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A N D
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AUGUST 1991

T E X A S W A T E R D E V E L O P M E N T B O A R D

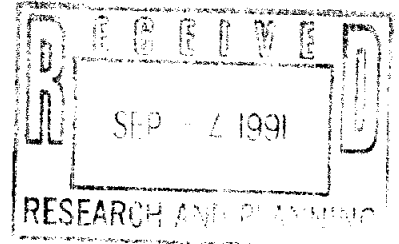
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**SALINAS
& ASSOCIATES INC.**

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August 15, 1991



J. Edgar Ruiz
Hidalgo County Water Development Board
P.O. Box 1356
Edinburg, Texas 78540

**RE: TWDB Contract # 8-483-628
Texas Water Development Board
Hidalgo County Water Development Board**

Dear Mr. Ruiz:

We are submitting two (2) copies of the final report for the Regional Water Supply Plan encompassing the La Joya Water Supply Corporation Service Area (also referred to as the "Facility Plan"). This facility plan identifies needs to provide domestic water service within the Corporation's Service Area, including the City of La Joya, both for the current population and the projected population through the Year 2020. This final draft has addressed comments 7 & 8, from Attachment A (Review Comments on Final Report) as requested by the Texas Water Development Board on their letter dated 07-12-91. Comments 1 thru 6 require no comments at this time.

Respectfully,

SALINAS & ASSOCIATES, INC.

Ricardo R. Salinas, P.E.

RRS/mi

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SECTION I

LA JOYA WATER SUPPLY CORPORATION STUDY

OBJECTIVES AND SCOPE OF THE STUDY

Salinas and Associates, Inc., Consulting Engineers & Surveyors of McAllen, Texas, were engaged by the Hidalgo County Water Development Board in February 1990 to perform the following scope of services for the Board.

1. General

Identify the facility need to provide domestic water service within the service are of the La Joya Water Supply Corporation, including the City of La Joya, both for the current population and the projected through the year 2020.

Address the adequacy of the existing supply, treatment and distribution system, as well as the near term and long term improvements necessary to provide adequate domestic service.

2. Evaluate Current Water Facility Needs Within the Study Area.

Identify the existing water supply and water treatment facilities within the service area.

Compile available information on area demographics, water use records and billing for the last two years.

Determine average user demand within the study area.

Estimate unconstrained peak-day and peak-hour demands.

Obtain representative system pressures.

Prepare a pipe network model.

Evaluate the capability to supply domestic water service during average and peak demand periods.

Identify deficiencies in the water distribution system.

Determine the extent of water supply available, the current amount being used and the capacity to provide treated water for consumption.

Determine what near term improvement to the water facilities are necessary to provide service to the population within the service area.

Evaluate the effectiveness of constructing an elevated storage tank in the system and, if appropriate, the most applicable location for the tanks.

3. Determine the Facility Need to Accommodate Future Growth

Estimate the potential growth in demand with the study area.

Determine the extent of improvements or expansion that will be necessary to accommodate the increased demand for water through the year 2020.

Address the need for additional water supplies and treatment capability that will be necessary to meet the increased demand.

4. Separation of the City of La Joya

Determine what modifications are necessary to the water distribution system assuming the City of La Joya was to operate an independent water system. The analysis will assume that water continues to be supplied by the Water Supply Corporation. (The modifications should address the need for metering within the City corporate limits, and should include the need for fire protection.

5. Determine Appropriate Financial Plans and Institutional Organizations to Implement the Recommended Improvements:

Determine the cost of the proposed improvements and include an implementation schedule consistent with the ability of the water supply corporation to pay for these improvements.

Estimate capital, operating and maintenance costs for proposed treatment plants and distribution lines.

Determine estimated monthly rates for proposed water service to the customers within the water supply corporation service area.

Analyze various financing alternatives available for implementation of the proposed improvements. Recommend feasible financing methods.

6. Develop Project Implementation Plan and Schedule for the Planning Area.

Prepare a project implementation plan for the recommended water supply facilities, including steps to be used to plan, finance, develop, operate and maintain the system.

Develop a schedule with the time frames for project implementation, including cash flow estimates for the first phase of improvements.

7. Prepare a Report of the Proposed Water Supply Distribution Facility Plan.

Prepare a draft report of the methodology and findings of the planning study and distribute the draft report to the TWDB for review and comment.

SECTION II
LA JOYA WATER SUPPLY CORPORATION STUDY

LA JOYA WATER SUPPLY SERVICE AREA PROJECTIONS

Accurate information is the keystone to informed decision making. Unfortunately in the case of the La Joya Water Supply Corporation (LJWSC), accurate information about the real size of the service area in terms of population is difficult to obtain.

The much maligned 1990 U.S. Census of Population for this area of Texas is no exception. It claims that the total population within the service area to be 21,527 persons. Informed local officials dispute this number and have challenged its authenticity in the courts.

The Texas Water Development Board has conducted its own analysis of the population within this region. Its primary data source is the 1987 Texas Water Development Board report entitled: A Reconnaissance Level Study of Water Supply and Wastewater Disposal Needs of the Colonias of the Lower Rio Grande Valley.

Telephone conversations with key staff members of the TWDB in May 1991, a review of other published materials provided by LWSC, and analysis of other data suggest that the May 1991 population for LWSC is not less than 24,750 persons. It could be as much as 10,000 more.

Metered account at LWSC and the City of La Joya in 1990 were 5,500 and in May 1991 they had risen to at least 5,620 on the basis of population studies of the TWDB within certain LWSC colonias, it has been concluded that there are at least 4.5 persons per metered account.

From these assumptions or conclusions, Table I was developed. It shows a series of projections of population and metered accounts that may occur in the LWSC during the next 30 years.

**TABLE I
LA JOYA WATER SUPPLY CORPORATION
PROJECTIONS THROUGH THE YEAR 2020**

YEAR AND BASE POPULATION 24,750	RATE OF GROWTH					
	4.50%	METERED ACCOUNTS	5.00%	METERED ACCOUNTS	1.50%	METERED ACCOUNTS
1991	25,864	5,745	25,493	5,645	25,121	5,583
1992	27,028	6,006	26,257	5,835	25,498	5,666
1993	28,244	6,275	27,045	6,019	25,881	5,751
1994	29,515	6,559	27,856	6,190	26,269	5,837
1995	30,843	6,854	28,692	6,376	26,663	5,925
1996	32,231	7,162	29,553	6,567	27,063	6,014
1997	33,681	7,485	30,439	6,764	27,469	6,104
1998	35,197	7,827	31,353	6,967	27,881	6,196
1999	36,781	8,174	32,293	7,176	28,299	6,289
2000	38,436	8,541	33,262	7,392	28,723	6,383
2001	40,166	8,926	34,260	7,613	29,154	6,479
2002	41,973	9,327	35,288	7,842	29,592	6,576
2003	43,862	9,747	36,346	8,077	30,035	6,675
2004	45,836	10,186	37,437	8,319	30,486	6,775
2005	47,893	10,644	38,560	8,569	30,943	6,876
2006	50,034	11,123	39,716	8,826	31,407	6,979
2007	52,260	11,624	40,908	9,091	31,879	7,084
2008	54,660	12,147	42,135	9,363	32,357	7,190
2009	57,120	12,693	43,399	9,644	32,842	7,298
2010	59,650	13,264	44,701	9,934	33,335	7,408
2011	62,376	13,861	46,042	10,232	33,835	7,519
2012	65,183	14,485	47,426	10,539	34,342	7,632
2013	68,116	15,137	48,846	10,855	34,857	7,746
2014	71,181	15,818	50,312	11,180	35,380	7,862
2015	74,385	16,530	51,821	11,516	35,911	7,980
2016	77,732	17,274	53,376	11,861	36,450	8,100
2017	81,239	18,051	54,977	12,217	36,996	8,221
2018	84,908	18,863	56,626	12,584	37,551	8,345
2019	88,750	19,712	58,325	12,961	38,115	8,470
2020	92,677	20,599	60,075	13,350	38,686	8,597

It would be inappropriate to conclude from Table 1 that the LWSC population may in fact reach 92,697 in population by 2020. However, conditions that created explosive growth in the LWSC area during the 1980's have materially changed. For this reason, a slower growth rate is anticipated and for the following reasons.

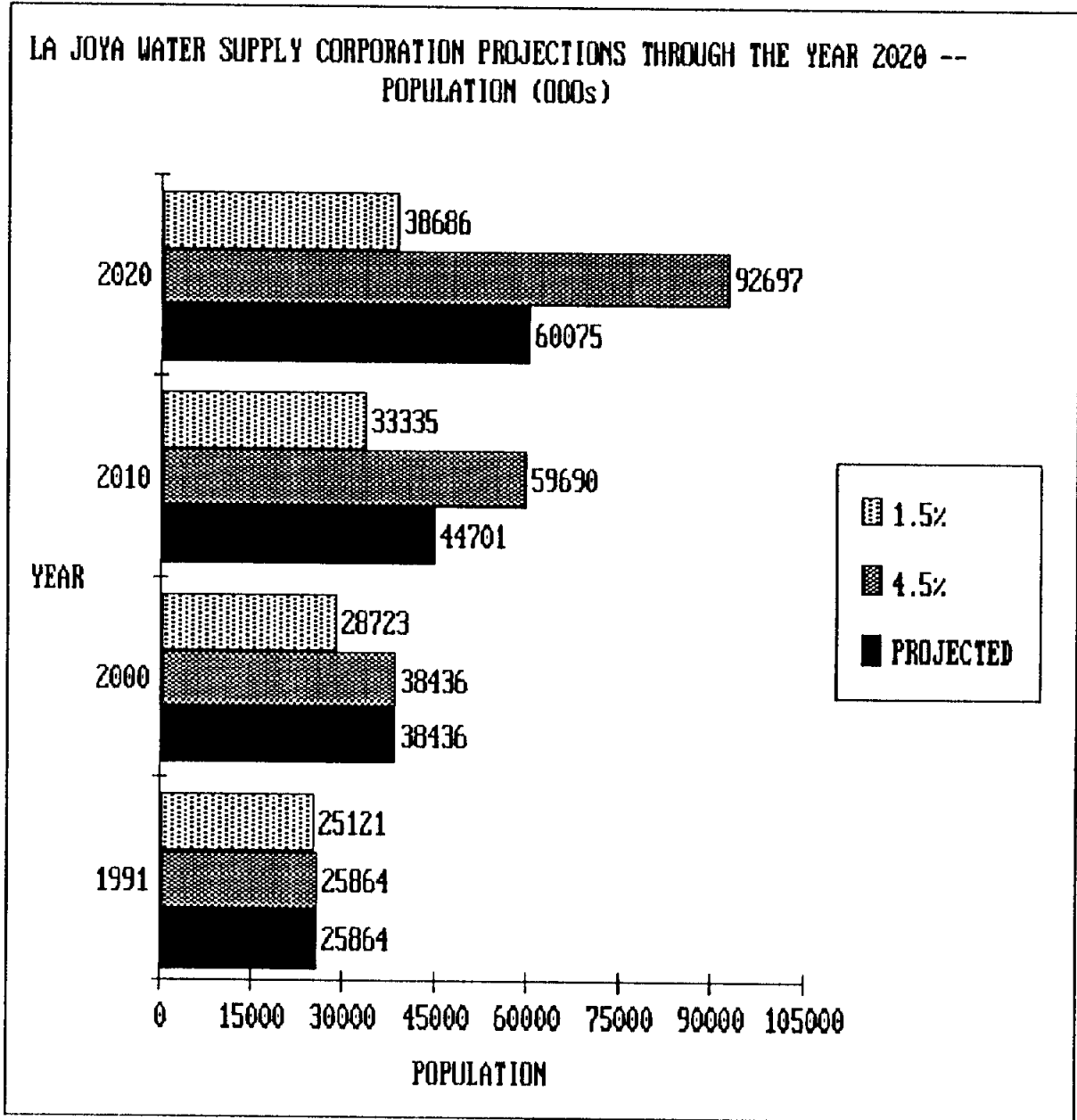
- * Adoption of Hidalgo County Subdivision Regulations prohibiting the creation of new colonias.
- * Aggressive enforcement of County building and subdivision regulations.
- * Gradual sell-off of existing inventory of "sub-standard" lots without corresponding "cheap" replacement sources.
- * Changing economic climate within Mexico resulting from a successful Free Trade Agreement.

On-the-other-hand, an International Bridge and Bi-national industrial park at the Los Ebanos Ferry site is in the works. The successful conclusion of negotiations and implementation of these projects could have a reversing effect on the slower growth rate of 1.5% thru 2020.

For all of these reasons this study bases its recommendations on a combination of growth rates that carry the population of the LWSC service area to 60,075 by the year 2020.

Figures 1 and 2 illustrate the LWSC population projections through the year 2020. Figure 1 illustrates the numerical increase from 1991 to 2000, 2010, and 2020 based on growth rates of 4.5% and 1.5%. The "Projected" bar symbol (██████) is the probable growth rate and thus, is the rate on which the master plan contained in this

document is based. Figure 2 is the same information contained in Figure 1, shown in line form as opposed to a bar.



