determined by applying per capita demands (GPCD) to projected service populations.

Socioeconomics

The project area is located within the corporate limits of the City of Del Rio, in Val Verde County, Texas. The county is located on the Rio Grande Plain bordered by Mexico on the southwest and the Edwards Plateau on the northeast. The terrain is characterized by rolling hills and scrub brush enhanced by the scenic rock canyons of the Pecos River and the Devils River.

According to the Middle Rio Grande Development Council, Val Verde County is the 68th largest of the 254 counties in Texas, with an estimated population of 40,022 in 1991. The county seat of Val Verde County is Del Rio, and the next most significant city is Comstock. Val Verde is a rural county located within the Middle Rio Grande JTPA service delivery area and the Middle Rio Grand Quality Workforce Planning region.

Laughlin Air Force Base, which is located approximately six miles east of Del Rio, is a major generator of income and employment, employing 1,400 military and 1,800 civilian workers. According to the Texas Employment Commission (TEC), the county civilian labor force numbered 15,087 in March of 1992. Total unemployment was 1,942, an increase from 1,803 in March of 1990. The county unemployment rates, which decreased over the three years, was 12.9, 12.7, and 10.9 percent for March 1990, 1992, and 1993, respectively. The state-wide unemployment rate was 7.4 percent in March 1992 and 6.7 percent in March 1993.

Wool and mohair production accounts for a large portion of the county's \$16 million annual agricultural income. A survey conducted by the Texas Agricultural Statistics Service in cooperation with the Texas Department of Commerce revealed a total of 360 farm and ranch employment positions for the county in January 1993. Non-agricultural industries include mining, construction, manufacturing, transportation/utilities, wholesale/retail trade, services, finance, and government, with government being the major industry sector at 42 percent, followed by wholesale/retail trade at 28 percent.

Tourists are attracted to the City of Del Rio due to its location on the Mexico border, its proximity to nearby Lake Amistad, and its comfortable climate. Also attracting tourists are a number of cultural spots in the area, including the Val Verde Winery, Whitehead Museum, and Seminole Country with its Indian pictographs. Sectors of the local economy which have experienced significant growth include international trade with Mexico, manufacturing, service, and wholesale industries.

In 1988, the per capita personal income level for Val Verde County was \$8,875, with a state- wide average of \$14,590. By 1990, the per capita income had increased to \$10,326 for the county. Based on the 1990 Census, the median household income for families in Val Verde County was \$18,042, with a statewide average of \$27,016. The average weekly wage for all covered employment in the county in the first quarter of 1992 was \$294.40, compared with the state-wide average of \$445.65.

According to the 1990 Census, Val Verde County had a population of 35,910. Forecast estimates placed the 1998 projected population at 44,388 persons. The median age of the 1990 population was 27.6 years old, compared with the statewide average of 30.9 years and the national average of 35.9 years of age. In 1990, 14 percent of the population in Val Verde County were between the ages of 14 and 21, and 17 percent were 55 or over. According to the Census Bureau, the ethnic distribution in Val Verde County in 1990 was approximated as 27 percent white, 2 percent black, 71 percent Hispanic, and 1 percent other.

Two public schools and six private schools provide education in the area, as well as a number of colleges, trade schools, and adult and continuing education centers. In 1990, 13 percent of the residents age 25 and over in Val Verde County had college degrees (Bachelors) or higher. School districts in the county showed 9,079 average daily attendance in 1990, which represents a decrease from the 1986 school year of 9,355. Public school dropouts in 1991 were down from 272 in 1989 to 219, with a greater number of dropouts occurring after the 9th grade.

The above clearly shows that the service area for this proposed project has the economic viability to service the debt requirement, although admittedly at a severe hardship level for many families.

Additionally, the proposed project should have a positive effect on the business climate and economic growth of the community.

b. Fee/Rate Model

The proposed Fee/Rate model shows that, with the various water utility monthly fee increases for the different customer classes, the monthly revenues will be sufficient to support debt service requirements as well as operation and maintenance costs.

1) Fee/Rate Schedules - Historical

A copy of the existing, historical Fee/Rate schedule in the form of an ordinance passed by the City Council of the City of Del Rio on September 13, 1994, to become effective October 1, 1994 is included to this document..

A table showing the efficiency of collections as compared to billings, and expressed as a percent, for the months of October, 1996 to September, 1997, is included to this document. For the given 12 month period, the overall collection efficiency is 95.15%.

