

CHAPTER NINE: Infrastructure Financing Report

Region M Regional Water Planning Group

November 2005

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Infrastructure Financing Report Region M Regional Water Planning Group

Background

The Infrastructure Financing Report (IFR) requirement was incorporated into the regional water planning process in response to Senate Bill 2 (77th Texas Legislature). For purposes of the IFR, each regional water planning group (RWPG) is required to determine proposed financing for all of the water management strategies that were proposed in the first round of planning. For each of these strategies, the RWPG must determine the funding needed to implement the strategy, and what types of funding are likely to be accessed.

According to TWDB guidelines, the primary objectives of the IFR are:

- To determine the number of political subdivisions with identified needs for additional water supplies that will be unable to pay for their water infrastructure needs without some form of outside financial assistance;
- To determine how much of the infrastructure costs in the regional water plans cannot be paid for solely using local utility revenue sources;
- To determine the financing options proposed by political subdivisions to meet future water infrastructure needs (including the identification of any State funding sources considered); and,
- To determine what role(s) the RWPGs propose for the State in financing the recommended water supply projects.

NRS Consulting Engineers was authorized to prepare the Infrastructure Financing Report (IFR) and Policy Statement for the Region M Regional Water Planning Group (RWPG). The list, as provided as a template by the Texas Water Development Board, was used to develop the list of water user groups in need. Names and address lists were developed for each group. A sample letter is included as Appendix A. As per the discussion with the RWPG, it was decided to expand the survey and add additional questions to aid in the current planning process. The supplemental survey is included as Appendix B.

There was also a discussion at the RWPG meeting to include all water supply corporations in the survey that would have fallen under the County-Other category. To help give a better understanding of the irrigation groups, surveys were sent to them also. Data has been summarized to incorporate the general consensus of these groups.

The consultant team attempted to visit each WUG to discuss the surveys and their approach to the financing their water management strategies. 90% percent of the municipal user groups, water supply corporations, and irrigation districts were personally visited within June through November of 2004. In the irrigation category, a presentation and verbal discussion was held at the Irrigation District Managers meeting to get input and attempt to receive a consensus amongst the irrigation districts.

Findings

Information found in the template formulated by the TWDB, was used to merge data into the required survey forms. During the last round of regional planning upon the development of these forms, all but four user groups had zero dollars listed for their future capital expenditures. This was confusing to the recipients of the survey. In addition, the WUG's did not know, for the most part what was in the plan and why these strategies were picked for them.

In the second round of planning most of the WUGs were visited to obtain an in depth representation of the WUG. Decision documents showing the strategies chosen by the entities in 2004 were compiled and revisited in a survey mailed out in October 2005. The entities were given ample time to add comments and corrections to the data gathered for this regional water plan written. The first survey in 2004 asked let the entity state what strategies were they interested in implementing in the next fifty years. At that time they were asked how they were planning to fund it. The second survey pertained more to the financing of the strategies. The data in these surveys were compiled and being used for this plan. Sample letters and surveys can be found in Appendix A and B attached to this report.

Water User Group Summaries

Municipal Water User Groups

The majority of municipal WUG's had strategies that include urbanization, advanced water conservation measures and purchase of Rio Grande supplies. There are total of eight counties, 52 cities, and 15 water supply corporations in this regional planning area. Surveys were sent to only those that had been listed in the plan with a need during the fifty-year plan. Of these municipal WUGs, 90% received a personal visitation made by one or more of the consultant team during the months June through November of 2004. As part of the visitation, the survey was explained as to its purpose and the Regional Planning Group's role in the planning process.

The RWPG also sent out two surveys throughout this second round of planning. The first was sent out in the summer 2004 and the second was sent out in October 2005. Samples of the surveys are attached to this report. The surveys were used to obtain additional information about their current thought about water planning and their involvement with the RWPG. The survey also discussed what their focus was with regard to providing water for their future. For the most part, the interviewees indicated that there was a better line of communication between the WUG and the RWPG compared to the last round of planning. They understood that it should be their responsibility to attend public hearings and find out what is going on. Those that had attended the monthly RWPG meetings did not have the time to go to the meetings for four hours. It was noted by interviewees that the brief monthly newsletters being sent to the municipalities to inform them of what actions and updates occurred at the RWPG meeting was beneficial. This region has an estimated total annual cost of \$152,096,384 for all municipal water management strategies. The Acquisition of Water Rights through Purchase has the highest yield for

municipal strategies at 144,991 acre-ft. Desalination of Brackish Groundwater came in second with 57,880 acre-ft assigned to municipal water user groups.

