

WATER CONSERVATION PLAN



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INTRODUCTION

This 2010 Woodmoor Water Conservation Plan (Plan) reflects the District's unique characteristics and community values. The Plan further demonstrates the District's long-standing commitment to encourage the efficient use of water and to promote that commitment with conservation measures and programs that assist their customers in accomplishing that goal.

The Plan has been designed to:

- Promote water conservation education and awareness for all water-user types throughout the District's service area. Encourage a "water efficiency ethic" among customers;
- Augment marketing of existing water conservation activities to ensure customer understanding and full program effectiveness;
- Expand existing programs to increase total program efficiency;
- Pilot/Evaluate new water conservation programs to determine cost/benefits and acceptance by targeted customer type;
- Select new conservation measures and programs that are "socially acceptable" to District customers and compatible with the conservation plans of other Colorado Front Range water providers.

The Water Conservation Plan was developed under the direction of the District's staff, with guidance from the Board of Directors. The Plan is a "dynamic document" with revisions being made as programs are eliminated, added or enhanced.

This document was formatted to follow the May, 2005 version of the CWCB Water Conservation Plan Guidelines. Although the Plan does not replicate the CWCB Model Plan, it does include the nine planning steps and incorporates the minimum requirements of the Water Conservation Act of 2004.

EXECUTIVE SUMMARY

The efficient use of water has always been the goal of the Woodmoor Water District (District). Before the term “water conservation” became an adopted and promoted concept by progressive utilities, the District designed its system to encourage efficiency and discourage water waste:

- Water Waste Ordinance
- Universal Metering
- Cost of Service Rates
- Accounting of Non-Revenue Water
- Customer Education/Information

An enforceable water waste ordinance, universal metering (individual meters for each service connection) and, beginning in the mid-70s, an increasing block-rate structure, have been standard utility practices for the District.

A goal of the District has been to administer water-user rates and charges that recover the costs based upon the various parameters of demands on the system. While the rates were initially designed to support cost-of-service principles, those same principals are now endorsed as the basis for conservation rates that discourage excessive use of water and curtail high summer peak demands.

The District also adopted regulations and ordinance that discourage wasteful practices. The water-waste ordinance contains enforcement parameters that include fines for those who repeatedly choose to ignore the regulations.

Because the District was built around these fundamental utility concepts; in combination with optimization of water resources through Exchange of reusable effluent, Non-Potable Irrigation Systems, a School Water Education Program and a Water Smart Gardening Project; Woodmoor has already established the foundation of a viable conservation program.

2006 Long Range Planning Guide

Water Conservation is a fundamental component of the District's Long Range Plan (LRP). The District recognizes that conservation and water efficiency are two of the principal elements used to ensure a sustainable and affordable water supply.

During the preparation of the District's 2006 LRP, the previous conservation elements were expanded. The program was broadened to include rebate incentives and components for Demand Management.

A mandatory summer water irrigation schedule, including designated watering days and restricted watering hours, was adopted to reduce max-day demands. The program was also expanded to include rebate incentives for both indoor fixtures and appliances and outdoor irrigation controllers and rain sensors.

The expanded conservation plan was included in the LRP to evaluate the role the program could achieve in extending the life of the District's present non-renewable groundwater as well as deferring the capital expenditures associated with the development of the infrastructure needed to treat and deliver that resource.

2010 Water Conservation Plan

The District, while continuing to provide its customers with safe and adequate service, seeks to maximize the efficient use and reliability of its present water supply. The conservation plan compliments these basic service commitments and is designed to minimize the amount of additional raw water needed to serve existing and future customers, postpone the construction of future infrastructure projects and reduce on-going operational costs.

In an effort to augment dwindling ground water supplies, the District is evaluating a variety of options for securing a renewable water resource. The extensive time and large costs associated with developing renewable water are now being realized.

The District recognizes that a well-founded water conservation program, with the proven ability to optimize their present supply and lower their present and projected demands, is an important part of a sustainable water resource program. While continuing to support all of the current conservation programs, the District's 2010 Water Conservation Plan includes additional measures to expand and improve existing programs and the evaluation and consideration of new measures designed to realize additional savings.

The following list summarizes those measures and programs that survived the screening process of Section 5 and were selected to “Enhance Existing Programs” or designated as New Programs earmarked for “Further Evaluation”.

- **Enhancement of Existing Programs**
 - Education/Information
 - ◆ Dissemination
 - ◆ Customer Feedback
 - School Program
 - ◆ Water Education Unit
 - Water Use Audits
 - ◆ Contract for Audits
 - Leak Detection
 - ◆ Sonic leak detection

- **Evaluation of New Programs**
 - Incentives
 - ◆ “Give-Away” Kits
 - Temporary Agg Transfers
 - ◆ Arkansas River – Super Ditch program
 - Landscape and Irrigation Efficiency
 - ◆ Water-Wise landscape designs
 - ◆ Weather based Irrigation Systems
 - ◆ Soil Amendments
 - ◆ Rebate and Incentives

Costs/Benefit Ratios

The selection of the Measurements and Programs adopted in this initial Conservation Plan are not based on a detailed cost/benefit analysis. While building on historic programs that have served as the cornerstone of the District’s ongoing initiative for the efficient use of water, “foundational measures and programs” that have proven effective for other Colorado, Front Range, water utilities have simply been added.

Monitoring and Evaluation

Monitoring of the Water Conservation Program will be accomplished in a variety of ways, including tracking total daily water production, measuring end user participation rates and documentation of customer interaction and feedback. As the District continues to gather historic water use data, correlation between water demands and conservation measure/programs will be established.

This information, combined with the total costs associated with each program, will provide the historic data needed to develop a program-by-program, District-specific, cost/benefit ratio. The results of the cost/benefit analyses will then be used to evaluate each measure/program and adjust the Plan to guarantee the design of a successful conservation program.

Profile of Existing Water System

Characteristics of the Existing Water System

Service Area

The District is located in Northern El Paso County, 18 miles north of Colorado Springs, Colorado. The District's boundaries are south of County Line road, north of Higby Road, east of I-25 to just east of Furrow Road. (Figure 1-1)

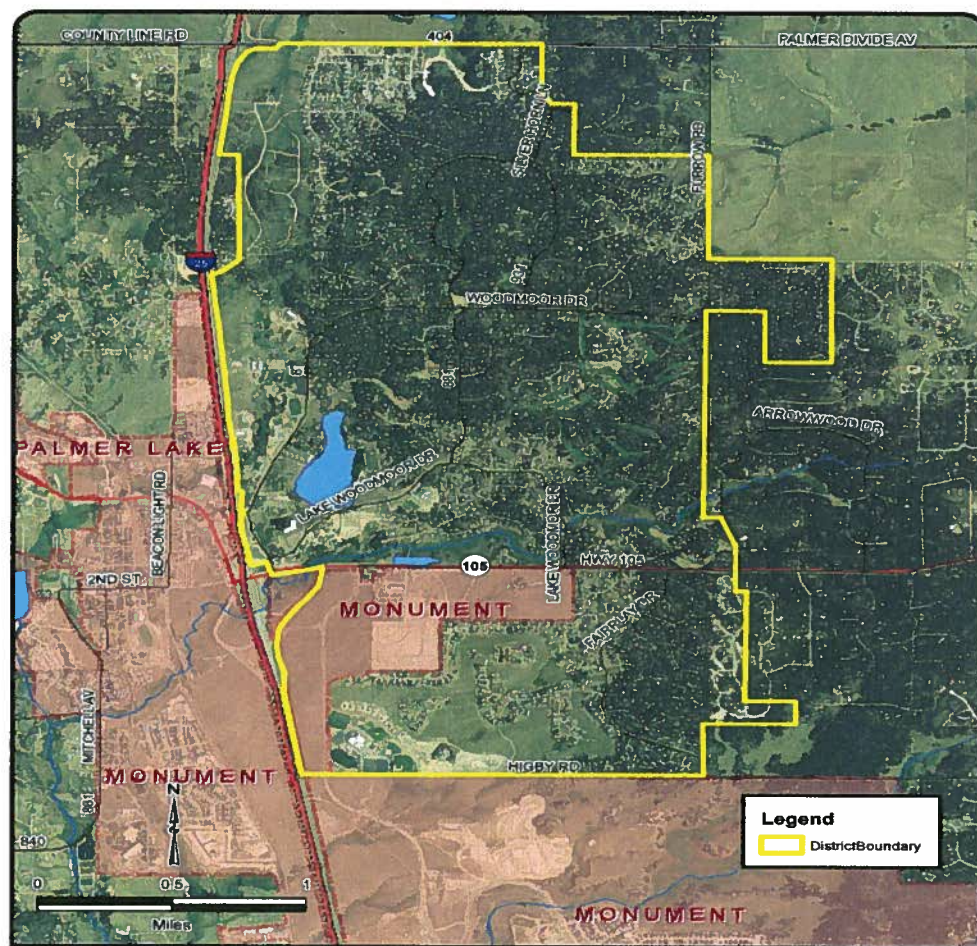


Figure 1-1 Woodmoor Water and Sanitation District Boundary

The elevation of the District ranges from 7,490 feet on the north end to 6,980 feet at Higby Road on the south. The average annual precipitation is 23.4 inches. The southern third of the District sits in the short-grass prairie and is normally warmer and drier than the northern and eastern two-thirds which are located in the natural forested area of the foothills. Soil conditions vary from decomposed granite to clay and sand. These varied natural elements create a diverse range of water demands throughout the service area.

Service Characteristics

The District was established in 1964 as a taxpayer owned Special District. The District provides municipal water supply and wastewater collection and treatment to a population of approximately 8,400 through 3,900 service connections (4,052 single family equivalents SFE's) within their 5.5 square mile service area. Table 1.1 provides a profile of the District's 2006 service characteristics.

Table 1-1 District Service Characteristics

SERVICE CHARACTERISTICS	Numbers		
Estimated servicer population	8,400		
Estimated service area (square miles)	6 square miles		
Miles of mains	59 miles		
Number of treatment plants	One combined surface/ground water, two ground water and five individual well chlorination stations		
Number of separate water systems	Two: One for treated water distribution and one for non-potable irrigation system		
Interconnection with other systems	None		
ANNUAL WATER SUPPLY⁽¹⁾	Annual Volume (Acre-ft/yr)	Number of Intakes or Source Points	Percent Metered
Groundwater	1,703	20	100%
Surface Water	70	1	100%
Purchases: raw	0	0	N/A
Purchases: treated	0	0	N/A
Total annual water supply	1,773	21	100%
SERVICE CONNECTIONS⁽²⁾	Connections	Water Sales \$	Percent Metered
Residential, single-family	2,625 (2,625 SFE)	⁽³⁾	100%
Residential, multi-family	184 (138 SFE)	⁽³⁾	100%
Commercial	50 (230 SFE)	⁽³⁾	100%
Public - Schools	3 (128 SFE)	⁽³⁾	100%
Total connections	2,862 (3,121 SFE)	⁽³⁾	100%

Table 1-1 District Service Characteristics

WATER DEMAND	Annual Volume (1000-gal)	Percent of Total	Per Connection (gal)
Residential sales	321,132	82%	116
Nonresidential sales	26,732	7%	534
Other sales	14,877	4%	4,959
Non-account water: authorized users	27,303	7%	N/A
Non-account water: unauthorized users	0	0	N/A
Total system demand (total use)	390,044		136
AVERAGE & PEAK DEMAND	Volume (MGD)	Total Supply Capacity	Percent of Total Capacity
Average-day demand	0.97	3.03	32%
Maximum-day demand	2.8	3.03	92%
Maximum-hour demand	N/A		N/A
PLANNING	Prepared a Plan	Date	Filed with State
Capital, facility, or supply plan	Yes	2006	N/A
Drought or emergency plan	Yes	2002	N/A
Water conservation plan	Yes	Formalized 2010	N/A
Notes (1) 2006 Demand 1,197 acre-ft-ye (2) Connection end of 2005 (3) Data not available			

Sources of Water

The District owns a portfolio of twenty Denver Basin wells. To optimize this ground water supply, the District has a storage decree for Lake Woodmoor and a decreed augmentation plan to exchange reusable effluent on both Monument Creek and Dirty Woman Creek.

Figure 1-2 schematically depicts the relationship of the raw water systems, the Central (CWTP) and Southern (SWTP) treatment plants and the treated water distribution system.

