SECTION 3.0
CITY OF BRENTWOOD
WATER AND WASTEWATER SERVICES

3.1 Overview

Incorporated in 1948, the City of Brentwood serves a population of 48,907 in an area of 14.83 square miles. The City's Sphere of Influence (SOI) includes an additional 51 square miles. Brentwood is bounded to the north by the City of Oakley, to the west by the City of Antioch, and to the south and east by unincorporated Contra Costa County.

The City provides water treatment and distribution, and wastewater collection, treatment and disposal services for its residents and businesses. The City's untreated water sources include groundwater extracted from the San Joaquin Basin, and surface water from the San Joaquin River Delta through purchase of surplus irrigation water from the East Contra Costa Irrigation District (ECCID). The City serves one residential parcel outside of the city boundaries (approved by LAFCO Resolution No. 05-16). A The City's profile for water and wastewater service is shown in *Table 3.1* and a map of the City's boundary and current SOI are shown in *Figure 3.1*.

Table 3.1
City of Brentwood
Water and Wastewater Service Information

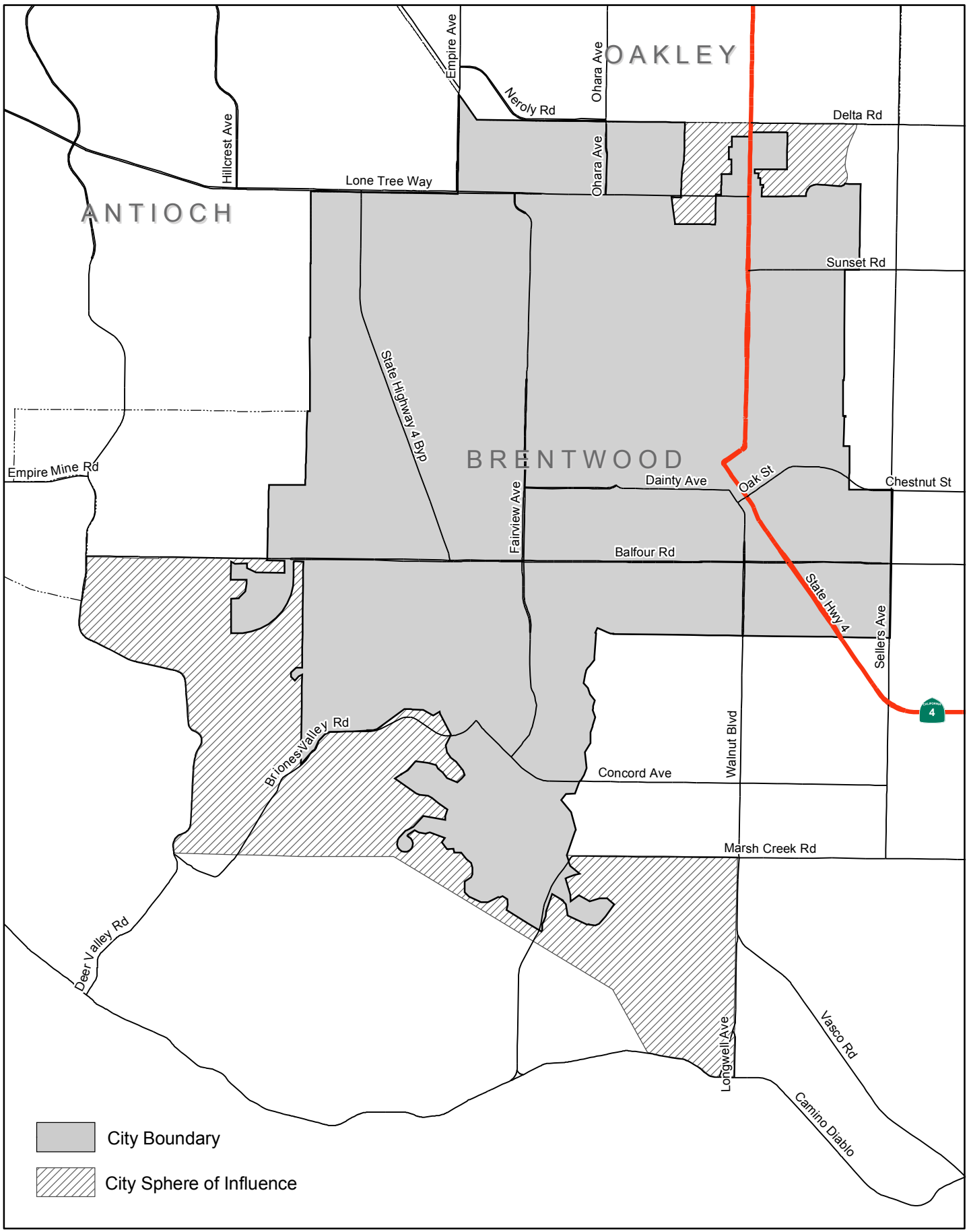
Service Area / Financial Summary	
Public Works Department:	2251 Elkins Way Brentwood, CA 94513 (925) 516-6000 www.ci.brentwood.ca.us
Service Area:	14.83 square miles
Population:	48,907 (Year 2007) / 82,900 (Year 2030) Average Annual Growth Rate (2007-2030) = 3.0%
Operating Budget (FY 2007/2008): Water Enterprise Fund Wastewater Enterprise Fund	 Revenues / Expenditures:$15,662,932 / $12,490,670 Revenues / Expenditures: $6,783,748 / $6,581,946
Net Assets:	Water Fund Net Assets 06/30/2007: $91,270,527 Wastewater Fund Net Assets 06/30/2007: $70,148,946
Water Service Data	
Services	Water Treatment and Distribution
Number of Service Connections	~16,410

Table 3.1
City of Brentwood
Water and Wastewater Service Information

Water Main / Booster Stations	158 miles of main / 7 booster stations
Average Age of Distribution System	10 years
Treatment and Capacity	Randall-Bold Water Treatment Plant / 40 mgd (Brentwood capacity share = 6 mgd) Brentwood Water Treatment Plant / 12 mgd
Storage Capacity	6 reservoirs / 18.7 mg
Average Day Demand / Maximum Day Demand	10 mgd/ 17 mgd
Wastewater Service Data	
Services	Collection, Treatment, Disposal, Recycled Water
Number of Service Connections	~15,928
Miles of Sewer Main / Number of Pump Stations	138 miles / 3 pump stations
Average Age of Collection System	10 years
Average Flow	3.35 mgd
Wastewater Treatment Plant Average Dry Weather Capacity	Current: Design 5 mgd Ultimate Capacity: 10 mgd
RWQCB Region	Region 5 – Central Valley
Orders	▪ Order No. 5-00-171 – Waste Discharge Requirements for Brentwood Wastewater Treatment Plant ▪ Order No. R5-2004-0132 – Master Reclamation Permit (recycled water) ▪ Order No. 2006-0003 – Statewide General Waste Discharge Requirements for Sanitary Sewer Systems ▪ Order No. R5-2007-0048 Waste Discharge Requirements for Randall-Bold Water Treatment Plant and Brentwood Water Treatment Plant