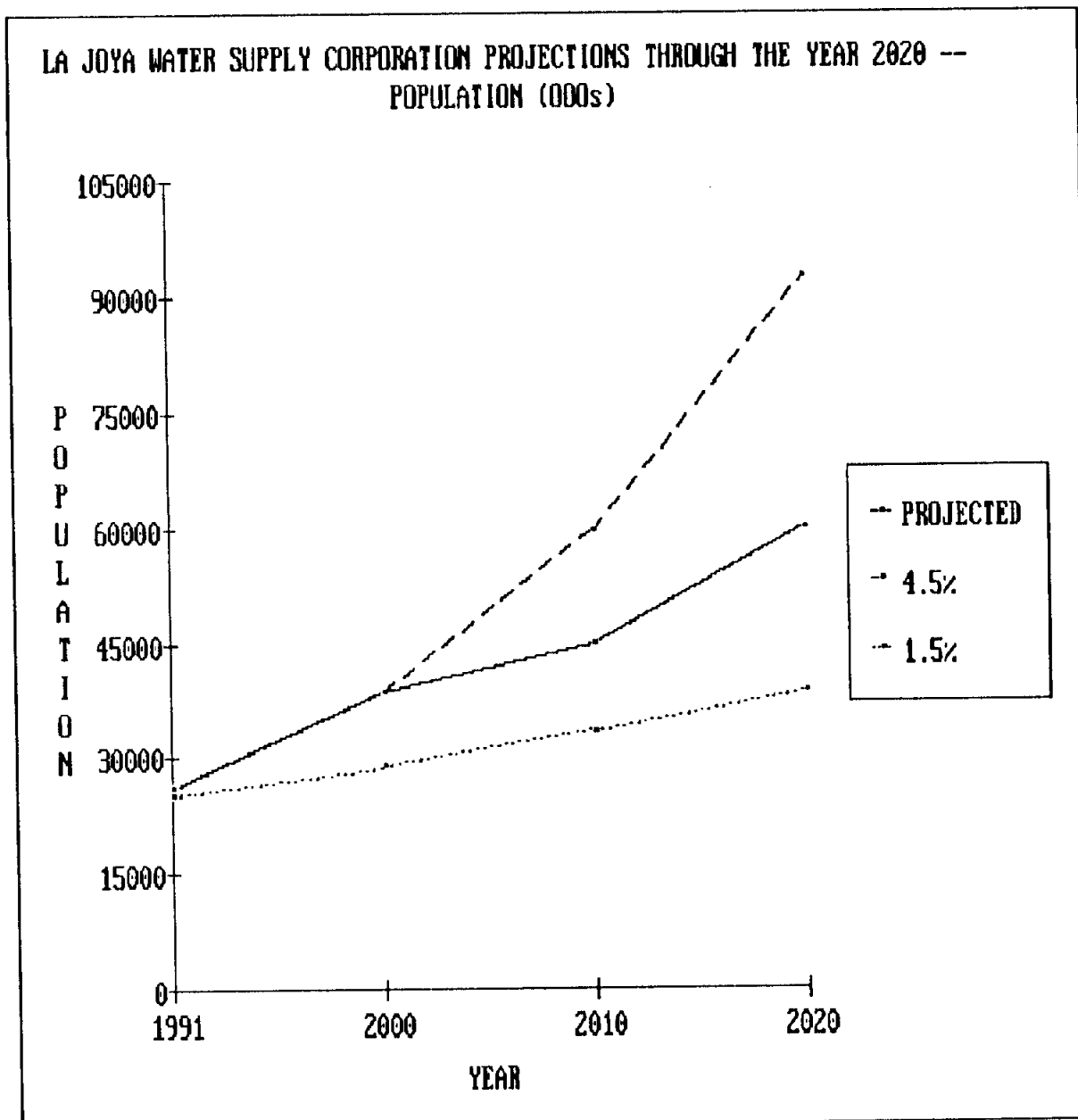


FIGURE 2

Growth in population will result in a growth in the number of meters connected to the system. Current population and meter connections suggest a ratio of 4.5 persons per meter.

Figures 3 and 4 illustrate the numerical increase in meters connected from 1991 to 2000, 2010, and 2020 based on growth rates of 4.5% and 1.5%. The "Projected" bar symbol (■) is the probable growth rate and thus, is the rate on which the master plan contained in this document is based. Figure 4 is the same information contained in Figure 3, shown in line form as opposed to a bar. Both graphs assume a continuing 4.5 persons per meter ratio.

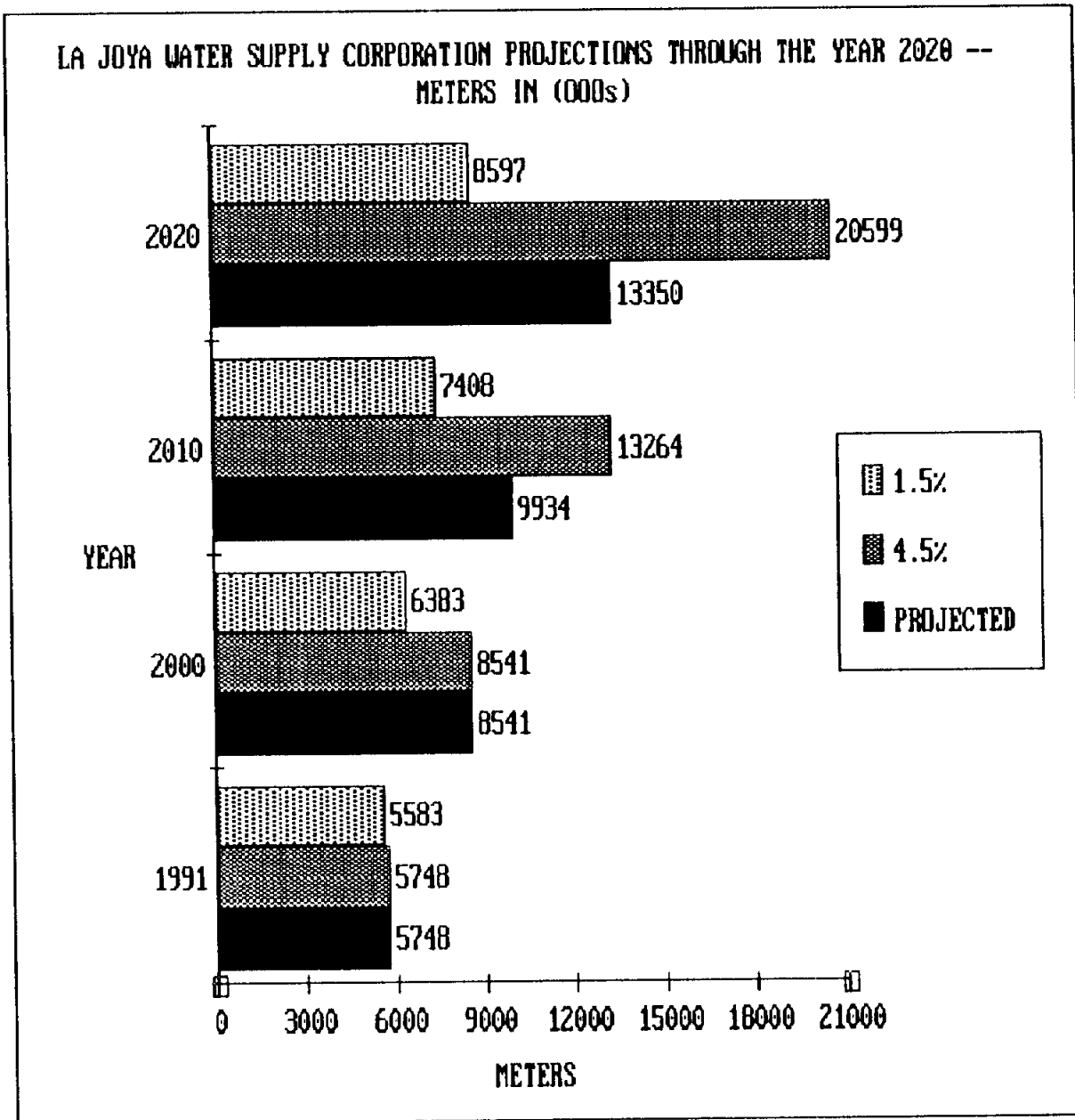


FIGURE 3

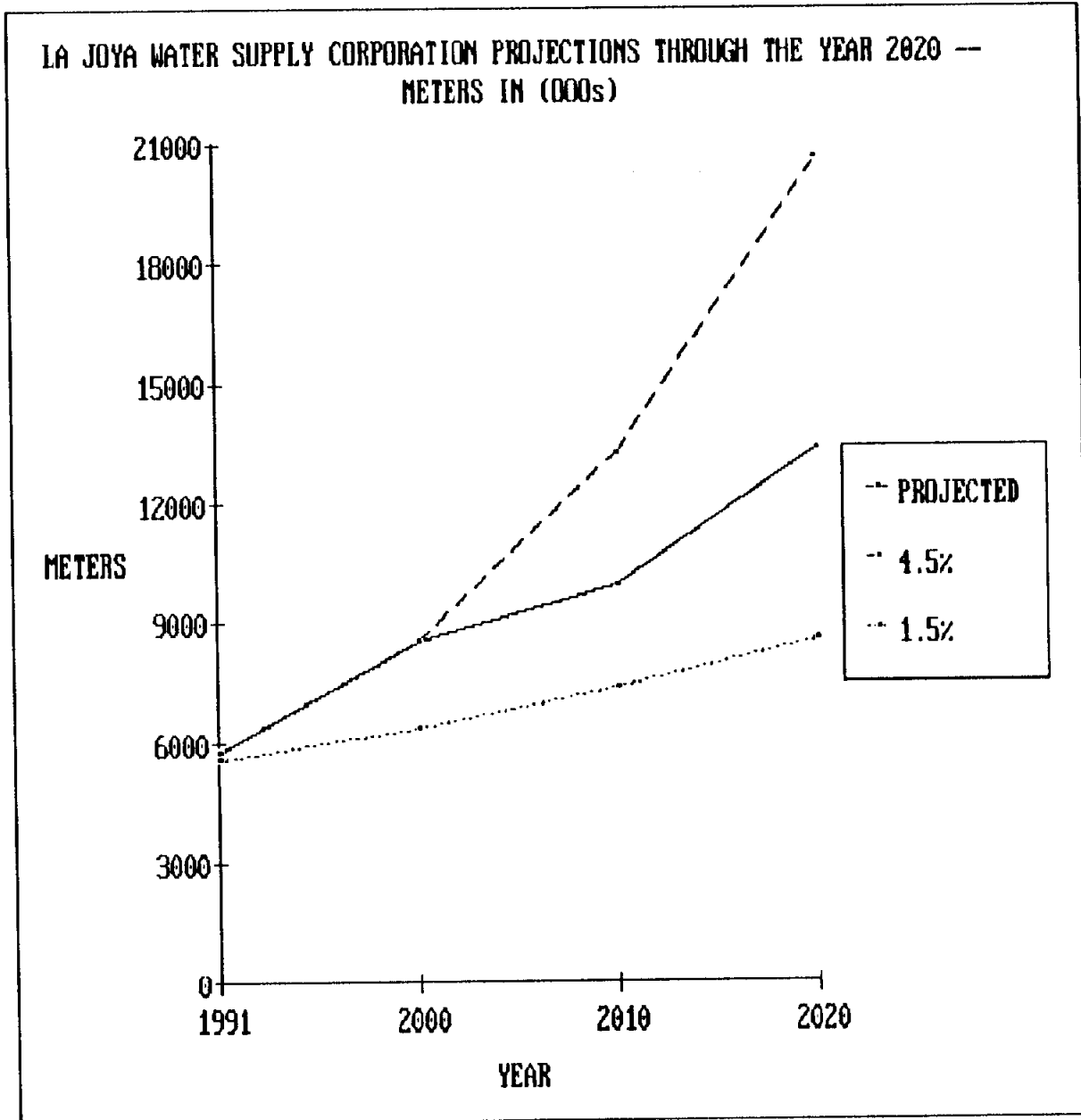


FIGURE 4

SECTION III

LA JOYA WATER SUPPLY CORPORATION STUDY

EXISTING LA JOYA WATER SUPPLY CORPORATION SYSTEM CAPACITIES

LWSC currently has three operating plant locations, Havana Plant, Bates Plant, and F.M. 492 Plant. These plants have the following facilities within their coverage area.

	CLEARWELL	*ELEVATED TANK	BOOSTER TANK	METAL	TOTAL
HAVANA	400,000	100,000	66,000	0	566,000
BATES	0	0	0	144,000	144,000
F.M. 492	375,000	0	82,000	187,000	644,000
TOTALS	775,000	100,000	148,000	331,000	1,354,000
		400,000*			1,754,000

* 400,000 Elevated Storage Tank under construction. Quantities do not include the 150,000 Gal. Elevated Storage at City of La Joya

Although the chart (above) includes the Bates Plant, the Plant will be abandoned as soon as additional capacity is provided at the F.M. 492 Plant.

On the basis of the information contained in Figure 3, and in accordance with the TDH standards, Total Storage required in the LWSC in 1991, 2000, 2010, 2020 are as follows:

YEAR	GALLONS
1991	1,149,000
2000	1,708,200
2010	1,986,000
2020	2,670,000

On the basis of the information contained herein, and in accordance with the TDH, Total Clearwell Storage required in the LWSC in 1991, 2000, 2010, and 2020 are as follows:

PLANT	YEAR	GALLONS
HAVANA	1991	150,000
FM 492	1991	150,000
HAVANA	2000	150,000
FM 492	2000	225,000
HAVANA	2010	225,000
FM 492	2010	300,000
HAVANA	2020	225,000
FM 492	2020	300,000

On the basis of the information contained in Figure 3, and in accordance with the THD standards, **Total Elevated Storage** required in the LWSC in 1991, 2000, 2010, and 2020 are as follows:

YEAR	GALLONS
1991	570,000
2000	850,000
2010	990,000
2020	1,335,000

On the basis of the information contained in Figure 3, and in accordance with the THD standards, **Total Plant Capacity** required in the LWSC in 1991, 2000, 2010, and 2020 are as follows:

YEAR	MGD
1991	4.75
2000	6.85
2010	7.90
2020	10.46

The FY 1991 budget of the LWSC is summarized below. Based meter connections at the time of its adoptions, this budget projected a \$238,372 deficit in operations.