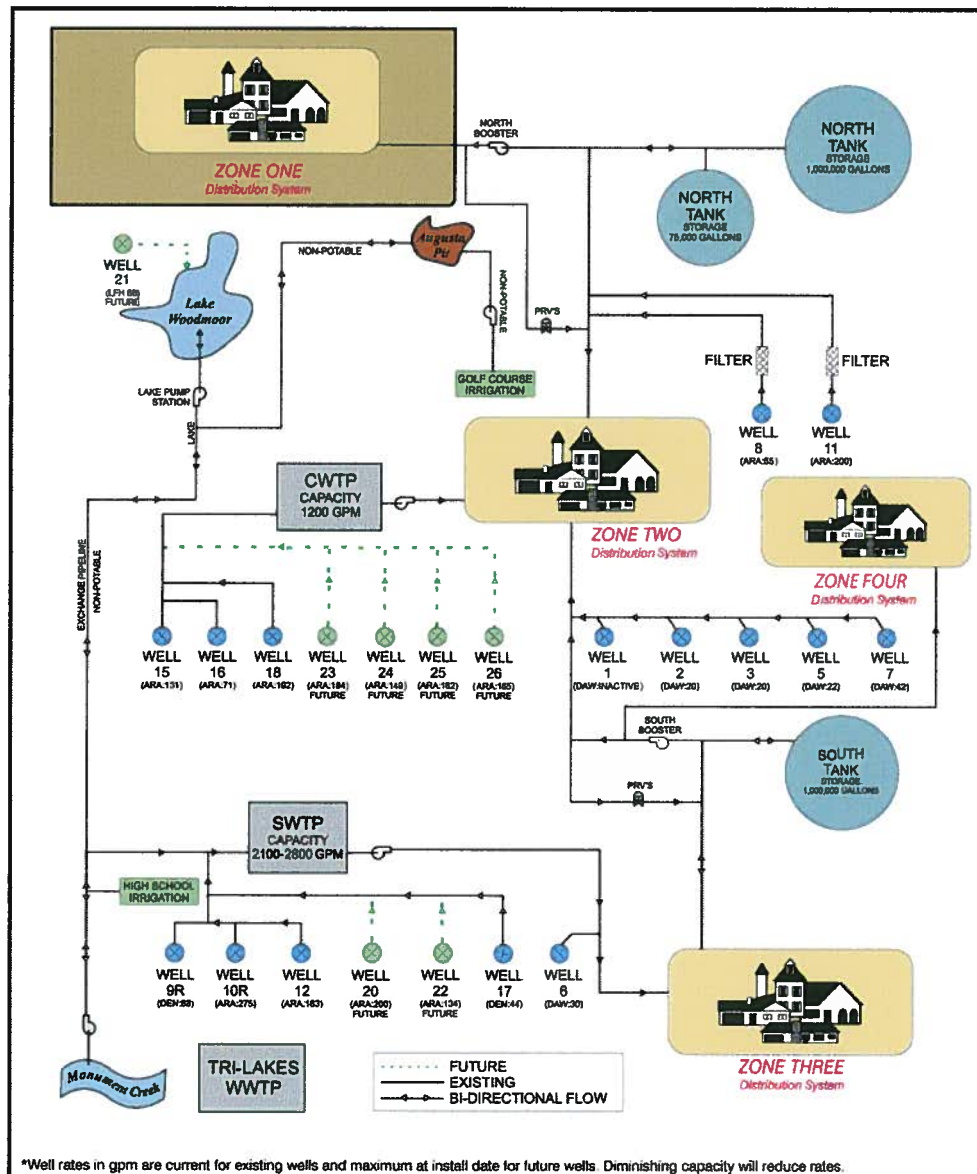


Figure 1-2 Woodmoor Water System Schematic

Groundwater Resource

As shown in Figure 1-3, the majority of the District's water is provided by the Denver Basin Aquifers. The aquifers consist of the Dawson (shallowest), Denver, Arapaho, and Laramie-Foxhills (deepest) aquifers. The District owns water rights in each of the four aquifers and owns and operates wells in the Dawson, Denver and Arapaho aquifers. The Decreed Denver Basin water rights, available for pumping, total 5,769 ace-feet per year (acre-ft/yr.)

2001 - 2005 Average Woodmoor Water Supply
Total - 1320 af

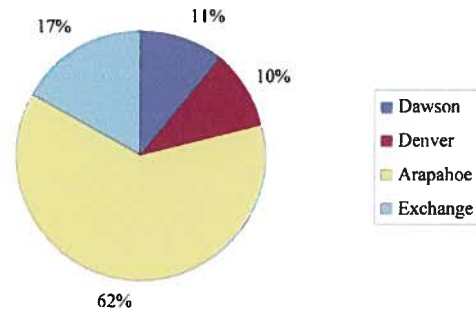


Figure 1-3 District Water as Provided by Denver Basin Aquifers

Table 1-2 presents generalized depths, current yields, and estimated construction costs for wells constructed within the District.

Table 1-2 Current Yields and Costs for Wells

Aquifer	Well Depth (ft)	Historical Range of Well Yields (gpm)	Estimated Well Construction Cost	Future Range of Well Yields (gpm)
Dawson	900	25 – 75	\$65,000 - \$180,000	20 – 75
Denver	1750	<50 – 200	\$340,000	<50 – 150
Arapahoe	2500	200 – 400	\$555,000	50 – 250+
Laramie-Fox Hills	3020	75 – 100	\$670,000	75 – 100

Well depths, yields and well construction costs vary across the District. The values presented above are representative of conditions and depths at the northeastern portion of the District. The well yields are based on the upper and lower range of current operational pumping rates from the District's existing wells. Denver aquifer well yields have been highly variable and it is possible that yields of new Denver aquifer wells may be very low.

Existing Wells

Table 1-3 presents a summary of the District's existing and abandoned wells.

Table 1-3 Summary of District Wells

Well Number	Date Constructed	Aquifer	Depth	Status	Permit Number
QAL		Dawson	-	Online	47155-F
Well 1	1963	Dawson	846	Online	4484-F
Well 2	1965	Dawson	1011	Online	9260-F
Well 3	1965	Dawson	1123	Abandoned	9259-F
Well 3A	1968	Dawson	1100	Online	9259-R-F
Well 4	1965	Dawson	1126	Online	9481-F
Well 5	1968	Dawson	800	Online	12278-F
Well 6	1962	Dawson	800	Online	3826-F
Well 7	1963	Dawson	818	Online	4949-F
Well 8	1971	Arapahoe	2500	Online	16248-F
Well 9	1976	Denver	1130	Abandoned	21126-F
Well 9R	2001	Denver	1319	Online	2116-F-R
Well 10	1979	Arapahoe	1765	Offline	24030-F
Well 10R	2001	Arapahoe	1809	Online	56480-F
Well 11	1986	Arapahoe	2500	Online	39116-F
Well 12	1990	Arapahoe	1927	Online	36098-F
Well 13	1992	Denver	1438	Offline(1)	40474-F
Well 14	1992	Denver	1349	Abandoned	41030-F
Well 15	1992	Arapahoe	1874	Online	41363-F
Well 16	1993	Arapahoe	1907	Online	42450-F
Well 17	1996	Denver	1352	Online	47103-F
Well 18	1998	Arapahoe	1859	Online	49574-F
Well 19	2001	Dawson	616	Online	55199-F
Well 20	2007	Arapahoe	1874	Offline(2)	64594-F
(1) Grout in well screen					
(2) Pump Installation Pending					

Diminishing Capacity

Denver Basin ground water resources are largely non-renewable. The current aquifer pumping rates are resulting in depletion of the water within the aquifers. While the volume of water in the aquifer system is substantial, the rate at which water can be pumped from each well is beginning to diminish.

In addition to regional water level decline, well-to-well interference within the District also decreases well capacity. While new Arapahoe wells will provide an incremental additional net-well field yield, pumping new wells is projected to reduce the production rate of existing wells, thereby making it increasingly difficult to meet summer irrigation demands

With changes in water levels in the District's wells and the associated diminished well yields, particularly in the Arapahoe aquifer wells, the District continues to develop new operational and water resource approaches for meeting demands.

Exchange System

The exchange system is schematically illustrated in Figure 1-3. The District has the ability to exchange surface water and alluvial groundwater from Monument Creek and Dirty Woman Creek and to store the water in Lake Woodmoor. The water is used to meet both potable and non-potable system demands.

Based on current wastewater discharge flows, the District is entitled to approximately 600 acre-ft/yr of exchange. This water supply is first used to meet non-potable irrigation demands of approximately 150 acre-ft/yr (25 acre-ft/yr at the Lewis-Palmer High school and 125 acre-ft/yr at the Woodmoor Pines Golf Course and Country Club). The remaining 450 acre-ft/yr is treated at the South Filter Plant and delivered through the potable water distribution system to help meet the District's water demands.

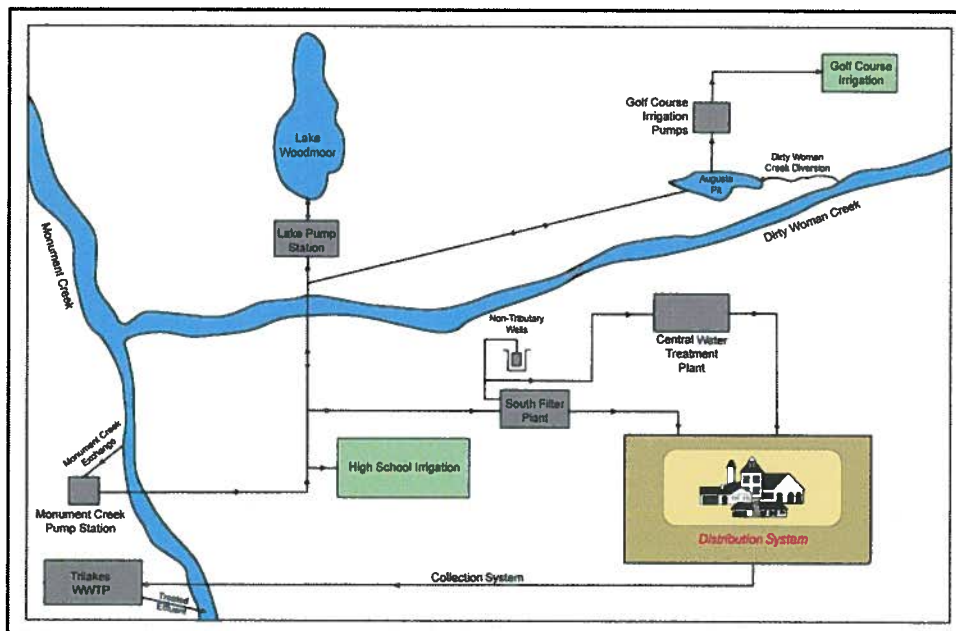


Figure 1-4 Exchange System Schematic

System Limitations

The Northern El Paso County area is one of the key “gap” areas identified by the Statewide Water Supply Initiative. While the District has adequate groundwater rights to meet their ultimate thirty-year build-out horizon, it is projected that groundwater levels will continue to decline both directly underlying the District service area as well regionally. Because groundwater is not replenishable, the District has begun to investigate the development of supplemental renewable surface water supplies (see page 1-12).

Table 1-4 provides a brief summary on the conditions of the water supply system.

Table 1-4 Summary of System Conditions (CWCB Worksheet)

PLANNING QUESTIONS	Yes	No	COMMENTS
Is the system in a designated critical water supply area?	X		Northern El Paso County (the District) is in an area identified by SWSI
Does the system experience frequency shortages or supply emergencies?		X	The existing groundwater supply is designed to meet both system average and max-day demands. Mandatory watering days (summer irrigation schedule) were established in 2006 to manage peak day demands. Additional wells are planned to be brought online to stay ahead of demands. See Section 3
Does the system have substantial unaccounted-for and lost water?		X	The District accounts monthly for its total water production. Average unaccounted-for water is below 9%
Is the system experiencing a high rate of population and/or demand growth?		X	The District experienced a 7% yearly rate of growth from 2006 – 2009. 4, 5 and 6% rates of growth are used when evaluating project future demand alternatives. See Section 2
Is the system planning substantial improvements or additions?	X		The District prepared an initial Long Range Planning Guide in 1991. The Planning Guide is “updated” yearly with total revisions made every three to five years. The Capital Improvements Program (CIP) is projected to average over eight million dollars per year over the next twenty years. See Section 3

Water Costs and Pricing

The District's goal is to administer water user charges which:

- Are based on cost-of service principles;
- Are equitable among customer classes;
- Comply with bond covenants;
- Encourage the wise use and conservation of the District's water resources.



The Demand Commodity method was used to develop the District's water rate structure. The structure consists of a monthly service charge designed to cover customer service cost (e.g. billing, administration, etc) and a volume-related charge calculated to recover the balance of the operating costs.

The District's 2010 water rate structure (Table 1-5) is an increasing three-tier block structure for five customer classes – residential, non-residential, irrigation only, bulk and non-potable irrigation. The increasing block rates range from \$4.16 to \$14.18 per 1,000 gallons of metered water usage.

The District also has a “one time - front-end” Tap Fee designed to add equity to system financing by requiring new customers to make an up-front contribution so that the user rates paid by existing customers are not unnecessarily increased to expand facilities to accommodate new growth. The base $\frac{3}{4}$ inch equivalent charge is \$15,992.00. The fee increases to reflect tap size and tap equivalence ratios for taps larger than $\frac{3}{4}$ inch.

All taps are metered and read on a monthly basis using an electronic radio receiver. The meter reading is performed using a hand-held or laptop computer. Readings that appear to fall outside normal use patterns are re-read and an accounting for actual consumption is established prior to final billing. The meter reading system ensures meter accuracy, promotes the customers understanding of water use and assists with leak detection.

