



CITY OF AMERICAN CANYON  
PUBLIC WORKS DEPARTMENT  
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AMERICAN CANYON, CA 94503

# **WATER SUPPLY REPORT**

## **Valley Gate Vineyards**

Napa County Assessor's Parcel Number  
057-140-010 and 057-140-015

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Date

**Water Supply Report  
Valley Gate Vineyards**

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## WATER SERVICE REQUEST

### DESCRIPTION OF PROJECT

Madison Vineyard Holdings LLC, (Owner) is seeking a Use Permit Modification (P10-00188) from the Napa County Conservation Development and Planning Commission to increase production at the existing winery from 200,000 gallons per year to 1.3 million gallons of production and an additional 2.4 million gallons of bottling. The winery site is located at 1 Kirkland Ranch Road and is 69 acres in size. The current zoning is Agricultural Watershed, Airport Compatibility (AW:AC). The purpose of this water supply report is to analyze and allocate a water demand to Napa County Assessor's Parcel Number 057-140-010 and 057-140-015 (previously 057-140-003).

The City of American Canyon issued a will serve letter for potable water for APN 057-140-015 and 057-140-010 on May 23, 1994. The will serve letter did not allocate a specific water demand.

The parcels are a portion of the "real property" described in Exhibit "A" (attached); of the Agreement for Provision of Water Service between the City of American Canyon and Kirkland Cattle Company (Agreement) dated February 28, 1994. This agreement provides raw water to Kirkland Cattle Company. In accordance with City Policy 2011-01 it is the City's intent to amend the Agreement to remove all properties currently owned by Madison Vineyard Holdings, LLC from the raw water supply and shift them to alternate water sources. The raw water demand of these properties will be replaced with recycled water provided by Napa Sanitation District (NSD). The Table below lists the parcels owned by Madison Vineyard Holdings, LLC their proposed use, demand, and water source.

**Table 1**

APN	Proposed Use	Proposed Demand	Proposed Source		
			Potable City	*Recycled NSD	Raw City
057-140-010	residential and vineyard	domestic and agricultural	X	X	
057-140-011	vineyard	agricultural		X	
057-140-012	road	none			
057-140-013	vineyard	agricultural		X	
057-140-014	vineyard	agricultural		X	
057-140-015	winery	industrial, irrigation and agricultural	X	**X	***X

*\*Applicant has a Will Serve Letter for recycled water from Napa Sanitation District in the amount of 85 AFY*

*\*\*Recycled water to be used for irrigation and agricultural demand*

*\*\*\*Fire suppression system only*

### Average Daily Demand

Mr. Erich Kroll (Applicant) submitted a Will-Serve Questionnaire on September 30, 2011, which stated that the anticipated average-day potable water demand (ADD) for properties 057-140-015 and 057-140-010 is 25,256 gpd. Staff reviewed the questionnaire and backup information submitted by the applicant. The "proposed water use model" attached to the will serve questionnaire indicates an ADD of 25,465. With the addition of an ADD of 457 gpd for the single family residence staff recommends an ADD of 25,922 gpd.

Proposed Demand	Annual Water Usage	Average day demand
Residence (057-140-010)		*457
Winery (057-140-015)		
Tasting Room/Office	198,300	
Cellar	3,400,000	
Harvest	3,836,500	
Bottling	1,860,000	
Total Winery Water	9,294,800	25,465
<b>TOTAL</b>		25,922 gpd

\* Water demand factor for Residential Estate from 2005 UWMP.

### Total Site Demand

The domestic water demand	=	457 gpd
The irrigation water demand	=	0 gpd
The industrial water demand	=	25,465 gpd
Total average-day demand	=	25,922 gpd

### Peak-Day Demand

Mr. Erich Kroll submitted a Will-Serve Questionnaire on March 24, 2011 which stated that the anticipated maximum-day potable water demand (MDD) for properties 057-140-15 and 057-140-10 is 45,550 gpd. Staff reviewed the questionnaire and backup information submitted by the applicant. The "proposed water use model" attached to the will serve questionnaire indicates a MMD during Week 38 of 48,010 gpd. With the

<b>Proposed Demand</b>	<b>*Maximum day demand</b>	<b>Maximum day demand **686</b>
Residence (057-140-010)		
Winery (057-140-015)		
Tasting Room/Office	570	
Cellar	0	
Harvest	40,000	
Bottling	7,440	
Total Winery Water	48,010	
<b>TOTAL</b>		<b>48,696 gpd</b>

\* Week 32  
\*\* MDD is 1.5 x ADD.

#### **Total Site**

The domestic water demand	=	686 gpd
The irrigation water demand	=	0 gpd
The industrial water demand		48,010gpd
Total maximum-day demand	=	48,696 gpd

### **Conservation Measures Included in Project**

The project included water conservation measures, including:

- Educate employees regarding water conservation.
- Minimize water usage and maximize water efficiency of the operations.
- Installation of onsite recycled water system for use of recycled water for irrigation.

### **CONSISTENCY**

#### **URBAN WATER MANAGEMENT PLAN**

The properties were not included in the 2005 Urban Water Management Plan. A potable water demand was not anticipated for the properties.

## **RECYCLED WATER FACILITIES PLAN**

The project site is within the Napa Sanitation Districts (NSD) recycled water service area. The applicant received a Will Serve letter from NSD which allocates 85 AFY to the properties. There is an active recycled water line located in the northeast area of APN 057-140-057 (currently owned by NSD). The applicant shall be required to design and construct recycled water system improvements necessary to serve APN 057-140-010 and 015.

The applicant shall connect to the NSD recycled water system and use recycled water for all agricultural, irrigation and other purposes per Municipal Code Chapter 13.14 by March 2012.

## **WATER CONSERVATION IMPLEMENTATION GUIDELINES**

The project has not yet been reviewed for consistency with the Water Conservation Guidelines adopted by the City Council on October 23, 2007. This shall be accomplished as part of the plan review process prior to issuance of a building permit.

## **CONSISTENCY WITH MUNICIPAL CODE 13.10**

All projects within the City of American Canyon conforming to City zoning as industrial and all projects within the unincorporated area of Napa County for which the City provides water connections pursuant to Municipal Code Section 13.10 are subject to a limit of 650 gallons per acre per day average annual water demand. The current zoning is AW:AC therefore Municipal Code 13.10 does not apply.

## **WATER FOOTPRINT**

### **ZERO WATER FOOTPRINT DEFINITION**

On October 23, 2007, the City Council of the City of American Canyon adopted the following definition of Zero Water Footprint (ZWF).

*No loss in water service reliability or increase in water rates to the City of American Canyon's existing customers due to the requested increased demand for water in the City's water service area.*

Appendix A provides the process for water service requests considered by the City Council as part of their policy decision on Zero Water Footprint.

The important ZWF policy decision followed shortly after the Napa County Local Agency Formation Commission (LAFCO) adopted Policy Resolution 07-27 on October 15, 2007, which established that water service requests outside the City of American

Canyon city limits but within the Airport Industrial Area are not subject to LAFCO review. Because the City of American Canyon lacks land use jurisdiction in this area, it became necessary to implement a policy and process that protects the reliability and financial viability of the City's water enterprise while providing a predictable outcome for those seeking new or increased water service.

It is the City of American Canyon's policy that the ZWF policy and process apply equally both within the City limits and within the approved extraterritorial service area.

## **PROJECT'S WATER FOOTPRINT**

The project does not have a zero water footprint as it adds to the City's water burden which will result in a loss in water service reliability. Policy Number 2011-03 - Implementation of the Zero Water Footprint Policy states that the baseline zero water footprint (ZWF) is the water demand from an approved will-serve letter, water supply report or water contract; the water demand calculated from an audit of three-years of water use; or absent other information the water demand in 2007.

Potable Water: A 3-year potable water audit from January 2008 to January 2010 performed by staff for 1 Kirkland Ranch Road indicates an ADD of 2,695 gpd.

Raw Water: The Agreement allocated **30 AFY** of raw water to the Kirkland Cattle Company. Staff prorated the raw water allocation by parcel size as shown in the tables on the following page.



