

## E. SERVICE AREA POPULATION

The estimated population of the Northern Division, by Service Area, in 2000 and 2005 and projected population in succeeding 5-year intervals until 2025 are shown in Table 3.

<b>TABLE 3</b> <b>EXISTING AND PROJECTED POPULATION</b> <b>NORTHERN DIVISION</b> <b>By Service Area</b>						
<b>Service Area</b>	<b>2000</b>	<b>2005</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>
Antelope	25,250	25,880	26,527	26,792	27,059	27,329
Lincoln Oaks	35,970	36,869	37,790	38,169	38,550	38,935
Arden	2,397	2,456	2,517	2,542	2,568	2,594
Suburban/Rosemont	49,754	49,882	51,810	52,538	54,269	55,398
Parkway	47,085	53,735	55,787	56,848	57,817	59,012
West Placer	0	1,600	4,750	9,500	16,250	25,000
Security Park	0	0	0	1,300	2,500	4,000
Walnut Grove	466	477	489	500	515	525
Isleton	857	879	1,800	2,100	2,300	2,500
<b>TOTAL</b>	<b>161,779</b>	<b>171,778</b>	<b>181,470</b>	<b>190,289</b>	<b>201,828</b>	<b>215,293</b>
Sources: Citizens Utilities Company, <i>Urban Water Management Plan</i> , 2000 Brown and Caldwell, <i>Parkway Water System Master Plan</i> , September 2003 West & Yost, <i>Suburban-Rosemont Systems Water Supply Plan</i> , 2000. A. Soulé, California-American Water Company Donaldson Associates						

## **IV. PAST, CURRENT, AND PROJECTED SOURCES OF SUPPLY AND WATER DEMAND**

### **A. SOURCES OF SUPPLY**

#### **1. GROUNDWATER AND CONJUNCTIVE USE**

##### **Central Sacramento Groundwater Basin**

The Northern Division's Parkway, Suburban and Security Park service areas are predominately supplied with groundwater pumped from the Central Sacramento Groundwater Basin. Together they account for about 58% of the Division's total production requirement. The Central Basin lies between the American River on the north, the Cosumnes River on the south, Interstate 5 and the Sacramento River on the west and the area where the Sierra Nevada foothills begin to rise up from the floor of the Central Valley on the east. The Central Basin is not an adjudicated groundwater basin. The Central Sacramento County Groundwater Forum was formed in 2000 to bring stakeholders together to develop a Groundwater Management Plan. Cal-Am has participated in those efforts. It is anticipated that a Joint Powers Authority will be formed in late 2006 to better manage the area's groundwater resources.

Historically, groundwater elevations in the Central Sacramento Groundwater Basin declined 20 to 25 feet per decade between 1950 and 1980, from about -20 feet mean sea level (msl) to -90 msl. Levels stabilized in the early 1980's and by 1990 and then appear to have recovered to a range of between elevation -65 and -75 msl.<sup>1</sup>

Studies completed through the Groundwater Forum effort have determined that the Central Basin has a sustainable yield of about 273,000 AFY. In the 1970's, estimated withdrawals from the basin exceeded this level in most years, and groundwater levels dropped significantly. While groundwater demand varies based on annual weather conditions, withdrawals from the Basin generally declined in the 1980's and 1990's with an estimated withdrawal of about 250,000 AF in 1990 and 215,000AF in 1995. Annual withdrawals in recent years are estimated at about 190,000 acre-feet per year.

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<sup>1</sup> Central Sacramento County Groundwater Forum, *Groundwater Digest*, September 2003, p. 2-2.

In 1985 the Sacramento County Water Agency created "Zone 40", a zone in Sacramento County for which a conjunctive use program would be developed to protect the long-term viability of the Central Groundwater Basin. A conjunctive use program involves the coordinated management of surface water and groundwater supplies to increase the yield and reliability of both. Conjunctive use is intended to increase total supplies and enhance water supply reliability by utilizing more surface water and recharging groundwater basins in wet years, while increasing the reliance on groundwater during dry years. Cal-Am's Parkway system is located within the boundaries of the Central Basin, adjacent to Zone 40. In 2003 about 10% of the water supplied to the Parkway system was surface water, supplied by the City of Sacramento, while in 2004 about 18% of Parkway's supply was surface water.

The Sacramento County Water Agency's plan for Zone 40 calls for acquiring long-term rights for up to 78,000 AFY of surface water from multiple sources including the Central Valley Project, intermittent wet year surplus supplies and water from City of Sacramento water rights. With these programs, plus conservation and water recycling efforts, the Groundwater Forum has determined that the groundwater basin can be sustained over the long term, while accommodating future water demands from population growth and changes in land use.

### **North Sacramento Area Groundwater Basin**

The North Sacramento Area Groundwater Basin is the predominant source of water for the Northern Division's customers north of the American River. This would include the Antelope, Lincoln Oaks and Arden service areas, accounting for about 41% of the Division's total water needs.

Historic groundwater level trends have varied between sub-areas of this groundwater basin. In the North Central sub-area, where Cal-Am's Antelope service area is located, groundwater levels dropped about 17 feet per decade between 1950 and 1990 and have subsequently stabilized at about 40 feet below msl from 1990 to the present. In the South-Central sub area, where Cal-Am's Arden service area is found, groundwater levels are characterized as gently to moderately declining over time, having dropped about 20 feet over a 34-year period ending in

2002.<sup>1</sup> In recent years, groundwater level decline rates have moderated and in many wells water levels have stabilized.

The basin is managed by the Sacramento Groundwater Authority (SGA), a Joint Powers Authority formed by the Cities of Sacramento, Folsom, Citrus Heights and Sacramento County. Fourteen local water purveyors, including Cal-Am are represented on the Board of Directors of the JPA, which facilitates cooperative decision-making in the operation of the groundwater resource. The SGA's Groundwater Management Plan<sup>2</sup> covers the portion of the larger groundwater basin (known by the Department of Water Resources as the North American Sub basin) that lies within Sacramento County. The management area extends north and west of the American River east to the Sacramento River. The Placer County line forms the northern boundary. Cal-Am operates approximately 50 groundwater wells in the SGA management area, which have historically supplied virtually all of its water production needs for the Antelope, Lincoln Oaks and Arden service areas.

Four water purveyors within the SGA have surface water rights on the American River, two water purveyors have water supply contract entitlements with the U.S. Bureau of Reclamation and two water purveyors have water rights on the Sacramento River. American River surface water is available for use in Cal-Am's Arden Service Area, which is in the authorized Place of Use (POU) for City of Sacramento's water rights. Central Valley Project water is available for use in Cal-Am's Antelope and Lincoln Oaks Service Areas, indirectly through the Placer County Water Agency which provides water to the Sacramento Suburban Water District (SSWD), whose POU authorizations cover these Cal-Am service areas. Cal-Am has recently signed a water delivery agreement with SSWD for delivery of surplus treated surface water for conjunctive use.

The Groundwater Management Plan recommends an average annual sustainable yield within the groundwater area of 131,000 acre-feet. In order to sustain the viability of this groundwater resource, the Plan recommends conjunctive use of ground and surface water resources, conservation to reduce overall demand over time, and water recycling for landscape plant

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<sup>1</sup> Sacramento Groundwater Authority, *Groundwater Management Plan*, December 2003, pps 15, 17.

<sup>2</sup> Sacramento Groundwater Authority, *Groundwater Management Plan*, 67 pps. plus appendices, December 2003.

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irrigation. Over \$21 million of capital investments in new wells, interconnection and transmission pipelines, booster pump stations and other facilities have been installed under the Plan to facilitate regional implementation of the conjunctive use objectives.

The mixes of surface water/groundwater resources necessary to meet projected 2030 demands are presented in the Plan. In all, approximately 222,060 AF of surface water would be used in average/wet years, while groundwater extractions would be correspondingly reduced, well below the sustainable yield of 131,000 AF. This would allow the groundwater basin to naturally recharge in years of average or high precipitation.

In drier years, surface water use would range from 138,730 to 169,140 AF, determined on a sliding scale based on inflow to Folsom Reservoir. Groundwater extractions would increase to 102,110 to 132,520 AF in these years. In the driest years, surface water supplies would be at the minimum, 138,730AF, and groundwater supplies would be at the maximum, 132,520 AF. It is noted that this is higher than the sustainable yield of the groundwater basin, but it is considered a manageable amount, because these high withdrawals would not occur regularly.

Full implementation of the Plan would affect Cal-Am in that all three service areas overlying the Basin (Antelope, Lincoln Oaks and Arden) could be participants in the conjunctive use programs, using water purchased wholesale from surface sources in average and wet years, and relying on groundwater exclusively only in the driest years. The Division has capital projects planned or underway that will interconnect the Antelope and Arden systems to the Sacramento Suburban Water District and the City of Sacramento systems, respectively. These projects include interconnection pipelines, booster pump stations, and related facilities, involving investments of over \$2,000,000.

## **2. SURFACE WATER**

The West Placer service area is the only portion of the Northern Division that relies exclusively on surface water. Cal-Am is a franchised water retailer for the West Placer service area, which is small today, but will eventually grow to a population of up to 60,000 people. Filtered and chlorinated water is supplied to Cal-Am by the City of Roseville from the Placer County Water Agency (PCWA), which has American River water rights. The PCWA diverts, stores, and treats

the water prior to transporting the water to Cal-Am's distribution system in the West Placer area via the City of Roseville system.

Newly developing areas in the West Placer Service area are also being provided with recycled water from the City of Roseville's Dry Creek wastewater treatment plant. The recycled water primarily is used for irrigation of landscaping in parks, street medians, golf courses and open space areas.

## **B. SUMMARY OF CURRENT AND PROJECTED DEMAND AND SUPPLY**

### **1. DIVISION-WIDE DEMAND AND SUPPLY**

Table 4 projects the Northern Division's current and planned water supplies over the coming 20 years. As can be seen, Cal-Am will continue to rely primarily on groundwater produced from Company-owned wells, although to a lesser extent than in the past. Cal-Am does not plan to develop surface water diversion and treatment facilities in the Northern Division, but plans to distribute surface water produced and treated by other suppliers. The West Placer service area will be supplied exclusively with surface water from the Placer County Water Agency. Other areas may be supplied with surface water pursuant to regional conjunctive use programs via transfers or exchanges with agencies holding surface water rights (City of Sacramento, Sacramento Suburban Water District, PCWA, and others) provided that water supply agreements can be reached with other water purveyors and CPUC approval of implementation costs is granted. Table 4 shows the proportions of ground water to surface water that are potentially available in average or wet years. Larger amounts of groundwater will be produced and distributed by Cal-Am in dry or very dry years. Table 5 describes water supply and demand management programs that may be implemented by Cal-Am in the future, contingent on:

- Negotiation of mutually beneficial and equitable wholesale water supply agreements with other water purveyors in the Sacramento area.

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- Approval of programs and water supply agreements by the California Public Utilities Commission, including appropriate water rate adjustments associated with program costs.

This Urban Water Management Plan, as a planning document, is subject to change in the future to adjust for changing conditions, regulations, and new information as it becomes available. It does not represent a commitment on the part of Cal-Am to implement any of the specific programs or actions described herein.

Cal-Am does not operate wastewater collection and treatment systems in its service areas and will not be supplying recycled water to its customers. However, it is being developed by other agencies in the region, and will be used for irrigation, indirectly benefiting Cal-Am and its customers. New subdivisions in the West Placer Service Area will be constructed with both recycled and potable water distribution systems. Cal-Am will be supplying the potable water and the recycled water will be supplied by the City of Roseville.

The Sacramento Regional County Sanitation District (SRCSD) is developing a Water Recycling Opportunities Study (WROS) which will examine water recycling opportunities within the Sanitation District's service area. Cal-Am's Security Park service area lies within a portion of the Rancho Cordova planning area that could potentially be served with recycled water. Additionally, a feasibility study with the City of Rancho Cordova and the County Water Agency will develop a more detailed analysis of the viability of providing recycled water to this area. The study would also investigate the possibility of initially charging the system with remediated water until such time as a recycled source is developed.

There are no plans for supplying desalinated water by Cal-Am or other purveyors in the region.