**LA JOYA WATER SUPPLY CORPORATION
DEMANDS ON THE SYSTEM**

YEAR	POPULATION	1 GALLONS PER PERSON PER DAY	DEMAND IN MILLIONS OF GALLONS		
			2 AVERAGE DAY	3 MAXIMUM DAY	4 PEAK PERIOD
1990	24,750	65.4	1.62	2.78	3.97
1991	25,864	65.4	1.69	2.90	4.15
2000	34,436	65.4	2.51	4.32	6.18
2010	44,710	65.4	2.92	4.02	7.18
2020	60,075	65.4	3.92	6.74	9.64

These demands do not take into consideration the potential increase in water use in the future, when colonias are hooked up to public sanitary sewer collection system.

1 Per Capita Water Demand (Gallons Per Person Per Day-GPD) was computed by dividing the 1990 average day consumption of 1.6 million gallons by the 1990 population of 24,750.

2 The Average Day Demand (ADD) is computed by multiplying the population in the year indicated by GPD ($24,750 \times 65.4 = 1.62$ MGD)

3 The Maximum Day Demand (MDD) is computed by multiplying the Average Day Demand by 1.72, the ratio of Maximum Day Demand to Average Day Demand.

4 The Peak Period is computed by multiplying the MDD times 1.43 (the ratio of Peak Period Demand to Maximum Day Demand). The answer is expressed in MGD.

**SUMMARY OF THE BUDGET
LA JOYA WATER SUPPLY CORPORATION
FY 1991**

PROJECTED REVENUES	\$ 1,436,000
PROJECTED EXPENSES	\$ 1,368,372
CAPITAL OUTLAY	<u>\$ 306,000</u>
TOTAL EXPENSES	\$ 1,674,372
 PROJECTED DEFICIT	 (\$ 238,372)

For this reason it became necessary for the LWSC to increase the rates in 1991 to make-up for the projected Budget shortfall. The new rate schedule is as follows:

**WATER RATES
LA JOYA WATER SUPPLY CORPORATION
FY 1991**

0-3,000 GALLONS	\$ 12.50
NEXT 7,000 GALLONS	\$ 1.70/1000
NEXT 20,000 GALLONS	\$ 2.10
NEXT 30,000 GALLONS	\$ 2.40
OVER 50,000 GALLONS	\$ 2.75/1000

It is estimated that these rates will be adequate for the foreseeable future to cover "normal operations and maintenance functions." However, the capital requirements of the LWSC as depicted in Section V which follows, describes a significant investment in new plant and equipment to accommodate the population expected to reside in the service area. The projects described are illustrated on a series of maps in Section VI.

1989 TREATED WATER CONSUMPTION

<u>MONTH</u>	<u>NO. OF METERS</u>	<u>TREATED WATER VOLUME</u>
AUGUST/SEPTEMBER	4226	59,734,380
OCTOBER	4374	47,105,410
NOVEMBER	4405	54,307,590
DECEMBER	4453	42,914,360

1990 TREATED WATER CONSUMPTION

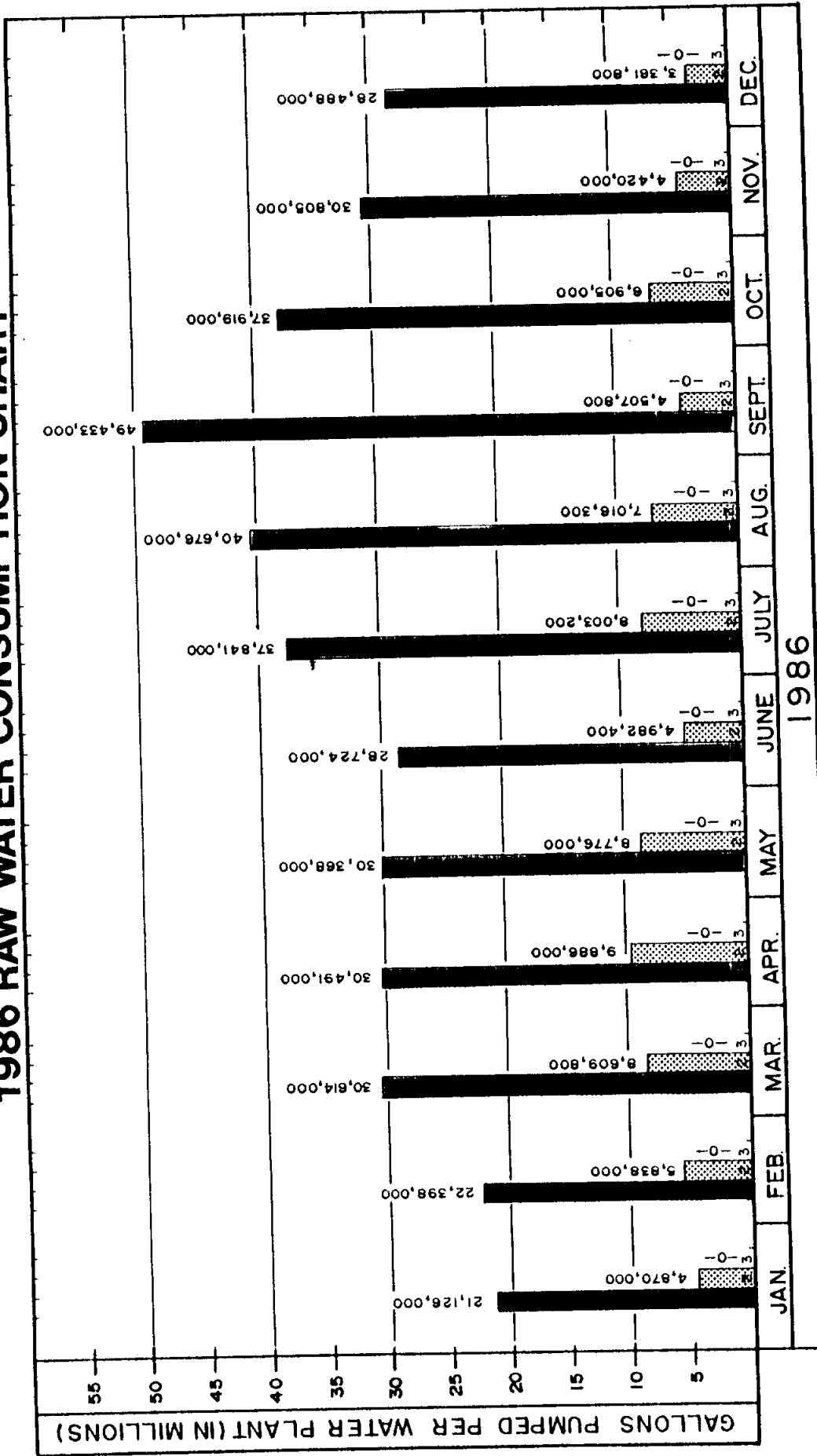
<u>MONTH</u>	<u>NO. OF METERS</u>	<u>TREATED WATER VOLUME</u>
JANUARY	4533	36,090,030
FEBRUARY	4613	48,589,670
MARCH	4741	34,717,450
APRIL	4783	37,616,420
MAY	4904	51,553,810
JUNE	4646	62,710,844
JULY	4997	64,427,558
AUGUST	5226	51,897,634
SEPTEMBER	5290	48,504,095
OCTOBER	5334	43,210,328
NOVEMBER	5374	47,930,243
DECEMBER	5389	48,006,966

*1991 TREATED WATER CONSUMPTION

<u>MONTH</u>	<u>NO. OF METERS</u>	<u>TREATED WATER VOLUME</u>
JANUARY	4622	33,036,162
FEBRUARY	4658	38,098,910
MARCH	4799	42,179,883
APRIL	4740	44,691,898
MAY	4735	44,471,505

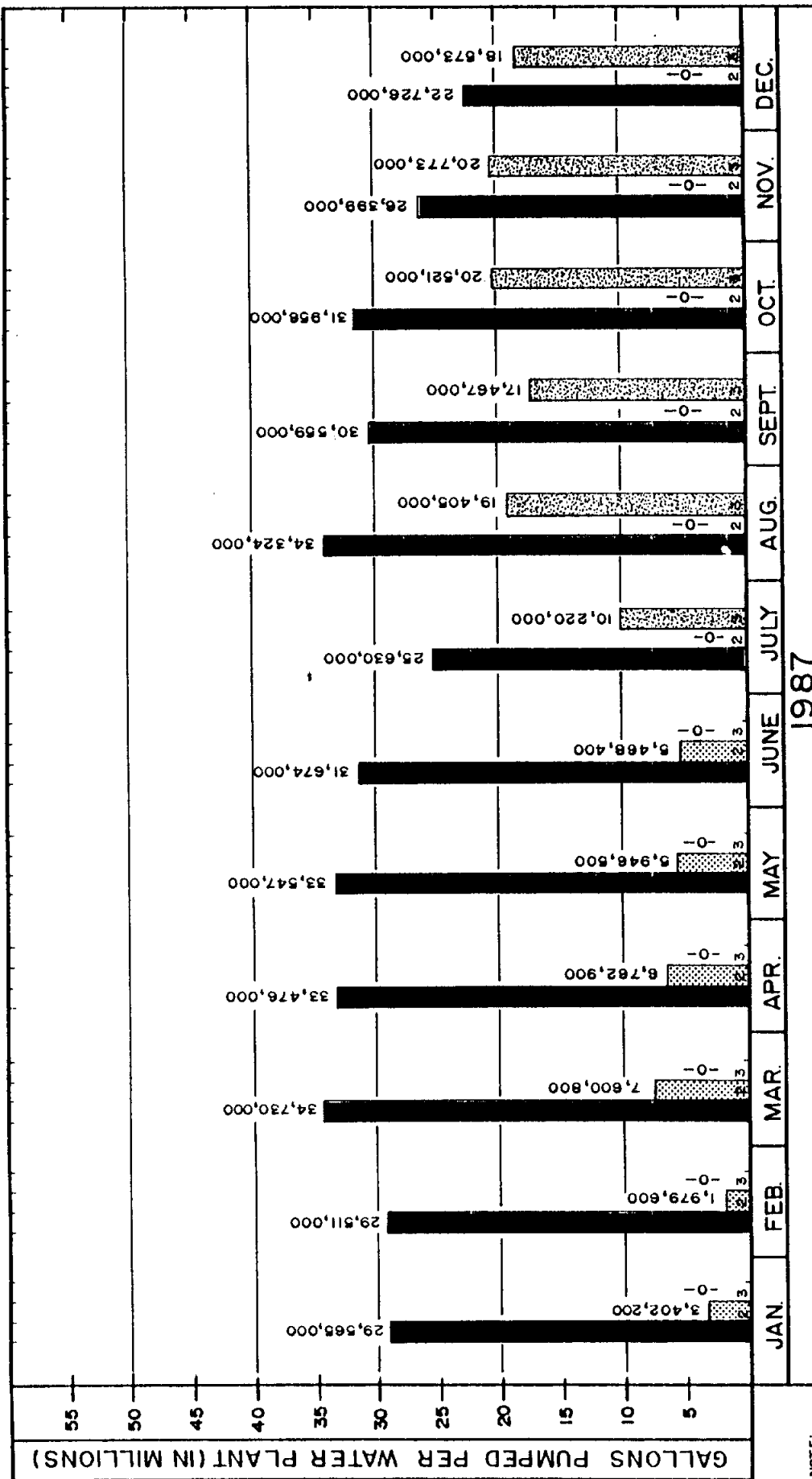
* 1991 Meter Count does not reflect 621 meters sold to the City of La Joya in January, 1991. It should be noted that the La Joya Water Supply Corporation is still servicing all the meters through a master meter.