**Table 2**  
**Prorated Raw Water Allocation by Acreage**

Owner	APN	Acreage	Prorated Raw Water Allocation by Acreage		
			X/469.15	AFY	AFY
Valley Gate	057-140-10	215.51	46%	30	13.78
Valley Gate	057-140-11	5.79	1%	30	0.37
Valley Gate	057-140-12	0.66	0%	30	0.04
Valley Gate	057-140-13	6.40	1%	30	0.41
Valley Gate	057-140-14	6.79	1%	30	0.43
Valley Gate	057-140-15	69.00	15%	30	4.41
Kirkland	057-020-07	74.88	16%	30	4.79
NSD	057-020-57	90.12	19%	30	5.76
		469.15			
			Valley Gate	65%	19.45
			Kirkland	16%	4.79
			NSD	19%	5.76

X = Property Acreage

**Table 3**  
**Total Water Allocation by APN**

APN	Owner	Allocation (gpd)		
		Potable	Raw	Total
057-140-10	Valley Gate	2,695	16,241	18,936
057-140-15	Valley Gate			
057-140-11	Valley Gate	0	1,125	1,125
057-140-12	Valley Gate			
057-140-13	Valley Gate			
057-140-14	Valley Gate			
057-020-07	Kirkland	0	4,277	4,277
057-020-57	NSD	0	5,142	5,142
	<b>TOTAL</b>	2,695	26,785	29,480

The total allocation (potable and raw) for properties owned by the Owner is 20,061 gpd. The applicant is requesting an average day demand of 25,530 gpd, an increase of 5,469 gpd. Therefore the project does not have a Zero Water Footprint

## **PROJECT'S IMPACT ON RELIABILITY**

The 2005 Urban Water Management Plan finds that, the City of American Canyon would experience a shortfall in water supplies in multiple dry years of up to 427 acre feet and single dry years of up to 897 acre feet. Due to increased demand, the shortfall would worsen even as additional supplies are obtained. By the year 2015, the City of American Canyon would experience a shortfall in multiple dry years of up to 1,037 acre feet and in single dry years of up to 1,557 acre feet. The project does not have a ZWF because it is increasing its water demand. Therefore, it would reduce the reliability of American Canyon water service.

## **PROJECT'S IMPACT ON RATES**

The project does not have a zero water footprint as it is requesting a new demand; therefore, it would have an impact on rates. Therefore, in accordance with Chapter 13 of the City Municipal Code, the applicant shall pay to the City a monthly service charge in the amount of \$4.81/100 cubic feet (Vallejo rate). The estimated water service charge, based on an average daily water demand of 25,922 gpd, is approximately \$5,000 per month.

## **PROJECT'S CONTRIBUTION CAPACITY FEE**

Based on the Water and Wastewater Rate and Fee Study prepared by Bartle Wells and Associates for the City of American Canyon and the December 18, 2007, approval of the Water Capacity Fee Ordinance, the project would generate water capacity fees of **\$892,598** based on the peak-day demand of 48,696 gpd times **\$18.33** per gallon.

Potable Water: The applicant shall receive credit for the 3-year potable water demand for APN 057-140-010 and 057-140-015. Records indicate the 3-year (2008-2010) average day water demand of 2,695 gpd. Using a factor of 1.5 x the ADD the City would anticipate a MDD of 4,042 gpd. This creates a credit of \$74,099 (4,042 gpd times **\$18.33** per gallon).

Raw Water: The applicant shall receive credit for their raw water allocation (see Table 1) for APN 057-140-010 and 057-140-015 in return the Owner shall agree to amend the Agreement to eliminate the use of raw water on the parcels owned by Madison Vineyard Holdings, LLC (excluding raw water for fire suppression on APN 057-140-015). Using Table 1 for all of the Owners properties included in the Agreement their allocation is 17,366 gpd (19.45 AFY). This creates a credit of \$318,319 (17,366 gpd times **\$18.33** per gallon).

Therefore the Water Connection fee due is equal to:

$$WCF\ due = \$892,598 - \$74,099 - \$318,319 = \$500,180$$

## **REIMBURSEABLE IMPROVEMENTS**

None.

## **CAPITAL PROGRAM STATUS**

### **SUMMARY**

The City of American Canyon's Water Capital Program will address the supply shortfalls identified in the 2005 Urban Water Management Plan and will meet the treatment, storage, and distribution needs as the City implements its General Plan. Appendix B describes the program in detail.

### **SYSTEM PLANNING STATUS**

The City of American Canyon is currently preparing an Integrated Water Management Plan, which will address all water resources— drinking water, recycled water, wastewater, groundwater, creeks and wetlands— in a comprehensive way. The study was initiated in December 2006 and Phase I is complete. The work products within Phase I include a technical review of the Water Treatment Plant, goal setting and performance criteria, a water loss audit, an analysis of existing conditions, a report on threatened and endangered species constraints, a feasibility study of a well in the Newell Open Space Preserve, a funding assistance survey, an investigation into corrosion problems in portions of the water system, a unified hydrology analysis, and a Strengths, Weaknesses, Opportunities and Threats report.

Phase II of the Integrated Water Management Plan has been initiated and will include an estimate of anticipated resource demands, a feasibility study of a high capacity well field, a wastewater source identification and local limits study, a facilities plan for wastewater improvements, an analysis of alternative water resource solutions, a water conservation feasibility study, an assessment of a possible well at the American Canyon High School property, Geographical Information Systems (GIS) data entry, and pilot testing of Water Treatment Plant modifications.

A water and wastewater rate and capacity fee report was prepared, which proposed substantial increases in water and wastewater rates and in capacity fees. It was endorsed by the City's Blue Ribbon Committee on Water Resources and was approved by the City Council at a public hearing on December 18, 2007.

The Blue Ribbon Committee on Water Resources was formed in March 2007 to serve as a sounding board on all water-related issues. The committee includes elected and appointed City leaders, long-term residents, newer residents, developers with interests inside and outside the City limits, vineyard owners, business owners, agency

representatives, a Napa County Supervisor and retired water professional. The Blue Ribbon Committee is expected to remain active for the next two years as the Integrated Water Management Plan is completed and initial projects are implemented.

## **WATER SUPPLY**

### **Water Supply Implementation Status**

The status of the water supply projects in the Final Water and Wastewater Rate and Fee Study is as follows:

- Water rights - Purchase of 1,560 annual acre feet of water rights from Sacramento Valley agricultural interests. The City of American Canyon, the City of Napa and the Napa County Flood Control and Water Conservation District have met with one interested seller, who provided a letter summarizing the availability and possible terms for the water supply. They indicated that the requested amount would be available to the City of American Canyon for long-term transfer. During cutbacks north of the Delta of the Central Valley Project, the transfer would be subject to a reduction of 25%. The long-term transfer of appropriative rights would require approval by the State Water Resources Control Board. About three years would be needed to complete the long-term transfer. Short-term transfers are also available on a year-to-year basis.

Water Code Section 109 contains a declaration of state policy favoring voluntary water transfers, and directs the Department of Water Resources, the State Water Resources Control Board and all other state agencies to encourage voluntary water transfers. Water Code section 475 contains legislative findings and declarations favoring voluntary water transfers.

The Sacramento Valley Integrated Water Management Plan promotes water transfers, both within the Sacramento Valley and outside of it, as one of its key water management strategies.

On May 20, 2008, the City Council approved a consulting contract to evaluate three potential sellers. After the City selects a preferred seller, the consultant will describe the next steps needed to complete a transfer. The schedule for the consulting contract calls for completion in 2008 Phase 1, evaluation of three sellers is completed. Phase 2, selection of a preferred seller and other steps, was completed in 2009.

- North Bay Aqueduct expansion - Project to expand the ability of the North Bay Aqueduct to deliver more water. An increase of 5.5 cubic feet per second (cfs) in conveyance capacity would allow the City of American Canyon to treat an additional 3.5 million gallons per day during peak months of the year. It would provide conveyance capacity for approximately 3,300 acre feet per year.

The Department of Water Resources completed a study in 2005 which confirmed the feasibility of expanding the conveyance capacity of Reach 3a of the North Bay Aqueduct from 46 to 65 cfs. The project would replace the four existing pumps and motors, furnish and install a new air chamber, furnish and install new check valves, furnish and install required electrical equipment, and furnish and install a parallel 36-inch steel pipeline from the surge tank to the terminal tank(s).

Currently, the County of Napa and the California Department of Transportation (Caltrans) are performing environmental review on a project to widen Jameson Canyon Road (SR 12). When it is constructed, about half of the length of the North Bay Aqueduct will need to be relocated out of the roadway at the expense of the highway project. This would be an appropriate time to expand the North Bay Aqueduct. The agenda for the November 2007 meeting of the Napa County Water Technical Advisory Committee included a discussion of this opportunity.

Solano and Napa County water agencies have contracted with CDM to evaluate future water demands and NBA capacity. Their consulting services are in progress.