Summary of Municipal Water Management Strategies

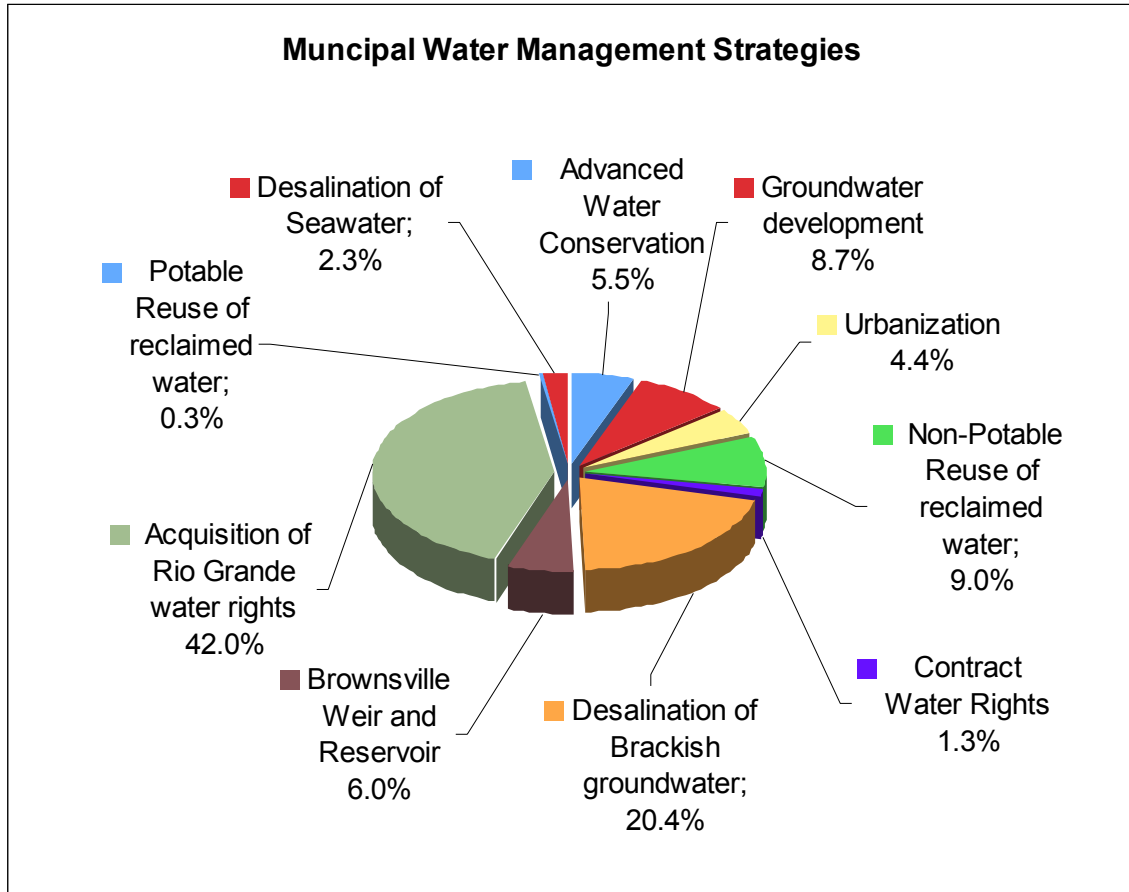
For Municipal users, the strategies recommended for this regional planning area are:

- Advanced Water Conservation;
- Potable Reuse of Reclaimed Water;
- Non-Potable Reuse of Reclaimed Water;
- Acquisition of additional Rio Grande Water through Water Rights Purchase;
- Acquisition of additional Rio Grande Water through Urbanization;
- Acquisition of additional Rio Grande Water through Contract;
- Desalination of Brackish groundwater;
- Desalination of Seawater;
- Groundwater Development; and
- Brownsville Weir and Reservoir.

Table 1: Summary of WMS Yields & Annual Costs

Strategy	Yield, ac-ft	Acre-foot Cost	Total Annual Cost
	(Additional)	(Annual)	
Advanced Water Conservation	19,009	\$ 112.47	\$ 2,137,995
Groundwater development	29,824	\$ 304.46	\$ 9,080,215
Urbanization	15,245	\$ 368.37	\$ 5,615,801
Non-Potable Reuse of reclaimed water;	30,841	\$ 415.22	\$ 12,805,800
Contract Water Rights	4,577	\$ 455.56	\$ 2,085,053
Desalination of Brackish groundwater;	69,832	\$ 505.51	\$ 35,300,774
Brownsville Weir and Reservoir	20,643	\$ 537.27	\$ 11,090,865
Acquisition of Rio Grande water rights	143,944	\$ 542.74	\$ 78,123,949
Potable Reuse of reclaimed water;	1,120	\$ 705.89	\$ 790,597
Desalination of Seawater;	7,902	\$ 767.63	\$ 6,065,812
Total	342,937		\$ 163,096,861

Chart 1: Municipal WMSs



The following table shows how the Water User Groups in this region plan to fund the recommended strategies. The majority of the WUGs plan to fund their projects through Bonds. We had several surveys that stated that they wanted 100% of their projects to be funded through bonds.

Table 2: Summary of Funding for Municipal Strategies

	Total Annual Costs	Bonds	Cash Reserves	Federal Government Programs	State Government Programs	Other
Municipal WMSs	152,096,384	40%	8%	33%	16%	3%

1. Advanced Water Conservation Measures – All municipal WUGs listed this strategy for water supply needs. All cities had a water conservation plan in place according to TCEQ regulations. The larger entities usually had a budget for

information and education. McAllen has a full time staff member to implement water conservation measures.

