3.7 PUBLIC SERVICES AND UTILITIES

This section evaluates existing public services and utilities at the site and impacts associated with the proposed project. The impact discussion is limited to impacts to fire and police protection services, water service, and wastewater. Refer to Chapter 3.5 Hydrology and Water Quality for a discussion of impacts to storm water drainage.

3.7.1 ENVIRONMENTAL SETTING

FIRE PROTECTION

Fire protection is provided to the City of Pasadena by the Pasadena Fire Department. Fire Station No. 32, located at 2424 East Villa Street, is approximately 1 mile northwest of the project site. Fire Station No. 32 has a staffing level of approximately 10 persons and operates a ladder truck, an engine company, and an ambulance. The average response time for Fire Station No. 32 is approximately 3 minutes. Fire Station No. 34, located at 1360 East Del Mar Boulevard, is approximately 1.75 miles west of the project site. Fire Station No. 34 has an engine company. It has a staffing level of approximately 8 persons and a response time of approximately 5 minutes. The Pasadena Fire Department generally operates 3 shifts of personnel out of Fire Stations No. 34 and 32 (City of Pasadena 2004). They are responsible for emergency medical calls and fire response. Inspection and plan check services are managed out of the Fire Department Headquarters, located at 199 South Los Robles Avenue. In 2006, Fire Station No. 32 responded to 1,883 calls with the entire Pasadena Fire Department responding to 31,695 calls. Of the total calls received within the City, approximately 74 percent were medical, 20 percent were for fires, and 5 percent were service calls (Pasadena Fire Department 2006).

The project site is currently developed with 85 independent living units, 9 assisted living beds, 46 residential treatment beds, 90 psychiatric and 22 chemical dependency in-patient beds, 15 medical offices, and 3 single-family residences. Three driveways are currently located on Del Mar Boulevard that provide access to the northern portion of the project site. Access to the central portion of the site is provided from the middle driveway off of Del Mar Boulevard. The southern driveway located on El Nido Avenue is exit only. These driveways connect to an interior access road that is generally restricted to emergency personnel and service vehicles. Access to the residential uses is provided off of San Gabriel Boulevard by 3 separate driveways.

Las Encinas is a level IV medical facility. Physicians are not on-site 24 hours per day. All nursing staff are trained in cardiopulmonary resuscitation (CPR). Registered Nurses are trained on the use of Automatic External Defibrillators. Staff has provided first aid and CPR, and has placed calls to 911 for emergency medical services to the City. Las Encinas has a contract with Medic One Ambulance Services for any ambulance needs.

POLICE PROTECTION

Police protection services for the City are provided by the Pasadena Police Department. The police headquarters are located at 207 North Garfield Avenue, approximately 4 miles west of the project site. The Pasadena Police Department employs 385 full-time employees with 262 sworn officers, 117 civilian employees, and 6 reserve police officers (volunteers). The project site is located within the east service area (Pasadena Police Department 2008). The average citywide response times are as follows:

- Priority one calls (e.g., homicide, robbery): 6.47 minutes
- Priority two calls (e.g., vandalism, fights in progress): 16.10 minutes
- Priority three calls (e.g., ringing burglary alarms): 25.33 minutes

Las Encinas Hospital currently employs a private security staff to ensure the safety and privacy of patients and residents. Security personnel are stationed on-site in the evenings and on weekends. A guard station is located off of the second driveway on Del Mar Boulevard. Visitors to the psychiatric hospital are required to check in at the front desk.

WATER SERVICE

Pasadena Water and Power (PWP) is the water supply service provider to the City of Pasadena residents and businesses, as well as to a limited number of customers within adjacent unincorporated areas. PWP provides approximately 37,094 acre-feet per year (af/yr) of potable water (based on the average PWP total production over the last 10 years). According to the City's 2005 Urban Water Management Plan, Pasadena's water supply is drawn from a variety of sources, including groundwater, local surface water, and imported water. Additional water supplies are also available through short-term water exchanges with neighboring agencies. PWP attempts to maximize its groundwater use each year and then use imported water to meet remaining demand. PWP obtains approximately 40 percent of its annual water supply from groundwater and the remaining 60 percent is purchased from the Metropolitan Water District (MWD). MWD obtains it supply from two sources of imported water: the Colorado River Aqueduct and the State Water Project (PWP 2005).