**TABLE 4**  
**SUMMARY OF CURRENT AND PROJECTED DEMAND AND**  
**SOURCES OF WATER SUPPLIES (AFY)**  
**Average and Wet Years**

<b>Year:</b>	<b>2005<sup>1</sup></b>	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>
Projected Demand: <sup>2</sup>	47,620	50,800	53,300	56,500	60,300
<b>Projected Supply, by Source:</b>					
Cal-Am Groundwater	44,161	39,600	35,4500	32,400	30,500
Wholesale Purchases:					
Placer County Water Agency (West Placer Service Area)	600	1,700	3,500	5,900	9,000
City of Sacramento (Parkway) <sup>3</sup>	2,420	3,500	3,500	4,000	4,500
Sacramento Suburban W D (Lincoln Oaks and Antelope Interties) <sup>4</sup>	439	1,500	2,000	2,500	3,000
Sacramento County (Security Park)	0	0	350	700	1,100
City of Sacramento (Arden Intertie) <sup>5</sup>	0	500	700	1,000	1,000
City of Sacramento (Suburban/Rosemont) <sup>7</sup>	0	4,000	7,800	10,000	11,200
Transfers and Exchanges	(See Wholesale Purchases, above. Transfers and exchanges of water occur pursuant to conjunctive use agreements.)				
Cal-Am Surface Diversions	0	0	0	0	0
Recycled Water (by Cal-Am) <sup>6</sup>	0	0	0	0	0
Desalination	0	0	0	0	0
Total Water Supply w/o Conservation	47,620	50,800	53,300	56,500	60,300
Estimated Conservation Savings w/ Meter Retrofit & Conservation Efforts	-	2,100	3,300	4,000	4,800
Total Water Demand w/ Conservation	47,620	48,700	50,000	52,500	55,500

## Water Supply and Demand

<sup>1</sup>Estimated from actual 2004 data.

<sup>2</sup> Projected demands are without Conservation efforts. See estimated Conservation savings with Meter Retrofit and other Conservation programs implemented, at the bottom of the Table.

<sup>3</sup>Assumes the Parkway service area will use about 27% surface water in future wet and average years.

<sup>4</sup>Assumes that the Lincoln Oaks and Antelope service areas will use about 16% surface water from Sac Suburban W. D. in future wet and average years.

<sup>5</sup>Assumes the Arden service area will use about 50% American River surface water exclusively in future wet and average years.

<sup>6</sup> Does not include recycled water provided by others for irrigation or groundwater recharge, including Roseville's supply to the West Placer Service Area or the potential for recycled water in the Security Park Service Area as a part of SRCSD efforts.

<sup>7</sup>Assumes the Suburban/Rosemont system will use about 50% surface water by 2025.

## **2. WATER USE BY CUSTOMER TYPE – PAST, CURRENT AND FUTURE**

Table 5 summarizes past, present and projected future water use by customer type for the Northern Division.

Most of the growth in the Northern Division is expected to occur in West Placer service area, where the Division estimates that there will be about 2,250 new connections by 2010, continuing with an average of 500 new connections a year until 2025. The Parkway service area is also expected to experience notable growth over the coming 20 years, and the projections in Table 5 are based on the upper range estimates presented in the Parkway Water System Master Plan (2003). The remaining service areas have shown little growth in the past five years and are mostly built-out. In those areas, the projections assume that residential connections will increase by only 1% each 5-year period, while the commercial sector is projected to grow more rapidly, at about 2.5% for each period.

Currently about 90% of the residential connections in the Northern Division are unmetered, as most of the system was built at a time when local ordinances prohibited the installation of residential water meters. A meter-retrofitting program is underway, and the greatest change projected in Table 5 will be the shift from unmetered to metered residential accounts. The Company is currently investing over \$2 million a year in meter installations and by 2025, Cal-Am estimates that all residential accounts will be retrofitted as required by AB 2572. Division data indicates that, on average, metering results in a conservation savings of about 8 %<sup>1</sup>, equivalent to a cumulative consumption reduction of over 1,200 acre-feet a year by 2025.

## **3. SUPPLY RELIABILITY**

Cal-Am operates over 100 wells in the Northern Division with a theoretical functional capacity of at least 100,000 AFY<sup>2</sup>, which exceeds current and projected demand. In some locations,

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<sup>1</sup> HDR, *Meter Installation Program for the Sacramento District*, June 2003, pp. 3-1.

<sup>2</sup> Citizens Utilities of California, *Urban Water Management Plan*, December 2000, p. 3-14.

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however, peak hour and peak day demands approach the capacity of the local wells and/or transmission mains.

TABLE 5 PAST, CURRENT AND PROJECTED WATER DELIVERIES AND PRODUCTION BY CUSTOMER CATEGORY (AFY)							
Category		2000 <sup>1</sup>	2005 <sup>1</sup>	2010	2015	2020	2025
Residential- Unmetered	# of Accts.	46,810	46,210	35,000	16,000	3,000	0
	Sales (AFY)	27,670	26,830	20,500	9,400	1,750	0
Residential- Metered <sup>2</sup>	# of Accts.	3,320	5,670	25,800	47,900	64,950	72,700
	Sales (AFY)	1,790	3,110	11,700	24,700	34,900	39,800
Commercial	# of Accts. <sup>3</sup>	4,810	4,850	5,100	5,225	5,350	5,490
	Sales (AFY)	12,140	12,050	12,755	13,080	13,400	13,740
Public Authorities	# of Accts.	86	87	91	93	95	97
	Sales (AFY)	870	1,105	1,040	1,060	1,080	1,105
Sales to Other Agencies		0	0	Would occur in dry years in accordance with conjunctive use agreements.			
Groundwater Recharge		0	0	Passive recharge in wet years.			
Conjunctive Use		0	0	Will vary depending on rainfall and snow pack. Will involve purchases of surface water in wet years and sales of groundwater in dry years.			
Raw Water		0	0	0	0	0	0
Recycled Water		0	0	0	0	0	0
Saline Barriers		0	0	0	0	0	0
Other: Construction, Fire, Misc.		44	45	48	50	52	55
Total Customer Demand		42,515	43,140	46,025	48,300	51,200	54,700
Unaccounted-for Water <sup>4</sup>		4,410	4,480	4,775	5,000	5,300	5,600
Total Water Production <sup>5</sup>		46,925	47,620	50,800	53,300	56,500	60,300
Estimated Conservation Savings w/ Meter Retrofit & Conservation Efforts		-	-	2,100	3,300	4,000	4,800
Total Water Demand w/ Conservation		46,925	47,620	48,700	50,000	52,500	55,500

<sup>1</sup>Source: 2000 sales data and 2005 estimates from Exhibit B, NOI No. N04-02-021 (2004 Rate Case Application to CPUC)

<sup>2</sup>Assumes implementation of an aggressive 20-year Meter Retrofit program to comply with AB 2572 (2004), however expected demand reduction due to commodity pricing are not included.

<sup>3</sup>Assumes general growth in commercial accounts of 2.5% per 5-year period.

<sup>4</sup>Assumes unaccounted-for water averages about 9.4% of production, consistent with Cal-Am filings with the CPUC.

<sup>5</sup>Assumes no reduction from conservation and commodity pricing from meter retrofitted accounts.

To address these localized concerns, the Company typically invests in capital projects involving strategically located wells, enlargement of existing wells, or the enlargement of transmission mains or storage facilities. All of the service areas except for Isleton, Walnut Grove and Security Park have interties with other water purveyors and exchanges of water through these interties provide emergency back-up sources of supply. Redundant wells that are normally off-line provide emergency back-ups for the Isleton and Walnut Grove systems.

Over the past decade, the Sacramento County Water Forum and successor efforts have cooperatively developed plans for managing the region's groundwater and surface water resources with the dual objectives of 1) providing a safe and reliable water supply for the region's economic health and planned development through the year 2030 and 2) preserving the fishery, wildlife, recreational and aesthetic values of the Lower American River. The Water Forum Agreement established sustainable yields for the groundwater basins in Sacramento County, two of which are Cal-Am's primary sources of supply.

The Sacramento Groundwater Authority (SGA) was established to manage the North Sacramento Groundwater Basin and the Central Sacramento Groundwater Forum (CSGCF) was established to manage the Central Groundwater Basin. Cal-Am is a participant in both efforts. The management approaches to maintaining long-term sustainable yields from both groundwater basins involve the establishment of conjunctive use programs, under which surface water supplies will be utilized more extensively in normal and wet-years, when they are ample, allowing the groundwater basins to recharge naturally. In dry and very dry years, surface water diversions would be reduced; leaving more water in the streams (protecting natural values) and groundwater use would increase. The conjunctive use programs that are now being established are expected to allow the region's annual demands to be met in dry or very dry years, by mixing the proportions of groundwater and surface water utilized.

Cal-Am will tailor the Northern Division's water supply mix during dry and very dry years in cooperation with the SGA and the CSGCF to assist in the management of the basin with the conjunctive use program in any given year. Table 6 describes the hypothetical scenarios for single dry years and multiple dry years based on estimates of 2025 demand levels. As shown, the Northern Division expects to be using a significant amount of imported surface water during years of normal precipitation by 2025. In a very dry year, or the 3<sup>rd</sup> year of a multiple dry year scenario, however, 100% of the Division's projected supply would be groundwater.

#### **4. TRANSFER AND EXCHANGE OPPORTUNITIES**

Except for Isleton, Walnut Grove and Security Park all of the Northern Division's service areas have one or more interties with adjoining water purveyors. In the past, the interties have generally provided an emergency back up source of supply that have been infrequently used. In the coming years, as the regional conjunctive use programs are implemented, transfers and exchanges of water across these interties will become more routine as some service areas, potentially Parkway, Lincoln Oaks, Antelope, Suburban/Rosemont and Arden distribute increasingly large quantities of surface water purchased wholesale from other providers during average and wet years. Conversely, Cal-Am may become a wholesale supplier of groundwater to these adjoining purveyors, pursuant to conjunctive use agreements, during dry years. Accordingly, the Division expects that new or expanded interties will be constructed over the coming years.

### **C. WATER QUALITY**

The quality of water delivered to customers throughout the Northern Division meets or exceeds all State and Federal drinking water requirements. Groundwater pumped by most of the Division's wells is generally very high quality, and requires no treatment other than disinfection, which is accomplished by chlorination. In the Parkway service area the groundwater is high in iron and manganese, and the Division operates 3 water treatment plants for treating and filtering the raw groundwater prior to distribution. The water is chlorinated at these plants prior to distribution. In addition, water supplied to the Rosemont sub-area of the Suburban service area is fluoridated, as is water distributed in the Parkway system.

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All surface water distributed in the Northern Division is treated by the respective wholesalers prior to entering Cal-Am’s distribution systems. No additional treatment is required.

TABLE 6 SUPPLY RELIABILITY AND SOURCES OF SUPPLY Normal, Single Dry and Multiple Dry Years (AFY) 2025 Demand Levels					
	Normal Year	Single Dry Year	Multiple Dry Years		
			Year 1	Year 2	Year 3
Groundwater	30,500	60,300	38,600	50,600	60,300
Surface Water (Conjunctive Use)	29,800	0	21,700	9,700	0
% of Normal <sup>1</sup>	100%	100%	100%	100%	100%

<sup>1</sup>Assumes no demand reduction from conservation and the Meter Retrofit program. Implementation of water shortage contingency plans in dry years could reduce overall demand by 15%, or more.

Groundwater contamination is the most significant water quality concern in the region and has directly affected Cal-Am’s operations in several service areas. Contaminate plumes have adversely affected groundwater in both the North and Central Sacramento Groundwater basins down gradient from three Superfund sites: the Aerojet General site, the former McClellan Air Force Base and the former Mather Air Force Base site. Contaminants include solvents, TCE, PCE, BTEX, fuels, perchlorate, NDMA, and volatile organics. A number of governmental agencies are participating in the ongoing cleanup efforts at these sites. The Sacramento Groundwater Authority has an extensive groundwater quality monitoring program in place in the Northern Groundwater Basin to serve as an early warning system for contaminants that could make their way to water supply wells and the Central Sacramento Groundwater Forum is evaluating the cumulative effects of contamination and developing groundwater management strategies to ensure that the groundwater supply in the Central Basin remains safe and reliable.