Figure 3.1

City of Brentwood Boundary and Sphere of Influence



Map created 10/1/2007
by Contra Costa County Community Development, GIS Group
651 Pine Street, 4th Floor North Wing, Martinez, CA 94553-0095
37:59:48.455N 122:06:35.384W

Miles
0 0.3 0.6 1.2

3.2 Growth and Population Projections

The City of Brentwood has a current estimated population of 48,907 residents; this is projected to reach 82,900 by 2030[1], with an average annual growth rate of 3 percent (2007 through 2030). In 2001 the City updated the Land Use, Growth Management, and Circulation Elements of the 2010 General Plan. The Update reduced the ultimate population to approximately 75,000 people, and increased employment from 30,000 to approximately 43,000 jobs to achieve a ratio of 1.6 jobs per housing unit. Build-out is projected to be reached in 2025. The predominant land use is residential, with the majority of residential development being single family. Office, industrial, and regional commercial uses are primarily located along the State Route 4 Bypass. The General Plan Update includes 26,653 dwelling units and 2,471 acres of employment generating uses.

In 2001, the City also adopted a Residential Growth Management Program (RGMP), establishing a residential growth allocation system that ensures growth is orderly and efficient. The Plan is also intended to better synchronize growth with the construction of public infrastructure and facilities. The RGMP is updated periodically with the most recent update in October 2006.

The City does not have a similar program for commercial and industrial growth. However, the areas where this development will occur are defined in the General Plan Update and incorporated into the City's master plans for water and wastewater services.

The City has considered the need for water and wastewater services with respect to existing development and future growth and has incorporated policies within the General Plan Growth Management Element as follows:

- Policy 1.1.1: The City shall only approve developments which are in conformance with the performance standards provided in the Master Infrastructure Plan (Water Master Plan, Sewer Master Plan, Water Master Plan and Reclaimed Water Master Plan):
    - For water facilities: assure sufficient capacity to provide quality water that meets or exceeds the standards set forth by the State Department of Health Services; and
    - For sanitary facilities: assure the capability to collect and treat sewage according to the standards set forth in the City's National Pollutant Discharge Elimination System (NPDES) permit issued by the Central Valley Regional Water Quality Control Board.

[1] Association of Bay Area Governments, Projections 2007.

- Policy 1.1.2: Through development review the City shall ensure that utilities are adequately sized to accommodate the proposed development, and if applicable, allow for anticipated future expansions.
- Policy 1.1.4: Existing water and wastewater facilities shall be expanded to accommodate existing and planned future development.
- Policy 1.1.9: Ensure that the rate of growth is consistent with the ability to provide adequate municipal services.
- Policy 1.6.1: Ensure that final development approvals are not issued unless the City is assured that adequate infrastructure (wastewater, water, flood control, parks, trails, police, fire, emergency services, and public utilities) is in place or will be in place concurrent with the need for such infrastructure.

The projected growth is consistent with the assumptions the City used to prepare its Fiscal Analysis Model (February 2007), which provides ten-year financial projections with detailed analysis so that the City Council can identify potential financial difficulties and establish priorities. A key finding of the report is that the annual population growth rate will stabilize between two and four percent over the next decade. 2,600 new residential units are projected by 2010 and 5,800 by 2016.

Future growth adjacent to the city will be guided by the countywide Urban Limit Line approved by the voters in November 2006. Earlier, in November 2005, Brentwood voters narrowly defeated Measure L, which would have established an Urban Limit Line (ULL) for the city. The area to the east of Brentwood is designated as "agricultural core" on the County's ULL map, and area to the south is designated as "agriculture, open space, wetlands, parks and other non-urban uses."

As the City of Brentwood continues to develop in the future, there will be an increased need for water and wastewater services, including a reliable source of recycled water. These needs have been addressed in the City's master plans and will require that the City continue to implement phased improvements to some pump stations, water and sewer mains, and the water and wastewater treatment plants as necessary per growth trends. These improvements will ensure that there are no service impacts to existing customers and that necessary improvements will be funded through connection fees and other capital asset replacement revenues as identified in the City's Development Fee Program and Capital Improvement Program.

3.3 Infrastructure Needs or Deficiencies

Brentwood's water system infrastructure includes wells and a water storage and distribution system. The wastewater system includes a collection system, a wastewater treatment plant, and a

disposal system. The City prepares an annual strategic plan that establishes City Council priorities for the upcoming year. In the 2007 Strategic Plan, water and wastewater infrastructure is addressed, both for the need to update the respective master plans and to continue to aggressively pursue and secure funds for infrastructure construction. As identified in *Section 3.2* above, the Infrastructure Element in the City's General Plan includes several policies related to water and wastewater service to achieve the goal of maintaining and improving Brentwood's infrastructure.

3.3.1 Water Supply and Demand

The City of Brentwood's water sources include locally produced groundwater, surface water from the San Joaquin River Delta through ECCID, and recycled water.

Groundwater Supply

Brentwood obtains approximately half of its water supply from groundwater extracted from the San Joaquin Basin, which is not adjudicated. The City has eight wells producing at a rate of approximately 4,200 gallons per minute or 6.0 million gallons per day. The groundwater quality is adequate, but does have detectable levels of total dissolved solids, chlorides, and nitrates. These dissolved solids fall within required limits, though are on the higher end of the acceptable range. Treatment is provided at the well heads and the water is pumped directly to the distribution system. One of the wells is unusable several months a year due to poor water quality, and the City is evaluating the installation of a mechanical treatment process to improve the reliability of this source.

Because the San Joaquin Basin is not adjudicated there are no legal limits on groundwater production. In 1999 the City, in conjunction with East County Water Management Association, conducted a groundwater study to evaluate the current status of the groundwater resources among other things. Although the determination of basin capacity was not included as a part of the scope of work, it was determined that the basin was able to sustain the current production of the City and other groundwater users. The City's two main well fields are located in the northeast part of town and to the southeast. According to the City's 2005 Urban Water Management Plan, "Static water level readings from the City's wells indicate that the water level difference may be 20 to 200 feet and is most likely caused by municipal pumping. The City's pumping, however, has not affected the larger regional system." The City is monitoring water levels and water quality to determine whether the deeper zones of the newer municipal wells might cause degradation of water quality by inducing downward movement of water quality constituents. This water source is considered reliable at this point to meet a portion of the demands as projected in the City's adopted 2005 Urban Water Management Plan.

