

## 4.14 UTILITIES

This section provides a discussion of the existing conditions and potential impacts relating to water supply, wastewater services, and solid waste from the East Washington Place project.

### A. *Water Supply*

This section describes existing water supply conditions for the proposed project site and its surroundings, as well as a discussion of the potential impacts the project may have on domestic water supplies. A preliminary fire-flow study was conducted by CSW/Stuber-Stroeh (August 19, 2004) and was submitted to the City as part of the project application. A copy of the study is available for review at City Hall. The conclusions of this study were used for the following discussion on water distribution infrastructure.

#### 1. **Regulatory Framework**

The following section lists and explains local, regional and State regulations addressing water supply planning.

##### a. **Petaluma General Plan**

Policies and programs in the Land Use and Growth Management and Community Health and Safety Elements of the existing Petaluma General Plan determine the City's approach to enhancing and managing its water supply. Relevant policies and programs are included in Table 4.14-1, including policies from the Water Resources Element of the proposed General Plan.

##### b. **Water Master Plans**

The City of Petaluma adopted a Water Master Plan in 1985, which is now out of date due to the population growth that has occurred since 1985. As part of the 2025 General Plan process, a Water Demand and Supply Analysis

TABLE 4.14-1 **PETALUMA GENERAL PLAN POLICIES AND PROGRAMS—  
 WATER SERVICES**

<b>Policy/ Program Number</b>	<b>Policies and Programs</b>
<b>Existing General Plan</b>	
<i>Land Use and Growth Management Element</i>	
Policy 29	The City shall maintain development fees at a sufficient level to finance infrastructure costs.
<i>Community Health and Safety Element</i>	
Policy 29	The City shall maintain an updated water service plan.
Policy 30	The City shall incorporate needed water facilities into its capital improvements program.
Policy 31	The City shall determine the demand for water for the expected population within the Petaluma water service are, and shall consider the impacts of a peak drought or peak fire-fighting demand and determine how it would operate during a drought.
Policy 32	Alternative funding mechanisms for construction activities related to water supply should be sought.
Program 27	Reconstruct the Lawler Water Treatment Plant to increase its capacity and water quality.
Program 28	Construct storage reservoirs, especially in areas where new development at higher elevations will require increased water pressure.
Program 29	Construct a new Sonoma County Water Agency aqueduct turnout to cross the Petaluma River to the East Side.
Policy 37	The City shall see controls to protect potential groundwater recharge areas and streambanks from urban encroachment.
<b>Proposed General Plan</b>	
<i>Water Resources Element</i>	
Policy 8-P-1	Optimize the use of imported water from the SCWA to provide adequate water for present and future uses.
Policy 8-P-1	Work toward the development and execution of new water supply agreements with SCWA to ensure adequate potable water.

Policy/ Program Number	Policies and Programs
Policy 8-P-4(A)	The City shall continue to monitor the demand for water for projected growth against actual use, and ensure that adequate water supply is in place prior to, or in conjunction with, project entitlements.
Policy 8-P-5	Develop alternative sources of water to supplement imported supply.
Policy 8-P-6	The City shall utilize the Water Demand and Supply Analysis Report, June 2006 and any amendments thereto, for monitoring, assessing and improving the City's municipal water supply.
Goal 8-G-3	Maximize the use of recycled water as a potable water offset to manage water demands, and meet regulatory requirements for wastewater discharge.
Goal 8-G-5	Maximize water conservation measures to improve water use efficiency and reduce overall water demand.

Report,<sup>1</sup> Water Distribution System Master Plan, and Groundwater Feasibility Study have been or are being prepared to address the growth anticipated by the 2025 General Plan. These plans will work together to identify how various water sources will be utilized to meet anticipated water demand in the future. Although not directly related to the General Plan update, a Recycled Water Distribution System Master Plan is also in the process of being developed.

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<sup>1</sup> Dodson Engineers, 2006. *Water Demand and Supply Analysis Report*. Prepared for City of Petaluma. Technical Appendix C to the Draft General Plan 2025, Vol. 2. Available for review at City Hall, Community Development Department, 11 English St., Petaluma. (Copies of the draft General Plan 2025 and Draft Environmental Impact Report, General Plan 2025, are also available on the City's website at <http://cityofpetaluma.net>; the full set of General Plan documents including technical appendices are also available for review or purchase from General Plan Administration, 27 Howard St., Petaluma.)

c. Sonoma County Water Agency's Urban Water Management Plan

California Water Code, Section 10610 et seq, requires the Sonoma County water Agency (SCWA) to prepare a regional Urban Water Management Plan.<sup>2</sup> The UWMP 2005 serves as the Urban Water Management Plan for the Agency and its eight primary water contractors, and describes the availability of water, water use, reclamation, and water conservation activities. This plan concludes that the given assumptions of the water supplies available to the Agency's water transmission system and to the eight water contractors that the Agency has adequate water supply through the 2030 planning horizon of this UWMP, except for single-dry years, starting in 2020.<sup>3</sup>

d. Senate Bill 610 (SB610)

As a result of the passage of SB610 in 2001, CEQA and the Water Code require that a Water Supply Assessment (WSA) be prepared by the local water agency for certain enumerated projects (Pub. Res. Code §21151.9; Water Code §10912). The WSA must contain the following information:

- ◆ A discussion of the ability of the public water system to meet the project water demand associated with the proposed project during normal, single dry, and multiple dry water years during a 20-year timeframe, in addition to the system's existing and planned future uses.
- ◆ Identification of existing water supply entitlements.
- ◆ Identification of other water systems, if any, that have water supply entitlements to the same system if the applicable water system has not previously received water.
- ◆ An assessment of the impact on groundwater basins.

Based on this information, the WSA must conclude whether the public water system has the ability to provide sufficient water to meet the demands of the

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<sup>2</sup> Sonoma County Water Agency, *2005 Urban Water Management Plan*.