PWP also diverts surface water runoff from 2 streams that flow within its service area: up to 25 cubic feet per second from Arroyo Seco, which lies on the northwest side of the City; and up to 8.9 cubic feet per second from Eaton Canyon, which lies in the eastern portion of the City. Although this water can be treated and used directly, PWP currently diverts and spreads the water in spreading basins where it percolates into the ground and recharges the aquifer (PWP 2005).

Groundwater production is obtained from the Raymond Basin, a large aquifer that underlies the City and surrounding region. It has a groundwater production of approximately 30,000 af/yr and has the 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) (PWP 2005). The Raymond Basin is adjudicated and under

the judgment the City of Pasadena has the right to 12,807 af/yr with additional pumping rights each year based on spreading surface water diversions in the Arroyo Seco and Eaton Canyon. Spreading credits vary from year to year, but on average PWP has received 4,128 af/yr in credits since 1994. Thus, on an average year, PWP has the right to pump approximately 16,935 af/yr from the Raymond Basin. PWP is currently operating 7 wells with a combined capacity of 15,200 af/yr (PWP 2005).

In May of 2008, PWP was made aware that the Raymond Basin Management Board (Watermaster) is concerned that, in certain areas of the Raymond Basin, groundwater production is greater than net recharge, which has lead to decreases in groundwater levels and increased depth-to-pumping (Stetson Engineers 2007). It was estimated that the safe yield of the Pasadena subarea of the Raymond Basin, the subarea from which Pasadena takes a vast majority of its pumping rights, was approximately 35 percent less than current decreed rights in that subarea. To protect the storage capacity of the Pasadena subarea, PWP anticipates that the Watermaster may reduce the pumping allocation of every pumper in the Pasadena subarea by 35 percent (Stetson Engineers 2007). If that should occur, PWP's groundwater pumping rights would be reduced to 5,423 af/yr in the subarea, for a total of 9,877 af/yr in the Raymond Basin.

In 2007, PWP supplied a total of 38,434 acre feet (af), of which 25,100 was from imported water and 12,849 af was from groundwater with approximately 485 af from local water exchanges. Water use in PWP's service area is approximately two-thirds residential and one-third commercial/industrial. Total system per capita water use (excluding agricultural water use) averages 170 gallons per day (gpd). There were approximately 36,830 connections in 2007. Since 1990, new connections have been added at a rate of approximately 0.15 percent per year. However, demand for water has remained relatively constant with the implementation of water efficiency improvements.

Current and projected water use within PWP's service area is shown in Table 3.7-1. Table 3.7-1 shows water usage projected for normal years and single dry years from 2010 through 2030.

TABLE 3.7-1 PWP SERVICE AREA NORMAL AND SINGLE DRY YEAR SUPPLY AND DEMAND (AF/YR)

SCENARIO	2010	2015	2020	2025	2030
***Normal Year*[1]**					
Supply	39,957	41,291	42,624	43,959	45,293
Demand	39,957	41,291	42,624	43,959	45,293
Difference	**0**	**0**	**0**	**0**	**0**
Single Dry Year					
Supply	32,318	32,318	32,318	32,318	32,318
Demand	33,963	35,097	36,230	37,365	38,497
Difference	**(1,645)**	**(2,779)**	**(3,912)**	**(5,047)**	**(6,179)**

[1] Projected supplies exceed demands; however, PWP will only take the amount of imported water necessary to serve projected demand. Additional water may be purchased by PWP at an increased rate; however PWP plans to get additional water from long term storage

Source: PWP 2005.

PWP has contracted with MWD for deliveries under a purchase order arrangement (PWP 2005). Under the contract, MWD charges for water supply under a two-tiered rate structure. PWP has the right to purchase up to 90 percent of their initial base demand at Tier 1 rates. Initial base demand is calculated as the maximum firm demand for MWD water over a 10-year period since 1989. Tier 1 rates are set by MWD to recover its costs of maintaining a reliable supply. Any amount higher than 90 percent of base demand is charged at higher Tier 2 rates to encourage efficient utilization of local resources and include MWD's costs for developing additional supplies.