1986 RAW WATER CONSUMPTION CHART



NOTE:
 1 = HAVANA WATER PLANT
 2 = BATES WATER PLANT
 3 = FM. 492 WATER PLANT

1987 RAW WATER CONSUMPTION CHART



NOTE:

1 = HAVANA WATER PLANT

2 = BATES WATER PLANT

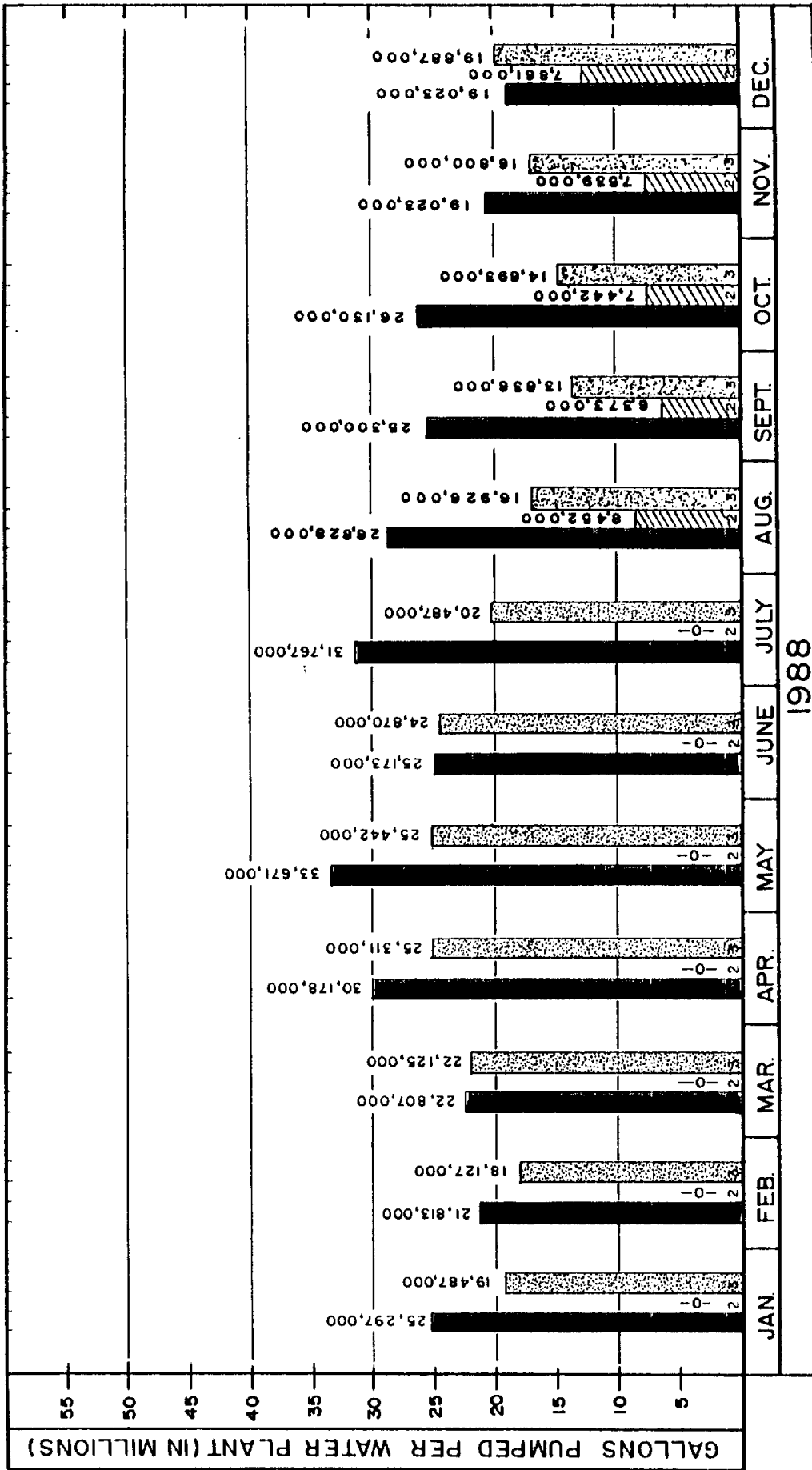
3 = FM. 492 WATER PLANT

HAVANA PLANT

BATES PLANT

FM. 492 PLANT

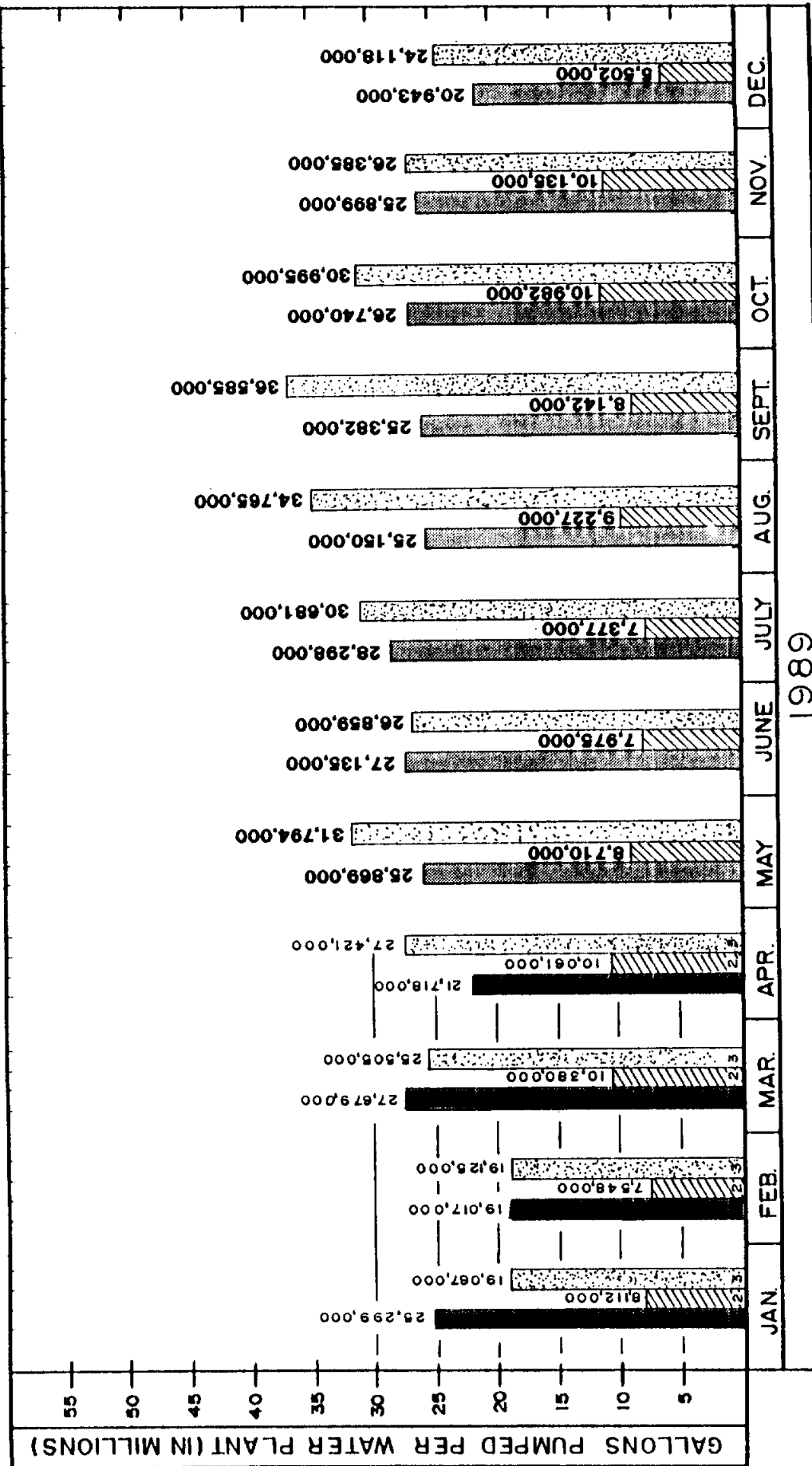
1988 RAW WATER CONSUMPTION CHART



NOTE:
 1= HAVANA WATER PLANT
 2= BATES WATER PLANT
 3= FM. 492 WATER PLANT

HAVANA PLANT
 BATES PLANT
 FM. 492 PLANT

1989 RAW WATER CONSUMPTION CHART

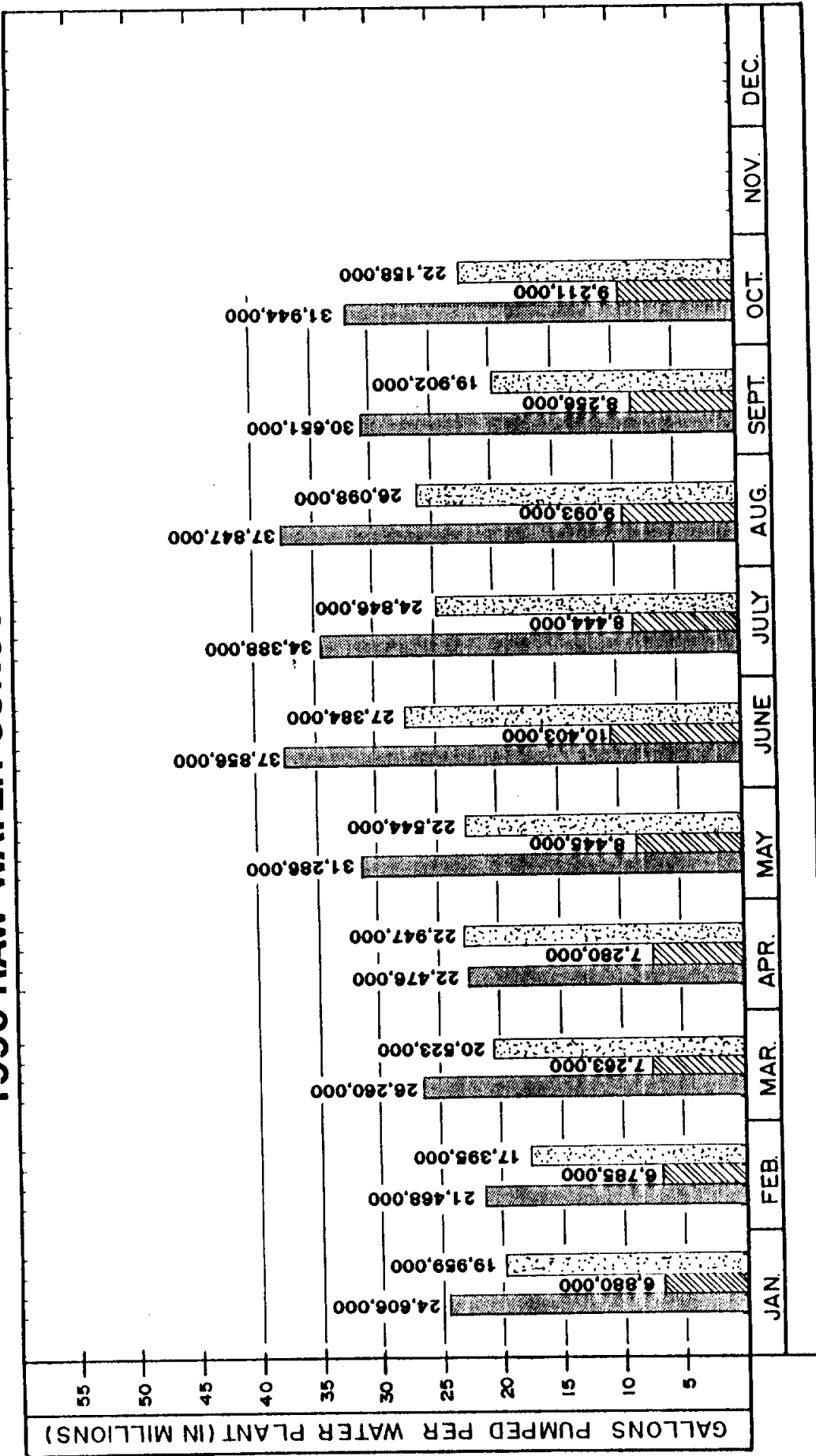


NOTE:
 1= HAVANA WATER PLANT
 2= BATES WATER PLANT
 3= EM.492 WATER PLANT

1= HAVANA PLANT
 2= BATES PLANT
 3= EM.492 PLANT

1989

1990 RAW WATER CONSUMPTION CHART



HAVANA PLANT
 BATES PLANT
 F.M. 492 PLANT

SECTION IV

LA JOYA WATER SUPPLY CORPORATION STUDY

PROJECT NARRATIVE

The principal beneficiaries of the project described here include the estimated 25,000 residents, 123 businesses and those expected to reside in the future. It is anticipated that the proposed improvements will attract citizens to the service area. Additional businesses will locate here and existing businesses will be able to expand their facilities. New employment opportunities for area residents will result.

The project consists of making improvements to existing facilities in the area. There will be no adverse environmental impact on the area. Thus, no environmental permits will be needed for this project. However, appropriate and applicable permits will be obtained as may become necessary. Such permits will be obtained upon receiving preliminary approval for the TWDB.

The current deficiencies within the study area could be categorized as follows:

Trunk Lines: Existing trunk lines are limited to 8", 6", and 4" lines. The forced delivery of water thru these lines and low pressure reading are clearly demonstrated on the water distribution map and pressure reading section accompanying this report. Over 90% of the residual pressures shown on this report are below the Texas Department of Health state minimum requirements.

Plant Capacities: The Havana plant capacity is now being taxed to

over 95% of daily capacity and is in violation of the Texas Department of Health requirements for peak period demand. This same plant has no auxiliary power supply and is a victim to power failures in the area.

The FM-492 water treatment plant is now running at 75% of the daily capacity and is in violation of Texas Department of Health peak period demand requirements.

Storage Requirements: While the system is now barely in compliance, the adding of needed plant capacities will place the storage requirements out of Texas Department of Health requirements.

The La Joya Water Supply Corporation board is considering a moratorium on new developments by the last quarter of 1991 due to not being able to produce and deliver the needed water to its present membership.

The La Joya Water Supply Corporation has operated federally funded projects in the proposed improvement service area. These include an elevated storage tank in Sullivan City, two (2), 1.5 million gallon plants and water line improvement projects in the Palmview, La Joya and Sullivan City areas (West Hidalgo County).

The La Joya Water Supply Corporation has filed with the state Historic Preservation Officer (SHPO) and the local A-95 clearinghouse copies of the pre-application for their respective reviews.

The proposed improvements outlined in this study are designed to

directly assist all present and future water users within the La Joya Water Supply Corporation service area. Upon completion, the project will eliminate major service delivery and maintenance problems. The proposed improvements will also provide a sound foundation for future development and insure that customers of LWSC will continue to receive prompt and sufficient service to maintain a quality of life that they deserve.

The City of La Joya is a small community with a population of about 4000 people and is located near the center of the La Joya Water Supply Corporation service area. For the past 18 years the City has in it's efforts toward establishing itself as both an independent water and wastewater providing municipality has made the following improvements.