<sup>3</sup> Sonoma County Water Agency, *2005 Urban Water Management Plan*, page 7-1, SCWA website, [http://www.scwa.ca.gov/\\_pdf/2005\\_uwmp\\_report.pdf](http://www.scwa.ca.gov/_pdf/2005_uwmp_report.pdf). Accessed on December 21, 2006.

proposed project, in addition to existing and planned future uses. The local agency must then review the WSA conclusions, and determine whether the public water system has available water to meet project demands. If so, then the project is considered to have a less-than-significant impact on water resources. The City has determined that no WSA is required for the proposed project.<sup>4</sup>

## 2. Existing Conditions

This section summarizes the existing water system in the City of Petaluma and conditions that apply specifically to the proposed project site.

### a. Existing Water System<sup>5</sup>

The City of Petaluma receives the majority of its water supply from the SCWA. This water originates from watershed areas tributary to the Russian River. The SCWA water flows into the City in the Petaluma Aqueduct, which is a 16.5-mile-long, 24-inch and 33-inch diameter pipeline located between Santa Rosa and Petaluma. Under the City's current contract with SCWA, the 11<sup>th</sup> Amended Agreement for Water Supply, Petaluma has access to an average day maximum month (ADMM) delivery rate of 21.8 million gallons per day (mgd) and an annual supply limit of 13,400 acre-feet/year (afy). However, the city is limited in the near term to an ADMM rate of 17.1 mgd (19,154 afy) under a Temporary Impairment Memorandum of Understanding (MOU) with SCWA.<sup>6</sup> In 2002, the City delivered more than 3,600 million gallons (11,000 acre-feet) of potable water to Petaluma's residents and

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<sup>4</sup> Michael Ban, Department of Water Resources and Conservation, City of Petaluma. Email correspondence, June 22, 2006.

<sup>5</sup> The information provided about the City's existing water system is based on a memorandum prepared by Michael Ban, Director Water Resources & Conservation; Michael Moore, Community Development Director; and Pamela Tuft, Director of General Plan Administration for Michael Bierman, City Manager, dated March 31, 2006 and discussed by the Petaluma City Council on its June 6, 2006 agenda. Information from the Dodson, 2006, *Water Demand & Supply Analysis Report* was also used.

<sup>6</sup> The Temporary Impairment Memorandum of Understanding was created by the Sonoma County Water Agency and issued to the Agency's contractors.

businesses. The City's water conservation program, which began in 1998, saves approximately 66 million gallons of potable water per year (mgy). As part of the 2025 General Plan Update, the City has completed an analysis of future water demands based on the draft General Plan land use map. See Water Demand and Supply Analysis Report.<sup>7</sup> Based on this analysis, Petaluma's total water demand by 2025 is anticipated to be approximately 5,139 million gallons per year (15,771 acre-feet), which is more than the City's current entitlement of 4,366 mgy (13,400 acre-feet).

Capacity shortfalls are anticipated to occur throughout the SCWA service area as communities within Sonoma County continue to grow. To meet this increasing demand, the SCWA designed a Water Supply and Transmission System Project in the 1990's to increase its permitted water rights from 75,000 afy to 101,000 afy and the transmission system capacity from 92 mgd to 149 mgd. However, SCWA's EIR for the Water Supply and Transmission System Project was challenged in litigation in 2003 and SCWA elected to begin a new EIR process on the renamed project, the Water Supply, Transmission and Reliability Project ("Water Project"). This EIR is not anticipated to be completed until October 2007. Concerns were raised in the biological assessment completed for the Water Project EIR in regards to the potential affects that SCWA's actions could have on Russian River fish species including Coho salmon, Steelhead and Chinook salmon. As a result, the extent of any limitations on planned expansion of water supplies from measures needed to protect Russian River fish species is unknown at this time. Petaluma's water planning contained in the 2025 General Plan does not assume or rely on an increase in SCWA water supply.

According to the analysis contained in the June 2006 Water Demand & Supply Analysis Report,<sup>8</sup> and using the existing SCWA 11<sup>th</sup> Amended Agreement for Water Supply limitation for annual water demand, there would be a

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<sup>7</sup> Dodson Engineers, 2006, *Water Demand and Supply Analysis Report*. Prepared for City of Petaluma.

<sup>8</sup> Dodson Engineers, 2006, *Water Demand and Supply Analysis Report*. Prepared for City of Petaluma.

shortage of water by 2011. However, since the water supply is further limited by the Temporary Impairment Memorandum, shortfalls in water supply would actually occur as early as 2007.

To resolve this projected shortfall in short-term supply and to serve cumulative demand for prospective buildout under the 2025 General Plan, the City has begun evaluating alternative sources of potable water. Currently, the City is looking at meeting future increases in demand by:

- ◆ Expanding the City's water recycling program.
- ◆ Expanding conservation efforts.
- ◆ Providing for emergency use of groundwater supplies to meet peak demands, if needed, at the end of the 2025 General Plan buildout period.

Table 4.14-2 depicts the anticipated demand for water resulting from the 2025 General Plan and the sources of water that the City plans to use to meet this demand. The Water Demand & Supply Analysis Report<sup>9</sup> provides an overview of the specifics of each of the water off-set programs, including cost estimates. The proposed 2025 General Plan also includes policies that would implement these programs. However, the Petaluma City Council has not taken adoptive action on the 2025 General Plan and/or the preferred water plan identified in the June 2006 report.

The City's current Water Master Plan, which was adopted in 1985 and is based on the existing General Plan, is out of date and does not effectively identify future demand for water and how that demand will be met. However, under the existing General Plan the demand for water could still be expected to exceed supply in 2007 for ADMM and 2011 for annual water supplies since, based on current market conditions, the same amount of growth would be expected to occur in the short-term either under the existing 1987 General Plan or the proposed 2025 General Plan.