To achieve the estimated water savings associated with the advanced municipal water conservation scenario, a significant commitment of funding and other resources to implement the measures will be required. Cost elements of a program to achieve the estimated savings include funding for educational and public awareness activities and staff to manage and implement the various programs. It is important to note that the investment in municipal water conservation requires substantial front-end funding at the outset and for the duration of the planning period. Because the effects of conservation are incremental and build over time, the initial costs on a unit basis are relatively high at the outset and then decline significantly over time. The cost for Advanced Conservation will take into consideration the population of the region multiplied by the cost proposed for public education & school education by Best Management Practices Guide provided by TWDB which is estimated to be \$5/person. The population will be multiplied by the cost of conservation education and divided by the savings of water annually for public education. The population of school age children based on the 2003/ US Census will be multiplied by the cost of school conservation education and divided by the savings of water annually for school education. The cost of Advanced Water Conservation cost is estimated at \$112.47 per acre-ft saved.

A total annual cost of \$2,137,942 for a 19,009 acre-ft yield. All indicated that the extended portion strategy would have to be funded by some other source than local funds.

2. Acquisition of Water Rights Through Urbanization – Discussions with the WUG have resulted in some confusion as to what urbanization is and how the costs were generated by the RWPG. Some of the entities require development to provide water required from the development of agricultural land into residential/commercial development. The process varies considerably from entity to entity. Most areas receive some sort of funds or water rights through development in the form of impact fees, direct transfer of water rights, tap-in fees or other method of accounting for the growth within the city. Other entities receive no compensation for development and water rights are retained within the irrigation district without compensation to the city. Most of these indicated that they are pursuing changes in this procedure.

Most of the WUGs in the survey did not realize that treatment costs were included in this strategy as it was only for the cost of the water supply to the facilities.

3. Acquisition of Water Rights Through Purchase of Additional Rio Grande Supply - The cost of water rights in this area has increased significantly over the last few years. Current costs exceed the range of \$1,900 to \$2,100 per acre-foot for municipal rights compared to approximately \$700 per acre-foot only five years ago. Most entities have planned purchases as they need water rights. Mostly

smaller entities have listed a need for assistance in the purchase of water rights to meet their needs.

A total annual cost for this strategy is estimated to be \$78,692,415 at a 144,991 acre-ft yield which comes out to \$542.74 an acre-ft.

Table 3: Water Yield for Acquisition of Rio Grande Water Rights

	Cameron	Hidalgo	Jim Hogg	Maverick	Starr	Webb	Willacy	Zapata
Purchase (ac-ft)	15,435	58,856	8	2,227	10,455	55,061	88	1,813
Urbanization (ac-ft)	0	15,245	0	0	0	0	0	0
Contract (ac-ft)	847	2,256	0	0	132	1,337	5	0
Total:	16,282	76,357	8	2,227	10,587	56,398	93	1,813

will be determined by the parties willing buyers and willing sellers, which will also dictate the specific components required to implement this strategy. However, for this planning process it is necessary to provide cost estimates for acquisition of additional Rio Grande water supplies for DMI use. Using the purchase prices for recent water transactions, the estimated cost to purchase water rights is approximated to range from \$1,900 to \$2,100 per acre- feet. A value of \$2000/ac-ft was used.

A total annual cost for this strategy is estimated to be \$2,110,154 at a 4,632 acre-ft yield which comes out to \$505.51 an acre-ft.

5. Non-Potable Reuse – Ten WUGs in the region listed Non-Potable Reuse as a water management strategy. They are: Brownsville, Harlingen, Laguna Madre Water District, Alamo, Edinburg, McAllen, Mission, Pharr, Rio Grande City, and Laredo. Those entities that have listed this strategy generally agreed that the costs associated with this strategy were projected to be too high. Most of these entities utilize effluent as currently treated for irrigation of golf courses or provide this water for industrial or power plant use. Many of those of which this strategy is not listed are planning on using effluent as strategy in the future.

A total annual cost for this strategy is estimated to be \$2,110,154 at a 4,632 acre-ft yield which comes out to \$505.51 an acre-ft.

Table 4: County Yields for Non-Potable Reuse

	Cameron	Hidalgo	Jim Hogg	Maverick	Star	Webb	Willacy	Zapata
Yield (ac-ft)	600	18,991	0	0	50	11,200	0	0

6. Potable Reuse- Currently, only the City of Weslaco is interested in pursuing indirect potable water reuse. By 2010, their goal is to use 1 million gallons/day (1120 ac-ft/yr) of reuse water to facilitate potable water demand by blending it with raw water before it enters a treatment facility. This quantity would be available to Weslaco for the extent of the planning study.

The costs estimates developed for the full-scale potable reuse system evaluated for the City of McAllen were reviewed for this planning effort. In 2000 dollars, capital costs of the project would be approximately \$17.8 million. The total annual cost, which includes debt service (6% for 30 years) and operations and maintenance costs, are estimated to be \$3.9 million per year. On an annualized basis, the unit cost of the additional water supply would be \$535 per acre-foot per year. However, it should be noted that these estimates do not include the costs associated with conventional treatment of the blended raw/reclaimed water supply. These numbers were referenced from the previous regional plan and are based on the McAllen, TX – Demonstration of ZenoGem and RO for Indirect Potable Reuse Pilot Study performed by CH2M Hill.