Surface Water Supply

The balance of Brentwood's water supply is obtained from the San Joaquin River Delta through an agreement with the East Contra Costa Irrigation District (ECCID). In 1999, Brentwood and ECCID entered into an agreement that provides the City with a permanent entitlement to purchase 14,800 AF/Yr of surplus irrigation water from the Delta. ECCID owns the pre-1914 water rights, which are not subject to delivery reductions during water shortages including regulatory restricted and drought years. The water purchased by Brentwood may only be used by the City and its retail customers within the City boundary or ECCID boundary.

If necessary, Brentwood also has the option to purchase treated water from CCWD through a 2004 agreement wherein Brentwood purchased a treatment capacity right at the Randall-Bold Water Treatment Plant, entitling the City to up to 6 mgd of treated water for use within the area that overlaps between the City and CCWD. The source of this treated water is Brentwood's ECCID water. The City is entitled to the water quality and emergency storage benefits of the Los Vaqueros Project for the connections within the overlap area. Per the 2003 Amendatory Agreement between the City and CCWD, 3,202 acre-feet of emergency supply is available under specific limited circumstances, such as when CCWD cannot pump the City's ECCID water for some reason; it is not additive to the City's existing supplies.

Water Demand

In 2006, residential uses accounted for 87 percent of water demands and commercial/institutional 13 percent. The proportional share between residential and commercial service is expected to remain relatively consistent through 2025. For master planning purposes, the City estimates future water demand based on land use, ranging from 410 gallons per day (gpd) per unit for medium density residential to 1,000 gpd/unit for ranchette estates. For planning purposes, the system-wide maximum day demand at buildout is 41 mgd. The City's 2005 Urban Water Management Plan indicates that water demands are expected to increase by 225 percent by 2025, with water use factors of 181 gpd/person in 2003 increasing to 309 gpd/person in 2030. (Conservation measures taken in the future are not reflected in the projected water demands.) The 2005 Urban Water Management Plan uses a demand projection in 2025 of 21,419 AF/Yr or 19.1 mgd average day demand and 39.9 mgd for maximum day demand. The 2006 Water Master Plan is based on demand projections of 41 mgd maximum day demand at build-out with a maximum day supply of 42 mgd (30 mgd from the BWTP, 6 mgd from the RBWTP, and 6 mgd from the City's groundwater wells).

Balancing Supply and Demand

The projected water supply and demand through 2025 for Brentwood are shown below in *Table 3.2*:

Table 3.2
City of Brentwood Projected Water Supply and Demand (Normal Year)
(AF/Yr)

	2005	2010	2015	2020	2025
Normal Conditions					
Supply:					
Groundwater	6,721	6,721	6,721	6,721	6,721
Surface Water	6,720	14,800	14,800	14,800	14,800
Recycled	323	2,190	2,646	3,442	3,733
Total Supply	13,764	23,711	24,167	24,963	25,254
Demand	9,481	12,958	15,475	18,032	21,419
Difference	4,283	10,753	8,692	6,931	3,835
Single Dry Year Conditions					
Supply	NA	22,462	22,462	22,462	22,462
Demand	NA	12,603	13,554	14,383	15,139
Difference	NA	9,859	8,908	8,079	7,323

Source: Brentwood 2005 Urban Water Management Plan and City communications

Per the City of Brentwood's adopted 2005 Urban Water Management Plan, the City should have adequate water supply to meet normal, single and multiple dry years through 2025 based on available supplies. This assumes that the BWTP will be operational in 2008 with a capacity of 13,443 AF/Yr, and recycled water from the BWWTP will be a real source of water for irrigation of parks, streetscapes, golf courses, and various industrial uses.

3.3.2 Water System Infrastructure

The City's water system infrastructure includes eight wells, capacity in the RBWTP and new BWTP, and the City-owned storage and distribution system. The RBWTP and adjacent BWTP are located north of the city at 3760 Neroly Road in Oakley, adjacent to the Contra Costa Canal. *Table 3.3* summarizes the existing water system facilities:

Table 3.3
City of Brentwood
Water System Overview

	Quantity
Wells / Capacity	8 wells / 6 mgd
Water Mains / Booster Stations	~158 miles / 3 pressure zones / 7 booster stations
Storage Capacity	6 reservoirs / 18.7 mg
Average Age of Distribution System	≥ 10 years
Treatment /Capacity	Randall-Bold Water Treatment Plant – 6 of the 40 mgd Brentwood Water Treatment Plant – 12 mgd
Average Day Demand / Maximum Day Demand As of 2006	10 mgd / 17 mgd

As noted in *Table 3.2* above, groundwater is a significant source of the City's water supply, and Brentwood has eight wells located in the eastern portion of the city with a combined capacity of 6 mgd. Some wells are considered backup wells due to water quality issues. The City will need to maintain a minimum firm groundwater pumping capacity of at least 5 mgd to meet buildout maximum day demands. For buildout, the existing well pumps will need to be replaced with higher pressure pumps.

In addition, the City has capacity rights in both water treatment facilities serving the city. The City has purchased a permanent capacity right of 6 mgd at the RBWTP and is currently using additional capacity on an interim basis. Interim treatment is scheduled to end in 2008 when the new Brentwood WTP is anticipated to come on line.

Per the terms of a 2006 amendment to the CCWD/Brentwood agreement, CCWD will treat the City's ECCID water supply at the new BWTP, located adjacent to the RBWTP. The BWTP will be designed, constructed, owned, operated, and maintained by CCWD for the exclusive use of serving treated water to the City. The City plans to finance the construction. The City has the option to assume ownership of the BWTP from CCWD should the City desire to do so in the future. The construction contract was approved in September 2006 and the BWTP is expected to be operational in 2008. As part of this project, the City has constructed a new pump station at the RBWTP and pipeline connecting to the City's distribution system so there are no capacity limitations for delivering treated water to the system.

The new BWTP will have an initial treatment capacity of up to 12 mgd, with an ultimate capacity of up to 30 mgd. Where cost effective and consistent with the CCWD/DWD Joint Powers Agreement for the RBWTP, the BWTP and RBWTP may share facilities, such as the solids lagoons, main power supply and backup power facilities.

The City has constructed a new pump station and pipeline to deliver the water from the BWTP to the City's distribution system. The City has three pressure zones and approximately 158 miles of water mains. There are currently 6 distribution reservoirs with a combined capacity of 18.7 mg.

