

## 3K. Utilities

### 3K.1 Introduction

The purpose of this chapter is to assess the impacts of the proposed project on water supply services. The impacts of the proposed project on wastewater collection and treatment, solid waste disposal, gas, electric and telecommunication services were found to be less than significant in the Initial Study (**Appendix A**) and will not be addressed in the EIR. The following analysis is based upon information from Pasadena Water and Power (PWP). Analysis in this chapter relies upon information from PWP, including the 2005 Water Management Plan.

### 3K.2 Environmental Setting

#### Area Water Supply and Infrastructure

PWP is responsible for supplying water service to the Pasadena residents and businesses, as well as to customers within adjacent unincorporated areas. PWP provides approximately 37,094 acre-feet of water per year (afy) within its service area. PWP serves water to approximately 167,000 persons through 37,000 connections. Approximately 15 percent of the City's customers live outside the City limits.<sup>1</sup> According to the City's 2005 Urban Water Management Plan,<sup>2</sup> Pasadena's water supply is drawn from a variety of sources, including groundwater, local surface water and imported water. PWP obtains approximately 40 percent of its water from groundwater production and the remaining 60 percent is purchased from the Metropolitan Water District (MWD).<sup>3</sup> PWP maintains a distribution system of approximately 500 miles of pipeline of various sizes, ranging from 2- to 42-inches in diameter; 19 booster stations; and 22 storage reservoirs with a total capacity of 110 million gallons. MWD has five service connections to PWP's system. The Raymond Basin underlies the City and is one of the most important water resources for the City. It has a groundwater production of approximately 30,000 afy and has potential to store large amounts of imported water for drought purposes (up to 16 times the amount of water consumed by residents living over the Basin).<sup>4</sup>

For ten years (1994-2004) the City's water demand has remained relatively constant (with the exception of a drought period from 1992 to 1995), with an average annual demand of 33.75 million gallons per day (gpd), or 37,800 afy.<sup>5</sup> The City of Pasadena projected average year water demand in 2015 would be approximately 41,291 afy, 42,642 afy in 2020 and 45,293 afy in 2030.<sup>6</sup> However, the MWD has received record low rainfall in 2006-2007 and is using water stored in reserve to meet supply. If MWD were to reducing its water allocations to the City of

<sup>1</sup> City of Pasadena, *2005 Urban Water Management Plan*, Page 1 December 2005.

<sup>2</sup> City of Pasadena, *2005 Urban Water Management Plan*, December 2005.

<sup>3</sup> *Ibid.*

<sup>4</sup> City of Pasadena, *2005 Urban Water Management Plan*, Page 1 December 2005

<sup>5</sup> City of Pasadena, *2005 Urban Water Management Plan*, Page 18 December 2005.

<sup>6</sup> City of Pasadena, *2005 Urban Water Management Plan*, Page 29 December 2005.

Pasadena, the PWP could have a water shortage.<sup>7</sup> In Pasadena, the groundwater levels were 60 feet below their historical norms.<sup>8</sup> The MWD has not formally declared a water shortage; however, in December 2007, the City projected a water shortage and produced a Water Shortage Plan I (PMC 3.10.040), to help implement water conservation measures. The Water Shortage Plan I contains nine measures to assist all Pasadena customers with conservation techniques (see Regulatory Framework, below for details on plan implementation)

### **Art Center College of Design Water Supply and Infrastructure**

There is a 12-inch water main serving the proposed project. This main is inside the boundaries of an existing 15-foot utility easement granted to PWP for water transmission line purposes. The water main runs directly underneath the existing South Parking Lot. The water pressure in the area varies due to its altitude and terrain and ranges from 130 to 160 pounds per square inch (psi).

In a January 1975 Letter of Understanding (LOU) regarding water service to the Art Center College, the Art Center College made an agreement to limit water usage outside of a 33-acre boundary. For any water usage outside of that area in the future, the college agreed to pay a reservoir and pumping plant charge (\$500 per gross acre at the time of the LOU).