A total annual cost for this strategy is estimated to be \$790,752 at a 1,120 acre-ft yield which comes out to \$767.63 an acre-ft

7. Brownsville Weir and Reservoir – Of all the municipal WUGs in Region M, 1 was listed as using this strategy for water supply needs. Brownsville is the only WUG that lists this strategy as a long term approach to their water supply needs. In addition to other water rights, BPUB currently has authorization to divert up to 40,000 acre-feet per year of “excess flows” from the Rio Grande under TNRCC Permit No. 1838. However, the firm yield of the project (based on hydrologic analysis for the period from 1960 to 1997) is estimated to be 20,643 acre-feet per year. It is currently in process of funding and environmental and international approvals.

Based on information supplied in the last regional plan, the cost estimate to construct the Brownsville Weir and Reservoir is just less than \$36.2 million. TWDB guidelines require an annualized cost to construct the project to deliver water to meet end user based on firm yield requirements. Assuming the firm yield from the diversion is used as the basis for providing treated water for DMI use, the following determination of unit cost was developed. Using TWDB cost estimation guidelines, the inflation adjusted annualized cost to construct, operate, and maintain the project, and provide required treatment, is approximately \$13.6 million dollars per year.

A total annual cost for this strategy is estimated to be \$11,090,865 at a 20,643 acre-ft yield which comes out to \$537.27 an acre-ft. Of this amount, approximately \$168 per acre foot is used to develop the water and the balance is used to treat and transfer the water.

8. Develop Local Groundwater – Twelve water user groups in the region listed this strategy. This is a major growth from the last round of regional planning where Laredo was the only WUG that listed groundwater development for their current water management strategy.

The estimated construction cost of the wellfield is about \$2,975,000 (2004 dollars). The estimated construction cost for the wells (assuming depth and production rate for each well of 300 feet and 7.5 MGD). Annual operation and maintenance costs for the wellfield are estimated at \$3,239,443. TWDB guidelines require an annualized cost to construct the project and deliver water to the end user based on yield assumptions. Consequently, the estimated unit cost of firm water supply from the wellfield is approximately \$304.46 per acre-foot per year (see Appendix). Of this amount, approximately \$136.65 per acre-foot is for development of the water and the balance is for treatment and transfer of the water.

A total annual cost for this strategy is estimated to be \$8,891,450 at a 29,204 acre-ft yield which comes out to \$304.46 an acre-ft.

Table 5: Groundwater Supply Yield

	Cameron	Hidalgo	Jim Hogg	Maverick	Starr	Webb	Willacy	Zapata
Yield (ac-ft/yr)	2,250	7,774	73	0	4,188	15,539	0	0

9. Seawater Desalination – There are three water user groups with seawater desalination as a water management strategy. They are Laguna Madre Water District (864 acre-ft), The City of Brownsville (7,013 acre-ft), and Laguna Vista (25 acre-ft). Cost estimates were developed for a 1 mgd desalination facility near Port Isabel in 1996. Estimated total project costs are \$6 million, with total annual costs of nearly \$1.5 million. Based on an estimated firm yield of 1,120 acre-feet per year, the cost estimate per acre-foot is \$1,300. During a presentation the project team for the Port of Brownsville project indicated a capital cost of \$120 million with a combined debt service and operation cost of \$2.50/1000 gallons or

\$820 per acre –foot.¹ This indicates that a larger facility is more cost effective due to economies of scale. It is also site specific where placed in conjunction with power generation facilities will lower power costs and provide a combined water intake. It should be noted that this cost representation is only conceptual in nature. It leaves out pipelines and discharge costs that a plant would have to take into consideration also.

A total annual cost for this strategy is estimated to be \$682,423 at an 889 acre-ft yield which comes out to \$767.63 an acre-ft.

10. Brackish Desalination – The annual cost per acre-ft for this strategy to be implemented in this region was estimated to be at \$505.51. The sizes of the brackish desalination plants in this region range from .25 MGD to 7.5 MGD². Further cost data updated to include current projects completed or in the planning and design stage are summarized in the Appendix part of this plan. Costs include Well Field, Well Field Collection and Treatment Facilities. It does not include pumping and distribution costs. A major factor not included in these figures is the cost of water rights. The latest cost to purchase water rights has been approximately \$2,000/acre-foot. If financed for 20 years @6% interest, the annual cost per acre foot would be \$542.74. This could be deducted from the following costs as the capital cost includes the development of the groundwater source. Costs vary due to plant size, location, and water source salinity.

Table 6: Water Supply Yield for Brackish Water Desalination

	Cameron	Hidalgo	Jim Hogg	Maverick	Starr	Webb	Willacy	Zapata
Yield (ac-ft)	24,753	21,792	0	641	1,120	10,100	11,426	0

A total annual cost for this strategy is estimated to be \$29,258,919 at a 57,880 acre-ft yield which comes out to \$505.51 an acre-ft.

County Other User Groups

The County-Other groups consist of entities other than Cities within the county. These are listed as Cameron County-Other, Hidalgo County-Other, Willacy County-Other, Starr County-Other, Jim Hogg County-Other, Maverick County-Other, Webb County-Other, and Zapata County-Other. The official survey was sent to the County Judge in each of these counties.

¹ The Future of Desalination in Texas Workshop, Austin, Texas 2003, Concept Paper Presented by Dannenbaum Engineering Co. and URS Company.