The City's 2007/2008-2008/2009 Operating Budget identifies several accomplishments for water services as well as goals for the two-year budget period. Accomplishments related to water operations include the following:

- Removal and replacement of the Sarah Street main line
- Four potable water reservoirs were inspected and cleaned
- The annual valve turning and flushing program was continued as was the leak detection program
- Two wells were inspected and repaired
- The entire water system was converted from free chlorine to chloramines

Goals for the 2007/2008-2008/2009 budget period include:

- Completing well abandonment for specified wells to avoid groundwater contamination
- Continue well and distribution system monitoring for regulatory compliance
- Continue leak detection program
- Inspect and clean six potable water reservoirs
- Establish and administer a fire hydrant maintenance and repair program
- Continue with and expand water conservation programs for high-efficiency toilets, washers and "smart" irrigation controllers.

In March 2006, the City adopted its Water Master Plan, which updated the system-wide water demand and modeling to determine the sizes for future facilities. This Master Plan provides a framework for the City's five-year Capital Improvement Program (CIP) as well as for determining the appropriate Facility Fee charges for new development. The current CIP (2007/2008-2011/2012) includes $79.2 million in water system improvement projects funded primarily through Facility Fees on new development and service charges. The major project is $42 million for the new Surface Water Treatment Facility (or BWTP). This includes design and construction of the ultimate pumping facilities and main trunk line to the City's distribution system and design of the new BWTP to treat the City's ECCID surface water supply. Other projects include $2.8 million for upgrades to the downtown water infrastructure to support future development in the redevelopment area and $4 million for construction of a new well and other well site improvements. The City has funded an annual program for rehabilitation of the water distribution system at approximately $62,000 per year. Current unfunded capital projects include a 12-inch water main in Brentwood Boulevard and future phases of the design and construction

of equalization storage basins (totaling 10 mg of storage) on the eastern edge of the city. Currently all of the City's storage capacity is on the western edge of the city where hilly terrain allows use of gravity flow. The City is not planning any other major water facilities, such as a desalination plant.

Capital costs for infrastructure needs to serve existing development are considered in the Water Rate Study for FY 2007/2008-2012/2013 (September 2007). The City has prepared a Water Master Plan (March 2006), which addresses infrastructure needs given current system conditions and anticipated growth.

The City's water system infrastructure is generally in good condition. No major service deficiencies were noted, such as inadequate water pressure, numerous pipeline breaks, regulatory violations, etc. The City's unaccounted for water system losses are estimated at 5-percent, which is an indicator of the integrity of the system. In general, industry standards set a benchmark at 10-percent for an acceptable level of system losses. The City has an Emergency Plan, approved April 2007, currently on file with the local County Department of Health Services, outlining appropriate response actions to protect utility services from emergencies such as: chlorine leaks, fires, earthquakes, civil disturbance, and loss of utilities.

3.3.3 Wastewater System Infrastructure

The City of Brentwood owns and operates its wastewater collection, treatment and disposal system. The collection system, with approximately 138 miles of sewer main, conveys wastewater to the Brentwood Wastewater Treatment Plant (BWWTP) located on approximately 70 acres on the north side of the city adjacent to Marsh Creek. The BWWTP provides tertiary treatment and has an average dry weather flow capacity of 5.0 mgd. Effluent is pumped through the BWWTP as process water or pumped offsite as recycled water to be used for irrigation for landscaped areas in accordance with the City's Master Reclamation Permit issued by the Central Valley RWQCB (Order No. R5-2004-0132). Any remaining treated wastewater is discharged into Marsh Creek per the terms of the City's Waste Discharge Requirements Permit (Revised Order No. 5-00-171). Marsh Creek is listed as an impaired water body on the Environmental Protection Agency's 303(d) list for mercury from Marsh Creek Reservoir to the San Joaquin River resulting from an abandoned mercury mine in the foothills of Mt. Diablo approximately southwest of the Marsh Creek Reservoir.

Recycled water is an important element in how the City manages its water resources to ensure a reliable water supply to meet current and future water demands as a result of growth. The BWWTP has tertiary treatment, providing recycled water for use in parks and other facilities.

The City's 2005 Urban Water Management Plan projects a 780 percent increase in use from 323 acre-feet per year to 2,520 acre-feet per year in 2025.[2]

Table 3.4 summarizes the City's existing wastewater system facilities:

Table 3.4
City of Brentwood
Wastewater System Overview

	Quantity
Sewer Mains	~138 miles
Pump Stations	3
Average Age of Collection System	10 years
Average Dry Weather Flow:	3.35 million gallons per day
Plant Design Capacity Average Dry Weather Flow:	Current: 5 mgd Ultimate: 10 mgd
Water Reclamation & Effluent Disposal:	Tertiary treatment discharge into Marsh Creek or used for irrigation

The BWWTP is designed to have sufficient capacity to handle all wastewater flows at build-out per the General Plan. The Plant has a current treatment capacity of 5 mgd, and is designed to expand to 10 mgd in 2.5 mgd increments. Currently the Plant can handle a peak wet weather flow of 10 mgd. The Plant was expanded in 1998-2002, increasing treatment from a simple secondary treatment plant with a daily process capacity of 2 mg to a state of the art tertiary treatment facility with a capacity of 5 mgd. The Phase II expansion is under development, with completion expected in FY 2014/2015. This second phase will expand capacity to 7.5 mgd by adding oxidation ditches, secondary clarifiers, filters, and related appurtenances. In preparation for design, the City is completing a plant process optimization analysis to identify and evaluate any required modifications to the existing plant process. The analysis focuses on UV disinfection instead of chlorine, plant modifications, biosolids treatment and disposal options, alternate power generation options, and an overall biological assessment. This approach to planning allows the City to thoroughly evaluate the alternatives, and consider opportunities to proactively address anticipated additional restrictions the Central Valley RWQCB may impose on the City.

The State Water Resources Control Board (SWRCB) maintains an online database, the California Integrated Water Quality System (CIWQS), where permit violations and sewer system overflows are reported. In 2006, the SWRCB adopted the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (WQO No. 2006-003-DWQ) and Brentwood (as part of the Central Valley Region) must begin reporting all sewer system overflows to the CIWQS by

[2] City of Brentwood 2005 Urban Water Management Plan. Table 4-4

September 2, 2007. The database lists several violations related to the BWWTP in 2005 that were mostly related to temperature fluctuations in the treated effluent; there were no reported violations for 2006 or 2007. In their response to this review, the City indicated that there were no SSOs to report.

The City's 2007/2008-2008/2009 Operating Budget identifies several accomplishments for the wastewater services as well as goals for the two-year budget period. Accomplishments related to operations include the following:

- There were no discharge violations for the BWWTP for the prior budget period
- The Marsh Creek Temperature Study was completed (in relation to impacts from discharge)
- The City's laboratory was recertified by the Environmental Laboratory Accreditation Program
- Municipal Code Chapter 13.04 Sewer System – Rules and Regulations was updated
- Twelve sewer laterals were replaced through the Lateral Maintenance program
- A recycled water filling station was installed for off-site construction use.