Multiple dry-year supply and demand scenarios for 2010 through 2030 are shown in Table 3.7-2.

TABLE 3.7-2 PWP SERVICE AREA MULTIPLE DRY YEAR SUPPLY AND DEMAND (AF/YR)

2011 THROUGH 2015	**2011**	**2012**	**2013**	**2014**	**2015**
Supply	40,224	40,491	36,861	31,665	34,294
Demand	40,224	40,491	40,757	34,870	35,097
Difference	0	0	(3,896)	(3,205)	(803)
Pumped from Long Term Storage	0	0	3,896	3,205	803
Long Term Storage Balance	24,221	24,221	20,325	17,120	16,137
Annual Net Deficit	0	0	0	0	0
2016 THROUGH 2020	**2016**	**2017**	**2018**	**2019**	**2020**
Supply	41,559	41,826	36,861	31,665	34,294
Demand	41,559	41,826	42,092	36,005	36,232
Difference	0	0	(5,231)	(4,340)	(1,938)
Pumped from Long Term Storage	0	0	5,231	4,340	1,938
Long Term Storage Balance	24,221	24,221	18,990	14,650	12,712
Annual Net Deficit	0	0	0	0	0
2021 THROUGH 2025	**2021**	**2022**	**2023**	**2024**	**2025**
Supply	42,891	43,158	36,861	31,665	34,294
Demand	42,891	43,158	43,424	43,691	43,957
Difference	0	0	(6,563)	(5,472)	(3,070)
Pumped from Long Term Storage	0	0	6,563	5,472	3,070
Long Term Storage Balance	24,221	24,221	17,658	12,186	9,116
Annual Net Deficit	0	0	0	0	0
2026 THROUGH 2030	**2026**	**2027**	**2028**	**2029**	**2030**
Supply	44,226	44,493	36,861	31,665	34,294
Demand	44,226	44,493	44,759	38,272	38,499
Difference	0	0	(7,898)	(6,607)	(4,205)
Pumped from Long Term Storage	0	0	7,898	6,607)	4,205
Long Term Storage Balance	24,221	24,221	16,323	9,716	5,511
Annual Net Deficit	0	0	0	0	0

Source: PWP 2005.

The City has a long term storage program in the Raymond Basin and banks water within the basin for withdrawal during dry years when supplies are not sufficient to cover demands. Based on the supply and demand comparisons, PWP will have sufficient supply to meet the projected demand over the next 25 years (PWP 2005). Its ability to meet demands during a multiple dry year period is based on the storage reserve it maintains in the Raymond Basin. During a time of drought, it can draw on this reserve to supplement its supply. In the previous comparisons, the scenarios showed that the storage reserve would be drawn down over the course of a three year dry period. In the final multiple year analysis from 2026 through 2030, the long term storage balance reached 5,511 af. Thus, although there is enough projected supply and storage available under these scenarios, it is important that PWP take steps to boost its reserves. There are a number of critical actions that PWP is planning to take to provide additional assurance that it will be able to maintain deliveries:

- In the short term, PWP will restore most of the out-of-service wells into production by installing perchlorate treatment systems.

  In the long term, PWP will maintain deliveries through aggressive conservation programs and the implementation of recycled water for irrigation purposes.
- PWP will cooperate with the watershed planning efforts in the Arroyo Seco to develop the plan to increase the capacity of its spreading basins.

The comparisons in Table 3.7-1 and Table 3.7-2 are based on the assumption that MWD is forced to curtail its deliveries during a drought. In reality, MWD has performed its own multiple dry year analysis and has determined that it would be able to maintain deliveries to its member agencies even in the event of a historical multiple dry year period. However, by taking the critical actions above PWP will ensure that it can reliably maintain its own supply in the event that MWD experiences delays in implementing its Integrated Resources Plan (IRP), as well as providing a buffer against uncertainty.

PWP Actions and Programs to Address Water Supply Issues. PWP has many options at hand to address potential water supply issues, arising from either a reduction in its MWD allocations or its ability to pump groundwater from the Pasadena subarea of the Raymond Basin.