- North Bay Aqueduct terminal tank replacement - Project to replace and expand the seismically deficient water tank at the end of the North Bay Aqueduct. One 7-million-gallon open air tank is being replaced with two 5-million gallon enclosed tanks. This project is under construction. The first two million-gallon tank is complete and the 7-million gallon tank is being demolished.
- Vallejo water rights purchase - Exercise remaining potable water contract options from city of Vallejo for use in times of drought. The 1996 contract between the City of American Canyon and the City of Vallejo currently provides the City of American Canyon with treated water in the following amounts:
  - A maximum of 2.15 million gallons per day on a peak day or
  - A maximum of 1.3 million gallons per day for a peak month or
  - A maximum of 1,351 acre feet per year

The contract also provides for 500 acre feet of raw water, available through Vallejo's riparian permit. It also provides for an additional 500 acre feet of raw water per year during emergency conditions.

The contract provides options for the City of American Canyon to purchase additional capacity in the following periods:

- 2007-2011, 1.15 million gallons per day on a peak day
- 2012-2016, 0.9 million gallons per day on a peak day
- 2017-2021, 0.9 million gallons per day on a peak day

The total water supply available under the remaining options is 1,854 AFY.

The Integrated Water Management Plan will guide the City's decision on whether to execute the remaining potable water contract options with Vallejo or to use the capacity fees for more cost-effective supply sources.

On June 16, 2008, the City of American Canyon received an offer from the City of Napa to evaluate purchasing water from the City of Napa as an alternative to the 2007-2011 Vallejo Water Supply option.

- Emergency groundwater bank - American Canyon's share of project to "bank" groundwater for times of emergency. The feasibility of this project is currently being investigated as part of the Integrated Water Management Plan. It is conceived as a high-yield well field which serve as a regional facility for municipalities in Napa County. Based on initial hydrogeology investigation, Soscol Creek would be one probable location for such a high-yield well field. In 2007, the City of Napa denied a request to install a commercial well on Anselmo Court, which would have tapped this resource. The reports provided to the City of Napa indicated that wells in this vicinity have been found to produce high-quality water at rates of 1,000 to 2,000 gpm. A feasibility report on high-capacity wells at this location was approved by the Blue Ribbon Committee at their May 2008 meeting.
- Water conservation program implementation - Project to fully implement the City-approved Water Conservation Guidelines. The City's current water conservation program includes rebates for low-flow toilets, public education, leak detection, and a master irrigation controller for City parks. A Water Conservation Implementation Plan has been drafted to fully implement the Best Management Practices of the California Urban Water Conservation Council, of which the City of American Canyon is a member. It sets forth guidelines for new development and provides an implementation plan for new programs such as conservation pricing, a water conservation ordinance, enhancement of the leak detection programs, enhancements to the public awareness program, and enhancements to the rebate programs. It estimates that 744 AFY will ultimately be supplied through water conservation. Startup costs for several of these programs are included in the capacity fee, and several startups are already in progress.

On January 1, 2008, the City initiated a clothes washer rebate program in partnership with other Bay Area water agencies and PG&E. The rebate program is partly funded through a State of California Proposition 50 grant. It provides rebates ranging from \$125 - \$200 depending on the washing machine efficiency.

- Recycled water implementation – Project to implement the Recycled Water Facilities Plan approved by the City Council in 2003. Currently, the City of American Canyon recycles 100 AFY of wastewater to a vineyard directly adjacent to the Wastewater Treatment Plant. The permit

for recycled water distribution was issued in 2005. The City completed the construction of a 1.0 MG Recycled Water Storage Tank in June 2010. The City has completed the construction of the Wetlands Edge Road and American Canyon Road and portions of the Green Island Road and Town Center segments of the system. The City has received a \$2.5 million Proposition 50 grant for constructing the recycled water distribution system, which requires that the system be completed by 2010 and achieve 1,000 AFY of distribution by 2021.

Additionally, the Napa Sanitation District is implementing a recycled water system in the City's extraterritorial service area, which includes the Airport Industrial Area. Landscape irrigation within significant portions of the Napa Valley Gateway Business Park have been converted to recycled water. Based on analysis of the water use since this conversion has taken place, potable water use has been reduced by approximately 50% for the properties served by recycled water. The Napa Sanitation District has adopted a Recycled Water Strategic Plan which calls for converting all of the landscape irrigation in the Airport Industrial Area to recycled water. Additionally, several industrial users are committed to using recycled water for their process demands. The Urban Water Management Plan estimated the ultimate yield from this source of supply to be 226 acre feet per year, which represents less than 20% of the ultimate Airport Industrial Area demand and appears to be conservative (low). The scope of the Integrated Water Management Plan includes a more comprehensive estimate of ultimate recycled water demand in this area.

The Napa Sanitation District is also pursuing a recycled water Aquifer Storage and Recovery (ASR) project. They have completed a hydrogeological investigation of five alternate sites, which concluded that two locations in Jameson Canyon were feasible. They are now performing detailed investigation of the preferred site, which is located in lower Jameson Canyon. The ASR project would benefit American Canyon's water supply by improving the reliability of the NSD recycled water supply. It could also serve as a supplemental source to the City of American Canyon during peak summer irrigation periods when the wastewater treatment plant does not generate sufficient supply.

In summary, the City's long term water supply and demand situation is as follows:

**Table 4**

<b>LONG TERM WATER SUPPLY AND DEMAND</b>			
<b>Source</b>	<b>Normal Year</b>	<b>Multiple-Dry-Year</b>	<b>Single-Dry-Year</b>
State Water Project	3,640	1,976	1,508
Current Vallejo Potable Water Contract	1,351	1,216	1,216
Current Vallejo Contract for Raw Permit Water	500	450	450
Current Vallejo Contract for Raw Water during Emergencies		450	450
Subtotal, Current Supplies	5,491	4,091	3,623
City of American Canyon Recycled Water	1,000	900	900
Napa Sanitation District Recycled Water	226	203	203
Water Conservation	744	744	744
Water Transfer from Sacramento Valley	1,560	1,170	1,170
Remaining Vallejo Potable Water Contract Options	1,854	1,668	1,668
Subtotal, Additional Supplies	5,384	4,685	4,685
<b>Total Long Term Water Supply</b>	<b>10,875</b>	<b>8,776</b>	<b>8,308</b>
(Demand)	(7,026)	(7,026)	(7,026)
Surplus/(Shortfall)	3,849	1,750	1,282



The City of American Canyon has developed a capacity fee program which, when implemented, will ensure an adequate supply of potable and recycled water to meet demands under normal years, multiple-dry-years and single-dry-years

### **Water Supply Alternatives**

The Blue Ribbon Committee is currently evaluating alternative water supplies. One of the most promising would be to harvest the rain that currently falls on American Canyon by tapping into groundwater supplies. If groundwater wells yielding 4.5 mgd could be developed, it would not be necessary to purchase additional Vallejo options or to expand the North Bay Aqueduct. Bulletin 118 from the California Department of Water Resources states that wells up to 300 gallons per minute are found in American Canyon's groundwater subbasin, the Napa-Sonoma Lowlands. A well reportedly yielding 400 gallons per minute is located on the American Canyon High School property. Eleven wells yielding 300 gallons per minute would be required to meet the peak demand. Groundwater research was recommended by the Urban Water Management Plan and is being completed through the Integrated Water Management Plan. A 72-hour test was performed on the High School well in summer 2008. Although the well did produce a large volume, it was not sustained and upstream wells stopped producing during the test. This well water was also tested for water quality and was determined to be very high in Boron which is not desirable for drinking water. The City of American Canyon and the Napa Valley Unified School District have entered into a Memorandum of Understanding (MOU) regarding the High School project; one provision of this MOU is an agreement to cooperate on development of the well.

During 2008, the City of American Canyon experienced a 65% cutback in the State Water Project allocation. This would have resulted in a shortfall of 2,300 AFY. However, a number of alternate sources were developed, and implementation of the Water Shortage Contingency Plan has not been necessary as of May 23, 2008. These sources include previous year carryover, Article 21 Water, Yuba Accord Dry Year Purchase Program and Turn Back Pool A & B Water from the State Water Project. :

- **Table A Previous Year Carryover.** The City is able to carry its unused Table A water over from the previous year to the current year. This additional water is treated as if it were additional Table A water, except it is lost as soon as State Water Project (SWP) storage at the San Luis Reservoir fills and spills due to pumping from the Banks Pumping Plant.
- **Other Cities in Napa County Carryover Water.** When available, the City can purchase carryover SWP water from the previous year from other cities in Napa County. This additional carryover water has the same conditions as our carryover water; that is, it is treated as if it were additional Table A water, except it is lost once the San Luis Reservoir "fills and spills" because of pumping at the Banks Plant.

