MILITARY HIGHWAY WATER SUPPLY CORPORATION
WATER CONSERVATION PLAN

INTRODUCTION

In order to reduce the quantity of water required by water users and extend the corporation's dependable water supply, Military Highway Water Supply Corporation has developed this Water Conservation Plan. Included in the Plan are programs the Corporation will undertake to reduce waste and loss from the water system; procedures the Corporation will follow to meter and regulate the water supplied to its customers; measures the Corporation will take to educate the public on the benefits of water conservation; modifications to existing City and County codes to require water saving fixtures on new and remodeled construction; and, in the event of a drought, implementation of a Drought Contingency Plan which calls for voluntary and mandatory actions to reduce the demand placed on the water supply system. The Corporation recognizes the benefits to its customers and itself of implementing an effective Water Conservation Plan.

Water conservation is an effective and efficient means of solving many water supply problems: it can ease a utility through a short term shortage; it can eliminate the need for new source development; it can improve a water system's efficiency; it can reduce operating costs; and it can help a utility cope with water supply emergencies including the loss of supply due to contamination.

There are two ways in which conservation can be achieved. Through Supply Management, the utility conserves within the supply system. Through Demand Management, the user conserves within his home or business.

Since the supply system is under the direct control of the utility, saving water within the system is relatively straightforward. If you have enough funds and/or labor, you can make the system improvements that will save water without involving users. Four (4) Supply Management programs are included in this conservation plan.

If the utility needs to rely on its customers to save water, the conservation plan becomes somewhat more complex. Users need a good reason ... an incentive to reduce their water use. Demand Management programs are designed to provide the users with such an incentive. Four (4) Demand Management programs are included in this conservation plan.

PUBLIC INVOLVEMENT

Military Highway Water Supply Corporation provided opportunity to its members to provide input into the preparation of the Plan by means of its annual membership meeting and allows public comments on any regulation during the monthly Board of Directors meetings.

PUBLIC EDUCATION

Military Highway WSC will periodically provide the public with information about the Plan. This information provided by means of individual notices mailed to each customer receiving water service.

COORDINATION WITH REGIONAL WATER PLANNING GROUP

The service area of the Military Highway WSC is located within the Lower Rio Grande Development Council and the Regional Water Planning Group M area. MHWSC has provided a copy of this Plan to the LRGDC and the Regional Water Planning Group in order to insure consistency with the approved regional water plan.

IMPLEMENTATION AND ENFORCEMENT

The plan was adopted by the Board of Directors at a properly noticed meeting and in order to insure that the plan is fully implemented and enforceable, it is incorporated into the Tariff of Military Highway Water Supply Corporation.

METHOD OF MONITORING THE EFFECTIVENESS AND EFFICIENCY OF THE WATER CONSERVATION PLAN

The General Manager, or his/her designee, is hereby authorized and directed to implement the provisions of this Plan. The General Manager will review the procedures in this plan annually or more frequently. Modifications may be required to accommodate system growth, changes in water use demand, available water supply and/or other circumstances. The General Manager will prepare a report annually on the effectiveness of the Corporation's water conservation measures and per capita use of its customers. The General Manager may modify the plan accordingly to increase its effectiveness.

GOALS

Water conservation goals for municipal utilities are generally established to maintain or reduce consumption, as measured in:

1. gallons per capita per day used;
2. unaccounted-for water uses;
3. peak-day to average-day ratio; and/or
4. an increase in reuse or recycling of water.

The conservation measures can include:

1. reducing unaccounted-for water uses;
2. reducing indoor water use;
3. reducing seasonal water use; and
4. reducing water use through public education programs.

The Corporation proposes a water saving goal of reducing the average per capita water use by at least 0.5% each year in an effort to reach an average per capita water use goal of less than 74 gpcd by year 2050. The Corporation also proposes a goal of maintaining the peak-day to average-day ratio below 1.30 and the unaccounted-for water uses to below 15%. Conservation measures will focus on both Supply Management techniques and Demand Management techniques.

SPECIFIC FIVE AND TEN YEAR TARGETS AND GOALS

The guidelines for water savings require an entity to set 5 and 10 year goals for water conservation. The goals, which are non-enforceable, must be in a measurable form such as gpcd (gallons per capita per day) usage. Setting of the goals should be based on identifying water conservation strategies that the utility can successfully implement and assign an anticipated water savings value to the strategy.

1. 5 Year Target and Goals of the Program

   Military Highway WSC's target and goals are to achieve and maintain an average municipal use of 98 gallons per capita per day during the next 5 years beginning in the year 2009 and achieve a per year reduction in the municipal use water loss of 1 gallon per capita per day during the next 5 years beginning in the year 2009.