1. Installed a sanitary sewer collection system.
2. Installed 6" to 8" water mains within it's city limits in order to meet fire flow conditions.
3. Installed fire hydrants at required residential spacings.
4. Installed a 150,000 gallon elevated storage tank in order to provide adequate water pressure and volume for domestic consumption and for fire protection.

The City of La Joya recently purchased all the water lines and 621 water meters located within it's city limits from the La Joya Water Supply Corporation. It is the City's intention to obtain it's own water treatment facility in the future. However, since it cannot be determined how soon this will be, the Water Supply Corporation jointly with the City of La Joya has installed a 12" bypass line through the City of La Joya. The City will continue to purchase treated potable water from the Water Supply Corporation via a 6" master meter discharging into their elevated storage tank. It should be noted that although membership count has been decreased by

621, the La Joya Water Supply Corporation still serves and will continue to serve all the people residing within the City of La Joya; therefore, this study is based on the total number of meters lying within the original La Joya Water Supply Corporation service area.

The city of La Joya is now completely separated from the La Joya Water Supply Corporation System. This was accomplished by a 12" Water Line By-Pass from the city's West city limits to the city's East city limits. The by-pass includes a master meter on its West city limits to meter the water delivered for the city's demands.

The City is now in the process of selecting an Engineer to design a water treatment plant. A tentative site near the Irrigation District No. 6 raw water reservoir is now being studied for the location of the water treatment plant. City officials have been visiting with the Texas Water Development staff to discuss financing of the proposed project.

Configuration of the system has changed very little since the city's residential and commercial areas are South of the by-pass and the La Joya Water Supply Corporation system is not serving any demands within the corporate limits of the city. The city's needs are 11% of the needs of the La Joya Water Supply Corporation. We feel that the proposed city water treatment plant will not significantly affect the needs of the La Joya Water Supply Corporation.

The design standards utilized in the development of the projects contemplated herein are those published by the Texas Department of Health entitled: Rules and Regulations for Public Water Systems 1988. Included among these standards are as follows:

MINIMUM PRESSURE REQUIRED:

35 psi under normal conditions with a $Q=1.5$ gpm per connection
20 psi under peak demand. Could be affected by different pressure plane.

GROUND STORAGE:

200 Gal/connection $(5,500 \times 200)=1.1$ million Gallons.

CLEARWELL:

5% rated daily plant capacity $(1,500,000 \times 5\%)= 75,000$ Gallons/Plant

ELEVATED STORAGE:

100 Gal/connection $(5,500 \times 100)= 550,000$ Gallons.

RAW WATER PUMP CAPACITY:

0.6 Gal/min/connection with largest pump out-of-service.
 $(0.6 \text{ Gal/min} \times 5,500) = 3,300$ gallons/min with largest pump out-of-service.

TREATMENT PLANT CAPACITY:

0.6 Gal/min/connection. $(0.6 \times 60 \text{ minutes} \times 24 \text{ hours} \times 5,500) = 4,752,000$ mgd.

SERVICE PUMP CAPACITY:

Each pump station or pressure plane shall have two or more pumps having a total capacity of 1,000 gallons per minute and able to meet peak demand, whichever is greater.

T A B L E I I

L A J O Y A W A T E R S U P P L Y C O R P O R A T I O N
CAPITAL IMPROVEMENTS REQUIRED -- 1991Component I: System-Wide

A. Water Distribution Lines:

1. From Havana Plant to Nuevo Penitas at F.M. 1427 and U.S. 83 12" x 20,000 LF	\$ 250,000.00
2. From 492 Water Plant to City of Palmview Elevated Storage and To Nuevo Penitas 12" x 31,500 LF	525,000.00
3. System-wide replacement of existing lines Replaces 3" lines & under to 6" x 100,000 LF	250,000.00
SUB-TOTAL SECTION A	\$ 1,025,000.00

B. Booster Stations and Storage:

1. Sullivan City Existing Booster Station: (Rehabilitate and Replace Pumps and Motors, Etc.)	\$ 30,000.00
2. Sullivan City Existing Elevated Storage: (Rehabilitate cathodic treatment)	50,000.00
3. F.M. 492 and Mile 3 North Existing Ground Storage: (Rehabilitate cathodic treatment)	75,000.00
4. FM 492 & Mile 4 3/4 Existing Booster Station: (Rehabilitate and replace pumps, motors, etc.)	25,000.00
5. Palmview Elevated Storage: (250,000 to 400,000 gallon elevated storage)	500,000.00
SUB-TOTAL SECTION B:	\$ 680,000.00
SUB-TOTAL COMPONENT I	\$ 1,705,000.00

Component II: FM 492 Plant

1. Increase the capacity from 1.5 MGD to 3.0 MGD	\$ 1,500,000.00
2. Increase 60 HP centrifugal pumps from two to four	100,000.00
3. Increase backwash pumps with motors from one to two	100,000.00
4. Increase raw water storage facilities	250,000.00
5. Construct a 3,000 to 4,000 s.f. storage warehouse	150,000.00
6. Replace existing pumps, valves, flow meters and motors	75,000.00
SUB-TOTAL COMPONENT II	\$ 2,175,000.00

Component III: Havana Plant

1. Increase the capacity from 1.5 MGD to 3.0 MGD	\$ 1,500,000.00
2. Increase vertical turbine pumps (100 HP) from two to four	100,000.00
3. Increase backwash pumps with motors from one to two	100,000.00
4. Acquire auxiliary power unit (generator)	50,000.00
5. Increase the number of raw water pumps and install 2,500 linear feet of raw water transmission lines	75,000.00
6. Replace existing pumps, valves, flow meters and motors	150,000.00
SUB-TOTAL COMPONENT III	\$ 1,975,000.00
TOTAL COMPONENTS I, II & III	5,855,000.00
<u>Contingency (5% of Components I, II and III)</u>	\$ 292,750.00
TOTAL CONSTRUCTION COST*	
* (Components 1,2 3 and Contingency)	\$ 6,147,750.00

PROPOSED PROJECT EXPENDITURE SUMMARY--YEAR 1991

1. CONSTRUCTION COST	\$ 6,147,750.00
2. ENGINEERING COST (6.30%) OF CONSTRUCTION COST	\$ 387,308.25
3. SPECIAL SERVICES (SEE GENERAL ENGINEERING SERVICES MANUAL)	\$ 200,000.00
4. PROJECT ADMINISTRATION (2%) OF CONSTRUCTION COST	\$ 122,955.00
5. GRAND TOTAL PROJECT COSTS (1.+2.+3.+4.)	* \$ 6,858,013.25

These capital improvements are needed in Year 1991 to meet minimum Texas Department of Health requirements.

Overhead and Maintenance budgeted for the 1991 year is 1,071,467.

Overhead and Maintenance for each additional year should be increased by 4% per year.

T A B L E I I I

L A J O Y A W T E R S U P P L Y C O R P O R A T I O N
CAPITAL IMPROVEMENTS REQUIRED -- YEAR 2000

Component I: System-Wide

A. Water Distribution Lines:

1. Loop from Palmview Storage Tank to Mile 7 Proposed 12" X 64,500 L.F. of P.V.C. Water Line	\$ 1,064,250.00
2. Loop from F.M. 886 West to Guadalupe Flores Road and South of Business 83 -- Proposed 10" X 24,000 L.F. of P.V.C. Water Line	336,000.00
3. System-wide replacement of existing 3" lines and under with 6" x 100,000 L.F. of P.V.C. Water Line (This is 1/3 of lines that need to be replaced)	250,000.00
SUB-TOTAL SECTION A	\$ 1,650,250.00

B. Booster Stations and Storage:

1. Rehabilitate and Replace Pumps, Motors, Etc.	\$ 100,000.00
2. Nuevo Penitas Elevated Storage:	250,000.00
SUB-TOTAL SECTION B	\$ 350,000.00
SUB-TOTAL COMPONENT I	\$ 2,000,000.00

Component II: FM 492 Water Treatment Plant

1. Increase capacity from 3.0 MGD to 4.5 MGD	\$ 1,500,000.00
2. Increase 60 HP centrifugal pumps from four to six	100,000.00
3. Increase backwash pumps with motors from two to three	100,000.00
4. Replace existing pumps, valves, flow meters and motors	75,000.00
SUB-TOTAL COMPONENT II	\$ 1,775,000.00

Component III: Havana Plant

1. Replace existing pumps, valves, flow meters and motors	\$ 75,000.00
SUB-TOTAL COMPONENT III	\$ 75,000.00

TOTAL COMPONENTS I, II, & III	\$ 3,850,250.00
Contingency (5% of Components I, II and III)	\$ 192,500.00
TOTAL CONST. COST*	
*(Components I, II, III and Contingency)	\$ 4,042,750.00

PROPOSED PROJECT EXPENDITURE SUMMARY--YEAR 2000

1. CONSTRUCTION COST	\$ 4,042,750.00
2. ENGINEERING COST (6.30%) OF CONSTRUCTION COSTS	\$ 254,693.25
3. SPECIAL SERVICES (SEE GENERAL ENGINEERING SERVICES MANUAL)	\$ 200,000.00
4. PROJECT ADMINISTRATION (2%) OF CONSTRUCTION COSTS	\$ 80,855.00
5. GRAND TOTAL PROJECT COSTS	\$ 4,578,298.25

These capital improvements are needed in Year 2000 to meet minimum Texas Department of Health requirements.

T A B L E I V

L A J O Y A W A T E R S U P P L Y C O R P O R A T I O N
CAPITAL IMPROVEMENTS NEEDED BY -- YEAR 2010Component I: System-Wide

A. Water Distribution Lines:

1. Loop F.M. 2002 from Penitas South to Palmview Elevated Storage Tank -- Proposed 12" X 64,500 L.F. of P.V.C. Water Line	\$ 792,000.00
2. System-wide replacement of existing 3" lines and under with 6" x 100,000 L.F. of P.V.C. Water Line (This is 1/2 of lines that need to be replaced)	250,000.00
SUB-TOTAL SECTION A	\$ 1,042,000.00

B. Booster Stations and Storage:

1. Rehabilitate and Replace Pumps, Motors, Etc.	\$ 200,000.00
2. Elevated storage at F.M. 492 and Mile 7	250,000.00
SUB-TOTAL SECTION B	\$ 450,000.00
SUB-TOTAL COMPONENT I	\$ 1,492,000.00

Component II: FM 492 Water Treatment Plant

1. Increase capacity from 4.5 MGD to 6.0 MGD	\$ 1,500,000.00
2. Increase 60 HP centrifugal pumps from six to eight	100,000.00
3. Increase backwash pumps with motors from three to four	100,000.00
4. Replace existing pumps, valves, flow meters and motors	75,000.00
SUB-TOTAL COMPONENT II	\$ 1,775,000.00

Component III: Havana Plant

1. Increase capacity from 3.0 MGD to 4.5 MGD	\$ 1,500,000.00
2. Increase vertical turbine pumps (100 HP) from four to six	100,000.00
3. Increase backwash pumps with motor from two to three	100,000.00
4. Replace existing pumps, valves, flow meters and motors	75,000.00
SUB-TOTAL COMPONENT III	\$ 1,775,000.00

TOTAL COMPONENTS I, II & III	\$ 5,042,000.00
Contingency (5% of Components I, II and III)	\$ 252,000.00
TOTAL CONSTRUCTION COST*	
* (Componenets 1, 2 3 and Contingency) _____	\$ 5,294,000.00

PROPOSED PROJECT EXPENDITURE SUMMARY -- YEAR 2010

1. CONSTRUCTION COST	\$ 5,294,000.00
2. ENGINEERING COSTS (6.30%) OF CONSTRUCTION COSTS	\$ 333,522.00
3. SPECIAL SERVICES (SEE GENERAL ENGINEERING SERVICE MANUAL	\$ 200,000.00
4. PROJECT ADMINISTRATION (2%) OF CONSTRUCTION COSTS	\$ 105,880.00
5. GRAND TOTAL PROJECT COSTS	* \$ 5,933,402.00

*These capital improvements are needed in Year 2010 to meet minimum Texas Department of Health requirements.

1991 BUDGETProjected Revenues - 1991

Water Sales	1 300 000
Meter Sales 400 @ \$275	110 000
Interest Income	14 000
Platt Fees	12 000

Total Revenues	-----
----------------	-------

1 436 000

Projected Expenses - 1991

Raw Water & Temporary Water Rights	182 000
Chemicals	100 000
Samples	2 200
Trucks Expense	24 000
Car Allowance Mileage	4 500
Scholarships	6 000
Advertising/Promotional	2 500
Computer Maintenance Agreement	3 095
Computer Supplies	1 000
Delivery Services	2 700
Dues	4 500
Dredging Reservoirs	4 000
Engineer - Retainer	1 800
Education/Schooling	2 500
Insurance - Workmen's Compensation	40 000
Insurance - Liability	24 000
Debt Service	300 000
Accounting Retainer	4 200
Accounting-Management Advisory Services	4 000
Audit	3 600
Legal Fees	12 000
Legal - Water Tower	4 000
Meter Installation Supplies	37 500
Meter Breaks Expense	3 000

Meals	600
Newsletter, Proxies	2 000
Office Supplies	9 500
Postage - Billings	14 000
Repairs - Plant, Lines, Pumps	35 000
Salaries - Office	121 576
Salaries - Distribution	57 954
Salaries - Water	147 342
Seminars	7 000
Lodging	3 000
Taxes Payroll	27 000
Taxes - Ad Valorem	31 000
Telephone	3 500
Travel - Board	5 400
Uniforms	7 000
Utilities	126 500

1 371 467

CAPITAL OUTLAY:

3 New Pickups	33 000
Nike Flores	40 000
Base Radio	10 000
Computer Upgrade	3 000
Land Acquisition	40 000
Funded Depreciation	120 000
Reserve Account	60 000

306 000

Total Projected Expenses

1 677 467

Projected Deficit

(241 467)
=====

YEAR **OVERHEAD AND MAINTENANCE
PROJECTED YEARLY EXPENSES**

1991	1,071,467
1992	1,114,326
1993	1,158,899
1994	1,205,255
1995	1,253,465
1996	1,303,603
1997	1,355,748
1998	1,409,977
1999	1,466,377
2000	1,525,032
2001	1,586,033
2002	1,649,474
2003	1,715,453
2004	1,784,071
2005	1,855,434
2006	1,929,652
2007	2,006,838
2008	2,087,111
2009	2,170,596
2010	2,257,419

The implementation of plans for improvements required in Year 1991 (Phase I) have been given board approval. The need to have the proposed improvements constructed immediately are being delayed only by the need of funding for the project. Plans and specifications for the construction of trunk lines in Component I (water distribution lines) will be ready by January of 1992. The plans and specifications for booster stations and storage tanks improvements in Component I are projected to be ready for construction by April of 1992. The plans and specifications for Component II are projected to be completed by July of 1992. The financing and cash flow of the project (Phase I) are now being developed and will be submitted by separate cover.