2) User Fee Structure

A pro-forma fee/rate schedule in constant values, which is the basis of the income statement's projections which provide for coverage of current and future operation and maintenance costs, and which allows the City of Del Rio to have sufficient cash flow to amortize the debt and cover equipment replacement costs is included.

The new user fee structure must be approved by the City of Del Rio Utility Commission and passed by the City of Del Rio City Council as a City Ordinance.

Expected income sources include user fee increases, BECC transition grant funds, and BECC construction capital grant funds. The actual amounts have not been determined, but projections based on differing percentages of funding have been calculated. As stated above, the community has the necessary economic viability to generate all of the required revenues through water utility rate increases. However, this would cause undue, severe hardship on the great majority of families within the community.

c. Project Management

1) Organizational Structure

A complete organizational chart depicting the key management and functional department heads, along with their resumes and job descriptions that include job functions, is attached.

2) Institutional Capacity and Legal Framework

The City Attorney's opinion on the status of the current operations regarding technical and administrative functions, as well as the legal framework of these operations, is included with this document as well.

There has not been delay on the part of the City responding to regulatory requests. The City of Del Rio received notification by the TNRCC in May of 1995 of rising turbidity levels and of the influence of surface water. In this notification, it proposed that we monitor the water conditions and address the filtering of the water. In said time, the City of Del Rio continued the monitoring of the turbidity levels. They also contracted with an engineering firm to research the treatment processes that were available for the water system. In their study of the treatment processes and water from the Springs, the engineering firm found itself in a situation that it was not adequately prepared for and proposed alternatives to the City that were not feasible.

The City of Del Rio then began the active solicitation of qualifications for engineering firms to design the water treatment plant and the water storage tanks. Through a multi-step procurement process, the City selected the firm of Malcolm Pirnie, Inc., to design the plant and tanks. Malcolm Pirnie, Inc., has been on-line with the City since February 1997 and actively working on the Preliminary Engineering Report to outline the history of the system, the capacity of the plant, and the treatment process. Once the process was selected, the design of the plant commenced.

The City of Del Rio received a draft of an Administrative Order (AO) in May 1997 with terms for compliance. It complied with those terms by signing the draft AO. As of this date, the Agreed Order has not been signed by the TNRCC. However, the TNRCC is still pursuing the delivered water date of 31 May 1999. This will put a time constraint on construction that may escalate the costs related to it. For this reason, a conference to discuss on-going progress on the Design Phase of this proposed project and to request consideration of a postponement of the May 31, 1999 deadline was requested by the City of Del Rio. This meeting took place in January 8, 1998 between the City of Del Rio, TNRCC, and Malcolm Pirnie. To date there has been no response from TNRCC on a time extension.

Legal empowerment to undertake long-term loan obligations and to use assets or cash flow as financial guarantees has been demonstrated by the legal opinion attached to this document and the fact that the City of Del Rio has begun the process of issuing the first increment of municipal bonds in the amount of \$11 million to finance this proposed project. However, the funding being applied for in this application is grant funds, not loans.

There are no legal issues that could impede the progress of this proposed project, or its implementation, known at this time.

5. Community Participation

a. Comprehensive Community Participation Plan

A BECC-approved Comprehensive Community Participation Plan (CCPP) consisting of a. local steering committee, meetings with local organizations, public access to project information, and at least two public meetings was developed. The CCPP is dated August 8, 1997 and was reviewed and approved by the BECC on August 12, 1997.

That Plan also includes a copy of the list of members of the Citizens' Steering Committee, and agendas and minutes of the Citizens' Steering Committee organizational meetings and other activities.

1) Local Steering Committee

The Local Steering Committee, or Citizens' Steering Committee, is made up of members from different organizations and representing diverse ethnic backgrounds as well as different geographic areas of the City of Del Rio. A list of the members is included in number 4) b, below.

Although the project has no significant impacts on Mexico, representatives from Ciudad Acuna were invited by Mayor Chavira to participate in the Public Meetings. To date, no participants from Ciudad Acuna, Coahuila, Mexico have taken part.

2) Meetings with Local Organizations

The Steering Committee members decided to hold their meetings in different geographic areas of the City and thus make available to the public the information regarding the project in this manner. However, presentations were made to the local Lions Club on 9/24/97 and 10/1/97 by members of the Steering Committee.