Goals for the 2007/2008-2008/2009 budget period include:

- Completing the NPDES permit renewal process
- Upgrading the Sellers Avenue lift station
- Assisting the developer of Dream Catcher in completing a new lift station
- Repairing/replacing utility water lines at the WWTP
- Developing a Sewer System Management Plan (SSMP).

Projects identified in the 2007/2008-2011/2012 Capital Improvement Program Final Budget include citywide sewer collection system rehabilitation for replacement of main lines, lateral connections, manholes, and covers. Recent visual and CCTV inspections indicated some areas with pipe separations, cracks, and broken or deteriorated pipes due to age or tree root damage. The rehabilitation program will address these issues, including reducing infiltration and inflow. Continued expansion and improvement to the non-potable water distribution system are also planned along with the BWWTP expansion.

Capital costs for infrastructure needs to serve existing development are considered in the Sewer Rate Study for FY 2007/2008-2012/2013 (September 2007). The City recently updated the rate study and is also preparing an update to the Wastewater Collection System Master Plan, which will address infrastructure needs given current system conditions, anticipated growth, and regulatory changes. The Master Plan update is expected to be complete by 2009.

No other wastewater service challenges were noted. Brentwood is preparing the mandated Sewer System Management Plan in accordance with the requirements of the SWRCB's General Waste Discharge Requirements for Sanitary Sewer Systems (Order No. 2006-0003-DWQ). The Plan includes an Overflow Emergency Response Plan to support an orderly, effective response to SSOs.

3.3.4 Summary

Brentwood's sources of water supply include surface water purchased from ECCID, groundwater and recycled water. Per the City's adopted 2005 Urban Water Management Plan, water supplies will be adequate to meet demands in normal, single and multiple dry years through 2025.

In accordance with the policies in the General Plan, the City has planned for water and wastewater infrastructure needs through master plans, annual budget, and the five-year CIP. The City is partnering with CCWD on the new BWTP and is increasing treatment capacity at the BWWTP. The City is implementing programs to extend the life of existing infrastructure and improve performance.

3.4 Financing Constraints and Opportunities

The City of Brentwood accounts for its water and wastewater utilities as enterprise activities, such that revenues from service fees and charges are expected to cover operating costs.

In 1989, the City adopted a Development Fee Program that establishes the nexus between contemplated future development, facilities needed to serve future development, and estimated costs of the improvements based on the current General Plan and CIP. The Program implements policies of the City's General Plan requiring that new development contribute its fair share of the cost of on-site and off-site public infrastructure and services. Developers are required to participate in a Capital Improvement Financing Program, which poses minimal risk to the City.

The City uses a bi-annual operating budget cycle and a five year CIP budget. In the FY 2005/2006 Comprehensive Annual Financial Report, the City noted that it is beginning to experience the financial impact from the slowing housing market and slowdown in general building activity. Development fees and developer-paid infrastructure that is dedicated to the City are an important source of capital funding; in FY 2004/2005, the City received $8.5 million in such funding for the water system and $8.4 million for wastewater. In FY 2005/2006, the City received $8.3 million for the water system and $6.9 million for the wastewater system.

For FY 2005/2006, total revenues for the City were $166.9 million and total expenses were $77 million. For the same period water operating revenues were $12.3 million and operating

expenses were $10.2 million. Wastewater operating revenues were $6 million and operating expenses were $5.3 million. *Tables 3.5 and 3.6* summarize the financial history of the water and wastewater enterprise funds.

Table 3.5
City of Brentwood
Water Enterprise Funds Summary

	FY 2004/2005 Actual	FY 2005/2006 Actual	FY 2006/2007 Projected[3]	FY 2007/2008 Budgeted[3]
Operating Revenues	$10,231,960	$12,264,649	$14,760,700	$15,662,932
Operating Expenses	$8,443,952	$10,248,654	$15,805,267	$17,589,294
Net Non-operating Revenues / (Expenses)	($267,306)	($108,870)	$5,501,282	$5,098,624
Contributions/(Transfers)	$5,486,594	$7,299,492		
Change in Net Assets	$7,007,296	$9,206,617	$4,456,715	$3,172,262
Beginning Balance (*restated 2005/06)	$58,488,050	$66,305,556*	$75,512,173	
Net Assets, End of Year	$65,495,346	$75,512,173		

Source: Brentwood Comprehensive Annual Financial Reports, Adopted Budgets

The Water Utility Enterprise Fund had an unrestricted net asset balance of $7.1 million at June 30, 2006.

Table 3.6
City of Brentwood
Wastewater Enterprise Funds Summary

	FY 2004-2005 Actual	FY 2005-2006 Actual	FY 2006-2007 Projected[3]	FY 2007-2008 Budgeted[3]
Operating Revenues	$4,549,961	$5,979,653	$6,592,581	$6,783,748
Operating Expenses	$5,031,041	$5,268,045	$6,993,350	$7,454,906
Net Non-operating Revenues / (Expenses)	($690,393)	($105,700)	$955,630	($872,960)
Contributions/(Transfers)	$9,788,448	$6,364,136		
Change in Net Assets	$8,616,975	$6,970,044	$554,861	$201,802
Beginning Balance	$46,935,641	$55,552,616	$62,522,660	
Net Assets, End of Year	$55,552,616	$62,522,660		

Source: Brentwood Comprehensive Annual Financial Reports, Adopted Budgets

The Wastewater Enterprise Fund had $4.9 million in unrestricted net assets at the end of the year.

[3] On September 25, 2007 the City Council accepted and approved rates studies for water and wastewater services, and adopted revised monthly user charges for FY 2007/08 to 2012/13, effective November 9, 2007. The rate studies include cash flow projections; the methodology used results in the following projected revenues and expenses for Water: 2006/07: $15,358,400 revenues and $15,809,000 expenses; for FY 2007/08 $16,357,376 revenues and $14,486,000 expenses. For Wastewater: FY 2006/07 $6,688,660 and $6,985,000 expenses; for FY 2007/08 $7,038,847 revenues and $7,394,000 expenses.

As noted in *Section 3.3*, Brentwood and CCWD entered into an agreement in January 2000 whereby the City acquired 6 mgd of CCWD's treatment capacity at the RBWTP to serve the City's customers in CCWD's Los Vaqueros service area. As part of the agreement, Brentwood is required to pay water connection fees (less the portion for future water supply) for the City's customers residing within this area as the "buy-in" to the existing infrastructure. Brentwood pays annually for actual and projected future connections for a 20 year period. The minimum annual amount is 239 connections, for a total of 4,780 connections over the 20 year period. The current established rate is $3,154 per connection with a zero-percent interest rate. At June 30, 2006 the outstanding principal balance was $9.8 million; current annual payments are $753,806.