Cal-Am owns several wells that have been shut down or are threatened due to the impact of contaminate plumes in several of the Sacramento service areas. In the Suburban system, two wells have been shut down because of groundwater contamination, several have been fitted with granulated activated charcoal (GAC) treatment systems to remove low-level contamination, and up to 12 other wells are threatened with future contamination due to

migration of the Mather and Aerojet plumes. Cal-Am has developed contingency plans in conjunction with the parties responsible for the contamination to address the potential loss of these wells involving the construction of new wells in the eastern part of the service area, away from the path of the contaminant plume, the installation of additional GAC units to remove contaminants, where feasible, the construction of a storage tank and booster pump to augment peak period supplies, and the purchase of additional surface water.

In the Parkway service area the Wilbur Well (which supplied up to 1.4 mgd) was affected by contamination with VOCs from a nearby industrial laundry and dry cleaning facility. It was shut down in 2001. Reimbursement for all related costs is being sought from the responsible party. Previously, in the mid-1990's another well in the Parkway service area was contaminated with VOCs from a former gasoline station site nearby. Cal-Am received compensation for the loss of this well.

In Isleton and Walnut Grove, Cal-Am may be affected by the change in the drinking water standard for arsenic, which the EPA has reduced from 50 ppb to 10 ppb, effective in 2006. Tests have shown that arsenic levels in the wells serving these communities range from 10-20 ppb. Cal-am is pilot testing several available treatment technologies and expects to invest over \$3.1 million in treatment facilities for these systems.

## **D. PLANNED WATER SUPPLY PROJECTS**

California American Water's planned five-year capital expenditure plan over the 2006-2010 period for the service areas described in this plan includes approximately \$70 million in infrastructure replacements and improvements. Planned facilities include: new and replacement wells, new and replacement water mains, arsenic treatment systems for affected wells, additional storage tank and booster station capacity, conversion of flat rate customers to metered services, and funds to implement wholesale water supply agreements for regional conjunctive use projects.

The capital expenditure program is designed to respond to anticipated customer account growth detailed in this plan, maintain adequate water service levels, and maintain compliance with all state and federal drinking water quality standards. When California American wells

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are impacted by groundwater contamination, the company will continue to seek appropriate compensation from the parties responsible for the contamination in order to maintain pre-existing water production levels and avoid rate impacts to its customers.

## **V. URBAN WATER MANAGEMENT PLAN PROGRAMS**

### **A. INTRODUCTION**

This chapter describes and evaluates Cal-Am's Urban Water Management Programs for the 2006 - 2010 period in the Northern Division. It describes the water conservation programs that are being implemented directly by the Division and by Cal-Am cooperatively with other agencies pursuant to regional water management efforts under the Water Forum and successor organizations, including the Regional Water Authority.

Cal-Am is a signatory to the *Memorandum of Understanding regarding Urban Water Conservation in California* (MOU) and is therefore a member of the California Urban Water Conservation Council (CUWCC). The MOU, as amended, contains 14 Best Management Practices (BMPs). The BMPs are examples of sound water management practices that have been found to be feasible and practicable in most instances throughout California. Accordingly, the water conservation programs presented in this chapter have been organized in a format that is consistent with the list of BMPs contained in the MOU. California American Water is also a member of the Sacramento Region Water Forum since 2000. Therefore, the company has designed a BMP Programs Plan that also works to meet the goals stated under California American Water's Water Forum Agreement for the 16 included BMPs (similar and based on the CUWCC's 14 BMPs).

### **B. ON-GOING PROGRAMS**

During the last significant drought, Cal-Am submitted a Water Management Plan addressing long-term strategies for reducing water consumption to the California Public Utilities Commission for approval. The Company's Water Management Plan (WMP) was approved in Decision No. 90-08-055 (Oct. 23, 1991). When Cal-Am acquired the Sacramento operations from Citizens Utilities Company in January 2002, the Northern Division began to operate under the Company's Water Management Plan.

## Urban Water Management Plan Programs

The Water Management Plan includes both supply-side and demand-side management approaches to achieving the long-term goal of improving water conservation within Cal-Am's service areas throughout the state. It contains programs which management has determined will help in accomplishing the stated long-term goal. The existing WMP programs are as follows:

**Residential Plumbing Retrofit Kits.** Low flow plumbing retrofit kits are available at the business office sites, the Company booth at community events, and are offered with the toilet and clothes washer rebate programs. They are also installed during water surveys as applicable. The plumbing retrofits include a low flow showerhead with a maximum flow rate of 2.5 gallons per minute, compared to non-conserving showerheads with flow rates of 5 to 8 gpm. In addition, the kits include faucet aerators for the bathroom and kitchen sinks, hand-held showerheads for handicap facilitation and leak detection tablets to detect leaking toilets. As needed, customers are provided with toilet tank bags to reduce 3.0 gallon per flush (gpf) toilets to 1.6 gpf, replacement toilet flappers (for 3.0, 5.0 and 7.0 gpf type toilets), drip gauge measurement vile/cylinder to identify the annual water loss from a dripping sink faucet, shower, etc.

**Information and Education.** The public information portion of this program is designed to promote understanding and dialogue in the community on water conservation topics, as well as to motivate customers to conserve water. Water conservation information campaigns increase customers' awareness of habits or practices that waste water, as well as their awareness of water scarcity, available sources, system capacity, and treatment and distribution issues.

**Large Turf Irrigation Audit.** The objective is to provide landscape managers with information to enable them to do timely equipment maintenance and to apply accurate irrigation amounts throughout the year based on explicit customized reports. During the audit process brochures describing the causes and cures of maintenance and management problems in large turf irrigation systems are included with the Division's irrigation guide. In addition, site specific water budgets are created based on local (micro-climate) weather conditions to provide water efficient use guidelines for facility maintenance staff.

**Demonstration Gardens.** Many residential and commercial property owners were not familiar with low turf landscaping using California's indigenous plants and other low water using

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plants. In 1992, Cal-Am constructed demonstration gardens, stressing seven Xeriscape principles, at company offices to show customers how attractive a low water using landscape can be. The Northern Division was purchased by Cal-Am ten years later, and did not benefit from this program; however, the Regional Water Authority has seven demonstration gardens in the Sacramento Area. The Northern Division is currently developing example Xeriscape gardens in residential and commercial communities in the California American Water service area. Cal-Am also maintains a Xeriscape garden at the main office facility with displays of the low water using plant names used in the demonstration garden. Cal-Am receives a high number of customers visiting the main office to make bill payments, service order requests, etc. which has made the property a useful demonstration garden site.

**Indoor and Landscape Irrigation Audits for Residential Customers.** Residential water audits are offered free of charge to all requesting participants. The audits provide the customer with a comprehensive evaluation of interior and exterior use of water at that residence. The interior audit includes installing (as applicable) high quality plastic bags in the toilet tank, low flow showerheads, faucet aerators, replacement toilet flappers, and checks for toilet, faucet and general plumbing leaks throughout the home. The exterior audit includes soil analysis of the type of soil throughout the yard (clay, sandy, loam, etc.), in-depth inspection of irrigation system and instructions for customers on how to adjust spray heads (to prevent over watering and other inefficiencies), check-up of meter, and providing other water saving measures that are applicable to exterior water use. Customers receive a personalized audit report and packet with applicable information sheets on technologies and topics specific for water use issues at their residence. During these audits, Cal-Am promotes other applicable incentive programs including the Ultra-Low-Flow Toilet (ULFT) and High Efficiency Clothes Washers (HECW) rebates to help customers maximize their water and cost saving.

**Commercial and Multi-Family Water Audits.** Commercial and multi-family water audits are offered free of charge to all commercial and multi-family customers, upon request. As with the residential audits, they include a comprehensive evaluation of interior and exterior water use, an in-depth audit report with applicable cost-effective water saving recommendations and the installation of water conserving retro-fit devices, as appropriate.

**Ultra-Low-Flush Toilet (ULFT) Rebates.** Cal-Am has a program to rebate residential and multi-family customers up to \$100 (combined Cal-Am \$50 rebate and Sacramento County Sanitation

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District up to \$50 rebate amount) for each existing high-water using (2.0 gallons per flush or more) toilet that is replaced with an ultra-low-flow toilet using 1.6 gallons per flush (gpf) or less. Cal-Am provides \$50 toward every customer rebate for a maximum of 3 ULFT rebates per household (exceptions may apply per Cal-Am Conservation Department approval). The County Sanitation District rebates the customer 25 percent of the cost of the ULFT and installation for a maximum of \$50 per ULFT. To make it easier for the customer and encourage participation, Cal-Am processes both rebates and provides the customer with a single rebate check.

**Supply Side Management.** The Company is committed to maximizing the efficient use of water within its operations. This requires accurate metering of production and treatment facilities, with scheduled meter testing and replacement programs. Formalized leak detection programs and timely repair, rehabilitation or replacement of mains are high priority items.

**Cooperation with Government.** The Company recognizes the cumulative benefits of regional and state water conservation initiatives and works with governmental agencies at all levels to implement water resource management programs appropriate for each community level. Cal-Am's Northern Division staff participated in the 1999 Sacramento Water Forum, and continues to participate in its successor efforts, through membership in the Regional Water Authority, the Sacramento Groundwater Authority, the Central Sacramento County Groundwater Forum, and the American River Basin Conjunctive Use Program.

## C. WATER CONSERVATION PROGRAMS – 2006 - 2010

California American intends to significantly expand its conservation programs over next five years. As part of this effort, the company will request cost recovery from the California Public Utilities commission for increased conservation program spending in its 2006 general rate case application for the Northern Division.

### 1. DMM 1: INTERIOR AND EXTERIOR WATER AUDITS (BMP 1)

*BMP 1: Implementation shall consist of at least the following actions:*

*Develop and implement a strategy targeting and marketing water use surveys to single-family and multi-family residential customers.*

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*Directly contact not less than 20% of single-family and 20% of multi-family residential customers each reporting period.*

*Surveys shall include indoor and outdoor components.*

*Customers shall be provided with results.*

*Track survey offers, completions, results and costs.*

In accordance with Company policy, Cal-Am offers residential interior and exterior water audits to customers requesting them. A small number of requests are received every year, although records of the calls and responses are not maintained. The Company has not pursued a marketing program for residential water audits, which are difficult to market successfully to a majority of the Sacramento customers, who are billed on a flat rate basis. In the absence of volume of use billings, there is no financial incentive for customers to undertake special efforts to achieve reductions in water consumption.

**2006-2010 IMPLEMENTATION:** Cal-Am will continue to offer residential and commercial water audits to customers requesting them, free of charge. It is expected that the number of requests will increase over the coming five years, as a larger proportion of the Division's residential customers are metered and billed on a volume of use basis. Industry experience has shown that this is especially true following the transition from flat-rate to volume of use rates, as those customers who have never tried to conserve water become more conscious of water use, have a financial incentive to conserve, and seek advice in ways to reduce their water bills. Accordingly, Cal-Am intends to develop this program more fully during the 2006-2010 period by providing audits to accounts that are being converted from flat rate to a metered rate. Cal-Am intends to request program cost recovery from the California Public Utilities Commission its next general rate case in 2006. Provided program costs are allowed, full compliance with this BMP is anticipated by 2010. A list of interested residents for the free water audit services was created in 2005 and will be followed through during the 2006 audit season.

In 2006, Cal-Am will incorporate promotion of the residential water audit service in the customer notifications and information on the Meter Retrofit program. Customers will be offered free water audits to help them take a proactive step in preparing for the new metered (commodity) billing to begin December 2006 (first metered billing sent out to customers). In order to facilitate the expected increase in audit requests, Cal-Am will be bringing a new full time Water Conservation Specialist position to the department to process audit requests. A pre-

audit phone survey will be completed to gather essential information to streamline the on-site audit efforts and best service the customer's needs by identifying the types of plumbing fixture devices and other water saving technologies needed for the audit. All customer requests for audits and gathered phone survey and audit data will be maintained and tracked in an Excel database. Cal-Am will track the number of requests, length of time for staff to respond to customer inquiries, average year homes were built, retrofit trends (percent of homes already retrofitted), type of landscape and irrigation systems in Sacramento residential sites, and most common water use inefficiencies. The gathered information will be used to better service the customers, strategically target customers with the highest water saving potential, develop educational material most essential to Sacramento area residents, and better access how conservation department funds should be spent to generate the greatest water savings and customer benefit.