- **Article 21 Water.** Article 21 water is available after the City uses its SWP scheduled monthly allotment when unbalanced conditions exist in the Delta. The Delta is considered to be in an unbalanced condition when rain and snowmelt water is flowing out under the Golden Gate Bridge into the Pacific Ocean.
- **SWP Dry-Year Program.** It is possible to purchase additional water through the SWP during dry years, when Sacramento Valley farmers willingly let their land lie fallow and make their water available to State Water Contractors. In addition, there are occasional reservoir re-operation activities that some water agencies can do that make water available for sale to buyers. Approvals from DWR and/or SWRCB are often required to allow transfer and conveyance of the water from seller to buyer.
- **Pool A and B Water.** State Water Contractors that decide not to draw all or a portion of their entitlements in any given year may place their unused water into a pool for resale by DWR to other State Water Contractors.
- **Yuba River Accord.** This agreement between the Yuba County Water Agency, the Department of Fish and Game, and several other regulatory agencies and environmental groups would revise the operation to provide higher flows in the lower Yuba River and allow the Department of Water Resources to purchase and transfer this water to State Water Project and Central Valley Project contractors in dry years.
- **Vallejo Water Service Addendum No. 1** This addendum would allow American Canyon to receive up to 500 acre feet per year of raw water when the City's entitlement is reduced due to environmental or other constraints.

## **WATER TREATMENT**

### **Water Treatment Implementation Status**

The City has two water treatment facilities, side-by-side on the same site at 205 Kirkland Ranch Road: a 2.5 million gallon per day (mgd) conventional treatment plant completed in 1976, and a 3.0 mgd advanced technology treatment plant completed in 2004. The advanced technology treatment plant uses membranes manufactured by Zenon Corporation, as does the wastewater treatment plant.

Additional treatment capacity is needed to achieve the General Plan EIR peak day demand estimate of 10.0 mgd. The membrane plant was designed to accommodate an additional 3.0 mgd expansion within the existing structure. This is included in the capital fee capital program. Expansion to the North Bay Aqueduct (NBA), as discussed above, would be needed to meet the peak day flow requirements for this additional treatment. Under this approach, the total treatment plant capacity would be 8.5 mgd. The

remaining 1.5 mgd of peak treated water capacity could come from the City of Vallejo through the water supply contract discussed above. The Vallejo contract currently provides up to 1.3 mgd of peak day capacity during a peak month, which would be more than adequate to meet the treatment gap. If all of the remaining options were executed, the Vallejo contract would provide up to 3.1 mgd of peak day capacity during a peak month. An additional metering station would be needed to deliver this water to the City of American Canyon distribution system; this metering station is included in the capacity fee capital program.

### **Water Treatment Alternatives**

The City of American Canyon also enjoys a physical connection to the City of Napa's treated water supply. Currently, the City of Napa treated water is provided on an informal basis in the absence of an agreement. On June 17, 2008, the City Council approved a one-year agreement with the City of Napa to treat and wheel water on behalf of the City of American Canyon. The City of American Canyon and the City of Napa have recently agreed to extend the agreement for another year. The agreement provides up to 1 mgd of treatment capacity in normal circumstances and up to 2.25 mgd when the North Bay Aqueduct is out of service.

### **WATER STORAGE, TRANSMISSION, AND DISTRIBUTION STATUS**

Two additional storage tanks for treated water are needed to support anticipated fire flows and daily demands for the cumulative condition. East Tank #1, a 2.5 million gallon potable water tank, has been designed for a site to the east of Newell Drive. The base of the tank will be set at elevation 195 to match the existing Oat Hill #1 tank. The two tanks together will serve the main pressure zone in the City of American Canyon. A mitigated negative declaration has been completed, the plans and specifications are 95% complete, and regulatory permits have been obtained. The land has been acquired and construction is anticipated by 2015.

The second water storage tank is East Tank #2, a 2.0 MG potable water tank, which will serve the American Canyon High School and other areas at a higher elevation within the City of American Canyon's anticipated sphere of influence. A mitigated negative declaration has been completed, the plans and specifications are 95% complete, and regulatory permits have been obtained. The tank will be located on the 313-acre wildlife preserve acquired by Napa Valley Unified School District to mitigate impacts for the American Canyon High School. Mitigation land for the East Tank #1 and East Tank #2 has been addressed in the regulatory permits associated with the American Canyon High School. It is anticipated East Tank #2 will be constructed by 2014.

A variety of projects are included in the capacity fee capital program to expand the water distribution system, to repair existing deficiencies, or a combination of the two. Recently, Flow Control Valve (FCV) #9, which overly restricted water flow from the treatment plant to the distribution system was removed. The backbone of the distribution system is a 14" diameter transmission main which runs down SR 29; it was built in the 1950s, is badly corroded and is being replaced in segments as part of the Capital Improvement Program and by new development. As it is replaced, additional

capacity will be added and water loss will be reduced. As demands grow, there is a need for additional connections across SR 29; a project is planned to complete three connections. Similarly, development on the east side of SR 29 will require closing gaps in the existing water main. Ultimately, increased flows from the water plant will require transmission improvements, either a pump station or another pipeline, on the east side of SR 29.

## **WATER CAPITAL PROGRAM FINANCIAL STATUS**

The Water Capital Program is primarily funded by capacity fees, supplemented by capital funds from the Water Operations Fund. The City of American Canyon has adopted a fiscal policy which requires new development to fully fund improvements needed to serve that development. The capacity fee for a single-family residence is \$12,462, as adopted by City Council in July 2009.

## **VINEYARDS ANALYSIS**

### **VINEYARDS DECISION**

The California Supreme Court decision "Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova and Sunrise Douglas Property Owners Association et. al" sets forth guidelines for evaluating the water supply of a project under the California Environmental Quality Act (CEQA). It requires that water supplies not be illusory or intangible, that water supply over the entire length of the project be evaluated, and that environmental impacts of likely future water sources, as well as alternate sources, be summarized.

### **Facts with respect to solutions to water supply problems**

The City of American Canyon has developed a capacity fee capital program which, when implemented, will ensure an adequate supply of potable water and recycled water to meet demands under normal years, multiple-dry-years, and single-dry-years.

### **Water supply over the life of the project**

The project is being developed in multiple phases, however all phases are being evaluated through this report. Accordingly, an analysis of water supply for later phases is not required.

### **Impacts of likely future water sources**

Potential environmental impacts of purchasing a permanent transfer of 1,560 acre feet per year of water rights from Sacramento Valley agricultural interests have not yet been evaluated. However, because the water would be used to make up shortfalls in the State Water Project supplies and would be conveyed using existing State Water Project facilities, the transfer would not require the construction of any new facilities. Also, such an intra-regional transfer would be consistent with the Sacramento Valley Integrated

Regional Water Management Plan, which has been subject to significant public input and environmental review. Lastly, several of the potential sellers of water rights have completed environmental review of similar permanent transfers.

The environmental review of North Bay Aqueduct expansion has not been initiated. However, the area of disturbance of the pipeline would largely be included within the area impacted by the Jameson Canyon (SR 12) widening project, which is currently being evaluated by Caltrans through a mitigated negative declaration.

No environmental review has been performed for a potential emergency groundwater bank. However, such a groundwater bank is intended to improve the reliability of water supplies and is not to serve as a primary water source. Also, it should be noted that wells in the vicinity of Soscol Creek historically served the American Canyon area as well as portions of Solano and Contra Costa counties with potable water supply. The wells have been inactive since the mid-20<sup>th</sup> century.

No additional environmental review would be needed to execute the remaining options for treated water supply from the City of Vallejo because these options are included within the 1996 contract.

Water conservation would result in no negative impacts to the physical environment.

A mitigated negative declaration was prepared for the recycled water distribution system when the Recycled Water Facilities Plan was adopted by the City Council in November 2003. Impacts were minimal because the pipelines were to be located in existing public rights of way.

### **Possible replacement sources and their impacts**

Development of groundwater as an alternative municipal supply is currently under study as part of the Integrated Water Management Plan. Potential environmental impacts have not yet been evaluated. However, 41 existing wells are included in the Department of Water Resources records for the City of American Canyon area. The average flow rate for these wells varies from approximately 5 to 20 gpm, with the total between all wells of approximately 500 gpm. This does not include the well on the high school property. Most, if not all, of these wells will eventually go out of service as City of American water service is supplied. Thus, a minimum of 500 gpm, which would equate to 807 AFY, would be available without increasing the rate of withdrawal of groundwater.

## **RECOMMENDED MITIGATIONS**

### **LONG TERM WATER MITIGATIONS**

The potable water impacts of the project will be fully mitigated by the financial contribution it will make to the water capacity fee program.