## **3K.3 Regulatory Framework**

### **Federal and State Regulations**

The Safe Drinking Water Act (SDWA) Amendments of 1996, the Safe Drinking Water Act of 1974, PL 93-523, and the Safe Drinking Water Act of 1986, PL 99-339, establish a federal program to monitor and increase the safety of all commercially and publicly supplied drinking water.

California Water Code, Division 7 Water Quality, addresses the conservation, control and utilization of water resources; water quality; and charges the state and regional water boards with coordination and control of water quality. Section 13050 defines pollution, contamination and nuisance, as well as other terms used in the California Water Code.

### **City of Pasadena Codes and Requirements**

Municipal Code 13.20.070 (Water Rate Ordinance) specifies current reservoir and pumping plant charges for service to currently unutilized land. (The charge is currently \$2,884 per gross acre, up from \$500 in 1975.)

<sup>7</sup> City of Pasadena, Pasadena Water and Power, accessed at, [http://cityofpasadena.net/waterandpower/watershortage/default.asp#Water\\_Shortage\\_Plan\\_I\\_\(PMC\\_13.10.040\)](http://cityofpasadena.net/waterandpower/watershortage/default.asp#Water_Shortage_Plan_I_(PMC_13.10.040)), on March 27, 2008.

<sup>8</sup> City of Pasadena, Pasadena Water and Power, accessed at, [http://cityofpasadena.net/waterandpower/watershortage/default.asp#Water\\_Shortage\\_Plan\\_I\\_\(PMC\\_13.10.040\)](http://cityofpasadena.net/waterandpower/watershortage/default.asp#Water_Shortage_Plan_I_(PMC_13.10.040)), on March 27, 2008.

The Uniform Plumbing Code by IAPMO (International Association of Plumbing and Mechanical Officials) provides guidance on safe and sanitary plumbing procedures. According to the Uniform Plumbing code, the installation of a pressure regulator is required when water pressure exceeds 80 psi.

### **City of Pasadena Water Shortage Plan I**

The City set forth water conservation measures for all customers and persons within the City. Presently, adherence to the following measures is presently voluntary.

- Refrain from hosing or washing sidewalks, walkways, driveways, parking area or other paved surfaces;
- Refrain from cleaning, filling, or maintaining levels in decorative fountains, ponds, lakes, and similar structures unless such structure is equipped with a water recycling system;
- Refrain from serving drinking water, unless at the express request of a customer, in all restaurants, hotels, cafes, cafeterias, or other public places where food is sold, served or offered for sales;
- Promptly repair all leaks from indoor and outdoor plumbing fixtures, including but not limited to sprinkler systems;
- Refrain from allowing water to run off landscape areas into adjoining streets, sidewalks, parking lots or alleys;
- Refrain from allowing water to run off into adjoining streets, sidewalks, parking lots or alleys while washing vehicles;
- Refrain from landscape watering more often than once every three days.

### **City of Pasadena Water Shortage Procedures (PMC 13.10): Water Shortage Plans II and III**

The purpose of the Water Shortage Plans II and III is to ensure that water is used to the maximum beneficial use and that water conservation is properly implemented. The department shall monitor and evaluate water supply and demand. In the event of a water shortage, the department would recommend to the City of Pasadena, City Council a water shortage plan and or plans. Should a water shortage occur, additional water conservation measures are found in the Water Shortage Plans II and III. Plan II includes all the same measures as Plan I with the addition of the following measures:

- No customer of the department shall use or allow the use of water for landscape watering between the hours of 10:00 a.m. and 5:00 p.m.

- No customer of the department shall use or all the use of water from the department to refill a swimming pool emptied after the commencement of a water shortage period.