## **2. DMM 2: RESIDENTIAL PLUMBING RETROFIT (BMP 2)**

*BMP 2: Implementation shall consist of at least the following actions:*

*Develop a targeting and marketing strategy to distribute or directly install low-flow showerheads, toilet displacement devices, toilet flappers and faucet aerators to single-and multi-family residences constructed prior to 1992.*

*Maintain distribution and/or direct installation programs so that devices are distributed to not less than 10% of single-family connections and multi-family units each reporting period or require through an enforceable ordinance the replacement of high-flow showerheads and other water using fixtures with their low-flow counterparts, until it can be demonstrated that 75% are retrofitted.*

In 2004, the Northern Division offered residential plumbing retrofit kits to all customers through a billing insert promotion. Customers who responded received kits containing a positive shut off hose nozzle, a water conserving showerhead, faucet aerators for the bathroom and kitchen, toilet tank bags to reduce high water using toilet's flush volume, a soil moisture meter, a lawn watering gauge to measure irrigation system output, and dye tables to detect toilet tank leaks. And in 2005, the District continued to provide low-flow showerheads, hose nozzles and the other applicable devices upon request. In addition, Cal-Am distributed these devices as community events, to walk-in customers at Cal-Am's main office, and during on-site audits of residential properties.

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**2006-2010 IMPLEMENTATION:** Cal-Am will continue to make the water conserving kits available to any customer requesting them, and will offer them to all new customers. At least once during the 5-year term of this Plan, the Company will again promote the availability of low flow showerheads and hose nozzles through bill inserts or other similar means. In addition, as part of the residential water audit program and the meter retrofit described for BMP 1 above, low flow devices will be installed in homes that do not currently have them and/or customers will be showed how to install the devices themselves.

In 2005 and 2006, Cal-Am will complete a detailed inventory of all water saving devices currently in stock for the Sacramento office and identify new devices to add to the stock. As of 2005, Cal-Am has already added hose timers for customers that use simple hose connected sprinkler heads to irrigate their landscape. The hose timers allow customers to schedule a specific timer frame or interval to water with the hose water automatically turning off at the end of the programmed interval. New rain gauge/irrigation efficiency measurement tools have also been added to the inventory for customers to complete a basic “catch can test” of their irrigation system to identify and mediate any inefficiencies such as uneven distribution or release rate of the water through the system. For indoor devices, Cal-Am will bring back the replacement toilet flappers for 1.6, 3.0, 5.0 and 7.0 gpf toilets for those customers who cannot afford to replace their complete toilet, or have a newer 1.6 gpf toilet with a leaking flapper. Cal-Am also added Spanish language text directions for the leak detection kits, installation directions for showerheads, aerators and toilet tank bags.

### **3. DMM 3: DISTRIBUTION SYSTEM AUDITS AND LEAK DETECTION AND REPAIR (BMP 3)**

*BMP 3: Implementation shall consist of at least the following actions:*

*Annually complete a prescreening system audit to determine the need for a full-scale system audit.*

*When indicated, complete a distribution system audit using methodology consistent with the American Water Works Association’s “Manual of Water Supply Practices, Water Audits and Leak Detection.*

*Advise customers whenever it appears possible that leaks exist on the customer’s side of the meter; perform system leak detection when warranted and repair leaks when found.*

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Cal-Am has an established *Water Loss and Leak Detection Policy*<sup>1</sup> which is followed by Cal- Am personnel when conducting routine annual surveys for pipeline leaks. Leaks found during the leak detection work are prioritized and scheduled for repair as quickly as possible. Larger leaks are given higher priority, while the largest leaks are considered emergencies and are repaired as quickly as the District or contracted personnel and equipment can be mobilized.

Since a large portion of the residential connections are not metered, basic pre-screening audits of the distribution system are not feasible. The Company has completed intensive leak detection surveys in selected areas, the most recent being a December 2004 survey of 22 miles of distribution lines in the Antelope and other areas. That survey found 2 moderate distribution system leaks and 5 leaks on customer's property. The Cal-Am leaks were repaired and affected customers were advised of the leaks detected on their water lines.

**2006-2010 IMPLEMENTATION:** Cal-Am will continue to maintain the distribution system and repair leaks and other sources of lost water when found. Customers will be advised whenever leaks are detected on their side of the curb stop. In addition, the Company will continue to replace older and deteriorating pipelines. The Company will also continue the meter-retrofit project until all connections are fully metered. In 2006, the Operations staff will be reviewing procedures for determining un-accounted-for water loss and incorporating the procedural guidelines set by American Water Works Association (AWWA) for identifying and preventing distribution system water leaks, and maintaining non-revenue water levels to less than ten percent.

### **4. DMM 4: METERING WITH COMMODITY RATES FOR ALL NEW CONNECTIONS AND RETROFIT OF EXISTING CONNECTIONS (BMP 4)**

*BMP 4: Implementation shall consist of at least the following actions:*

*Requiring meters for all new connections and billing by volume of use.*

*Identifying a program for retrofitting existing unmetered connections and billing by volume of use.*

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<sup>1</sup> California-American Water Company, *Distribution Policy 7, Water Loss Control and Leak Detection*, adopted by the Board of Directors, May 9, 1988.

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*Identifying intra- and inter-agency disincentives or barriers to retrofitting mixed use commercial accounts with dedicated landscape meters, and conducting a feasibility study to assess the merits of a program to provide incentives to switch mixed use accounts to dedicated landscape meters.*

In the 2000 Urban Water Management Plan prepared by Citizens Utilities, meter retrofitting was evaluated and rejected as financially infeasible, with a projected benefit/cost ratio of only 0.4. After purchasing the system in 2002, Cal-Am reconsidered, and requested PUC approval of a meter-retrofitting program for the Northern Division. Permission to proceed was granted and the program is underway. Currently, Cal-Am is investing about \$2,000,000 per year on meter retrofitting, and expects to be fully metered in the coming 20-year period.

Once a customer has a meter in place, the Company initiates a 6 - 12 month changeover period before volume of use billing takes effect. During the transition, the customer receives comparison billings showing flat rate charges and metered charges, but is billed for the flat rate fee.

**2006-2010 IMPLEMENTATION:** All commercial connections in the Northern Division and all new customers are metered and billed on a volume of use basis. Cal-Am is committed to fully metering all of the residential accounts, and will continue to invest up to \$2,000,000 a year throughout the 5-year term of this Plan. Meter retrofit customers will be moved to volume based billings over a transition period of 6-months to 1-year, as part of the retrofitting project. As noted above, water audits and device retrofits will be offered to new meter installations.

In 2006, Cal-Am plans to retrofit 5,000 residential accounts with meters and convert to commodity (or metered) billing. The Meter Retrofit program will begin in the Antelope service area as well as a small portion of the Suburban system if additional funds become available in 2006. The initial or baseline meter read will occur in the June/July billing cycle with the first meter read of actual usage to be completed in the August/September billing cycle. Customers will be sent a comparison bill during the August/September billing cycle showing their costs with the current flat rate compared to their expected costs based on their initial meter reads of their commodity usage. Customers will receive their first actual metered-based bill in December of 2006. Therefore, customer will have a full winter (or wet) season to prepare for the metered billing and adjust their water usage prior to the high water using summer season.

Cal-Am's External Affairs, Operations and Conservation Departments will be working together throughout 2006 to develop and implement a comprehensive public outreach and educational campaign to prepare and educate customers on the Meter Retrofit program and new metered or commodity usage billing system. In early spring of 2006, all affected customers will receive a notification letter describing the meter retrofit program and a calendar of the important dates or milestones including the comparison billing month and first metered-based bill. To best help customer prepare for the new metered rates, Cal-Am's Conservation Department will offer free water audits to all customers receiving a new meter or those with a meter already installed but not being read until the summer of 2006. Information on the free audit services will be included in the notification letter and other outreach materials to be distributed as part of the meter retrofit program.

Two public workshops or information meetings will be scheduled to provide customers a forum to ask Cal-Am questions and get more information on the meter retrofit and available services to help them save on their monthly water bills. The Conservation Department will put together various displays on water saving technologies and techniques in landscape and irrigation maintenance at the workshops for customers to learn about and apply at their residence. In addition, Cal-Am will give a presentation on current incentive programs and offer cost-effective water saving tips for all residents attending the workshops. The first workshop is planned for July before the comparison bill is released and the second workshop will be scheduled in the fall after the customers have had a chance to review the comparison bill. Additional workshops and meetings will be scheduled as needed.

## **5. DMM 5: LARGE LANDSCAPE CONSERVATION PROGRAMS AND INCENTIVES (BMP 5)**

*BMP 5: Implementation shall consist of at least the following actions:*

- a. Provide non-residential customers with support and incentives to improve their landscape water use efficiency. This support shall include the following:*
  - 1. Identify accounts with dedicated irrigation meters and assign ETo-based water use budgets.*
  - 2. Provide notices each billing cycle to accounts with water use budgets showing the relationship between budget and actual consumption.*

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*a. Develop and implement a strategy targeting and marketing large landscape water use surveys to CII accounts with mixed-use meters. Each reporting period, directly contact via letter or telephone not less than 20% of such accounts and offer water use services.*

*b. Provide information on climate-appropriate landscape design, efficient irrigation equipment/management to new customers and change of service customer accounts.*

### *Recommended actions:*

*a. Install climate appropriate water efficient landscaping at water agency facilities.*

*b. Provide customer notices prior to the start of the irrigation season alerting them to check their irrigation systems and make repairs as necessary.*

*c. Provide notices at the end of the irrigation season advising them to adjust their irrigation system timers and irrigation schedules.*

The Northern Division requires all new connections with significant landscaping (except single-family residences) to have separate water meters for irrigation systems. This will provide the Division with the capability of tracking irrigation demands of these customers, and establishing conservation programs for them.

The Southgate Recreation and Park District, a major irrigation water customer in the Parkway service area, manages its irrigation systems with an ETo-based water conserving approach designed to avoid over watering when evapo-transpiration rates are lower. Cal-Am supplies water to Southgate through 61 irrigation meters watering about half of Southgate's 475 acres of irrigated sports fields, lawns, landscaped strips and other areas. Southgate operates its own weather station that uploads weather data daily and adjusts the nighttime irrigation schedules at 41 sites operated by a centralized computer system. Southgate's system is also programmed to consider site specific soil data and plant requirements to better determine the optimal water requirements for each landscaped area.<sup>1</sup> The Southgate Recreation and Park District contacted Cal-Am in late 2005 for assistance in further saving water in other park facilities. The Conservation Department will be working with Southgate over the next year (2006) and beyond

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<sup>1</sup> Scott Hokoma, Southgate Parks and Recreation District, personal communication, July 12, 2005.

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to upgrade other park facilities and potentially incorporate the irrigation systems into their main central irrigation control system with the weather station.

The Regional Water Authority (RWA), of which Cal-Am is a member and financial sponsor, also operates and maintains an automated weather station (part of the CIMIS<sup>1</sup> network) to provide evapo-transpiration data to the area landscapers (See Table 2). The Authority also offers irrigation management information and services to homeowners, gardeners, landscape managers and businesses as part of its Water Efficiency Program. These services include landscape workshops for homeowners throughout the year. All of Cal-Am's customers are eligible to take advantage of these services. The Authority also conducts an annual media campaign to notify residents to make seasonal irrigation schedule changes, implementing a part of BMP 5 on a regional basis, to the mutual benefit of all of the area's water users and water purveyors.

From 1999 through 2001, Cal-Am worked with a local consultant Irrigation Consultation Evaluations (I.C.E.) to complete water audits of 81 large residential, 15 large landscape (with dedicated irrigation meters) and 3 CII site audits (2 commercial and 1 institutional site audit) as well as audits of Cal-Am's major well and operating sites. All audited large landscape audits and Cal-Am properties received weather-based water budgets for the property and the irrigation systems were evaluated in detail including a "catch can test" and creation of a recommended irrigation schedule (per station) for a 12 month period. Cal-Am used the audit report and gathered data of the well sites and other audited facilities to restructure their maintenance procedures and irrigation schedule to improve water use efficiency. In 2005, the audited sites were reviewed and Cal-Am plans to make necessary upgrades and changes to continue operating the sites water efficiently.

**2006-2010 IMPLEMENTATION:** Over the term of this Plan, Cal-Am will identify the separate irrigation meter accounts and establish water budgets for the largest accounts that are not presently managed using local ETo data. If feasible, these accounts will receive information comparing actual consumption with the water use budget for that account each billing period.