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<sup>9</sup> Dodson Engineers, 2006, *Water Demand and Supply Analysis Report*. Prepared for City of Petaluma.

TABLE 4.14-2 **PROJECTED WATER SOURCES AND DEMAND FOR THE 2025 GENERAL PLAN**

<b>Annual Water Source/Demand</b>	<b>Annual Amount</b>
Projected 2025 Demand	5,139 million gallons
Existing Source - SCWA Entitlement	4,366 million gallons
<i>Anticipated Shortfall Without New Sources</i>	<i>-773 million gallons</i>
New Source - Increased Water Recycling	464 million gallons
New Source - Increased Conservation	266 million gallons
New Source – Utilizing of Standing Wells	61 million gallons
Resulting Total Sources (Existing + New)	5,157 million gallons
<i>Anticipated Excess With New Sources</i>	<i>18 million gallons</i>
<b>Daily Water Source/Demand</b>	<b>ADMM Amount</b>
Projected 2025 Demand	22.1 mgd
Existing Source – SCWA Impairment MOU Limit	17.1 mgd
<i>Anticipated Shortfall Without New Sources</i>	<i>-5.0 mgd</i>
New Source - Increased Water Recycling	3.57 mgd
New Source - Increased Conservation	1.39 mgd
New Source – Utilization of Standing Wells	0.5 mgd
Resulting Total Sources (Existing + New)	22.56 mgd
<i>Anticipated Excess With New Sources</i>	<i>0.46 mgd</i>

Source: *Water Demand and Supply Analysis Report*, June 2006.

The total amount of water demand generated by buildout of the existing General Plan may vary from the proposed 2025 General Plan since the existing General Plan would result in 1,386 fewer housing units, but 3.1 million square feet more of non-residential uses than the 2025 General Plan. Even though an updated study of the ultimate demand for water in 2025 under the existing General Plan is not available, it can be concluded that a similar approach towards increased water conservation, and recycled and ground water use as proposed for the 2025 General Plan would be needed.

b. Distribution to Project Site

Petaluma's water distribution system is divided into five topographically defined pressure zones. The project site is within the Zone I pressure zone for water service and fire flow. An existing 10-inch diameter water line runs along East Washington Street, which provides the existing water service to the project site.<sup>10</sup> There is also an existing connection to the 8-inch diameter water line that runs along Lindberg Lane.<sup>11</sup>

Historical water use at the Kenilworth Junior High property has averaged 8,949 CCF (894,900 cubic feet) per year. Use has run as high as 10,159 CCF per year in 2001-2002. With the demolition of the Junior High School, water use has been reduced to 8,018 CCF, or 20.54 afy. Most of the water use is for irrigation of the fields used by local youth sports under agreement with the applicant as owners of the private property. This volume of 8,018 CCF is the current baseline water use for the property.<sup>12</sup>

### 3. Standards of Significance

The proposed project would have a significant impact related to water supply if it would:

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<sup>10</sup> Sheet G007, Petaluma Water System. Revision Date September 23, 2004.

<sup>11</sup> CSW/Stuber-Stroeh, 2004, *Preliminary Fire Flow Study*, August 19, Attachment 1. Available for review at City Hall, Community Development Department, 11 English St., Petaluma.

<sup>12</sup> Bruce Qualls, Regency Development Corporation. Personal email communication, November 14, 2006.

- ◆ Have insufficient water supplies available to serve the project from existing and identified entitlements and resources.
- ◆ Require or result in the construction of new water facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

#### 4. Impact Discussion

The following provides an assessment of the proposed project on water, both with regards to water supply and distribution. For the following analysis, both the existing and proposed General Plans were reviewed to determine whether there would be different conclusions under either Plan. Unless otherwise stated below, the following impact analysis and its conclusions would apply under the implementation of either General Plan scenario.

##### a. Project Impacts

##### i. *Water Supply Assessment*

The proposed project would result in a need for potable water to serve the retail and residential components. As noted above, existing annual water demand at the site is 20.54 afy (6.8 mgy). The proposed project would result in an annual demand for 25.7 million gallons, which would be an increase of 18.9 million gallons over existing demand.<sup>13</sup> As discussed in Section 2(a) above, based on the analysis contained in the Water Demand & Supply Analysis Report,<sup>14</sup> the City will experience a shortfall in water supply starting in 2007. As a result, by the time the project is operational, there will not be adequate water supplies since the project has not established entitlements to the remaining capacity. This would be a *significant* impact.

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<sup>13</sup> Demand factors identified in the 2006 Water Supply and Demand Analysis Report completed by Dodson Engineers were used to quantify the project-specific water demand. Residential and commercial demand would be 15.9 and 9.8 million gallons/year, respectively.

<sup>14</sup> Dodson Engineers, 2006. *Water Demand and Supply Analysis Report*. Prepared for City of Petaluma.

As also mentioned in Section 2(a), the City is working to address the impending water shortage by exploring a program that would combine increased use of recycled water, and increased water conservation and possible emergency use of groundwater, if necessary. On June 19, 2006, the City adopted Resolution No. 2006-120, a resolution of intent to amend the City's water capacity charges for new development in the City.<sup>15</sup> Once a final program to provide additional water supply is adopted by the City Council, and the water capacity charges adopted, subsequent development projects would be required to pay the increased capacity charge as their share of the costs of the additional water supply program. This program and the increased water capacity charge would mitigate the future shortfall of water by paying for improvements to the larger water system and expanded conservation programs. However, at this time, neither the program nor the increased water capacity charge, has been adopted by the City Council.

*ii. Water Distribution*

Using the minimum flow requirements per the Petaluma fire code, as provided by the Petaluma Fire Department, the preliminary fire flow study prepared by CSW/Stuber-Stroeh utilized the City's KYPIPE Zone 1 model to design an on-site water system that would:

- ◆ Provide commercial fire flow of 2,500 gallons per minute (gpm) at 20 pounds per square inch (psi) in the retail portion of the project.
- ◆ Provide residential fire flow of 1,500 gpm at 20 psi in the residential portion of the project.
- ◆ Maintain pipe velocity at below 10 feet per second (fps) in new pipes.