## SHORT TERM WATER MITIGATIONS

It is assumed that the project will be partially occupied by May 2012 which would represent 25% of the demand for the 2011/12 water year.

The additional source of supply from acquiring a permanent transfer of water rights from Sacramento Valley agricultural interests will not be available until the 2011/12 water year, based on three years from the anticipated completion of the evaluation of potential sellers, which is currently underway.

The recycled water system was implemented in the 2010 water year, upon completion of Recycled Water Tank in March 2010 and the remaining pipeline by in Summer 2011.

A decision will not be made as to executing the 2007-2011 option under the Vallejo water contract until after the Integrated Water Management Plan is completed. If an alternate supply is chosen, it would require a minimum of two years to implement.

Thus the project would result in potential reliability impacts during multiple-dry-year and single-dry-year conditions during the 2010/11 and 2011/12 water years. This impact can feasibly be mitigated, however, by providing funds to the City of American Canyon to purchase dry-year water, if necessary. Dry-year water is available either through the State Water Project Contractor's Association or from individual sellers. The cost of dry-year water is currently on the order of \$275 per AF per year, and no environmental review is required on a one-year transfer. Acquisition of one-year water transfers for the 2010/11 thru 2013/14 water years will mitigate short term impacts, as follows:

**Table 5**

SHORT TERM MITIGATION					
Water Year	Percent occupied	Annual demand (AF)	Water needed (AF)	Estimated cost/AF	Short-term mitigation
2011-12	25%	29	7.25	\$330	\$2,393
2012-13	75%	29	21.75	\$357	\$7,465
2013-14	75%	29	21.75	\$372	\$8,091
Total					\$18,248

The project will contribute the above amounts as non-refundable payments to the water operations fund to allow the City to acquire dry-year water, if necessary. If the long-term mitigations are not in place prior to the 2014/15 water year, the project will continue to make annual non-refundable payments until the short-term impacts are mitigated by completion of long-term improvements.

## **OPPORTUNITIES TO REDUCE PROJECT'S WATER FOOTPRINT**

### **ON-SITE CONSERVATION OPPORTUNITIES**

The project will be reviewed for additional on-site conservation opportunities during the building permit plan review process.

### **OFF-SITE CONSERVATION OPPORTUNITIES**

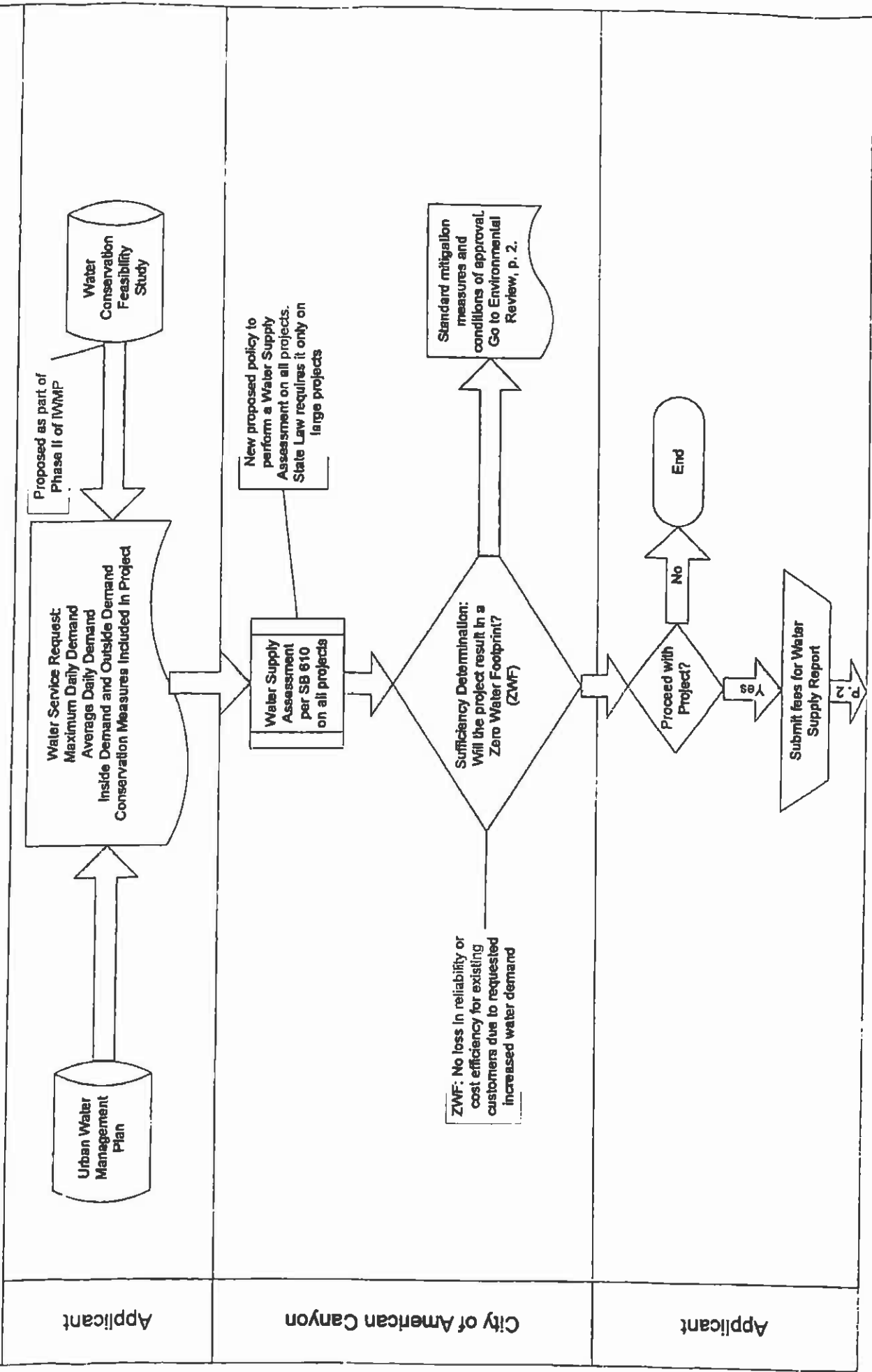
The project could reduce its water footprint by including one or more of the following off-site water conservation opportunities:

- Conversion of existing toilets to high-efficiency toilets
- Conversion of existing washing machines to high-efficiency, front-loading washing machines
- Conversion of existing urinals to waterless urinals
- Conversion of existing irrigation demands from potable water to recycled water
- Completion of a landscape conversion project

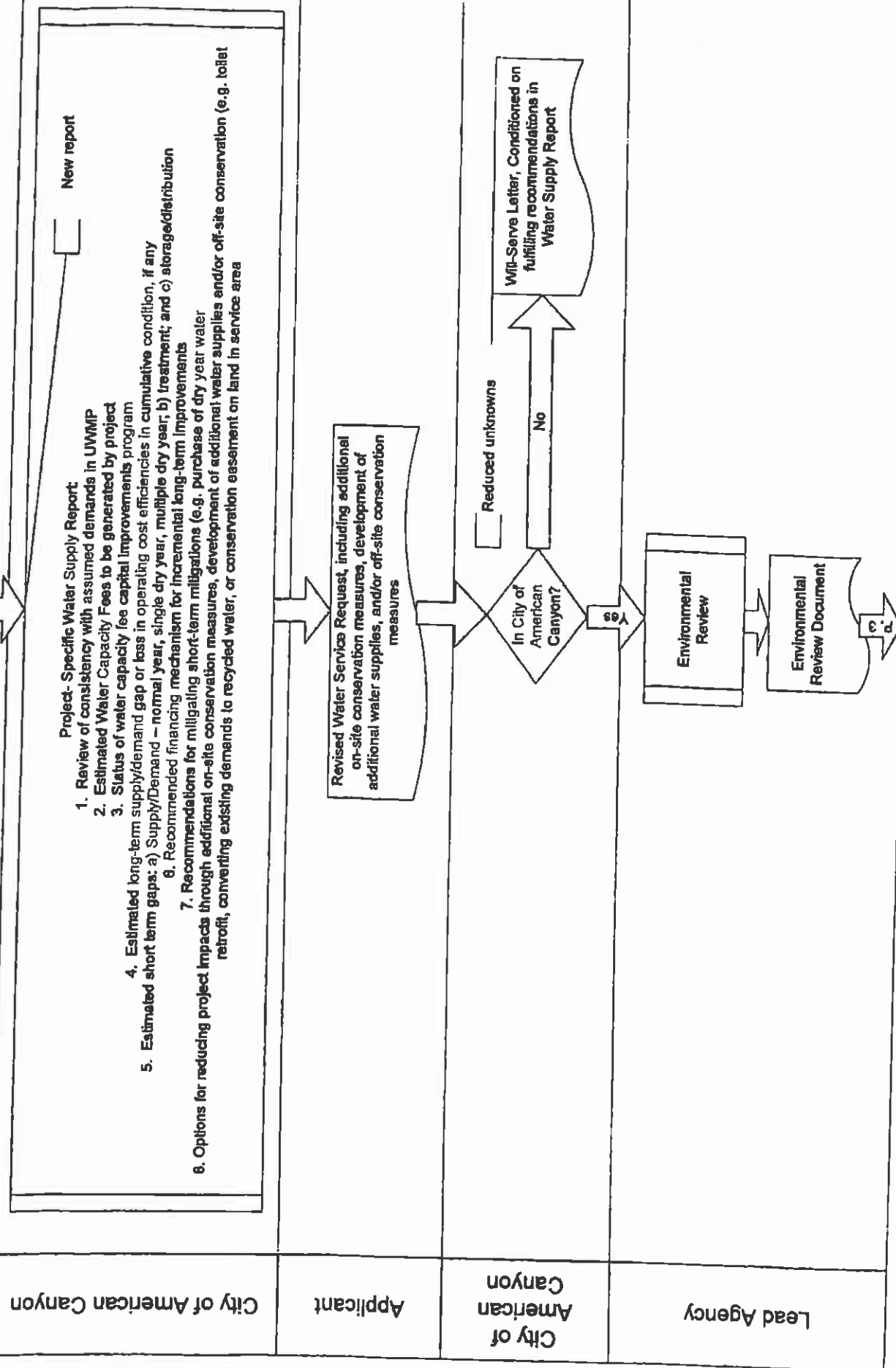
**APPENDIX A**  
**WATER SERVICE REQUEST PROCESS**



