CHAPTER 1
INTRODUCTION

1.1 PURPOSE

This update to Alameda County Water District's (ACWD or District) Urban Water Management Plan (UWMP or Plan) has been prepared in response to the State of California's Urban Water Management Planning Act, Water Code Sections 10610 through 10657. The Act requires that every urban water supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually to prepare and adopt an urban water management plan. The Act also requires that water suppliers provide updates to their Plan every five years.

1.2 PLAN PREPARATION

This UWMP Update covers the period from 2006 through 2010, and is the fifth plan adopted by the ACWD Board of Directors (the four prior plans covered the periods from 1986-1990, 1991-1995, 1996-2000 and 2001-2005). Several changes have occurred since ACWD's first UWMP was adopted in 1985, which have resulted in the need for a broader, more sophisticated representation of the District's water supply, demand management and operational alternatives. Accordingly, in 1992, the District began implementation of a planning effort that would apply the approaches and techniques of integrated resources planning (IRP) to ensure that appropriate facility and resource decisions are made. IRP is an inclusive process that begins with the premise that a wide range of traditional and innovative supply-side and demand-side (conservation) resources must be considered. The process also provides information on potential consequences and aids in judging the value of trade-offs among resource strategies.

In August 1995, the ACWD Board of Directors adopted the recommendations of ACWD's Integrated Resources Planning Study as its road-map for both supply and demand-side planning through the year 2030. Because this planning process involves assessment and treatment of conservation as a resource that is evaluated as rigorously as supply-side options, the IRP process and results form the foundation for this and future urban water management plans. In addition, because the process applied is inclusive of both supply and demand-side options, it generally goes beyond the statutory requirements outlined the Urban Water Management Planning Act in its analysis of resource management options. ACWD is currently in the process of updating the assumptions and implementation status of the 1995 IRP and the IRP water supply strategy recommendations. As such, the District's adopted 1995 Integrated Resources Plan and the on-going 2005 update to the IRP form the core of this report. Table 1-1 provides a comparison of the key components of the District's IRP and 2006-2010 UWMP Update.

A key policy criterion used in the formulation and evaluation of water supply strategies in the IRP process is to maximize local control of resources while maintaining a high level of service reliability. This is especially important for ACWD because of the reliance on imported water supplies from the State Water Project and San Francisco Regional Water Supply System for approximately half of the District's total supplies. As described in this UWMP, ACWD's water supply strategy includes maximizing the use of local water supplies (local groundwater and surface water, brackish groundwater desalination and recycled water), together with off-site groundwater banking of SWP supplies and a strong demand management program to minimize dependency on imported supplies.

Table 1-1
Comparison of UWMP and
ACWD's Integrated Resources Plan (IRP)

Item	*UWMP*	*IRP*
Planning Horizon	2025 (20 Years)	2030
Planning Criteria	* Reliability * Water Quality * Environmental Impacts	*Reliability *Water Quality *Cost *Environmental Impacts *Local Control
Demand Projections	Yes	Yes
Existing Water Supply Availability	Yes	Yes
Supply Opportunities: -Demand Management -Recycled Water -Water Transfers	Yes	Yes
Long-Term Water Supply Strategy	Yes	Yes
Water Quality Considerations	Yes	Yes
Treatment & Production Facilities	No	Yes
Shortage Contingency Plan	Yes	No

ACWD has coordinated with all appropriate agencies in the development of the District's IRP and this Urban Water Management Plan Update. Table 1-2 below provides a summary of the agencies that ACWD has coordinated with and the relevant information incorporated in this UWMP.

Table 1-2
Agency Coordination

Agency ACWD has coordinated with…	*Relevant information incorporated in the UWMP*
California Department of Water Resources	Estimated future reliability of State Water Project supplies
San Francisco Public Utilities Commission	Estimated future reliability of San Francisco Regional Water System supplies
Bay Area Water Supply and Conservation Agency	Estimated future reliability of San Francisco Regional Water System supplies
Union Sanitary District	Potential future recycled water supplies and projects
City of Fremont	Projected future land use conditions (City General Plan) in Fremont
City of Union City	Projected future land use conditions (City General Plan) in Union City
City of Newark	Projected future land use conditions (City General Plan) in Newark

As per section 10621 (b) of the Urban Water Management Planning Act, all cities within the District's service area were notified of ACWD's UWMP planning process. The Cities of Fremont, Newark and Union City were notified, as was the County of Alameda.