Table 1-5 2010 Rate Table

Residential						
	Rate/1000 gal.	3/4 in.	1 in.	1.5 in.	2 in.	2.5 in.
Monthly Service Charge	N/A	\$6.81	\$17.02	\$34.05	\$54.48	\$81.72
Block 1	\$4.91	0-6000	0-15,000	0-30,000	0-48,000	0-67,800
Block 2	\$8.11	6001-25,000	15,001-62,500	30,001-125,000	48,001-200,000	67,801-282,500
Block 3	\$14.18	>25,001	>62,501	>125,001	>200,001	>282,501
Non-Residential						
	Rate/1000 gal.	3/4 in.	1 in.	1.5 in.	2 in.	2.5 in.
Monthly Service Charge	N/A	\$6.81	\$17.02	\$34.05	\$54.48	\$81.72
Block 1	\$6.70	0-6000	0-15,000	0-30,000	0-48,000	0-67,800
Block 2	\$6.70	6001-25,000	15,001-62,500	30,001-125,000	48,001-200,000	67,801-282,500
Block 3	\$6.70	>25,001	>62,501	>125,001	>200,001	>282,501
Irrigation Only						
	Rate/1000 gal.	3/4 in.	1 in.	1.5 in.	2 in.	2.5 in.
Monthly Service Charge	N/A	\$6.81	\$17.02	\$34.05	\$54.48	\$81.72
Block 2	\$8.11	0-19,000	0-47,500	0-95,000	0-152,000	0-214,700
Block 3	\$14.18	>19,001	>47,501	>95,001	>152,001	>214,701
Bulk						
	Rate/1000 gal.	3/4 in.	1 in.	1.5 in.	2 in.	2.5 in.
Monthly Service Charge	N/A	\$6.81	\$17.02	\$34.05	\$54.48	\$81.72
Block 1	\$4.91	0-6000	0-15,000	0-30,000	0-48,000	0-67,800
Block 2	\$8.11	6001-25,000	15,001-62,500	30,001-125,000	48,001-200,000	67,801-282,500
Block 3	\$14.18	>25,001	>62,501	>125,001	>200,001	>282,501
Non-Potable Irrigation						
	Rate/1000 gal.	3/4 in.	1 in.	1.5 in.	2 in.	2.5 in.
Monthly Service Charge	N/A	\$6.81	\$17.02	\$34.05	\$54.48	\$81.72
Block 1	\$4.16	0-3400K				
Block 2	\$5.06	3401K-5600K				
Block 3	\$6.58	>5601K				

Current Policies and Planning Initiatives

Long Range Planning Guide

In 1991, the District developed a comprehensive Long Range Planning Guide (LRP). The information/data used in developing the LRP is constantly updated and formally published at approximately three to five year intervals.

The scope of the report is to determine what additional facilities are needed to ensure that the District can meet its service area water demands through build-out. The following systems are evaluated to identify limitations and to determine future facility improvements:

- Alternative Service Area Scenarios
- Alternative Growth Projections
- Current and future water demands
- Current and future water supplies and collection systems
- Water treatment capacity expansion
- Water distribution system improvements
- Operations and Maintenance costs

The Guide generates a Capital Improvements Program (CIP) which identifies specific short-term, five-year, projects. The CIP also projects general long term, twenty-year, facility requirements to facilitate financial planning and water resource development.

The “2006 Long Range Planning Guide” included a discussion of strategies for Demand Management and Water Conservation.

Renewable Raw Water Source

The District has identified the need for a renewable/reliable raw water source as an important challenge.

For more than 40 years, the District has relied on the non-renewable Denver Basin aquifer water as their primary source of supply. Recent data shows declining water levels in the most prolific of these aquifers and it is universally agreed that the underground water levels are falling and the resource is being depleted.

Pikes Peak Regional Water Authority/WIPS Initiative

In 2006, the Pikes Peak Regional Water Authority (Authority) was formed as a project-oriented entity with the ultimate goal of obtaining a renewable raw water supply for its six Northern El Paso member water providers.

The Authority initiated a Water Infrastructure Planning Study (WIPS) to “provide a regional infrastructure plan to maximize and optimize the use of existing water resources and infrastructure; develop an item water supply strategy until a renewable water supply became available; and evaluate the infrastructure needs to fully develop and deliver the future renewable supply”.

Note: The Number one recommendation of the study was that - - “Each WIPS Participant should optimize their water supply by incorporating efficiency programs designed to reduce overall demand.”

The District’s Renewable Water Plan

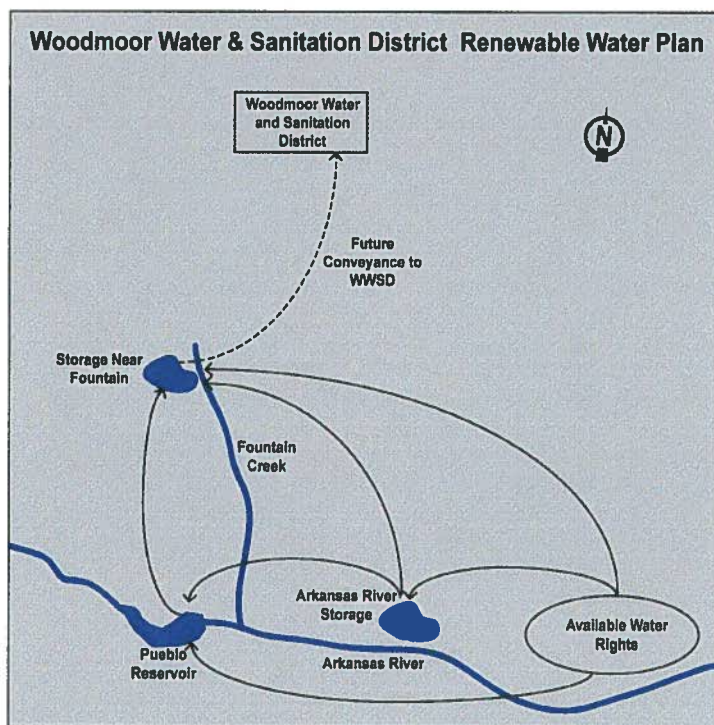


Figure 1-5 Renewable Water Plan Schematic

Recently, the District identified potential water resources, collection and transmission systems that would secure for the Woodmoor customer’s a reliable, sustainable, cost-effective long term renewable supply. On December 30, 2010, the District filed an application for a plan to move water upstream from the lower Arkansas River to the District service area via exchange through a system of storage facilities.

Mandatory Summer Water Use Program

In order to extend the districts ground water supply and lower its peak summer demands prior to the irrigation season of 2007, the District adopted a Mandatory Summer Water Use Program (Table 1-6). The program is designed to adequately supply the needs of the District customers while requiring an efficient use of the water supply.



To assist their customers in lowering individual water demand, the District also offers a rebate program for both low-water-use appliances and irrigation efficient systems (Page 1-17).

Table 1-6 Summer Water Use Program (June 1st through September 30th)

Common Elements	
Outdoor Use Calendar	Addresses ending in an Odd number water on Sunday, Wednesday, Friday
	Addresses ending in an Even number water on Saturday, Tuesday, Thursday
	No watering on Monday
Prohibited Watering Hours	No Watering 10 am to 6 pm
Water Waste	It is a violation to waste water by causing runoff of water on streets or into drainage facilities
Outdoor Watering & Irrigation	
<u>Turf Grass</u>	3 times per week (Suggested Minutes per Watering Day)
New Seed & Sod	Lawn permits from District - additional irrigation times allowed - 2 week permit for sod - 4 week permit for seed
Flowers, Vegetables, Trees and Shrubs	Hand-held hose or low-volume non-spray irrigation, any day, any time.
Designated Community Parks, open space and Athletic & playing fields	Water Budget developed with the District
Washing / Impermeable Surfaces	
Cars - washing at home	With hand-held hose with shut-off nozzle, per calendar, not between 10 am to 6 pm
Charity car washing / events	On a case-by-case basis permitted by District
Impermeable Surfaces	Using water to clean sidewalks, driveways, patios or similar hardscapes is prohibited
Power washing with high-pressure units or steam cleaner	Health & safety issues or no reasonable alternative. If for business function, high efficiency equipment required

Table 1-6 Summer Water Use Program (June 1st through September 30th)

Exemptions	
Hardship exemptions on a case-by-case basis - Permitted by District	
Violations	
Warnings - 1st violation	Written warnings
Fines - 2nd, 3rd, and 4th violation	\$50, \$100, \$200
Flow Restrictor - 5th violation	\$200 fine and flow restrictor - 25% of normal flow

Summarize Current Water Conservation Activities

The efficient use of water has been an important part of the District’s management plan since its inception in 1964. Individual customer metering, an inclining block rate structure, accounting for un-metered demands and water waste ordinances are all elements of the continuing operation of the District. Prior to the 2007 irrigation season, the District formalized its Water Conservation Program to include both water demand management initiatives as well as retrofit – rebate programs.

Table 1.7 lists each conservation measure/program and provides related detail. Details on water rate structure and demand-management programs were previously provided in Tables 1-5 and 1-6.

Table 1-7 Water Conservation Measures / Programs

Water Conservation Measure and Programs	Approximate Annual Water Savings Since Implementation	Implemented Since	Is Planned to Continue?
Low Water Use Fixtures	Unable to Quantify	1994	Yes
Water Waste Ordinance	Unable to Quantify Discussion Follows	1964	Yes
Water Rate Structure – Increasing Block Structure	Unable to Quantify	Mid-1970’s	Yes
New Billing System	Unable to Quantify Discussion Follows	2005	Yes
Mandatory Summer Water Use Program	Unable to Quantify - Discussion Follows	2007	Yes
Rebate Program	Discussion Follows	2007	Yes
Education and Public Information	Unable to Quantify – Discussion Follows	2007	Yes
School Education Program	Unable to Quantify – Discussion Follows	2002	Yes
Water Smart Gardening Education Program	Unable to Quantify - Discussion Follows	2004	Yes

Table 1-7 Water Conservation Measures / Programs

Water Conservation Measure and Programs	Approximate Annual Water Savings Since Implementation	Implemented Since	Is Planned to Continue?
Utility Water Loss and Leak Detection Program	Unable to Quantify - Discussion Follows	1964	Yes
Replacement and Improvement Program	Unable to Quantify	District continually dedicated to funding adequate program	Yes
Non-Potable Irrigation	Discussion Follows	2002	Yes
Meter Source Water	Unable to Quantify	All source water is metered, starting in 2007 daily data recorded	Yes

Water Waste Ordinance

All water waste violations are personally investigated by District staff. Follow-up investigations are typically discussed with customers as an education tool with the customer voluntarily correcting any misunderstanding.

New Billing System

In conjunction with the District's upgrade to remote radio read meters, a new billing system was also purchased. Prior to the new system, the customer invoice was a "postcard bill" with very little information other than monthly consumption and billing statement.

The new billing system can generate a number of comparative reports. These capabilities are now being evaluated and will ultimately generate part of the on-going information needed to evaluate the results of the adopted conservation programs. The added capabilities of the reporting system provide data that will assist in analyzing the Utilities Water Loss and Leak Detection Program and managing the Replacement and Improvement Programs.

Education and Public Information

In 2004, the District began implementing a coordinated effort to educate their customers concerning water rates, comparative historic consumption data, importance of water conservation and water supply planning initiatives. A variety of venues are used to distribute information including: Newsletter, Bill Inserts and the District's Website.



The design of the new billing invoice will assist in educating the individual customer by showing comparative previous consumption data and providing personalized, customer specific, information, i.e. notice of "higher than expected demands". Because the bill is now mailed in an envelope, it also allows a cost-effective means of distributing information via bill inserts.

School Education Program



The District sponsors an annual water related Poster Contest for grades 1st through 5th in each of the four area elementary schools. The program, coordinated with the schools art departments, includes a presentation by District staff concerning the importance of water conservation and the theme for the year's poster. All participants receive recognition and the winning posters are exhibited at the District office and on the District's website.

Water Smart Gardening Education Project

The Water Smart Gardening Education Project is located at the South Water Treatment Facility on approximately 1.2 acres of land. The Garden serves the communities between Castle Rock and Colorado Springs and has been designed around the area's own unique terrain, elevation, and climate. The Garden is used to educate the community on water conservation and serve as a model for water smart landscaping.

Included in the Garden are sixty-one water-efficient plants and trees along with interpretive materials including brochures and plant lists.



Utility Water Loss and Leak Detection Program

All leaks within the District's distribution systems not on private property are repaired at the District's expense. The District has budgeted for a "sonar leak survey" program in 2010.

Non-potable Irrigation

Approximately 50 million gallons (150 AF) of non-potable water is used annually for irrigation at both the Lewis Palmer High School and the Woodmoor Pines Golf Course and Country Club.

Rebate Program

The District launched a comprehensive rebate program in June of 2007. The program is designed to promote an incentive for the customers to install products that enhance water use efficiency both inside and outside the home. Details on each rebate program are provided in Table 1- 8. For the first three years of the program, 403 rebates were made totaling \$21,036. Estimated water savings for programs where savings can be quantified are presented in Table 1-9.

Table 1-8 Rebate Incentives

Items	Benefit/Savings	Rebate	Number of Rebates 2007/2009	Total Rebate Expenditures
Indoor Fixtures and Appliances				
Low Flow Toilets	Replace higher water use toilets (3-5 gallons per flush) with low flow toilets (1.6 gallons per flush)	\$25.00 (limit one per household)	164	\$4,100.00
High-efficiency Toilets	Replace higher water use toilets with toilets that use no more than 1.28 gallons per flush – includes dual-flush toilets	\$75.00 (limit one per household)	24	\$1,800.00
High-efficiency Clothes Washers	Replace higher water use washing machines (45 gallons per load) with low usage front load washers (25 gallons per load)	\$100.00	144	\$14,400.00
Dishwashers	Replace higher water use dishwashers (gallons per load) with low usage energy savings washers.	\$25.00 (limit one per household)	43	\$1,075.00
Showerheads	Replace higher water use showerheads(4 gallons per minute) with a more efficient showerhead (2.5 gallons per minute)	\$10.00 (limit two per household)	9	\$90.00
Outdoor Items				
Irrigation Controller	Irrigation clock that sets multiple days and time limits	\$35.00 (limit one per household)	11	\$385.00
Rain Sensor	Rain sensor that overrides irrigation system when detecting precipitation	\$25.00 (limit one per household)	8	\$200.00

Note: Maximum total rebate to on any one single family residence is up to \$485: 3- ESToilets, 3-showerheads, 1- ESClothes Washer, 1-ESDishwasher, 1-Irrigation Controller and 1-Rain Sensor.