² Data Provided By NRS Consulting Engineers

Summary of County-Other Water Management Strategies

1. Advanced Water Conservation Measures – Of the 8 County-Other WUGs, 8 were listed as using this strategy for water supply needs. All indicated that the extended portion strategy would have to be funded by some other source than local funds.

A total annual cost of \$2,137,942 for a 19,009 acre-ft yield. The cost of Advanced Water Conservation cost is estimated at \$112.47 per acre-ft saved. All indicated that the extended portion strategy would have to be funded by some other source than local funds.

2. Develop Local Groundwater – Of the 8 County-Other WUGs, 4 were listed as using this strategy for water supply needs.

A total annual cost for this strategy is estimated to be \$8,891,450 at a 29,204 acre-ft yield which comes out to \$304.46 an acre-ft.

3. Purchase Additional Rio Grande Supply - Of the 8 County-Other WUGs, 6 were listed as using this strategy for water supply needs.

A total annual cost for this strategy is estimated to be \$78,692,415 at a 144,991 acre-ft yield which comes out to \$542.74 an acre-ft.

Irrigation Water User Groups

The adopted plan lists irrigation groups by county without specific irrigation districts listed with needs. For each county irrigation group, two strategies are listed. These are on-farm improvements and conveyance system improvements.

Table 7 – Summary of Irrigation Strategies

Irrigation Data			
WMSs	Yields	Total Annual Cost	Unit Cost
On Farm	219,226.00	55,547,585.23	253.38
Conveyance	218,783.00	26,402,708.30	120.68
The counties that used these strategies are Willacy (Both), Starr (On-Farm), Maverick (Both), Hidalgo (Both), and Cameron (Both)			

Summary of Water Management Strategies

1. On-Farm Improvements – This strategy consists of improvements to flow measurements, installation of polypipe delivery systems, improved management and technology, installation of SCADA system and implementation of a verification program to monitor effectiveness of the program. A wide range of

comments were received at the Irrigation District Managers Association meeting subsequent to the previous plan and this plan. It was made clear that it was not their responsibility to fund on-farm improvements. A range of affordability included the inability for the farmer to pay for any improvements to 50% of on-farm improvements. At the meeting, a reluctant consensus, representing several irrigation districts in Cameron and Hidalgo Counties, felt like 40% of on farm improvements could be paid for locally with the remaining 60% from outside sources including the Texas Water Development Board, Bureau of Reclamation and legislative appropriations. It was encouraged at the meeting that each irrigation district returns their survey to confirm this information. The surveys returned indicate similar findings; Based on discussions with the irrigation districts and the RWPG it was suggested that the affordability of irrigation improvements be changed to 10%, as many districts could not afford any improvement cost. This was recommended and approved at the RWPG.

A total annual cost for this strategy is estimated to be \$55,547,585 at a 219,226 acre-ft yield which comes out to \$253.38 an acre-ft.

2. Irrigation Conveyance System Improvements - The Texas Agricultural Experiment Station (TAES) evaluated and developed water savings and cost estimates for a comprehensive program to rehabilitate and improve the management of irrigation conveyance and distribution facilities. The program would consist of six principal components: 1) Installation of no-leak gates; 2) Installation of additional water measurement weirs; 3) Conversion of smaller concrete canals that are in poor condition to pipeline; 4) Relining of concrete-lined canals that are in poor condition; 5) Lining of smaller earthen canals constructed of more porous soils; and, 6) Implementation of verification program to monitor and measure the effectiveness of the efficiency improvements.

Like on farm improvements, comments varied greatly amongst the District Managers. Unlike the previous Plan's IFR, there was gained a great deal of experience in the funding of these projects. Several projects have been completed since the previous plan. The Districts that were prepared for construction, i.e. had approved Project Reports for the U.S. Bureau of Reclamation (Reclamation) and subsequent Cost-Share agreements executed were able to take advantage of funding from the North American Development Bank (NADBank) to supplement the 50% share from Reclamation. Most Districts were able to achieve at least a 90% combined funding level with Federal and NADBank funds. Districts have recognized the realization that the 50% cost share agreement with the Bureau does not mean that reimbursement will occur rapidly and actually may take several years to get reimbursement of the Bureau's share. This means that the Districts will need to finance that portion in some way in addition to their own portion. This alone, the Districts cannot afford the construction of new facilities given the fact of up front 100% financing. The addition of the NADBank funds allowed Districts to complete the projects while awaiting reimbursement. One district was unable to complete their project even with the 50% cost share with the Bureau and

the 40% share and withdrew from NADBank consideration. According to NADBank, these funds will not be used for other projects and it is not expected that additional funds will be available in the future. A summary of projects and funding levels are show in a table located in Appendix C courtesy of the U. S. Bureau of Reclamation as of December 28, 2005.

A general consensus was given for the ability to afford 40% financing. Discussions however indicate that even that would be far too costly for the irrigator to afford. When presented to the Region M RWPG, it was approved to use 10% affordability. Even at that, some could still not afford.

A total annual cost for this strategy is estimated to be \$26,402,708.30 at a 218,783 acre-ft yield which comes out to \$120.68 an acre-ft.