2. 10 Year Target and Goals of the Program

   Military Highway WSC's goals are to achieve and maintain an average municipal use of 93 gallons per capita per day during the next 10 years beginning in the year 2009 and achieve a per year reduction in the municipal use water loss of 1 gallons per capita per day during the next 10 years beginning in the year 2009.

3. Baseline GPCD

   Twenty (20) year historical data contained in the utility profile was used to obtain a averaged baseline gpcd of 103 gallons per capita per day.

GENERAL DESCRIPTION

Military Highway Water Supply Corporation (MHWSC) is a member-owned, nonprofit corporation incorporated pursuant to the provisions of Texas Water Code Chapter 67, Non-Profit Water Supply or Sewer Service Corporation and as supplemented by the Texas Non-Profit Corporation Act, Tex. Rev. Civ. Stat. Ann., Article 1396-1.01,et. seq. (West 1980, Vernon Supp. 1996 as amended) for the purpose of furnishing potable water and wastewater utility service.

CCN: WATER SERVICE AREA

MHWSC under the Certificate of Convenience and Necessity (CCN) Number 10551, issued in March 1990, is authorized to provide water services to 10 “facilities and 200 feet” service areas and 12 “bounded” service areas located in Hidalgo and Cameron Counties, Texas. A copy of the MHWSC’s CCN is included in Appendix A.

Military Highway Water Supply Corporation’s service area is located in the Rio Grande Valley of Texas just north of the Rio Grande River. The service area consists mostly of small communities and colonias in southwestern Cameron County and southeastern Hidalgo County. The service area is bounded on the south by the Rio Grande River, on the east by the City of Brownsville, on the north by the Cities of San Benito, Harlingen, La Feria, Mercedes, Weslaco, Donna, Alamo, and San Juan and on the west by the city of Pharr.

The communities receiving service from MHWSC are Progreso, Progreso Lakes, Los Indios, and Rangerville. The colonias receiving service from MHWSC are Runn, Relampago, Waterfall, Zacatal, Santa Maria, Iglesia Antigua, Bluetown, Venadito, Las Rusias, Carricitos, Landrum, La Paloma, El Calaboz, El Ranchito, Villa Cavazos, San Pedro, Villa Nueva, Russeltown, Lagos, and Rice Tract. MHWSC also provides water to the rural areas south of the cities of San Juan, Alamo, Donna, Weslaco, Mercedes, Harlingen, and San Benito and north of the city of Brownsville. The map of the Rio Grande Valley of Texas shown in Appendix A has been highlighted to show the existing service areas.

SYSTEM DESCRIPTION

The system is composed of four (4) individual TCEQ-identified water systems

ID # 1080067 - Las Rucias WTP - GUI System

> Raw water is treated at a 1,500 GPM-rated water treatment plant consisting of two (2) treatment trains. Treatment units consists of an aeration chamber, a rapid mix and flocculation basin, a sedimentation and clarification basin, and dual media

filters. Chemicals used are alum and chlorine.

Source water is obtained from four (4) groundwater-under-the-influence-of-surface-water wells of 500 GPM each located in Rio Grande Alluvium aquifer. Each well has its own meter maintained within an accuracy of plus or minus 5.0% in order to fully account for the amount of water withdrawn from the aquifer.

Treated water is stored in a one (1) million gallon concrete ground storage tank and pumped to the distribution system using five (5) 1,000 GPM pumps. Six (6) 100,000 gallon elevated tanks are used to maintain the distribution pressure throughout the system.

A new 2 MGD Micro Filtration and Reverse Osmosis Treatment Plant has been funded and will be constructed in the near future to remove the iron and manganese and lower the total dissolved solids present in a brackish water well field in Cameron County. Brackish water wells will pump the groundwater to the treatment plant for treatment prior to distribution to the users. Each well has its own meter maintained within an accuracy of plus or minus 5.0% in order to fully account for the amount of water withdrawn from the aquifer. The construction of this plant basically doubles the supply capacity of this system.

Treated surface water is also purchased from the City of Harlingen and stored in a 100,000 gallon ground storage tank located at the Rangerville Road Booster Station. Water is pumped to distribution by two (2) 700 GPM-rated pumps. Water is diverted from the Rio Grande River from the pumping facilities of the Cameron County WC&ID No. 1 as authorized in Certificate of Adjudication 23-0831 and measured by metering devices maintained within an accuracy of plus or minus 5.0% in order to fully account for the amount of water diverted from this source of supply.