Water Shortage Plan III is divided into phases based on potential scenarios of projected water shortage. Plans III includes the following water conservation measures:

- Phase 1: No customer shall use or allow the use of water from the department for any purpose in an amount in excess of 85 percent of that customer's base except that process may be used to the extent of 95 percent of that customer's base.
- Phase 2: No customer shall use or allow the use of water from the department for any purpose in an amount in excess of 80 percent of that customer's base except that process may be used to the extent of 90 percent of that customer's base.
- Phase 3: No customer shall use or allow the use of water from the department for any purpose in an amount in excess of 75 percent of that customer's base except that process may be used to the extent of 85 percent of that customer's base.
- Phase 4: No customer shall use or allow the use of water from the department for any purpose in an amount in excess of 65 percent of that customer's base.
- Phase 5: No customer shall use or allow the use of water from the department for any purpose in an amount in excess of 50 percent of that customer's base.
- Nothing contain herein shall be deemed to require any customer of the department to reduce his/her consumption of water provided by the department to an amount less than 20 billing units bi-monthly at each meter during any billing period.

Once it is determined by City Council that a water shortage no longer exists; then any and all water shortage plans would be terminated.<sup>9</sup>

## **3K.4 Impacts and Mitigation**

### **3K.4.1 Methodology**

The potential for adverse impacts on services and utilities has been evaluated based on information concerning current service levels and the ability of the service and utility providers to accommodate the increased demand created by the proposed project.

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<sup>9</sup> City of Pasadena, Water Shortage Procedures, accessed at [http://municipalcodes.lexisnexis.com/codes/pasadena/ DATA/TITLE13/Chapter\\_13\\_10\\_WATER\\_SHORTAGE\\_P ROCE/](http://municipalcodes.lexisnexis.com/codes/pasadena/ DATA/TITLE13/Chapter_13_10_WATER_SHORTAGE_P ROCE/) on March 27, 2008.

### 3K.4.2 Significance Criteria

The criteria used to determine the significance of water supply and infrastructure impacts are based on Appendix G of the *CEQA Guidelines*. For this analysis, the proposed project may result in significant impacts if it would:

- Require or result in the construction of new water facilities or expansion of existing facilities, the construction of which could cause significant environmental effects; or
- Require new or expanded water supplies that would create a substantial adverse physical impact, where existing entitlements and resources are not sufficient to serve the project.

### 3K.4.3 Project Impacts

**Impact 3K.1: The proposed project could require or result in the construction of new water facilities or expansion of existing facilities, the construction of which could cause significant environmental effects (less than significant with mitigation).**

Current water supply facilities at the site include a 4-inch domestic and an 8-inch fire service.<sup>10</sup> The water pressure in the area varies due to its altitude and terrain. The water pressure ranges from 130 to 160 psi. The Uniform Plumbing Code requires the installation of a pressure regulator when water pressure exceeds 80 psi. The proposed project is located within the developed boundaries of the Art Center. The proposed development would occur largely in areas of the site that are currently already disturbed, though excavation and export of earth (less than 10,000 cubic yards) would be required. Proposed new development would be located primarily within the existing 33-acre area of the campus that has been previously graded and developed, and which was previously planned for irrigation in the Letter of Understanding with the PWP. As shown in *Chapter 2, Project Description*, Figure 2.2, only two small new areas of grading would occur, extending the area of irrigation by the same amount.

PWP requires that no permanent structures can be constructed over the utility easement given to PWP for water transmission. The proposed project conflicts with the easement on the existing South Parking Lot (on which the proposed parking structure and maintenance facilities would be built), which is located over the utility easement. There is a 12-inch water main serving the proposed project. This main is inside the boundaries of an existing 15-foot wide easement. The easement is a utility easement granted to the PWP “for water transmission line and future water lines purposes.”<sup>11</sup>

Proposed new development would be located primarily within the existing 33-acre area of the campus that has been previously graded and developed. An additional area of less than half an acre would be added as newly graded and excavated land. Un-graded hillsides would remain in an open, natural state, except for required City Fire Department clearance around all structures.

