Appendix A

Phase I
Report of Integrated Regional Water Management Plan

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LIST OF ABBREVIATIONS

CEQA - California Environmental Quality Act
CHWTP – Cement Hill Water Treatment Plant
CIMIS – California Irrigation Management Information System
CUWCC - California Urban Water Conservation Council
CVP - Federal Central Valley Project
CWSC – California Water Service Company
DSMWS – Dixon Solano Municipal Water Service
DWR - California Department of Water Resources
FCAC – SCWA Flood Control Advisory Committee
FEMA – Federal Emergency Management Agency
FSSD – Fairfield-Suisun Sewer District
HCP – Habitat Conservation Plan
IRWMP – Integrated Regional Water Management Plan
JPA – Joint Powers Authority
LPCCC – Lower Putah Creek Coordinating Committee
MPWD – Maine Prairie Water District
MWA – Mojave Water Agency
NBA - North Bay Aqueduct
NBR – North Bay Regional (Water Treatment Plant)
NOAA – National Oceanic and Atmospheric Administration
PSC – Putah South Canal
RD 2068 – Reclamation District No. 2068
SCFC&WCD - Solano County Flood Control and Water Conservation District
SCWA - Solano County Water Agency
SID – Solano Irrigation District
SP – Solano Project
SSWA – Suisun Solano Water Authority
SWA - Solano Water Authority
SWP - State Water Project
SWRCB - State Water Resources Control Board
TAFB – Travis Air Force Base
USBR - United States Bureau of Reclamation
VPW – Vallejo Permit Water

PREAMBLE

This document is the first phase of an Integrated Regional Water Management Plan (IRWMP) for the Solano Agencies. Existing SCWA programs are documented and individual member agency water supplies and current demands are provided.

DESCRIPTION OF THE SOLANO COUNTY WATER AGENCY

History

The boundaries of the Solano County Water Agency include the entire County of Solano, the property of the University of California at Davis in Yolo County and approximately 2,800 acres of Reclamation District No. 2068 that is in Yolo County. The Agency was formed in 1951 by an act of the State Legislature as the "Solano County Flood Control and Water Conservation District". The full text of the legislative act, as amended, is in the California Water Code Appendix Chapter 64 entitled the "Solano County Water Agency Act".

As originally established, the Board of Supervisors of Solano County was the governing board (ex-officio) of the Solano County Flood Control and Water Conservation District (SCFC&WCD). As with other countywide flood control and water conservation districts established about that same time, the SCFC&WCD was given water supply and flood control authorities. The first major action of the SCFC&WCD was to contract with the United States Bureau of Reclamation (USBR) for water supply from the Solano Project.

In 1988, the legislative act was changed to modify the governing board of the SCFC&WCD and to make other minor updates to the act. In 1989 the name of SCFC&WCD was changed to the "Solano County Water Agency" (SCWA).

The change in the governing board of SCWA was very significant. In addition to the five members of the Board of Supervisors, the mayors from all seven cities in the County were added and a board member from each of the three agricultural irrigation districts (Solano Irrigation District, Maine Prairie Water District and Reclamation District No. 2068) was added. The three agricultural districts were added because those districts provide retail water service to their constituents. During the 1988-89 time period, the governing board made a decision to hire a staff independent of the County. Previously the County Transportation Department and other County departments provided staff and administrative services. In October of 1989 SCWA hired its first employee, the General Manager. Additional employees were added starting in 1990.

Authorities

The authorities of SCWA fall into two main categories: water supply and flood control. The water supply function consists of providing wholesale, untreated water supply to cities, districts and state agencies. Additionally, SCWA leads efforts to protect rights to existing sources of water and participates in efforts to secure new sources of water for water supply reliability and future growth in the County.

For flood control, SCWA is responsible for operations and maintenance of the Ulatis Flood Control Project and the Green Valley Flood Control Project. These two projects are described in more detail later in this document. SCWA also has authority to deal with all flood control matters within the boundaries of SCWA.

Funding

SCWA revenues come from essentially two sources: property taxes and water sales. SCWA receives 1.72% of the countywide 1% property tax. This amounts to approximately $4,634,000 per year (FY 2003-2004). This is the Water Agency's "general fund", but most of the revenue goes to fund Solano Project activities. SCWA also has a special tax of 2-cent per $100 of assessed value that is assessed to property within a zone of benefit for the State Water Project. The zone of benefit includes all the cities in the County and much of the irrigated agricultural land. This property tax amounts to approximately $6,208,000 per year (FY 2003-2004). These two property taxes are used to offset some of the costs for the water provided to the cities, districts and state agencies.

Water sales revenues amount to about $2 million per year.

Overall SCWA revenues are about $16 million.

Expenditures

The major expenditures for SCWA are payments to the state and federal government for water supply. Annual payments to the Department of Water Resources (DWR) amount to about $6 million per year. The DWR payments include all costs for delivery of water supply including labor and power costs. Payments to the US Bureau of Reclamation are about $1 million per year. This payment is only for capital cost repayment, operations and maintenance are funded separately with SCWA funds.

Operation and maintenance of the Solano Project is about $3 million per year. Maintenance of the Ulatis and Green Valley Flood Control Projects is about $800,000 per year.

SCWA has a Capital Project Funding Plan that allocates SCWA financial reserves to fund future capital projects.

Overall SCWA expenditures are about $16 million per year.

Staffing

The staff of SCWA currently consists of the General Manager, a Supervising Water Resources Engineer, a Supervising Water Resources Scientist, a Water Resources Specialist a Streamkeeper, an Assistant Streamkeeper, an Administrative Analyst and an Administrative Assistant. Various consultants

and contractors supplement these employees. The General Manager serves at the pleasure of the Board of Directors as a contract employee. The Streamkeeper is also a contract employee who is managed by the Lower Putah Creek Coordinating Committee.

SOLANO PROJECT

History

The idea for the development of the Solano Project was conceived in the 1940's and 1950's to meet the water demands of agriculture, municipalities and military facilities within Solano County. As agriculture developed in the County, use of groundwater increased substantially. Groundwater overdraft persisted in several parts of the County. This overdraft condition provided the impetus for a surface water supply to offset the overdraft. The population of Solano County in the 40's and 50's was also expected to grow; however, planners at that time had no way of knowing that the urban population growth in Solano County would increase as dramatically as it has over the past three decades.

During the planning of the Solano Project, Napa County and Yolo County were asked if they wished to participate in a larger Solano Project. Napa and Yolo declined, so the Solano Project was sized to meet only the projected water needs of Solano County. Congressional authorization was granted for the construction of the Solano Project and the first water was delivered in 1959. The total construction cost for the Solano Project was $38 million. For a more detailed history of the Solano Project, see the book by the Solano Irrigation District entitled "The Solano Water Story: A History of the Solano Irrigation District and the Solano Project."

Solano Project Facilities

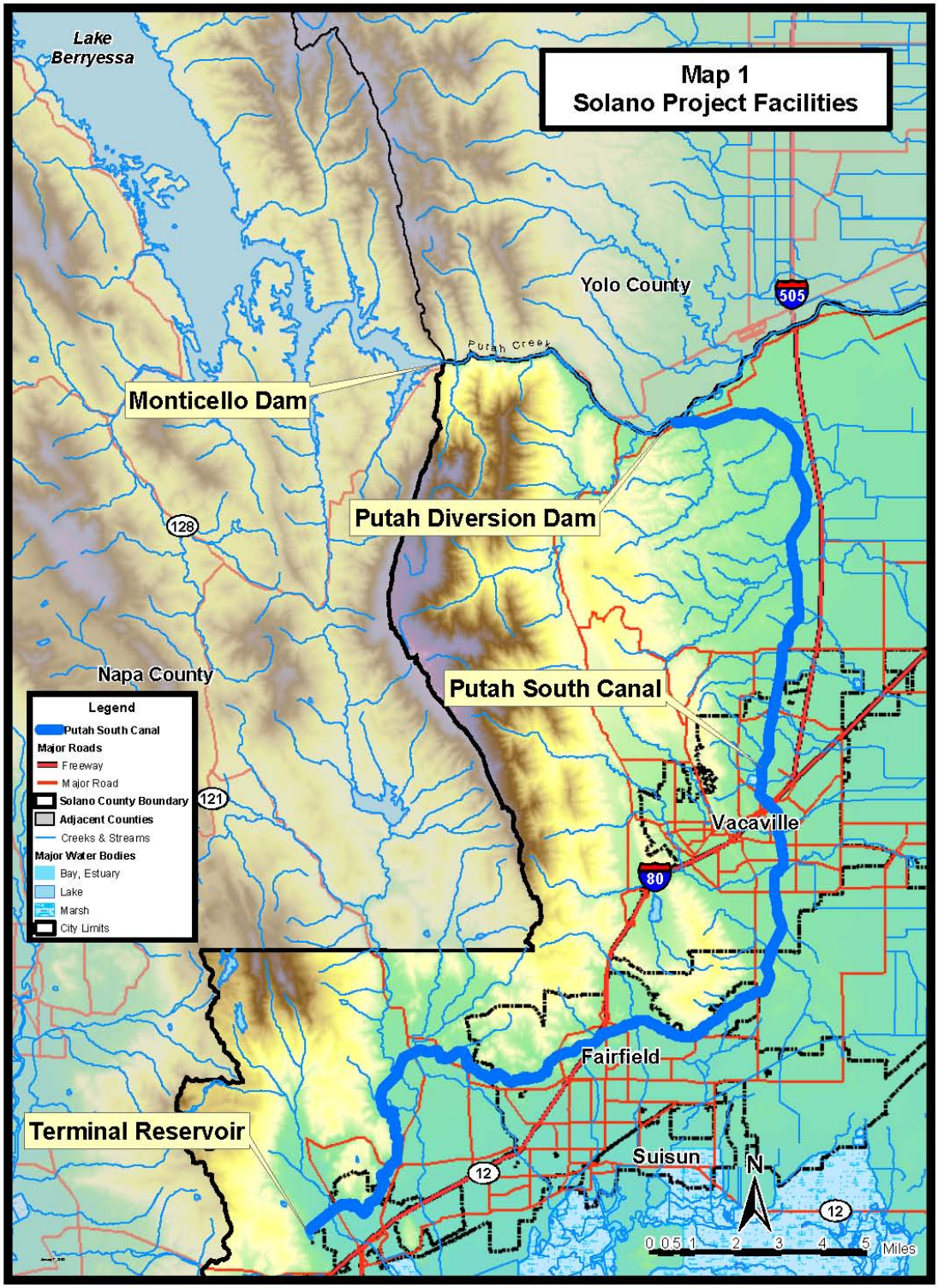
The physical facilities of the Solano Project include Monticello Dam, the Putah Diversion Dam and the Putah South Canal. Facts and figures on these facilities are presented in Figure 1. The locations of the facilities are shown in Map 1.

FIGURE 1
Solano Project Facilities

Monticello Dam - Lake Berryessa
- Storage - 1,602,000
- Dam Height - 304 feet
- Dam Crest - 1,023 feet

Putah Diversion Dam - Lake Solano
- Lake Capacity - 750 acre-feet
- Dam Height - 29 feet
- Dam Crest - 910

Putah South Canal
- Length - 33 miles
- Capacity - 956 cubic feet per second (maximum)


Map 1
Solano Project Facilities
Lake Berryessa
Yolo County
Putah Creek
Monticello Dam
Putah Diversion Dam
Putah South Canal
Napa County
Vacaville
Fairfield
Suisun
Terminal Reservoir
505
128
121
80
12
N
0 0.5 1 2 3 4 5 Miles
Legend
Putah South Canal
Major Roads
Freeway
Major Road
Solano County Boundary
Adjacent Counties
Creeks & Streams
Major Water Bodies
Bay, Estuary
Lake
Marsh
City Limits

SCWA has operations and maintenance responsibility for the Solano Project. SCWA has an agreement with the Solano Irrigation District (SID) to operate Solano Project facilities on behalf of SCWA. SID also owns and operates a hydroelectric power plant at Monticello Dam.

Water Rights

The water rights permits for the Solano Project are held by the USBR in trust for the Solano water users. The water right permits further state that when the permits are converted to a license the license will be issued in the name of the Solano water users. Unlike most federal water projects, the water rights to the Solano Project "belong" to the Solano water users. The water rights permit specifies releases to Putah Creek and limits upstream water development in the Lake Berryessa watershed.

Licensing is the final step in the water rights permitting process. After a water right permit holder puts its water to full beneficial use, the water rights holder can apply to convert the permit to a license. This "firms up" or “perfects” the water right and finalizes the amount of water that can be used based on the water right. The State Water Resources Control Board (SWRCB) is the permitting and licensing agency. The SWRCB will retain jurisdiction over the license holder for instream fish and wildlife concerns. The USBR has applied to the SWRCB for a water rights license for the Solano Project.

In 1995 a settlement was reached on part of the Putah Creek Adjudication that settled longstanding disputes between most appropriative upstream water right holders (i.e., above Monticello Dam) and Solano agencies. Called the "Condition 12 Settlement Agreement," the settlement placed a cap on future water development in the watershed of Lake Berryessa and allocates a limited amount of future water development rights to projects in Napa and Lake Counties. The original water rights permit for the Solano Project had set limits to water supply development in the watershed, but the settlement clarified the limits and provided a mechanism to account, monitor and enforce compliance. A Watermaster has been appointed by the Court to monitor water use and to enforce the settlement. The settlement agreement provides a measure of certainty to the Solano Project water supply since all the major water users in the watershed of Lake Berryessa are bound by the settlement agreement.

In March of 1996 a trial was held in Sacramento Superior Court on instream flow needs for Putah Creek downstream of the Putah Diversion Dam. The Court ruled that additional flows were required in Putah Creek. The judgement was appealed by the Solano parties, but a settlement, the Putah Creek Accord, was negotiated in 2000 among the parties that resolved all disputes. The settlement provides for increased flows to Putah Creek, but includes reduced flows when Lake Berryessa is low in storage and includes a process for addressing illegal surface water diverters in Putah Creek. Prior to the settlement approximately 21,000 acre feet per year was released to Putah Creek to meet instream flow needs. The settlement requires the previous release amount as a baseline with additional flows at specified times. Additionally, set flows were required at specified downstream flow locations. Until there is more experience operating to the settlement standards, the additional water costs of the settlement is difficult to determine.

In normal hydrologic conditions the additional flows from the settlement amount to about an additional 1,000 acre feet per year. In drier years the amount of additional flows increase.

A Lower Putah Creek Coordinating Committee, made up of Yolo and Solano representatives was formed to address Putah Creek issues such as Creek habitat enhancement projects and a Streamkeeper has been hired.

The SWRCB is currently processing a modification to the water rights for the Solano Project that will effectively consolidate terms of the water rights permits, extend some of the terms of the permits and add Putah Creek to the allowed place of use for Solano Project water (to conform to the Putah Creek Accord).

Solano Project Yield

The amount of water contracted (207,350 acre feet per year) is approximately the firm yield of the Solano Project. The firm yield is an engineering calculation based on providing a specified water amount (the firm yield) every year during the driest hydrologic period on record. For the Solano Project the driest hydrologic record was from 1916 to 1934. This is a conservative method of determining a water supply from a reservoir and results in a very dependable water supply.

Water Supply Contracts

A water supply contract executed in 1955 between SCWA and the USBR provided for repayment of Solano Project costs. The contract included a fixed water payment for the term of the contract. The contract was renewed for a 25-year term in 1999. The pricing of the water was kept the same as the rates set in 1955. The rates are $15 per acre-foot for urban water and $2.65 per acre-foot for agricultural water. SCWA pays for operational losses and spills from the Putah South Canal. Payments to the USBR for the water go to offset the capital cost for the Solano Project. SCWA expects the complete repayment of the Project capital costs in about 2005. SCWA uses property taxes to pay for the operations and maintenance of the Solano Project.

SCWA has entered into agreements with cities, districts and state agencies to provide them water from the Solano Project. The contracts with the Solano Project member units are for the full supply available from the Solano Project. The Solano Project contracting agencies are: Fairfield, Suisun City, Vacaville, Vallejo, Solano Irrigation District, Maine Prairie Water District, University of California at Davis, and California State Prison - Solano.

The USBR is contractually committed to deliver the full contract amount of water supply from the Solano Project unless the water supply does not physically exist (e.g. an empty reservoir). All Solano Project contractors, whether they are municipal or agricultural, are on an equal basis for Solano Project water supply.

The contractual allocation of water supply from the Solano Project to Solano Project contracting agencies is shown in Table 2. SID and the Maine Prairie Water District have an

agreement where SID receives 10,000 acre-feet per year of Maine Prairie Water District's Solano Project entitlement in return for providing a larger amount of agricultural return flows to the Maine Prairie Water District. There have been other exchanges and transfers of Solano Project entitlements that are explained in the Member Unit Water Portfolios.

Table 2
Solano Project Water Contracts

Agency	Annual Entitlement (Acre Feet)
Fairfield	9,200
Suisun City	1,600
Vacaville	5,750
Vallejo	14,600
Solano Irrigation District	141,000
Maine Prairie Water District	15,000
UC Davis	4,000
California State Prison – Solano	1,200
Project Operating Loss (average estimated)	15,000
TOTAL PROJECT	**207,350**

Water Quality

Water quality from the Solano Project is excellent for both municipal/industrial use and agriculture. The watershed of Lake Berryessa is 576 square miles in Lake and Napa Counties. Much of the watershed is a natural state, but there is urban and agricultural development.

In the Lake County part of the watershed, the communities of Middletown, Anderson Springs and Hidden Valley have a cumulative population of about 13,000. Near Lake Berryessa in Napa County there are several small subdivisions and the town of Pope Valley. Estimated population for the Napa County part of the watershed is estimated at under 5,000, but recreational visitors will seasonally increase the number of people temporarily in the watershed substantially. It is estimated that 2 million recreational visitors come to the Lake Berryessa area each year.

The primary agricultural land use in the watershed is vineyard production of wine grapes. Cattle grazing occurs on the eastern shore of Lake Berryessa. Much of the watershed remains in a natural undeveloped state.