Table1-9 Estimated Water Savings from Existing Rebates

Retrofit	Rebate	2007		2008		2009		Total Rebates	Average Savings (kgal/yr)
		Number of Rebates	Savings (kgal/yr)	Number of Rebates	Savings (kgal/yr)	Number of Rebates	Savings (kgal/yr)		
Low Flow Toilets	\$25	9	81	11	99	144	1,296	164	1,476
High-efficiency Toilets	\$75	1	10	8	80	15	150	69	690
High-efficiency Clothes Washers	\$100	38	209	61	335	45	248	144	792
Dishwashers	\$25	0	0	28	14	15	8	43	22
Showerheads	\$10	2	10	5	25	2	10	9	45
Irrigation Controller	\$35	5	(1)	5	(1)	1	(1)	11	(1)
Rain Sensor	\$25	2	(1)	3	(1)	3	(1)	8	(1)

Notes: (1) Lack sufficient site specific data to make estimate of related savings

Water Use and Demand Forecasts

Alternative Growth scenarios, associated projections of single family equivalent taps (SFE's) and accompanying water demands were developed as part of the District's 2006 Long Range Planning Guide (LRP).

NOTE: An update to the LRP is scheduled for the year 2013. The 2013 LRP will be revised to reflect the results that the slowed economy has had on development within the District and the timing of projected growth. Growth rates will be adjusted and the Capital Improvements Program will be modified to reflect the associated delay of facility development. At the same time short-term, preliminary results, of some of the conservation programs and their effects on the various aspects of water demand will also be evaluated.

Service Area Growth

Two growth scenarios: Current Service Area Build-Out and Ultimate Service Area Build-Out have been developed to project alternative future District water demands.

Current Service Area Build-Out is defined as every platted lot and all un-platted land currently within the District's boundary having the maximum number of single family equivalents (SFEs) possible. Ultimate Service Area Build-Out is defined as Current Build-Out plus lands likely to petition for inclusion within the District.

Current Service Area Build-Out

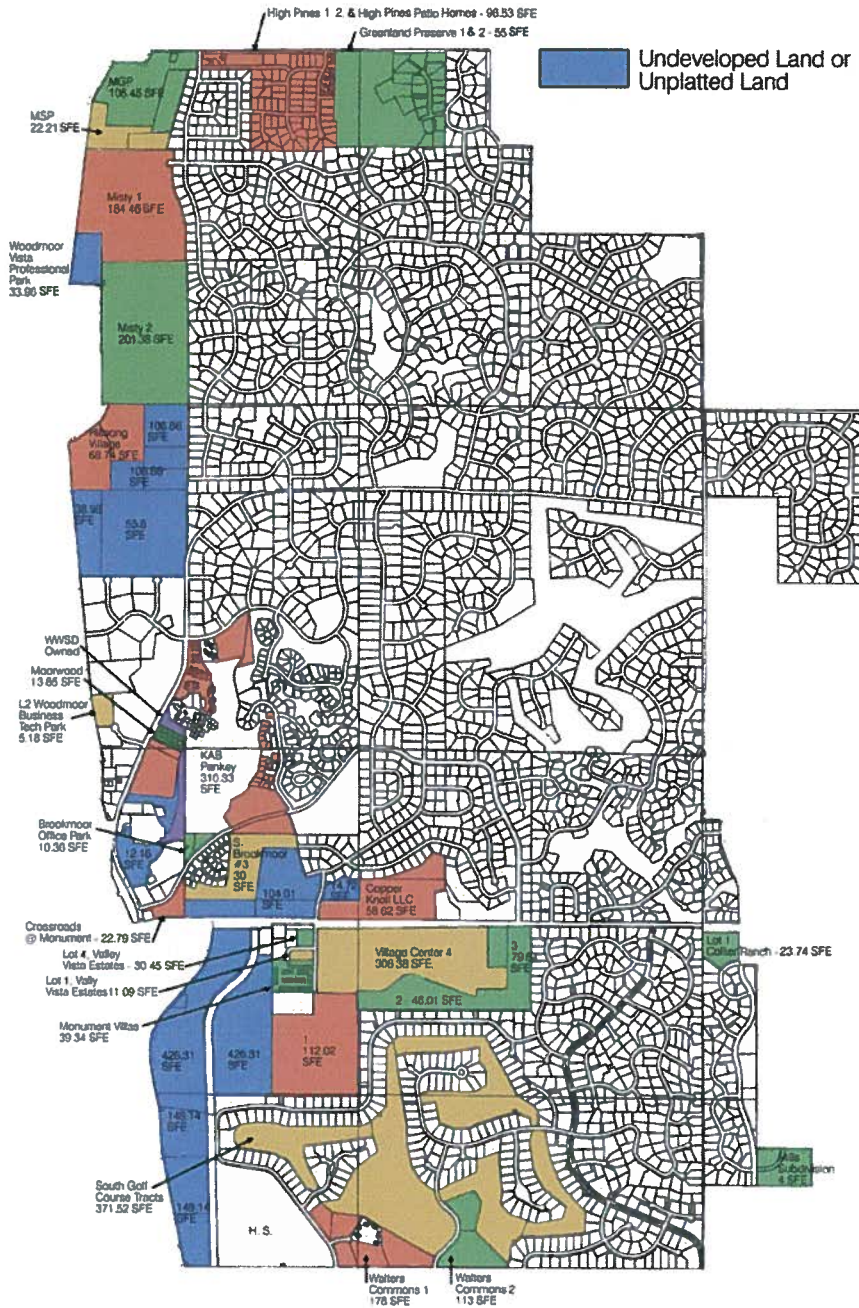


Figure 2-1 Current Service Area Build-Out

The Current Build-Out of the District (Figure 2-1) is projected for the year 2033 at 6,504 SFEs.

Growth projections for the Current Build-Out scenario are separated into short and long-term growth rates.

Short-term growth rates are applied for projections from 2006 to 2011. Those short-term growth rates were created by combining the build-out schedules for developments already under contract with the District.

Projected long-term growth was developed using a linear 3% rate of growth. Historically, District growth, best fit a linear pattern with an average growth rate of 7.7% per year. It is anticipated that the long-term growth rate will decrease from this relatively high rate; but will continue to follow the same linear pattern.

Ultimate Build-Out

The Ultimate Build-Out of the District (Figure 2-2) is projected to be 7,844 SFEs. Assuming the same 3% long-term growth rate, the projected Ultimate Build-Out will be reached in the year 2042.

Table 2-1 presents the projected SFEs by year for the Current and Ultimate Build-Out Service Areas. The SFEs are projected in each of the District's 2006 three major pressure zones. Zone 1 located at the northern end of the District, serving elevation of 7,490 through 7,175 feet, Zone 3 at the lower southern end serving area serving between 7,100 and 6,960 feet.

Table 2-2 breaks out the service commitments the District has made for an additional 3,165 SFEs. The tap commitments have been made within the current District boundaries, and are shown by location (Zone) and Tap Type.

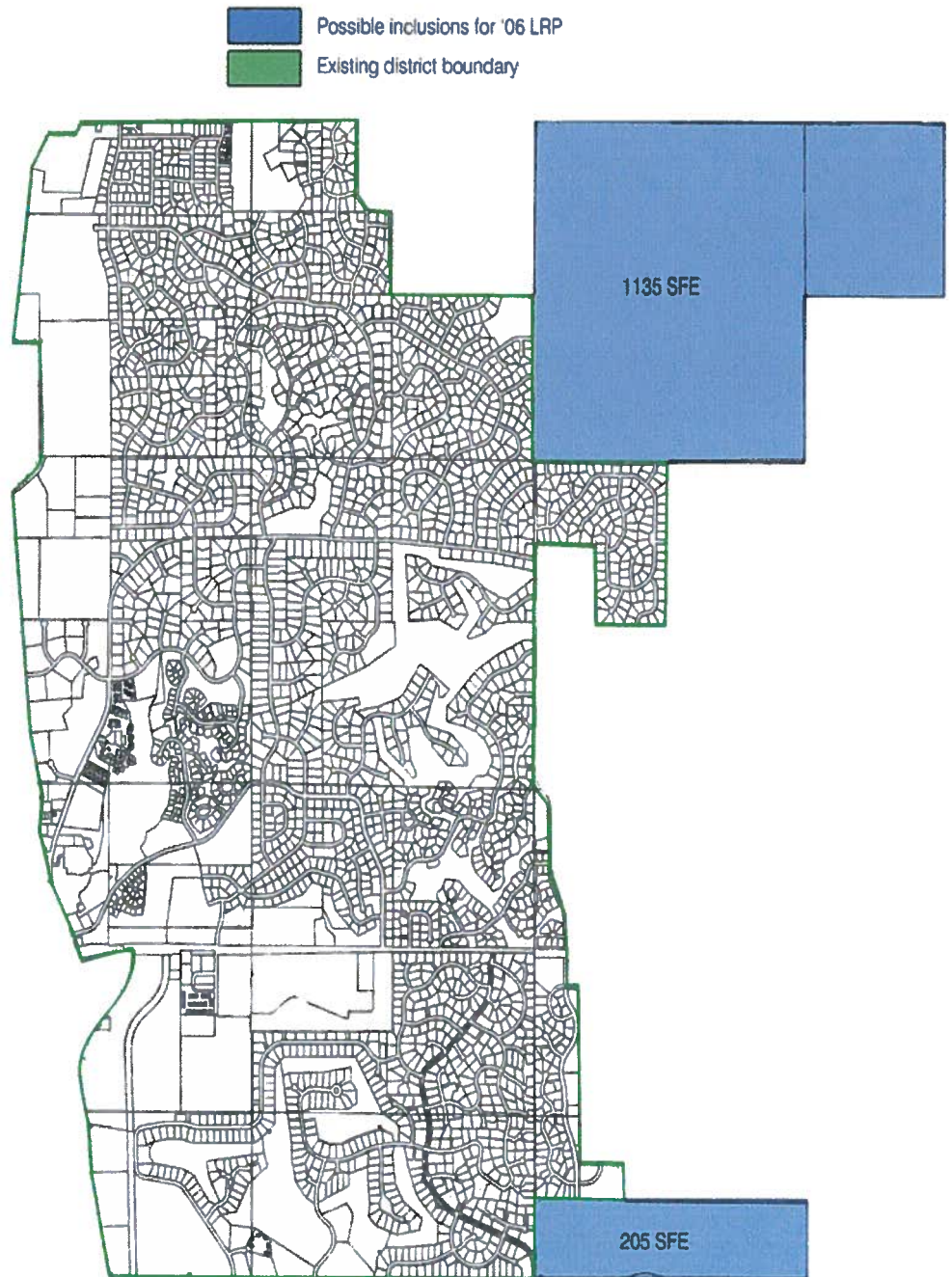


Figure 2-2 Ultimate Service Area Build-Out

Table 2-2 Service Commitments by Zone (Current Build-Out Service Area)

Development	Commitment SFE	Zone	Tap Type
High Plains (All Filings)	98.53	Zone 1	Single Family
MCP (Monument Business Park)	22.21	Zone 1	Commercial
Monument Villas	39.34	Zone 3	Multi-family
Moorwood	13.85	Zone 3	Multi-family
Copper Knoll, LLC	58.62	Zone 3	Single Family
Lewis Palmer School District #38	68.74	Zone 1	Single Family
Lot 1 Collier Ranch (Montessori School)	23.74	Zone 2	Single Family
L2, Woodmoor Business/ Tech Park (Monument Academy)	5.18	Zone 3	Commercial
Lot 1 Valley Vista Estates	11.09	Zone 3	Commercial
Lot 4 Valley Vista Estates	30.45	Zone 3	Commercial
Village Center at Woodmoor			
Filing 1	112.02	Zone 3	Single Family
Filing 2	46.01	Zone 3	Single Family
Filing 3	79.84	Zone 3	Single/Multi Family
Filing 4	306.38	Zone 3	Commercial
Misty Acres Filings 1 and 2	386.34	Zone 1	Single/Multi Family
Crossroads at Monument	22.79	Zone 3	Commercial
M.G.P. (Mahlon Plovman)	106.45	Zone 1	Commercial/ Single Family
Greenland Preserve			
Filing 1	19.00	Zone 1	Single Family
Filing 2	36.00	Zone 1	Single Family
Cheyenne Mountain Development	78.52	Zone 2	Single Family
Cheyenne Mountain Development	231.81	Zone 3	Commercial/ Single/Multi Family
Brookmoor Office Park	10.36	Zone 3	Commercial
Mills Subdivision	4	Zone 2	Single Family
Walters Commons			
Filing 1	178	Zone 3	Multi-family
Filing 2	113	Zone 3	Multi-family
Brookmoor Filing 3	30	Zone 3	Single Family
Walters Estate - S. Woodmoor Property ⁽¹⁾	373	Zone 3	NA
Undeveloped/Unplatted Low Density ⁽²⁾	91	Zone 2	NA
Undeveloped/Unplatted Zone 1 ⁽³⁾	155	Zone 1	NA
Undeveloped/Unplatted Zone 2 ⁽³⁾	206	Zone 2	NA
Undeveloped/Unplatted Zone 3 ⁽³⁾	427	Zone 3	NA