1.3 PUBLIC REVIEW AND ADOPTION OF PLAN

Section 10642 of the Urban Water Management Planning Act requires urban water suppliers to make the Plan available for public review and hold a public hearing prior to adopting the Plan. The Draft Plan was distributed for review and comment beginning on October 27, 2005. In order to encourage the involvement of ACWD's customers, including both residential and non-residential customers, ACWD made copies of the Draft Plan available on the District's web-site, as well as provided copies for review at the District's headquarters and city libraries. Copies of the Draft Plan were also provided to the Cities of Newark, Union City and Fremont, as well as the San Francisco Public Utilities Commission, California Department of Water Resources and Union Sanitary District. A public hearing was also held on the Plan on November 10, 2005 and comments were received through December 15, 2005. This Plan was adopted on December 15, 2005 by ACWD Board of Directors Resolution No. 05-055.[1]

As per the requirements in Water Code Section 10644 (a) a copy of ACWD's Urban Water Management Plan was provided to the following agencies: the California Department of Water Resources, the California State Library, the City of Fremont, the City of Newark and Union City, California on or before January 15, 2006, within 30 days of the Plan's adoption.

ACWD will periodically review its Urban Water Management Plan to ensure that it accurately reflects the District's management activities. Changes will be adopted and incorporated into the plan via amendments or other appropriate means as set forth in Water Code sections 10640 through 10645.

1.4 REPORT FORMAT AND ORGANIZATION

This UWMP provides an update of the elements contained in the District's Integrated Resources Planning Study, and discusses the status of projects, programs, and studies in water supply planning, water conservation and recycled water that were recommended as part of the IRP. This Plan also meets the requirements of the Urban Water Management Planning Act. Table 1-3 provides an index of the required components of the UWMP, and their location within this ACWD 2006-2010 UWMP Update, respectively.

Chapter 1: Introduction - This chapter provides an overview of the Urban Water Management Planning Act requirements, the preparation and organization of this report, and background information on ACWD.

Chapter 2: Past, Current & Future Water Use - This chapter provides an overview of historical and current water use in the District, as well as a summary of future projected water demands.

Chapter 3: Sources of Supply - This chapter provides a summary of the District's sources of supply and their availability, as well as an overview of the management of these supplies.

Chapter 4: Groundwater - This chapter describes the Niles Cone Groundwater Basin, the District's reliance on it as a source of water supply, and the District's policy and activities for managing it.

Chapter 5: Desalination – This chapter describes the Newark Desalination Facility and the District's plans for expanding capacity to augment this source of water supply.

Chapter 6: Water Recycling - This chapter describes the Union Sanitary District's wastewater system (which serves the ACWD service area), and the opportunities for the use of recycled.

[1] The Plan has been amended to include additional information on projected water accounts and wastewater flows. The amended Plan was adopted on April 27, 2006 by the ACWD Board of Directors Resolution No. 06-030.