Throughout the end of 2008 and early 2009, PWP has taken the following steps to update its approach to water supply issues:

Comprehensive Water Conservation Plan (CWCP). On April 13, 2009, the City Council adopted the CWCP (City of Pasadena 2009). As a long-term goal, the CWCP presupposes an initial target of reducing per-capita potable water consumption 10 percent by 2015 and 20 percent by 2020. Whereas PWP's past water conservation programs relied heavily on indoor efficiency, the CWCP reflects an emphasis on:

- Using price signals in rate design to encourage conservation;
- Increased emphasis on outdoor water efficiency; and
- Maximizing efficiencies related to new construction.

The CWCP includes 6 water conservation approaches that will be pursued simultaneously to meet the City's water conservation targets (City of Pasadena 2009):

1. Implement Water Conservation Rate Design:
   - Modified block rate structure with higher cost tiers for high water use
   - Develop a budget-based water rate proposal
2. Adopt Sustainable Water Supply Ordinances:
   - Establish a Permanent Water Waste Prohibition Ordinance
   - Modify existing Water Shortage Ordinance
   - Adopt a Water Efficient Landscape Ordinance
   - Evaluate potential effectiveness of a Fixture Replacement on Resale Ordinance, and adopt, if appropriate
   - Review the Gray Water Systems and Storm Water Capture Ordinances and update or modify, as appropriate
   - Adopt appropriate water use limitations and mitigation measures associated with new development
3. Provide Incentives for Use of Water Efficient Technology and Practices:
   - Indoor fixture incentives
   - Irrigation technology incentives
   - Water-efficient landscape and turf replacement incentives
4. Provide Direct Installation and Distribution of Efficient Technologies.
5. Provide Water Use Audits.
6. Provide Water Use Information, Education, and Outreach:
   - Usage data on bills
   - Appropriate water use standards or guidelines
   - Efficient indoor and outdoor water use practices.

The City has begun the process to increase water rates as envisioned by the CWCP, and which are necessary for covering surcharges imposed by MWD on PWP whenever customers exceed MWD's new allocation targets (PWP 2009a). The City anticipates holding the first public hearing in this process on June 8, 2009 (PWP 2009b).

Water Waste Prohibition and Water Shortage Plan (WWP/WSP) Ordinance. Also on April 13, 2009, the City Council directed the drafting of an ordinance that will replace the City's previously adopted Water Shortage Plan I (City of Pasadena 2009). The proposed WWP/WSP Ordinance includes a number of permanent water waste prohibitions, as well as procedures that will be initiated in the event of a water shortage. The proposed ordinance is consistent with the MWD Model Water Waste ordinance and is intended to address the shortcomings identified with the City's current Water Shortage Procedure Ordinance that it will replace. The proposed permanent water waste prohibitions include:

- Watering with potable water (i.e., drinking water) is prohibited between the hours of 9:00 a.m. and 6:00 p.m. on any day, except by use of a hand-held container, a handheld hose equipped with a water

shut-off noule or device, or for very short periods of time for the express purpose of adjusting or repairing an irrigation system;

- No watering during periods of rain;
- No excessive water flow or runoff;
- No washing down hard or paved surfaces except were necessary to alleviate safety or sanitary hazards and then only by use of a hand-held bucket or similar container, a hand-held hose equipped with a water shut-off noule or device, a low-volume, high-pressure cleaning machine equipped to recycle any water used, or a low volume high-pressure water broom;
- Obligation to fix leaks, breaks or malfunctions when discovered or within seven days of receiving notice from PWP;
- Recirculating water systems are required for fountains and decorative water features;
- Using potable water to wash a vehicle is prohibited, except by use of a hand-held bucket or a hand-held hose equipped with a water shut-off noule or device. (This subsection does not apply to any commercial car washing facility);
- Drinking water may be served in restaurants only upon request by a customer;
- Restaurants are required to use water conserving dish wash spray valves;
- Commercial lodging establishments must provide guests option to decline daily linen services;
- Installation of single pass cooling systems is prohibited in buildings requesting new water service;
- Installation of non-recirculating water systems is prohibited in new commercial conveyor car wash and new commercial laundry systems; and
- Effective on July 1, 2010, commercial conveyor car wash systems must have installed operational recirculating water systems or secured a waiver of this requirement from the City of Pasadena.