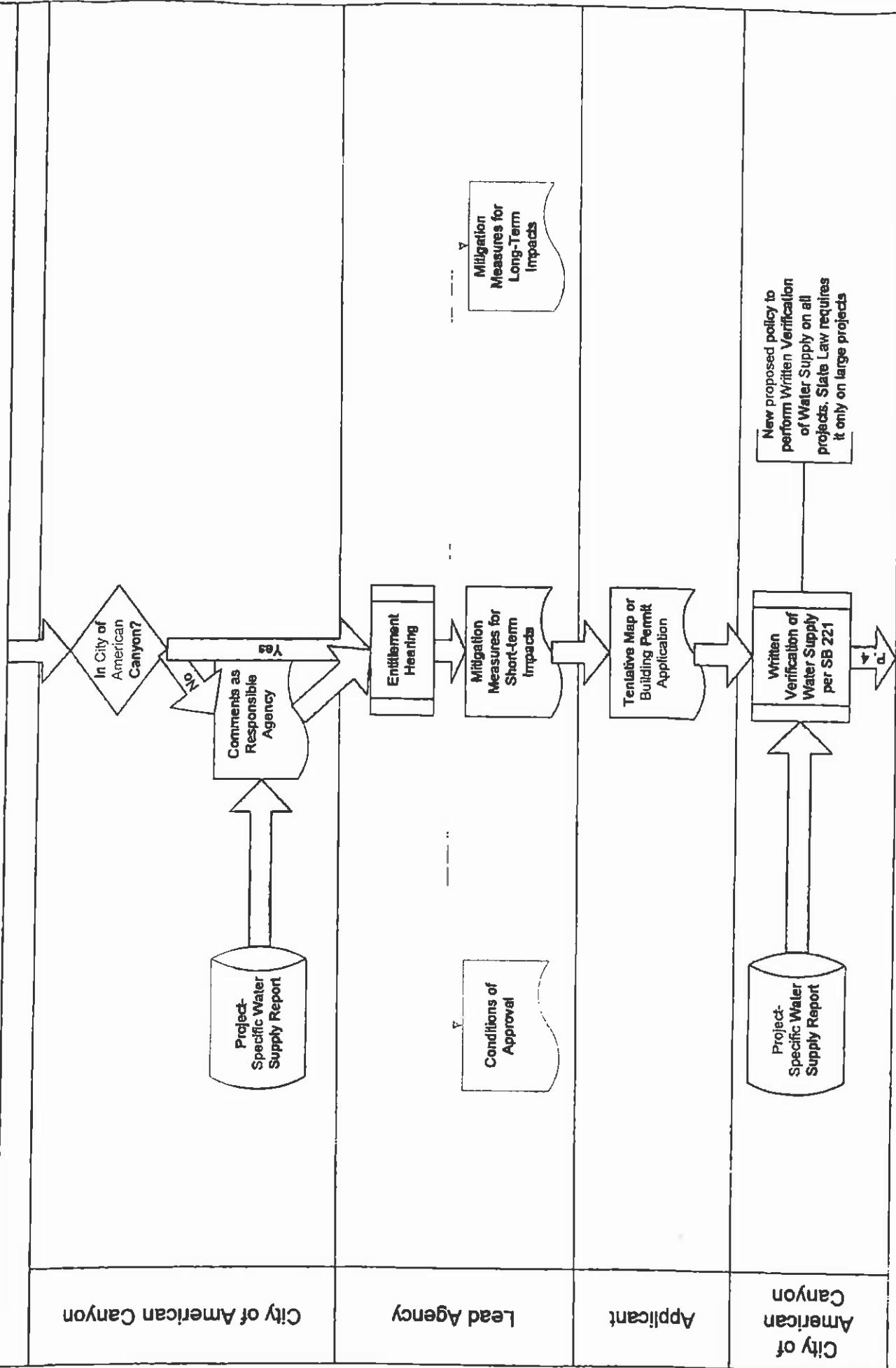
# City of American Canyon Water Service Request Process, p. 1



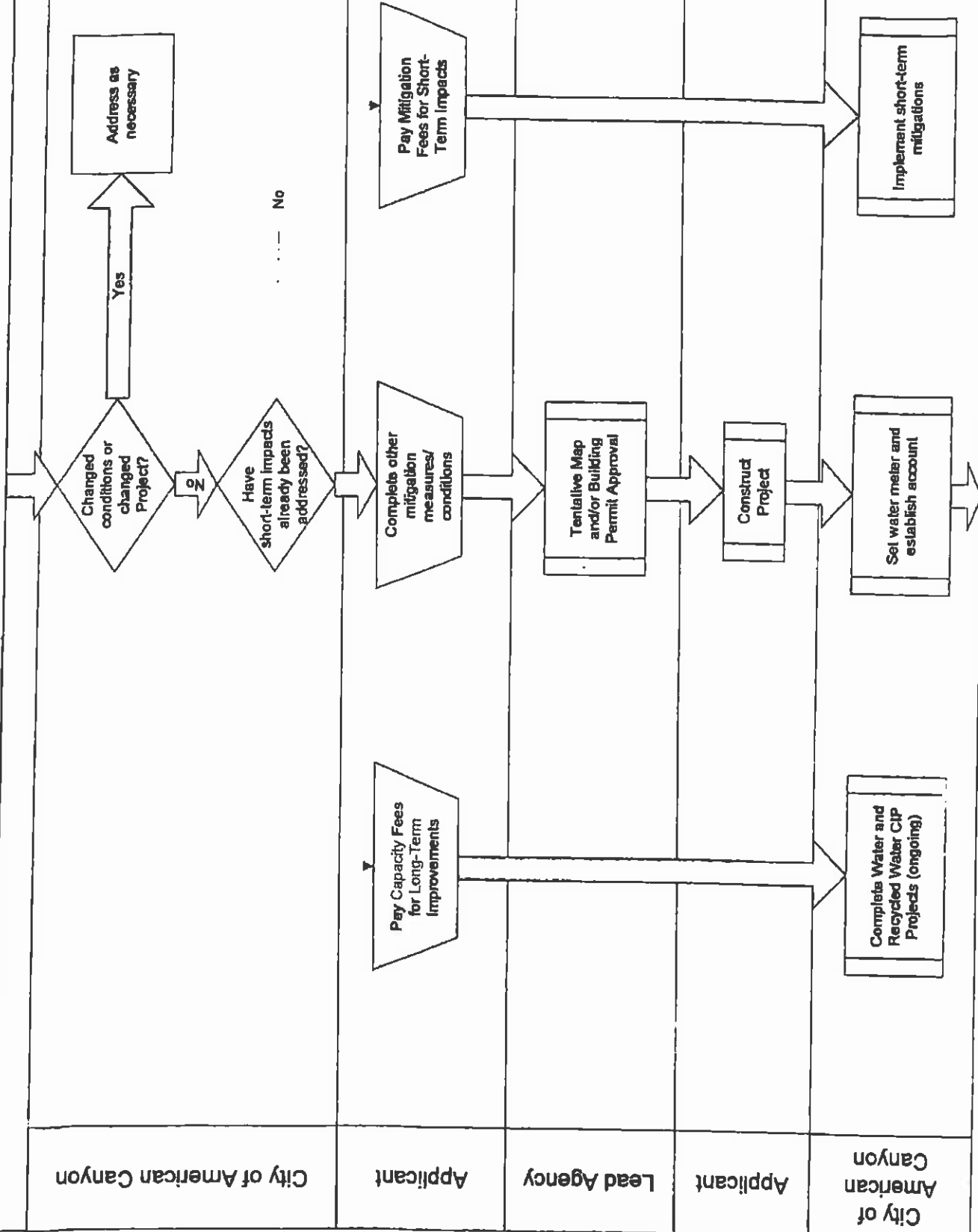
# City of American Canyon Water Service Request Process, p. 2