Notes:
 (1) SFEs estimated based on 1.0 acre-ft/acre/year of supplemental water sales without standard 0.5 acre-ft/acre/year water allocation
 (2) SFEs estimated based on 0.5 acre-ft/acre/year of standard allocation without supplemental water sales
 (3) SFEs estimated based on 1.0 acre-ft/acre supplemental water sales plus 0.5 acre-ft/acre/year in allocated water at a rate of 320 gpd/SFE

Table 2-4 SFE Projections per Pressure Zone

Year	Current Buildout				Ultimate Buildout			
	Zone 1 (SFE)	Zone 2 (SFE)	Zone 3 (SFE)	Total (SFE)	Zone 1 (SFE)	Zone 2 (SFE)	Zone 3 (SFE)	Total (SFE)
2008	1151	1258	930	3339	1151	1258	930	3339
2007	1232	1346	995	3573	1232	1346	995	3573
2008	1318	1440	1065	3823	1318	1440	1065	3823
2009	1397	1527	1129	4052	1397	1527	1129	4052
2010	1467	1571	1185	4223	1467	1571	1185	4223
2011	1525	1571	1232	4329	1525	1571	1232	4329
2012	1560	1571	1313	4443	1561	1571	1288	4448
2013	1594	1571	1393	4558	1637	1571	1359	4567
2014	1628	1571	1473	4672	1692	1571	1422	4685
2015	1662	1571	1553	4787	1748	1571	1495	4804
2016	1696	1571	1634	4901	1804	1571	1548	4923
2017	1730	1571	1714	5015	1860	1571	1611	5042
2018	1765	1571	1794	5130	1915	1571	1674	5160
2019	1799	1571	1874	5244	1971	1571	1737	5279
2020	1833	1571	1954	5359	2027	1571	1800	5388
2021	1867	1571	2035	5473	2082	1571	1863	5517
2022	1901	1571	2115	5587	2138	1571	1926	5636
2023	1935	1571	2195	5702	2194	1571	1990	5754
2024	1968	1571	2275	5813	2249	1571	2053	5873
2025	1986	1571	2355	5893	2305	1571	2116	5882
2026	1986	1571	2436	5973	2361	1571	2179	6111
2027	1986	1571	2516	6053	2418	1571	2242	6228
2028	1986	1571	2598	6134	2472	1571	2306	6348
2029	1986	1571	2676	6214	2528	1571	2368	6467
2030	1986	1571	2756	6294	2584	1571	2431	6588
2031	1986	1571	2837	6374	2639	1571	2494	6705
2032	1986	1571	2917	6454	2695	1571	2557	6823
2033	1986	1571	2997	6534	2751	1571	2620	6942
2034	1986	1571	2967	6504	2806	1571	2683	7061
2035	1986	1571	2967	6504	2862	1571	2747	7180
2036	1986	1571	2967	6504	2918	1571	2810	7298
2037	1986	1571	2967	6504	2973	1571	2873	7417
2038	1986	1571	2967	6504	3029	1571	2936	7536
2039	1986	1571	2967	6504	3085	1571	2999	7655
2040	1986	1571	2967	6504	3102	1571	3062	7735
2041	1986	1571	2967	6504	3102	1571	3125	7788
2042	1986	1571	2967	6504	3102	1571	3171	7844
2043	1986	1571	2967	6504	3102	1571	3171	7844
2044	1986	1571	2967	6504	3102	1571	3171	7844
2045	1986	1571	2967	6504	3102	1571	3171	7844
2046	1986	1571	2967	6504	3102	1571	3171	7844
2047	1986	1571	2967	6504	3102	1571	3171	7844
2048	1986	1571	2967	6504	3102	1571	3171	7844
2049	1986	1571	2967	6504	3102	1571	3171	7844
2050	1986	1571	2967	6504	3102	1571	3171	7844
2051	1986	1571	2967	6504	3102	1571	3171	7844
2052	1986	1571	2967	6504	3102	1571	3171	7844
2053	1986	1571	2967	6504	3102	1571	3171	7844
2054	1986	1571	2967	6504	3102	1571	3171	7844
2055	1986	1571	2967	6504	3102	1571	3171	7844
2056	1986	1571	2967	6504	3102	1571	3171	7844
2057	1986	1571	2967	6504	3102	1571	3171	7844
2058	1986	1571	2967	6504	3102	1571	3171	7844
2059	1986	1571	2967	6504	3102	1571	3171	7844
2060	1986	1571	2967	6504	3102	1571	3171	7844



Current Water Use

Woodmoor customers are predominantly residential with a limited number of multi-family, commercial and school users. Figure 2-3 shows the total percent of water use by customer type.

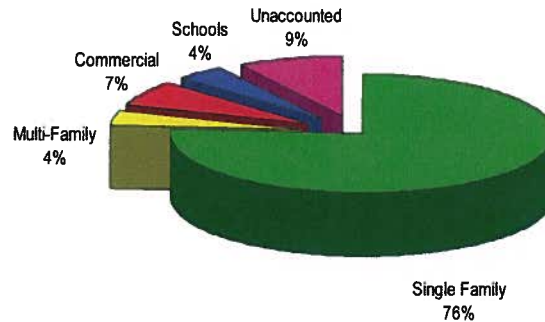


Figure 2-3 Total Water Use by Customer Type

Forecasting Method

The 2006 LRP analyzed water usage data from January 2002 through May 2006. The total well production for each month and the average demand per SFE is presented in Table 2-3.

Table 2-3 Monthly Well Production Data

Month	2002		2003		2004		2005		2006	
	Total Production (MG)	Average Daily Demand Per SFE (gpd/SFE)	Total Production (MG)	Average Daily Demand Per SFE (gpd/SFE)	Total Production (MG)	Average Daily Demand Per SFE (gpd/SFE)	Total Production (MG)	Average Daily Demand Per SFE (gpd/SFE)	Total Production (MG)	Average Daily Demand Per SFE (gpd/SFE)
Jan	22.2	201	17.7	174	19.5	174	17.5	171	19.0	185
Feb	19.1	199	18.2	195	18.1	185	18.8	189	16.5	149
Mar	17.1	167	18.0	182	15.1	153	16.9	154	18.2	171
Apr	21.7	227	18.8	172	19.8	183	17.7	170	23.3	207
May	37.8	360	20.4	214	25.5	232	21.0	204	46.4	428
Jun	45.0	442	42.6	373	51.6	496	41.6	390	51.7	503
Jul	57.4	586	41.7	418	35.7	353	47.7	442		
Aug	58.8	553	50.1	509	35.6	348	53.6	519		
Sep	46.6	479	37.5	395	36.2	347	41.2	405		
Oct	26.5	268	36.0	317	28.2	257	34.6	331		
Nov	20.1	194	23.3	234	19.7	200	24.0	237		
Dec	18.8	188	19.6	195	17.8	162	24.0	235		
Total	391		344		323		359		175	

Table 2-4 presents the results from the data analysis for the key historical parameters used to predict future water demands.

Table 2-4 Water Demand Analysis Summary: Jan 2002 - May 2006

Parameter	Total Demand		Demand Per SFE With	
Average Annual	1,087	Acre-ft/yr	314	gpd/SFE
Max Annual	1,200	Acre-ft/yr	369	gpd/SFE
Max Month	180	Acre-ft/mo	654	gpd/SFE
Peak Day(1)	2.52-2.81	MGD	909	gpd/SFE

⁽¹⁾Peak day estimated based on peaking factor of 2.6 to 2.9

From 2002 through May of 2006, the average annual water demand for the system was 1,087 acre-ft/year. This demand corresponds to an average use of 314 gpd/SFE, which is slightly less than the value of 327 gpd/SFE used in previous LRPs. To account for this slight decrease, the annual water demand per SFE used in the 2006 LRP update was 320 gpd/SFE, which is the average of the previous LRP value and the 2002 to May 2006 value.

Peak Day Demands

As in previous LRP Updates, the peak-day water demand could not be accurately determined due to insufficient data. Therefore, the same 2.6 to 2.9 average day-to-peak day factors were used. Because the peak-day water demand drives the capacity requirement and timing of some of the most costly facilities, it was recommended the District install the necessary flow monitoring equipment to accurately determine peak day water demand.

NOTE: In 2007/2008, the District expanded their monitoring system to include collection of daily total water production data. This information will be evaluated in the next LRP to determine the actual system max-day and max-hour multipliers. Not only will this additional information help determine the need and timing for those facilities specifically required to meet the maximum daily demands, it will also help in evaluating those demand management programs aimed at reducing the historic combined peak irrigation demands.

Projected Water Demand

Water demands for undeveloped land within the present District boundaries, unless specific allocations have been contracted for, are based on the assumptions of 0.5 acre-ft/acre/year for platted land and 1.5 acre-ft/acre/year for unplatted. All land anticipated for future inclusion into the District has been allocated at a maximum of 0.5 acre-ft/acre/year. Figure 2-4 depicts the growth of SFE's and the accompanying annual water demands for both Current and Ultimate Buildout scenarios. Table 2-5 summarizes the District's Projected Service Area Commitments.

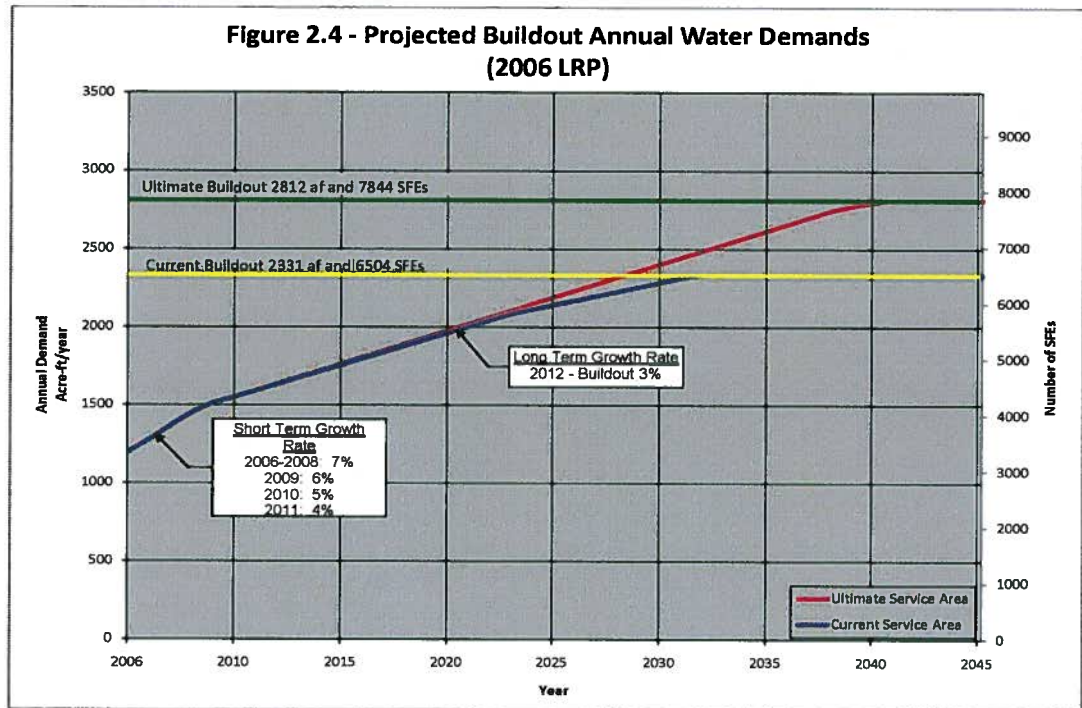


Table 2-5 Projected Service Area Commitments

Service Area	Year	SFE's	Demand Ac-ft/Yr
Present	2006	3,339 ⁽¹⁾	1,197
Current Service Area Build-Out	2033	6,504	2,331
Ultimate Service Area Build-Out	2042	7,844	2,812

Note:

⁽¹⁾ End of Year 2006 SFE's

Proposed Facilities

As discussed in Section 1, page 1-11 the District first prepared a Long Range Planning Guide (LRP) in July of 1991. The LRP has since been updated four times. The facility requirements, timing and costs developed in the 2006 LRP are presented in this section.

Cost Potential of Future Facility Needs

The LRP includes projections of system growth and associated water demands. The Plan also includes capacity assessments of the existing water supply, treatment, and the distribution and delivery systems. The LRP concludes with a presentation of a twenty year Capital Improvement Program (CIP). The twenty year CIP provides a year-by-year schedule of facility development and associated costs.

Table 3-1 sets forth the first ten years of the CIP. Approximately \$150 million is projected to be spent on the expansion and operation of the water collection and distribution systems over the next ten-year. The total cost is distributed in the following manner: \$20 million for groundwater, \$3 million for treatment and delivery and \$116 million for the development of an alternative surface water supply. Additionally, \$300,000 per year is committed to the replacement and rehabilitation program and \$600,000 per year is dedicated to operations and maintenance.

The LRP identifies only projects that can be constructed solely by the District with minimal cooperation from surrounding entities. It is possible that during the twenty year planning horizon that one or more regional renewable resource projects will be available that will offer a like solution and be more cost effective.