Table 1-3
2005 Urban Water Management Plan Checklist

Section of Water Code	*Section in Plan*	*Items to Address*
§ 10620 (d)(1) (2)	1.2	Coordination with Appropriate Agencies
§ 10620 (e)	1.2	Urban Water Management Plan Preparation
§ 10620 (f)	8.1,8.2	Describe resource maximization/import minimization plan
§ 10621 (a)	1.3	Plan Updated in Years Ending in Five and Zero
§ 10621 (b)	1.2	City and County Notification and Participation
§ 10621 (c)	1.3	Periodic Review, Adoption of Changes or Amendments
§ 10630	1.2	Appropriate Level of Planning for Size of Agency
§ 10631 (a)	1.6	Service Area Information
§ 10631 (b)	3.1,8.2	Water Sources
§ 10631 (b) (1-4)	4.1-4.4, 8.3	Groundwater as an Existing or Planned Source (see Appendix A)
§ 10631 (c) (1-3)	3.1,8.2, 8.3	Reliability of Supply
§ 10631 (c)	3.1	Water Sources Not Available on a Consistent Basis
§ 10631 (d)	3.1, 8.2	Transfer or Exchange Opportunities
§ 10631 (e) (1) (2)	2.2, 2.3	Water Use Provisions
§ 10631 (f)	7.1, 7.2	Description of Water Demand Management Measures (DMMs)
§ 10631 (g)	7.2	Non-Implemented DMMs
§ 10631 (h)	8.2, 8.3	Planned Water Supply Projects and Programs
§ 10631 (i)	5.2,5.3	Opportunities for Desalinated Water
§ 10631 (j)	7.1	District is a CUWCC Signatory and submits the bi-annual BMP status reports (see Appendix B)
§ 10631 (k)	3.1	Wholesale supplier agencies information
§ 10631.5	7.1, 7.2	Determination of DMM Implementation
§ 10632	9.1-9.5	Water Shortage Contingency Plan
§ 10632 (a)	9.3	Water Shortage Contingency Plan - Stages of Action
§ 10632 (b)	9.2	Three-Year Minimum Water Supply
§ 10632 (c)	9.5	Preparation for catastrophic water supply interruption
§ 10632 (d)	9.3	Prohibitions
§ 10632 (e)	9.3	Consumption Reduction Methods
§ 10632 (f)	9.3	Penalties
§ 10632 (g)	9.4	Revenue and Expenditure Impacts
§ 10632 (h)	9.3, 9.4	Water Shortage Contingency Ordinance/Resolution
§ 10632 (i)	9.3, 9.4	Reduction Measuring Mechanism
§ 10633	6.1	Recycling Plan Agency Coordination
§ 10633 (a-b)	6.2	Wastewater System Description
§ 10633 (d)	6.4	Recycled Water – Potential Uses
§ 10633 (e) (f)	6.4	Projected use of Recycled Water/Incentives to Use
§ 10633 (f-g)	6.5	Plan to Optimize Use of Recycled Water (with Incentives)
§ 10634	3.3	Water Quality Impacts on Availability of Supply
§ 10635 (a)	8.3	Supply and Demand Comparison to 20 Years
§ 10635 (a)	8.3	Supply and Demand Comparison: Single Dry Year Scenario
§ 10635 (a)	8.3	Supply and Demand Comparison: Multiple Dry Year Scenario
§ 10635 (b)	1.2	Provision of Water Service Reliability to Cities/Counties within Service Area
§ 10642	1.3	Public Participation and Plan Adoption
§ 10643	8.2	Review of Implementation of 2000 UWMP
§ 10644 (a)	1.3	Provision of 2005 UWMP to Local Governments
§ 10645	1.3	Availability for Public Review

Chapter 7: Demand Management - This chapter provides an overview of the District's demand management strategy (adopted as part of the IRP process) and a summary of the implementation of the District's water conservation programs.

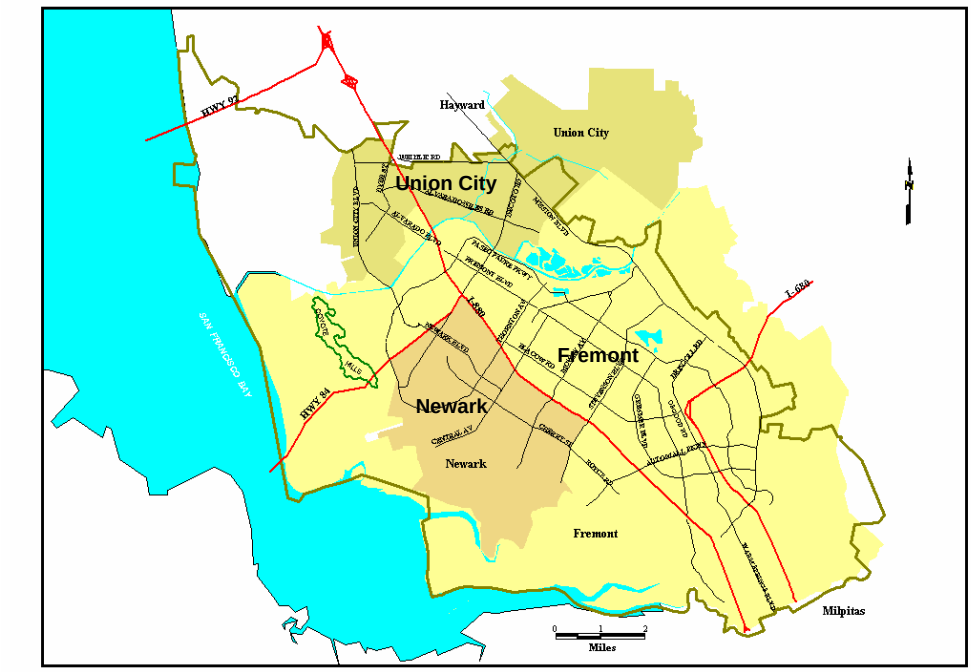
Chapter 8: Water Supply Strategy - This chapter summarizes the planning criteria utilized by the District in developing the District's water supply strategy (as part of the IRP process), followed by a summary of the recommended water supply strategy for the District and the implementation status of key IRP programs.