<sup>10</sup> Predevelopment Plan Review Comments from the City of Pasadena Water & Power Department, Water Division, Ms. Aurora Santa Isabel on February 23, 2007.

<sup>11</sup> Predevelopment Plan Review Comments from the City of Pasadena Water & Power Department, Water Division, Ms. Aurora Santa Isabel on February 23, 2007.

According to the 1975 LOU between the Art Center and PWP, the Art Center College will limit water usage to the 33-acre boundary (or pay appropriate fees per acre outside of the 33-acre boundary). As the project will only add a small additional area of grading and development, there is no major expansion of infrastructure required in order to service the proposed project. With implementation of **Mitigation Measure 3K.1**, the proposed project would have less than a significant impact.

### **Mitigation Measure**

**Mitigation Measure 3K.1:** The Art Center College shall relocate the existing 12-inch water main away from the proposed parking structure. Art Center College would also be required to provide a new recorded utility easement.

**Significance After Mitigation:** Less than significant.

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### **Impact 3K.2: The proposed project could require new or expanded water supplies that would create a substantial adverse physical impact, and, existing PWP entitlements and resources are sufficient to serve the project (less than significant with mitigation).**

Construction of the project would permanently increase the water supply needed to serve the Art Center College of Design Hillside Campus. The water duty factors presented in the 2005 Urban Water Management Plan are used to evaluate the amount of water increase needed by proposed project. A water duty factor is defined as the average water use of a particular land use. The duty factors were developed by PWP by taking statistically representative samples of existing customers.<sup>12</sup> **Table 3K-1** below provides PWP water duty factors for various non-residential uses. The first four are from the 2005 Urban Water Management Plan. However that plan does not provide a specific water duty factor for education uses. The usage factor provided on line five for use in calculating the increase is water supply to the Art Center Hillside Campus resulting from the project was estimated at 7,200 gallons per day (which is .0072 million gallons per day, or 8.07 afy<sup>13</sup>), based on the project-related increase of 400 students per day and the City of Los Angeles water usage factor for university projects. In addition, project applicants need to obtain a fire flow test to determine capacity limitations for new project sites. According to PWP, the City of Pasadena has a guaranteed water supply for the next 20 years.<sup>14</sup> As PWP indicated, there is adequate supply for this project, and only the standard requirement of payment of fees (see **Mitigation Measure 3K.2**), is required to assure water to the project. However, in light of the December 2007 City projected water shortage and Water Shortage Plan I, the proposed project shall also be required to implement **Mitigation Measure 3K.3** to reduce impacts to water resources.

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<sup>12</sup> City of Pasadena Water & Power Department, *2005 Urban Water Management Plan*, Page 37, December 2005.

<sup>13</sup> Based on the conversion factor of one million gallons per day (mgd) = 1,120 acre feet per year.

<sup>14</sup> Personal Communication with Joseph Gachiri, P.E, of the City of Pasadena Water and Power on September 12, 2007.

**TABLE 3K-1  
WATER DUTY FACTORS**

| Land Use Designation <sup>a</sup>                           | Duty Factor                  | Duty Factor (afy) |
|---|------------------------------|-------------------|
| Commercial (acreage) <sup>b</sup>                           | 2,000 gal/day/acre           | 2.24              |
| Commercial (office space) <sup>b</sup>                      | 0.065 gal/day/sq. ft. office | --                |
| Industrial <sup>b</sup>                                     | 600 gal/day/acre             | 0.67              |
| Recreational <sup>b</sup>                                   | 3,000 gal/day/acre           | 3.36              |
| Educational (Art Center Project) <sup>c</sup>               | 18 gal/day/student           | --                |
| Multi-family residential                                    | 190                          |                   |
| Multi-family residential (MF12, 2 Dwelling Units (DU)/ lot) | 2,280                        | 2.55              |
| Multi-family residential (16 DE/acre)                       |                              |                   |

<sup>a</sup> Only non-residential land use categories shown here.

<sup>b</sup> Source: 2005 Urban Water Management Plan, Page 38, Table 4-4.