3) Public Access to Project Information

Copies of the Draft Environmental Assessment for this proposed project and the Step II BECC Application were made available for the public at least 30 days prior to the first public meeting. The documents were available at publicly accessible locations at the Val Verde County Public Library and at the City Manager's Office at City Hall on October 10, 1997. Both of these facilities are accessible during, as well as after, normal working hours of 9:00AM to 5:00PM. The first Public Meeting was held January 15, 1998; and the second Public Meeting took place on January 22, 1998.

The availability of the documents to the public was publicized on the Public Access cable TV channel and in the local daily newspaper, The Del Rio Times-Herald, as were the dates, times, and locations of the Citizens' Steering Committee meetings and the Public Meetings.

Other copies of the documents were circulated by members of the Citizens Steering Committee to interested individuals and groups.

4) Public Meetings

The notices for the two public meetings were submitted to the BECC for review and approval prior to their publication.

Although the project directly affects only residents of the City of Del Rio, efforts to obtain the participation of the public from Ciudad Acuna, Coahuila, across the border in Mexico were continued, but with no success.

The Notices for the two Public Meetings included the information on the availability of the project documents for public access. The notice for both public meetings was posted at City Hall and publicized on the Public Access cable TV channel as well as in the local daily newspaper, the Del Rio Times-Herald. The required minimum two public meetings were held on January 15 and January 22, 1998.

Both City staff and Malcolm Pirnie staff, as well as the members of the Citizens Steering Committee, were available to provide information and answer questions. As detailed in the minutes of the meetings, the format generally began with an introduction by the chairman of the committee of all of the committee members present and was followed by a presentation and explanation of the project and its history, made by representatives of the City and the consultant. This was then followed by questions from the public and answers by staff.

The impact to user rates was the most frequently asked question at all of the meetings. Copies of a project description summary, prepared by the City, were available at all the meetings.

The City provided tape recordings and transcribed the minutes from those tapes.

b. Report Documenting Public Support

A report summarizing citizen support for the project has been included as part of this document. Generally, the public has accepted the need for the project as a public health measure, but some community members are concerned about the size of the water utility rate increases which will be necessary. Communities to be directly affected by the proposed project are the City of Del Rio, Texas, and Colonia Cienegas and Colonia Val Verde in Val Verde County, Texas.

Steering Committee Members.

The following are the names of the members of the Citizens' Steering Committee:

- 1. Ms. Maria Gonzalez 4. Mr. Greg Stone 7. Mr. Juan Olivares (V. Chair)*
- 2. Mr. Fred Sanders, Jr. (Chair) 5. Mr. Hector Valdes 8. Mr. Jesse Fernandez*
- 3. Mr. Roberto Fernandes 6. Mr. Robert Flores 9. Mr. Max Cuellar*

Steering Committee Activities.

Below is a listing of Citizens' Steering Committee activities:

- 1. Organizational Meeting 9/2/97 4. Neighborhood Meeting 10/2/97*
- 2. Neighborhood Meeting 9/10/97 5. Neighborhood Meeting 10/9/97*
- 3. Neighborhood Meeting 9/24/97 6. Public Meeting 1/15/98*

- 7. Public Meeting 1/22/98*

Presentations by Citizens' Steering Committee member Mr. Juan Olivares to the Del Rio Lions Club were made on 9/24/97 and 10/1/97. A presentation was also made by Committee Chair Fred Sanders and member Juan Olivares to the Water Task Force of the Del Rio Chamber of Commerce.

Other avenues used to distribute the project proposal were the availability of copies to the public at the Val Verde County Library; the City Secretary's Office; and the City Manager's Office. Media avenues used to publish the two meeting notices included the Del Rio News-Herald (Local Daily Newspaper); the Del Rio Sun; the El Zocalo (Cd. Acuña daily newspaper); Public Access TV; and the local radio station.

Evidence demonstrating the scope and success of the Comprehensive Community Participation Plan is the unanimous approval in support of the project by vote of the Citizens' Steering Committee at their meeting of 9/10/97.

6. Sustainable Development

a. Definition and Principles

The proposed City of Del Rio Water Treatment Plant project adheres to the principles of sustainable development by incorporating a comprehensive approach, including integrating environmental concerns, economic issues, and social and health aspects into the response to a regulatory mandate. This approach is described in detail in this Step II Application document and the accompanying Environmental Assessment.

The proposed project will improve the quality of life in the community by providing a safe and dependable public drinking water supply. The project will eliminate potential risks to the public health from unfiltered water and maintain harmony with nature by minimizing unfavorable environmental impact.