FINANCING ALTERNATIVES

***THIS SECTION IS AN EXACT REPRODUCTION FROM THE
REGIONAL WATER SUPPLY AND WASTEWATER DISPOSAL PLAN
FOR
HIDALGO COUNTY
JANUARY, 1990**

PREPARED FOR THE TEXAS WATER DEVELOPMENT BOARD

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*** With the exception of Financial Assistance Section taken from
Senate Bill 2 and added to the end of Section V.**

SECTION VII - FINANCING ALTERNATIVES

Overview

Perhaps the most difficult and controversial part of a water supply or wastewater disposal program is the determination of how the implementation of the program should be financed and how it should be managed. In the case of the colonias and some incorporated areas of Hidalgo County, the poverty level of many of the residents, their rural location, and the many other capital demands of the area make these particularly difficult questions. Without workable answers to these questions, any capital development program obviously remains only a plan.

Water and wastewater development programs historically have been funded with general tax revenues and general obligation debt, most often at the federal level. Most major water impoundments constructed throughout the country during this century have been financed with federal funding, often as flood control and conservation projects. Since 1972, the Federal Water Pollution Control Act (later known as the Clean Water Act) has provided literally billions of dollars of federal money in the form of grants for the construction of wastewater treatment plants in an effort to improve water quality and control pollution.

On the other hand, transmission and collection lines and annual operation and maintenance expenses of both water and wastewater systems traditionally have been the financial responsibility of state and local governments or of the utilities themselves. Most of these costs, in turn, are passed on to the utility user in some form of user charge.



In analyzing the options available for financing proposed improvements presented in this study, several factors must be considered. Centralized water supply and distribution or centralized wastewater collection and treatment, for example, require relatively high initial costs with lesser recurring costs (operation, maintenance, and replacement). Some costs may qualify for various financial programs, while others do not. Ability, or inability, to pay may significantly limit user charges as a potential revenue source, thus limiting the participation in loan or grant programs. Existing municipal and utility service areas, facilities, and financial commitments also influence the choice of financing and management structures and on which procedures appear most reasonable for future development. This section of the report examines some of financing and management options available to implement needed water and sewerage improvements needed for the study area.

Potential Programs for Financing Colonia Utility Development

There are some state and federal programs that have been used or potentially could be used to assist in financing water or wastewater system development in Hidalgo County. The following is a brief description of the programs which appear to have the greatest potential.



Federal Programs

Clean Water Act Construction Grants For Wastewater Treatment Works

Historically, the most important program assisting in the financing of wastewater treatment facilities has been the federal construction grants program administered by the Environmental Protection Agency. This program has been the major financial participant in new wastewater treatment plant development throughout the country since its inception in 1972. Most of the treatment plant capacity now located in the Rio Grande Valley has been financed through this program. However, in recent years lack of available funding has essentially limited the program's participation to assistance in completion of projects that are currently under development. Expansion of the City of San Juan's wastewater and collection facilities, for example, are to be completed with a combination of federal grant funds and a local financial share.

Unfortunately, the Clean Water Act grant program is being phased out and replaced by a revolving loan fund. Initial "seed" money for the loan program comes from federal capitalization grants, however, once the loan program is established, federal participation is expected to cease.

Farmers Home Administration's Program for Rural Communities

The Farmers Home Administration (FmHA) has grant and loan programs specifically designed to assist in financing water and wastewater systems for rural communities. By regulation, grants



cannot exceed 75 percent of eligible project costs. The actual percentage of a grant is related to household income with the highest percentage applied to the lowest income applicants. Facilities financed by FmHA must be designed to serve primarily rural residents. The financing is not available to any "area" or any city or town with a population in excess of 10,000. The grants and loans are available to political subdivisions of the State and also to nonprofit organizations which are "utility-type" organizations serving rural communities. This latter ability has made these programs very useful to the nonprofit water supply corporations that currently provide service to the colonias in Hidalgo County. In fact, FmHA is the primary, if not the only, financing agency or institution used by most of these water suppliers.

In order to be eligible for financial assistance from FmHA's rural water and wastewater disposal programs, the applicant must be unable to finance the project from its own resources or to find reasonable financing through commercial credit institutions. Grant funds cannot be used to pay for interest on loans or to pay operations and maintenance expenses. Loans are made at an interest rate not to exceed 5 percent if the facilities to be financed are needed to meet minimum health and sanitary standards and the median household income of the service area is below the poverty level.



PROVIDING MANAGEMENT AND TECHNICAL ASSISTANCE

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(512) 787-0256

Housing and Urban Development Community Development Block Grants

The Department of Housing and Urban Development (HUD) has two broad categories of Community Development Block Grants--formula grants, which are allocated directly to larger cities (over 50,000 population) and urban counties (over 200,000 population); and project grants for smaller cities which, in most cases (including Texas), are administered by the states. In the case of Texas, these grant funds are administered by the Texas Department of Community Affairs.

The objectives of both these programs are very broad, as are the types of projects they support. Their purpose is to enhance the living environment and economic opportunities of both low and moderate income persons. Because of this, these grant funds seldom go to single major projects but most often are allotted to many relatively small projects which are unable to qualify for other types of funding. In 1987, Brownsville, McAllen and Harlingen in the Lower Rio Grande Valley received approximately \$1.5 million in Community Development Block Grants from HUD.

State Programs

The State Water Pollution Control Revolving Fund

The State Revolving Fund (SRF) is a perpetual fund through which the Texas Water Development Board (TWDB) provides low-interest loans to Texas communities for the construction of wastewater treatment works. Eligible projects include construction of new treatment plants, interceptor sewers and repairs to



existing collection systems. In addition to construction funding, loans can also include funds for planning and design. As noted above, the SRF program replaces the federal construction grants program and is managed by the state with minimal federal oversight. Current (FY 1989) interest rates are 5.5 percent and the maximum term of SRF loans is twenty years after project completion.

In order to apply for assistance, "an entity must be an interstate agency, city, town, county, district, river authority, association, or other public body created by or pursuant to state law which has the authority to treat sewage." The entity also must be or have applied to become a designated waste management agency before the Texas Water Commission. Among other requirements the applicant additionally must satisfy the following.

- ° Have a cost-effective, eligible project which is included on the Project Priority List.
- ° Prepare a water conservation plan and SRF engineering report.
- ° Document the existence of a dedicated source of funds for repayment.
- ° Implement a user charge system and demonstrate that it has the financial and managerial capability.
- ° Obtain an environmental determination in compliance with the National Environmental Policy Act.

Recent changes to the SRF legislation allow for a reserve fund to be established from SRF repayments for loans to eligible applicants which qualify as "hardship" cases. In evaluating hardship, the TWDB considers severity of the public health



problem, alternative funding sources imposing a hardship on the community, median household income, and area unemployment. Should an entity qualify, certain priority ranking and project rating requirements of the program can be waived, as well as completion of the SRF engineering plan. In FY 1989, approximately \$200 million dollars was earmarked for SRF projects. With funding requests from around the state in excess of \$640 million for FY 1990, there are numerous projects which will likely remain unfunded this year. If Colonias projects are to be funded through the SRF, hardship status will certainly be required.

Texas Community Development Program

The funds the Texas Department of Community Affairs (TDCA) receives from the HUD Community Development Block Grant Program (see above) go to fund the Texas Community Development Program. There are three major funds under the program: the Community Development Project Fund, the Area Revitalization Fund, and the Emergency/Urgent Need Fund.

The Community Development Project Fund allocates funds among the state's 24 planning regions to cities and counties for "public facilities/services and housing assistance projects." Water and sewer construction projects are eligible under this program but, as with other financial assistance programs, operating and maintenance expenses are not. The Area Revitalization Fund provides statewide competition for projects to cities and counties who have not applied under the Community Development



Project Fund Program. The Emergency/Urgent Need Fund is established to respond to natural disasters and to projects that pose a threat to the immediate health and safety of the local residents. The maximum allowed in any one grant is \$500,000.

Texas Water Development Board's Financial Assistance and Water Bond Insurance Programs

Under the Texas Water Code, the Texas Water Development Board (TWDB) administers programs of financial assistance for projects involving "water conservation, water development, and water quality enhancement" as well as flood control and drainage. These programs are for loans and loan insurance and do not currently include construction grants. Matching grants are available for planning and engineering some of these facilities. These programs are separate from the State Revolving Loan Fund (SRF) which was initiated at the federal level.

The TWDB's financial assistance and bond insurance programs are available to any "political subdivision" of the State which specifically includes "any nonprofit water supply corporation." The Board has considerable latitude regarding the terms and conditions of loans made, including interest deferral or the capitalization of interest and can make loans for durations of 50 years.

The TWDB can acquire, lease, construct, or reconstruct projects with funds from the so-called "state participation account" and thus own up to 50 percent of a project. In turn, the state can "sell, transfer, or lease its ownership" to an eligible



applicant. This can be undertaken so long as the TWDB can reasonably "expect that the state will recover its investment in the facility."

New Programs

Texas Senate Bill No.2 (SEE SENATE BILL 2 FINANCIAL ASSISTANCE SUBCHAPTER E)

While the TWDB currently has no grant program for facility construction, such programs have been and are presently being considered in the legislature. Senate Bill 2, currently under consideration, would amend the Texas Water Code, Chapter 15, to create an "Economically Distressed Area Fund" as a subfund of the Water Assistance Fund to provide loans and grants for water and wastewater facilities in economically distressed areas. Eligible counties would be required to meet several test conditions, including having (1) per capita income 15 percent below the state average, (2) unemployment rate 15 percent below state average, and (3) adopted model rules. Counties adjacent to eligible counties and to the international border would be eligible for assistance. Amendment to Chapter 16 of the Code would authorize the Texas Water Commission, the Texas Health Department and the TWDB to adopt rules (for subsequent adoption by applicants) to assure that standards for safe and sanitary water and sewer services were met. The rules would further assure that adequate drinking water and sewage facilities were available and would provide civil penalties and injunctive relief for violation of the rules. The Bill would also amend Chapter 17 of the Code to dedicate 5 percent of authorized but unissued water development



bonds in the Water Development Fund for similar purposes. Up to 5 percent of the allocated money in either fund could be utilized for planning grants.

Texas Water Resources Finance Authority

As a result of refinancing existing and committed political subdivision bonds, the Texas Water Development Board will recognize approximately \$41 million in revenue. Hearings were conducted in late April to receive public comment on how to spend the funds. At the current time, lawmakers are targeting grants and loans for water and wastewater projects in economically distressed areas. Projects dealing with public health and regional planning will likely receive a priority.

H.R. 3524

H.R. 3524, the "Colonia Water and Sewage Service Act" is a resolution currently pending in Congress intended to deal with the colonias problem. The bill was introduced by Rep. Solomon Ortiz on October 21, 1987. The bill would provide targeted funds through two existing FmHA programs, the water and sewage grant program, and a separate program that aids low income housing. The pending legislation would increase funding for these two programs by \$20 million each of which \$5 million would be for grants and \$15 million would be for loans.

H.R. 2046

The House recently approved a bill authorizing the Secretary of State, acting through the International Boundary and Water



Commission, to conclude agreements with Mexico concerning pollution of the Rio Grande. The bill is to focus on certain border cities and authorizes "such sums as may be necessary" to fund U.S. share of planning, constructing, operating and maintaining facilities recommended in the agreements. Reynosa, Mexico and Hidalgo, Texas are noted as cities to receive consideration.

Infrastructure Bills

Several bills have been introduced to assist municipalities in financing infrastructure improvements to water and sewer systems. One bill, H.R. 2801 would authorize the Federal Government to pay 25 percent of the debt service. The bill was intended to aid localities by defraying a portion of the debt incurred by communities in restoring public works.

Funding Requirements

Because the ultimate use of funds will often influence the method best suited for securing the funding, the financial needs of the typical water or wastewater service should be examined by use category. In this way, a financial program can be established which may comprise a variety of financing sources, each designed to accommodate a separate funding need.

Funding Operations and Maintenance Costs

The costs of operating and maintaining a water or wastewater system are daily costs that require a continuous flow of funds. The anticipated operations and maintenance (O&M) expenses for a fiscal period are generally budgeted prior to the beginning of



the period. These budgeted funding needs are then converted to per-unit costs for collection purposes.