<sup>c</sup> Source: Draft LA CEQA Thresholds Guide, Exhibit K.2-11, page K.2-24, City of Los Angeles, Department of Environmental Affairs, May 19, 1998.

As stated previously, the City purchases 60 percent of its water from MWD. The Metropolitan Water District Act provides a preferential entitlement for MWD agencies to purchase of water. As of June 2002, the City of Pasadena has a statutory preferential right of 1.08 percent of MWD's total water supply.<sup>15</sup> MWD has established an Integrated Resources Plan (IRP) to ensure the reliability of its supplies. PWP does not anticipate major changes in its water supply sources.<sup>16</sup> PWP coordinates with MWD to ensure that projected water demand is met. MWD utilizes information from PWP and employs a forecasting model to conducts its own regional water management planning.<sup>17</sup>

In addition, the Art Center is not anticipated to use an excessive amount of water. The proposed project would use typical amount of water for an educational facility. In addition, the Art Center College of Design has stated that all buildings proposed on campus are intended to be sustainable buildings. The College indicates that materials, energy concerns, the amount of trips being made, the amount of soil being moved, etc. will be part of the criteria for achieving the equivalent of a Leadership in Energy and Environmental Design (LEED)-rated<sup>18</sup> building. This type of LEED rated designation requires the efficient use of natural resources. The LEED checklist includes features promoting sustainability of a project, including water efficiency features. Water reduction and efficiency as a part of LEED certification and can include techniques such as limiting the amount of potable water for landscape irrigation, incorporating waterless urinals, and

<sup>15</sup> City of Pasadena, *MWD Water Resources Management Report*, Page 7, January 8, 2008.

<sup>16</sup> City of Pasadena, *2005 Urban Water Management Plan*, Page 29, December 2005.

<sup>17</sup> City of Pasadena, *2005 Urban Water Management Plan*, Page 31, December 2005.

<sup>18</sup> Refers to the green building rating system, Leadership in Energy and Environmental Design (LEED), established by the United States Green Building Council. Such rating systems have been established to guide and rate the energy and conservation design of buildings.

using occupant sensors to reduce the potable water demand.<sup>19</sup> **Mitigation Measure 3K.4 has been included to assure** reduced impacts to water resources.

The proposed project requires a nominal additional amount of water, which is a very small fraction of the current and long-term water projection rates (the City of Pasadena projected average year water demand in 2015 would be approximately 41,291 afy, 42,642 afy in 2020 and 45,293 afy in 2030<sup>20</sup>). Therefore, the proposed project would have less than a significant impact. Implementation of **Mitigation Measures 3K.2, 3K.3 and 3K.4** will ensure that impacts remain less than significant.

### **Mitigation Measures**

**Mitigation Measure 3K.2:** The Art Center College shall pay reservoir and pumping plant charges (currently \$2,884 per new gross acre).

**Mitigation Measure 3K.3:** The Art Center College shall comply with the January 1975 Letter of Understanding (LOU) regarding water service to the Art Center College which limited water usage to inside the 33-acre boundary. For any water usage outside of that area in the future, the college shall be required to pay a reservoir and pumping plant charge (\$500 per gross acre at the time of the LOU).

**Mitigation Measure 3K.4:** The Art Center College shall implement water conservation features as a part of its LEED equivalent design. Such features shall be approved by the Department of Planning and Development and PWP, prior to building permit approval.

**Significance After Mitigation:** Less than significant.

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## **3K.4.4 Cumulative Impacts**

**Impact 3K.3: The proposed project could result in adverse cumulatively considerable impacts to water supply or infrastructure (less than significant).**

This analysis is based on the Cumulative Projects List also provided in Chapter 2. The listed projects include various uses near the proposed project in the City of Pasadena that are currently under construction, approved but not built, or proposed for development. **Table 3K-2** displays the related projects and their anticipated water usage.