In December 1996, the City issued $12.2 million in Water/Wastewater Revenue Bonds, with interest rates ranging from 4.0 to 5.5 percent. The bonds are due July 1, 2026. Annual payments of principal and interest are approximately $860,000. For FY 2005/2006, the pledged revenue coverage on these bonds was 5.66 percent

In December 2000, the City entered into a loan contract with the SWRCB to finance the Wastewater System Improvement Project over a 20-year period. The $45.5 million loan has a zero-interest rate; as of June 30, 2006, the principal balance was $37.8 million with annual payments of approximately $1.7 million. The contract between the City and the SWRCB requires that the City maintain adequate wastewater utility revenue to assure repayment of the loan, generate enough revenue to pay for maintenance and operations of the facility, and maintain adequate revenue to provide for future expansion and improvement. This includes maintaining a Wastewater Capital Reserve Fund for the term of the loan. The fund balance as of June 30, 2007 was $3,127,388. As described below in *Section 3.6*, the City uses a multiple-year rate study in its financial planning process to ensure that wastewater revenues will be adequate to meet the terms of this loan. The current rate study for the 2007/2008-2012/2013 period was approved in September 2007.

The City plans to finance the new $52.5 million BWTP. This will require a significant long-term financial commitment from the City. Certain financing instruments require that the City's water service rates and charges adequately fund projected annual operating and maintenance expenses, including the costs of repairs and replacements as well as debt service and other financial obligations of the loan. In addition, the costs must be recovered equitably from users. In these cases, the City will be legally required to raise rates as necessary to meet the contractual requirements of its loan in the event that capital charge revenue is lower than projected. The City's Development Fee Program, Capital Improvement Program, Operating Budget, and Water Rate Study have factored in the financing costs and allocated the expenses equitably between existing users and future development.

As described above, the City funds its water and wastewater operations through service charges. Development contributes its fair share for capital improvements through the fee structure established in the Development Fee Program, with a fee structure based on infrastructure needs for build out per the General Plan. The projects identified in the CIP will be funded through Facility Fees, state and federal grant funding, developer contributions, and zero to low interest loans from the State.

The September 2007 Rate Studies identify revenue and expenses through 2012/2013, projecting revenues exceeding expenses for each year in the water enterprise and beginning in 2009 for the wastewater enterprise. The rate study expenses factor in capital replacement, debt service and fund reserves of 30 percent, in addition to on-going operation and maintenance costs. The Rate Study projections are shown below in *Table 3.7*.

Table 3.7
City of Brentwood
Budget and Projections for Water and Wastewater Enterprise Funds
(in 000's)

	2007/08 Budget	2008/09 Budget	2009/10 Projected	2010/11 Projected	2011/12 Projected	2012/13 Projected
Water Fund						
Revenues	$16,357	$17,745	$18,832	$20,005	$21,279	$22,649
Operations	$14,486	$16,658	$17,330	$17,790	$18,411	$19,517
Net	$1,871	$1,087	$1,502	$1,851	$2,868	$3,132
Wastewater Fund						
Revenues	$7,038	$7,891	$8,729	$9,687	$19,562	$11,940
Operations	$7,394	$8,498	$8,398	$8,837	$18,733	$10,961
Net	($355)	($606)	$332	$851	$830	$979

With the construction of the new BWTP, the City has made major financial commitments for long-term debt service and operations and maintenance. The capacity of this new treatment facility serves both existing and planned development. In addition, the City will need to ensure that adequate financial resources are available to cover the costs attributable to future development.

3.5 Cost Avoidance Opportunities

The City is utilizing cost avoidance measures to control costs for its water and wastewater utilities. To control water treatment costs, the City is leveraging the opportunity to share capacity in the RBWTP and is partnering with CCWD on the BWTP. To reduce potable demand, non-potable water is used to irrigate approximately 55 percent of the City's public parks

and landscaped areas, and the City has a comprehensive water conservation program with a full-time Water Reclamation Specialist on staff.

In terms of wastewater infrastructure, the BWWTP is designed to allow for incremental growth. The City will use the treatment process analysis being performed for the Phase II BWWTP expansion to identify further cost avoidance opportunities. Treatment facilities are monitored, controlled, and supervised by a SCADA system. The City has a lateral maintenance program and is rehabilitating mains and laterals to maintain the integrity of the system, reducing infiltration from storm and groundwater and avoiding sanitary sewer overflows.

Lastly, the City is preparing its Sewer System Management Plan (SSMP) in accordance with the requirements of the SWRCB's General Waste Discharge Requirements for Sanitary Sewer Systems (Order No. 2006-0003-DWQ). The SSMP provides a plan and schedule to manage, operate, and maintain all parts of the sanitary sewer system to reduce and prevent SSOs and mitigate any SSOs that do occur. The SSMP will include a Fats, Oils and Grease (FOG) Control program to minimize the potential for line blockages.

3.6 Opportunities for Rate Restructuring

The City of Brentwood has structured its water and wastewater rates to recover the cost of operations to ensure that these enterprise accounts do not require any subsidies from other City resources. The September 2007 Rate Study budget projections indicate that water operation revenues are projected to exceed expenses through FY 2012/13 and wastewater revenues are expected to exceed expenses FY 2009/2010 through FY 2012/13. The City budgets factor in the required terms for adequate revenues as specified in the contract with the SWRCB for the zero-interest loan which funded the first expansion of the BWWTP.

In 1999, the City Council completed water and sewer rate studies and adopted utility rates for FY 1999/2000-2004/2005. In 2002, the rate studies were updated and the Council adopted rates for FY 2002/2003-2007/2008, the rates were further reviewed and established for FY 2007/2008-2012/2013 in September of 2007. The rate studies factored in anticipated capital needs, including the costs associated with the enhanced wastewater treatment process, noting that costs would increase for operations and maintenance, including regulatory, energy, chemical and personnel costs.

The water and wastewater rates include a fixed rate plus a variable rate based on water usage. Sewer rates for commercial accounts are based on waster use and wastewater loading. The highest rates are assigned to bakeries, grocery stores, and restaurants. All sewer rates include a lateral line maintenance charge. The rates increase incrementally over the six year period and

are automatically adjusted annually based on the San Francisco Consumer Price Index for the preceding twelve months.