If the O&M expenses are to be financed through user charges, the budgeted figures can be converted into monthly charges per gallon of water used or per service connection. Revenues derived from these charges are then used to finance the O&M expenses incurred during the period. Obviously, the ability of this financing method to accurately generate needed funds is dependent on the accurate projection of O&M expenses, volume of water consumed, and number of active connections during the budget period. Since the volume of water used is often related to weather conditions, long term demand projections and, therefore, derived revenue can be lesser or greater than anticipated.

With monthly water bills averaging \$8 to \$30 in Hidalgo County, it is doubtful that colonia customers will be able to pay in excess of \$10 to \$15 per month more for wastewater service. Systems with average O&M costs in excess of this amount would probably need to be subsidized to be feasible.

If O&M expenses are to be subsidized with tax revenues, the budgeted O&M expenses need to be added to other financing needs to be covered by the specific tax involved. While tax generated revenue is not considered to be as "fair and equitable" as user charges in paying for utility operations, taxes are generally a more reliable and predictable form of revenue generation.



Debt financing is almost never used to finance O&M expenses. In fact most bond covenants will specifically prohibit bond funds from being used for O&M expenses.

Capital Funding of New Systems

The major funding need of a new utility system is for financing design and construction of new facilities. These new facilities may be an entirely new facility or expansion to an existing system. Whether a water supply or wastewater disposal system, the facilities can generally be divided into three categories: (1) Treatment or supply plants, (2) collection or distribution facilities, and (3) onsite service lines and plumbing. Each category may be financed somewhat differently, depending upon the specific circumstances involved.

Some characteristics that are common to all facility financing will tend to influence the funding alternatives to be considered. First, during construction, there is generally a requirement for a relatively large capital funding commitment over a relatively short time period. Second, the amount of funds required for a specific project can usually be quite accurately estimated before a financing commitment is made. Third, most new facilities will be useful and productive over an extended time period far beyond the initial funding time frame.

Because of these common characteristics, most financing of new facilities will involve some form of debt. By issuing debt, the utility can obtain the relatively large initial investment required for construction and amortize repayment of the debt over



the estimated useful life of the system. In this way, the repayment of the debt takes the form of annual payments similar to the annual depreciation expense of the newly financed facility. Those entering the system after it is built are required to share its initial cost in the form of amortized debt service as part of their annual user fees.

While grants may become available to help fund a portion of the capital costs, some of these costs will likely require local debt financing. It follows that most, if not all, of the customers' affordable monthly charge will need to be allotted to paying O&M costs, little, if any, user charge revenue is left with which to amortize the local share of the capital costs.

Justification for using general tax revenue in support of capital funding of wastewater facilities can be made based on general public benefits received. The potential pollution and health hazards created by poor wastewater disposal methods is widespread and can affect the entire county. While a case can be made that those who create the problem (the colonia residents) should pay to correct it, if they cannot afford the cost and no correction is undertaken the problem extends far beyond the individual residence discharging the wastewater.

An alternative to general tax support to fund necessary facility expansion is enforcement of subdivision ordinances requiring developers to pay for the necessary improvements. This has the effect of having the buyer of the property pay, as the developer's costs are passed on to the buyer in terms of a higher



purchase price. This financing method has two major drawbacks. It, of course, is not applicable to financing facilities to serve existing residences. In addition, the problems of affordability and enforceability again arise. Those who cannot afford the higher property values will have to live elsewhere. Past experience shows that to reduce property prices to an affordable range, some developers may move to more remote rural areas where subdivision restrictions do not apply or are not enforced. Thus, the problem is not resolved, only dispersed.

Capital Funds for Repair and Replacement of Existing Systems

Probably the most ignored or abused funding requirements of water and wastewater utility systems are those required for facility repair and replacement (R&R). Wastewater systems in particular often are in need of facility replacement or repair that goes unfulfilled due to lack of required funding. This type of financial oversight generally results in a system which operates ineffectively.

Financing system repair and replacement needs generally differs from new facility financing. While the funding needs for R&R can be significant, especially as a system ages, R&R funding is not as predictable or preplanned as funding new or expanded facilities. Therefore, R&R financing usually makes use of a reserve fund created by regular periodic contributions until the fund reaches some preset balance. Thereafter, contributions are made only as necessary to retain the preset balance.



SENATE BILL 2
FINANCIAL ASSISTANCE
SUBCHAPTER E

SUBCHAPTER E. FINANCIAL ASSISTANCE

Sec. 21.101. CREATION OF PROGRAM. The economically depressed area water assistance program is created under the jurisdiction and administration of the board to provide financial assistance to political subdivisions for the purpose of providing water and sewer services and facilities to economically depressed areas.

Sec. 21.102. USE OF GENERAL OBLIGATION BOND PROCEEDS. (a) In addition to providing financial assistance from the fund, the board may use the proceeds from the sale of general obligation bonds administered by the board to provide financial assistance under this chapter, if the constitution or the resolution authorizing the issuance of those bonds does not prohibit the use of those proceeds for this purpose.

(b) The board may use general obligation bond money totally

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or in part to provide financial assistance under this chapter.

(c) Financial assistance under this section is exempt from any state law that restricts using general obligation bond proceeds for making loans that cannot be retired by the loan recipients during the life of the bond obligations.

Sec. 21.103. COUNTY ELIGIBILITY FOR FINANCIAL ASSISTANCE.

(a) Except as provided by Subsection (b) of this section, to be eligible for financial assistance under this chapter, a county must have:

(1) a per capita income that averaged 15 percent below the state average for the most recent three consecutive years for which statistics are available;

(2) an unemployment rate that averaged 15 percent above the state average for the most recent three consecutive years for which statistics are available; and

(3) adopted the model rules developed under Section 21.012 of this code.

(b) A county that is located immediately adjacent to a county that meets the criteria in Subsection (a) of this section and to an international border is eligible to obtain financial assistance under this chapter on adoption of the model rules developed under Section 21.012 of this code.

Sec. 21.104. MUNICIPALITY ELIGIBLE FOR FINANCIAL ASSISTANCE.

A municipality that is located in a county that is eligible for financial assistance under Section 21.103 of this code is eligible for financial assistance under this chapter if the municipality

adopts the model rules developed under Section 21.012 of this code.

Sec. 21.105. DISTRICTS ELIGIBLE FOR FINANCIAL ASSISTANCE. A district is eligible to receive financial assistance under this chapter if:

(1) the district is wholly within the boundaries of a county or counties which have qualified as eligible counties under Section 21.103 of this code;

(2) application is made to provide services to residents of an economically depressed area located in an eligible county or municipality; and

(3) the governing bodies of each eligible county and municipality in which the service area is located do not intend to apply for financial assistance for the same project for the same area and approve by resolution the district submitting an application for financial assistance.

Sec. 21.106. APPLICANTS' CONTINUED ELIGIBILITY. If, after submission of a financial assistance application, a county has an increase in average per capita income or decrease in unemployment rate average that no longer meets the criteria in this chapter, the political subdivision that submits the application continues to be eligible for the financial assistance, and the board shall process the application and, if the application is approved, shall provide financial assistance to the political subdivision to complete the project.

Sec. 21.107. APPLICATION FOR FINANCIAL ASSISTANCE. (a) A political subdivision may apply to the board for financial assistance by submitting an application together with a plan for

providing water and sewer services to an economically depressed area for which the financial assistance is to be used.

(b) The application and plan must:

(1) comply with board requirements;

(2) describe in detail the method for delivering water and sewer services and the persons to whom the services will be provided;

(3) describe the method for complying with minimum state standards for water and sewer services adopted by the board under Section 21.011 of this code;

(4) include a budget that estimates the total cost of providing water and sewer services to the economically depressed area and a proposed schedule and method for repayment of financial assistance provided by the board;

(5) describe existing water and sewer facilities located in the economically depressed area;

(6) provide proof that the political subdivision has adopted the model rules developed under Section 21.012 of this code;

(7) describe the procedures to be used to collect money from residents who use the proposed water and sewer services including procedures for collection of delinquent accounts;

(8) include a requirement that a contractor who agrees to acquire, construct, extend, or provide water and sewer services executes a performance bond in the amount of 100 percent of the

contract price; and

(9) agree to comply with applicable procurement procedures in contract awards for water and sewer service.

(c) If an applicant is a district, the applicant must include with the application proof that the appropriate county and municipalities have given their consent.

Sec. 21.108. CONSIDERATIONS IN PASSING ON APPLICATION. In passing on an application for financial assistance, the board shall consider:

(1) the need of the economically depressed area to be served by the water and sewer services in relation to the need of other political subdivisions requiring financial assistance and the relative costs and benefits of all applications;

(2) efforts by the residents of the economically depressed area to provide necessary water and sewer services;

(3) the proposed use of labor from inside the political subdivision to perform contracts for providing water and sewer services; and

(4) the relationship of the proposed water and sewer services to minimum state standards for water and sewer services adopted under Section 21.011 of this code.

Sec. 21.109. APPROVAL OR DISAPPROVAL OF APPLICATION. (a) The board may issue a decision to approve an application contingent on changes being made to the plan submitted with the application.

(b) After making the considerations provided by Section

21.108 of this code, the board by resolution shall approve or disapprove the application and shall notify the applicant in writing of its decision.

Sec. 21.110. APPLICATION AMENDMENT. (a) A political subdivision may request the board in writing to approve a change to or a modification of the budget or project plan included in its application.

(b) A change or modification may not be implemented unless the board provides its written approval.

Sec. 21.111. METHOD OF FINANCIAL ASSISTANCE. The board may provide financial assistance by using money in the fund to make planning grants or loans to political subdivisions or to purchase political subdivision obligations.

Sec. 21.112. GRANTS. (a) The board may use from the fund an amount not to exceed five percent of the amount of bonds issued under this chapter to make grants to the governing bodies of eligible counties and municipalities to develop plans for water and sewer services projects.

(b) The board also may provide planning grants to eligible districts.

(c) The board by rule shall establish terms and conditions under which a planning grant may be obtained.

(d) The board shall provide necessary guidance and technical assistance to political subdivisions and contractors working on project plans to expedite the planning process.

Sec. 21.113. LOANS. The board may loan money in the fund as financial assistance to a political subdivision to be repaid in the form, manner, and time provided by board rules and in the loan agreement between the board and the political subdivision.

Sec. 21.114. PURCHASE OF POLITICAL SUBDIVISION OBLIGATIONS.

(a) The board may purchase political subdivision obligations in the manner, with the security, and under the terms and conditions the board establishes in its rules.

(b) The board may purchase political subdivision refunding bonds issued for the purpose of refunding bonds issued for the construction of water and sewer services that would qualify for financial assistance under this chapter.

Sec. 21.115. INTEREST RATE. A political subdivision's obligations purchased by the board must bear interest at the lending rate as defined by Section 17.001 of this code.

Sec. 21.116. APPROVAL AND REGISTRATION. The board may not purchase a political subdivision's obligations unless they are approved by the attorney general and registered by the comptroller.

Sec. 21.117. DISBURSEMENT OF FUNDS. (a) If the board approves an application for financial assistance in the form of a loan that is not secured by political subdivision obligations, the board shall disburse the money borrowed from the fund on a periodic basis in accordance with the agreement between the board and the political subdivision.

(b) If the board purchases political subdivision

obligations, the board shall purchase those obligations with money in the fund to pay the costs incurred from time to time by the political subdivision.

Sec. 21.118. SALE OF POLITICAL SUBDIVISION OBLIGATIONS. The board may sell or dispose of political subdivision obligations purchased with money from the fund.

Sec. 21.119. DEFAULT. If a political subdivision defaults in the payment of principal of or interest on political subdivision obligations, the attorney general shall institute appropriate proceedings by mandamus or other legal remedy to compel the political subdivision or its officers, agents, and employees to cure the default by performing those duties that they are legally obligated to perform. The proceedings shall be brought in a district court in Travis County.