ID # 1080234 - Progreso System - Groundwater System

Source water is obtained from two (2) well fields. The Progreso well field consists of three (3) wells of 500 GPM capacity each. Each well has its own meter maintained within an accuracy of plus or minus 5.0% in order to fully account for the amount of water withdrawn from the aquifer. These wells pump the groundwater to two (2) ground storage tanks (150,000 gallons each) located at the Progreso Booster Station. Water is pumped to distribution by two (2) 700 GPM-rated pumps. One (1) 100,000 gallon elevated tank is used in the distribution system. Chlorine is used as the disinfectant agent. A Micro Filtration and Reverse Osmosis Treatment plant is being constructed at the present time to remove the iron and manganese and lower the total dissolved solids present in the well water. The wells will pump the groundwater to the treatment plant for treatment prior to distribution to the users.

The Progreso Lakes well field consists of two (2) wells of 1,000 GPM capacity each

and one (1) 500 GPM capacity. Each well has its own meter maintained within an accuracy of plus or minus 5.0% in order to fully account for the amount of water withdrawn from the aquifer. These wells pump the groundwater to two (2) ground storage tanks (250,000 gallons each) located at the Progreso Lakes Booster Station. Water is pumped to the distribution system by two (2) 1000 GPM-rated pumps and one (1) 500 GPM-rated pump. Two (2) 100,000 gallon elevated tanks are used in the distribution system. Chlorine is used as the disinfectant agent. Two (2) Transfer Booster Stations (Santa Ana and Moore Road) are also part of the distribution system serving the southern-eastern portion of Hidalgo County. Each Booster Station has two (2) 150,000 gallon ground storage tanks for temporary storage prior to distribution. One (1) 100,000 gallon elevated tank is used in the Santa Ana distribution system and one (1) 150,000 gallon elevated tank is used in the Moore Road distribution system.

ID # 1080235 Weslaco System - Purchased Water System

Source water is treated surface water purchased from the City of Weslaco. The system consists of a distribution system which uses the city's pressure to distribute the water. The master meter is maintained within an accuracy of plus or minus 5.0% in order to fully account for the amount of water purchased from the city.

ID # 123412 - Del Mar Heights System - Purchased Water System

Source water is treated surface water purchased from the East Rio Hondo WSC. The system consists of a distribution system which uses the WSC's pressure to distribute the water. The master meter is maintained within an accuracy of plus or minus 5.0% in order to fully account for the amount of water purchased from the supplier.

SUPPLY MANAGEMENT TECHNIQUES

ANNUAL AND MONTHLY AUDITING OF WATER USE

Military Highway Water Supply Corporation conducts an accountability water study and audit on a yearly basis. A records management system accounts for water pumped and water sales and allows for the desegregation of water sales and uses into the multiple user classes to account for all water use in the service area. Comparison of residential, commercial, and institutional users is performed to determine user and seasonal changes. Water pumped and water billed are compared to determine water not-billed. Real water losses are identified and are minimized by replacement of deteriorating water mains and appurtenances, as is conducted by MHWSC staff on an on-going basis

Military Highway WSC has always had a high water-loss percentage. This is due to the fact that the water loss is calculated based only on the difference between water produced and water sold. Due to the layout of the distribution system, Military Highway conducts aggressive directional mainline flushing to insure and maintain water quality standards. All water- used-for-flushing is accounted for but not factored into the water loss formula. This determines the amount of actual unaccounted water losses. The actual **unaccounted** water loss is well below the acceptable 15%.

UNIVERSAL METERING, METER REPAIR, AND METER REPLACEMENT

Military Highway Water Supply Corporation presently meters all its accounts and maintains a regular program of meter testing/repair replacement.

1. All of the master meters at the water plant and water wells are inspected monthly and all problems are promptly corrected. Calibrations of meters for all treated water deliveries are conducted annually.

2. The Military Highway WSC meter replacement program is as follows:

    a) The older service meters in the water distribution system are being changed out for new meters as time and monies permits. Residential meters will continue to be monitored for accuracy annually and replaced on a fifteen-year cycle. 1,100 residential meters have be changed out during the last three years.

    b) Any meter abnormally showing no usage is promptly checked and a new meter installed if the meter has stopped. Meters less than ten years old are repaired and put back into inventory for re-installation.

    c) The customer is notified when any meter shows a higher than normal usage.

A Corporation employee inspect the premises for possible water leaks. This also helps to reduce complaints about abnormal high water bills.

3. Larger water demand customers are checked at least once a year; Commercial meters are checked every three years; Meters 1 inch or smaller are checked at least once every ten years.

4. Pressure in the distribution system is controlled to just above standard-of-service level by use of SCADA to control unnecessary excess water flow.

LEAK DETECTION

The Military Highway Water Supply Corporation presently has an aggressive leak detection program to reduce real water losses The following are steps that the Corporation has undertaken and some of the correction work planned:

1. A survey of the water system has been made. Several “hot. spots” for water leaks have been found. These areas are monitored continually to assure prompt discovery of any leaks.