Chapter 9 - Water Shortage Contingency Plan - This chapter provides the District's water shortage contingency plan, as required under the Urban Water Management Planning Act. This contingency plan includes scenarios for shortages of up to 50%.

1.5 ACWD BACKGROUND

The Alameda County Water District is a retail water purveyor with a service area of approximately 100 square miles encompassing the Cities of Fremont, Newark and Union City (Figure 1-1). The District was established in 1914 under the California County Water District Act and is governed by a five-member Board of Directors. It was originally created to protect the groundwater basin, conserve the waters of the Alameda Creek Watershed and develop supplemental water supplies, primarily for agricultural use. In 1930, urban distribution became an added function of the District. Today, the District provides water primarily to urban customers: approximately 70% of supplies are used by residential customers, with the balance (approximately 30%) utilized by commercial, industrial, institutional and large landscape customers. Total distribution system water use (excluding system losses) was approximately 48,400 Acre-Feet (43 million gallons per day, mgd) in fiscal year 2004-2005.

Figure 1-1
ACWD Service Area



The Niles Cone Groundwater Basin was the principal source of water supply for the District until 1962. Up to that time, groundwater use by the District and numerous private pumpers exceeded recharge, and this imbalance permitted salt water from the Bay to intrude into the basin, severely limiting its use. In 1962, the District was the first state contractor to receive water from the State Water Project (SWP). State water was used to recharge the groundwater basin. As a result, groundwater levels rose and prevented additional saltwater intrusion. However, certain areas within the groundwater basin remain brackish due to past years of seawater intrusion.

Today, the District's primary sources of supply come from the Bay-Delta (via the SWP); the San Francisco Regional Water System; and local supplies including groundwater from the Niles Cone Groundwater Basin.

1.6 SERVICE AREA DESCRIPTION AND POPULATION PROJECTIONS

As part of the San Francisco Bay Area, the District's service area of Fremont, Newark and Union City ("Tri-Cities") is home to a population of over 324,000, and over 7,500 businesses. As indicated in Table 1-4, the projections provided by the Association of Bay Area Governments indicate that the population in the service area may grow to over 400,000 by the year 2030 (see Table 1-4).

Table 1-4
Projected Population in the ACWD Service Area
(source: ABAG, 2003)

City	*Year*				
	2010	***2015***	***2020***	***2025***	***2030***
Fremont	221,600	228,700	236,700	245,500	257,100
Newark	47,000	48,500	50,000	51,700	53,500
Union City	77,200	81,500	86,000	91,100	95,300
Total	345,800	358,700	372,700	388,300	405,900

California's only automobile manufacturing plant (New United Motor Manufacturing Incorporated) is located in the District's service area, as well as numerous high-tech, bio-tech and other industries. The Tri-Cities is also home to numerous retail and commercial businesses that support the Tri-Cities and surrounding communities. The 2003-04 assessed valuation (land, improvements and personal property) of the Tri-Cities area was over $36 billion.

The District's service area is located approximately 20 miles southeast of San Francisco on the southeastern shores of the San Francisco Bay. The District is bounded by San Francisco Bay on the west, by the hills of the Diablo Range on the east, by the Hayward Plain to the north and by Coyote Creek Slough to the south. The western portion of the District area consists primarily of salt evaporation ponds and saltwater marshes. These ponds and marshes extend from one to four miles inland and cover an area of approximately 35 square miles.

Most of the District area is relatively flat with an average elevation of approximately 20-50 feet above mean-sea-level (MSL). The highest elevations (1,500 feet MSL) occur on the eastern boundary of the District, along the easterly slopes of the Diablo Range. In addition, elevations in the Coyote Hills, located adjacent to the salt evaporation ponds are up to 300 feet MSL.

The mean annual precipitation within the District is geographically variable due to the Diablo Range on the eastern boundary of the District. Along the Diablo Range the mean annual precipitation is the highest with approximately 20 inches. However, along the western boundary, adjacent to San Francisco Bay, the mean annual precipitation is approximately 13 to 15 inches. The mean annual precipitation at the Niles precipitation gauging station is approximately 19 inches. The precipitation in the area is highly seasonal with over 75% of the rainfall occurring in the winter months between November and March. Climate data for the ACWD service area is provided in Table 1-5.