The on-site system would be a loop system with two connections to the 10-inch East Washington Street line and one connection to the 8-inch Lindberg Lane connection. In the residential area, the lines would be 8-inch, while in

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<sup>15</sup> The June 19, 2006 resolution and the supporting Water Capacity Charge Update Report, Bartle Wells Associates (May 2006) are available for review at the City Clerk's Office, 11 English St., Petaluma.

the retail area the lines would be 8 or 12 inches. The existing 10-inch diameter main under East Washington Street has been identified for replacement in the City's Water Capital Improvement Program due to its age and condition. Due to the main's importance in the City's distribution system, it would need to be replaced regardless of the proposed project.<sup>16</sup> Construction and operation of the project without improvements to the 10-inch main on Washington Street, however, would result in a *significant* impact in regards to providing adequate water supplies to the project. However, since this is an existing pipeline within an existing roadway, improvements to the pipeline would not result in significant physical impacts. Construction and operation of the new facility would take place within the right-of-way for East Washington Street and therefore not impact any areas outside this corridor.

According to CSW/Stuber-Stroeh, meeting the City's fire flow requirements would provide adequate capacity to also distribute adequacy water to meet on-site potable water demand.

The potential impacts associated with the construction of the on-site water distribution system are analyzed as part of the project as a whole in the other sections of this EIR since the on-site system is included as part of the project description.

To meet future demand for potable water, including the proposed project, improvements to the larger water system will be required, including improvements to recycled water infrastructure, expanded conservation programs, and improvements to groundwater pumps if needed for emergency use at the end of the 2025 General Plan buildout period. The Water Demand and Supply Analysis Report<sup>17</sup> outlines the anticipated improvements that would be required to meet the water demand associated with the preferred water program and the Draft General Plan EIR analyzes the environmental impacts

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<sup>16</sup> Dean Eckerson, City of Petaluma, Water Resources and Conservation Department. Email correspondence, January 16, 2007.

<sup>17</sup> Dodson Engineers, 2006. *Water Demand and Supply Analysis Report*. Prepared for City of Petaluma.

of the proposed water program. However, until the City commits to a final water supply program through adoption of the General Plan or otherwise, details of any necessary infrastructure improvements will not be known. Accordingly, potential impacts associated with the construction of the improvements cannot be analyzed to determine if their construction would result in significant impacts. Additional environmental review of the specific infrastructure improvements would be required prior to full implementation of the program.

b. Cumulative Impacts

As discussed in Section 2(a) of this chapter, by 2007, there will be a shortage of water due to cumulative growth anticipated in Petaluma under the 2025 General Plan. This cumulative impact would also occur under the existing General Plan. The proposed project would contribute to the cumulative impact by increasing demand for potable water in Petaluma. As a result, the proposed project would result in a *significant* cumulative impact associated with availability of water supplies.

There would be the need for additional water facilities, including storage, treatment and pumping infrastructure to be constructed to meet the cumulative demand for water supplies anticipated under either the proposed General Plan or existing General Plan. The construction of these improvements could result in significant impacts. As explained above, the Water Demand and Supply Analysis Report<sup>18</sup> outlines the anticipated improvements that would be required to meet cumulative water demand. However, details of any necessary infrastructure improvements are not yet known and potential impacts associated with the construction of them cannot be analyzed. Additional environmental review of the specific infrastructure improvements would be required prior to full implementation of the water supply program.

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<sup>18</sup> Dodson Engineers, 2006, *Water Demand and Supply Analysis Report*. Prepared for City of Petaluma.

## 5. Impacts and Mitigation Measures

**Impact UTIL-1:** The proposed project would generate a demand for water that would exceed existing entitlements and resources. This is a *significant* impact.

Mitigation Measure UTIL-1: The developer shall pay a water capacity charge in an amount determined by the City, pursuant to Resolution No 2006-120 N.C.S, to help fund programs necessary to meet future water demand through increased water recycling, conservation and possible emergency use of groundwater.

Significance After Mitigation: While paying for its fair share of needed improvements would reduce the project's impact to less than significant, until the City of Petaluma formally adopts and provides a funding mechanism for a water program sufficient to ensure an adequate water supply, the mitigation is not feasible. The impact would remain *significant and unavoidable* until such time as the City adopts and provides a funding mechanism for an adequate water supply program.

**Impact UTIL-2:** The existing 10-inch main under East Washington Street would not be adequate in size to service the project.

Mitigation Measure UTIL-2: The developer would be required to install a replacement 16-inch diameter replacement main under East Washington Street to ensure the provision of an adequate water supply.

Significance After Mitigation: Provision of an adequately-sized 16-inch main and associated environmental review would reduce this impact to a *less-than-significant* level.

**Impact UTIL-3:** The proposed project would contribute to a cumulative impact associated with a lack of adequate water supplies to meet the cumulative demand under the existing or 2025 General Plan. This is a *significant* impact.

Mitigation Measure UTIL-3: See Mitigation Measure UTIL-1.

Significance After Mitigation: While paying for its fair share of needed improvements would reduce the project's impact to less than significant, until the City of Petaluma formally adopts and provides a funding mechanism for a water program sufficient to ensure an adequate water supply, the mitigation is not feasible. The impact would remain *significant and unavoidable* until such time as the City adopts and provides a funding mechanism for an adequate water supply program.

## ***B. Wastewater Services***

This section describes existing wastewater services conditions for the proposed project site and its surroundings, as well as an assessment of the potential impacts related to wastewater services associated with the project. A Preliminary Sewer Capacity Study was prepared by CSW/Stuber-Stroeh Engineering Group in September 2004 as part of the project application. The following incorporates the conclusions of this study. The full report is available for review at City Hall.