The proposed project meets the needs of the current population. The project will also meet the needs of the anticipated population. It has been designed for future expansion when required. However, the project does not invoke growth in and of itself. It does meet the needs of the current and expected population through the year 2002. The expected growth will not cause negative social, economic, or environmental impacts.

Because the project incorporates both short-term and long-term impact mitigation to sensitive aquatic species habitat, it protects existing as well as future natural resources. Also, this proposed project has involved the people most impacted by its implementation to take part in the decision-making through a well-planned and executed Comprehensive Community Participation Plan. As a result of this project, the City of Del Rio will provide municipal drinking water to unincorporated colonias outside of the city within Val Verde County, thus bringing appropriate institutions together for better balanced development planning and better use of scarce resources.

The proposed City of Del Rio Water Treatment Plant Project is a sustainable development project because it is designed to promote a more efficient use of natural resources by improving ground storage tanks to prevent losses; and at the same time to protect human health and fulfill the needs of the public for a safe water supply.

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, is the ultimate goal of funding assistance programs administered by the NADBank for which the BECC certifies for consideration. Four of the principles which define these concerns are stated below, with a description of the way this proposed City of Del Rio Water Treatment Plant project addresses them following.

One of the most basic needs for human beings living in a community is a safe, dependable, and affordable water supply. This project will fulfill that need.

While this project will not trigger unnecessary growth by extending the water distribution system to undeveloped areas, it will provide supply capacity for both present and future needs. It will also provide municipal water service to existing colonias located in Val Verde County.

The protection of the environment through efficient use of existing natural resources such as groundwater, and the careful monitoring and management of residual stream discharges to protect surface water quality is an integral part of this project. Construction techniques which will minimize acute short-term environmental impacts are being incorporated to the greatest extent feasible. Mitigation efforts to reduce potential long-term, chronic impact to aquatic species from membrane filter backwash effluent are also being implemented.

A Comprehensive Community Participation Plan has been incorporated into the project development process. Local citizens and interested organizations and groups have been provided the opportunity to voice their questions and concerns, and to offer suggestions for alternatives.

b. Institutional and Human Capacity Building

1) Human Resource Capacity

a. Existing Human Resource Capacity

The City of Del Rio, population 42,000 (1997 estimate), operates most of the typical municipal services including streets, drainage, sanitary sewerage, water system, police, fire, and planning and zoning. The wastewater treatment plants are operated under contract by OMI Services, Inc. The current number of city employees is 420, of which 51 are city water utility employees. The city water utility includes three departments: water production, with 7 employees; water distribution, with 27 employees; and wastewater collection and treatment, with 17 employees.

Of these water utility employees, 6 are licensed, certified operators including one B licensed (surface water); one B licensed (groundwater); three C licensed (groundwater); and one D licensed (groundwater). The TNRCC will require B licensed (groundwater) operators for the proposed membrane filtration plant.

a. Human Resource Capacity Needed to Operate and Maintain the Project

For operation and maintenance of the selected membrane filtration treatment process, the estimated staffing requirements will be 1 to 2 full-time (2 shifts daily) and 2 to 3 day shift staff, which is a total of 224 to 392 man-hours weekly, or 6 to 10 full-time staff without resorting to overtime. Because existing staff has other duties and responsibilities, several of these positions may require new hires.

a. Plan to Strengthen Human Resource Capacity

The City of Del Rio plans to staff these positions during the Start-Up and Operations Assistance part of the project Schedule, that is, the latter part of 1999.

2) Institutional Capacity

a. Existing Institutional Capacity

The City of Del Rio currently has the institutional capacity to staff and operate the proposed Water Treatment Plant, just as it presently staffs and operates the municipal water supply and water distribution departments (See b.1.a above).

a. Institutional Capacity Needed to Operate and Maintain the Project

No additional institutional capacity is projected to be needed other than the required additions to existing staff (See b.1.b above).

a. Plan to Strengthen Institutional Capacity

Existing institutional capacity is expected to be sufficient to operate and administer the proposed Water Treatment Plant.

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

All known local and regional plans which are applicable to this proposed project have been reviewed. This project conforms to their requirements as described below.