Table 3-1 10 Year Capital Improvements Program

Classification		Projected SFE Current Buildout	3573	3823	4052	4223	4328	4443	4558	4672	4787	4901
		Project Description	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Water CIP	Groundwater Supply	New Arapahoe Well 20 & Transmission Line	\$2,967,000									
		New LFH Well 21 & Transmission Line to Lake			\$1,090,000							
		New Arapahoe Well 22 & Transmission Line to SFP			\$1,839,700							
		New Arapahoe Well 23 & Transmission Line to CWTP						\$3,840,000				
		New Arapahoe Well 24 & Transmission Line to CWTP							\$1,114,000			
		New Arapahoe Well 25 & Transmission Line to CWTP								\$1,840,000		
		New Arapahoe Well 26 & Transmission Line to CWTP									\$2,940,000	
		Redrill Well 8R					\$2,967,000					
		Lower Well Pump 9R	\$50,000									
		Lower Well Pump 18		\$100,000								
	Lower Well Pump 12								\$100,000			
	Rehabilitate Well 1 and Install New Well Pump		\$120,000									
	Water Treatment	CWTP Lake Pump Station			\$490,000							
		Expansion of SFP to 2,900 gpm New South Booster Pump Station						\$700,000				
		New Water Treatment Plant								\$760,000		
	Storage	New Water Storage Tank						\$1,310,000				
	Surface Water Supply	Surface Water Rights Acquisition Design and Construction of Raw Water Reservoir						\$16,480,000				\$38,810,000
		Capital Investment for Renewable Water Project										\$62,090,000
	Studies and Reports	Water Resource Acquisition Plan	\$50,000									
		PPRWA WIPS	\$120,000									
		Woodmoor/Monument Integration Resource Study	\$50,000									
		Water Conservation Plan		\$50,000								
		2008 Interim LRP Update to Incorporate Studies		\$25,000								
		2009 Interim LRP Update			\$10,000							
		2010 Interim LRP Update				\$10,000						
	2011 LRP Update					\$100,000						
	2011 Water Resource Acquisition Plan Update					\$50,000						
Total CIPs		\$3,237,000	\$295,000	\$3,429,700	\$10,000	\$3,117,000	\$21,330,000	\$1,214,000	\$2,600,000	\$2,940,000	\$100,900,000	
Water R&R	Supply R&R	\$10,000	\$10,000	\$15,000	\$5,000	\$5,000	\$45,000	\$30,000	\$40,000	\$40,000	\$40,000	
	Treatment R&R	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	Storage, Transmission, Distribution R&R	\$305,000	\$300,000	\$300,000	\$305,000	\$300,000	\$300,000	\$305,000	\$300,000	\$480,000	\$307,500	
Total R&R		\$315,000	\$310,000	\$315,000	\$310,000	\$305,000	\$345,000	\$335,000	\$340,000	\$520,000	\$347,500	
O&M	Lake Maintenance	\$5,000	\$505,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	
	Water Chemicals	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	
	Water Quality Testing	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	
	General Water Maintenance	\$120,000	\$120,000	\$120,000	\$120,000	\$120,000	\$120,000	\$120,000	\$120,000	\$120,000	\$120,000	
	Manhole Rehab, Cleaning, Inspecting	\$390,000	\$890,000	\$390,000	\$390,000	\$390,000	\$390,000	\$390,000	\$390,000	\$390,000	\$390,000	
Total O&M		\$580,000	\$1,580,000	\$580,000	\$580,000	\$580,000	\$580,000	\$580,000	\$580,000	\$580,000	\$580,000	
Total Cash Flow Model Inputs		\$4,132,000	\$2,185,000	\$4,324,700	\$900,000	\$4,002,000	\$22,255,000	\$2,129,000	\$3,520,000	\$4,040,000	\$101,827,500	

Conservation Goals

Sound water resource management has always been a goal of Woodmoor Water. The District has a long history of promoting efficient use of their water resources. Full metering, inclining block “conservation rates”, non-potable irrigation, through exchange of wastewater effluent and a water waste ordinance are standard utility practices.

Water use efficiency continues to be an integral part of the District’s Long Range Master Plan. The decrease of annual demands combined with demand management programs to reduce the peaking factors associated with summer irrigation are essential in insuring the long-term adequacy and reliability of the District’s water supply.

Integrated Supply Strategy

In its 2006 LRP, the District identified an expanded water Conservation program as one of two new water resource components in its Integrated Supply Strategy. (Figure 4-1) The second new component is the development of a renewable Surface Water supply. Combining these two new elements, while continuing to optimize their existing Ground Water and Exchange supplies, will ensure a safe and reliable water supply able to meet the future needs of its customers.

Integrated Supply Strategy

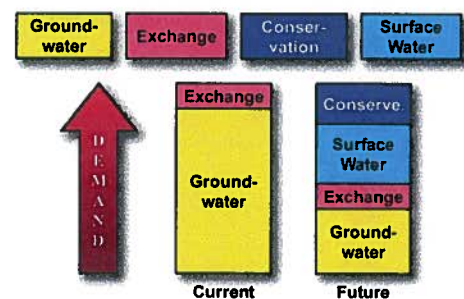


Figure 4.1

Water Conservation Goals

The District has established the following projected water conservation goals:

Demand Reduction Goals

Establishing demand reduction goals is a key component used to gauge the success of an overall conservation program. Goals provide a specific set of standards that can be used to determine the effectiveness of a program as well as defining the savings for each element of demand. The goals listed below

were developed to target the system wide demands of average annual, max-day and projected use per single family equivalent (SFE).

- A target of decreasing the projected combined total average annual water demand by 10%.
- Reduce max-day demand by at least 15% concentrating on the high-peaking factors associated with summer irrigation patterns. (The district has implemented irrigation days per week and time-of-day watering programs intending to ultimately realize an overall 20% reduction in max day demands).

As the Plan is updated, based on additional interpretation of individual customer class demand patterns, specific goals will be developed for each conservation programs.

Program Goals

First considerations were given to those conservation programs that have been shown to be universally acceptable by the overall customer base and proven to produce immediate and lasting water savings. Although financial limits were set on program costs, i.e. “not to exceed monetary limits on rebates”, a specific program-by-program cost/benefit evaluation was not developed. A review of the resource cost associated with other water providers “like” programs, monetary as well as staffing, were examined and determined to be acceptable.

- Promote water conservation education and awareness for all water-user-types throughout the District’s service area. Develop a “water efficiency ethic” among customers;
- Continue existing water conservation activities which have proven effective and have been accepted by District customers;
- Promote/Expand existing programs to insure customer understanding and full program effectiveness;
- Pilot/Evaluate new water conservation programs to determine cost-benefits and acceptance by targeted customer class.
- Select new conservation measures and programs that are “socially acceptable” by District customers and compatible with surrounding water supply entities’ in the Northern El Paso community;
- Design a water conservation plan with programs and goals that are acceptable, supported and enforced by the Woodmoor Improvements Association and surrounding Counties.

Monitoring Goals

The effectiveness of any conservation program can only be evaluated if accurate measurable data is available. The District has expanded its monitoring system to collect and record daily water production. They recently purchased new billing system software that will support implementation of a comprehensive monitoring system.

The goals of the Monitoring system are:

- Develop an accounting system that collects, monitors and characterizes water use demand data to effectively measure the success of current and future conservation programs;
- Measure water savings achieved through both current and future implemented measures/programs on a regular on-going basis;
- Constantly monitor and evaluate conservation practices and modify as necessary.

Goal Development Process

The demand reduction goals were originally developed as part of the planning process initiated as the precursor to updating the District's 2002 Long Range Plan. The goals were developed after consideration of historic system-wide water use patterns and the proven effectiveness of various functioning water conservation programs. The District also evaluated, as part of their "2006 Long Range Planning Guide," demand management strategies that would lower both annual demand and limit peak day events. Both "time-of-day" and "days-per-week" irrigation schedules were adopted prior to the 2007 Load Season.

The District's consulting team's facilitated discussions with the Staff and Board to evaluate, develop and select the conservation goals and the design the initial consecration program.

Conservation Measures and Programs

This section provides an inventory of the potential conservation measures and programs that were considered by the planning team. Included is a discussion of the screening criteria used to evaluate, select or eliminate each measure. Lists of programs that were eliminated from further consideration and those that were approved for further evaluation are also presented.

Identify Conservation Measures and Programs

Table 5-1 provides the list of conservation measures and programs that were considered during the development of this Plan. The list includes those programs and measures identified in the CWCB guidelines as well as additional measures that were considered during the development process. The list consists of a wide variety of both Demand and Supply Side conservation measures and programs.

Initial Screening of Conservation Measures and Programs

The following screening criteria were used to evaluate the collective list of conservation measures and programs. In a small number of cases, some measures and programs were eliminated because they are not conducive with the District's water system or community values. In other cases, the programs were judged to have not yet proven their effectiveness or been adopted as a standard water conservation utility practice. However, in many instances, the District plans to "pilot" on-site new programs and assess other water providers' existing programs to evaluate the cost and effectiveness of implementing these new conservation measures. At the same time, the District will continue to support existing programs and evaluate additional new measures to enhance or expand those efforts.

Table 5-1 Conservation Measures and Programs Identified in the Planning Process

Demand-Side Measures	Demand-Side Measures	Demand-Side Programs
Water-efficient fixtures and appliances ¹		
Low-Flow toilets	Commercial Kitchen & Restaurant	School programs
Low-Flow Urinals	Pre-Rinse Sprayer Nozzles	Informative & understandable bill
High efficiency toilets (HET)	Commercial Laundries	Water bill inserts
Dual-Flush toilets	Water efficient clothes washers	Website
Waterless toilets and urinals	Swimming Pools	Local media outreach
Auto flush toilets and urinals	Pool covers	Collaboration with others
Toilet retrofit devices	Cooling Systems	Technical Assistance
Low-flow showerheads	Once-through cooling systems	Customer water use audits
Low-flow faucets	Cooling towers	Targeted at large landscapes
Faucet retrofit devices (aerators)	Evaporative coolers	Residential audits
High efficiency clothes washer	Heating Systems	Commercial audits
High efficiency dishwasher	Boilers & Steam generators	Technical workshops
Hot water recirculation system	Humidifiers	Water conservation expert
Tankless hot water heater	Supply Side Measures	Regulations/Ordinances
Landscape Efficiency	Water Reuse Systems	Addressing fixtures & appliances
Native and low-water use plants	Large irrigation reuse/non-potable	Standards for fixture/appliance
Drought-resistant vegetation	Indirect potable reuse	Time of sale upgrades
Soil Preparation	Distribution System Efficiency	Addressing landscapes
Mulching	Leak repair	Turf restrictions
Efficient Irrigation	Removal of Phreatophytes	Landscape design/layout
Rain shutoff devices	Temporary transfers from AG	Soil preparation
Automatic controller	Dry year leasing	Irrigation equipment
Proper scheduling	Rotational fallowing	Water time restrictions
Drip irrigation	Water salvage	Water waste prohibition
Soil moisture sensors	Source Optimization	Incentives
ET controllers	Conjunctive use	Rebates
Central control systems	System integration w/ others	Giveaways
High efficiency nozzles	Dry year leasing	Supply - Side Programs
Water decorations and fountains	Rotational fallowing	Distribution System Efficiency
Cooling mist systems	Demand Side Programs	Analysis of non account water
Commercial Efficiency	Rate structures & Billing systems designed to encourage conservation	Improved water accounting
Water Efficient Processes	Volume billing	Leak identification
Metering	Conservation rate structure	Metering
Sub-metering	Increased billing frequency	Meter source water
Manual Car Washing	Meter testing and replacement	Meter service connections
Hose end shut off	Education/Information Dissemination	Sub-metering multi-family
Commercial Car Washing	Public education	Irrigation only metering
Recycling	Water-saving demonstrations	Meter testing and replacement

¹ To meet the requirements of §37-60-126, C.R.S., measures in shaded rows must be considered.

Criteria 1 - Existing Measure/Program

These measures/programs have already been implemented and are considered to be a standard District practice and will continue to be a part of the District's on-going conservation program.

- 1.a Measures/Programs that have been employed as a standard practice of the District's initial and continuing water service principle to assure the efficient use of water.
- 1.b The measures/programs were adopted prior to the 2007 irrigation season and are practices that will continue to be integral components of the District's water management plan.
- 1.c The measures were required to meet the Energy Policy Act of 1992 and the subsequent 1994 EPA-mandated new appliance low-flow characteristics adopted by Teller County as a portion of their Building Codes. Although the District does not have the authority to mandate building codes, they do require compliance with the "water conservation codes" as a condition of service. The District also supports the conversions of existing older high-water-using appliances to new low-flow fixtures through its rebate program.
- 1.d The measures/programs are proven and designed to have an immediate effect on decreasing the summer irrigation demands both total annual and peak-day.

Measures and Programs adopted in conjunction with criteria 1.b and 1.d will be assessed as part of the District's on-going Monitor and Evaluation process. Data on each program will be collected to measure total water savings, participation rates and overall cost effectiveness. Until such time that any one of the programs are shown to produce a negative cost/benefit ratio, the measure will continue to be included as an on-going element in the District's Conservation Plan.

Criteria 2 - Measures and Programs Judged “Not Applicable”

Some measures/programs have been judged as “Not Applicable” and for the following reasons are not being considered as an element of this initial plan.

- 2.a The measure/program is not conducive to the District’s water supply system or its customer base and demand allocations.
- 2.b The projected water savings would not support the District’s cost of implementation and maintenance of the measure/program.
- 2.c The measure/program has not yet to prove effective at saving water and has not been adopted as a standard utility practice.

Criteria 3 – Measures and Programs Require Further Evaluation

Measure/programs require further evaluation to understand the cost effectiveness of the program before adoption or rejection (Further Evaluation).

Screening Conservation Measures and Programs

A review of the identified measures and programs was conducted by the Districts’ staff and their consultant and reviewed and approved by the District’s Board. The results of this review narrowed the list to include measures and programs that are consistent with the goals of the District and the initial phase of their water conservation plan.

Table 5.2 indicates the conservation measures and programs already implemented by the District, those recommended for Further Evaluation and those that were judged as Not Applicable and eliminated from further consideration.