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<sup>1</sup> California Irrigation Management Information System

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The Division's Conservation Coordinator will develop and implement a program to identify and prioritize the largest 20% of the CII accounts with mixed-use meters or irrigation meters that have been previously categorized in other ways (i.e. commercial or public authority). Once identified, the company plans to conduct water audits and develop water budgets for these customers on a pilot program basis, with appropriate follow-up as required in BMP 5. In addition, rebates for ETo based irrigation controller installation and other water saving technologies are planned. Upon evaluation of the effectiveness of the pilot program, the company will develop an appropriate full-scale program for the Northern Division.

In 2005, Cal-Am began re-evaluating the Auberry Well site property, given continual problems with the irrigation system and landscape conditions over the past few years. Cal-Am created an updated ETo-based irrigation schedule and a weekly log sheet to monitor the conditions and irrigation efforts at the site. In 2005/06, the Auditing staff used the Auberry site for landscape audit training in which training staff learned how to adjust rotor spray arcs, diameters, clean out clogged heads, and other simple adjustments to help reduce water usage at the site. Cal-Am plans to replace the current irrigation timer in the summer of 2006 with a new battery or solar powered timer to prevent power outage problems that previously occurred and to more easily irrigate the site which currently must be hand watered. In 2007, Cal-Am plans to work with the surrounding neighborhood residents to develop and demonstration garden design for the Auberry Well Site that incorporates native and drought tolerant plants for a Xeriscape design. The site will be used as an educational resource for the local neighborhood and surrounding community with information displays about the various plants used, irrigation system and weather-based irrigation timer planned for installation in 2007. Upon successful completion of the Auberry Well Site Demonstration Garden, Cal-Am will identify and begin plans for additional neighborhood demonstration gardens in each of the Sacramento service areas including Antelope, Suburban/Rosemont, Lincoln Oaks, etc.

## **6. DMM 6: HIGH-EFFICIENCY CLOTHES WASHING MACHINE FINANCIAL INCENTIVE PROGRAMS (BMP 6)**

*BMP 6: Implementation shall consist of at least the following actions:*

*Until January 1, 2007, the water agency shall offer financial incentive, if cost effective, for the purchase of high-efficiency clothes washing machines (HEWS) meeting a water factor of 9.5 or less.*

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*Any financial incentive offered shall be not less than the marginal benefits of the water savings, reduced by the necessary expense of administering the incentive program. A program is not required if the agency determines that the maximum cost-effective incentive is less than \$50.*

Cal-Am has a program of rebates for high efficiency washing machines in other California service areas, and such a program will be added in the Sacramento service area in 2006. In accordance with BMP 6, rebates of at least \$50.00 will be provided for qualifying high efficiency washing machines. The rebates will be supplemental to rebates that are available (as long as the annual allocations are not depleted) from the Sacramento Municipal Utility District (SMUD) and Pacific Gas and Electric Company (PG & E). The SMUD rebates range from \$75-\$125 and are available for customers who have an electric water heater. The PG&E rebates cover customers with gas fired water heaters and range from \$35 to \$75, depending upon the make and level of efficiency of the washing machine being purchased.

The SMUD rebate program was initiated in 2003 when the Regional Water Authority (of which Cal-Am is a sponsoring member) joined with SMUD in a "Save Water, Save Energy" promotional program. The campaign involved the placement of point-of-sale posters regarding water and energy efficient clothes washers and the distribution of over 80,000 bill inserts.

**2006-2010 IMPLEMENTATION:** Cal-Am is working with SMUD, RWA and six other water purveyors to initiate a High Efficiency Washing Machine Rebate Pilot Program for the Cal-Am's Sacramento service area in 2006, and will continue the program (if cost-effective under BMP 6 Guidelines) through the end of 2006, at a minimum, at which time the program will be reviewed. Rebates will be available as long as funds remain available. SMUD will process the (electric) energy HECW rebates for their customers as well as the water related rebates for participating water purveyor customers including Cal-Am residential customers. SMUD will send a list of applying customers every 2 weeks to confirm Cal-am customers are eligible and to process their rebate application. SMUD will also provide a monthly report to Cal-Am and the other participating water purveyors listing all the participating customers who received a HECW rebate. Rebate checks will be released to the customer directly from SMUD with Cal-Am's name and logo included on the rebate reimbursement check. To expedite the process, Cal-Am and the other participating purveyors will be providing payment to SMUD for the customer's rebates at the start of the pilot project. Cal-Am has tentatively budgeted \$15,000 for 300 HECW rebates for

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residential customers in 2006. SMUD is providing the rebate processing and data management service to the participating purveyors at no charge. If the pilot project is successful, Cal-Am, SMUD and other participating and interested water purveyors will extend the project into 2007 and possibly expand it to a full-scale rebate program,

Cal-Am will also continue its support of the Regional Water Authority's promotion of high efficiency washing machine rebate programs and expects that the RWA's efforts will increase the number of rebate applications filed. In addition, Cal-Am will support and work cooperatively with SMUD, PG & E and other participating water purveyors to implement a joint clothes washer rebate programs and assist in the program promotion efforts to local retailer and wholesaler appliance stores.

### **7. DMM 7: PUBLIC INFORMATION (BMP 7)**

*BMP 7: Implementation shall consist of at least the following actions:*

*Implement a public information program to promote water conservation and conservation related benefits.*

*Program should include providing speakers to community groups and the media; using paid and public service advertising, using bill inserts; providing information on customers bills showing use in gallons per day for the last billing period compared to the same period the year before; providing public information to promote other water conservation practices; and coordinating with other governmental agencies, interest groups and public interest groups.*

Cal-Am is a key financial contributor to the Regional Water Authority's Water Efficiency Program and its public information component. The company contributes over \$34,000 annually to the program. In 2003, the Authority conducted a radio ad campaign with a water efficiency message. In 2005, the RWA is placing water efficiency messages on over 20 large billboards in the Sacramento region. The RWA also has an internet site with extensive water conservation information for the public and has established a water conservation telephone hotline. The Water Efficiency Program staff conducts public outreach activities including the free distribution of water efficient landscape information brochures such as *Rules of Thumb for Water Wise Gardening* and *Watering Tips for Beautiful Gardening*. The information is distributed through retail gardening outlets, university extension programs, booths and displays in home and garden shows and the RWA website.

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Cal-Am also operates independent public information programs by including water conserving tips on bill inserts or text messages on the water bills approximately three to four times a year. In 2005, External Affairs and Conservation Department worked with Operations to create a public outreach and educational campaign plan on the upcoming Meter Retrofit (Conversion) project to install meters in 5,000 residential properties in 2005/06.

The Company also makes speakers available for informational presentations at neighborhood meetings, service clubs, and other community events, and staffs booths at local community events, providing informational pamphlets and brochures. In 2005, Cal-Am coordinated with Sacramento Suburban Water District (SSWD) to set up an education booth with free water saving devices, brochures and guidebooks on saving water at a local shopping center in Cal-Am's Antelope Service area. Cal-Am staff also hands out informational brochures on water resources topics at the company booth at regional events and fairs. In 2004, 2005 and previous years, Cal-Am sponsored and set up a large booth at the Sacramento Salmon Festival and Creek Celebration and other local events. Cal-Am's booth included interactive activities on water conservation for kids, displays on water efficient technologies for homes and businesses as well as information and sign up sheets for Cal-Am's incentive programs.

**2006-2010 IMPLEMENTATION:** Cal-Am will support and partner with the Regional Water Authority and other Sacramento area water providers in developing and implementing its public information programs over the coming 5 years. Cal-Am will provide financial assistance and staff RWA program committees. The Company will also continue regular distribution of water conserving messages via bill inserts and bill text messages, and will initiate more aggressive public information programs in the event of a drought or any other water shortage emergency.

The Meter Retrofit Project will begin in 2006 with the first commodity billing to previous flat rate customers. Cal-Am's Conservation Department will implement a coinciding educational and outreach campaign to help customer prepare and adjust to the new commodity billing structure. Outreach efforts will include notification letters with the tentative schedule when the meters will be installed and read, release of comparison and actual new commodity bill and planned public workshops. Cal-Am's Conservation Department will also offer residential audits to customers changing over to metered or commodity billing and provide applicable

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water saving devices and guidebooks to help them keep their water bill down. Cal-Am will continue setting up the Meter box and radio read display at local community events throughout 2006 to 2010 as the Meter Retrofit (Conversion) Project continues. Cal-am will also continue to provide customers with information on the newly installed Neptune meters and the assembly bill that enacted the requirement for full metering of all customers.

Cal-Am will attend and set up an education water conservation booth at a minimum of 3 community events a year with information and displays on indoor and outdoor conservation, new water saving technologies and information on applicable rebates, and a kids table with information, games and activities especially for kids. Cal-Am is also having an education water mural showing water resources in nature, through Cal-Am water distribution system and water use throughout a home. The mural will be used at community events, school presentations and other opportunities to help promote water conservation. In 2007, Cal-Am plans to develop, design and construction an interactive table top display of a water efficient home and yard with a display showing underground waterways and a well system. The table top display will also be used for presentations at schools, homeowner association meetings, and other community workshops and events.

## **8. DMM 8: SCHOOL EDUCATION PROGRAMS (BMP 8)**

*BMP 8: Implementation shall consist of at least the following actions:*

*Implement a school education program to promote water conservation and conservation related benefits.*

*Programs shall include working with the school districts and private schools in the water supplier's service area to provide instructional assistance, educational materials and classroom presentations that identify urban, agricultural, and environmental issues and conditions in the local watershed. Education materials shall meet the state education framework requirements, and grade appropriate materials shall be distributed to grade levels K-3, 4-6, 7-8 and high school.*

For school education programs Cal-Am has joined with other water purveyors in the region and the Sacramento Bee to support the Regional Water Authority's *Tools for the Classroom* water education program. The free program for K - 8 students is called *Be Water Wise* and teaches children to practice water efficiency in every-day activities. The program includes a newspaper

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style student supplement called "Water" which is furnished through the Newspaper's "In Education Program." It tells the never-ending story of the water cycle and includes fun activities and is well illustrated.

The Sacramento Bee provides sets of newspapers delivered to participating classrooms on consecutive Mondays in April and May (to coincide with Water Awareness Month), and the RWA supplies teachers with a current teaching guide with a regional focus and with lesson guidance based on the California state teaching standards. Other classroom materials supplied by the program include a California Waterways Map prepared by the Department of Water Resources for the older children and a "Mr. Leaky" water conservation activity book for grades K-4. In addition, through the RWA, Great Water Mystery and Journey of the Salmon assemblies have been conducted at three schools in the Cal-Am service area in 2004/05 school year.

Through these programs, students can learn where their water comes from, along with basic ecological principals. They can also get involved in challenging investigative work and classroom activities, fun puzzles, and receive lessons involving the science, math and arts components of the curriculum.

The RWA also provides a "Water Fun for Kids" area on its internet site with fun facts about water, information on local water supplies, how water is distributed to homes and how it is treated after it leaves homes. The site includes a "Mr. Leaky Water-Saving Game" and downloadable files of the "Mr. Leaky Activity Book" for water saving fun.

**2006-2010 IMPLEMENTATION:** Throughout the term of this UWMP, the Northern Division will continue to support the Regional Water Authority's *Tools for the Classroom* program. In addition, Cal-Am's Conservation Coordinator and other staff will be available to speak to school groups on water conservation and resources issues upon request.

Beginning in 2006, Cal-Am's Conservation Department will be working directly with the South Yuba River Citizen's League (SYRCL) to add more schools in the Cal-Am service area into the educational school assembly program on water conservation (Great Water Mystery) and the local environment (Journey of Salmon). Cal-Am will create a complete list of schools with the Sacramento service areas for the SYRCL to follow up with and encourage every school to sign up for the free educational assembly. The cost per assembly will decrease as more schools are

Urban Water Management Plan Programs signed up and RWA will cover the costs for an agreed upon number of assemblies as part of Cal-Am's Category 1 Agreement. By 2007, Cal-Am has budgeted for \$14,000 to cover assemblies in every school in Cal-Am's service area for students in 4<sup>th</sup> and 5<sup>th</sup> grade. The SYRCL will alternate the assembly program each year so that all students participate in both assemblies.

In 2008, Cal-Am will reassess the School Education program through RWA and the SYRCL's Educational Assemblies to decide on continuing the current programs or adding or changing the efforts to include other options. Cal-Am has budgeted to implement the Resource Action Program's Water Wise educational lesson and home audit program for 5<sup>th</sup> and 6<sup>th</sup> grade level students at 2 to 3 selected low income schools in 2008. The Water Wise program includes students learning about how water is used throughout their home and how to audit their water usage and install various water saving devices.