Land Use Study

In 1990, the firm of Hogan and Razor was contracted by the City of Del Rio to perform a land use study of the area immediately surrounding the San Felipe Springs. The area to the immediate north was identified as raw land and as the potential recharge zone for the San Felipe Springs. The development in this area was hindered due to the lack of water and sewer systems. The land was annexed into the City and zoned as low density residential (lot sizes 5.0 acres plus). This would allow very low density over the recharge zone and reduce the possibility of contaminants from flowing into the aquifer that feeds the Springs.

Capital Improvement Plan

The current Capital Improvement Plan in effect in the City of Del Rio was adopted in 1994 with subsequent revisions in the years thereafter. The CIP addresses the current sizing of water and sewer main lines and the projects necessary to bring the system up to better efficiency. The modeling of the water system is currently under contract with the firm of Lockwood, Andrews, & Newman. This modeling takes into consideration the existing conditions of water lines, pressures, and storage. From this the population projections are inserted into the formula to address areas of growth and identify problematic areas. The final recommendation is for adequate water line sizing and replacement. This finished product is projected to be returned to the City by early Spring 1998. With this subsequent revisions will be made to the CIP in reference to water improvements.

In relation to sewer, the similar process is under investigation by the same firm. The modeling of this system has not commenced but will start in the Spring of 1998. This too will modify the current CIP to include problematic areas and the necessary solutions.

Transportation Master Thoroughfare Plan

As part of the Hogan and Razor study of 1990, the area to the surrounding the Springs was identified as low density, annexed and zoned such. The current Transportation Master Thoroughfare Plan projects a series of road extensions that will be used to implement extensions of water and sewer that will increase the potential for development in the area. The land use is still governed by the current zoning which allows Single Family Residential in 5 acre tracts or large. It also allows some agricultural uses. However, most of this land is raw and undeveloped.

Therefore, the proposed project will conform to the Master Thoroughfare Plan and the existing CIP.

Zoning Ordinance

The project will also conform with the City of Del Rio's Zoning Ordinance. Under the current zoning ordinance it is not required that this property be rezoned. The property is zoned Residential Single Family but is used for a "grandfathered" Industrial Use associated with the storage of the materials by the Texas Department of Transportation. If the use is vacated for a period greater than two years the "grandfathered" use is disallowed and would require re-zoning. However, this is not the case, as the Industrial use would be continued by the Water Treatment Plant.

The contact persons for these local or regional plans are listed below:

Capital Improvement Plan Juan J. Aguirre, Assistant City Manager

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Transportation Thoroughfare Master Plan Same as above.

Zoning Ordinance Same as above.

d. Natural Resource Conservation

The proposed City of Del Rio Water Treatment Plant Project will conserve groundwater resources by the reduction and elimination of approximately 250,000 to 500,000 gallons per day in losses from ground storage tanks. This volume represents 91.0 to 183.0 million gallons per year, or about 2.0 to 5.0 percent of the City's average demand.

The City of Del Rio has a water conservation program currently in place. Part of the conservation plan entails educating the consumers on the importance of conservation and exactly how to accomplish a noticeable reduction in water use. The City of Del Rio Plumbing Code was amended to include conservation-oriented construction methods. All water meters are maintained to keep an accurate record of the destination all water. A drought contingency plan is also in place to establish temporary methods and procedures to deal with situations of critical water supply.

There are different aspects of the Conservation Plan. The most critical is that during times of drought, more severe and mandatory conservation methods are to be implemented. However, there are aspects of it that address low flow showers, low volume water closets, and other items to be implemented during new house construction. These were called for in the drought policy but have been implemented in the Building Codes. Conservation is also addressed in the Housing Code Section of the Code of Ordinances and in the prohibition of water from running in the streets.

e. Community Development

The proposed project will have a positive impact on the community. A safe, dependable drinking water supply will attract others to the community.

Implementation of this proposed project will improve the educational, recreational, and other community services by providing a safe and convenient supply of potable water. A safe water supply will encourage orderly community growth with outside investment. It will also help assure the future of Laughlin AFB, the area's largest employer.

The City of Del Rio Subdivision regulations very much govern the orderly growth of the community. They are strictly enforced and such provisions make developers provide water, sewer, and paved roads to the development before any lots are even sold. As previously indicated, the current CIP outlines problematic areas and cites proposed solutions. In order for growth to occur in these areas, the City of Del Rio and the developers would be required to make such improvements to serve the community.

The longterm effects of this project will include, in addition to an increase in overall economic activity, the encouragement and facilitation of new employment, commercial, and residential development because of the availability of a safe water supply.