# City of American Canyon Water Service Request Process, p. 3



# City of American Canyon Water Service Request Process, p. 4



# City of American Canyon Water Service Request Process, p. 5

City of  
American  
Canyon

Applicant

Policy and ordinance change  
will be required to enforce  
usage limits

Usage within  
approved request?

No Action

Apply for Increased water  
services (Return to p. 1)

**APPENDIX B**  
**WATER CAPACITY CAPITAL PROGRAM PROJECTS**

# City of American Canyon

## Water Enterprise Capital Improvement Program Summary

Project Name	Project Description/Need	Projected cost and financing		
		Cost	Ratepayers	Development
Water supply				
Water rights				
North Bay Aqueduct expansion	Purchase of 1,580 annual acre feet of water rights from Sacramento Valley agricultural interests	\$7,500,000	0%	100%
North Bay Aqueduct interest payments	Project to expand the ability of the North Bay Aqueduct to deliver more water	4,400,000	0%	100%
North Bay Aqueduct terminal tank replacement	Ongoing interest payments for loan to build North Bay Aqueduct	1,440,000	47%	53%
Vallejo water rights purchase	Project to replace and expand the seasonally deficient water tank at the end of the North Bay Aqueduct	2,165,000	47%	53%
Emergency groundwater bank	Exercise remaining potable water contract options from city of Vallejo for use in times of drought	12,295,908	0%	100%
Water conservation program implementation	American Canyon's share of project to "bank" groundwater for times of emergency	1,200,000	0%	100%
	Project to fully implement the City-approved Water Conservation Guidelines	400,000	0%	100%
Water treatment				
Zenon cassette addition	Project to improve treatment of water at membrane treatment plant, anticipating future regulations	50,000	0%	100%
Zenon plant expansion	Project to expand potable water treatment from 5.5 mgd to 8.5 mgd	3,000,000	0%	100%
Sludge handling expansion	Project to increase ability to handle sludge generated during water treatment	500,000	0%	100%
Recycled water				
Phases 1-5	Projects required to develop recycled water as a water source, includes new pipelines and a recycled water reservoir	15,808,500	0%	100%
Transmission, Distribution and Storage				
East Tank #1	New water tank in main pressure zone required to meet needs of future growth	4,500,000	0%	100%
East Tank #2 (High School Tank)	New water tank in high pressure zone provides benefits for both new growth and reduced pumping costs to City	4,000,000	0%	100%
Hwy. 28 crossings	Projects required to increase connections across SR 28 as demand grows	400,000	0%	100%
14" re-alignment/replacement	Replacement of badly corroded pipeline to reduce water loss and increase capacity	3,000,000	47%	53%
Waterline Eastside of 28 (W-14 and W-15)	Project to close gaps in new water line to serve development on east of SR 28	1,500,000	30%	70%
Broadway Vallejo potable water metering station	Required to increase the capacity of potable water delivery from Vallejo	300,000	0%	100%
Eastern sphere transmission improvements	Improvements to handle increased water supply from treatment plant	400,000	0%	100%
Repairs/Upgrades				
Conventional plant electrical upgrade	Electrical system at conventional water treatment plant require replacement	300,000	100%	0%
Conventional plant valve replacement	Flow control valves at conventional water treatment plant require replacement	75,000	100%	0%
FCV #9 Modification (relocation of tank outlet)	The flow control valve #9 overly restricts water flow from the plant and will be relocated	100,000	100%	0%
Enhanced treatment process	Enhancements at treatment plant to meet higher water quality standards	750,000	47%	53%
Conventional plant filter media replacement	The treatment media at the conventional water treatment plant is due for replacement and upgrade	125,000	47%	53%
Acid addition system	Project to upgrade treatment to allow for acid addition during treatment process	175,000	47%	53%
Water system SCADA	Supervisory Control and Data Acquisition system allows for remote sensing and control of water system.	300,000	47%	53%
Other				
Integrated Water Management Plan - Phase I and II	Long-range planning project that allow the City to develop comprehensive technical plan for entire water system	500,000	47%	53%
Corp Yard Improvements	Project to replace the City Corporation Yard, which lies in the floodplain and is subject to disruption in emergency situations	5,000,000	47%	53%
		\$69,984,408	\$7,304,154	\$62,680,254

3/6/2008

City of American Canyon

**City of American Canyon**  
**Wastewater Enterprise Capital Improvement Program Summary**

Project name	Project description/need	Estimated cost	Estimated cost and financing	Development
Pump station upgrades Phase 1	Pumps replaced to handle increased wastewater flows	\$320,000	0%	100%
Wetlands Edge Rd force main upgrade	Critical project required to replace and upgrade force main which carried 90% of wastewater flow in City	2,100,000	67%	33%
Zenon cassette	Additional cassettes to increase wet weather flow capacity	887,831	67%	33%
Phase 1 treatment upgrades (1)	Increases capacity from current 1.9 mgd to 2.5 mgd	3,000,000	0%	100%
Phase 2A treatment upgrades (2)	Increases capacity from 2.5 mgd to 2.75 mgd and lays foundation for future expansions	6,600,000	0%	100%
Phase 2B treatment upgrades (3)	Increases capacity from 2.75 mgd to 3.75 mgd to meet General Plan requirements	10,950,000	0%	100%
Sludge pond #2 liner replacement	Liner in Pond #2 must be replaced	1,200,000	100%	0%
WWTP electrical system repair	Existing electrical system in plant must be repaired and upgraded	1,200,000	80%	20%
Wastewater system SCADA	System for monitoring and controlling the wastewater treatment system	300,000	67%	33%
WWTP (50%)	Long-range planning project that allow the City to develop comprehensive technical plan for entire water system	500,000	0%	100%
LI Reduction	Program that reduces wet weather infiltration into sewer pipes which improves function of wastewater treatment plant	8,000,000	10%	90%
Force main addition (Sunset to WWTP)	Second force main required to bring wastewater flows to treatment plant to meet buildout flow levels	3,000,000	0%	100%
Corp yard improvements	Project to replace the City Corporation Yard, which lies in the floodplain and is subject to disruption in emergency situations	5,000,000	67%	33%
Lombard pump station	New pump station required to meet planned flows in northeastern portion of City	2,500,000	100%	100%
Main pump station replacement	Project to replace the Main Pump Station to meet code requirements when expanded	2,000,000	0%	100%
Broadway & American Canyon Road Sewer Upstzng	Gravity sewers along Broadway from Donaldson Way and American Canyon Rd. must be updated to handle increased flows	2,100,000	0%	100%
Broadway & S. Napa Jct. Rd. Sewer Upstzng	Gravity sewers along Broadway from Napa Jct. Rd. to Donaldson Way must be updated to handle increased flows	700,000	0%	100%
Upgrade Green Island Pump Station	Pump station must be expanded to handle increased industrial flows from Green Island area	250,000	0%	100%
		\$48,607,831	\$9,312,713	\$40,294,918