## **9. DMM 9: CONSERVATION PROGRAMS FOR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL (CII) ACCOUNTS (BMP 9)**

*BMP 9: Implementation shall consist of both (a) and (b) and either (c) or (d):*

- (a) Identify and rank CII accounts according to water use;*
- (b) Implement a program to accelerate replacement of high-water using toilets with ULFTs in CII accounts;*
- (c) Implement a CII Water-use Survey and Customer Incentives Program such that 10% of the CII accounts are surveyed within 10 years of the date of implementation;*
- (d) Achieve a water use reduction in CII sectors equaling or exceeding 10% of the baseline (1997) use over a 10-year period.*

The Regional Water Authority, in cooperation with seven water suppliers in the region and the Sacramento County Sanitation District offers ULFT rebates of \$50 - \$125 per toilet for businesses that install ULFTs. Under the program the participating water provider offers rebates of \$50 - \$75 and the Sacramento County Regional Sanitation District contributes up to \$50 per toilet (or 25 percent of the total cost for the new toilet bowl, tank, seat, installation, parts and labor; not to exceed the total costs) additional rebate for a total of up to \$125 per ULFT. Cal-Am began participating in this program in 2005, however focused program promotion to residential customers first. A list of interested commercial customers seeking to replace a high volume of

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ULFTs for a single property was created in fall of 2005. This list of interested commercial customers will be used in 2006 and 2007 when the budget for ULFT rebates is sufficient enough to distribute a larger number of rebates to a single commercial customer while still having funds for residential customers.

A total of 110 pre-rinse spray valves (PRSVs) were installed in 89 CII sites in 2004-05 and walk-through audits were performed. RWA is currently working with the CUWCC to negotiate a Phase 3 installation of PRSV in the Sacramento region. If accepted, Cal-Am will participate for additional PRSV installation and CII site walk-throughs in the Cal-Am service area as part of Phase 3.

Cal-Am has conducted water use surveys and audits of 18 CII and large landscape accounts since 2003.

*(c) Implement a CII Water-use Survey and Customer Incentives Program such that 10% of the CII accounts are surveyed within 10 years of the date of implementation;*

*AND/OR*

*(d) Achieve a water use reduction in CII sectors equaling or exceeding 10% of the baseline (1997) use over a 10-year period.*

*(Partial Credit under BMP 9 for CII Walk-Through Water Audits)*

The California Urban Water Conservation Council, with support from the California Public Utilities Commission (CPUC), several major power companies and 14 water purveyors initiated a test program in 2001 to ascertain the potential benefits of retrofitting commercial (and institutional facility) kitchens in restaurants and other food service businesses with more water efficient pre-rinse spray valves, (PRSVs) which are commonly used in commercial dishwashing. A walk-through audit inventorying all water using appliances, fixtures and equipment was completed at each participating site with a follow up call or postcard. The collected data was provided to the water purveyors for further follow up and promotion of other water saving incentives and rebates for these commercial and institutional facilities. Cal-Am and other participating water purveyors received water audit credit under BMP 9 (Commercial, Industrial and Institutional Water Conservation Programs and Efforts) for the Rinse and Save Program's walk-through audits and follow up efforts.

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The Sacramento Regional Water Authority, of which Cal-Am is a member, was one of the participating agencies. In the first phase of the program, 480 pre-rinse spray valves were installed in restaurants in the Sacramento area (including some of Cal-Am's customers) resulting in an annual estimated water savings of 84 acre-feet of water and about 160,000 therms of natural gas. In 2004-05, a total of 110 PRSVs were installed in 89 CII sites in 2004-05 and walk-through audits were performed. Through the Phase 2 of the Rinse and Save Program, Cal-Am received credit for 89 CII audits composed mostly of commercial restaurants as well as a few institutional sites such as churches, schools and hospitals. RWA is currently working with the CUWCC to negotiate a Phase 3 installation of PRSV in the Sacramento region. If accepted, Cal-Am will participate for additional PRSV installation and CII site walk-throughs in the Cal-Am service area as part of Phase 3.

**2006-2010 IMPLEMENTATION:** The Northern Division will further identify and prioritize CII accounts for conducting audits, device installation and rebate programs and additional installations of pre-rinse spray valves.

### Pre-Rinse Spray Valves and the Rinse and Save Program

Cal-Am will continue to support the implementation of the Rinse and Save Program through the Regional Water Authority, and will participate in the proposed Phase 3 program and beyond. Phase 3 of the Rinse and Save Program is planned to begin in late 2006 through 2007. Cal-Am is also considering joining in a regional PRSV distribution program (independent of the Rinse and Save program) with RWA and other water purveyors in the Sacramento region. A regional PRSV distribution program will involve Cal-Am directly distributing the PRSVs to their qualifying CII customers. Such distribution efforts will most likely be in combination with a CII audit or rebate package (by industry type) program for maximum cost-effectiveness. The Rinse and Save Program and the Regional Distribution and Installation Program will apply to Cal-Am's efforts to meet the BMP 9 a, c and d requirements.

### CII Pilot Site Program

A pilot level program is planned for the first three years of this period. After program effectiveness is evaluated and as additional budget funds become available, Cal-Am plans to expand the program as warranted. The pilot project consists of selecting a set number of

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interested CII customers/properties to receive an in-depth water audit of the facility and operations. Participating CII sites will receive a detailed audit report describing their operations and where and how much water is used throughout the facility, as well as cost-effective water saving recommendations that will help the CII customers to save money and streamline their production operations. Cal-Am will then work with the CII sites to implement the recommendations and install the water saving technologies. Cal-Am will create specific rebate or incentive packages to the participating CII sites to encourage them to implement the recommendations. Incentives will include rebates for ULFTs (as listed in BMP 9, option b); HETs and dual flush toilets, HECWs, Waterbrooms and pre-rinse spray valves (possible free distribution to customers). Cal-Am will also offer a Water Use Efficiency Upgrade grant to each facility up to \$5,000 to \$10,000 to install water saving technologies specific to their operations. Grant funds could be used for weather-based irrigation controllers and central controller systems, conductivity or pH controllers for cooling towers, or water recycling technologies including reverse osmosis, ultra and/or micro filtration or other membrane based systems to help industrial facilities significantly reduce their water use and wastewater discharge. Cal-Am will increase the number of participating CII sites each year from 2007 through 2010 as the program budget increases each year. Through the Pilot Site project, Cal-Am will meet the requirements under the CUWCC's BMP 13, options a, b and c (or d).

**2006-2010 IMPLEMENTATION:** Cal-Am will continue to support the implementation of the Rinse and Save Program through the Regional Water Authority, and will participate in the proposed Phase III program, and beyond, or a regional PRSV distribution program (independent of the Rinse and Save program) with RWA and other water purveyors in the Sacramento region over the term of this UWMP. A regional PRSV distribution program will involve Cal-Am directly distributing the PRSVs to their qualifying CII customers. Such efforts will most likely in combination with a CII audit or Rebate package (by industry type) program for maximum cost-effectiveness.

## **10. DMM 10: WHOLESALE AGENCY ASSISTANCE PROGRAMS (BMP 10)**

*BMP 10: Implementation shall consist of at least the following actions:*

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*Wholesale water suppliers shall provide financial incentives, or equivalent resources, as appropriate, beneficial and mutually agreeable to their retail water agency customers to advance water conservation efforts and effectiveness.*

The Northern Division is not a wholesale supplier of water. BMP 10 is not applicable.

### **11. DMM 11: CONSERVATION PRICING (BMP 11)**

*BMP 11: Implementation shall consist of at least the following actions:*

*Implementation methods shall be at least as effective as eliminating non-conserving pricing and adopting conserving pricing. For signatories supplying both water and sewer service, this BMP applies to pricing of both water and sewer service. Signatories that supply water but not sewer service shall make good faith efforts to work with sewer agencies so that those sewer agencies adopt conservation pricing for sewer service.*

All of the Northern Division's commercial, multi-family residential, institutional, industrial and public authority customers are currently metered and billed by volume of use, which is a conservation pricing structure. Recently constructed single-family developments are also metered and billed by volume used. The Company still has over 46,000 unmetered residential accounts, all of which represent homes that were built when residential water metering was prohibited by ordinance in Sacramento County. All of these customers are billed at flat rates. The approved rates for the Northern Division are currently \$0.9412 per CCF unit (100 cu. ft.) plus a service charge of \$7.14 for a basic single family connection. The flat rate charge for single-family residences is \$16.33 per month for property sizes less than 4,500 sq. ft. and \$22.09 for lots between 4,501 and 8,000 sq. ft. Data shows that the metered customers use about 20 CCF units a month on average, resulting in a total water bill of about \$26.00 per month, approximately \$4 greater than the flat rate charge for customers with a typical mid-sized suburban lot. This demonstrates the potential water conserving incentive associated with volume of use billing and incentives to conserve water that will occur as the Company's meter retrofit program progresses.

**2006-2010 IMPLEMENTATION:** As noted above in the discussion of DMM 4, Cal-Am is committed to fully metering all of the residential accounts, and will continue to invest up to \$2,000,000 a year throughout the 5-year term of this Plan (or \$10,000,000 total). As existing

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unmetered residential accounts are metered they will be converted to volume of use billing, a conservation pricing structure. The Company's goal is to meet the recent legislative mandate calling for full metering within 20 years.

Cal-Am will be evaluating the feasibility of tiered rates and other conservation pricing structures for the Sacramento District's upcoming rate cases. The objective is to establish a rate structure that promotes efficient water use by the wide range of residential customers in Cal-Am's Sacramento service area.

### **12. DMM 12: CONSERVATION COORDINATOR (BMP 12)**

*BMP 12: Implementation shall consist of at least the following actions:*

- a) Designation of a water conservation coordinator and support staff (if necessary), whose duties shall include the coordination and oversight of conservation programs and BMP implementation, preparation and submittal of Council BMP Implementation Reports, and communication and promotion of water conservation issues to agency senior management, coordination of agency conservation programs with operations and planning staff; preparation of annual conservation budget; participation in the California Urban Water Conservation Council; and preparation of the conservation elements of the agency's Urban Water Management Plans.*
- b) Agencies jointly operating regional conservation programs are not expected to staff duplicative and redundant conservation coordinator positions.*

The Northern Division had a part time Conservation Coordinator (.35 full time equivalents) when the 2000 UWMP was prepared. This position was retained by Cal-Am when it purchased the Citizens Utilities Company's holdings in California. The person holding the position retired in 2004 and the Conservation Coordinators duties were temporarily assigned to other staff, including one person who assumed the title of "Acting Conservation Coordinator." The Company hired a full time Water Conservation Programs Coordinator in August of 2005. The new full time Water Conservation Programs Coordinator (WCPC) coordinated the inclusion of Cal-Am into the regional ULFT Rebate Program in the fall of 2005 and worked with various staff previously assigned conservation related duties to continue and expand these efforts. The WCPC is also responsible for developing future BMP or conservation programs planned for 2006 to 2010 including a HECW rebates, residential audit program for single and multi-family

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residential customers, commercial, industrial and institutional (CII) conservation projects, and coordination of Cal-Am's participation in community events to promote water conservation. The WCPC also orders conservation devices and supplies, works with RWA and other local and state entities to implement various conservation projects in Cal-Am's service area, trains Cal Am staff and performs other water conservation related duties.

**2006-2010 IMPLEMENTATION:** Cal-Am will employ a new Water Conservation Specialist position to assist the WCPC with conservation program efforts. The Water Conservation Specialist will focus significant efforts on completing residential and large landscape water audits for Cal-Am to reach its objective under the CUWCC's BMP 1 and 5, as well as the goals set under Cal-Am's Water Forum Agreement. In addition, Cal-Am will use ULFT reimbursed funds from the County Sanitation District in 2006 to bring in a Conservation Dept. Intern to assist the growing conservation department with various efforts. In 2007, Cal-Am has budgeted for two year-round department Interns that will assist with residential water audits, processing of rebate applications and inquires, and helping with Cal-Am's booth at community events. Cal-Am has budgeted for one additional full-time staff position beginning in 2007 to assist with implementation of water conservation programs. The increase in the conservation department staff directly correlates with the expected increase in customer participation in various incentive programs as well as the addition of new conservation programs such as the CII Pilot Site and the WBIC Pilot Projects. The conservation department staff level will be reviewed in 2010 to determine if further additions or changes are needed for efficient operation of department programs and special projects.