Table 5-2 Selected Conservation Measures and Programs

Measure	Already Implemented	Further Evaluation Needed	Comments
Demand-Side Measures			
Water Efficient Fixtures/Appliances			
Low-Flow toilets	X		Criteria 1.b & 1.c (existing rebate program)
Low-Flow urinals	X		Criteria 1.c
High efficiency toilets (HET)	X		Criteria 1.b (existing rebate program)
Waterless toilets and urinals			Criteria 2.a - Not Applicable
Auto flush toilets and urinals	X		Expansion of Criteria 1.c
Toilet retrofit devices		X	Criteria 3 - Evaluation of existing programs "Giveaways"
Low-flow showerheads	X		Criteria 1. b & 1.c (existing rebate program)
Low-flow faucets	X		Criteria 1. b & 1.c (existing rebate program)
Faucet retrofit devices(aerators)		X	Criteria 3 - Evaluation of existing programs "Giveaways"
High efficiency clothes washer	X		Criteria 1.b(existing rebate program)
High efficiency dishwasher	X		Criteria 1.b - 1.d(existing rebate program)
Hot water recirculation systems			Criteria 2.c - Not Applicable
Tankless hot water heater			Criteria 2 .c - Not Applicable
Landscape Efficiency			
Native and low-water use plants	X		Criteria 1.a – Demonstration program and Dissemination of Education/Information
Drought-resistant vegetation	X		Criteria 1.a – Demonstration program and Dissemination of Education/Information
Irrigation scheduling – both days of week and hours of day	X		Criteria 1.b
Soil Preparation		X	Criteria 3 – Pilot Program - "Addressing Landscapes"
Mulching		X	Criteria 3 – Pilot Program - "Addressing Landscapes"
Efficient Irrigation			
Rain shutoff devices	X		Criteria 1.b & 1.d (existing rebate program)
Automatic controller	X		Criteria 1.b & 1.d (existing rebate program)
Proper scheduling	X		Criteria 1.b & 1.d
Drip irrigation		X	Criteria 3 - Pilot Program under "Addressing Landscapes"
Soil moisture sensors		X	Criteria 3 - Further Evaluation
ET controllers		X	Criteria 3 - Further Evaluation, includes assessment of "like" programs
Central control systems		X	Criteria 3 – combined with ET controllers
High efficiency nozzles		X	Criteria 3 – Pilot Program - "Addressing Landscapes"
Water decorations and fountains			Criteria 2.b - Not Applicable
Cooling mist systems			Criteria 2.b - Not Applicable

Table 5-2 Selected Conservation Measures and Programs

Measure	Already Implemented	Further Evaluation Needed	Comments
Commercial Efficiency			
Water Efficient Processes			Criteria 2.b - Not Applicable
Metering	X		Criteria 1.a
Submetering	X		Criteria 1.a
Manual Car Washing Hose end shut off	X		Criteria 1.a – water waste ordinance
Commercial Car Washing Recycling			Criteria 2.b - Not Applicable
Commercial Kitchen & Restaurant			
Pre-Rinse Sprayer Nozzles	X		Criteria 2.b – Not Applicable
Commercial Laundries			
Water efficient clothes washers	X		Criteria 1.a (existing rebate program)
Swimming Pools			
Pool covers			Criteria 2.b - Not Applicable
Cooling Systems			Criteria 2.b - Not Applicable
Once-through cooling systems			Criteria 2.b - Not Applicable
Cooling towers			Criteria 2.b - Not Applicable
Evaporative coolers			Criteria 2.b - Not Applicable
Heating Systems			
Boilers & Steam generators			Criteria 2 .b - Not Applicable
Humidifiers			Criteria 2.b - Not Applicable
Supply Side Measures			
Water Reuse Systems	X		Criteria 1.a – non potable irrigation system
Large irrigation reuse/non-potable	X		Criteria 1.a – non potable irrigation system – golf course
Indirect potable reuse		X	Criteria 3 – continues to be evaluated - - part of the Water Infrastructure Planning Study (WIPS)
Distribution System Efficiency			
Leak repair	X		Criteria 1.a
Removal of phreatophytes			Criteria 2 .a – Not Applicable, ground water system
Source optimization & Temporary Transfers from AG			
Conjunctive use	X		Criteria 1.a - Continually evaluated as a source optimization alternative in the Long Range Planning Study
System integration w/ others	X		Criteria 3 – evaluated in WIPS
Dry year leasing		X	Criteria 3 – Arkansas River - Supper Ditch Study
Rotational fallowing		X	Criteria 3 – Arkansas River - Supper Ditch Study

Table 5-2 Selected Conservation Measures and Programs

Measure	Already Implemented	Further Evaluation Needed	Comments
Demand Side Programs			
Rate Structures & Billing Systems Designed to Encourage Conservation			
Volume billing	X		Criteria 1.a
Conservation rate structure	X		Criteria 1.a
Increased billing frequency	X		Criteria 1.a – monthly billing system
Meter testing and replacement	X		Criteria 1.a
Education/Information Dissemination			
Public education	X	X	Criteria 1.a & 3– expand PR program
Water-saving demonstrations	X		Criteria 1.a – Demonstration garden
School programs	X	X	Criteria 1.a & 3 - Yearly water poster contest. Evaluating expanding to water education unit.
Informative & understandable bill	X		Criteria 1.a – new billing system. Evaluating capabilities of expanded billing system
Water bill inserts	X	X	Criteria 1.a – evaluate expand education/information programs
Website	X		Criteria 1.a
Local media outreach	X		Criteria 1.a
Collaboration with others	X		Criteria 1.a – Member of the Pikes Peak Regional Water Authority. WIPS report
Technical Assistance			
Customer water use audits	X	X	Criteria 1.a - Expand existing “In house staff - high bill notification program”. Evaluate contracting with established Water Audit contractors.
Targeted at large landscapes	X	X	Criteria 1.a - Expand existing “In house staff - high bill notification program”. Evaluate contracting with established Water Audit contractors.
Residential audits	X	X	Criteria 1.a - Expand existing “In house staff - high bill notification program”. Evaluate contracting with established Water Audit contractors.
Commercial audits	X	X	Criteria 1.a - Expand existing “In house staff - high bill notification program”. Evaluate contracting with established Water Audit contractors.
Technical workshops		X	Criteria 3 – evaluate as part of total education/information program
Water conservation expert	X		Criteria 1.a employ “utility management consultants.”Administrative demands handled with present staff.

Table 5-2 Selected Conservation Measures and Programs

Measure	Already Implemented	Further Evaluation Needed	Comments
Regulations/Ordinances			
Addressing Fixtures & Appliances			
Standards for fixture/appliance	X		Criteria 1.c
Time of sale upgrades			Criteria 2.a - Not Applicable
Addressing Landscapes			
Turf restrictions		X	Criteria 3 – pilot program to design and evaluate alternative rebate programs for “water wise” landscape designs.
Landscape design/layout		X	Criteria 3 – pilot program to design and evaluate alternative rebate programs for “water wise” landscape designs.
Soil preparation		X	Criteria 3 – pilot program to design and evaluate alternative rebate programs for “water wise” landscape designs, and individual assessment of like programs
Irrigation equipment		X	Criteria 3 – pilot program to design and evaluate alternative rebate programs for “water wise” landscape designs.
Irrigation time restrictions	X		Criteria 1.a & 1.d – Mandatory Summer Water Use Program
Water waste prohibition	X		Criteria 1.a - water waste ordinances
Incentives			
Rebates	X		Criteria 1.b – Rebate Program
Giveaways		X	Criteria 3 – evaluate existing programs
Supply Side Programs			
Distribution System Efficiency			
Analysis of non account water	X		Criteria 1.a
Improved water accounting	X		Criteria 1.a - added information with new billing system
Leak identification	X	X	Criteria 1.a – Pilot sonic leak detection
Metering			
Meter source water	X		Criteria 1.a & 1.b – completed in 2007
Sub-metering multi-family	X		Criteria 1.a
Irrigation only metering	X		Criteria 1.a
Meter testing and replacement	X		Criteria 1.a – prioritized with information from billing system

Programs Eliminated by Criteria 2

The only measures/programs eliminated by Screening Criteria 2 as “Not Applicable” were:

- 2.a Not Conducive with District’s water system or Community Values:
 - Waterless toilets and urinals.
 - ◆ Not an accepted community practice.
 - Removal of phreatophytes
 - ◆ The District relies on groundwater that is delivered through a closed-pipe system. Removal of phreatophytes is not applicable.
 - Regulations/Ordinances for upgraded fixture & appliances at Time-of-Sale.
 - ◆ The District offers a number of rebates for replacing fixtures and appliances with more efficient models. This voluntary approach is more acceptable by the District than establishing time-of-sale mandates.
- 2.b Not Cost-Effective, lack of applicable system demands.
 - Commercial water efficiency processes
 - ◆ Less than 11% of the District’s total demand is used to supply the demands for the two combined customer classes of Commercial and Schools. The only Lodge in the District took advantage of the Low-Flow Toilet rebate program in 2009 and retro-fitted all of their units. Lewis-Palmer, the older of the two High Schools in the District, utilizes non-potable supply for all of its irrigation needs, including its athletic field complex. The Palmer Ridge High School, opened in 2008, was designated as an energy star rated “Green Building”.

While the District will continue to monitor all of its customers for excessive use, specific programs related to Commercial Efficiency have not been prioritized in the initial plan.
 - Water Decorations and Fountains, Cooling mist systems, Pool Covers and Commercial Car Washing Recycling.
 - ◆ Demands either non-existent or extremely small.
- 2.c Not an adopted standard utility practice, unproven water saving effectiveness.
 - Hot water recirculation system, Tankless hot water heater.

Further Evaluation – Criteria 3 (new programs)

The following measures/programs were judged to warrant further evaluation through on-site “pilot” testing or assessment of other water providers’ existing programs to determine the cost and effectiveness before implementing or discarding the new program.

- Incentives – “Giveaway” water efficiency products kits.
 - Review Kit give-away programs. The “free” kit give-away program not only distributes conservation products, it is also a low- cost means of advertising and drawing the customer’s attention to a utilities overall conservation program.
- Source optimization & Temporary transfers from AG.
 - As a member of the Pikes Peak Regional Water Authority, the District is consulting with the Arkansas River’s Super Ditch District for an alternative surface water supply. The program envisions developing the water supply through Following/Dry year leasing with the farming community along the lower Arkansas River.
- Addressing Landscapes - Landscape and Irrigation Efficiency.
 - The District will “pilot” a program with a limited number of new homes to evaluate the water savings and related costs associated with Water-Wise landscape designs. The designs will include measures such as soil preparation, turf restrictions, native and low-water using plants and high efficiency irrigation systems. Results from this study will be evaluated to consider a partnership with builders to design a “water-wise” lower water demand home partially financed with a lower water utility system development charge.
 - Existing Water Providers’ Utility Weather Based Irrigation Scheduling Systems and Soil Amendment Programs will be assessed and considered for inclusion in the rebate program.

Further Evaluation – Criteria 3 (expand existing programs)

The District will evaluate the cost, and where applicable, water savings associated with expanding or enhancing the following existing programs.

- Education/Information Dissemination.
 - Expand conservation information available on website and increase number of water bill inserts, public meetings and technical workshops.
- School Program.
 - Continue yearly “water” poster contest - Add water education program.
- Water Use Audits.
 - Continue in-house staff administrated high bill notification program – evaluate contracting with professional water audit contractor.
- Leak Identification.
 - Continue current numerically driven accounting system – 2010 Pilot sonic leak detection program.

Select Conservation Measures and Programs

Table 5-2 presented the conservation measures and programs “Already Implemented”, those recommended for “Further Evaluation” and judged as “Not Applicable” and eliminated from further consideration.

Measures and Programs Recommended for “Further Evaluation”

Table 6-1 summarizes those measures and programs which have been recommended for “Further Evaluation”. In most instances the added measures will be designed to augment existing programs; promoting efficiency in administrative costs and assuring comprehensive and effective measures.

Estimated Cost and Water Savings

The District is mindful of the costs associated with its conservation/demand management program. However, the District is only now beginning to accumulate sufficient amounts of actual historic water use data to allow for a reasonable cost-benefit analysis. The Monitoring and Evaluation program, page 8-4, will be developed in 2011 and projections based on the collected data will be included in the up-date of the Long Range Planning Study. Individual conservation program cost-benefit analysis will be included in revisions to the Conservation Plan.

Evaluation Criteria

The District is faced with replacing their present-day dwindling ground water supply. Options for securing a renewable water resource are being evaluated. The prolonged time frame and high costs associated with development are now becoming evident. It is clear to the District that all practical conservation programs, that have been demonstrated capable of optimize supply and lowering present and projected demands, must be considered.