SCWA works with groups in the Lake Berryessa watershed to promote activities to protect water quality. SCWA leads the Lake Berryessa Watershed Partnership. The Partnership consists of organizations and public agencies in the watershed of Lake Berryessa to monitor and

improve water quality in the Lake. The Partnership supports projects such as household hazardous waste collection sites, signage to prevent water pollution, and sharing of water quality data.

The large volume of Lake Berryessa provides a large dilution factor for any contaminants that may reach the Lake. Additionally, the Solano Project draws its water supply from the bottom of the reservoir that provides for additional decomposition and dilution of any contaminants before and Solano Project water is release to Putah Creek for delivery to the Putah South Canal.

In compliance with state law, a sanitary survey has been prepared for the Solano Project that analyses all potential contamination sources and recommends measures to protect water quality. The sanitary survey covers Putah Creek (between Monticello Dam and the Putah Diversion Dam) and the Putah South Canal, in addition to the Lake Berryessa watershed. City water treatment plants regularly test Solano Project water and find it to be of high quality.

Current Issues

Anadromous Fish. The Putah Creek Accord provides flows that benefit anadromous fish (e.g. salmon and steelhead). The Lower Putah Creek Coordinating Committee desires to improve the habitat in Putah Creek to attract more salmon and steelhead. Steelhead are listed as a threatened species under the Endangered Species Act. The Accord provides for SCWA to request assurances from the Federal Government that improvements to steelhead habitat and the additional flows will not result in a demand for more water releases from the Solano Project. SCWA does not want to be put into a situation where steelhead populations are improved due to the Accord and Lower Putah Creek Coordinating Committee activities, resulting in more steelhead in the Creek, then NOAA Fisheries (the federal agency responsible for enforcing the Endangered Species Act for anadromous fish) demanding more water be released to the Creek to further benefit the increased population of steelhead. Negotiations with NOAA Fisheries are underway to provide a means to allow measures to improve the steelhead populations in the Creek to take place with assurances to SCWA about the need for future increased Creek flows.

Rehabilitation and Betterment. The Solano Project is over 40 years old. SCWA expends an increasing amount of resources on Project maintenance and rehabilitation and betterment. Also, due to the need for better water measurement and water management, SCWA and SID staff has been improving water measurement and water management procedures for the Solano Project.

NORTH BAY AQUEDUCT

History - Water Rights

The North Bay Aqueduct (NBA) is part of the State Water Project (SWP). The SWP exports water from Northern California to parts of the San Francisco Bay Area, San Joaquin Valley and Southern California. Along with the Federal Central Valley Project, the SWP is a major water

supplier in the State of California. The SWP contracts with twenty-nine public agencies for water supplies. SCWA is one of those agencies.

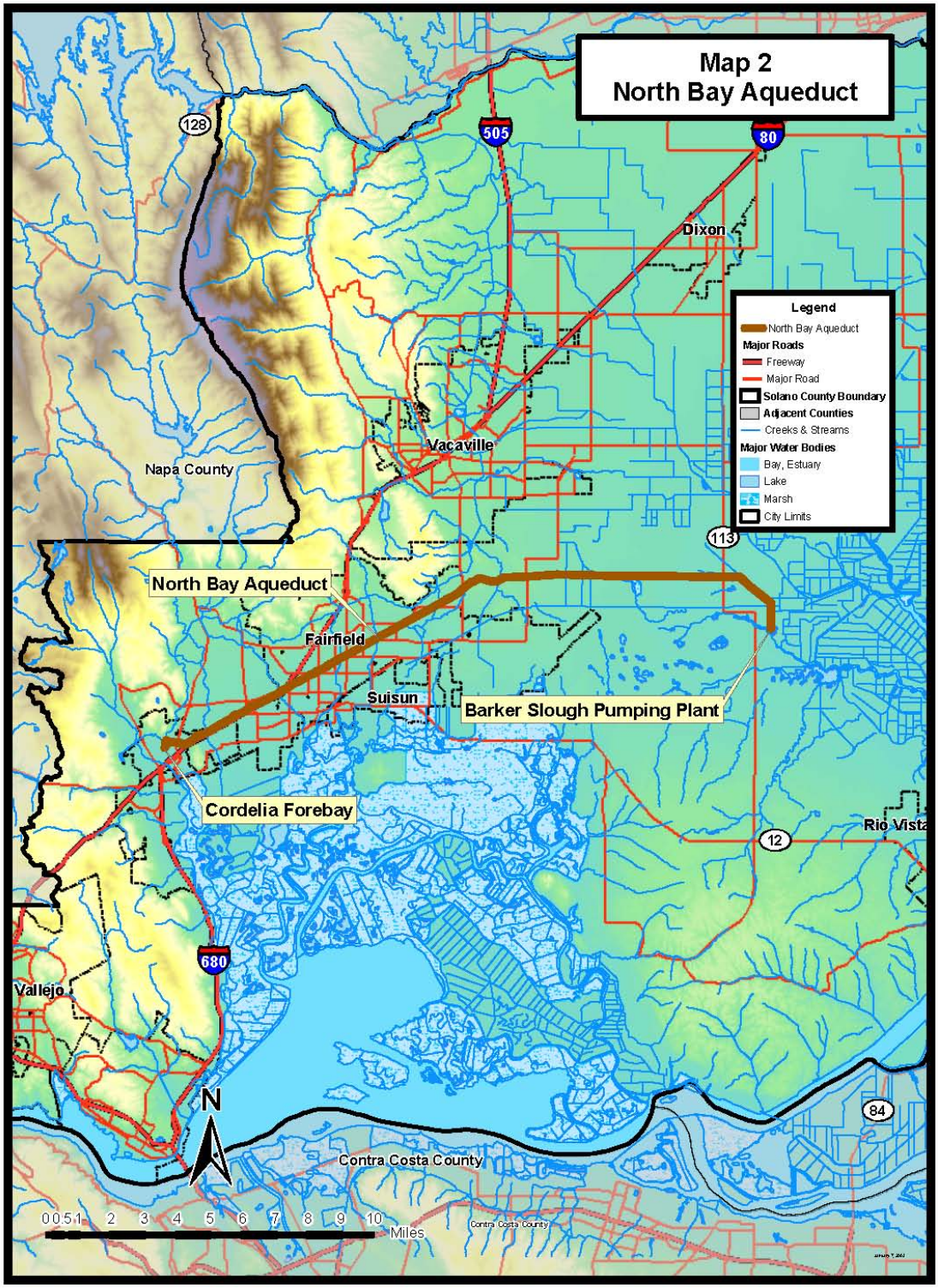
The water supply from the SWP comes from Lake Oroville, a SWP facility, and water rights for flows in the Sacramento and San Joaquin River systems. Major facilities of the SWP are the Banks Pumping Plant in the South Delta, the California Aqueduct, Lake Oroville on the Feather River and San Luis Reservoir located south of the Delta.

The NBA was envisioned as part of the SWP during the 1950's and 1960's when the SWP was being planned. NBA water supplies to Napa County started in 1969 using an interim water supply from the Solano Project. These NBA water deliveries to Napa were provided through this temporary arrangement until the NBA was completed. Construction of the NBA in Solano County started in 1984 and was completed in 1988. Initial NBA water service in the SCWA service area went to Benicia and Vallejo. In 1990 the North Bay Regional Water Treatment Plant, serving Fairfield and Vacaville, came on line and was able to treat water from the NBA for these two cities. The NBA cost approximately $83 million to construct.

NBA Facilities

The NBA is an underground pipeline that runs from Barker Slough in the Delta to Cordelia Forebay, just outside of Fairfield. From the Cordelia Forebay water is pumped to Napa County, Vallejo and Benicia. Travis Air Force Base is also served off the NBA. The size of the underground pipeline varies from 72 inches at Barker Slough to 54 inches at Cordelia Forebay. The facilities of the NBA are shown in Map 2. The NBA is operated remotely by the State Department of Water Resources (DWR) at the Delta Field Division office near Tracy.

DWR has recently found that the NBA cannot deliver the full 154 cfs flow for which it was designed (An additional pump, not presently installed, is required to reach the full contract amount of 175 cfs). Pumping tests have shown that the NBA can deliver a maximum of 142 cfs. DWR, SCWA and Napa County are investigating methods to increase the capacity of the NBA to design levels and are considering increasing the capacity to as much as 248 cfs.


Map 2
North Bay Aqueduct
Legend
North Bay Aqueduct
Major Roads
Freeway
Major Road
Solano County Boundary
Adjacent Counties
Creeks & Streams
Major Water Bodies
Bay, Estuary
Lake
Marsh
City Limits
128
505
80
Dixon
Vacaville
Napa County
113
North Bay Aqueduct
Fairfield
Suisun
Barker Slough Pumping Plant
Cordelia Forebay
Rio Vista
12
680
Vallejo
N
84
Contra Costa County
0 0.5 1 2 3 4 5 6 7 8 9 10
Miles
Contra Costa County

Water Supply Contracts

SCWA has a contract with DWR for water supply from the SWP. In turn, SCWA has contracts with Solano cities for provision of this water supply. The NBA contracting cities are: Benicia, Vacaville, Fairfield, Vallejo, Suisun City, Rio Vista and Dixon. The city of Suisun City has an allocation of NBA water but has no facilities to take NBA water at this time. The cities of Rio Vista and Dixon have the right to obtain a specified amount of NBA water in the future, but have no facilities to take NBA water at this time.

All the water from the NBA supply is currently used for municipal and industrial purposes. The SWP contract runs to the year 2035 and is renewable. The contract term is tied to the repayment of bonds that pay for SWP facilities. If additional bonds are issued, the SWP contract term could be extended. The price charged for the water varies each year to recoup the capital and operations and maintenance costs for the SWP. Water payments from SWP contractors pay for the full capital cost of SWP facilities and operations and maintenance.

SCWA has contracted for 47,756 acre-feet per year of water from the SWP. This amount includes 5,756 acre feet per year additional SWP water that SCWA purchased on behalf of the cities of Fairfield and Vacaville from the Kern County Water Agency (another SWP contractor) in 2001.

The amount of contract water increases each year until it reaches this ultimate entitlement. Table 3 shows the annual increases in supply. For 2003 the contract amount is 46,756 acre-feet.

Table 3

SCWA North Bay Aqueduct Water Supply

Year	Total Annual Amount (Acre Feet)
2004	47,206
2005	47,256
2006	47,306
2007	47,356
2008	47,406
2009	47,456
2010	47,506
2011	47,556
2012	47,606
2013	47,656
2014	47,706
2015 and each succeeding year thereafter	47,756

The cities of Vallejo, Fairfield and Vacaville have purchased the rights to additional capacity in the NBA beyond the amounts of their contractual entitlements. Table 4 shows current and ultimate contract amounts for water from the SWP for each NBA contracting agency.

Table 4
North Bay Aqueduct Member Unit Water Supply
(in acre-feet per year)

City	Current Amount [1]	Ultimate Amount
Benicia	17,200	17,200
Dixon	0	1,500 [2]
Fairfield	14,678	14,678
Rio Vista	0	1,500 [2]
Suisun City	750	1,300
Vacaville	8,978	8,978
Vallejo	5,600	5,600
TOTAL	**47,206**	**47,756**

1. 2004 Entitlements
2. Dixon and Rio Vista Ultimate Amounts are not included in the Total. If Dixon and/or Rio Vista decide to use the NBA water supply; supplies to Benicia, Fairfield and Vallejo are commensurately reduced.

The cost of water through the NBA is approximately $146 per acre-foot (2004 costs). Contracts between SCWA and NBA contracting cities call for a price of $20.50 per acre-foot. This price was established to roughly equate to the price of municipal and industrial water from the Solano Project. There are provisions in the NBA contract for increasing the price of water sold to cities should additional money be necessary to pay DWR for the water. The special NBA property tax generates funding necessary to make up the difference between the $146 paid to DWR for the water and the $20.50 charged to cities. The special NBA property tax of 2 cents per $100 assessed valuation is assessed to a zone of benefit that includes all the cities and most of the irrigated agricultural lands in the County. The property tax assessment is to be in effect as long as payments must be made for NBA water supply.

A large part of the cost of water from the SWP is for fixed capital costs. A breakdown of the approximately $146 per acre foot cost of water is shown in Table 5.

Table 5
North Bay Aqueduct Water Cost Breakdown

Item	Cost [1]	Cost/Acre-Foot
Delta Water Charge	$ 1,212,000	$25.67
NBA Capital	3,368,000	71.35
O&M and Power	2,305,000	48.85
TOTAL	**$6,885,000**	**$145.85**

1. 2004 costs and water amount of 47,206AF

State Water Project Reliability

The biggest issue regarding the NBA water supply is its reliability. When the SWP was first envisioned, it was assumed that the water supply would be very reliable. Additional dams and reservoirs were to be built to meet the ultimate contractual demands of SWP contractors of 4.2 million acre-feet per year. But currently, in dry years, and even many normal years, the SWP will not be able to deliver its full contractual amount. For example in 1991 and 1992 SWP supplies for urban contractors were reduced to 30% and 45% of contracted supply, respectively. In 2001 SWP supplies were curtailed to 39% of contracted supply. Future SWP facilities are not expected to raise the yield of the SWP up to the 4.2 million acre-feet per year amount. SWP export pumping is limited by fishery and water quality constraints in the Delta.

DWR prepared and extensive report on SWP reliability entitled "The State Water Project Delivery Reliability Report" in 2002. This report provides a thorough analysis of the delivery capability of the SWP. The report includes a line graph of the probabilities of projected annual SWP deliveries for three different demand scenarios. There are many variables that effect SWP deliveries including: regulatory standards, operating rules, reservoir carryover supplies, demand in service areas and most importantly precipitation. The line graph is reproduced as Figure 2 below.

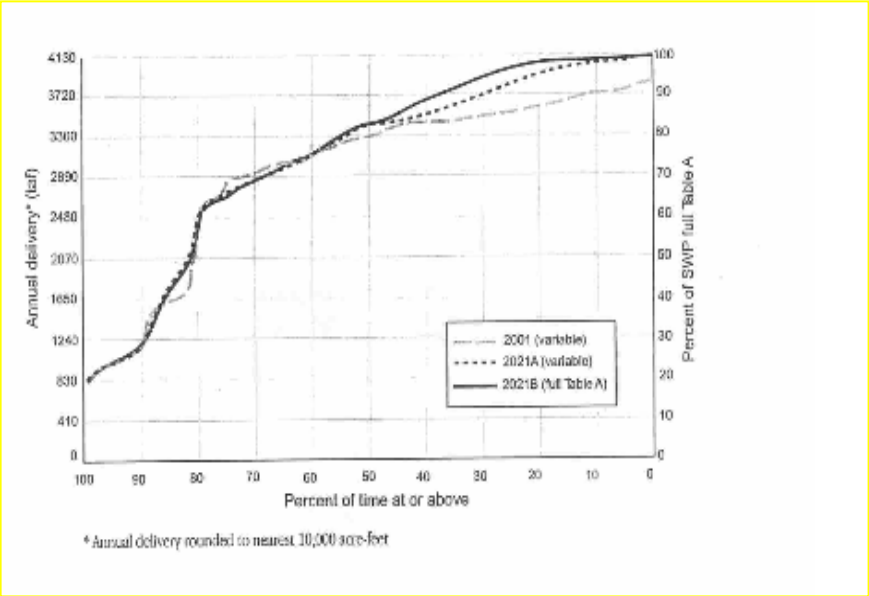
Figure 2 is an exceedence curve. The bottom horizontal scale is the "percent of time at or above". For example if you are reading the 80 % mark, the graph shows that at least 80% of the years the SWP will be able to deliver about 2,275,000 AF, or about 55% of full Table A (contract amounts). The graph will be updated in the future as variables change. At the 50% exceedence level about 82% of contract amounts are delivered.

This graph does not include Article 21 water. Article 21 water is water that is available in excess of Table A contract amounts when there is water available in the Delta in excess of what can be pumped and stored in the SWP system. Article 21 water usually becomes available to south of the Delta SWP contractors when San Luis Reservoir fills in the late winter. San Luis Reservoir is an off stream regulating reservoir south of the SWP and the Federal Central Valley Project (CVP) pumping plants that is filled in the winter when more Delta water is available and supplements

Delta pumping in the summer when demands are high. For NBA water contractors Article 21 water is available whenever the Delta is in excess conditions. Excess conditions in the Delta occur when the SWP and CVP are pumping the maximum amount allowed, all Delta standards are met and there is still water available for export. NBA contractors have Article 21 water available substantially more than south of the Delta SWP contractors. DWR rules specify that use of Article 21 water is to be only for water used beyond that scheduled by SWP contractors.

Historically, SCWA has not used its full SWP contract amount in many years, although this situation will change as cities build out. SWP contractors are allowed to carry over unused water to the next calendar year. "Carryover water" becomes the first water used in the following year. Carryover water is available until San Luis Reservoir spills. Any carryover water left in San Luis Reservoir is lost once it spills.

Figure 2
SWP Delta Delivery Probability



SCWA has an agreement with the Mojave Water Agency (Mojave), another SWP contractor, to exchange wet year SWP water for dry year SWP water. In years when SWCA has extra SWP supplies, SCWA can exchange two units of SWP water for a future return of one unit of water to be provided (at the Delta) by Mojave most likely in a dry year when there are SWP shortages. SCWA also pays some SWP transportation charges to Mojave when water is delivered to Mojave. So far only Benicia has taken advantage of this exchange program and currently (as of 2004) has the right to 5,500 AF of return water from Mojave. Up to 10,000AF in any one year of SCWA SWP supply can be exchanged with Mojave (resulting in a return obligation of 5,000 AF in a future year) with a cumulative return obligation of Mojave of 20,000 AF at any one time. Mojave stores its excess water supply in its groundwater basin. Mojave and SCWA enter into agreements with DWR to transport the exchange water through SWP facilities. The agreement calls for the water to be returned within 10 years.