Table 8 – Funding for Irrigation Strategies

Irrigation WMSs	Funded Locally	Outside Sources
On Farm Conservation	40%	60%
Irrigation Conveyance System Improvements	10%	90%

Manufacturing

The Rio Grande Region, for the most part, has adequate supplies to meet manufacturing water demands. Throughout the planning period currently available water supply for manufacturing exceeds projected water demand. However, certain local areas do have small manufacturing water supply deficits. Cameron and Hidalgo County show a water supply deficit. The shortages were assigned two water management strategies. They are Non-Potable Reuse and Acquisition of Water Rights through the Purchase of Water Rights.

1. Non- Potable Reuse- A total annual cost for this strategy is estimated to be \$2,110,154 at a 4,632 acre-ft yield which comes out to \$505.51 an acre-ft.
2. Acquisition of Water Rights through the Purchase of Water Rights- A total annual cost for this strategy is estimated to be \$78,692,415 at a 144,991 acre-ft yield which comes out to \$542.74 an acre-ft.

There were no surveys sent in this category. It was assumed that manufacturing would pay what was necessary to finance their water needs.

Steam Electric Power

The Rio Grande Region is projected to have steam electric water supplies in excess of demand through the year 2020. After that point, demand will be slightly greater than supply, and relatively large steam electric water supply deficits will occur due to the

location of available supply. Although the Rio Grande Region currently has no identified steam electric water demand needs, water shortages are projected to occur beginning in 2050 in Cameron County, in 2050 in Webb County, in 2020 in Hidalgo County. Hidalgo County is projected to have shortages of 1,980 acre-feet in year 2020 and to continue thereafter through 2060 with a deficit of 15,183 acre-feet. Combined, the county-level steam electric power generation WUGs in Cameron, Hidalgo, and Webb counties are projected to have shortages of 11,215 acre-feet combined per year by 2050 and thereafter through 2060. Water management strategies considered potentially applicable to this need include acquisition of additional Rio Grande supplies, use of reclaimed water, and groundwater. It is recommended that all of the projected steam electric demands be met through a combination of the three listed strategies. No surveys were sent to these entities. These strategies were considered to be financed through the steam electric power companies through the cities.

1. Non- Potable Reuse- A total annual cost for this strategy is estimated to be \$2,110,154 at a 4,632 acre-ft yield which comes out to \$505.51 an acre-ft.
2. Acquisition of Water Rights through the Purchase of Water Rights- A total annual cost for this strategy is estimated to be \$78,692,415 at a 144,991 acre-ft yield which comes out to \$542.74 an acre-ft.
3. Develop Local Groundwater - A total annual cost for this strategy is estimated to be \$8,891,450 at a 29,204 acre-ft yield which comes out to \$304.46 an acre-ft.

APPENDIX A

SAMPLE LETTER SENT TO IRRIGATION DISTRICTS IN JULY 2004

July 1, 2004

Joe A. Barrera
Manager
Brownsville Irrigation District
6925 Coffee Port Rd.
Brownsville, Texas 78521

Re: Long-Range Regional Water Planning – Region M

Dear Mr. Barrera:

Attached please find a survey to verify information regarding Brownsville Irrigation District. Please take a few minutes to verify the accuracy of the information that the Rio Grande Regional Water Planning Group has about Brownsville Irrigation District. The Rio Grande Regional Water Plan will be updated and submitted to state officials in September 2005. Updating this plan will assist each of the entities to better plan water strategies and properly provide water resources for the next fifty years.

Over the next few weeks we will contact you or your designated representative to set up an appointment to review the requested items.

I thank you in advance for your continued cooperation in the water planning process for our region. If you have any questions, please do not hesitate to call me at (956) 423-7409.

Sincerely,
NRS Consulting Engineers

Joseph W. Norris, P.E.
Region M Planning Engineer

cc: Kenneth N. Jones, Jr.

SAMPLE LETTER SENT TO MUNICIPAL WATER SUPPLIERS IN JULY 2004

July 1, 2004

John Bruciak
General Manager & CEO
Brownsville PUB
1425 Robinhood Dr.
Brownsville, Texas 78520

Re: Long-Range Regional Water Planning – Region M

Dear Mr. Bruciak:

Attached please find a survey to verify water planning information regarding the Brownsville PUB. Please take a few minutes to review the accuracy of the information that the Rio Grande Regional Water Planning Group has about Brownsville PUB. The Rio Grande Regional Water Plan will be updated and submitted to state officials in September 2005. Updating this plan will assist each of the entities in Region M to better plan water strategies and properly provide water resources for the next fifty years.

Over the next few weeks we will contact you or your designated representative to set up an appointment to review the requested items.

I thank you in advance for your continued cooperation in the water planning process for our region. If you have any questions, please do not hesitate to call me at (956) 423-7409.

Sincerely,
NRS Consulting Engineers

Joseph W. Norris, P.E.
Region M Planning Engineer

cc: Kenneth N. Jones, Jr.
Charles Cabler



SAMPLE SURVEY FOR IRRIGATION

REGIONAL WATER PLANNING INFORMATION FOR:

Cameron County Irrigation, Cameron County Irrigation
District #2

Long-range regional water planning is only as good as the information on which it's based.

Please take a few minutes to verify the accuracy of the information that the Rio Grande Regional Water Planning Group has about your organization. The Rio Grande Regional Water Plan will be updated and submitted to state officials in September 2005.