### **1. Regulatory Framework**

The following section lists local regulations on wastewater services for the City of Petaluma.

#### **a. Petaluma General Plan**

Policies and programs in the Community Health and Safety Element of the existing Petaluma General Plan and the Water Resources Element of the proposed General Plan determine the City's approach to enhancing and managing its wastewater service standards. Relevant policies and programs are as follows:

*i. Existing General Plan*

- ◆ **Policy 33:** The City shall maintain an updated sewage/wastewater treatment plan.
- ◆ **Program 40:** Encourage industrial use of reclaimed wastewater.

*ii. Proposed General Plan*

- ◆ **Policy 8-P-16:** Comply with the current Statewide General Waste Discharge Requirements concerning the operation and maintenance of the City's sanitary sewer collection system.
  - Perform condition assessment of existing facilities and emergencies.
  - Survey facilities and maintain current system maps.
  - Perform regular cleaning and inspection to help eliminate sanitary sewer overflows.
  - Fund collection system infrastructure replacement on a 100-year life cycle.
  - Regularly update the sanitary sewer flow model and make improvements necessary to support development.

**b. Petaluma Sewer Master Plan**

The City adopted a Sewer Master Plan in 1985 which is now out of date due to the growth that has occurred since 1985. However, the City is currently updating the Master Plan in conjunction with the General Plan update program. Once the revised General Plan is adopted, the Sewer Master Plan will be finalized and adopted.

**2. Existing Conditions**

Petaluma's wastewater facilities provide collection, treatment, disposal and reuse of domestic, industrial and commercial wastewater generated in Petaluma and the unincorporated community of Penngrove.

a. Wastewater Collection

The City of Petaluma's wastewater collection system consists of over 200 miles of sewer collection lines. These lines are continuously inspected using remote cameras inserted into the pipelines mains, with problem pipes either repaired or cleaned with high pressure vacuum trucks.

The closest sewer mains to the project site are located on Lindberg Lane and East Washington Street. The former Kenilworth Junior High School connected to the sewer system with a 6-inch sewer line that increases to 8 inches before reaching the 21-inch sewer main on Lindberg Lane.<sup>19</sup> There are approximately 15.9 acres of residential uses across Highway 101 that connect to the Lindberg Lane 8-inch sewer line through the project site. This service area is shown in Exhibit A of the Preliminary Sewer Capacity Study, and was included in the study when determining the sewer capacity of the sewer trunk line in Lindberg Lane.

There is also an existing 8-inch sewer connection at the Petaluma Swim Center and Skate Park that increases to a 10-inch line along Ellis Street, then to a 15-inch line on Madison Street, until it reaches the 33-inch trunk sewer near Payran Street.<sup>20</sup> Exhibit D of the Preliminary Sewer Capacity Study depicts the area that is assumed to contribute to the sewer demand for the 33-inch trunk sewer line on Madison Street near Payran Street. This area generally includes the area between Highway 101 and Noriel Lane, between East Washington Street or Washington Creek and Lynch Creek. On the other side of Highway 101, the contribution area includes much of the land between East Washington Street and Lynch Creek.

b. Wastewater Treatment

The City of Petaluma operates a wastewater treatment plant at 950 Hopper Street and oxidation ponds at 4400 Lakeville Highway. The City contracts

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<sup>19</sup> CSW/Stuber-Stroeh, 2004, *Preliminary Sewer Capacity Study*, page 2. Available for review at City Hall, Community Development Department, 11 English St., Petaluma.

<sup>20</sup> CSW/Stuber-Stroeh, 2004, *Preliminary Sewer Capacity Study*, page 2.

with Veolia Water North America to operate these secondary treatment facilities.

The wastewater treatment facility is staffed with seven State-certified operators and three maintenance personnel. It has a dry weather design capacity of 5.2 mgd and treats an average dry weather flow of 4.87 mgd.<sup>21</sup> The City recycles approximately 50 percent of its annual average dry weather flow of wastewater.<sup>22</sup> Average daily flows to the plant have been decreasing in recent years, from 5.1 mgd in 1996 to 4.8 mgd in 2002, most likely as a result of local water conservation efforts. This facility has been in operation since 1938 and no longer can support the City's growing populace.

A system of nine collection system pump stations pumps wastewater to the City's wastewater treatment facility. After receiving secondary treatment, treated effluent is discharged into the Petaluma River between October 20 and May 1 of each year. Wastewater is recycled during the summer for irrigation of 800 acres of agricultural land and a golf course. The City recycles approximately 50 percent of its annual average dry weather flow of wastewater.<sup>23</sup>

For several years, the City has been planning to build a new treatment plant with greater capacity and upgraded features. The City certified the EIR for the new facility in 2002. To treat the community's wastewater, the new facility will include extended aeration, secondary clarifiers, oxidation ponds, ter-

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<sup>21</sup> Mike Ban, City of Petaluma Water Resources Director. Email correspondence, October 31, 2006.

<sup>22</sup> City of Petaluma Department of Water Resources and Conservation website, <http://www.cityofpetaluma.net/wrcd/whatwedo.html>, accessed on June 15, 2006.

<sup>23</sup> City of Petaluma Department of Water Resources and Conservation website, <http://www.cityofpetaluma.net/wrcd/whatwedo.html>, accessed on June 15, 2006.

ary filters, UV disinfection, and treatment wetlands.<sup>24</sup> In the new facility (Ellis Creek Water Recycling Facility), wastewater will pass through a series of settling marshes, where bacteria and algae will remove nutrients, heavy metals and pathogens.<sup>25</sup> Construction began in 2006 and will be completed in 2009.