The NBA was subject to pumping restrictions due to the delta smelt, a threatened species listed under the Federal Endangered Species Act. This fish resides in sloughs and channels of the Delta. Delta smelt spawn in the slough where the NBA intake is located. In several of the years since delta smelt monitoring started in 1993 a temporary pumping restriction of 65 cfs was placed on the NBA in order to protect young delta smelt from being entrained (sucked up) by the NBA pumping plants. In 2005, the U.S. Fish and Wildlife Service discontinued Delta Smelt monitoring at the NBA intake.

Non State Water Project Water

SWP Table A contract water is not the only water that is allowed to be transported in the NBA. Two other important water sources use the NBA: Vallejo Permit Water (VPW) and Settlement Water.

VPW is derived from a water rights license held by Vallejo. The license allows for 31.52 cfs to be pumped from the Delta. The service area allowed to use VPW includes Vallejo, Benicia, parts of Fairfield and the American Canyon area of Napa County. Prior to the construction of the NBA, VPW was transported in the Cache Slough pipeline owned by Vallejo. A pumping plant located on Cache Slough in the Delta pumped water to Vallejo through an underground pipeline.

The Cache Slough Pipeline is interconnected with the NBA and portions of the Cache Slough Pipeline are still being used to transport water from the NBA.

When the NBA was constructed, Vallejo paid for the right to use the NBA to deliver VPW through the NBA. The NBA was increased in size to transport 31.52 cfs of VPW. Annual amounts of VPW are contractually limited to 17,287 AF per year by DWR. This amount is 5,493 AF less than the amount if the 31.52 cfs were taken all year round. An amendment to the agreement with DWR would be necessary to increase the amount of VPW to the maximum amount.

VPW has a higher water rights priority date than the SWP and CVP, so it is more reliable than SWP supplies. VPW is subject to being cut off during the summer of very dry years when the State Water Resources Control Board determines that the available water supply in the Delta is coming from SWP and CVP reservoir storage releases. Term 91 is not included in the VPW license (see explanation of Term 91 is the discussion below about Settlement Water).

Particularly in dry years, VPW is an important part of the water supply in Solano County. Vallejo exchanges and sells VPW to other cities to augment their supplies. See the Member Unit Water Portfolio for detailed information on these exchanges and sales.

Settlement Water is a major new source of water for Benicia, Fairfield and Vacaville. In 1990 the three cities filed for State Water Resources Control Board water rights permits for an appropriation of water under the State's Watershed of Origin statues. The permit application was withdrawn after a settlement was reached with DWR that provided an essentially equivalent water supply from the SWP. A Settlement Agreement and a Conveyance Agreement with DWR specify the details of the Settlement Water supply.

Settlement Water is available up to the following amounts: Benicia 10,500 AF/year; Fairfield 11,800 AF/year; and Vacaville 9,320 AF/year. The main restriction to Settlement water is that is in not available when Standard Water Right Term 91 is in effect. Term 91 is declared by the State Water Resources Control Board when it is determined that the SWP and CVP are releasing stored water in excess of natural flow (natural flow is the flow that would have been in existence if the dam was not there) to meet in Delta demands and Delta water standards. Term 91 is declared in the summer of all but very wet years. Settlement water can be taken when the Delta is in excess conditions (same conditions as when Article 21 water is available) or when the Delta is in balanced

(non-excess) conditions as long as Term 91 is not in effect. Balanced conditions in the Delta are when the SWP and CVP are meeting in Delta water demands, meeting all Delta standards, meeting their export demands and there is no extra water available. During balanced conditions the SWP and CVP are releasing water from reservoir storage to meet their water delivery obligations. The main benefit of Settlement Water is that it is available during balanced conditions when Term 91 is not in effect. Under excess conditions Article 21 water is available, negating the need to use Settlement Water.

Settlement Water is a major new source of water to meet the long term needs of Benicia, Fairfield, and Vacaville. The amount of water requested was based on projected water needs to meet city General Plan demands. The Settlement Agreement allows the three cities to apply in the future to the State Water Resources Control Board for a Watershed of Origin appropriation above Settlement Agreement amounts if their demands exceed those upon which the Settlement Agreement was based. The Settlement Agreement runs through 2035 and is renewable under the same terms as the DWR/SCWA SWP contract. The Settlement Water can be considered a permanent supply.

Water Quality

Another major NBA issue is water quality. The Delta water from the NBA is generally of poorer quality and requires more treatment than water from the Solano Project. Statewide studies of water quality show that the NBA has the poorest water quality of all SWP contractors for some constituents such as turbidity and organic carbon. City water treatment plants have been designed to take into consideration the poorer quality and are able to meet current drinking water standards. However, as drinking water standards become more stringent, it will be more difficult and more expensive to treat water from the NBA. Some city water treatment plants will switch from NBA water to other sources of water when NBA water quality is poor, but this may be less of an available option as the cities build out. Poor NBA water quality particularly occurs in the winter when runoff from the Barker Slough watershed is pumped into the NBA.

SCWA conducted studies to determine the source of contaminants to the NBA water supply. Studies have shown that winter runoff from the local watershed is the source of elevated levels of turbidity and total organic carbon. No point sources were identified. The local watershed is mostly used for grazing of livestock.

The organic carbon is coming from natural sources such as the soil and decaying plant matter. Studies have shown that it is not possible to effectively control organic carbon in the NBA watershed. Turbidity comes from soil particles that are not settling. The soil types in the Barker Slough watershed do not settle well and remain in suspension for very long periods. Traditional best management practices such as vegetative buffers and settling ponds do not reduce turbidity for these types of soils. Studies have determined that eliminating livestock from channels and erosion control are the best management practices to reduce turbidity. SCWA has installed fencing and alternate water supplies to prohibit livestock access to much of the waterways in the watershed. Water quality testing and monitoring is ongoing to test the effectiveness of these source control measures.

Through grant funding SCWA has also investigated the feasibility of an alternate intake to the NBA located away from Delta Smelt habitat and on or near the Sacramento River where there is better water quality. Such a project is feasible from an engineering perspective but is very expensive.

Also through grant funding SCWA is evaluating water treatment technologies to reduce organic carbon in the NBA water.

Current Issues

Reliability. The biggest issue with SWP supplies is the dry year reliability. SWP contracts specify that all SWP contractors be reduced proportionally when there is a shortage. The SWP is making some efforts to increase the water supply of the SWP but realistically can only make marginal improvements due to the high costs of water projects and tough environmental constraints. Most SWP contractors are developing their own projects to augment SWP supplies, such as local surface water storage facilities and groundwater banking. In recent years the SWP has modified its operating rules to encourage innovative local projects to stretch SWP water supplies, such as those measures included in the "Monterrey Amendments" to the SWP contracts. In dry years the SWP and/or the State Water Contractors (an organization of contract holders with the SWP) sometimes organize purchase pools to obtain water supplies from outside the SWP to distribute to participants in the purchase pools.

Many of the ways to increase the supply from the SWP are tied to statewide water issues. The California Bay Delta Authority (CALFED) is implementing plans to enhance ecosystem restoration, increase water supply, promote efficient water use, improve water quality and improve Delta levees. One of the main tenants of the Authority is to seek improvements simultaneously in all of the facets of the Authority's programs. The Authority has been hampered in implementation of its program due to lower than expected levels of funding, in particular from the Federal government. Most measures to improve the SWP water supply are tied to the Authority's overall program. The controversial nature of water issues in California makes it difficult to implement projects that benefit SWP water supplies.

Water Quality. Poor NBA water quality is being addressed on several fronts. Best management land use practices are being implemented in the Barker Slough watershed, primarily to reduce erosion from livestock grazing. These measures are expected to reduce turbidity in the winter runoff season. Alternative water treatment methods to deal with high organic carbon are being studied. A feasibility study of an alternate intake to the NBA that is away from Delta smelt habitat and located at a point on or near the Sacramento River that has better water quality has been completed. Once the treatment studies are completed, the cost and effectiveness of treatment and source control can be compared to the costs of an alternate intake to better determine what options are most feasible to improve water quality at the NBA.

Endangered Species. The endangered species, delta smelt, spawns in Barker Slough pumping plant intake to the NBA. In order to protect larval delta smelt, the US Fish and Wildlife

Service had imposed pumping restrictions on the NBA when larval delta smelt are present. While the restriction did not significantly impact NBA water supplies (shortages were made up later in the year), as NBA water use increases, a pumping restriction could have a major impact on NBA supplies. This restriction was discontinued in 2005, but could be reinstated in the future. This results in some uncertainty as to the availability of the NBA to be fully utilized in the future.

GROUNDWATER

Prior to the development of the Solano Project, groundwater was extensively used in Solano County both for municipal supplies and for agriculture. One of the main reasons for the development of the Solano Project was to rectify groundwater overdraft in some agricultural areas. Once the Solano Project started making agricultural water deliveries, groundwater levels rebounded.

The cities of Rio Vista and Dixon are served exclusively with groundwater from basins underlying the cities. Vacaville gets approximately one third of its municipal water supply from groundwater underlying the city. Most of the growers within SID use surface water supplied by SID, but SID has its own wells to supplement their surface water supply from the Solano Project. Maine Prairie Water District and Reclamation District No. 2068 provide surface water to their growers, and do not currently use groundwater underlying their districts. Growers outside of districts that provide surface water rely entirely on groundwater unless they have an individual right to a surface water supply. The amount of this groundwater use has not been accurately quantified.

Most rural residential landowners have individual shallow groundwater wells that serve their domestic needs. There are also some small rural residential water systems that distribute groundwater to their customers.

The largest groundwater basin underlies the northeastern part of Solano County. This groundwater basin starts from the foothills above Vacaville and goes to the Sacramento River. The groundwater basin goes from Putah Creek to the north to the boundaries of Fairfield to the south. There are two basic levels to the groundwater basin. The shallower aquifer provides agricultural water and local domestic supplies. The shallower aquifer is underlain by the Tehama Formation aquifer. This aquifer is quite deep (over 1,000 feet) under Vacaville, but surfaces in the English Hills area north and west of Vacaville. Vacaville's wells draw from the Tehama Formation for its groundwater supply.

Public agencies that overlie this groundwater basin have developed groundwater management plans as specified in AB 3030, the state law that authorizes local agencies to prepare groundwater management plans. SCWA, through the Solano Water Authority (see pg 41 for explanation of the SWA), prepares biannual reports on groundwater levels for the groundwater basin. Groundwater level data comes from DWR and local public agencies utilize the groundwater basin. These reports show no trend of over drafting with current levels of groundwater use. Groundwater levels drop in dry years, but rebound in wet years.

There may be a potential to more aggressively utilize the groundwater basin. Areas that have a surface water supply that are underlain by a groundwater basin are good candidates for conjunctive use projects. A typical conjunctive use project includes the installation of groundwater wells that are used in drier years instead of surface water that can be sold or exchanged. In wet years, the groundwater basin is recharged and the use returns to surface water.

Rio Vista has done studies on its groundwater basin and is evaluating how had little study.

Groundwater basins outside of the Tehama Formation area and Rio Vista have not been studied much.

OTHER SURFACE WATER SOURCES

Vallejo and Benicia have local reservoirs that provide a portion of their water supply.

For Vallejo, lakes Frey, Madigan and Curry are part of what is called the Vallejo Lakes System. In the past the Vallejo Lakes System provided water to the city of Vallejo. Currently the Vallejo Lakes System provides water to the unincorporated communities in Suisun Valley and Green Valley. As part of the development of the Vallejo Lakes System, Vallejo agreed to serve some residents in the area. The largest lake, Lake Curry, has a storage capacity of 10,700 AF and a yield of about 3,750 AF/year. Vallejo is attempting to get permission for the United States Bureau of Reclamation to transport water from Lake Curry via the Putah South Canal to its water treatment plant in Vallejo. This would more fully utilize the yield from Lake Curry. An environmental impact report for this proposal is underway. One major issue is the impact of the proposal on steelhead (a Federally listed threatened species). Suisun Creek, which is impounded by Lake Curry, supports a small population of steelhead.

For Benicia, Lake Herman, situated in the hills between Benicia and Vallejo, has a storage capacity of 1,800 AF. The average yield of the 10 square mile watershed is 500 to 1000 AF annually with no yield in dry years. The additional storage capacity serves as terminal storage for excess water delivered through the NBA.

In the eastern Delta part of Solano County many growers divert directly from local waterways. Growers hold riparian rights (water rights that derive from land ownership) or appropriative rights. There are no records on the amount of this type of water use. Reliability for these water supplies is high since there is always water physically available in this part of the Delta. There are also these types of small direct diversions on waterways in other parts of Solano County.

SUMMARY OF SCWA MEMBER AGENCY WATER USE

Table 6 below shows SCWA member agency water use from 1999-2002. Water use is broken down by different sources, if the agency receives water from multiple sources. This table

does not include water users who do not get water from one of these agencies, such as individual growers who have their own groundwater wells or their own surface water diversion rights.

Table 6
Member Agency Water Use

Agency	1999	2000	2001	2002
Benicia				
SWP	11,018	15,290	8,523	11,110
Other	749	913	4,087	1,257
Total	**11,767**	**16,203**	**12,610**	**12,367**
Dixon (groundwater)	**3,429**	**3,450**	**3,469**	**3,545**
Fairfield				
SWP	7,263	6,598	5,760	8,555
SP	10,278	9,550	7,867	9,200
Other	3,530	6,109	10,356	6,955
Total	**21,071**	**22,257**	**25,316**	**24,710**
Rio Vista (groundwater)	**1,565**	**1,550**	**1,725**	**1,799**
Suisun City SP	**4,175**	**4,379**	**4,759**	**4,820**
Vacaville				
SWP	4,897	5,484	3,424	6,296
SP	5,410	5,542	5,656	4,012
Groundwater	4,096	5,141	6,211	6,638
Other	1,000	1,322	2,000	1,000
Total	**15,403**	**17,489**	**17,291**	**17,946**
Vallejo				
SWP	8,544	9,461	2,912	5,961
SP	13,514	13,278	12,337	13,714
VPW	0	774	5,448	2,628
Other	82	174	137	157
Total	**21,140**	**23,687**	**20,834**	**22,460**
SID				
SP	125,978	126,378	134,490	129,527
Groundwater	4,820	5,959	5,300	6,853
Total	**130,798**	**132,337**	**139,790**	**136,380**
Maine Prairie Water Dist	**23,142**	**21,390**	**24,170**	**23,894**
CSP Solano	**1,372**	**1,147**	**1,191**	**1,241**
UC Davis	**3,878**	**3,708**	**3,815**	**3,098**
Reclamation Dist 2068	**55,007**	**54,471**	**53,449**	**53,956**
Overall Total	**292,747**	**301,958**	**308,419**	**306,216**

WATER CONSERVATION

Water conservation is an integral part of water management in Solano County. Under the auspices of SCWA, there is both an urban and an agricultural water conservation committee that deal with countywide water conservation issues. Additionally, cities and districts have active water conservation programs as part of their retail water supply program.

SCWA's Urban Water Conservation Committee concentrates on countywide water conservation programs. Examples of programs are water conservation poster contests, water conservation radio script contests, and water efficient landscaping exhibits. Staff from urban agencies meet on a regular basis to plan these types of events and coordinate water conservation activities of individual urban agencies. This also provides a mechanism for sharing information and group purchase of water conservation materials. A major project of the Committee was the Six Flags Marine World (Vallejo) water education exhibit and demonstration water conservation garden. Six Flags has an annual attendance of over a million people, so the exhibit gets a large audience.

Cities and districts receiving water from the Solano Project (Fairfield, Vacaville, Suisun City, Vallejo, Solano Irrigation District, Maine Prairie Water District and SCWA) are required to meet water conservation standards of the federal government. These are the same conservation standards required of CVP contractors and, for municipal users, are basically equivalent to the standards developed by the California Urban Water Conservation Council.

Since SCWA does not provide water directly to residents, the cities are left to develop local programs such as distribution of low flow showerheads, in-school education and low flush toilet installations. SCWA, as a wholesale agency, is a member of the California Urban Water Conservation Council (CUWCC) and has signed the Memorandum of Understanding to implement best management practices for urban agencies at a wholesaler level. The cities of Fairfield and Benicia are also members. The CUWCC is made up of urban water supply agencies, public interest groups and businesses to promote a consistent urban water conservation program statewide. The CUWCC is working with the California Bay Delta Authority to develop a possible urban water conservation certification program that may require any agency that benefits from an Authority related program to meet the CUWCC conservation standards. All the large cities in Solano County and SCWA currently meet this standard.

The Agricultural Water Conservation Committee works on projects that benefit irrigated agriculture. One of their projects has been the purchase of three California Irrigation Management Information System (CIMIS) weather-rainfall stations. These stations are part of a statewide network that provides growers with information on how much water their crops need based on weather conditions. The Committee also provides irrigation efficiency evaluations and information on crop water needs to growers so that they can more efficiently use their water supplies. SCWA, SID, Maine Prairie Water District and Reclamation District No. 2068 are all members of the Agricultural Water Management Council, which is the agriculture version of the CUWCC. SID and the Maine Prairie Water District are also required to have agricultural water conservation plans that meet CVP standards.

In summary, agencies in Solano County meet the water conservation standards that have been established by the CUWCC, the Federal Government (CVP standards) and the Agricultural Water Management Council. The only exceptions are the smaller cites and districts that are not required to meet these conservation requirements.

CITY WATER MANAGEMENT PLANNING

State law requires cities (having over 3,000 connections or serving over 3,000 acre feet per year) to prepare Urban Water Management Plans every five years. These Plans describe current water supplies of each city, water demands, and plans for meeting water demands under shortage conditions. Each city that contracts for Solano Project water is required to have water conservation plans that meet federal requirements. Members of the California Urban Water Conservation Council (CUWCC) voluntarily agree to meet urban water conservation standards and report compliance annually. The federal water conservation standards are similar to the CUWCC standards.

SB 610 and SB 221 (of 2001) require cities to provide detailed information regarding water availability prior to approval of specified large development projects (generally over 500 units). Cites must show how they will meet the water use requirements of existing development and the proposed new development over multiple consecutive dry years. The Urban Water Management Plans are used as a foundation for the SB 610/221 reports.