Current water and sewer rates are shown in *Table 3.8* below:

Table 3.8
City of Brentwood
November 2007 Water and Sewer Rates - Monthly

Type	Residential	Non-Residential
Water Base Fee –5/8 inch or ¾ inch meter	$16.46	$16.46
Water Consumption Fee	1-10 k gal - $2.58/1k gal 11-20 k gal - $3.07/1k gal 21-30 k gal - $3.68/1k gal 31 k gal and over - $4.28/1k gal	1-10 ccf - $2.50/ccf 11 ccf and over - $2.98/ccf
Sewer Fee	$9.60 - $32.78 max (based on avg water usage in winter $1.18 Sewer Lateral Maintenance	$9.60 base rate plus usage fee based on water consumption and wasteload

In 1989, the City adopted its first Development Fee Program; the Connection Fees are based on infrastructure needs for build-out per the General Plan. The rates are adjusted periodically based on build out projections and the *Engineering News Record Construction Cost Index for the San Francisco Bay Area*. The current Connection Fees for a single family residence include $7,135.87 for water facilities (effective 08/01/2007) and $4,260.78 for wastewater facilities (effective 07/01/2007). These rates reflect an increase of approximately 7.5 percent over the prior rates.

3.7 Opportunities for Shared Facilities

Brentwood shares facilities with CCWD by partnering on the new BWTP and through shared treatment capacity and certain facilities at the RBWTP. CCWD is constructing, managing, and operating the new treatment plant, so there is no duplication of efforts between the City and CCWD. The City also shares in the use of the Contra Costa Canal to convey water to the treatment facilities.

Although the City's wastewater system is not connected to systems serving adjacent areas, the City does share facilities by participating in regional planning efforts related to wastewater and water quality. This includes production of recycled water that is used to reduce potable demand which benefits water utilities within eastern Contra Costa County and CCWD's service area.

3.8 Evaluation of Management Efficiencies

The City's water and wastewater utilities are managed by the Public Works Department. As part of the biannual budgeting process, goals are established and performance measures evaluated for the three divisions of the water enterprise (Water, Non-Potable Water, and Utility Billing) and four divisions of the wastewater enterprise (Wastewater Operations, Wastewater Utility Billing, Wastewater Lateral Maintenance, and Wastewater Replacement). The budget includes staffing and the rationale for budget increases.

In addition to the budget, the City uses a number of plans to ensure that water and wastewater services are delivered in an efficient, cost-effective manner. These include the Water Master Plan (2006), Wastewater System Master Plan (under development), Sewer System Management Plan (under development), CIP, water and sewer rate studies, annual strategic plan, and the General Plan.

3.9 Government Structure Options

Two government structure options were identified for the City of Brentwood:

- Maintain the status quo
- Annex the residential parcel outside of the City boundaries currently receiving water and sewer service

Maintain the Status Quo: The City is currently providing adequate water and wastewater services within its boundaries, as well as to one parcel outside city boundaries. The City is not experiencing infrastructure or financial challenges that require another agency to take over service to the city. The advantages of this option are continuity of service and economies associated with internal coordination with other city projects for water pipelines, street and sidewalk repairs, etc. The disadvantage to this option is that it does not clean up boundary issues for the area where service has already been extended.

Annex parcel receiving service into the City: There are currently two parcels with Out-of-Agency Service Agreements for water and sewer service, though only one parcel has connected to the City system. The extension of service was authorized by an Out-of-Agency Service Agreement approved by LAFCO Resolution No. 05-16. Brentwood should consider annexing the parcel into the City since the property owners signed a covenant and agreement to annex their property to the City per the terms of the agreement.

It should be noted that the City of Brentwood has been providing water to the Clayton Regency Mobile Home Park on Marsh Creek Road on an emergency basis from a metered hydrant in

Brentwood due to the failure of the Mobile Home Park's on-site potable water wells and the lack of other viable service alternatives. The Contra Costa Environmental Health Department has declared this a public health hazard due to the potential for contaminants to enter the water supply. The mobile home park is closest to CCWD's service area, and at the City and County's request, CCWD will be evaluating a means to provide a reliable, long term water source through an out of agency agreement.

3.10 Local Accountability and Governance

The City of Brentwood incorporated in 1948 as a General Law City. There are four City Council Members and a directly elected Mayor. The Council members are elected at large. Water and wastewater services are addressed by the City Council during regular meetings held the second and fourth Tuesday of the month at 7:00 PM at Council Chambers located at 730 Third Street, Brentwood. Meetings are open to the public. Meeting notices, agendas, and supporting documentation are posted at least 72 hours in advance at City Hall and a copy is also available on the City's website (www.ci.brentwood.ca.us). Information on the City's water and wastewater utilities, including operations, capital improvements and utility rates, is available on the website as well. The current City Council is identified in *Table 3.9:*

Table 3.9
Brentwood City Council

Member	Title	Term Expires
Bob Taylor	Mayor	November 2008
Robert Brockman	Vice Mayor	November 2008
Chris Becnel	Council Member	November 2010
Brandon Richey	Council Member	November 2010
Erik Stonebarger	Council Member	November 2008

Council members also serve as the Board of Directors for the City's Redevelopment Agency. Council members are compensated $569.25 per month for services to the city and they may elect to be a CalPERS member, which provides medical, vision, dental and retirement benefits.

3.11 Sphere of Influence Recommendations

The Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 requires that LAFCO review and update the sphere of influence (SOI) for each of the special districts and cities within the county at least once every five years in order to promote logical and orderly development of areas within the sphere.[4] The SOI recommendations for the City of Brentwood

[4] Government Code Section 56425 et seq.

are included in the *East County Municipal Service Review* that considers the full range of services the City provides. There is a need within the City of Brentwood for the water and wastewater services the City provides. The City is providing adequate service and has the financial resources and rate structures in place to continue to provide services and meet infrastructure needs for existing development. Furthermore, the City has considered water and wastewater service needs per the build-out projections of the General Plan. Service needs for future development are considered in the master plans and rate studies. The City has the capacity to implement phased infrastructure improvements to serve future growth that is consistent with the General Plan.

The City of Brentwood's current SOI includes area northeast of the city and area south of the City's incorporated boundary. The City noted in the materials provided for this service review that logical extensions of the SOI include areas east of the current city boundary to Sellers Avenue and the area north of Balfour Road, westerly to Deer Valley Road. Both of these areas are outside the countywide ULL adopted by the voters in November 2006, as is the area to the south of the City boundaries. The area to the east is part of the agricultural core as shown on the County Urban Limit Line map (November 8, 2006). The area north of Balfour Road and south of the City boundaries is designated as agriculture, open space, wetlands, parks and other non-urban uses.

The Planning Area used in the City's General Plan Land Use Element (updated November 2001) generally extends from Deer Valley Road on the west to Bixler Road to the east, and from Neroly/Delta Road to the north to Camino Diablo Road to the south. Land uses reflected in the General Plan include 8,572 acres of residential, 2,471 acres of employment generating, and 28,735 of other land uses, including 27,335 acres of parks, open space, agriculture, and urban reserve. With respect to water and wastewater services, the City has planned to serve the growth within areas that have or will have developed uses in accordance with the General Plan. The water and wastewater demand projections are addressed in the Technical Memorandum "Brentwood Water Master Plan Model Update, Water System Analysis and Water System Facilities" (March 14, 2006) and a similar analysis is currently in process for wastewater. These projections were used to update the water and wastewater master plans. For future annexations to the city, the projected water demands and wastewater flows would need to be further evaluated based on the type and location of development, existing system capacity in that area, necessary infrastructure improvements to maintain acceptable levels of service, and the timing for improvement construction.