The proposed ordinance establishes a penalty schedule for violations, and the penalties are meant to be deterrents rather than sources of funds. The proposed ordinance is anticipated to come before the City Council in late June or early July of 2009.

Other PWP Water Supply Management Projects. Just as MWD has done, PWP has maintained its supply reliability in the face of supply uncertainties in the past, and is actively managing its supplies to ensure the reliability for the future. As a primary example, the City maintains a contract with the City of Glendale for the provision of recycled water, and has the right to 6,000 af/yr of recycled water from the Los Angeles/Glendale Water Reclamation Plant. The City has the right to take this allocation at a point of connection in Scholl Canyon, on the northwestern end of Pasadena. Although implementation of the pipe construction project to bring recycled water into Pasadena has been on hold since 1995, the City has already begun the work necessary to re-start implementation of that project. Funding for the initial planning of this project is currently available. As additional funding can be secured, the City anticipates increasingly offsetting the use of potable water for landscaping with recycled water, thus leaving more potable water for other uses. Through these efforts, PWP anticipates serving demand in the City as forecast in the City's General Plan and Urban Water Management Plan into the foreseeable future.

MWD Reliability

Future projected annual supplies from MWD during single dry, multiple dry and normal years are shown in Table 3.7-3. MWD supplies range from a high of about 3.3 million af to a low of 1.9 million af, depending on the year and the scenario. In drought conditions, water supplies may be reduced as a result of reduced precipitation. Since the City receives the majority (approximately 60 percent) of its water from MWD, an analysis of the reliability of the MWD supply under drought conditions is required. An analysis of single dry year, multiple dry year and average year MWD supply reliability follows. Table 3.7-3 shows the MWD demand and supply capabilities through the year 2030 under average year, single dry year, and multiple dry year scenarios. The data shows that demand from MWD customers will be met under the 3 different scenarios through the year 2030 with surplus. Surplus ranges from a low of 240,000 af/yr to 1.16 million af/yr (MWD 2005).

TABLE 3.7-3 MWD SUPPLY AND DEMAND (AF/YR)

SCENARIO	2010	2015	2020	2025	2030
Multiple Dry Year					
Supply	2,619,000	2,834,000	2,841.000	2,827,000	2,827,000
Demand	2,376,000	2,389,000	2,317,000	2,454,000	2,587,000
Surplus (Supply less Demand)	243,000	445,000	524,000	373,000	240,000
Single Dry Year					
Supply	3,151,000	3,356,000	3,309,000	3,252,000	3,203,000
Demand	3,320,000	2,196,000	2,229,000	2,358,000	2,487,000
Surplus (Supply less Demand)	831,000	1,160,000	1,080,000	894,000	716,000
Average Year					
Supply	2,668,000	2,600,000	2,654,000	2,654,000	2,654,000
Demand	2,036,000	1,947,000	1,983,000	2,110,000	2,246,000
Surplus (Supply less Demand)	632,000	653,000	671,000	544,000	408,000

Demand represents FIRM demand, defined as full service demands (Tier I and Tier II) plus 70 percent of the Interim Agricultural Water Program.
Source: MWD 2005.

Summaries of MWD's individual supplies, along with the challenges facing each supply, are presented in the following sections. These sections also include specific actions that MWD is taking to meet each of the challenges facing its water supplies. Over the past several decades, MWD has demonstrated that it can adapt to continuous change and address uncertainties in supply by developing a diverse portfolio, setting supply targets, monitoring its progress on a regular basis, and adapting its strategy to meet its targets.

The Colorado River. MWD diverts water from the Colorado River at Lake Havasu on the California/Arizona border and conveys it across the Mojave Desert via the agency's Colorado River Aqueduct to Lake Mathews near Riverside. From there, MWD pumps the water into its feeder pipeline distribution system for delivery to its member agencies throughout Southern California.