Solano cities and districts are also undergoing water supply Municipal Service Reviews by the Solano County Local Agency Formation Commission (LAFCO) pursuant to state law. These reviews also look at water supply and demand of each entity. These reviews also examine organizational and jurisdictional aspects of the entity.

Table 7 shows the status of each city's current involvement in the previously described programs.

TABLE 7
City Water Management Planning

City	Urban Water Management Plan	Solano Project Water Conservation Plan	CUWCC	AB 3030 (groundwater)	SB 610/221
Benicia	√	N/A	√	N/A	
Dixon	N/A	N/A			√
Fairfield	√	√	√	N/A	
Rio Vista	N/A	N/A			√
Suisun City		√		N/A	√
Vacaville	√	√		√	√
Vallejo	√	√		N/A	

WASTEWATER RECYCLING

The Fairfield/Suisun Sewer District has one of the longest operating wastewater recycling plants in California. Wastewater from the Fairfield/Suisun area is recycled and used for agricultural irrigation and as a fresh water supply for the Suisun Marsh. Fairfield, working with the Fairfield/Suisun Sewer District, has installed a distribution system that provides reclaimed wastewater to landscaping projects in Fairfield. Plans have been developed for increasing the use of recycled water but cost considerations are holding back implementation.

Vacaville discharges treated wastewater into local waterways that eventually drain into the Ulatis Flood Control Project. During the summer irrigation season the treated wastewater, along with agricultural return flows, natural runoff and Solano Project water, is stored behind temporary dams installed by the Maine Prairie Water District and the Solano Irrigation District. The water is used for irrigation and only a fraction of the water leaves the County. This is another form of recycling of wastewater.

Benicia is considering a wastewater recycling project that could provide treated wastewater to the Valero refinery, reducing the refinery's use of NBA water.

SCWA is member of the Northern California Salinity Coalition. The Coalition seeks funding for studies and projects that deal with desalting water for beneficial uses. Seawater desalination is one example. In Solano County several projects for removing salts in recycled water to make the recycled water more readily used by industrial processes have been proposed.

WATER TRANSFERS, EXCHANGES AND SALES

Solano County has a long history of cooperation between and among cities and districts with water projects. From the development of the Solano Project to water sharing during the droughts of the past decade, agencies in Solano County have sold, exchanged and transfer water supplies to both meet long term needs and emergency supplies. The below are some key examples. See the Member Unit Water Portfolios for more detailed explanations of these transfers, exchanges, and sales. The Member Unit Water Portfolios also includes smaller arrangements that are not listed below.

SID/City Agreements. SID has longstanding agreements with Fairfield, Vacaville, Suisun City and Dixon.

SID/Fairfield. Originally executed in 1974, this agreement was recently renewed in 2002. This is a complicated agreement that basically promised that Fairfield would not expand its city limits into Suisun Valley in return for additional water supply from SID. The additional supplies provide a significant amount of Fairfield's overall water supply. The Amended 2002 Agreement provides for up to 16,018AF/year of water from SID. A Separate JPA agreement provides for SID water to serve lands within the common boundaries of the two agencies not covered under the 2002 Agreement.

SID/Vacaville. This agreement executed in 1995 provides for SID to sell Vacaville up to 10,050AF/year of Solano Project water supply in return for limitations of Vacaville city expansion east into agricultural land.

SID/Suisun City. SID and Suisun City have created a Joint Powers Authority (JPA) called the Suisun Solano Water Authority to run Suisun City's water supply system. The JPA uses Suisun City's Solano Project contract supply and supplements it with SID's Solano Project supply to meet Suisun City's water demand along with the unincorporated Tolenas area. Suisun City is unable to treat its State Water Project contract supply, so it is not currently utilized.

SID/Dixon. SID and Dixon have a Joint Exercise of Powers Agreement that creates the Dixon Solano Municipal Water Service to provide part of Dixon's water supply. The other part of Dixon's water supply comes from the California Water Service Company, a California Public Utility Commission regulated private utility. Each water provider has a specified service area in Dixon. Groundwater is the source for both water suppliers.

Solano Project Drought Measures Agreement. As part of the Solano Project water supply contract renewal, the Solano Project contracting cities (Fairfield, Vacaville, Vallejo and Suisun City) entered into and agreement with the two agricultural Solano Project contracting districts (SID and Maine Prairie Water District) to share water supplies during drought periods. The "Drought Measures Agreement" was executed concurrently with the renewed Solano Project water supply agreements in 1999.

The Agreement works as follows:

When Solano Project storage is less than 800,000 AF on December 1, a Drought Contingency Plan is developed. If Solano Project storage is greater than 1.1 million AF by the following April 1, the Drought Contingency Plan is suspended.

When Solano Project storage is between 800,000 AF and 550,000AF on April 1, each of the parties to the agreement will forgo at least 5% of their contract amount that year. If storage is between 550,000 AF and 450,000 AF on April 1 the parties forgo at least 10%. These forgone amounts are called "Restricted Carryover" and are credited to the party forgoing the water.

This Restricted Carryover cannot be withdrawn from storage until Solano Project storage exceeds 800,000 AF or is less than 450,000 AF on a subsequent April 1. The concept is that the Restricted Carryover should not be used until conditions improve (storage in excess of 800,000AF) or worsen (storage less than 450,000 AF). There is a further restriction for SID and Maine Prairie. When Storage is less than 450,000 AF, their Restricted Carryover can only be used for municipal purposes or to be sold for municipal purposes. When April 1 storage is below 450,000 no Restricted Carryover is accumulated, full contract amounts are available. Restricted Carryover cannot exceed 50% of any party's annual contract amount.

Restricted Carryover is in addition to any voluntary carryover that is allowed under the Solano Project contracts.

If Solano Project storage is less than 400,000 AF on April 1, a drought emergency is declared. This will trigger the "Solano Irrigation District Drought Impact Reduction Program." This program provides for SID growers to fallow land and provide up to 20,000 AF per year for voluntary sale to cities (not restricted only to those with Solano Project contracts). Such a drought fallowing program was implemented in 1991 that created 15,000 AF of SID water sold to cities and SCWA.

Vallejo Agreements. Vallejo often has water supplies in excess of its current needs. Vallejo has entered into agreements with Benicia, Napa County and Fairfield for sales and exchanges.

Benicia. Vallejo has two agreements with Benicia to provide supplemental water when needed by Benicia. The first agreement provides for sale of 1,100 AF/year of Solano Project water. The second agreement provides for up to 4,400 AF/year of NBA water.

Napa County. Vallejo has an agreement with the city of American Canyon in Napa County to provide for a future permanent sale of up to 750 AF of Vallejo Permit Water to American Canyon. American Canyon would then sell an equivalent amount of its Napa County SWP contract amount to the cities of Calistoga and Yountville. This is an indirect way of selling VPW to Calistoga and Yountville who are outside of the allowed place of use for VPW. That transfer has not been activated yet. Vallejo also has an agreement with American Canyon that allows Vallejo to treat part of American Canyon's Napa County NBA contract water and deliver it to American Canyon. This arrangement has no impact on SCWA water supplies since it is Napa's NBA water being treated.

Fairfield. Vallejo and Fairfield have an agreement where by under mutually agreeable circumstances, Vallejo provides Fairfield with two units of VPW water and gets one unit of Solano Project water from Fairfield.

Vallejo Lakes System. Vallejo provides water service to unincorporated communities in the Green Valley/Suisun Valley areas from local reservoirs.

Mojave Exchange Agreement. SCWA has an agreement with the Mojave Water Agency (Mojave), another SWP contractor, to exchange wet weather SWP water for dry year SWP water. In years when SWCA has extra SWP supplies, SCWA can exchange two units of SWP water for a future return of one unit of water to be provided (at the Delta) by the Mojave most likely in a dry year when there are SWP shortages. SCWA also pays some SWP transportation charges to Mojave when water is delivered to Mojave. So far only Benicia has taken advantage of this exchange program and currently (as of 2004) has the right to 5,500 AF of return water from Mojave. Up to 10,000AF in any one year of SCWA SWP supply can be exchanged with Mojave (resulting in a return obligation of 5,000 AF in a future year) with a cumulative limit return obligation of Mojave of 20,000 AF at any one time. Mojave stores its excess water supply in its groundwater basin. Mojave and SCWA enter into agreements with DWR to transport the exchange water through SWP

facilities. DWR currently requires that the water supply exchanged be returned within 10 years of the initial exchange, but this policy may be changed.

Highline Canal Study. This study originated as an investigation of constructing a blending reservoir (called the Noonan Reservoir) for SWP water and Solano Project water. The blended water reservoir would allow exchanges of Solano Project and NBA water and provide for emergency water supply storage. The reservoir was to be located just south of Vacaville where the NBA and the Putah South Canal nearly meet. The proposed location for the blending reservoir proved to have geotechnical problems so the reservoir plan was postponed indefinitely. In its place a project is being developed to implement some of the benefits of the reservoir project.

A revised project was developed where water from the NBA would be utilized in the SID Highline Canal, serving an agricultural area of 7,400 acres. The project facilities include a pump station, a connection to the NBA and a connection to the SID Highline Canal. NBA water will be pumped into the Highline Canal, blended with Solano Project water, and distributed to SID growers.

This project is beneficial since it provides a means to better utilize NBA water when it is available. The project would include agreements between cities who are funding the project (Fairfield, Vacaville and Benicia) and SID who would be distributing water to their customers from the project. The cities would also provide financial incentives to growers to use the NBA water. In return for providing NBA water the cities would obtain Solano Project water in Lake Berryessa storage.

Since the cities usually do not fully utilize their NBA supplies, and this water ends up as spilled carryover or just forgone, this project would optimize use of NBA water and take advantage to Solano Project storage. NBA water would be used conjunctively with Solano Project water. The Solano Project water is also a better drinking water source for the cities.

A total of 12,000 – 15,900 AF of NBA water could be used in the service area of the project if 100% NBA water was used. It is anticipated that a blend of NBA water and Solano Project water would be used during initial stages. This project has the potential to be expanded to other agricultural areas, but infrastructure costs would be higher for other locations.

Maine Prairie Water District Study. A study was done to determine if it is possible to fund water system improvements in the Maine Prairie Water District (MPWD) that would allow MPWD to exchange some of its Solano Project entitlement. Some of the options to be studied include a groundwater conjunctive use project and exercise of MPWD's North Delta Water Agency water supplies that are currently not utilized.

Parts of the MPWD and Reclamation District No. 2068 are in the North Delta Water Agency. The North Delta Water Agency has an agreement with DWR that provides a supplemental water supply to landowners within the boundaries of the North Delta Water Agency when their water rights from the State Water Resources Control Board are reduced or cut off due to Delta water quality standards.

Reclamation District No. 2068 Conjunctive Use. RD 2068 currently uses surface water supplies derived from its own water rights and the North Delta Water Agency agreement. RD 2068 also overlies a groundwater basin that is not utilized. If RD 2068 could develop the groundwater basin, they could exchange their surface water and utilize groundwater at certain times. This has a potential to supplement dry year supplies in Solano County.

RD 2068 recently received a grant to study its groundwater basin in the context of a possible future conjunctive use project. Cities in Solano County are interested in participating in such a conjunctive use project, in particular, to improve the reliability of their SWP supplies, that come from the same Delta source. Allowing other entities to use RD 2068 surface water requires additional research to determine if and how best this can be done.

ULATIS FLOOD CONTROL PROJECT

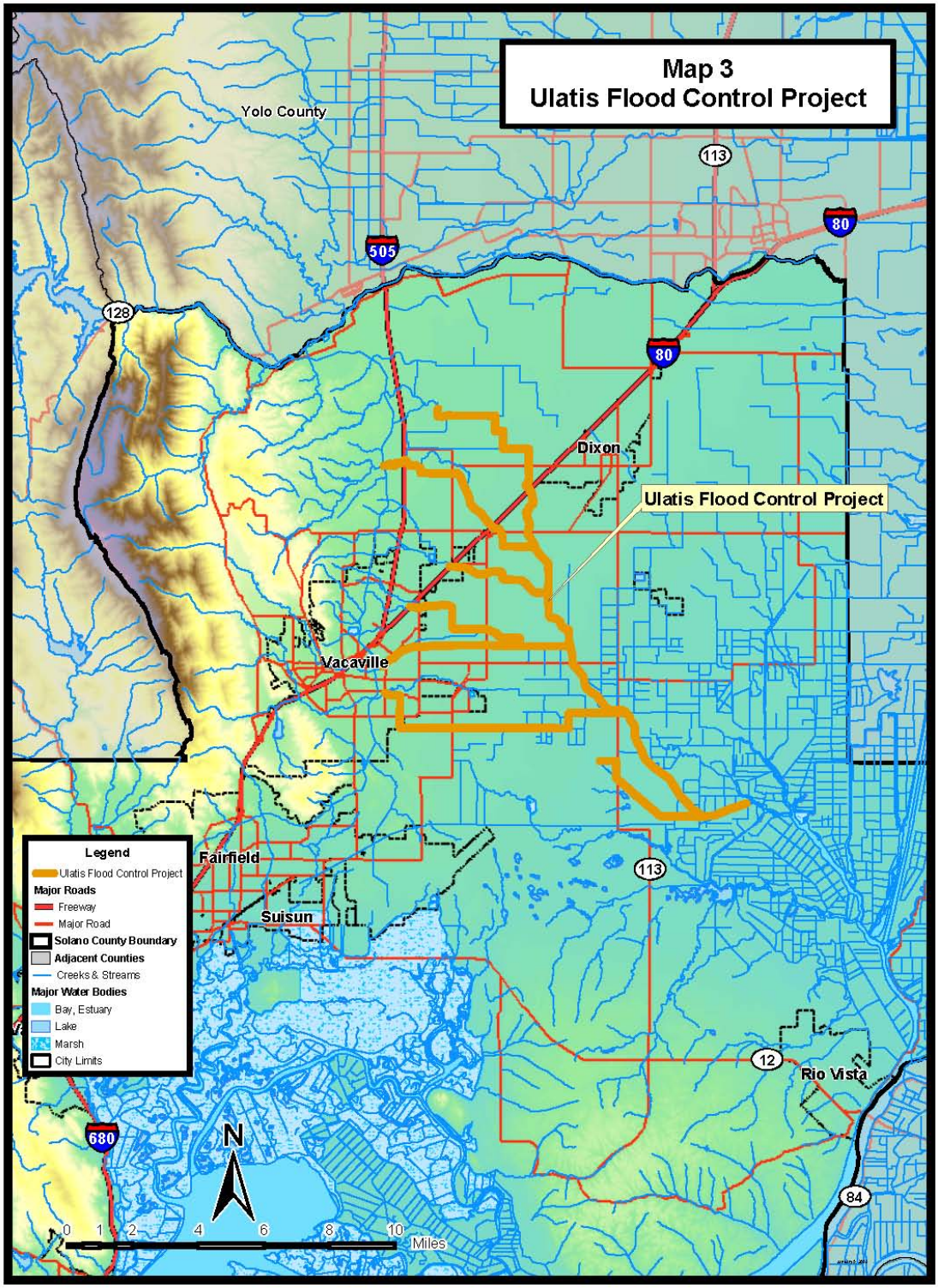
The Ulatis Flood Control Project is located in the Vacaville -Elmira drainage basin. The watershed area for the Ulatis Flood Control Project ranges from the hills to the northwest of Vacaville to the Liberty Island area in the Delta. The Ulatis Project location is showed in Map 3.

The Project was constructed from 1962 to 1972 by the Federal Soil Conservation Service (now the Natural Resource Conservation Service). After completion of the Ulatis Project the Project was turned over to SCWA for operations and maintenance. The channels are almost entirely on private property with easements granted to SCWA for operations and maintenance access. The Natural Resource Conservation Service reviews any plans for major modifications or improvements to the Project. SCWA is responsible for all maintenance and capital improvements. The total cost of construction was approximately $14 million.

Although the City of Vacaville is entirely within the watershed, the primary purpose of the Ulatis Project was to protect agricultural land downstream of Vacaville. The Ulatis Project was designed to control a storm with a 10-year recurrence level, meaning the Project was designed to handle a storm that occurs on an average of once in every ten years. This is a standard level of protection for a non-urban area. Flood control protection in an urban area is usually at a 100-year recurrence level. Portions of the Ulatis Project within the City of Vacaville have been upgraded to a 100-year protection level.

The channels of the Ulatis Project are unlined earth channels where some vegetation is allowed to grow for slope protection. There are a total of 57 miles of channel in the Ulatis Project. Trees and woody vegetation are cleared annually to ensure adequate flood control capacity. The channels are dredged as needed, erosion control utilized and some weed growth is controlled by chemical herbicides.

SCWA contracts with the Solano County Resource Management Department for maintenance of the Ulatis Project. SCWA staff provides engineering, administration and right-of-way management. The County Resource Management Department is responsible for all field operations.


Map 3
Ulatis Flood Control Project
Yolo County
113
80
505
128
80
Dixon
Ulatis Flood Control Project
Vacaville
Fairfield
Suisun
113
12
Rio Vista
680
84
N
0 1 2 4 6 8 10
Miles
Legend
Ulatis Flood Control Project
Major Roads
Freeway
Major Road
Solano County Boundary
Adjacent Counties
Creeks & Streams
Major Water Bodies
Bay, Estuary
Lake
Marsh
City Limits

Funding for the Ulatis Project comes from a portion of the countywide 1 percent property tax. This property tax revenue generates approximately $637,000 per year (FY 2003-2004). Additional funding from the SCWA general fund can supplement the property tax revenues.

Some of the channels of the Ulatis Project are used by Solano Irrigation District and Maine Prairie Water District to convey agricultural irrigation water during the irrigation season. The two districts install a total of eleven temporary dams in the Ulatis Project channels to store water during the irrigation season. These dams are removed prior to the rainy season to ensure that the channels can perform their flood control function.