Table 1-5
Climate Data for ACWD Service Area

Climate Data (monthly average)	*November - March*	*April-June*	*July – Aug*	*Sept-October*	*Annual*
Evapotranspiration (in)	1.9”	5.4”	6.0”	3.9”	41.5”
Rainfall (in)	3.6”	1.3”	0.2”	0.7”	20.2”
Temperature (°F)	51.0° F	59.1° F	64.8° F	61.9° F	57.7° F
Maximum Daily Temperature (°F)	62.4° F	69.3° F	74.8° F	75.1° F	68.6° F

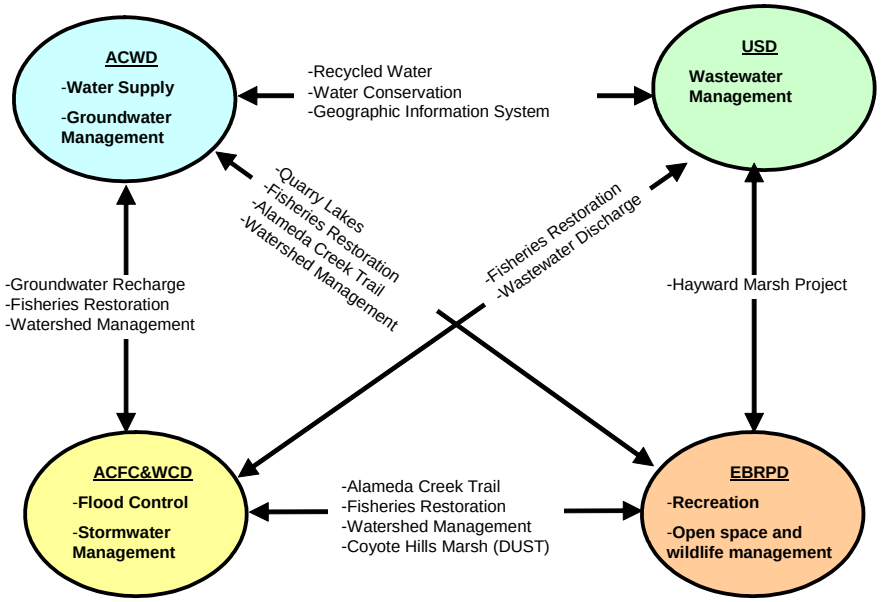
Note: Data represents period of record for CIMIS Station #171 (Union City), Feb 2001 to July 2005.

1.7 REGIONAL INTEGRATED PLANNING

ACWD water supply planning is coordinated with other agencies throughout the Bay Area region. Examples of ACWD’s participation in regional integrated planning include the following:

Integrated Regional Water Management Planning in the Niles Cone Groundwater Basin: In June 2005, ACWD, together with the Union Sanitary District (USD), East Bay Regional Park District (EBRPD), and Alameda County Flood Control and Water Conservation District (ACFC&WCD) completed an integrated regional plan which documents the coordinated planning efforts of these agencies in the Niles Cone Groundwater Basin (contiguous with the ACWD service area). This report included the numerous existing and planned water management activities that are closely coordinated to provide for water supply, wastewater treatment and disposal, stormwater management, flood control, recreation and habitat protection and enhancement in the region. An example of the coordination among the agencies in the Niles Cone Groundwater Basin is shown in Figure 1-2.

Figure 1-2
Integrated Regional Planning in the Niles Cone Groundwater Basin



Bay Area Integrated Regional Water Management Plan: Water Quality and Water Supply Element: ACWD is participating with ten other Bay Area water agencies (serving a combined population of over 5 million) to develop a Bay Area integrated regional water management plan. The purpose of this Bay Area planning effort is to (1) facilitate regional cooperation in water management planning and (2) foster coordination, collaboration, and communication among the participating agencies to achieve greater efficiencies, enhance public services and build public support for vital plans and projects.

Alameda Creek Watershed Planning: ACWD participates in several stakeholder-based Alameda Creek Watershed management planning efforts including: (1) a watershed management planning effort to develop a comprehensive management plan for the watershed; and (2) the Alameda Creek Fisheries Restoration Workgroup, which is focused on restoring steelhead trout, a federally listed threatened species, to the Alameda Creek Watershed.