To help protect the long-term water quality of the Petaluma River, the City plans to continue its summer storage operations and possibly expand reclamation once the new plant comes on-line. The wastewater effluent will receive a higher degree of treatment at the new plant, which will result in more options for effluent discharge. The new facility will have a average dry weather flow capacity of 6.7 mgd.<sup>26</sup>

### 3. Standards of Significance

The proposed project would have a significant impact related to wastewater services if it would:

- ◆ Require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- ◆ Have insufficient wastewater treatment capacity available to serve the project's projected demand in addition to existing demand.
- ◆ Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

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<sup>24</sup> City of Petaluma Department of Water Resources and Conservation website, <http://www.cityofpetaluma.net/wrcd/whatwevedone.html>, accessed on June 15, 2006.

<sup>25</sup> Glen Martin, San Francisco Chronicle Environment Writer, "Green technology to make sewage a less dirty word: \$110 million wetlands-based wastewater facility under construction," Tuesday, March 7, 2006.

<sup>26</sup> Mike Ban, City of Petaluma Water Resources Director. Email correspondence October 31, 2006.

#### 4. Impact Discussion

For the following analysis, both the existing and proposed General Plans were reviewed to determine whether there would be different conclusions under either Plan. Unless otherwise stated below, the following impact analysis and its conclusions would apply under either General Plan scenario.

##### a. Project Impacts

To analyze the potential impact of the proposed project on the City's wastewater collection system, CSW/Stuber-Stroeh completed a Preliminary Sewer Capacity Study. The study was completed assuming a larger project, with the existing swim center and skate park being developed for retail uses; however, the report's conclusions are still applicable to the proposed project being analyzed in this EIR, since the proposed project would generate less wastewater than was analyzed.

The project proposes to use the Lindberg Lane and Madison Street trunk sewer lines to serve the project. The majority of the project, including all of the residential units, and about half of the retail, would be connected to the Lindberg Lane sewer line. The remainder of the retail uses, including the anchor and its garden center, as well as the two pad retail buildings at the East Washington/Kenilworth Drive entrance, would be connected to the sewer line that extends through the swim center. It is possible the sewer line would be taken off-line for approximately two hours while the connection is established, however this would only be a potential short-term interruption in service. Full service would be restored immediately following the completion of the connection.

For the sewer study, CSW/Stuber-Stroeh analyzed the sewer flows that would be anticipated from the proposed project, in addition to the sewer flows from the existing development within the area served by the sewer trunk lines in Lindberg Lane and Madison Street near Payran Street. In addition to the anticipated sewer generation, the study also assumed that there would be some infiltration of water through cracks in the pipes, which would use available capacity. In addition, the study adjusted the anticipated sewer

generation to adjust out existing uses that would be replaced by the project (i.e. the former school uses) to determine the net increase of demand for sewer capacity resulting from the proposed project. The following is a summary of the primary assumptions used for the sewer capacity study:

- ◆ Average Flow per Capita – domestic dry-weather flow will vary from 65, 75, and 85 gallons per capita per day, depending on density.
- ◆ Persons per Household – 2.5 persons per dwelling unit.
- ◆ Commercial and Industrial Peak Flow – 3,000 gallons per acre per day (gad).
- ◆ Peaking Factor – varies from 1.0 to 2.0.
- ◆ Infiltration – 6,500 gad for existing sewer areas (contribution areas) and 750 gad for future sewer areas.

The conclusions of the sewer study show that the proposed project would not exceed the available capacity of the off-site wastewater collection infrastructure. As a result, no off-site improvements would be needed. The potential impacts associated with the construction of the on-site wastewater collection system are analyzed as part of the project as a whole in the other sections of this EIR since the on-site system is included as part of the project description.

The proposed project would not require or result in the construction of a new wastewater facility, as construction of a new facility is presently underway and will be completed in 2009. The retail component of the project and some of the residential component would be operational prior to completion of the new wastewater facility. However, a portion of the residential component would not be finished until after the new wastewater facility is completed. According to the Draft EIR completed for the 2025 General Plan Update, the new facility is planned to accommodate projected city buildout to 2025 and beyond, which would include the proposed project.<sup>27</sup> This facil-

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<sup>27</sup> *Petaluma General Plan Update Draft Environmental Impact Report*, page 3.5-18. Technical Appendix G-1 to the Draft General Plan 2025, Vol. 2, Available for review at City Hall, Community Development Department, 11 English St., Petaluma.

ity was needed prior to the proposed project as the current facility was unable to accommodate the needs of the city, and was operating near capacity.

Until such a time as the new wastewater facility is completed, the City continues to make necessary improvements to the existing facility to ensure that its wastewater treatment system remains in compliance with RWQCB requirements. City officials expect that these recent and ongoing improvements will enable the existing wastewater treatment plant to accommodate additional wastewater flows generated by anticipated future development within the plant's citywide service area, including the project, until the new wastewater treatment plant begins operation in 2009/2010.<sup>28</sup> As a result, no impacts related to compliance with Water Board requirements would occur because of the proposed project.

The project would involve an increase in the amount of wastewater generated on the site. However, the project would not require the expansion of existing wastewater facilities or the construction of new facilities not already planned that could have significant environmental effects, exceed available wastewater capacity, or exceed wastewater treatment requirements. As a result, the project would result in a *less-than-significant* impact.

b. Cumulative Impacts

A list-based approach has been used for this cumulative analysis. The analysis considers the development projects listed in Appendix C (Cumulative Projects) and whether this project would have significant cumulative impacts on Petaluma's wastewater service in combination with the cumulative projects.

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(Copies of the draft General Plan 2025 and Draft Environmental Impact Report, General Plan 2025, are also available on the City's website at <http://cityofpetaluma.net>; the full set of General Plan documents including technical appendices are also available for review or purchase from General Plan Administration, 27 Howard St., Petaluma.)

<sup>28</sup> Letter correspondence with Margaret Orr, Engineering Manager, City of Petaluma Waste Water Treatment Plant, May 18, 2004.