As development in the watershed of the Ulatis Project continues, SCWA must ensure that there is adequate capacity for additional runoff created. SCWA works closely with the City of Vacaville to ensure that development projects adequately mitigate their storm water runoff impacts. Part of the long-term maintenance program includes monitoring the channels to ensure that they retain the capacity to carry the flows the Ulatis Project was designed for.

GREEN VALLEY FLOOD CONTROL PROJECT

The Green Valley Flood Control Project is located in the Cordelia area. The watershed area for the Green Valley Project ranges from the hills between Vallejo and Fairfield to the Suisun Marsh. The Green Valley Project location is shown in Map 4.

Construction for the Green Valley Project was completed in 1962. The United States Army Corps of Engineers designed and constructed the Project. After completion of the Green Valley Project the Project was turned over to SCWA for operations and maintenance. The channels are almost entirely on private property with easements granted to SCWA for operations and maintenance access. The Corps of Engineers inspects the Green Valley Project once a year and reviews any plans for major modifications or improvements to the Project. SCWA is responsible for all maintenance and capital improvements.

The Green Valley Project is partially within the City of Fairfield. When the Green Valley Project was first built, the service area was unincorporated and largely undeveloped. The Green Valley Project was designed to control a storm with a 40-year recurrence level, meaning the Project was designed to handle a storm that occurs on an average of once in every 40 years. Flood control protection in an urban area is usually a 100-year recurrence level. Portions of the Green Valley Project within the City of Fairfield have been upgraded to a 100-year protection level.

The channels of the Green Valley Project are unlined earth channels where some vegetation is allowed to grow for slope protection. There are a total of six miles of channel in the Green Valley Project. Trees and woody vegetation are cleared annually to ensure adequate flood control capacity. The channels are dredged as needed, erosion control utilized and some plant weed growth is controlled by chemical herbicides.

SCWA contracts with the Solano County Resource Management Department for maintenance of the Green Valley Project. SCWA staff provides engineering, administration and right-of-way management. The County Resource Management Department is responsible for all field operations.

Funding for the Green Valley Project comes from a portion of the countywide 1 percent property tax. This property tax revenue generates approximately $39,000 per year (FY 2003-2004). Additional funding from the SCWA general fund can supplement the property tax revenues.

As development in the watershed of the Green Valley Project continues, SCWA must ensure that there is adequate capacity for additional runoff created. SCWA works closely with the City of Fairfield to ensure that development projects adequately mitigate their storm water runoff impacts. Part of the long-term maintenance program includes monitoring the channels to ensure that they retain the capacity to carry the flows the Green Valley Project was designed for.

OTHER MAJOR FLOOD CONTROL PROJECTS

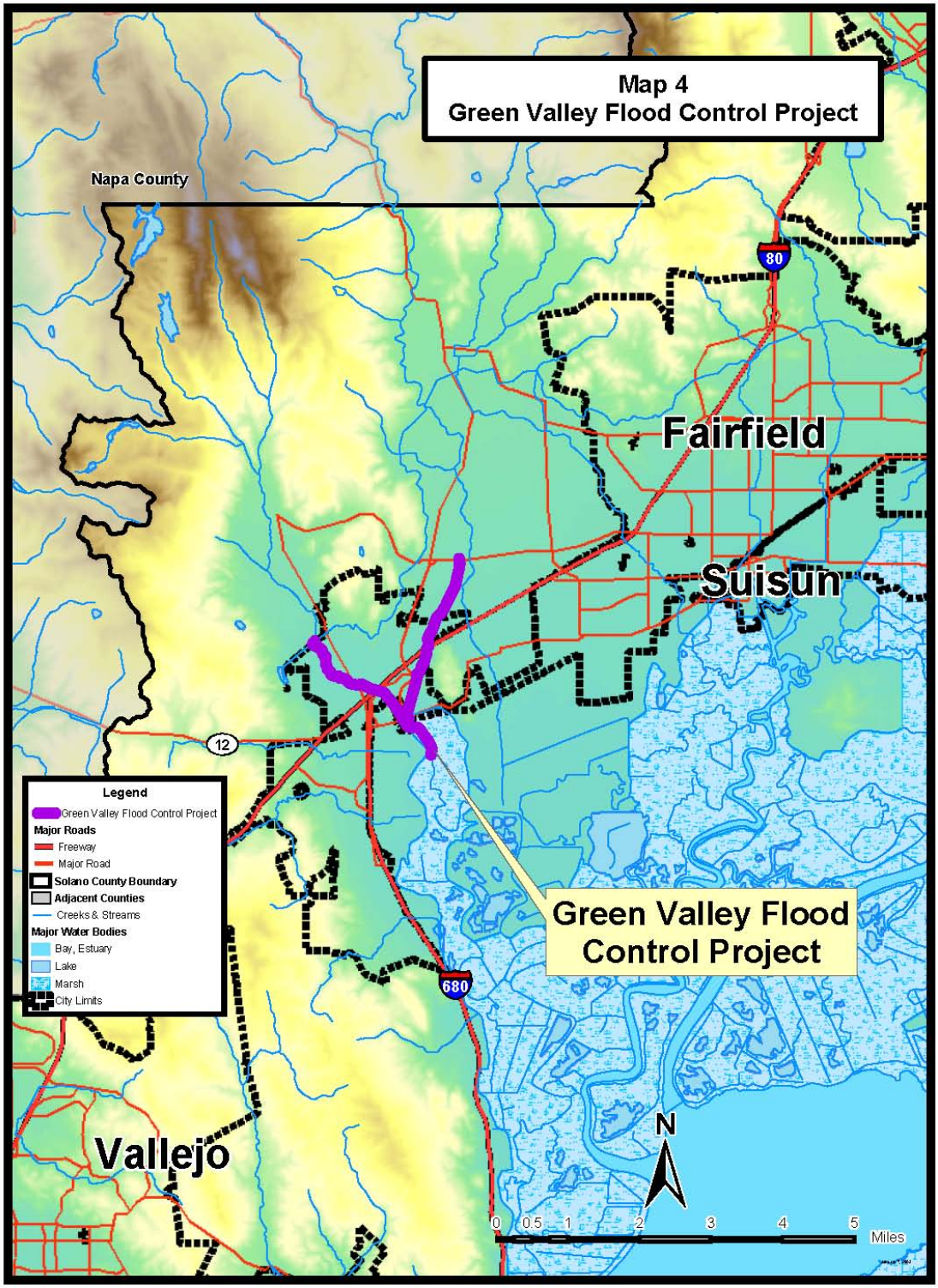
Fairfield Streams. The Fairfield Streams Project was sponsored by the US Army Corps of Engineers. This project provides 100 year flood protection for Fairfield and Suisun. The project consists of improvements to the bottom end of Ledgewood, Laurel, Union and McCoy Creeks that drain the Fairfield/Suisun area into the Suisun Marsh. The project was started in 1970's and completed over time. This project is maintained by the Fairfield Suisun Sewer District which collects a tax to fund maintenance.

Dixon Area Drainage. The agricultural areas in the eastern part of Solano County are provided drainage service by the Dixon Resource Conservation District, MPWD and RD 2068. Each agency has an agricultural drainage system whose purpose is to drain excess irrigation water during the irrigation season and stormwater during the winter. These systems are not designed to act as flood control projects such as city systems or the Ulatis Project.

These agencies have formed a Joint Powers Agency with the city of Dixon to collectively improve and manage drainage facilities. A study, partially funded by SCWA is the basis for this JPA. The city of Dixon lies in the watershed and contributes urban runoff to the agricultural drainage system. This area has a history of disputes and lawsuits over drainage. The JPA will resolve these disputes and provide for new drainage facilities to improve drainage in the area and allow Dixon to more effectively manage its stormwater.

The new projects include an enlarged channel (Lateral 1) leaving a main Dixon detention basin. This project has been completed. This project allows Dixon to discharge stormwater from its basin under metered conditions that shut off discharges when receiving channels of adjacent agricultural fields are flooded. The improved channels provide adjacent agricultural areas with improved drainage when Dixon flows are not using channel capacity.

The JPA also contemplates other projects that benefit the drainage in the region. The New South Channel, a facility that increase the capacity of some existing drains and constructs


Map 4
Green Valley Flood Control Project
Napa County
80
Fairfield
Suisun
12
680
Vallejo
Green Valley Flood Control Project
Legend
Green Valley Flood Control Project
Major Roads
Freeway
Major Road
Solano County Boundary
Adjacent Counties
Creeks & Streams
Major Water Bodies
Bay, Estuary
Lake
Marsh
City Limits
N
0 0.5 1 2 3 4 5
Miles

some new drainage segments would provide additional drainage capacity at the lower end of the system where the drainage outfalls into Delta sloughs. The JPA agreement provides that the city of Dixon will pay for most of the costs of this facility, with the JPA managing design and construction. SCWA is also planned to share in some of the costs. The Eastside Drain is a potential future project that would provide drainage to the Northeast Quadrant part of Dixon to the New South Channel. The viability of this project depends on the future drainage needs of Dixon's Northeast Quadrant area.

City Facilities. Each city in Solano County is responsible for its own storm drainage/flood control. Typically cities provide 100 year protection to residents. Flood control improvements are funded by the cities through taxes and/or assessments. In some cases cities must manage drainage from upstream sources that run into the city. Also they must coordinate with lands downstream of the city to make sure their runoff does not damage those who have interests downstream of their city. SCWA has little to do with city flood control issues other than sometimes working with cities to address upstream and downstream impact issues.

FLOOD CONTROL PLANNNG

Flood Control Master Plan. In 1998 the SCWA Board of Directors approved a Flood Control Master Plan. The Master Plan's main recommendation was to perform flood control watershed studies on problem areas in Solano County. The Master Plan ranked the problem watersheds to provide guidance on which watershed studies should be done first. A watershed study looks at the problem area from the standpoint of all lands that drain into a waterway. It also looks at potential downstream impacts so that any potential solutions will not adversely impact downstream interests

The Master Plan also had other recommendations that were implemented. Six new stream gages were installed throughout the County to provide better stream flow information. The Ulatis Flood Control Project computer model was updated to provide a better tool to analyze flood control improvements. The County Hydrology Manual was revised to provide updated rainfall/runoff data for designing flood control facilities. A small flood control grant program was established to deal with smaller projects meeting specified criteria.

Watershed Studies. So far six watershed studies have been completed (Ledgewood, Suisun, Dixon, McCune, Sweeney and Horse) and one more (Gibson Canyon) are underway. Costs for these studies run from about $50,000 to $200,000.

The watershed studies identify potential solutions to flooding/drainage problems. After the studies are complete SCWA staff works on implementing solutions. It is SCWA policy that SCWA will consider funding part of the capital costs of a potential project, but others must fund permanent operations and maintenance. Also permanent easements must be provided for SCWA funded improvements. Solutions are usually difficult to implement as many of the problem areas are rural and it is difficult to find cost effective solutions and to get operations and maintenance funding. SCWA works with the Flood Control Advisory Committee and local residents to

develop projects as recommended in the watershed studies. Project development includes of public meetings, project financing, right of way acquisition, design, permitting, CEQA and construction.

The following is a brief status report of each of the watershed studies as of the beginning of 2005.

Ledgewood Creek. This study was completed and identified several alternatives to reduce flooding in the area. No project is being implemented due to lack of interest from landowners that would benefit from flood improvements. Some landowners felt that flooding was not a major problem and others were not interested in funding project maintenance.

Suisun Creek. A first phase study was completed that failed to find any cost effective solutions to flooding problems. All solutions we prohibitively expensive compared to flood control benefits of a project. Staff and the Flood Control Advisory Committee are examining smaller potential projects that would benefit smaller areas along the creek. There may also be a possibility to partner with Caltrans, who may be building detention storage in the watershed as part of the North Connector project.

Dixon. A watershed study is complete and the city of Dixon is completing construction of the first phase of improvements along Lateral No. 1 that parallels Highway 113. A Joint Powers Authority (JPA) was being formed by Dixon, Dixon Resource Conservation District, Maine Prairie Water District and Reclamation District No. 2068 to operate and maintain JPA projects. Other future drainage projects identified in the watershed study are being considered for implementation.

McCune. The watershed study for McCune Creek upstream of Hally Road has been completed and staff is working on implementation of the project to determine interests of residents in the project, acquisition of right of way and funding of maintenance costs.

Horse Creek. A variation of a project identified in the watershed study for a one square mile area tributary to Horse Creek has been identified and been completed.

Sweeney Creek. This watershed study was started in 2003 and completed in 2004. SCWA approved projects identified in the study and the projects are in an implementation stage.

Gibson Canyon Creek. This watershed study was started in 2003 and will be completed in 2005.

Small Project Grants. Since 1996, SCWA has budgeted about $100,000 per year for a grant program aimed at solving small flood control/drainage problems. Generally these are projects less than $10,000. Criteria include that property owners must commit to maintaining projects after completion, project must not have adverse downstream impacts, and the project benefits more than one landowner. The full $100,000 is not always expended each year, but this program has been successful in resolving smaller flood control problems.

Flood Hazard Awareness. Storms of December 2002 cause severe flooding in the North West part of the County. Many residents were not aware that they lived in an area subject to flooding. In these areas the December 2003 storm was rated as a 100 year event, a 1% chance of happening in any year. Many people rely upon Federal Emergency Management Agency maps that were developed for flood insurance purposes to determine if they are in an area subject to flooding. These FEMA maps are not always accurate or up to date, particularly in rural areas.

In 2003 the SCWA Board of Directors funded a Flood Hazard Awareness Program to inform County residents of the danger of flooding. Had a 100 year storm been centered over another part of the County, it is likely that similar damage would have occurred. The program seeks to educate residents on how to determine if they are in an area that is subject to flooding and how to prepare for a flood.

Flood Control Project Funding Principles. SCWA has adopted "Interim Principles to be Followed for SCWA-Funded Flood Control Projects". The Principles are intended to be used by SWCA to make decisions on funding flood control projects identified in watershed studies developed by SCWA. The principles generally call for cost sharing of capital costs and non-SCWA funding of maintenance of projects. Projects must show a benefit commensurate with costs.

ENVIRONMENTAL PROGRAMS

Habitat Conservation Plan. SCWA, cities/districts that contract with SCWA for Solano Project water, and a few other public agencies are co-applicants to develop a Habitat Conservation Plan (HCP) that will allow issuance of incidental take permits to impact Federally listed endangered species. The HCP identifies species to be covered, covered activities, conservation measures, financing and HCP administration. If the HCP is approved by the US Fish and Wildlife Service the applicants will receive incidental take permits that allow them to impact species listed in the HCP for the activities listed in the HCP. The HCP benefits the Solano agencies by providing a streamlined and predictable permitting process for listed species and benefits the species by requiring conservation measures developed on a landscape basis rather than a project by project basis.

The HCP is planned to be a combined with a Natural Communities Conservation Plan, the state version of an HCP. Then state listed endangered species could be covered by the joint document.

The HCP also provides a conservation strategy for the entire County for the covered species. The HCP can be used to obtain grants and other funds to implement projects beneficial to the species above and beyond just mitigation.

The HCP is expected to be completed in 2006. SCWA will have a role in administration of the HCP including monitoring, adaptive management and reporting.

Lower Putah Creek Coordinating Committee. The Lower Putah Creek Coordinating Committee (LPCCC) was formed in 1999. The Putah Creek Accord that settled the instream flow dispute concerning the Solano Project and provided for the creation of the LPCCC. The LPCCC is made up of five members from Solano and five from Yolo representing the parties to the Accord. The LPCCC is charge with coordinating Putah Creek restoration and monitoring activities in Lower Putah Creek (downstream of the Solano Diversion Dam).

The Accord calls for the funding, by SCWA of monitoring programs and a Steamkeeper who plans and implements restoration projects. The Streamkeeper is an employee of SCWA, but works under the direction of the LPCCC. SCWA provides clerical, accounting and administrative support for the Streamkeeper and the LPCCC. The LPCCC has been very successful in obtaining grants to fund planning and restoration activities.

ADVISORY COMMITTEES

SCWA Advisory Commission. The legislation that created SCWA also calls for an Advisory Commission. The Commission is made up of public works directors and water district managers of member agencies. The Commission meets monthly and makes recommendations to the SCWA Board of Directors. One of the major benefits of the Commission is the forum it provides to discuss and coordinate water issues in Solano County.

Flood Control Advisory Committee. In 1998 the SCWA Board of Directors formed the Flood Control Advisory Committee (FCAC). The FCAC is made up of seven public members appointed by SCWA, two members from the SCWA Advisory Commission, and three from Resource Conservation Districts. The FCAC provides advice to the SCWA Board of Directors on flood control matters and monitors the implementation of the SCWA Flood Control Master Plan. The FCAC also acts as a liaison between the public who have flooding problems and the SCWA Board of Directors.

SOLANO WATER AUTHORITY

The Solano Water Authority (SWA) is a joint powers authority whose members are the same member agencies of the SCWA. SWA is structured around joint projects of interest to the member agencies and "project agreements" that establish how a project is to be funded and managed. There are presently four SWA project agreements. SWA is legally a separate entity from SCWA, although there is very close coordination and overlapping in responsibilities.

The SWA was established in 1987. At that time only the Solano Irrigation District, Fairfield and Vacaville were members of the SWA. In 1988, Vallejo, Benicia, Suisun City, Dixon, Rio Vista, The Maine Prairie Water District, Reclamation District No. 2068 and Solano County became members of SWA. With these additional agencies, SWA was made up of the same agencies that make up SCWA.

The governing board of SWA is a "Policy Committee" made up of one representative of each member agency. The SWA Policy Committee closely mirrors the governing board of SCWA.

One difference is that SCWA has all 5 members of the County Board of Supervisors on its governing board while the SWA has only one member of the Board of Supervisors. Additionally, SCWA has elected board members from agricultural irrigation districts on its governing board while for the SWA agricultural irrigation districts have chosen the option to have managers of the districts serve on the SWA governing board.

The project agreements are structured so the participating member agencies have full control over the projects done through the project agreements. SWA projects are funded solely by agencies that are participants of the project agreements.