2. A constant surveillance by all employees is made for water leaks. Leaks are reported by radio and are repaired immediately.

3. All of the water main lines are made of PVC and the corporation has not experienced any deterioration of the gasket joints. The majority of system main line water leaks in the last ten years have being caused by accidental ruptures due to utility construction.

4. Water system pressures are maintained at levels consistent with water demand to prevent high pressure situations that may lead to line breaks.

WATER RATE STRUCTURE

Military Highway Water Supply Corporation has a conservation oriented water rate structure in place to encourage the efficient use of water. The gallonage charge for both residential and commercial users is well over the state average. The Corporation has the following rate structure at the present time:

The current residential water rates are as follows:

$19.25 minimum 0 - 3,000 Gallons
$3.00 per 1,000 gallons for all usage over 3,000 Gallons

The current non-residential water rates are as follows:

$23.75 minimum 0 - 3,000 Gallons
$4.00 per 1,000 gallons for all usage over 3,000 Gallons

At the end of 2008, Military Highway Water Supply Corporation provided sewer service to 4,600 accounts.

The sewer rate for residential accounts is as follows:

$16.50 minimum for the first 9,000 gallons of water use
$0.75 per 1,000 gallons of water use thereafter
$21.75 maximum amount

In addition, there is a non-residential sewer charge as follows:

$21.00 minimum for the first 9,000 gallons of water use
$1.00 per 1,000 gallons of water use thereafter

A strict collection procedure is enforced. Water bills are sent out on the first of the month. A $1.00 penalty is added to the bill if the due amount is not paid by the 10th of the month. Cut-off notices are sent. If the bills are not paid by the 20th of the month, an additional $3.50 penalty is applied and water service is discontinued. Identification is required of all customers requesting water service in order to identify previous customers with outstanding bills. These bills must be paid before any new water service is turned on.

MHWSC will continue to review rates annually to insure water revenues exceed expenses and replacement costs and to discourage excessive and wasteful use.

DEMAND MANAGEMENT TECHNIQUES

PROGRAM OF PUBLIC EDUCATION AND INFORMATION

Through an education and information dissemination plan, Military Highway Water Supply Corporation informs its water customers of the benefits of water conservation. The Corporation will accomplish this by implementing the following steps:

1. The Corporation prepares mailout and newspaper articles containing information describing the water conservation and drought contingency programs. In May of each year (preceding the highest water demand months), the Corporation sends out a news-type letter containing water saving tips. Water saving tip sheets have been previously used by Military Highway Water Supply Corporation as handouts.

2. Along with the suggestions for saving water, the Corporation has available for free distribution additional pamphlets and tips on:

   a) water saving fixtures for homes and businesses;

   b) use of water conserving landscaping; and,

   c) recycling and reuse of water.

3. On an annual basis, the Corporation provides to local newspapers the water conservation tips included in the news letter.

4. The Corporation provides information to all new customers describing the water conservation and drought contingency programs.

PROGRAM OF RETROFITTING EXISTING STRUCTURES

For its water supply customers, the Military highway Water Supply Corporation makes available and disseminates information to homes and businesses on steps they can take to reduce water usage in existing structures. These will include changes in use of appliances and fixtures, replacing appliances with water conserving units, and tips on landscaping and lawn charge on request. and customers will be informed of the availability of the information through the annual news letter

Military Highway Water Supply Corporation has adopted the International Building Plumbing Code and the cities served have adopted the International Building Code as its standard for new construction and for remodeling.

LEAK DETECTION AIDS

The Corporation has available and distributes “dye tablet Kits’ printed in both English and Spanish to customers to aid in determining the presence of toilet tank leaks. Flapper valve replacements can reduce leaks as much as 25 gallons per day per toilet. MHWSC will provide flapper value replacement kits to elderly or needy customers. MHWSC also sells the kits at a reduced price to any customer with a flapper value problem.

WATER CONTRACTS

Military Highway Water Supply Corporation will establish a requirement in wholesale water supply contracts entered into or renewed after adoption of the plan that each subsequent wholesale customer implement adequate water conservation measures.

TRACKING TARGETS AND GOALS

The staff shall track targets and goals by utilizing the following procedures:

1. Annual water audits shall be documented and kept in the Corporation Water Department files.

2. Meter calibration, meter testing, and meter replacement program logs will be maintained.

3. Work Order Logs will be maintained for the system's Leak Detection Program.

4. Water rates will be tracked by means of date adopted.

5. Staff will keep copies of mail-outs distributed annually.

6. Logs of water conservation customer assistance will be maintained .