### **13. DMM 13: WATER WASTE PROHIBITION (BMP 13)**

Cal-Am has implemented a water waste prevention program according to the guidelines outlined in the CUWCC's BMP 13 (Water Waste Prohibition) of the Memorandum of Understanding (MOU). The efforts to ensure these guidelines are followed and enforced are a multi-department effort including the Conservation Department, Distribution System Maintenance and Operation's Customer Service Field staff, central Call Center team, and Administrative Department staff.

*BMP 13: Implementation methods shall be enacting and enforcing measures prohibiting gutter flooding, sales of automatic (self regenerating) water softeners, single pass cooling systems in new connections, non- systems in all new conveyer car*

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*washes and commercial laundry systems and non-recycling decorative water fountains.*

*Signatories (Cal-Am) shall also support efforts to develop state law regarding exchange-type water softeners that would: (1) allow the sale of only more efficient, demand-initiated regenerating (DIR) models; (2) develop minimum appliance efficiency standards that (a) increase the regeneration efficiency standard to at least 3,350 grains of hardness removed per pound of common salt used; and (b) implement an identified maximum number of gallons discharged per gallon of soft water produced; (3) allow local agencies, including municipalities and special districts, to set more stringent standards and/or to ban on-site regeneration of water softeners if it is demonstrated and found by the agency governing board that there is an adverse effect on the re-claimed water or groundwater supply.*

*Signatories (Cal-Am) shall also include water softener checks in home water audit programs and include information about DIR and exchange-type water softeners in their educational efforts to encourage replacement of less efficient timer models.*

The California Public Utilities Commission, through General Order 103, has authorized regulated water purveyors to discontinue service to any customers who are flagrantly wasting water. This authority is also explicitly granted to the Company in Rule 11 B, (3) of the Company's tariffs. Rule 11 B, (3a) permits the Company to terminate service "where negligent or wasteful use of water exists" as long as the practices have not been remedied within 5 days of giving the customer written notice to such effect.<sup>1</sup> Typically, Company staff would personally document at least three violations and notify a customer of the problem and corrective actions needed before turning off their water supply. Communication to the customer regarding a continued Water Conservation or Water Waste Violation may include a telephone call, in person visit, formal written letter, Water Conservation Violation doorhanger notice, or other practicable communication means. All water waste notifications are logged in the customer

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<sup>1</sup> California-American Water Company, Rule 11, § B, (3), effective July 6, 1993.

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database records and assigned a specific Service Order Request number so Cal-Am can track and resolve such activities.

Cal-Am also has authority under Rule 11 B, (3b) “in order to protect itself against serious and unnecessary waste or misuse of water, the utility may meter any flat rate service and apply the regularly established meter rates where the customer continues to misuse or waste water beyond five days after the utility has given the customer written notice to remedy such practices”. This allows Cal-Am to install a meter at properties currently on a flat rate that are continually in violation of the water waste and conservation prohibitions even if the property is not included in the immediate meter retrofit program schedule.

**2006-2010 IMPLEMENTATION:** Cal-Am will continue to enforce Rule 11 (B, 3a and 3b) and will enforce any future water waste prohibitions that are implemented pursuant to any voluntary or mandatory water rationing plans. In late 2005 / early 2006, Cal-Am incorporated water softener inspection procedures to the residential water use audit procedures following the parameters under the CUWCC’s BMP 13. Cal-Am’s Auditor track the type of water softener installed (including make, model, self-regenerating, contracted service, etc.), year of installation, noted problems or issues, and regeneration efficiency level. All customers with water softeners installed or with plans to purchase a water softener are given an information packet that includes information on demand-initiated regenerating (DIR) models, salt-less alternative water softener technologies, impacts of softener discharge on re-claimed water and groundwater supply as well as any applicable material provided (and requested for distribution) by the local County Sanitation District and Department of Water Resources (DWR) Stormwater Management Department. Cal-Am will continue water softener inspections during water use audits and will educate Operations and Customer Field staff on water softeners, alternative technologies and negative impacts on groundwater supply and the local environment to pass onto customers as applicable, during on-site service calls.

From 2006 to 2010, Cal-Am will continue to investigate the impacts of self-regenerating water softeners in the Sacramento region and efficient alternatives, as well as advocate the creation of state and local laws to prohibit the sale of inefficient softener models and/or the setting of water softener efficiency standards.

#### **14. DMM 14: RESIDENTIAL ULFT & HIGH EFFICIENCY TOILET (HET) INCENTIVE PROGRAMS (BMP 14)**

*BMP 14: Implementation shall consist of at least the following actions:*

*Implementation of programs for replacing existing high-water- using toilets with ultra-low-flush toilets (1.6 gallons or less) in single family and multi-family residences.*

*Programs shall be at least as effective as requiring the replacement at the time of resale.*

Originally seven water purveyors in the Sacramento region partnered with the Regional Water Authority and the County Sanitation District in a ULFT/HET retrofit program. The Sanitation District has pledged up to \$350,000 a year on a matching basis for rebates, and has promoted the program with several hundred thousand bill inserts.

In 2005, Cal-Am joined in the regional ULFT/HET retrofit program to offer up to 200 rebates for residential customers installing ULFTs, dual flush or high efficiency toilets (HETs). In addition to the County Sanitation District's rebate of 25 percent of the total cost of the new ULFT and/or HET, installation, parts and services not to exceed \$50 (or total costs), Cal-Am offers customers an additional \$50 rebate for each old toilet using more than 2.0gpf that is replaced with a toilet using 1.6gpf or less. Cal-Am is responsible for taking customer requests, processing rebates and submitting records to the County Sanitation District for reimbursement of their portion of the rebate. Cal-Am joined the regional program in fall of 2005 with over 200 requests for rebate applications received, with 62 rebates approved and processed from Cal-Am customers in less than 3 months. Over 70 additional rebate applications are currently in process for approval for 2005. Cal-Am's 2005 budget for the ULFT retrofit budget for 2005 was \$10,000.

**2006-2010 IMPLEMENTATION:** Cal-Am will be continuing participation in the regional ULFT/HET retrofit program with RWA and the other participating water purveyors in 2006. Cal-Am's Northern Division (Sacramento area) and has budgeted \$10,000 for rebates in the first year. The budget will increase each year from 2006 through 2009 to offer more rebates to customers and expand the program to commercial and institutional customers interested in replacing high volumes of toilets at a single property.

The program will be set up with a toll-free telephone number through RWA's Call Center Service and Cal-Am's call center representatives will be prepared to respond to inquiries,

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answer questions. Customer inquiries and requests will be forwarded to the local Conservation Department for further follow up and to provide rebate applications to qualifying customers. The program will be coordinated with the RWA/County Sanitation District program and will benefit from the synergies that can be gained through standardized applications, consistent policies and, most importantly, regional promotion of the program. To reach higher participation level and all target service areas, Cal-Am, RWA and the other participating water purveyors will be expanding the program marketing efforts. In 2006, RWA will revise the ULFT/HET retrofit program information brochure to include Cal-Am in the list of participating water purveyors as well as updated contact information for customers to receive information or a rebate application form. RWA will also be running public service announcements (PSAs) on local radio stations and multiple print ads in the Sacramento Bee newspaper to further promote the ULFT/HET retrofit program. Cal-Am will annually release a bill insert to all Sacramento service area customers with information on the ULFT/HET rebate program and advertise the program at Cal-Am's booth at several local community events.

Cal-Am's continued participation in the regional ULFT/HET retrofit program after 2006 will depend on the level of demand and customer participation, new regulations, and technologies developed. After 5 years (2010), Cal-Am will re-evaluate the water savings generated from the program to determine if it is still cost-effective or if funds should be re-allocated to rebate other water saving devices and appliances that can generate greater water savings potential and customer benefit.

## 15. WEST PLACER CC&R CONSERVATION POLICY

The West Placer service area is the Northern Division's most rapidly growing area. Essentially all of the new development will involve subdivision approvals and all of the new parcels will be individually metered. In addition, Cal-Am has been successfully incorporating water conservation measures in the Covenants, Conditions and Restrictions (CC&Rs) for individual subdivisions in the West Placer area through authority granted under a CPUC approved tariff. The CC&Rs required by Cal-Am include a restriction on maximum water use by EDU<sup>1</sup> (based

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<sup>1</sup>EDU = Equivalent Dwelling Unit

on both meter size and lot size), and promotion of low water demand landscaping and other conservation measures.

**2006-2010 IMPLEMENTATION:** Cal-Am will continue to incorporate water use limits and requirements for low water use landscaping in the CC&Rs of new subdivisions in the West Placer Service Area. In addition, Cal-Am will be developing a strategic plan to reduce peak water use in the West Placer service area. In 2006 and 2007, the Conservation Dept. will be evaluating water use in the West Placer service area to identify where the greatest water saving potential exist and develop cost-effective solutions for immediate water reduction. These steps will be in addition to the current CC&Rs and other conservation efforts currently in place.

## **16. WASTEWATER RECLAMATION**

The City of Roseville operates two wastewater treatment plants north of Sacramento in Placer County. In 2004 the City delivered 619 mg of recycled water to irrigation customers, including a total of four golf courses and three parks. Two of these facilities, including the Morgan Creek Golf Country Club are located within Cal-Am's West Placer Service area. The City has set the rates for recycled water at 50% of the rate it charges for potable water and does not charge a separate fee for connecting to the recycled water distribution system it has developed. This provides strong a financial incentive for participation, and should support the expansion of the program. By using reclaimed water for irrigating the golf course and park that would otherwise be served by Cal-Am, the City is reducing the demand on the Placer County Water Agency's American River water rights, the source of the potable water that Cal-Am distributes in the West Placer service area.

In addition, the Sacramento Regional County Sanitation District (SRCSD) provides conveyance, treatment, and disposal of wastewater for the Sacramento region from its Elk Grove Wastewater Treatment Plant. A small portion of SRCSD's wastewater is treated tertiary level and reused (approximately 3 – 5 mgd) for non-potable uses such as landscape irrigation uses. The SRCSD plans to increase its reclaimed water capacity to 10 mgd in the next few years. SRCSD is currently planning to expand its production of tertiary effluent (up to 9 mgd) to provide recycled water in additional communities within the City of Elk Grove. SRCSD has also been coordinating with the Regional Water Authority (RWA) to increase the delivery of reclaimed

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wastewater since it joined RWA as an associate member in 2003. None of the areas currently being irrigated under this program are within Cal-Am's service areas; however these efforts by SRCSD will create a potential to use reclaimed water in Cal-Am's Security Park service area as part of the Rio Del Oro Specific Plan.

**2006-2010 IMPLEMENTATION:** Cal-Am will continue to support the use of reclaimed wastewater for irrigation, and possibly other uses, in the West Placer service area. The Company will also continue to support the RWA and County Sanitation District's efforts to supply reclaimed water wherever feasible.

## **D. DEMAND MANAGEMENT PROGRAM IMPLEMENTATION SCHEDULE**

Table 7 summarizes the Cal-Am's implementation program for the *Urban Water Management Plan*. The implementation program is based on a six-year time horizon, beginning with 2005. The schedule is intended to provide general guidance to the Company for the enactment of the water conservation programs described in this report. As discussed in the previous section, Cal-Am is joining with the Regional Water Authority and/or other water purveyors to sponsor and implement many of the Demand Management Measures (BMPs). These include Public Information and School Programs (BMPs 7 and 8), HEWS and ULFT rebate programs (BMPs 6 and 14), Large Landscape Water and Commercial/Industrial/Institutional Conservation programs (BMPs 5 and 9).

The Northern Division will maintain flexibility in funding and scheduling the various programs, and the implementation schedule may be modified as a result of new developments or changes in conditions. In addition, the program implementation is contingent on the California Public Utilities Commission's (CPUC) approval of the proposed program cost recovery in water rates. As required by State law, the entire plan will be reviewed after five years.