Each SWA project agreements has a task force made up of staff from the participating agencies. Non-SWA members may also participate in projects. These task forces meet as necessary to carry out projects. Major project decisions are made by a subset of the SWA Policy Committee from representing only the project participants. The staff of SCWA provides staff services and is involved in each of SWA's task forces. The Solano Irrigation District staffs the SWA Policy Committee and acts as Treasurer/Controller. SWA has its own legal counsel.

All SWA projects are financed through contributions from member agencies. There are no outside sources of funding for SWA projects. General administration costs for SWA are allocated to member agencies.

The SWA has broad authorities as a joint powers authority through California law. The SWA can finance and own facilities, acquire water and construct, maintain and operate water projects.

The four SWA project agreements are described below:

Solano Project Transfer. This project agreement is for the transfer of ownership of the Solano Project from Federal ownership to local control. The participants in this project agreement were the Solano Irrigation District, Fairfield, Vacaville, Suisun City, Maine Prairie Water District, Vallejo and the Solano County Water Agency. This project is currently inactive.

This project agreement was formally established in 1990, although preliminary work on the proposed transfer of the Solano Project started several years earlier. The sole task of this project agreement was to obtain Federal legislation providing for the transfer of ownership of the Solano Project to local control. Legislation was first introduced in 1988. Solano Project transfer legislation continued to be discussed in Congress through 1992, where the legislation was discussed in a House-Senate Conference Committee, but was not included in water legislation that was ultimately enacted.

Noonan Reservoir. The Noonan Reservoir was anticipated to be a small, 2,800 acre-foot impoundment, located were the Putah South Canal and the North Bay Aqueduct come very close to each other between Vacaville and Fairfield. The idea was that Noonan Reservoir could serve as a blending reservoir for the two sources of water and as an emergency storage supply.

The participants in this project agreement are the Solano Irrigation District, Fairfield, Vacaville, the Suisun/Solano Water Authority, Vallejo, Benicia and the Solano County Water Agency.

Investigations have found that the soil conditions at the site are probably not suitable for a reservoir. The soil preparation necessary to construct a reservoir would be very expensive and the project is probably not financially feasible as proposed. This project is inactive.

A subset of the participants in the project agreement are currently looking at a physical connection at the Solano Irrigation District Highline Canal between the Putah South Canal and the NBA in order to provide some of the same benefits of Noonan Reservoir at a substantially lower cost. This connection would allow the use of NBA water for agriculture in exchange for Solano Project water to be used by cities. This project is described in more detail on page 31.

New Water Supply. This project agreement is for obtaining new permanent water supplies for the participants. The participants are the Solano Irrigation District, Fairfield, Vacaville, Rio Vista, Vallejo, Benicia, and the Solano County Water Agency.

This project agreement started out as a vehicle to apply to the U.S. Bureau of Reclamation for a Central Valley Project water supply contract. Subsequently, the USBR determined that it would not provide contracts for water supply to new contractors. The focus of the participants then shifted to water transfers. There are currently no active water transfer investigations underway.

The cities of Fairfield, Vacaville and Benicia have a sub agreement to participate in an application to the State Water Resources Control Board for additional water appropriations under the watershed of origin provisions in State law. This effort resulted in a Settlement Agreement with DWR that gave the cities an equivalent water supply. See details in the State Water Project section. This project is now complete.

Coordinated Groundwater Analysis. This project agreement is to study and monitor the Putah Fan/Tehama Formation Groundwater Basin. The participants are: the Solano Irrigation District, Vacaville, Maine Prairie Water District, Reclamation District No. 2068, Dixon, Solano County and the Solano County Water Agency. The project provides data for groundwater management plans pursuant to AB 3030 approved by the Legislature in 1993. SWA is preparing biannual reports on the groundwater basin levels that can be used to determine if future steps need to be taken.

STATE AND REGIONAL ORGANIZATIONS

State Water Contractors. Agencies that contract water from the SWP have joined in an organization called the State Water Contractors. The State Water Contractors include 27 of the 29 agencies that have contracts with DWR. These agencies represent over 99 percent of the total water contracted. The main activity of the State Water Contractors is to advocate for the protection and enhancement of supplies from the SWP. The State Water Contractors participate in CALFED activities and water right hearings regarding the Bay-Delta Estuary and are very involved in issues

regarding the Endangered Species Act. The State Water Contractors also advocate development of additional facilities to improve water supply reliability and increase the water supply of the SWP.

Cost control and cost containment are another important advocacy role of the State Water Contractors. Since the contracts between SWP contractors and DWR require the Contractors to pay for all of the costs of the SWP, the State Water Contractors are diligent in monitoring the activities of DWR to ensure that money is not unnecessarily spent. The State Water Project contractors also sponsor an annual audit of the SWP to ensure that expenditures and income are appropriate.

SCWA is a relatively small SWP Contractor with about 1 percent of the ultimate contracted yield. In contrast, the Metropolitan Water District of Southern California has contractual entitlements to about half the SWP water supply. The second largest agency is the Kern County Water Agency with approximately one quarter of the total SWP water supply. The rest of the agencies make up the remaining approximately one quarter of entitlements.

State Water Project Contracting Authority. The State Water Contractors, in 2003, formed a joint powers authority to provide assistance to DWR. The Authority is made up of almost all State Water Project contractors and is structured to allow DWR to contract with the Authority for a wide variety of services. The Authority would perform these services and bill DWR. DWR would pass along these costs to the SWP contractors in their standard bills for SWP water. An example of a service that the Authority provides is expert consulting in SWP energy acquisition.

The Authority is also involved in studies that benefit groups of SWP contractors and could become involved in water transfers in the future. The Authority has the ability to take over operations of parts of the SWP, but that type of work is not envisioned at this time. There are examples of local water contractors successfully running parts of Federal water facilities, like how SCWA operates and maintains the Solano Project for the USBR.

The Authority was formed under the realization that DWR was having trouble obtaining needed expertise and staffing due to staffing freezes and the cumbersome and restrictive State government process for procuring outside consultants.

CALFED - California Bay Delta Authority. The Authority oversees the CALFED Bay Delta Program, that is implementing plans to enhance ecosystem restoration, increase water supply, promote efficient water use, improve water quality and improve Delta levees. One of the main tenants of CALFED is to seek improvements simultaneously in all of the facets of the CALFED'S programs. The CALFED has been hampered in implementation of its program due to lower than expected levels of funding, in particular from the Federal government.

CALFED is a potential funding source for many SCWA projects. Grant programs through CALFED and from state general obligation bonds, such as Proposition 204 and Proposition 50, have funded several SCWA and LPCCC projects and are anticipated to fund future projects as future grant programs are announced.

Additionally CALFED deals with statewide water issues that directly impact the State Water Project. Any enhancement of the reliability of the State Water Project will benefit the SCWA NBA water supply.

Northern California Salinity Coalition. The Coalition was formed in 2003 by Bay Area water agencies to cooperate, share information and seek funding for desalination and desalting projects. The Coalition is developing a list of projects in need of funding, are investigating cooperative projects, and matching them to funding opportunities. The Coalition will also advocate for new funding for their projects. Examples of projects that may benefit SCWA and member agencies are projects that reduce salts in recycled wastewater making the recycled water more useful for industrial purposes. In the long term, desalination plants for water offshore of Benicia and Vallejo may be viable.

Bay Area Integrated Water Resources Plan. The Association of Bay Area Governments CALFED Task Force is developing a Bay Area Integrated Water Resources Plan. The Bay Area Plan contemplates including water supply, wastewater, stormwater discharge, land use issues, and watershed programs. SCWA has been invited to participate. The Solano Agencies IWRMP will be submitted to be part of the Bay Area Plan. One of the purposes of the Bay Area Plan is to be competitive for funding for State Proposition funding that encourages projects consistent with regional integrated water resources plans.

Coastal and Northern California Water Bond Coalition. This Coalition seeks funding from recently passed State General Obligation Water Bond measures for projects in constituent counties from Northern and Coastal California. The Coalition has developed a list of projects in each participating county that is seeking funding. The Coalition advocates that State funding be directed towards these projects.

Lake Berryessa Watershed Partnership. The Partnership consists of organizations and public agencies in the watershed of Lake Berryessa to monitor and improve water quality in the Lake. The Partnership supports projects such as household hazardous waste collection sites, signage to prevent water pollution, and sharing of water quality data.

Suisun Creek Restoration Team. The Team consists of landowners, organizations and public agencies interested in the resources of Suisun Creek. The group originated from the concern that water releases from Vallejo's Lake Curry would be reduced when Vallejo starts to divert Lake Curry water for its own use. Steelhead in Suisun Creek, an endangered species, could be impacted by the diversion of water to Vallejo. The Team is meeting to determine if there are solutions that meet Vallejo's water supply needs while protecting the natural resources of Suisun Creek.

California Urban Water Conservation Council. The CUWCC is an organization of representatives of water agencies and public interest groups whose goal is to increase the implementation of urban water conservation measures. The CUWCC has developed a set of Best Management Practices that sets a standard for water agency compliance for water conservation. All members must report their compliance with these standards.

Agricultural Water Management Council. The Council is the agricultural counterpart of the CUWCC. The Council had developed a set of water conservation standards geared towards agricultural water districts.

The following are other organizations that SCWA is a member:

Floodplain Management Association, Association of California Water Agencies, and California Central Valley Flood Control Association.

MEMBER UNIT WATER PORTFOLIOS

CITY OF BENICIA

Water Supply and Source(s)

(Acre-feet/Year)

Source	Amount[1]
State Water Project	17,200
Water Rights Settlement	10,500
Lake Herman	500
Vallejo Agreements	5,500
Mojave Exchange	5,500 [a]

[a] Amount currently available, not annually.

State Water Project

Benicia currently has contract rights up to 17,200 AF annually for State Water Project (SWP) water delivered via the North Bay Aqueduct (NBA). SWP water is taken from the Delta at the Barker Slough Pumping Plant and conveyed through the NBA to the Cordelia Forebay where Benicia then pumps the water to their treatment facility or Lake Herman for storage. The current SWP contract amount to Benicia could ultimately be reduced by 1,125 AF annually beginning in the year 2016, if Dixon and Rio Vista take their full NBA contract amount.

Water Rights Settlement

The "Area of Origin" Water Rights Settlement with the California Department of Water Resources (DWR) provides Benicia with 10,500 AF annually of non-project (not SWP) water. Settlement water is available when the Delta is in excess or balanced conditions and Term 91 is not in effect. This is essentially a permanent allocation of water supply. The water is conveyed through the NBA when capacity is available and delivered to Benicia in the same manner as SWP water.

Lake Herman

Lake Herman, situated in the hills between Benicia and Vallejo, has a storage capacity of 1,800 AF. The average yield of the 10 square mile watershed is 500 to 1000 AF annually with no yield in dry years. The additional storage capacity serves as terminal storage for excess water delivered through the NBA. The contribution to Benicia's water supply from local runoff produced by the Lake Herman Watershed is currently not quantified.

[1] See text for an explanation of reliability of these supplies.

Vallejo Agreements

Benicia has facilities to accept delivery of water from three of Vallejo's sources. SWP water and Vallejo Permit Water (VPW) can be delivered to Benicia's pumping facility at the Cordelia Forebay Reservoir and Solano Project (SP) water can be taken by Benicia's pumping facility at the Terminal Reservoir. There is also an inter-connection between the Benicia and Vallejo municipal water transmission systems that gives Benicia the capability to receive treated water from Vallejo. Benicia has two active water purchase agreements with Vallejo.

The first agreement was executed in February 1962, has been amended twice and ultimately provides for the sale of 1,100 AF per year of Vallejo's SP contract amount to Benicia. To execute the agreement, Benicia paid to Vallejo a connection fee of $4,575. The agreement allows Benicia to purchase at its option either treated or untreated water. The current cost of untreated water to Benicia is $34.50/AF. Treated water is delivered at the 'Outside City Limits Rate' in effect when the water is taken. The second amendment pushes the expiration date of the agreement to February 28, 2025.

The second agreement provides 4,400 AF per year of Vallejo's NBA water for purchase by Benicia, annually. Under the provisions of this agreement Benicia must pay $50 per AF per year ($220,000 per year) regardless of usage plus $75 per AF for usage during the entire term of the agreement. This agreement was executed in March, 1992, and expires February 28, 2010. This water is available to Benicia on a "stand-by" basis.

Solano Irrigation District Purchase

Benicia will often negotiate informal purchases with Solano Irrigation District (SID) for SP water to augment Benicia's supplies. These purchases usually occur during the winter period or when the NBA is unavailable.

Mojave Water Agency Exchange

Since 1997, when the Solano County Water Agency entered into the exchange agreement with the Mojave Water Agency (MWA), Benicia has exchanged through SCWA, 11,000 AF of SWP water with MWA. Benicia is entitled to 5,500 AF of MWA's SWP contract amount in the future based on the stipulations of the agreement. In addition to the two for one ratio of the exchange, a fee to pay for part of the transportation costs to get the water to the MWA. The amount is indexed, but is approximately $50/acre foot for each acre foot of water sent to MWA. There is not charge assessed for the return exchange.

Solano Project Agreement

Benicia also has a Storage Agreement with SCWA that provides an option to store up to 9000 AF in Lake Berryessa. To exercise this agreement, Benicia must exchange a portion of its NBA water for SP water or purchase it from other member units that have the capability to use either source. Essentially the other member unit uses the NBA water and foregoes the use of the

agreed upon SP water that it would have used normally. However, in the event Lake Berryessa spills, Benicia's storage is the first to be deducted ahead of carry-over belonging to other member units.

ANNUAL WATER CONSUMPTION
(Acre-Feet/Year)

	1999	2000	2001	2002
State Water Project [a]	11,018	15,290	8,523	11,110
Water Rights Settlement	0	0	0	0
Vallejo Agreements	524	143	3,170	1,087
SID Purchase	225	770	917	170
TOTAL	**11,767**	**16,203**	**12,610**	**12,367**

[a] Includes carry-over and Article 21 if available, therefore may exceed contract amount.

The Valero refinery has a contractual agreement with Benicia for up to 12,322 AF of raw water per year. Refinery use has historically ranged between 4,600 to 5,700 AF annually and is included in the above table.

ANNUAL WATER TRANSFERS, EXCHANGES, SALES
(Acre-Feet/Year)

	1999	2000	2001	2002
Mojave Exchange [a]	0	4,000	0	0
TOTAL	**0**	**4,000**	**0**	**0**

[a] Water transferred to Mojave Water Agency.

CITY OF DIXON

Water Supply and Source(s)

(Acre-Feet/Year)

Source	Amount[2]
State Water Project	1,500
Groundwater	variable

State Water Project

Dixon's SWP contract will begin with 300 AF in the year 2016 and gradually increase by 300 AF annually. The contract amount reaches a maximum of 1,500 AF by 2020 and remains so each year thereafter. Dixon currently has no transmission or treatment facilities to utilize water from the NBA but can initiate their SWP contract earlier with a five year notice.

NORTH BAY AQUEDUCT CONTRACT SCHEDULE - DIXON

(Acre-Feet/Year)

Year	Total Amount
2016	300
2017	600
2018	900
2019	1,200
2020 and beyond	1,500

Groundwater

Water service is currently provided to Dixon by the California Water Service Company (CSWC) and the Dixon-Solano Municipal Water Service (DSMWS). The supply source is groundwater.

CSWC, a California Public Utility Commission regulated private company, serves approximately 3,000 accounts in its service area, which primarily consists of the 'older' Dixon geographic area. CSWC supplies customer demand via a network of eight groundwater wells, averaging 500-600 feet below the ground surface, distributed around Dixon. The original supply system was purchased by CSWC in 1927 from PG&E. CSWC was the sole water service provider in Dixon prior to 1984.

In 1984 DSMWS was established through a Joint Exercise of Powers Agreement (JEPA) between Dixon and Solano Irrigation District. DSMWS currently serves approximately 1,800 accounts outside of CSWC's service area, primarily new developments since 1984. DSMWS serves the area from a well network consisting of 4 wells ranging from 800 to 1500 feet below

[2] See text for an explanation of reliability of these supplies.

the ground surface. The maximum annual yield of the groundwater system is approximately 2,000 AF. DSMWS service area is within SID's service area therefore Dixon is eligible to utilize a share of SID's surface water when necessary. The terms of the JEPA expire in 2009.

ANNUAL WATER CONSUMPTION
(Acre-Feet/Year)

	1999	2000	2001	2002
CWSC	1,767	1,747	1,668	1,701
DSMWS	1,662	1,703	1,801	1,844
TOTAL	**3,429**	**3,450**	**3,469**	**3,545**

CITY OF FAIRFIELD

Water Supply and Source(s)

(Acre-Feet/Year)

Source	Amount[3]
State Water Project	14,678
Solano Project	9,200
Water Rights Settlement	11,800
Vallejo Agreement	variable
SID Agreements	16,018
Recycled Water	3,000

State Water Project

Fairfield currently has contract rights up to 14,678 AF annually for State Water Project (SWP) water delivered via the North Bay Aqueduct (NBA). SWP water is taken from the Delta at the Barker Slough Pumping Plant and conveyed through the NBA to the North Bay Regional (NBR) Water Treatment Plant which is jointly owned with Vacaville. The current SWP contract amount to Fairfield could ultimately be reduced by 750 AF annually beginning in the year 2016 if Dixon and Rio Vista take their full NBA contract amount.

Solano Project

Solano Project (SP) water, stored in Lake Berryessa, is released down Putah Creek from Monticello Dam and re-captured by Putah Diversion Dam approximately 13 miles downstream. The water is diverted through the Putah South Canal to Fairfield's Waterman and NBR treatment plants. Fairfield has contract rights up to 9,200 AF annually from the Solano Project.

Water Rights Settlement

The "Area of Origin" Water Rights Settlement with the California Department of Water Resources (DWR) provides Fairfield with 11,800 AF annually of non-project (not SWP) water. Settlement water is available when the Delta is in excess or balanced conditions and Term 91 is not in effect. This is essentially a permanent allocation of water supply. The water is conveyed through the NBA when capacity is available and delivered to Fairfield in the same manner as SWP water.