This is especially important if you are developing projects that will require state permits and/or state funding. Under Texas state law, any water project must be consistent with the regional water plan in order to be eligible for a state permit or state funding.

For more information about the regional planning process, go to www.RioGrandeWaterPlan.org

For help with this questionnaire, call Rebekah Guardiola with NRS Consulting Engineers, at 956-423-7409. NRS is managing development of the regional plan for the Rio Grande RWPG.

A. Contact Information

Please make any necessary corrections and/or fill in blanks.

Person providing official information: **Sonia Kaniger**

Title: **Manager**

Mailing address: **P.O. Box 687, San Benito, Texas 78586**

Tel:

Fax:

e-mail address:

B. Customer Information

Please make any necessary corrections and/or fill in blanks.

Service area: **Cameron County**

Type of use: **Agricultural**

C. Water Demand Data

Please make any necessary corrections and/or fill in blanks.

	Current	2010	2020	2030	2040	2050	2060
Irrigated acres							
Delivery Capacity (ac-ft)							
Total demand							

Municipal/Industrial Cust.	Water Right Holder	Quantity	Contract Exp.

D. Conversion of Irrigated Land to Urban Use in the last 5 years

E. Water Supply Reports/Plans completed in the last 5 years (list)

F. Does your District have a GIS Mapping System? Is it available in electronic format? Do you have areas that you would like to have mapped that are currently unavailable?

G. Current Water Resources

Please make any necessary corrections and/or fill in blanks.

Source	Use (ag, municipal, industrial)	Amount of water from source in 2003	Maximum amount available from this source	Factors limiting use of water from source
Rio Grande				
Fresh groundwater				
Reused water				

E. Potential Resources for the Future

Please indicate whether you are considering any new water supply options.

Option	NO, we have NOT considered this option	YES, we have considered this option*	*If yes, please indicate with a check mark if you have:		
			conducted any feasibility studies	developed any cost estimates	begun any capital improvement plans
Ag Water conservation					
On-Farm Water Use Efficiency					

Reuse					
Fresh groundwater					
Water rights purchase					

F. Infrastructure Financing Options

Please indicate what options you have to finance water infrastructure improvements in the future to meet water demands.

Revenue Bonds	%	GO Bonds	%	Grants	%	Sale of Water Rights	%	Reserves	%	Other	%

G. Additional Comments

SAMPLE SURVEY FOR MUNICIPAL



REGIONAL WATER PLANNING INFORMATION FOR:

City of Brownsville

Long-range regional water planning is only as good as the information on which it's based.

Please take a few minutes to verify the accuracy of the information that the Rio Grande Regional Water Planning Group has about your organization. The Rio Grande Regional Water Plan will be updated and submitted to state officials in September 2005.

This is especially important if you are developing projects that will require state permits and/or state funding. Under Texas state law, any water project must be consistent with the regional water plan in order to be eligible for a state permit or state funding.

For more information about the regional planning process, go to www.RioGrandeWaterPlan.org

For help with this questionnaire, call Rebekah Guardiola with NRS Consulting Engineers, at 956-423-7409. NRS is managing development of the regional plan for the Rio Grande RWPG.

A. Contact Information

Please make any necessary corrections and/or fill in blanks.

Person providing official information: **Charles Cabler**

Title: **City Manager**

Mailing address: **P.O. Box 911, Brownsville, Texas 78520**

Tel:

Fax:

e-mail address:

B. Customer Information

Please make any necessary corrections and/or fill in blanks.

Service area: **City of Brownsville**

% of Service Area by County:

Type of use: **Municipal**

C. Population & Water Demand Data (per 2000 Water Plan?)

Please make any necessary corrections and/or fill in blanks.

	2010	2020	2030	2040	2050	2060
Service area population	173986	210210	247653	284979	322316	357828
Capacity (gallons/day)						
Total demand	43655	52038	60475	69270	77985	86577

D. Water Supply Reports/Plans completed in the last 5 years (list)

E. Current Water Resources

Please make any necessary corrections and/or fill in blanks.

Source	Use (agricultural, municipal, industrial)	Amount of water from source in 2003	Maximum amount available from this source	Factors limiting use of water from source	Entity that diverts & pumps the water	Is this water purchased under contract?	If purchased under contract, provide: 1. contract amount 2. expiration date 3. seller's name & address
Rio Grande COA/Permit No. _____ COA/Permit No. _____							

COA/Permit No. _____							
Other Surface Water:							
Fresh groundwater							
Brackish groundwater							
Reuse water							
Seawater							

F. Potential Resources for the Future

Please indicate whether you are considering any new water supply options.

Option	NO, we have NOT considered this option	YES, we have considered this option	If option has been considered, please indicate with a check mark if you have and provide related information:		
			conducted any feasibility studies	developed any cost estimates	begun any capital improvement plans
Water conservation					
Reuse					
Fresh groundwater					
Desalinated groundwater					

H. Do you have a Plumbing Fixture Replacement Program?

I. Do you have a Water Conservation Program?

J. Additional Comments

APPENDIX B

SAMPLE LETTER WITH SURVEY SENT TO WATER USER GROUPS IN OCTOBER 2005

October 19, 2005

Charles Cabler
City Manager
City of Brownsville
P.O. Box 911
Brownsville, Texas 78520

RE: Water Infrastructure Financing Survey

Dear Mr. Cabler:

Attached please find a survey to determine various issues to assist us in the planning and implementation of water management strategies for the region. The survey reviews the water management strategies outlined by the adopted regional plan for the and asks to answer several questions with regard to financing these strategies. This is a requirement of Senate Bill 2. As part of the survey, we must receive your response no later than November 11, 2005.