**LA JOYA WATER SUPPLY CORPORATION SERVICE AREA
PRESSURE READING LOCATION DESCRIPTIONS**

LA JOYA WATER SUPPLY CORPORATION SERVICE AREA

PRESSURE READING LOCATION DESCRIPTIONS

NUMBER	ELEVATION	RESIDUAL PRESSURE	STATIC PRESSURE	DESCRIPTION
1	140	8	50	Brick House on North of Expressway about 300' East of Breyfogle Road
2	145	19	57	About 300' South from 495 East Side on Moorefield Road
3	150	6	57	About 3000' North from 495 East Side of Moorefield Road
4	145	16	57	Southwest Corner of Breyfogle Road & 495
5	145	9	50	Leo's Drive Inn North East Corner of Expressway & Breyfogle
6	140	20	50	Frame house on East Side of Breyfogle South of Expressway about 1000'
7	130	10	50	North Side of Old 83 about 150' East of Breyfogle
8	120	14	54	West Side on Breyfogle 1000' South of U.S. 83
9	117	13	62	About 8 tenth of a mile South of Old 83 West of Breyfogle
10	130	9	45	Southeast Corner of Old 83 & Scott Lane
11	118	10	47	About 5 tenths of mile South of Old 83 and West of Scott Lane
12	120	9	24	About 8 tenths of a mile South of Old 83 and West of Scott Lane
13	135	20	45	Southeast Corner of Old 83 and Palm Drive Space #31
14	135	11	55	Northwest Corner of Old 83 and Palm Drive

NUMBER	ELEVATION	RESIDUAL PRESSURE	STATIC PRESSURE	DESCRIPTION
15	125	25	55	About 7 tenths of a mile South of Old 83 East of Palm Drive
16	145	13	38	South of Expressway about 1,000' and East of Palm Drive
17	145	14	46	Economy Drive Inn Southeast Corner of Expressway & Palm Drive
18	145	15	43	Southwest Corner Palm Drive & 495
19	145	20	45	Northeast Corner Palm Drive 495
20	145	19	48	About 1/2 Mile East of on Minnesota on Road 495 South Side
21	145	15	53	About 800' North from 495 on West Side of Minnesota Road
22	150	N/A	N/A	About 200' North from 495 Goodwin Road
23	150	10	54	West Side about 900' North from 495 Road on Goodwin East Road
24	145	15	47	Northeast Corner Subdivision area Brick Residence
25	145	11	42	Southeast Corner Expressway 83 & Goodwin East Road (Melo's Meat Market)
26	140	18	52	On Goodwin East Road - 2,640' North of Old Highway 83 - East Side
27	140	21	51	On Goodwin East Road - 2,640' North of Old Highway 83 - West Side (Tierra Linda Subd.)
28	125	21	55	Southwest Corners of Old 83 & Green Road (Frame Residence)
29	135	N/A	N/A	Not able to take reading, no faucet

NUMBER	ELEVATION	RESIDUAL PRESSURE	STATIC PRESSURE	DESCRIPTION
30	135	18	59	Southeast Corner of Old 83 and Wattson Road
31	135	13	52	About 2,500' + - South of Old 83 West about 200' on Wattson Road
32	130	12	54	About 2,500' South of Old 83 East of Wattson Road About 300'
33	120	7	58	About 3,000' South of Expressway 83 East of Wattson Road about 50'
35	115	N/A	N/A	Not able to take reading, no faucet
36	115	6	30	60' about 1.4 miles from Old 83 South turn Southeast on Military Road reading is to the North of the Road on a concrete lock 4 room apartment
38	115	10	34	Bentsen Park office about 1.5 Miles South of Old 83 and Palm Drive
39	110	N/A	N/A	Open Field
40	115	N/A	N/A	Open Field
41	120	4	37	On Abram Road 1.8 mile South of Old 83
42	120	16	34	On Abram Road 2.0 Miles South of Old 83 North Side of Abram Road
44	120	9	33	On Goodwin West Road
43	115	10	30	Hidalgo County Park
45	115	10	30	South of Old 83 about 2.6 miles and South of Abram Road 70'
46	120	8	30	South of Old 83 about 2.6 miles and North of Abram Road about 70'

NUMBER	ELEVATION	RESIDUAL PRESSURE	STATIC PRESSURE	DESCRIPTION
47	110	12	35	South of Old 83 about 3.1 Mile 3 and South of Abram Road about 60'
48	120	11	31	South of Old 83 about 3.1 miles and North of Abram Road about 30'
49	120	9	30	South of Old 83 about 3.6 South of Abram Road about 60'
50	145	13	48	About 1/2 mile North of F.M. 495 West Side Minnesota Road
51	147	8	47	Northeast Corner of Expressway 83 & Bates Road (Brick House)
52	147	20	50	Highway 83 - 1000' East of F.M. 492 - South Side (Pena's Motor Mart)
53	147	7	26	Northwest Corner of Expressway 83 & Bates Road (Ramiro Meat Market)
54	155	16	46	On Goodwin Road about 500' North of Elev. Canal East Side
55	150	10	53	On Goodwin Road about 1/2 mile Northeast Side from 495
56	155	16	46	Southeast Corner 492 & Mile 2 (Princes Beauty Salon)
57	150			Brick Home Across Plant East Side (Bates & F.M. 492)
58	155	13	51	About Mile 2 North Road East Side Goodwin East Road
59	185	16	50	About 2 3/4 miles North of Mile 2 North Road on Goodwin West Road
60	175	12	40	About 700' West of 492 South Side and along Mile 3
61	185	18	48	Northeast Corner Mile 3 & 492

NUMBER	ELEVATION	RESIDUAL PRESSURE	STATIC PRESSURE	DESCRIPTION
62	185	11	48	MI-FAR Ranch Drive Inn taking Northwest Corner 492 & Doffing Road
63	180	12	47	About 700' East of Goodwin Road South Side Mile 3
64	175	13	41	About 300' West of Palm Drive Bentsen Road North Side Mile 3
65	185	9	30	4,752' North of Mile 3 North Road on Minnesota Road East Side of Road
66	190	8	25	4,490' Mi. North of Mile 3 Road on F.M. 492 West Side of Road
67	187	12	47	1,056 North of Mile 3 North Road on county Road East Side of Road
68	199	4	43	400' North of County Road West of Bates Road (Brick House)
69	205	4	18	4,750 South of Mile 5 North Road front of (peeeler field)
70	205	15	50	(Laiberia Store) on Abram Road
71	N/A	N/A	N/A	No City Water
72	210	12	50	Southwest Corner of Mile 5 North Road & Abram Road
73	185	22	63	On F.M. 492-700' North of Booster Sta. - East Side of F.M. 492 (Booster Sta.)
74	181	6	63	On Minnesota Road-1,056'South Mile 5 North Road - West Side
75	188	10	60	1,056' North of Mi. 5 North Road on East side of F.M. 492
76	180	30	63	Southeast Corner of Mile 5 North Road and Minnesota Road (Brick Residence)

NUMBER	ELEVATION	RESIDUAL PRESSURE	STATIC PRESSURE	DESCRIPTION
78	180	30	68	On Mile 5 North Rd. -1,056' East of Minnesota Road-North Side
79	180	18	60	On Minnesota Rd.-1,584' North West Side (Block Residence)
80	200	12	44	2,900' North of Mile 5 North Road on F.M. 492-West Side
81	203	12	36	Northeast Corner of Mile 6 North Road & F.M. 492 (Citrus Lake Estates)
82	187	2	10	Northeast Corner of Mile 6 North Road Minnesota Road (Pride O'Texas)
83	200	4	52	Northeast Corner of Mile 7 North and Minnesota Rd. (@ a store)
84	202	10	35	Southeast Corner of mile 7 North Road & F.M. 492
85	220	13	33	2000' East of Western Road South Side (Brick Home) on Mile 7 North Road
86	225	10	35	Southeast Corner of Mile 7 North Road & Western (Hidalgo County District #16)
87	N/A	N/A	N/A	OPEN FIELD
88	N/A	N/A	N/A	NO TRESPASSING SIGN
89	215	12	39	Northeast Corner of Mile 5 North road & Western Road (Mobile Home)
90	N/A	N/A	N/A	Open Field
91	150	17	45	West Side about 300' North from 495
92	145	11	38	West Side Lupita's Beauty on La Homa about 800' North from 495 Road

NUMBER	ELEVATION	RESIDUAL PRESSURE	STATIC PRESSURE	DESCRIPTION
93	155	16	47	South of 495 about 400' East of La Homa (A-S Masonry)
94	140	16	52	South of Expressway about East of La Homa Road about 200'
95	150	11	30	On South of Expressway 83 about 800' & West of La Homa Rd. 800'
96	125	16	44	On Greene Road - 2,112' South Old Highway 83 - West Side
97	135	13	57	Is about 1,320' + - to the South of Expressway East of Wattson Road
98	135	N/A	N/A	Not able to take reading no faucet (brush)
99	125	18	49	About 2,000' South of Old 83 on West Side of Palm Drive
100	130	14	50	About 150' East of Scott Lane North of Old 83
101	N/A	N/A	N/A	NONE
103	215	12	41	On Western Road 2,110' North of Mile 5 North - on East Side (Brick House)
102	175	11	43	Southeast Corner Minnesota Road & Mile 3
103	215	12	41	0.4 Miles North of Mile 5 North Road East of Western Road (Brick House)
104	225	7	30	3,168' North of Mile 6 North Road
105	204	12	30	F.M. 492 - 1,056' South of Mile 7 North Road to Dallas Drive 5th house South Side of Dallas Drive
106	190	6	22	On Minnesota Road - 1,050' North of Mile 6 North Road - West Side

NUMBER	ELEVATION	RESIDUAL PRESSURE	STATIC PRESSURE	DESCRIPTION
107	189	6	11	On F.M. 492 - 3,6000' South of Mile 5 North Road - West Side
108	185	8	24	On Minnesota Road - 4,224' South of Mile 5 North Road - East Side
109	160	18	50	About 2 3/4 mile on Goodwin Road West & 600' West
110	170	9	59	Mile 2 1/2 North 492 West Side
111	N/A	N/A	N/A	Open Field
112	125	4	51	2,112' South of Old Highway 83 On Greene Road, East 1100' on North Side of Street
113	125	8	55	Southeast Corner of Old 83 & Greene Road (Salinas Auto Sales)
114	N/A	N/A	N/A	Southeast Corner Old Highway 83 & Bates Road Open Field
115	125	21	68	On Bates Road 700' North of Old Highway 83 West Side (Brick House)
116	140	26	50	Subdivision on Bates Road located 2,000' North of Old 83 Highway East Side
117	126	12	32	Southwest Corner of Old Highway 83 & Abram Road West of Abram Road (Brown Frame Residence)
118	126	12	33	Northwest Corner of Old Highway 83 & Abram Road @ a Store (R & R Meat Market)
119	145	11	32	300' West of Abram Road South of Expressway 83 (Crations Salv)
121	125	12	34	West of Old 83 about about 3 tenths of a mile South about 100' of caliche Road (Green & White)

NUMBER	ELEVATION	RESIDUAL PRESSURE	STATIC PRESSURE	DESCRIPTION
122	120	9	30	West of Old 83 about 5 tenths of a mile South about 500' of caliche Road
123	115	11	38	0.6 mile South of Old 83 East of Abram Rd.
124	115	11	35	Air Base on East Side of Abram Road
125	150	N/A	N/A	Subdivision do not half water of La Joya Water Supply (Salt Water)
127	150	N/A	N/A	No Faucet
128	160	19	46	Southeast Corner of Expressway 83 & F.M. 1427 (Super 7 Store)
129	160	16	41	About 100' South of Expressway 83 East of F.M. 1427 about 800'
130	160	7	39	South Expressway 83 about 3 tenths of a mile East of F.M. 1427 about 60'
131	160	14	43	South of Expressway about 3 tenths of a mile West of F.M. 1427 about 60'
132	125	9	51	South of Expressway about 8 tenths of a mile East of F.M. 1427 about 60'
133	N/A	N/A	N/A	No water from La Joya they use a water well
134	165	17	42	Garcia's Nursery NorthWest Corner U.S. 83 & Tom Gill Road
135	165	17	39	About 700' North from Tom Gill South Side on U.S. 83
136	165	9	35	About 700' West from Tom Gill Road & about 800' South from U.S. 83 West Side st
137	165	9	39	Southeast Corner U.S. 83 & Laurel St.

NUMBER	ELEVATION	RESIDUAL PRESSURE	STATIC PRESSURE	DESCRIPTION
138	165	16	41	About 150' West from Ebony St. South Side on South Side on U.S. 83
139	160	10	34	Last House on Laurel St. East Side
139-A	160	18	50	La Joya Funeral Home South Side of U.S. 83
140	170	17	58	About 400' East from Fire Station South Side of U.S. 83
141	170	N/A	N/A	La Joya Fire Station
142	165	8	64	About 400' North From U.S. 83 on F.M. 2221 East Side
143	175	37	71	Across U.S. 83 from Havana Plant Street Going North about 700' from Highway 83
144	170	23	68	About 1000' West from Havana
145	130	13	48	Route 3 about 1,000' South from U.S. Expressway 83 on the East Side
146	175	18	54	On Military Road about 800' East of Route 3 on the North Side
148	N/A	N/A	N/A	Havana
149	180	14	77	About 1/2 mile West from Havana Plant on U.S. 83 North Side Trevino Apt.
150	N/A	N/A	N/A	None
161	N/A	N/A	N/A	None
162	122	16	68	Bates Plant
163	165	19	58	Inside City of La Joya About 528' East of F.M. 2221 on North Side of U.S. Expressway 83
164	170	22	58	Inside City of La Joya Southwest Corner of 1st Street and Garza Avenue

NUMBER	ELEVATION	RESIDUAL PRESSURE	STATIC PRESSURE	DESCRIPTION
165	170	0	58	Inside City of La Joya Southwest Corner of Leo Ave. and 3rd Street
166	170	21	58	Inside City of La Joya About 100' North of Leo J. Leo's Store. Name of Area, Hidalgo County Headstart Center
167	150	15	58	Inside City of La Joya Northwest Corner of 9th Street and Leo Avenue. (F.M. 2521) 2nd Lot West
168	140	24	58	Inside City of La Joya Northwest Corner of 11th Street and Vela Jackson Avenue 2nd Lot North
169	140	15	58	Inside City of La Joya Northwest Corner of 10th Street and Garza Avenue (Green House)
170	150	23	58	Inside City of La Joya East Side of Garza Avenue Between 7th and 8th Street (Brick House)

V I - I I K e n t u c k y P i p e N e t w o r k M o d e l ,
P i p e L i n e a n d N o d e M a p

(S E E I N S E R T)

Hidalgo County Water Development Board
Water Distribution System Study And Master Plan
for The La Joya Water Supply Corporation and the
City Of La Joya Service Area
Contract No. 8-483-628

The following maps are not attached to this report.
They are located in the official file and may be
copied upon request.

VI-II Kentucky Pipe Network Model Pipe Line &
Node Map

VI-III Distribution System Map

Please contact Research and Planning Fund Grants
Management Division at (512) 463-7926 for copies.