[3] See text for an explanation of reliability of these supplies.

Vallejo Agreement

Fairfield has an ongoing water exchange agreement with Vallejo. The agreement stipulates that the parties can exchange portions of Vallejo's Permit Water (VPW) for Fairfield SP water on a 2:1 basis, respectively, with mutual willingness. The agreement also allows Fairfield to purchase Vallejo's VPW at a mutually agreeable rate. The agreement can be terminated by either party with a 30-day written notice.

Solano Irrigation District Agreements

Amendment No. 2, executed in 2002, to an agreement between SID and Fairfield entered in 1974 adds Fairfield-Suisun Sewer District (FSSD) as a party and re-titles the agreement the "Second Amended Agreement." The Second Amended Agreement provides Fairfield with up to 7,000 AF annually of "1974 common boundary SP water" deemed necessary and sufficient to serve all lands that were in the 1974 common boundaries of SID and Fairfield (including, most notably, the Anheuser-Busch brewery). This amount represents a 1,000 AF/year increase over the 1974 agreement. The 1974 agreement and Second Amended Agreement also provide Fairfield with up to 9,018 AF of "pre-1974 option SP water" annually based on lands that had been in SID prior to 1974 but had detached upon annexing to the city. The total amount of SP water available to Fairfield from the Second Amended Agreement is therefore 16,018 AF annually.

Fairfield and SID entered an joint exercise of powers agreement (JPA) in 1987 that established a basis for SID to provide the water to serve lands within the common boundaries of the two agencies not covered under the 1974 agreement (now the Second Amended Agreement). Water service under this JPA is typically supplied by dual systems, potable water from Fairfield and non-potable water from SID. All raw water is supplied by SID or reimbursed to Fairfield. Water supplies are provided under separate "water service sub-agreements" pursuant to the JPA. Since 1987, the two agencies have entered three water service sub-agreements. The three sub-agreements provide a minimum of 1 AF per year of raw water per acre or actual quantity reimbursement to Fairfield from SID for potable water served to lands specified. The current total acreage specified is approximately 450 acres.

In addition, SID provides water directly to a small number of irrigation customers within the Fairfield city limits based on service that existed prior to the property being annexed into Fairfield (e.g., Vanden High School, Fairfield High School, Busch Properties, etc.) or under subsequent outside-district water service agreements (e.g., B. Gale Wilson Elementary School, historic Waterman ranch, etc.). Because the supplies provided under the 1987 JPA and these other arrangements are technically to meet SID demands, they are included only under the section of this appendix on SID.

Recycled Water

Under the Second Amended Agreement, SID and FSSD agree to provide Fairfield with the first 12 million gallons per day (or 13,447 AF/year) of recycled water from the FSSD wastewater treatment plant in exchange for full an adequate consideration. For planning purposes, Fairfield

estimates it will be able to use 3,000 AF/year of recycled water at ultimate development. (This figure, and the city's overall water demand, could be much higher if a planned power plant required to utilize recycled water is constructed within the city adjacent to the FSSD plant.) If Fairfield is not using the recycled water, then SID may use it or sell it.

ANNUAL WATER CONSUMPTION
(Acre-Feet/Year)

	1999	2000	2001	2002
State Water Project [a]	7,263	6,598	5,760	8,555
SP - Fairfield [b]	10,278	9,550	7,867	9,200
Water Rights Settlement	0	0	0	0
VPW [c]	0	0	2,667	0
SID Agreements	3,530	6,109	7,679	6,838
Recycled Water	0	0	<10	117
TOTAL	**21,071**	**22,257**	**25,316**	**24,710**

[a] Includes carry-over and Article 21 if available, therefore may exceed contract amount.

[b] Based on project year Mar-Feb; includes carry-over if available, therefore may exceed contract amount.

ANNUAL WATER TRANSFERS, EXCHANGES, SALES
(Acre-Feet/Year)

	1999	2000	2001	2002
SP - Vallejo [a]	0	0	1,333	0
TOTAL	**0**	**0**	**1,333**	**0**

[a] Fairfield/Vallejo 2VP:1SP exchange agreement.

Fairfield has agreements with other neighboring water agencies to provide a water treatment and delivery service of raw water the other agency provides. These agreements do not yield a new supply to Fairfield because the raw water provided to Fairfield in reimbursement from the other agency matches the amount the other agency uses. Such agreements include the Vallejo "Lakes" system emergency water service agreement; the Suisun-Solano Water Authority seasonal water service agreement (under which S-SWA may use water between the months of November through March, and other months with restrictions), and the SID Blue Ridge Oaks and Peabody Road water service agreements (continuous use; facilities not yet in place). Only the SID agreements provide a permanent use of City facilities and require payment of a connection fee.

CITY OF RIO VISTA

Water Supply and Source(s)

(Acre-Feet/Year)

Source	Amount[4]
State Water Project	1,500
Groundwater	variable

State Water Project

Rio Vista's SWP contract will begin with 300 AF in the year 2016 and gradually increase by 300 AF annually. The contract right reaches a maximum of 1,500 AF by 2020 remains so each year thereafter. Rio Vista currently has no transmission or treatment facilities to utilize water from the NBA. With permission from DWR (and other relevant regulatory agencies) Rio Vista could take its SWP contract water directly from the Sacramento River rather than through the NBA. Rio Vista can initiate their SWP contract earlier with a five year notice.

NORTH BAY AQUEDUCT CONTRACT SCHEDULE - RIO VISTA

(Acre-Feet/Year)

Year	Total Amount
2016	300
2017	600
2018	900
2019	1,200
2020 and beyond	1,500

Groundwater

Rio Vista currently uses groundwater to meets its water demands. The supply system consists of six wells, four of which are currently producing. The well depths range between 500 and 1000 feet below the ground surface. Rio Vista has a contractual agreement with ECO-Resources, Inc., a subsidiary of Southwest Water Company, to maintain, operate and manage the water and waste-water facilities. Customers in the Rio Vista service area currently pay a flat fee for water usage.

[4] See text for an explanation of reliability of these supplies.

ANNUAL WATER CONSUMPTION

(Acre-Feet/Year)

	1999	2000	2001	2002
Groundwater	1,565	1,550	1,725	1,799
TOTAL	**1,565**	**1,550**	**1,725**	**1,799**

SUISUN CITY

Water Supply and Source(s)

(Acre-Feet/Year)

Source	Amount[5]
State Water Project	1,300
Solano Project	1,600
SSWA [a]	varies

[a] SSWA fulfills total demand as needed.

State Water Project

Suisun's SWP contract amount is 750 AF as of 2004 and gradually increases by 150 AF annually. The contract right reaches a maximum of 1,300 AF by 2015 remains so each year thereafter. Suisun currently has no transmission or treatment facilities to utilize water from the NBA.

NORTH BAY AQUEDUCT CONTRACT SCHEDULE - SUISUN CITY

(Acre-Feet/Year)

Year	Total Amount
2004	750
2005	800
2006	850
2007	900
2008	950
2009	1,000
2010	1,050
2011	1,100
2012	1,150
2013	1,200
2014	1,250
2015 and beyond	1,300

Solano Project

Suisun has contract rights up to 1,600 AF of Solano Project (SP) water annually. SP water stored in Lake Berryessa is released down Putah Creek from Monticello Dam and re-captured by Putah Diversion Dam approximately 13 miles downstream. The water is diverted through the

[5] See text for an explanation of reliability of these supplies.

Putah South Canal to the Cement Hill Water Treatment Plant (CHWTP) where the water is treated and piped to Suisun through Tolenas.

Suisun and SID entered into Joint Powers Authority Agreement (JPA) in 1988. The full JPA, Suisun-Solano Water Authority (SSWA) was implemented in 1991. Under this authority, SID operates the CHWTP to treat water on Suisun's behalf. The CHWTP treats Suisun's 1600 AF SP contract water and delivers it to their service area for distribution. A small portion of Suisun Valley is historically part of the service area and still being served. SSWA provides any additional contract water as needed beyond 1600 AF from SID's SP water supply.

ANNUAL WATER CONSUMPTION
(Acre-Feet/Year)

	1999	2000	2001	2002
State Water Project [a]	0	0	0	0
Solano Project [b]	1,763	1,689	1,600	1,584
SSWA	2,412	2,690	3,159	3,236
TOTAL	**4,175**	**4,379**	**4,759**	**4,820**

[a] Includes carry-over and Article 21 if available, therefore may exceed contract amount.

[b] Based on project year Mar-Feb; includes carry-over if available, therefore may exceed contract amount.

CITY OF VACAVILLE

Water Supply and Source(s)

(Acre-Feet/Year)

Source	Amount[6]
State Water Project	8,978
Solano Project	5,750
Water Rights Settlement	9,320
SID Agreement	3,000
Groundwater	8,000
Recycled Water	880

State Water Project

Vacaville currently has contract rights up to 8,978 AF annually for State Water Project (SWP) water delivered via the North Bay Aqueduct (NBA). SWP water is taken from the Delta at the Barker Slough Pumping Plant and conveyed through the NBA to the North Bay Regional (NBR) treatment plant which is jointly owned with Fairfield.

Solano Project

Solano Project (SP) water, stored in Lake Berryessa, is released down Putah Creek from Monticello Dam and re-captured by Putah Diversion Dam approximately 13 miles downstream. The water is diverted through the Putah South Canal to Vacaville's Diatomacous Earth plant and the NBR treatment plant. Vacaville has a contract right to 5,750 AF annually from the SP.

Water Rights Settlement

The "Area of Origin" Water Rights Settlement with the California Department of Water Resources (DWR) provides Vacaville with 9,320 AF annually of non-project (not SWP) water. Settlement water is available when the Delta is in excess or balanced conditions and Term 91 is not in effect. This is essentially a permanent allocation of water supply. The water is conveyed through the NBA when capacity is available and delivered to Vacaville in the same manner as SWP water.

Groundwater

Vacaville has a system of 10 deep aquifer wells. Most of these wells are located in the Elmira well field. Currently, approximately 6,000 AF per year is withdrawn. The estimated safe yield of Vacaville's groundwater system is 8,000 AF annually. The supply in dry years could be

[6] See text for an explanation of reliability of these supplies.

increased to 10,000 AF. Vacaville continually explores expansion of its well system to maintain an adequate water supply.

Solano Irrigation District Agreement

The 1995 Master Water Agreement between Vacaville and Solano Irrigation District (SID) provides Solano Project water to Vacaville from SID. The delivery schedule started at 1,000AF per year in 1995 and increases incrementally to a maximum of 10,050 AF in 2016. The amount available under the agreement for 2004 is 2,500 AF. The agreement expires in 2045. Vacaville pays SID $100/AF for this water supply.

ANNUAL WATER SCHEDULE FOR SID AGREEMENT
(Acre-Feet/Year)

Year	Amount
2005	3,000
2006	3,000
2007	3,000
2008	3,000
2009	3,000
2010	8,000
2011	8,000
2012	9,000
2013	9,000
2014	10,000
2015	10,000
2016 through 2045	10,050

Recycled Water

In 2003, Vacaville began developing a Recycled Water Master Plan. Preliminary estimates indicate approximately 1,200 AF of tertiary treated recycled water may be available annually by 2015. However, this drought-proof resource will require user contracts and possible retrofit costs on the user's behalf. Therefore, for planning purposes, only 75 percent of the total delivery estimate, or 880 AF per year, is assumed to be available beginning in 2015.

ANNUAL WATER CONSUMPTION

(Acre-Feet/Year)

	1999	2000	2001	2002
State Water Project [a]	4,897	5,484	3,424	6,296
Solano Project [b]	5,410	5,542	5,656	4,012
Water Rights Settlement	0	0	0	0
SID Agreement	1,000	1,322	2,000	1,000
Groundwater	4,096	5,141	6,211	6,638
TOTAL	**15,403**	**17,489**	**17,291**	**17,946**

[a] Includes carry-over and Article 21 if available, therefore may exceed contract amount.

[b] Based on project year Mar-Feb; includes carry-over if available, therefore may exceed contract amount.

CITY OF VALLEJO

Water Supply and Source(s)

(Acre-Feet/Year)

Source	Amount[7]
State Water Project	5,600
Solano Project	14,600
Vallejo Permit	17,287
Lakes System	400

State Water Project

Vallejo currently has contract rights up to 5,600 AF annually for State Water Project (SWP) water delivered via the North Bay Aqueduct (NBA). SWP water is taken from the Delta at the Barker Slough Pumping Plant and conveyed through the NBA to the Cordelia Forebay where Vallejo then pumps the water to their Fleming Hill Treatment Plant. The current SWP contract amount to Vallejo could ultimately be reduced by 1,125 AF beginning in the year 2016, if Dixon and Rio Vista take their full NBA contract amount.

Solano Project

Solano Project (SP) water, stored in Lake Berryessa, is released down Putah Creek from Monticello Dam and re-captured by Putah Diversion Dam approximately 13 miles downstream. The water is diverted through the Putah South Canal and conveyed approximately 33 miles to the Terminal Reservoir in Cordelia where Vallejo then pumps the water to their Fleming Hill Treatment Plant. Vallejo has contract rights up to 14,600 AF annually from the SP.

Vallejo Permit Water

Vallejo holds an Appropriative Water Rights License No. 7848 with the State Water Resources Control Board, issued August 1966 that is commonly referred to as Vallejo Permit Water (VPW). The license prescribes a maximum diversion of 31.52 cubic feet per second throughout each year that corresponds to a maximum annual amount of 22,780 AF from the Sacramento River. VPW is conveyed to Vallejo through the NBA project facilities governed by Amendment No. 10 to the Water Supply Contract between DWR and the Solano County Water Agency.

Conveyance of VPW is limited by contract to a maximum of 17,287 AF per year. Since the limitation is not based on a physical capacity constraint of the NBA, an additional 5,493 AF could be available upon execution of an amendment to the existing agreement between DWR and the Solano County Water Agency.

[7] See text for an explanation of reliability of these supplies.

Since VPW is non-project water, Amendment No. 16 to the State Water Supply Contract provides that costs for power resources for transporting non-project water shall be charged as if it were SWP water. In addition, the 'Vallejo Permit Water Power Agreement' between the Solano County Water Agency and the Vallejo, entered into March 2000, stipulates that Vallejo will not incur any charges for VPW used by public agencies within Solano County, including Vallejo itself, to make up deficiencies in SWP contract deliveries in a calendar year. However, Vallejo will pay transportation power costs at the SWP rate for any amount of VPW used above and beyond the collective Solano County SWP contract rights. The 'Vallejo Permit Water Power Agreement' expires December 31, 2035.

Lakes System

Vallejo also holds various appropriative rights to store water in three small local reservoirs, commonly known as the Lakes System. The annual safe yield of Lakes Frey and Madigan is 400 AF and Lake Curry's is 3,750 AF.

Vallejo provides domestic water service to several unincorporated areas in western Solano County. Historically these areas were served from the Lakes System. The system distributed water from Lakes Madigan and Frey to Green Valley and Jameson Canyon. Lake Curry water was distributed to Gordon and Suisun Valleys. Vallejo itself also received water supply from the Lakes System in the past. The water was treated at a pressure filtration plant near Lake Curry prior to delivery to Vallejo and other service areas.

In 1992, Vallejo was compelled to cease delivering water from the Lakes System to domestic users due to stringent new water treatment requirements adopted by the California Department of Health Services. Consequently, Vallejo built a new water treatment facility in Green Valley and has continued to serve the users in the Lakes System.

Lake Curry water is currently not available due to conveyance issues. Vallejo is actively seeking an agreement under the Warren Act with the U.S. Bureau of Reclamation to transport Lake Curry water through the Putah South Canal project facilities so Vallejo can transport it to its Fleming Hill treatment plant for use in the Vallejo. However, the total yield from Lake Curry will likely be reduced due to in-stream flow needs pending the results of studies currently being conducted as part of an EIR/EIS process for the Lake Curry project.

Fairfield Agreement

Vallejo has an ongoing water exchange agreement with the Fairfield. The agreement stipulates that Vallejo can exchange portions of its VPW with Fairfield for SP water on a 2:1 basis, respectively, with mutual willingness. The agreement also allows Fairfield to purchase excess VPW at a mutually agreeable rate. The agreement can be terminated by either party with a 30-day written notice.

Vallejo also has a "stand-by" agreement whereby Fairfield may provide emergency water service to the Vallejo Lakes Water System. This agreement is the successor to an expired agreement for

temporary potable water service whereby Fairfield treated raw water provided by Vallejo and delivered it to the Lakes System while Vallejo was upgrading the water treatment facilities in that service area. Vallejo established two connections, in Gordon Valley and Cordelia, between the Lake System and Fairfield water system under the original agreement, which are now reserved for emergency service. Because the emergency service agreement is not permanent and the service is by permission only, Fairfield required no connection fees or capacity charges.

Travis Air Force Base Agreement

Travis Air Force Base (TAFB) has an agreement with Vallejo to purchase one-third of Vallejo's SWP entitlement, annually. TAFB is served via a turnout off the NBA to the TAFB water treatment plant. Additional demand to TAFB is met with VPW. The ultimate annual water demand by TAFB is estimated to be 5,521 AF by the Vallejo based on the 'Final report, Travis Air Force Base Water Treatment Plant Evaluation', (1998). TAFB also augments their water supply with groundwater.

Benicia Agreements

Benicia has facilities to accept delivery of water from three of Vallejo's sources. SWP water and Vallejo Permit Water (VPW) can be delivered to Benicia's pumping facility at the Cordelia Forebay Reservoir and Solano Project (SP) water can be taken by Benicia's pumping facility at the Terminal Reservoir. There is also an inter-connection between the Benicia and Vallejo municipal water transmission systems that gives Benicia the capability to receive treated water from Vallejo. Benicia has two active water purchase agreements with Vallejo.