**TABLE 7  
IMPLEMENTATION PLAN SUMMARY**

<i>DMM #</i>	<i>Program</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>
1	Single- and Multi-family Water Survey Programs	O	E	O	E	E	O
2	Residential Plumbing Retrofit	E	E	O	O	O	O
3	System-wide Water Audits	O	O	O	O	O	O
3	Leak Detection	O	O	O	O	O	O
4	Metering with Commodity Rates	O	D/E	D/E	E	E	E
5	Large Landscape Conservation	-	D	E	E	E	O
6	High Efficiency Washing Machine Rebates	D	D/E	D/E	E	O	O
7	Public Information Program	O/D	E	O	E	O	O
8	School Programs	O	E	D/E	E	O	O
9	Commercial and Industrial Water Conservation	D	E	E	E	O	O
-	Restaurant Rinse and Save Program	O	O	O	E	O	O
10	Wholesale Agency Assistance	NA	NA	NA	NA	NA	NA
11	Conservation Pricing	O	D	D	E	O	O
12	Water Conservation Coordinator	E	E	E	E	E	O
13	Water Waste Prohibition	O	O	O	E	O	O
14	Residential ULFT Replacement	D	O	O	E	O	O
-	West Placer CC&R Provisions	O	O	O	O	O	O
-	Wastewater Reclamation	O	O	O	O	O	O

Key to Symbols:

D = Develop and/or Begin Program

O = Ongoing Program from Previous Plan or Before

E = Expanding Program to Full Implementation

NA = Not Applicable

- = No Program

# VI. WATER SHORTAGE CONTINGENCY PLAN

## A. INTRODUCTION

AB11 (1991) amended the Water Code provisions addressing *Urban Water Management Plans* to expand their scope to include the preparation of a *Water Shortage Contingency Plan* as one component of the updated *Urban Water Management Plans*. The Division’s first *Water Shortage Contingency Plan* was completed in 1992, (by Citizens Utilities Company) and is updated in this chapter.

## B. PAST, CURRENT AND PROJECTED WATER USE

The Northern Division’s projected total annual production requirements, in five-year increments between 2005 and 2025 are shown in Table 4, on page 29. The production requirements for the past 10 years are summarized in Table 8, on this page.

As described in Section III the population served by the Northern Division is expected to increase from base year 2000 by about 35%, to about 216,000 people, in 2025. The Division’s water production requirements are expected to increase by about 18% during the same period. This is substantially lower than the expected rate of population increase, and demonstrates the Division’s expected water use efficiencies due to the changeover to volume of use billings from the metering of new connections, the retrofitting of existing unmetered residential connections, and the benefits of all the other conservation efforts described in this report.

TABLE 8 WATER PRODUCTION 1996 - 2005	
Year	Amount (AF)
1996	57,785.6
1997	50,328.7
1998	42,781.5
1999	47,471.3
2000	46,925.0
2001	46,792.2
2002	46,377.5
2003	47,153.3
2004	47,825.5
2005	47,620*

\*Estimated

## **C. ESTIMATE OF MINIMUM WATER SUPPLY**

As described in Chapter IV, above, the region's water purveyors have developed management approaches to maintaining long-term sustainable yields from both the North Sacramento and the Central Groundwater basins from which Cal-Am draws the majority of its water supply. The management programs involve the establishment of conjunctive use programs, under which surface water supplies will be utilized more extensively in normal and wet-years, when they are ample, allowing the groundwater basins to recharge naturally. In wet years, when surface water is more abundant, diversions would increase and groundwater use would decrease. In dry and very dry years, surface water diversions would drop, leaving more water in the streams (protecting natural values) while groundwater use would increase. These conjunctive use programs are being planned to allow the region's annual demands to be fully accommodated in all years, whether wet, normal, dry or very dry.

Cal-Am will tailor the Northern Division's response to dry and very dry years in cooperation with the SGA and the CSGCF determinations as to how much surface water will be available under the conjunctive use programs in any given year. Table 6 describes the hypothetical scenarios for single dry years and multiple dry years based on 2025 demand levels. As indicated, Cal-Am expects to be able to meet its full projected 2025 production requirements in a normal year, a single dry year and also during a series of multiple dry years.

## **D. STAGES OF ACTION IN THE EVENT OF WATER SUPPLY SHORTAGES**

Cal-Am has developed a three-phase water rationing plan pursuant to Rule 14.1 of the California Public Utilities Commission. The plan was first adopted in 1991 and Phase III restrictions were implemented in several Cal-Am Districts in response to the water shortage declaration made at that time. The overall plan remains in place and a Phase I, II or III Rationing Program could be implemented, as appropriate, in response to a finding that a water shortage exists.

## Water Shortage Contingency Plan

Since the Northern Division currently has a large number of unmetered connections, it is not feasible for the Company to monitor consumption and provide feedback to individual customers on their conservation successes, nor is it feasible to enforce any mandatory use restrictions on a customer-by-customer basis. Therefore, all Phases of the Water Shortage Contingency Plan for the Northern Division call for voluntary conservation, in accordance with escalating goals. This requires modification of the standard Rule 14.1 plan so that it is appropriate for the Northern Division.

The three phases of the Northern Division's Water Shortage Contingency Plan are described below.

**Phase I:** This is voluntary (non-punitive) conservation program with a goal of a 10% reduction in Division-wide consumption over previous twenty-four months (the "historical base period") Under this program certain wasteful, nonessential uses of water would be prohibited, including:

1. Use of hose water to wash sidewalks, parking lots, service station aprons and other hard surfaces, except for sanitary purposes;
2. Car and motor vehicle washing without a positive shutoff nozzle;
3. Use of water in fountains and for aesthetic purposes unless they have a recycling system;
4. No restaurant drinking water service unless expressly requested;
5. Plumbing leaks must be repaired in 48 hours;
6. Lawn and landscape watering on odd/even days and between 5:00 pm and 10:00 am;
7. No water runoff from landscaped areas.

**Phase II:** Phase II would have a goal of between 10% - 20% conservation, measured against a base period of the 24 previous months. The exact level of conservation would be determined by Cal-Am depending on the severity of the shortage. Cal-Am would consult with other water purveyors in the region, independently or through the auspices of the Regional Water Authority, to arrive at a regionally consistent goal. Water waste would be prohibited, enforcement would be intensified, and the list of nonessential, wasteful practices would be broader. Changes would include:

## Water Shortage Contingency Plan

1. The amounts of permissible lawn and landscape watering would be cut back from every second to every fourth day;
2. Commercial nurseries, golf courses (using potable water) and other water dependent industries would be limited to irrigation on every second day between 6:00 pm and 8:00 am;
3. Water for construction projects, including dust control, would be limited to amounts specified in a water use plan and would have to be non-potable (recycled), if available.

**Phase III:** The Third Phase water rationing program would work toward a goal of greater than 20% conservation over the base period of the previous 24 months. Again, the exact level of conservation would be determined by Cal-Am, in consultation with other regional purveyors, working through the Regional Water Authority. Phase III would involve all of the water use restrictions in Phases I and II augmented by the following additional requirements:

1. Irrigation watering would only be permitted between 6:00 pm and 6:00 am, every fourth day;
2. Commercial nurseries, golf courses (using potable water) and other water dependent industries would be limited to irrigation on every third day between 6:00 pm and 6:00 am;
3. The use of water from fire hydrants would be limited to fire fighting and other public health, safety and welfare uses.

The Phase II and III programs would include increasing levels of patrol for water wasting activities, hot-lines for reporting observed violations, and enforcement mechanisms of escalating severity beginning with written warnings, followed by the installation of temporary meters and immediate conversion to volume-of-use billing if a customer is unmetered, the installation of flow restricting devices (after three monthly violations) plus the payment of special fees for their removal, to, ultimately, the termination of service. Appeal procedures for customers seeking variances or exceptions would also be established.

## **E. WATER EMERGENCY RESPONSE PLAN**

The Northern Division's primary sources of supply are groundwater wells that are widely distributed, interconnected within service areas (and in some cases between service areas) and supported, in critical areas, by standby-wells, back-up power systems, and an extensive system of inter ties to the distribution systems of neighboring water utilities. The sudden failure of an individual supply or distribution facility would not affect a large area or large number of customers, and could normally be dealt with by switching to one of the back-up supplies that area maintained in a state of readiness.

However, in the unlikely event that a loss of supply or distribution facility would result in a severe water shortage lasting more than a few hours or days, a Stage IV Emergency Response Plan has been developed.

In a Stage IV water shortage emergency, customers would be asked to reduce indoor water use to the maximum extent feasible without endangering public health. Requested reductions for residential customers could include:

1. Reduce toilet flushing by one-half to two-thirds;
2. Limit showers to 5 minutes or fill bathtubs no more than one-third full;
3. Run clothes washers only with full loads or wash clothes at facilities located outside the emergency water shortage area;
4. Run dishwashers only when full;
5. Plan menus that minimize water required for food preparation.

A Stage IV emergency alert would also involve very stringent reductions of outdoor use:

1. Landscape irrigation would be prohibited, except to protect rare or exceptionally valuable plants or animals;
2. Water use at commercial nurseries would have to be reduced by 50%.
3. Water use by commercial car washes would have to be reduced by 50%. All other vehicle washing would be prohibited.
4. On golf courses, only greens could be watered.

5. Water could not be used for ornamental fountains or for swimming pools, spas, artificial lakes, etc.
6. No construction water meters or permits for unmetered service would be issued.
7. Water could not be used to wash down paved surfaces, nor could it be served in restaurants, except by request.

## **F. MANDATORY PROVISIONS TO REDUCE WATER USE**

Each of the three Phases of water rationing and the Water Emergency Response Plan all include mandatory prohibitions against non-essential use of water. The prohibitions become increasingly broad in response to increasingly severe water shortages. They all incorporate mandatory restrictions on the use of water for washing sidewalks and other paved surfaces, for vehicle washing, for non-recycling fountains and other aesthetic water features, a prohibition on automatic water service in restaurants, increasingly stringent restrictions on landscape watering and a prohibition on landscape irrigation runoff to streets and sidewalks.

The Phase II or Phase III Water Shortages and Stage IV, Emergency Response, would incorporate additional mandatory reductions such as stringent irrigation restrictions for commercial nurseries and golf courses, limitations on the use of water for certain construction purposes, and the prohibition of the use of water from fire hydrants for other than essential health, safety and welfare reasons.

## **G. CONSUMPTION LIMITS**

Because it currently has a large proportion of unmetered, flat-rate connections, the Northern Division will not be able to specify individual consumption limits for individual customers. All phases of the Water Shortage Contingency Plan will work toward specified production goals. The goals will be communicated to all customers, and monitored by the Company so that progress can be reported to all customers on a regular basis. As more of the Division becomes metered in the future, consumption limits for individual residential accounts during shortages will become more feasible and could be implemented.

## **H. PENALTIES OR CHARGES FOR EXCESS USE**

The Water Shortage Contingency response would involve the adoption of penalties for excessive non-essential water use (water wasting) including installation of temporary meters and immediate conversion to volume-of-use billing if a customer is unmetered, the installation of flow restricting devices (after three monthly violations) plus the payment of special fees for their removal, to, ultimately, the termination of service.

## **I. IMPACTS ON REVENUES AND EXPENDITURES**

Cal-Am must follow the rules and regulations of the CPUC when recovering lost revenue due to reduced water sales. Procedures to permit special drought memorandum accounts were set up in the early 1990's and are now in effect. Cal-Am will continue to work with the CPUC to maintain revenues that are both beneficial to the customers and to the company.

Revenue from excess use charges would also be held in a separate reserve account for eventual disposition as authorized by the CPUC.

## **J. DRAFT ORDINANCE**

Cal-Am does not have the authority to adopt resolutions or ordinances. However, local cities and Sacramento or Placer Counties have the power to adopt ordinances that are compatible with the Company's Water Shortage Contingency Plan and the Company would encourage them to do so in the event of a water shortage.

Any water rationing program that would be implemented by Cal-Am would be designed to conform to the CPUC Rule 14.1 and complement the respective ordinances of the local jurisdictions with authority over portions of the Northern Division.

## **K. MECHANISM FOR DETERMINING ACTUAL REDUCTIONS**

While not all Northern Division customers are metered, the sources of supply are metered so the Company will be able to measure the effectiveness of any water shortage contingency plan in terms of reductions in production compared to comparable periods in the previous 24-months. Data is collected by the Company on a regular basis and, during a water shortage it will be compiled and evaluated to determine the effectiveness of the overall response to a water shortage on a consistent and regular basis. The information will be communicated to customers through several channels, including billing notices, press releases and local media contacts, an internet site, etc.