As stated above, the sewer capacity study completed for the project confirmed that the proposed project, by itself, would not exceed the available capacity of the off-site wastewater collection infrastructure or require construction of a new wastewater facility. Cumulative project demand would require the expansion of existing wastewater facilities and the construction of new facilities, such as the Ellis Creek Water Recycling Facility, which will be operational in 2009. As explained above, the cumulative demand for wastewater services created by this project in combination with other projects (see Appendix C) has already been accounted for in long-term facility planning. As a result, while this project in combination with others would increase demand for wastewater capacity, the City's planned provision of adequate capacity reduces this impact to a *less-than-significant* level.

## **5. Impacts and Mitigation Measures**

As no significant impact related to wastewater was identified, no mitigation measures are required.

### ***C. Solid Waste***

This section describes existing solid waste services in the proposed project area and its surroundings, and analyzes the potential solid waste impacts that could result from the proposed project.

#### **1. Regulatory Framework**

The following section lists State and local regulations affecting solid waste services for the City of Petaluma.

##### **a. California Integrated Waste Management Act**

The State of California is a national leader in establishing regulations for waste management. California's Integrated Waste Management Act of 1989 (AB 939) set a requirement for cities and counties throughout the State to divert 50 percent of all solid waste from landfills by January 1, 2000, through source reduction, recycling and composting. To help achieve this, the Act

requires that each city and county prepare and submit a Source Reduction and Recycling Element. AB 939 also establishes the goal for all California counties to provide at least 15 years of on-going landfill capacity. Petaluma provides for recycling and green waste composting through its contract with Green Waste Recovery, the City's contracted solid waste collector.

b. Petaluma General Plan

Policies and programs in the Community Health and Safety Element of the current Petaluma General Plan, and policies in the Natural Element of the proposed General Plan determine the City's approach to enhancing and managing its solid waste services. Relevant policies and programs are listed in Table 4.14-3.

**2. Existing Conditions**

The City of Petaluma recently signed a 10-year waste hauling contract with Green Waste Recovery. Beginning on January 1, 2006, Green Waste Recovery started collecting solid waste from all Petaluma residential and non-residential generators.

Per day, Green Waste Recovery collects approximately 100 to 130 tons of trash from Petaluma, 40 to 50 tons of recycling and about 30 tons of green waste.<sup>29</sup>

Trash is taken to the Redwood Landfill, located south of Petaluma in Marin County off of Highway 101. Recycling is sent to the Waste Management facility in Santa Rosa, and the green waste is taken for composting at the Somona Compost Company facility at the Central Disposal Site.<sup>30</sup>

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<sup>29</sup> Frank Weigel, Green Waste Recovery. Personal conversation with Catherine Reilly, DC&E, June 13, 2006.

<sup>30</sup> Frank Weigel, Green Waste Recovery. Personal conversation with Catherine Reilly, DC&E, June 13, 2006.

TABLE 4.14-3 **PETALUMA GENERAL PLAN POLICIES AND PROGRAMS – SOLID WASTE**

Policy/ Program Number	Policies and Programs
<b>Existing General Plan</b>	
<i>Community Health and Safety Element</i>	
Policy 28	The City shall manage solid waste in order to maximize reclamations and reuse of resources contained in the solid waste stream.
Program 34	Expand the curbside recycling program.
Program 35	Remove disincentives to recycling, such as requiring city residents to purchase containers for recycled material.
Program 36	Develop source separation programs for solid waste materials with recycling value, for all waste generators.
Program 38.1	Require retail centers and multi-family residential developments to provide on-site drop-off areas for recycling. Coordinate with the City’s refuse disposal contractor or other recycling services to insure regular pick-up.
<b>Proposed General Plan</b>	
<i>Natural Environment Element</i>	
Policy 4-P-16	Continue to work toward reducing solid waste and increasing recycling, in compliance with the Countywide Integrated Waste Management Plan (CoIWMP).
Policy 4-P-18	Require new or remodeled multifamily residential and all non-residential development to incorporate attractive and convenient interior and exterior storage areas for recyclables.
Policy 4-P-19	Continue to encourage waste reduction and recycling at home and in businesses through public education programs, such as informational handouts, on recycling, yard waste, wood waste, and hazardous waste.

The Redwood Landfill is a fully permitted Class III disposal site<sup>31</sup> and, according to the landfill representative, is currently permitted to accept up to 1,290 tons of trash per day, or 330,000 tons per year.<sup>32</sup> The landfill is currently in the process of completing an Environmental Impact Report that analyzes a preferred alternative for expansion. Under the proposed expansion, the landfill would be permitted to operate until 2024.<sup>33</sup> According to a representative of Redwood Landfill, while the amount of trash accepted into the landfill increases in the summer months, the landfill is not operating at overall maximum capacity. Under the proposed expansion, the landfill's total permitted capacity would be 25,100,000 cubic yards, which would provide an available, remaining capacity of 10,000,000 cubic yards.<sup>34</sup>

Marin County is processing an EIR that is analyzing potentially expanding the landfill capacity or modifying the operations of the landfill to reflect existing changes to the landfill operations.<sup>35</sup> The EIR has not been certified and it is unknown at this time if the landfill's preferred project will be approved, or if an alternative to the project will be approved.

Redwood Landfill does not have generation rates for various land uses.<sup>36</sup> However, Green Waste Recovery estimates that a single-family home will generate about 32 pounds of trash per week and about 20 pounds of recycling per week. They stated that estimating commercial trash generating is more

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<sup>31</sup> Marin County website, <http://www.marin.org/comres/recycling.cfm?TOrgID=5345>, accessed June 13, 2006.

<sup>32</sup> Beth Shiverdecker, Redwood Landfill. Personal conversation with Catherine Reilly, June 13, 2006.

<sup>33</sup> Beth Shiverdecker, Redwood Landfill. Personal conversation with Catherine Reilly, June 13, 2006.