I thank you in advance for your continued cooperation in the water planning process for our region. If you have any questions, please do not hesitate to call me at (956) 682-3481 or Bill Norris, NRS, at (956) 423-7409.

Sincerely,

Kenneth N. Jones, Jr.

Executive Director

**RIO GRANDE REGIONAL WATER PLANNING GROUP
WATER INFRASTRUCTURE FINANCING SURVEY**

Region Name: Region M - Rio Grande Regional Planning Group

Name of Political Subdivision: City of Brownsville

Contact Person: Charles Cabler

Title: City Manager

Telephone:

E-mail:

Background: On January 6, 2006, Regional Water Planning Groups (RWPGs) all across the State of Texas will formally submit 16 adopted regional water plans to the Texas Water Development Board (TWDB) per requirements of Senate Bill 1 (75th Texas Legislature). The adopted regional water plans examined and analyzed the water supply needs for all water users in the State. Based on the analysis, the RWPGs identified water management strategies necessary to ensure a sufficient supply of water for the 50-year planning period. The RWPGs also developed preliminary capital cost estimates for each of the strategies recommended in the approved regional water plan.

Senate Bill 2 (77th Texas Legislature) expanded the RWPG's assignment. Senate Bill 2 charges the RWPGs with examining what financial assistance, if any, is needed to implement the water management strategies and projects recommended in the most recently approved regional water plan.

Senate Bill 2 specifically requires that the RWPG report to the TWDB how political subdivisions all across Texas propose to pay for future water infrastructure needs.

The purpose of this survey is to complete this charge with your input.

Please return the completed survey by November 11, 2005 to:

Charlene Torres
P.O. Box 2544
Harlingen, Texas 78550
(956) 423-7482 fax
E-mail address: ctorres@nrseengineers.com

If you have any questions regarding this survey, please contact:

Bill Norris
Telephone Number : (956) 423-7409
E-mail address: bnorris@nrseengineers.com

**SURVEY TO OBTAIN INFRASTRUCTURE FINANCING INFORMATION FROM
POLITICAL SUBDIVISIONS WITH NEEDS**

Planning Group: Region M - Rio Grande Regional Planning Group

Political Subdivision (WUG or WWP): City of Brownsville

* See Attached Water Supply and Water Management Strategy Table

(Information to be provided by the Political Subdivision)

Are you planning to implement the recommended projects/strategies?

YES **NO**

If 'no,' describe how you will meet your future water needs.

If 'yes,' how do you plan to finance the proposed total cost of capital improvements identified by your Regional Water Planning Group?

Please indicate:

1) Funding source(s)¹ by checking the corresponding box(es) and

2) Percent share of the total cost to be met by each funding source.

- _____ % Cash Reserves
- _____ % Bonds
- _____ % Bank Loans
- _____ % Federal Government Programs
- _____ % State Government Programs
- _____ % Other _____
- _____ % **TOTAL – (Sum should equal 100%)**

If state government programs are to be utilized for funding, indicate the programs and the provisions of those programs.

¹Funding source refers to the initial capital funds needed to construct or implement a project, not the means of paying off loans or bonds used for the construction or implementation.

Person Completing this Form:

Name

Title

Phone

APPENDIX C
Bureau of Reclamation Table for Irrigation Section

	PROJECT COMPONENTS						ESTIMATED COSTS			PROJECT VALUE			
	Canals & Laterals			Control & Measurement			Federal \$	Non-Federal \$	Total \$	Estimated Annual Conservation Savings			Economic Value
	Lining miles	Replacement (Pipeline) miles	Rehabilitation / Construction miles	Telemetry / Metering sites	Pump Replacement / Rehabilitation sites	Gate Replacement sites				Water acre-ft/yr	Energy kwh/yr	O&M Dollars \$/yr	Average Comprehensive Cost \$/acre-ft
AUTHORIZED PROJECTS													
11 Projects under construction	42.4	54.1	5.6	97	8	0	27,706,708	29,030,705	\$56,737,414	63,926	4,522,929	\$571,566	\$38
8 Projects under development	6.2	33.3	1.8	16	4	6	18,177,770	21,247,330	\$39,425,099	16,219	2,893,448	\$203,886	\$63
Subtotal	48.5	87.4	7.4	113	12	6	45,884,478	50,278,035	\$96,162,513	80,145	7,416,377	\$775,452	\$43
PROPOSED PROJECTS													
19 Projects proposed	-	-	-	-	-	-	42,356,146	42,356,146	\$84,712,291	-	-	-	-
TOTAL													
Potential Program Total	-	-	-	-	-	-	88,240,623	92,634,181	\$180,874,804	-	-	-	-

Cost shares for 11 Projects under construction

TOTAL Project Costs	\$56,737,414	100%
Federal (Reclamation)	27,706,708	49%
Non-Federal	29,030,705	51%
District	10,499,471	19%
State	2,201,811	4%
NADBank	16,329,424	29%