3.12 Determinations

3.12.1 Growth and Population

Purpose: *To evaluate service needs based upon existing and anticipated growth patterns and population projections.*

The City of Brentwood has an estimated population of 48,907 residents in 2007; this is projected to reach 82,900 by 2030, with an average annual growth rate of 3.0 percent (2007 through 2030). The City expects to reach build out in 2025. As the City of Brentwood continues to develop over the next five years, there will be an increased need for water and wastewater services, as well as a reliable source of recycled water.

To serve this growth the City will need to implement the planned phased improvements to pump stations, water and sewer mains, and the water and wastewater treatment plants as addressed in the City's master plans. These improvements will ensure that there are no service impacts to existing customers and that necessary improvements will be funded through connection fees and other capital asset replacement revenues.

3.12.2 Infrastructure Needs or Deficiencies

Purpose: *To evaluate the infrastructure needs and deficiencies in terms of supply, capacity, condition of facilities, and service quality.*

Brentwood's sources of water supply include surface water purchased from ECCID, groundwater and recycled water. Per the City's adopted 2005 Urban Water Management Plan, water supplies will be adequate to meet current and projected demands in normal, single and multiple dry years through 2025. Future demand projections factor in growth and annexations and use an estimated population of 62,100 residents in 2025.

The City has acquired 6 mgd treatment capacity in the RBWTP to serve the portion of the City within CCWD's Los Vaqueros service area. The City is partnering with CCWD on the new Brentwood Water Treatment Plant (BWTP), which will have an initial treatment capacity of 12 mgd and be used to treat water purchased from ECCID.

The City's wastewater system infrastructure includes the Brentwood Wastewater Treatment Plant (BWWTP), a collection system, and discharge facilities. An expansion of the BWWTP to 7.5 mgd treatment capacity is planned to accommodate future growth. The Plant has an ultimate design capacity of 10 mgd. The City currently processes 3.35 mgd of average dry weather flow. The City continues to implement its Citywide Wastewater System Rehabilitation project to address system deficiencies and improve system performance.

No infrastructure needs or deficiencies were identified that are not being addressed in the City's capital improvement plans and operations and maintenance plans.

3.12.3 Financing Constraints and Opportunities

Purpose: To evaluate a jurisdiction's capacity to finance needed improvements and services.

The City funds water and wastewater services through service charges. Capital projects are funded through service charges, a Development Fee Program that establishes facility fees for new development, zero to low interest loans from the State, and revenue bonds. The water and sewer rate and fee schedules are intended to provide adequate revenue for operations and maintenance as well as planned capital improvements, including establishment and maintenance of the Wastewater Capital Reserve Fund.

The September 2007 Rate Studies identify revenue and expenses through 2012/2013, projecting revenues exceeding expenses for each year in the water enterprise and beginning in 2009 for the wastewater enterprise. The rate study expenses factor in capital replacement, debt service and fund reserves of 30 percent, in addition to on-going operation and maintenance costs.

3.12.4 Cost Avoidance Opportunities

Purpose: To identify practices or opportunities that may help eliminate unnecessary costs.

The City utilizes cost avoidance measures to control costs for its water and wastewater utilities. The City is leveraging the opportunity to share capacity in the Randall-Bold Water Treatment Plant and achieving efficiencies and economies of scale by partnering with CCWD to construct, operate, and finance a new surface water treatment plant to serve the City.

Measures to control wastewater service costs include performing a treatment process analysis in preparation for the upcoming BWWTP expansion. Treatment facilities are monitored, controlled, and supervised by a SCADA system. The City has a lateral maintenance program and is rehabilitating mains and laterals to maintain the integrity of the system, reducing infiltration from storm and groundwater and avoiding sanitary sewer overflows.

3.12.5 Opportunities for Rate Restructuring

Purpose: To identify opportunities to impact rates positively without decreasing service levels.

The City evaluates its water and sewer rates approximately every five years, and rates are set to increase per the adopted rate schedule. They are also increased annually by the CPI so that revenues generally keep pace with cost increases.

3.12.6 Opportunities for Shared Facilities

Purpose: To evaluate the opportunities for a jurisdiction to share facilities and resources to develop more efficient service delivery systems.

Brentwood shares facilities with CCWD through the Contra Costa Canal, shared treatment capacity of the RBWTP, and partnering on the BWTP.

Although the City's wastewater system is not connected to systems serving adjacent areas, the City does share facilities by participating in regional planning efforts related to wastewater and water quality. This includes production of recycled water that is used to reduce potable demand which benefits water utilities within eastern Contra Costa County and CCWD's service area.

3.12.7 Evaluation of Management Efficiencies

Purpose: To evaluate management efficiencies of the jurisdiction.

The City's water and wastewater utilities are managed by the Public Works Department. The City uses a number of plans to ensure that utility services are delivered in an efficient, cost-effective manner, including the Water Master Plan (2006), Wastewater Collection System Master Plan (under development), Sewer System Management Plan (under development), CIP, water and sewer rate studies, annual Strategic Plan, and the General Plan.

3.12.8 Government Structure Options

Purpose: To consider the advantages and disadvantages of various government structures to provide public services.

Brentwood is providing adequate water and wastewater services within the city. There are currently two parcels with Out-of-Agency Service Agreements for water and sewer service, though only one parcel has connected to the City system. The City is not experiencing infrastructure or financial challenges that require another agency to take over service to the City. Two government structure options were identified for the City of Brentwood:

Maintain the Status Quo: The advantages of this option are continuity of service and economies associated with internal coordination with other city projects for water pipelines, street and sidewalk repairs, etc. The disadvantage is that it does not clean up boundary issues for the area where service has been extended.

Annex parcel receiving service into the City boundaries: The City is providing water and wastewater service to one parcel outside city boundaries through an approved Out-of-Agency Service Agreement. Brentwood could annex this parcel into the City. The advantages of this option are to clean up boundary issues associated with service areas.

3.12.9 Local Accountability and Governance

Purpose: *To evaluate the accessibility and levels of public participation associated with the agency's decision-making and management process.*

Water and wastewater services provided by the City are addressed by the City Council during regular City Council meetings that are open and accessible to the public. Information on the City's water and wastewater services, including facilities, capital improvements, financing, development fees, and utility rates, is available on the City's website.