<sup>34</sup> Jessica Jones, District Manager, Redwood Landfill. Personal conversation with Ted Heyd, December 22, 2006.

<sup>35</sup> Tim Haddad, Marin County Community Development Department. Personal conversation with Catherine Reilly, June 13, 2006.

<sup>36</sup> Beth Shiverdecker, Redwood Landfill. Personal conversation with Catherine Reilly, June 13, 2006.

difficult since commercial users can vary significantly depending on the specific use. However, one estimation for commercial users is about 150 pounds per week per cubic yard of trash bin.<sup>37</sup>

### 3. Standards of Significance

The proposed project would have a significant impact related to solid waste collection and disposal if it would:

- ◆ Not comply with federal, State and local statutes and regulations related to solid waste and recycling.
- ◆ Not be served by a landfill with sufficient permitted capacity to accommodate the buildout of the project's solid waste disposal needs.

### 4. Impact Discussion

For the following analysis, both the existing and proposed General Plans were reviewed to determine whether there would be different conclusions under either Plan. Unless otherwise stated below, the following impact analysis and its conclusions would apply under the implementation of either General Plan scenario.

#### a. Project Impacts

##### i. Construction

Much of the solid waste generated during the construction phase such as wood, metal scrap, and formed construction board (cement and dry wall board) could be recycled and salvaged. Materials not recycled would be disposed of at local landfills. The Redwood Landfill in Marin County can accommodate the potential construction-waste generated by the proposed project at this time.<sup>38</sup> However, in an effort to divert construction-related solid wastes from entering the landfills, the Sonoma County Waste Management Authority (SCWMA) recommends that the City of Petaluma require con-

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<sup>37</sup> Frank Weigel, Green Waste Recovery. Personal conversation with Catherine Reilly, June 13, 2006.

<sup>38</sup> Phone correspondence from Jim Landa, Public Relations Manager, Redwood Sanitary Landfill, June 15, 2005. Source: Christopher Joseph & Associates.

construction contractors to prepare and implement a recycling plan for the construction phase of the project. The recycling plan would address the major materials generated during construction and identify the means to divert these materials away from the landfills. While solid waste impacts during the construction phase would be *less than significant*, implementation of a recycling plan during construction by the proposed project would further reduce the amount of solid waste disposed of at the Redwood Landfill and ensure consistency with SCWMA's recommended waste-reduction procedure.

*ii. Operation*

The East Washington Place project would result in an increase in generation of solid waste, resulting from the 227 residential units and up to 300,000 square feet of retail uses. Using the generation rate provided by Green Waste Recovery for single-family homes, the residential units would produce up to 7,264 pounds of trash and 4,540 pounds of recycling per week, or 0.52 tons of trash or 0.32 tons of recycling per day.

Since the number of trash bins anticipated for the retail portion of the project is unknown, the Green Waste Recovery's generation rate for retail uses could not be used to estimate the amount of solid waste generated by the retail portion of the site. However, the California Integrated Waste Management Board has a list of generation rates for various land use types; however, the list includes a wide range of possible generation rates.<sup>39</sup> As a result, for purposes of this EIR, a range of generation rates were used to estimate the amount of solid waste that would be anticipated for the retail portion of the project. The generation rates range from 0.0013 pounds per square foot per day to 0.046 pounds per day per square foot. Using these rates, the retail portion of the project would be anticipated to produce between 390 to 13,800 pounds of trash per day, or 0.195 to 6.9 tons per day of trash. Annually, this would translate to about 71 to 2,519 tons of trash per year. These generation rates do not differentiate between trash that will be disposed of in landfills

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<sup>39</sup> California Integrated Waste Management Board's website. <http://www.ciwmb.ca.gov/wastechar/WasteGenRates/Commercial.htm>. Retrieved June 13, 2006. The actual rate could vary depending on the specific retail users.

versus waste that will be recycled. If a portion of the commercial solid waste is recycled, the total amount entering the landfill would be reduced.

Combined together, the project could generate approximately 0.715 to 7.42 tons of trash in a day, plus the 0.32 tons of residential recycling. This would be equal to between 0.05 to 0.5 percent of the maximum daily permitted amount of the solid waste entering into the Redwood Landfill. The Redwood Landfill did not anticipate that the proposed project would result in the landfill exceeding its permitted capacity as long as the proposed uses were required to comply with the City's recycling policies.<sup>40</sup>

The project would comply with the City's recycling policies. During the operation phase, the project would be served by the City's contracted solid waste collector, which would include recycling and green waste pick up. Due to the inclusion of these services, the proposed project would *not significantly impact* the landfill's ability to accommodate the waste generated by the project. Because the project would participate in the City's recycling program, it would also comply with local, State and federal regulations related to solid waste and recycling, and *no impact* would occur.

#### b. Cumulative Impacts

A list-based approach has been used for this cumulative analysis. The analysis considers the development projects listed in Appendix C (Cumulative Projects) and whether this project would have significant cumulative impacts on Petaluma's wastewater service in combination with the cumulative projects.

As growth continues to occur in the Petaluma General Plan area, the demand for solid waste services and landfill capacity will increase. Other reasonably foreseeable projects occurring in the city would be expected to comply with the City's recycling policies and have the same opportunities for recycling and green waste collection that the proposed project would have. The landfill

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<sup>40</sup> Frank Weigel, Green Waste Recovery. Personal conversation with Catherine Reilly, June 13, 2006.

expects to remain open until 2024. This permitting capacity takes into account growth projections for the region and the City's General Plan foresees the development of the East Washington Place site with more intensive urban uses that would generate additional solid waste. Thus, while the proposed project would contribute to solid waste generation in the city, the contribution would *not be significant* since it would not exceed the landfill's capacity.

#### **5. Impacts and Mitigation Measures**

As no significant solid waste impacts associated with the project have been identified, no mitigation measures are required.