Table 6-1 Measures/Programs Recommended for “Further Evaluation”

Conservation Measure/Program	Combine with Existing and Expanded Programs	Type of Evaluation
Incentives		
Conservation Kits (Give-aways)	Audit program, Workshops/Public meetings and School program	Learn From Others
Toiler retrofit devices		
Faucet aerators		
Dye tablets – toilet leaks		
Irrigation/rain gauge		
Education/Information		
Water bill inserts	Capitalize on “New” billing system added capabilities	Expand Program
Water use audits	Existing staff administered program	Expand Program Contracting for Audits
School Program	Annual Poster Contest	Expand Program Water Education Program
Distribution Efficiency		
Sonic Leak detection program	Non-accounted water evaluation	Pilot Study
Irrigation Efficient		
Rebate Program		
ET controllers – Central control systems – Soil moisture sensors		Learn From Others
Landscape Efficiency		
Landscape design/layout	Rebate Program	Pilot Study Decreased Tape Fee
Turf restrictions		
Low-water use vegetation		
Irrigation equipment		
Drip irrigation		
High efficiency nozzles		
Soil Preparation / Mulching	Rebate Program	Learn From Others
Supply Side Measures/ Source Optimization		
Long Range Planning Report		District’s Ongoing Evaluation of Alternative Resource Initiatives
Indirect potable reuse		
Conjunctive use		
Dry year leasing		
Rational fallowing		

The District has selected four approaches for conducting their “Further Evaluation” process:

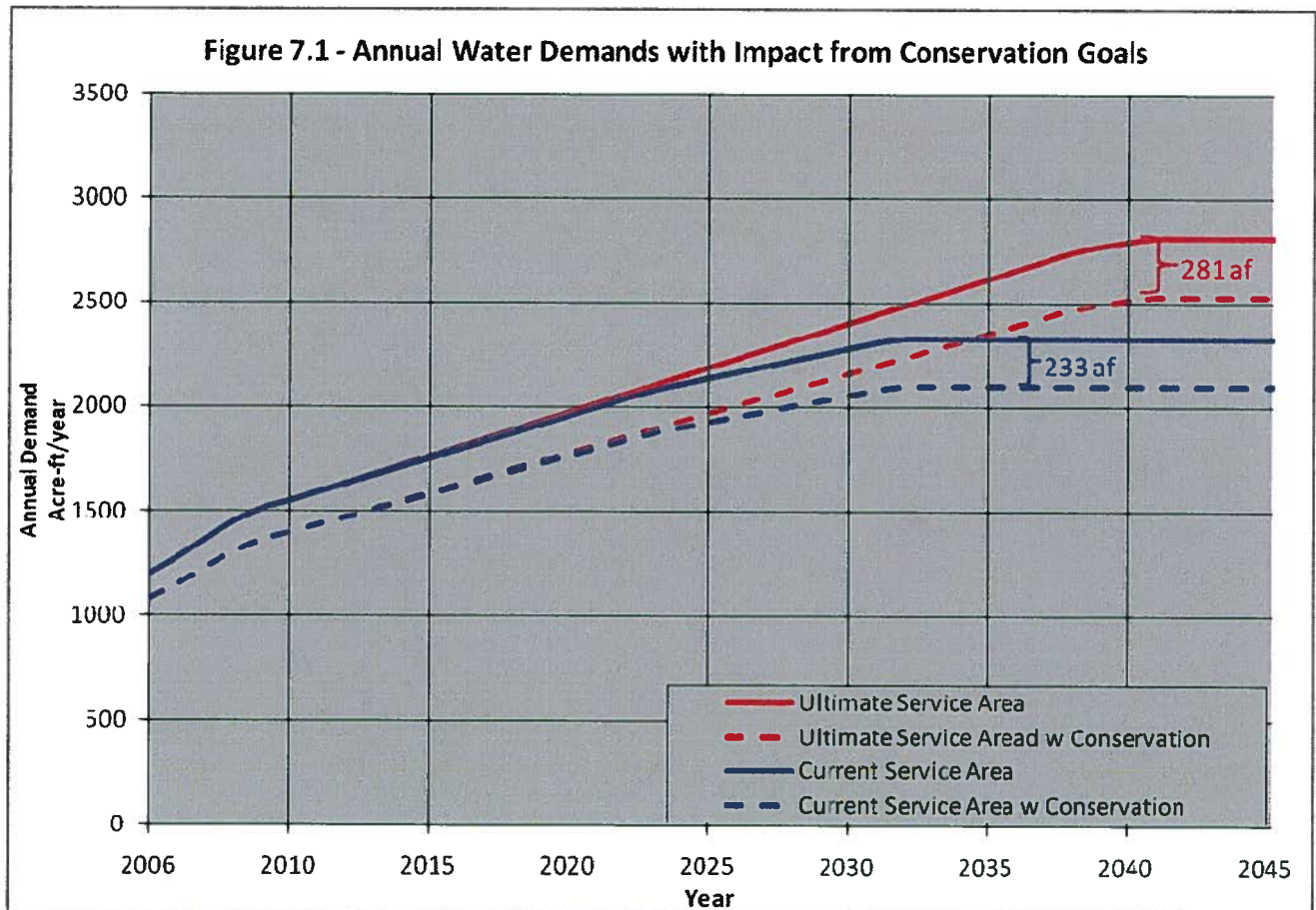
- Long Range Planning Program – On-going consideration of alternative renewable resource initiatives while developing “site specific projects” to optimize existing supplies.
- Expand Existing Programs – Evaluate programs to augment some of the District’s existing Education / Information programs.
- Learn From Others - Review “like programs” that are a proven successful element of other utility’s water conservation programs.
- Pilot Programs - Design and implement programs, on a controlled base, to understand costs, opportunities for success and projected water savings.

Modified Demand Forecasts

The Conservation Measures and Programs identified in Section 5 are expected to support the Demand Reduction Goals discussed in Section 4.

Annual Demand Reduction

Figure 7-1 shows the projected annual water demands with and without conservation. This initial Conservation Program targets a 10% decrease in the projected total average annual water demand. Water savings of 233 AF and 281 AF acre feet per year would be realized by the two alternative service area buildout scenarios.



Max Day Demand Reduction

The conservation program also targets a goal of reducing the summer irrigation max-day demand by 15%. The District has established irrigation days per week and time-of-day watering programs in an effort to immediately achieve that goal. The program savings will be documented in up-dates of both the LRP and the Conservation Plan.

Reduction of Project Demands for New Customers

As savings from the various water conservation programs are realized and confidence in the sustainability of lower demands are secure, it is also a future goal to decrease projected water demand per new SFE from 0.5 acre-ft/acre/year to 0.37 acre-ft/acre/year, a reduction of 25%.

Revenue Effects

Revenues will decline as water savings from the conservation programs are realized. However, the decline in revenue will be offset by lower operation costs and delay in, or elimination, of some of the investments now projected for expansion of growth related infrastructure.

The District evaluates and adjusts rates annually. Many of the conservation measures have been on-going for a number of years and others were adopted prior to the 2007 load season. Revenue effects associated with on-going conservation would be difficult to quantify.

Implementation and Monitoring Plan

This section provides a schedule of times when the selected conservation measures and programs are to be implemented along with the public participation and monitoring processes. Also discussed is the timing for updating and revising the Plan.

Implementation Schedule

Table 8-1 provides an Implementation Schedule for the selected conservation measures and programs. A number of new measures and programs are to be evaluated or piloted during 2010 - 2011. Implementation of any new programs or expansion of existing programs will be determined in conjunction with a total evaluation of the effectiveness of the Plan. Key actions required to initiate and or continue existing programs are provided.

Table 8-1 Implementation Schedule for Measures and Programs

Measure/Program	Required Action	Notes
Rebate Programs – Indoor Fixtures and Appliances		
Low-Flow Toilets	Continue to advertise/offer rebates: Newsletters, bill inserts and website. Evaluation of cost/benefit	Existing Measure Ongoing 3rd quarter 2011
High Efficiency Toilets (HET)	Continue to advertise/offer rebates: Newsletters, bill inserts and website. Evaluation of cost/benefit	Existing Measure Ongoing 3rd quarter 2011
Low-Flow Showerheads	Continue to advertise/offer rebates: Newsletters, bill inserts and website Evaluation of cost/benefit	Existing Measure Ongoing 3rd quarter 2011
High Efficiency Clothes Washer	Continue to advertise/offer rebates: Newsletters, bill inserts and website. Evaluation of cost/benefit	Existing Measure Ongoing 3rd quarter 2011
High Efficiency Dishwasher	Continue to advertise/offer rebates: Newsletters, bill inserts and website. Evaluation of cost/benefit	Existing Measure Ongoing 3rd quarter 2011

Table 8-1 Implementation Schedule for Measures and Programs

Measure/Program	Required Action	Notes
Rebate Program – Outdoor Fixtures		
Rain Shutoff Device	Continue to advertise/offer rebates: Newsletters, bill inserts and website. Evaluation of cost/benefit	Existing Measure Ongoing 3rd quarter 2011
Irrigation Controller	Continue to advertise/offer rebates: Newsletters, bill inserts and website. Evaluation of cost/benefit	Existing Measure Ongoing 3rd quarter 2010
New Program – Weather Based (ET) Irrigation Scheduling Systems	Assessment of like programs. Evaluation of available equipment, customer participation and resulting water savings	2011
New Program - Residential-Water-Wise Landscaping design	Pilot – limited / controlled study to evaluate water savings with alternative landscaping designs and irrigation system efficiency	2012
New Program – Soil Amendment Requirement	Assessment of like programs. Discussions with local Landscape Architects, Developers and Home Owners Association	2012
Conservation Rate Structure		
Increasing Block Rate Structure	Expand notification / explanation of rate structure in newsletters, bill inserts and website.	Existing Measure. Yearly review of demand allocations, and cost-of-service
Water Loss and Leak Detection Programs		
Water Waist Ordinance	Continued enforcement	Existing Measure Ongoing
Unmetered Water	Continue accounting of unmetered water and replacement and repair program	Existing Measure Ongoing
New Program - Sonic Leak Detection Program	Pilot – program / cost benefit evaluation	2010
Public Education Program		
Augment Existing Programs	District retained a Public Relations Firm to assist in designing and expanding customer information programs	2011 Ongoing
School Education Program	Continue Poster Contest and work with School District to expand and pilot accompanying water curriculum	2010/2011
Residential Indoor and Outdoor		
Augment Existing Water Audit Program	Expand “high bill” notification to include staff contact for a review of water use	2010
New Program - Residential Water Audit programs. Indoor Use and Irrigation Efficiency	Evaluate cost/benefit of hiring a private company to conduct water efficiency audits	2011
New Program - Commercial Indoor Audits	Evaluate cost/benefits of like programs. “Outcome” design of a Commercial rebate program	2011
New Program – Residential Water Conservation Kits	Evaluate cost/benefits of existing programs. “Outcome” offered /distribute kits to residential customers.	2011

Table 8-1 Implementation Schedule for Measures and Programs

Measure/Program	Required Action	Notes
Reuse		
River Exchange	Optimize available effluent exchange credits. Expand non-potable irrigation system and ability to store water in Woodmoor Lake	Expansion of Existing Measure Ongoing
Indirect Potable reuse	Optimize available effluent credits through advanced wastewater treatment and dilution with run-of-the-river raw water.	Continuation of WIPS supply alternative evaluations

Public Participation

The District’s customers play the key role in assuring success of the conservation plan. The effectiveness of the plan depends on how the public responds to the individual measures and programs. In 2007, the District formalized its conservation program to include rebates and irrigation scheduling. Customers have not only become accustomed to those conservation/demand management concepts they have also become more aware of the other on-going conservation activities and information made available through the District’s bill stuffers and on the website.

The District is committed to engaging their customers in its conservation planning and Plan design. This on-going dialog will include the evaluation of present and alternative programs and suggestions on how to more effectively communicate and publicize those programs.

The Plan will be announced via the District’s newsletters and billing inserts, published on the District website and noticed in the local newspapers. Hard copies of the Plan will be available for review at the District office. CD-copies of the plan will be distributed to customers on request. The District will ask for feed-back with all publications of the Plan. Once the customers have had ample time to review and comment on the Plan, the District will assess the interest in convening a public meeting to formally solicit feedback and discuss the effectiveness of the present measures. The District will also seek ideas and initiatives for future evaluation. On-going information concerning the Plan, adoptions of new measures and monitored results of existing programs will be publicized through these same mediums.

Monitoring and Evaluation

Understanding the success and acceptance of the Water Conservation Plan depends on establishing an effective monitoring and evaluation process, combined with a program that constantly solicits customer feedback.

Monitoring of the District's Water Conservation Program will be accomplished in a variety of ways all derived from the tracking of total daily water production, participation rates in the various programs and documentation of feedback from the District customers. As the District continues to gather historic information, correlation between water demands and conservation measure and programs will be established. The results from this evaluation will provide the District with the data to accurately quantify the effectiveness of the Plan. Due to the short implementation period of the formal conservation and demand management programs, the "wetter than average" weather and the slowdown in building and economic growth within the District, the current evaluation process is limited because of insufficient data.

The total costs associated with each program will also be collected. Expenditures associated with staff time, rebates, employment of consultants i.e. "home audit programs" – "sonic leak detection" and costs to support a viable ongoing public education / information program will be documented. This information combined with actual, program-specific, water savings will allow for the evaluation of a cost-benefit ratio to validate the success of each measure.

For those demand management programs (watering days and time-of-day restrictions) primarily designed to decrease max-day demands, the District staff will monitor total system-wide demands and individual customer use throughout the summer irrigation season.

Updating and Revising the Plan

While the Conservation Plan is viewed as a "dynamic document", with revisions being made as programs are eliminated, added or enhanced; a Formal Plan Update will be done at intervals in conjunction with the District's update of their LRP, approximately every three to five years. The next update is scheduled for 2013.

Plan Adoption

The elements of the District's Current Water Conservation Plan, summarized in Section 1, were adopted by Board action on the 21st of March, 2007. Those programs remain active today and are expected to continue into the future.

The concepts developed in this 2010 Conservation Plan have been accepted by the District Board. Final adoption of the plan will be made following the public review and comment period – Board action projected for March, 2011.

WOODMOOR
Water & Sanitation District No. 1