**APPENDIX C**  
**WATER DEMAND CALCULATIONS**

**City of American Canyon Will Serve Questionnaire**

Date: 09/29/11	
Owner Name: MADISON VINEYARD HOLDINGS dba VALLEY GATE VINEYARDS	Applicant Name: ERICH KROLL
Owner Address: 1 KIRKLAND RANCH RD 94558 4225 SALADO AVE # 200 94559	Applicant Address: SAME
Owner Phone #: 707-254-8673	Applicant Phone #: 707-812-1793
Owner Signature: <i>[Signature]</i>	Project Engineer: SAME
Project Name: VALLEY GATE VINEYARDS	Project Address: 1 KIRKLAND RANCH RD
Project APN: 057-140-015	
Project Description: WINERY EXPANSION FROM 200K GALLONS OF WINE ANNUALLY TO 1.3 MILLION GALLONS OF HARVEST PRODUCTION AND 2.4 MILLION GALLONS OF BOTTLING PRODUCTION.	
Permit Number:	Time of Operation:
Status of Environmental Clearance:	hours/day: 8
Permit Status:	days/week: 7
Land Use:	months/year: 12
Property Zoning:	
Lot Size (acres): APPROX. 90 AC	Building Size (sqft): APPROX. 57,000 SF
<b>Anticipated Potable Water Demand*</b>	
Average day demand (annual):	Maximum day demand:
domestic 457 gpd	domestic 686 gpd
Irrigation gpd	Irrigation gpd
Industrial 25,465 gpd	Industrial 48,010 gpd
Total 25,922 gpd	Total 48,696 gpd
* attach references used and calculations for water demand	
<u>Comments:</u> EXISTING WATER DEMANDS ARE FOLLOWING: ADD = 3,200 GPD MDD = 11,000 GPD	
The City of American Canyon Municipal Code 13.10.20 (Code) gives first priority for new water and sewer connections and services to residences and businesses located within the city corporate boundaries. The Code also states applicants for water service from other customer applicants must comply with all standards applicable to outside customers set forth in Chapter 13.	

1	Meters	Type	ADD (gpd)	MDD (gpd)
<b>EX.</b>				
2"	dom		3,698.0	1.5 x ADD
5/8"	pfp		0.0	0.0
	<b>Total</b>		<b>3,698.0</b>	<b>5,547.0</b>
<b>PROP.</b>				
2"	dom		25,922.0	48,696.0
	<b>Total</b>		<b>25,922.0</b>	<b>48,696.0</b>

<b>2</b>	<b>Conversion from gpd to AFY</b>				
	gpd	conversion			AFY
	25,922.0	1,120	1,000,000	=	29

<b>3</b>	<b>Conformance with UWMP</b>				
	Comm.	bldg size (sqft)	allotment	KSF	gpd
		57,000	155	1,000	8,835
		gpd	conversion		AFY
		8,835	1,120	1,000,000	10
	Ind.	lot size (acres)	allotment gpad		gpd
		69.00	650	=	44,850
		gpd	conversion		AFY
		44,850	1,120	1,000,000	50
	Ag	lot size (acres)	allotment gpad		gpd
		69.00	2,680	=	184,920
		gpd	conversion		AFY
		184,920	1,120	1,000,000	207

<b>4</b>	<b>Consistency with Ord. 2000-08 (AIASP and similar city uses only)</b>				
	lot size (acres)	gpd/a per Ord.			gpd
	0	650	=		0
	ADD (gpd)	acres			gpd/a
	0	60	=		0

<b>5</b>	<b>Capacity fee</b>			
	MDD (gpd)	\$/gpd		\$
	48,696	18.33	=	892,597.68

<b>6</b>	<b>Short Term Mitigation fee</b>				
	Water		Water needed	Estimated	Short-term
	Year	Percent occupied	ADD (AF)	cost/AF	mitigation
	2010 -11	0%	0	\$302	\$0
	2011-12	25%	29	\$330	\$2,393
	2012-13	75%	29	\$357	\$7,765
	2013-14	75%	29	\$372	\$8,091
	<b>Total</b>				<b>\$18,248</b>

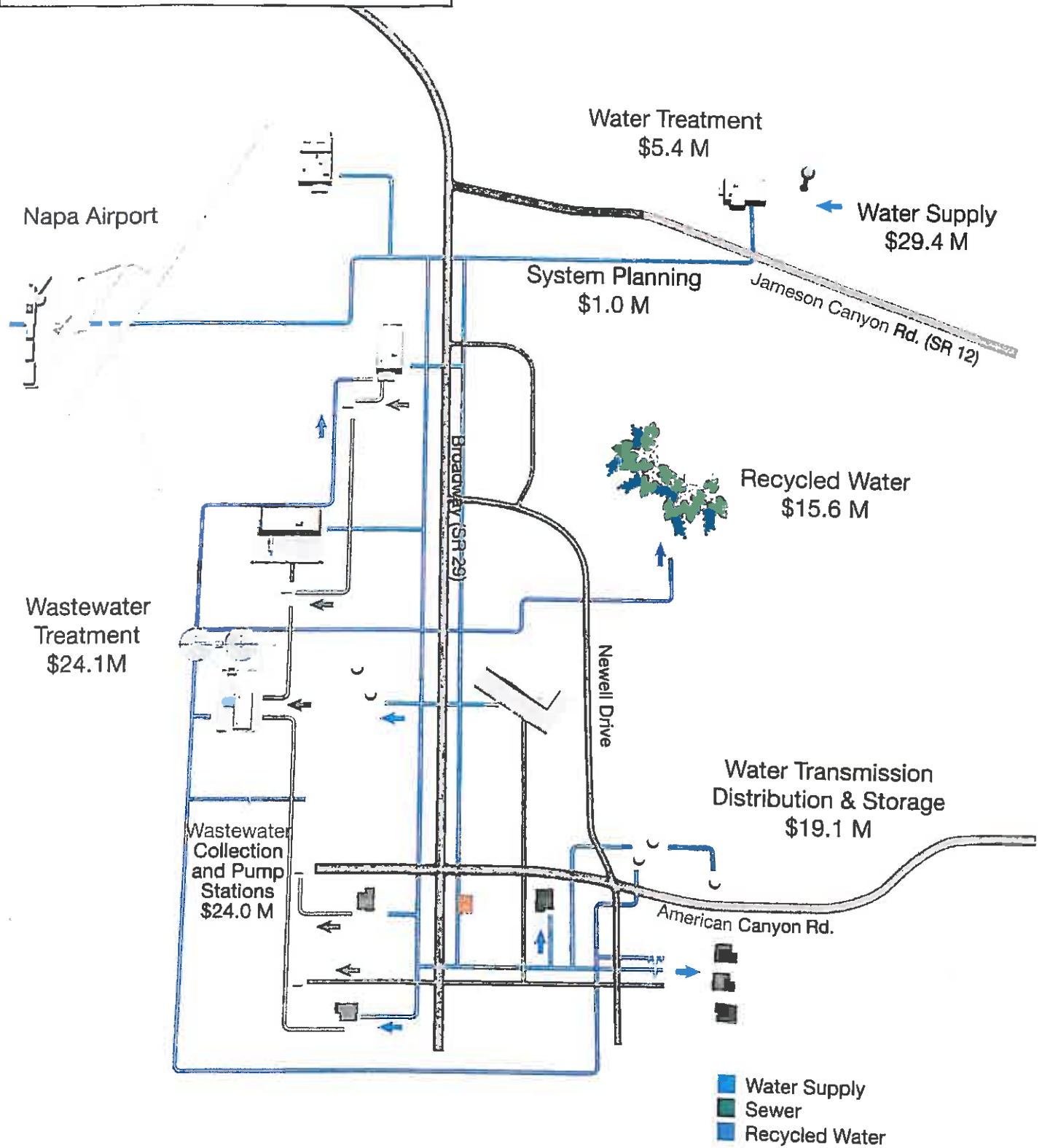
\* water year is october 1 thru Sept 30

**7 Estimated Monthly Water Bill**

	ADD X	30 /	748 X	cost/unit	=	cost/month
	gpd	days/month	gal/unit	\$		\$
AC/inside	0	30	748	3.22	=	\$0
AC/outside	0	30	748	4.51	=	\$0
Vallejo	25,922	30	748	4.81	=	\$5,001

**APPENDIX D**  
**WATER CAPACITY CAPITAL PROGRAM SCHEMATIC**

# City of American Canyon Capacity Fee Capital Program Schematic



## **APPENDIX E**

### **ACCEPTANCE OF WATER SUPPLY TERMS AND CONDITIONS**

APPENDIX E

ACCEPTANCE  
of  
WATER SUPPLY REPORT  
TERMS AND CONDITIONS

Valley Gate Vineyards

APN 057-140-010 and 057-140-015

Madison Vineyard Holdings, LLC  
I, dba Valley Gate Vineyards accept the terms and conditions set forth in the Water Supply  
Report dated October 11, 2011.

ERICH KROLL, AUTHORIZED PERSON  
(Print Applicant Name and Title)

E. Kroll  
(Signature)

Date: 10/18/11

Madison Vineyard Holdings, LLC dba Valley Gate Vineyards  
by: Lois M. Wendt, Manager  
(Print Owner Name and Title)

Lois M. Wendt  
(Signature)

Date: October 18, 2011