The first agreement was executed in February 1962, has been amended twice and ultimately provides for the sale of 1,100 AF per year of Vallejo's SP contract amount to Benicia. To execute the agreement, Benicia paid to Vallejo a connection fee of $4,575. The agreement allows Benicia to purchase at its option either treated or untreated water. The current cost of untreated water to Benicia is $34.50/AF. Treated water is delivered at the 'Outside City Limits Rate' in effect when the water is taken. The second amendment pushes the expiration date of the agreement to February 28, 2025.

The second agreement provides 4,400 AF per year of Vallejo's NBA water for purchase by Benicia, annually. Under the provisions of this agreement Benicia must pay $50 per AF per year ($220,000 per year) regardless of usage plus $75 per AF for usage during the entire term of the agreement. This agreement was executed in March, 1992, and expires February 28, 2010. This water is available to Benicia on a "stand-by" basis.

American Canyon Agreements

The City of American Canyon, in Napa County, entered into a Water Service Agreement in May 1996, with the Vallejo. Vallejo agreed to sell American Canyon a permanent supply potable water, to treat American Canyon excess raw water, and provide transmission facilities to convey American Canyon water to certain areas in the American Canyon water service area. To execute

this agreement, American Canyon paid to Vallejo a water connection fee of $1,428,571 to connect to Vallejo water facilities for a maximum day capacity of 1.0 million gallons per day (MGD). The connection fee is for the purchase of capacity in the Vallejo water facilities required to convey raw water on behalf of American Canyon, treat such water and transfer such potable water to American Canyon. The agreement currently has a maximum annual capacity of 628.6 AF based on the 1.0 MGD but provides for additional incremental capacity purchases up to 6.25 MGD within stipulated time constraints.

A series of four addendums to the original agreement have been executed. Addendum No. 1 allows American Canyon to purchase up to 500 AF of raw VPW for landscape irrigation under "emergency" conditions. The terms of this sub-agreement are at the discretion of Vallejo regarding availability.

Addendum No. 2 permanently transferred 500 AF of VPW to American Canyon for domestic use. American Canyon sold 500 AF of its SWP contract amount to the City of Calistoga, in-kind. To execute the sub-agreement, American Canyon paid to Vallejo a one-time charge of $1,000 per AF or $500,000, and $114,000 compensation for previous costs incurred by Vallejo for NBA capacity increases. American Canyon also reimburses Vallejo for all annual operation, maintenance, and replacement costs associated water delivered under this sub-agreement.

Addendum No. 4 could permanently transfer 250 AF of VPW to American Canyon for domestic use. Under the terms of this addendum American Canyon would sell 250 AF of its SWP contract amount to the City of Yountville, in-kind. To execute the sub-agreement, Yountville is to pay Vallejo a one-time charge of $1,100 per AF or $275,000, and $57,000 compensation for previous costs incurred by Vallejo for NBA capacity increases. American Canyon also reimburses Vallejo for all annual operation, maintenance, and replacement costs associated water delivered under this sub-agreement. This addendum does not appear to be fully executed at this time however Yountville maintaining the "option" provisions of the agreement.

Addendum No. 3 is for fire supply storage and flow to the Montevino Subdivision in American Canyon and has no impact on Vallejo's water supplies.

Solano Irrigation District Exchange

Vallejo has service exchange agreement with SID. Under this agreement Vallejo provides raw water service to Tolenas, in SID's service area, in exchange SID delivers an equal amount of raw water to Vallejo's Green Valley Treatment Plant. Consequently, Vallejo supplies Tolenas water demand from its NBA water supplies and SID augments Vallejo with SP water. The demands of both areas are typically not equal and SID typically owes Vallejo a balance of SP water at the end of each year. Vallejo estimates the ultimate annual water demand of the Lakes System service area to be 620 AF.

ANNUAL WATER CONSUMPTION
(Acre-Feet/Year)

	1999	2000	2001	2002
SWP [a]	8,544	9,461	2,912	5,961
SP [b]	13,514	13,278	12,337	13,714
VPW	0	774	5,448	2,628
Lakes System	82	174	137	157
TOTAL	**22,140**	**23,687**	**20,834**	**22,460**

[a] Includes carry-over and Article 21 if available, therefore may exceed contract amount.

[b] Based on project year Mar-Feb; includes carry-over if available and water exchanged from Fairfield, therefore may exceed contract amount.

ANNUAL WATER TRANSFERS, EXCHANGES, SALES
(Acre-Feet/Year)

	1999	2000	2001	2002
SWP - Travis [a]	3,031	261	482	3,090
SP - Benicia [b]	412	143	316	1,087
VPW - Vallejo	0	774	5,448	2,628
VPW - Travis	0	3,147	2,538	3,538
VPW - Benicia	0	0	2,854	0
VPW - Fairfield [c]	0	0	2,665	0
VPW - Vacaville	0	0	0	0
TOTAL	**3,443**	**4,325**	**14,303**	**10,343**

[a] Includes carry-over and Article 21 if available, therefore may exceed contract amount.

[b] Based on project year Mar-Feb; includes carry-over if available, therefore may exceed contract amount.

[c] Fairfield/Vallejo 2VP:1SP agreement.

SOLANO IRRIGATION DISTRICT

Water Supply and Source(s)

(Acre-Feet/Year)

Source	Amount[8]
Solano Project	141,000
MPWD Exchange	10,000
Groundwater	10,000

Solano Project

Solano Irrigation District (SID) serves primarily agriculture and some municipal and industrial users. SID has contract rights up to 141,000 AF of Solano Project (SP) annually. SID's service area is approximately bounded between Lake Solano, Dixon, Suisun, and Green Valley exclusive of the Fairfield and Vacaville service areas, dominantly rural. In addition to serving it own service area, SID also has various water supply and exchange agreements with other Solano County member units encumbering the contract amount.

Suisun-Solano Water Authority

Suisun and SID entered into Joint Powers Authority Agreement (JPA) in 1988. The full JPA, Suisun-Solano Water Authority (SSWA) was implemented in 1991. Under this authority, SID operates the CHWTP to treat water on Suisun's behalf. The CHWTP treats Suisun's 1600 AF SP contract water and delivers it to their service area for distribution. A small portion of Suisun Valley is historically part of the service area and still being served. SSWA provides any additional contract water as needed beyond 1600 AF from SID's SP contract amount.

Maine Prairie Water District Exchange

The SID Irrigation Tail Water Exchange Agreement with MPWD allows SID to exchange irrigation tail water for 10,000 acre-feet of Solano Project water. Under the terms of the agreement, SID can receive one acre-foot of Solano Project water for every two acre-feet of irrigation tail water exchanged to MPWD.

Vallejo Exchange

SID has service exchange agreement with Vallejo. Under this agreement Vallejo provides raw water service to Tolenas, in SID's service area, in exchange SID delivers an equal amount of raw water to Vallejo's Green Valley Treatment Plant. Consequently, Vallejo supplies Tolenas water demand from its NBA water supplies and SID augments Vallejo with SP water. The demands of

[8] See text for an explanation of reliability of these supplies.

both areas are typically not equal and SID typically owes Vallejo a balance of SP water at the end of each year.

Benicia, MPWD Purchases

Benicia will often negotiate informal purchases with Solano Irrigation District (SID) for SP water to augment Benicia's supplies. These purchases usually occur during the winter period or when the NBA is unavailable.

On occasion, MPWD utilizes their full contract amount prior to the end of irrigation demands and sufficient SID tail-water is not available. During those instances MPWD will purchase supplemental contract water from SID.

Fairfield Agreements

Amendment No. 2, executed in 2002, to an agreement between SID and Fairfield entered in 1974 adds Fairfield-Suisun Sewer District (FSSD) as a party and re-titles the agreement the "Second Amended Agreement." The Second Amended Agreement provides Fairfield with up to 7,000 AF annually of "1974 common boundary SP water" deemed necessary and sufficient to serve all lands that were in the 1974 common boundaries of SID and Fairfield (including, most notably, the Anheuser-Busch brewery). This amount represents a 1,000 AF/year increase over the 1974 agreement. The 1974 agreement and Second Amended Agreement also provide Fairfield with up to 9,018 AF of "pre-1974 option SP water" annually based on lands that had been in SID prior to 1974 but had detached upon annexing to the city. The total amount of SP water available to Fairfield from the Second Amended Agreement is therefore 16,018 AF annually.

Fairfield and SID entered an joint exercise of powers agreement (JPA) in 1987 that established a basis for SID to provide the water to serve lands within the common boundaries of the two agencies not covered under the 1974 agreement (now the Second Amended Agreement). Water service under this JPA is typically supplied by dual systems, potable water from Fairfield and non-potable water from SID. All raw water is supplied by SID or reimbursed to Fairfield. Water supplies are provided under separate "water service sub-agreements" pursuant to the JPA. Since 1987, the two agencies have entered three water service sub-agreements. Water supplies are provided under separate "water service sub-agreements" pursuant to the JPA. Since 1987, the two agencies have entered three water service sub-agreements. The three sub-agreements provide a minimum of 1 AF per year of raw water per acre or actual quantity reimbursement to Fairfield from SID for potable water served to lands specified. The current total acreage specified is approximately 450 acres. In addition, SID provides direct irrigation water service to a limited number of properties within the Fairfield city limits outside of any agreements between the two agencies.

In addition, SID provides water directly to a small number of irrigation customers within the Fairfield city limits based on service that existed prior to the property being annexed into Fairfield (e.g., Vanden High School, Fairfield High School, Busch Properties, etc.) or under subsequent outside-district water service agreements (e.g., B. Gale Wilson Elementary School,

historic Waterman ranch, etc.). The supplies provided under the 1987 JPA are technically to meet SID demands.

Vacaville Agreement

The 1995 Master Water Agreement between SID and Vacaville provides SP water to Vacaville from SID. The delivery schedule started at 1,000AF per year in 1995 and increases incrementally to a maximum of 10,050 AF in 2016. The amount available under the agreement for 2004 is 2,500 AF. The agreement expires in 2045.

ANNUAL WATER SCHEDULE FOR VACAVILLE AGREEMENT
(Acre-Feet/Year)

Year	Amount
2005	3,000
2006	3,000
2007	3,000
2008	3,000
2009	3,000
2010	8,000
2011	8,000
2012	9,000
2013	9,000
2014	10,000
2015	10,000
2016 through 2045	10,050

Groundwater

SID is also uses groundwater conjunctively with surface water supplies. SID has a groundwater well network consisting of 29 wells ranging from 400 to 1,000 feet below the ground surface. Groundwater is primarily used to supplement irrigation demands in area constrained by conveyance capacity for surface water deliveries. The historical yield of the groundwater system is 15,000 AF per year. Current annual system yield is approximately 10,000 AF due to physical failures in a few wells rendering them inoperative pending repair or replacement.

In 1984 DSMWS was established through a Joint Exercise of Powers Agreement (JEPA) between Dixon and Solano Irrigation District. DSMWS currently serves approximately 1,800 customers from a well network consisting of 4 wells ranging from 800 to 1500 feet below the ground surface. The DSMWS service area is within SID's service area therefore Dixon is eligible to utilize a share of SID's surface water when necessary. The terms of the JEPA expire in 2009.

Recycled Water

In the 1974 agreement with Fairfield, SID exchanged 6,000 AF per year of its SP contract water to Fairfield for an estimated equivalent amount of recycled wastewater. SID was only able to utilize approximately 1,000 AF per year of the recycled water, however, due to water quality constraints. Under the 2002 amendment to the agreement (the Second Amended Agreement), Fairfield agreed to full and adequate consideration to SID for the acquisition and transfer of SID's recycled water rights. If Fairfield is not using the recycled water then SID can continue to sell it.

ANNUAL WATER CONSUMPTION
(Acre-Feet/Year)

	1999	2000	2001	2002
SP - SID (AG) [a]	124,037	123,839	131,241	126,042
SP - SID (M&I) [a,c]	1,746	2,076	2,358	2,812
SP - Vallejo [b]	195	463	891	673
Groundwater	4,820	5,959	5,300	6,853
TOTAL	**130,798**	**132,337**	**139,790**	**136,380**

[a] Based on project year Mar-Feb; includes carry-over if available, therefore may exceed contract amount.
[b] SP credited to Vallejo for Tolenas/Green Valley exchange balance.
[c] Primarily raw water for urban landscape and Industrial use.

ANNUAL WATER TRANSFERS, EXCHANGES, SALES
(Acre-Feet/Year)

	1999	2000	2001	2002
SP - Benicia	0	0	917	170
SP - Fairfield	3,530	6,109	7,679	6,838
SP - Suisun	2,412	2,690	3,159	3,236
SP - Vacaville	1,000	1,322	2,000	1,000
SP – MPWD	0	2,478	220	0
MPWD Exchange	18,389	13,912	18,950	18,985
TOTAL	**25,331**	**26,511**	**32,943**	**30,229**

MAINE PRAIRIE WATER DISTRICT

Water Supply and Source(s)
(Acre-Feet/Year)

Source	Amount[9]
Solano Project	5,000
SID Exchange	20,000
Local Surface Water Rights	variable

Solano Project

Maine Prairie Water District (MPWD) has annual contract right to 15,000 AF of Solano Project (SP) water. SP water, stored in Lake Berryessa, is released down Putah Creek from Monticello Dam and re-captured by Putah Diversion Dam approximately 13 miles downstream. The water is diverted through the Putah South Canal (PSC) and diverted to Sweeney Creek, approximately 6 miles downstream of the PSC head-works, and conveyed through the creek system to MPWD approximately 7 miles downstream of the Sweeny turnout. MPWD SP contract water can also diverted to the creek system at various other locations in the SID conveyance system. MPWD can purchase additional SP water from SID as needed. On occasion MPWD has sold small amounts of SP water to CSP-Solano.

Solano Irrigation District Agreement

The SID Irrigation Tail Water Exchange Agreement (1984) allows MPWD to exchange 10,000 AF of its Solano Project water for SID's irrigation tail water. Under the terms of the agreement, MPWD can receive two acre-feet of irrigation tail water for each acre-foot of Solano Project water exchanged to SID. The agreement has officially expired but the terms have been extended by a letter agreement until further notice.

Local Surface Water Rights

MPWD has surface water rights to local streams that supplement their water supply from the Solano Project and SID. The contribution to MPWD's water supply from local surface water sources is currently not quantified.

[9] See text for an explanation of reliability of these supplies.

ANNUAL WATER CONSUMPTION
(Acre-Feet/Year)

	1999	2000	2001	2002
Solano Project [a]	4,753	5,000	5,000	4,909
SID Exchange	18,389	13,912	18,950	18,985
SID Purchase	0	2,478	220	0
TOTAL	**23,142**	**21,390**	**24,170**	**23,894**

[a] Based on project year Mar-Feb; includes carry-over if available, therefore may exceed contract amount.

CA STATE PRISON - SOLANO

Water Supply and Source(s)

(Acre-Feet/Year)

Source	Amount[10]
Solano Project	1,200

The CA State Prison – Solano (CSP) has a contract right to 1,200 AF annually from the Solano Project (SP). SP water, stored in Lake Berryessa, is released down Putah Creek from Monticello Dam and re-captured by Putah Diversion Dam approximately 13 miles downstream. The water is diverted from the Putah South Canal (PSC) to CSP via a small pump and pipeline facility located along the canal approximately 15 miles downstream of the PSC head-works. CSP treats most of the water at their water treatment plant for municipal use but a portion is also used for agriculture use.

CSP also has a service connection to Vacaville's distribution system to purchase supplemental treated water to augment their supply when necessary.

ANNUAL WATER CONSUMPTION

(Acre-Feet/Year)

	1999	2000	2001	2002
Solano Project (M&I)[a]	1,044	946	963	1,007
Solano Project (AG)[a]	328	201	228	234
TOTAL	**1,372**	**1,147**	**1,191**	**1,241**

[a] Based on project year Mar-Feb; includes carry-over if available, therefore may exceed contract amount.

[10] See text for an explanation of reliability of these supplies.

UNIVERISITY OF CALIFORNIA DAVIS

Water Supply and Source(s)

(Acre-Feet/Year)

Source	Amount[11]
Solano Project	4,000

UCD has a contract right to 4,000 AF annually from the Solano Project (SP). SP water, stored in Lake Berryessa, is released down Putah Creek from Monticello Dam and re-captured by Putah Diversion Dam approximately 13 miles downstream. The water is diverted from the Putah South Canal (PSC) to UCD via a surcharged pipeline approximately 2 miles downstream of the PSC head-works. UCD uses the water for agricultural purposes only.

ANNUAL WATER CONSUMPTION

(Acre-Feet/Year)

	1999	2000	2001	2002
Solano Project (AG)[a]	3,878	3,708	3,815	3,098
TOTAL	**3,878**	**3,708**	**3,815**	**3,098**

[a] Based on project year Mar-Feb; includes carry-over if available, therefore may exceed contract amount.

[11] See text for an explanation of reliability of these supplies.

RECLAMATION DISTRICT NO. 2068

Water Supply and Source(s)

(Acre-Feet/Year)

Source	Amount[12]
Local Surface Water	75,000

Reclamation District 2068 (RD2068) has riparian and appropriative water rights to surface water from the Sacramento River Delta. The riparian right is currently exercised but not adjudicated.

The appropriative rights consist of two licenses and one permit pending licensing with the oldest dating back to the early 1920's. The licenses are unquantified. The permit stipulates a water right amount of 75,000 AF annually as long as the permit is in effect.

In addition to these surface water rights, the landowners, as members of the North Delta Water Agency, hold a water rights settlement contract with DWR executed in 1981. The contract benefits the land and RD2068 is the surrogate as owner of the conveyance system. The terms of the contract provides water users to divert water from the Delta for reasonable and beneficial uses for agricultural, municipal, and industrial purposes. DWR furnishes such water as may be required within the Agency to the extent not otherwise available under the water rights of the water users and to maintain appropriate water quality conditions without restrictions.

ANNUAL WATER CONSUMPTION

(Acre-Feet/Year)

	1999	2000	2001	2002
Local Surface Water	55,007	54,471	53,449	53,956
TOTAL	**55,007**	**54,471**	**53,449**	**53,956**

[12] See text for an explanation of reliability of these supplies.