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<sup>19</sup> LEED: Green Building Rating System for New Construction and Major Renovation, Version 2.1 Revised 3-14-03, accessed at [http://www.usgbc.org/Docs/LEEDdocs/LEED\\_RS\\_v2-1.pdf](http://www.usgbc.org/Docs/LEEDdocs/LEED_RS_v2-1.pdf), on March 31, 2008.

<sup>20</sup> City of Pasadena, 2005 *Urban Water Management Plan*, Page 29 December 2005.

**TABLE 3K-2  
CUMULATIVE PROJECT LIST**

| Address/Name or Type of Project  | Description  | Size             | Duty Factor <sup>a</sup>                                      | Water Usage       |
|--|--|------------------|---|-------------------|
| 1005 Armada Drive/Chandler School                                      | Update to MDP, Increase enrollment to 30 students  | 3.86 acres (N/A) | 18 gal/day/per student <sup>b</sup>                           | 540 gpd           |
| 285 W. Green Street/Condominiums                                       | 33 multi-family dwelling units                     | 30,371 s. f.     | 9,120 gal/day/acre <sup>c</sup>                               | 6,359 gpd         |
| 751 N. Orange Grove Blvd/Apartments with Commercial Retail Development | 25 multi-family dwelling units and 9,999 sf retail | 21 845 s. f.     | 6,080 <sup>d</sup> gal/day/acre (for commercial) <sup>e</sup> | 3,046 gpd         |
| <b>Subtotal</b>  |  |                  |   | <b>9,945 gpd</b>  |
| Proposed Project   |  |                  |   | 7,200 gpd         |
| <b>Total</b>   |  |                  |   | <b>17,145 gpd</b> |

<sup>a</sup> City of Pasadena, 2005 Urban Water Management Plan, Page 38, Table 4-4.

<sup>b</sup> Draft LA CEQA Thresholds Guide, Exhibit K.2-11, page K.2-24, City of Los Angeles, Department of Environmental Affairs, May 19, 1998.

<sup>c</sup> Water Duty Factors for multi-family projects of this size range from a water duty factor for up to 32 DU/acre to 48 DU/acre. The higher generation rate of 48 DU/acre was used for the calculation.

<sup>d</sup> Water Duty Factors for multi-family projects of this size range from a water duty factor for up to 16 DU/acre to 32 DU/acre. The higher generation rate of 32 DU/acre was used for the calculation.

<sup>e</sup> High water duty factor (water generation rate) for commercial used to generate project water usage

SOURCE: City of Pasadena and URS, *Scoping for Transportation Impact Study*, July 27, 2007.

As shown, the related projects would generate a water demand of approximately 9,945 gallons per day. The proposed project's water usage added to the cumulative related developments would only be 17,145 gpd. The proposed project and the cumulative development projects would be well within the City of Pasadena average annual demand of 33.75 million gallons per day (gpd), or 37,800 afy.<sup>21</sup> This impact would be small and would not impede the provision of water by PWP over the next 20 years, assuming all projects are required to implement similar mitigation measures (or similar measures imposed as conditions of approval) to the project's **Mitigation Measures 3K.2, 3K.3 and 3K.4**, and assuming all projects are consistent with the City of Pasadena Water Shortage Plan and Water Shortage Procedures (PMC 13.10), as applicable. The City of Pasadena projected average year water demand in 2030 would be approximately 45,293 afy.<sup>22</sup> The cumulative project water demand would not result in a significant impact. Adequate water supplies exist for this project and for the list of projects, based on PWP projections. In addition, the proposed project's impact is less than significant, and would not be cumulatively considerable. Therefore, the proposed project, in conjunction with the listed projects, would have less than a significant cumulative impact related to water supply and infrastructure.

**Mitigation:** None required.

<sup>21</sup> City of Pasadena, 2005 Urban Water Management Plan, Page 18 December 2005.

<sup>22</sup> City of Pasadena, 2005 Urban Water Management Plan, Page 29 December 2005.