MWD possesses the right to divert water from the Colorado River pursuant to a contract with the U.S. Secretary of Interior under Section 5 of the federal Boulder Canyon Project Act (45 Stat. 1057, December 21, 1928). The Blueprint Report includes a description of MWD's 550,000 af/yr base apportionment water right, along with the Colorado River supply projects that MWD is implementing to maximize the reliability of Colorado River supplies (MWD 2003). Following distribution of the Blueprint Report, the Quantification Settlement Agreement (QSA) and other related agreements were approved on October 10, 2003, related to the supplies of all the California users of the Colorado River, including MWD. Signing of the QSA and related agreements will allow implementation of the Colorado River supply projects identified in the Blueprint Report, as well as other projects. MWD described in the QSA and related agreements and their impact on the reliability of MWD's supplies in its 2006 Integrated Water Resources Plan Implementation Report (MWD 2006).

According to MWD, it is expected that its fourth priority apportionment of 550,000 af of Colorado River water will be available every year for the next 20 years. This supply is "expected to be available during all year types, including wet, average, single dry-year, and multiple dry-year weather" (MWD 2003).

Current challenges facing MWD's Colorado River supply include risk of continued drought in the Colorado River Basin and pending litigation that may threaten implementation of part or all of the QSA. MWD has been aggressively preparing for these 2 risks to its Colorado River supply for many years (MWD 2003). Its responses to these challenges are described in the following paragraphs.

The Colorado River Basin has experienced below-normal runoff for the past 8 years. During 2006, Lake Mead was at its lowest level in 41 years (MWD 2006). A *Draft Environmental Impact Statement on Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead, Particularly Under Lower Reservoir Conditions* was released by the U.S. Bureau of Reclamation, which operates the Colorado River reservoirs in February 2007 (U.S. Bureau of Reclamation 2007). That study analyzed various alternatives to manage the Colorado River in light of the current extended dry period for enhanced reliability in water allocations for all the users of the Colorado River, including MWD. For example, one of the alternatives would introduce new operating and accounting procedures to address the ability of MWD and others to store water in Lake Mead (MWD 2006).

Despite the challenges of recent Colorado River Basin hydrology, MWD "does not anticipate adverse water supply impacts resulting from the implementation of [the] shortage guidelines because California's 4.4 million acre-foot apportionment has a higher priority than a portion of Arizona and Nevada's apportionments during shortage conditions" (MWD 2006).

Programs that will help to implement the QSA and meet Colorado River water supply targets, and that are currently in operation, close to completion or in progress include: the Imperial Irrigation District and MWD water conservation and transfer program; the Coachella and All-American Canal lining projects; the Imperial Irrigation District and San Diego County Water Authority water transfer; the Palo Verde Irrigation District land management and crop rotation program; and the Interim Surplus Guidelines adopted by the U.S. Secretary of the Interior (MWD 2006). MWD is actively working to implement

several of these QSA-related programs. In addition, MWD is participating in the Intentional Created Surplus program to store water in Lake Mead for withdrawal during dry years. During 2006 and 2007, MWD stored 50,000 af of water in Lake Mead that it had saved under the Palo Verde Irrigation District Land Management and Crop Rotation Program (MWD 2006). Collectively, these programs are expected to maintain the reliability of MWD's Colorado River supplies.

MWD's fourth priority apportionment of Colorado River water has been delivered to MWD every year since 1939, in all hydrologic year types. By existing contract, this supply "will continue to be available in perpetuity" due to California's senior rights on the Colorado River. MWD has affirmed that "[t]he historical record for available Colorado River water indicates that Metropolitan's fourth priority supply has been available in every year and can reasonably be expected to be available over the next 20 years" (MWD 2005). Thus, according to MWD, its Colorado River supply is secure through at least 2025. Pursuant to the analysis in more recent MWD assessments of its water supplies and this water supply analysis, there are no substantial challenges that are currently predicted to arise between 2025 and 2030. Therefore, the same reliability that MWD declared through 2025 is also applicable through at least 2030.

The second challenge to MWD's Colorado River supplies is the pending litigation concerning the QSA and related agreements. That litigation has taken 2 forms: (1) a series of lawsuits against the lining of the All-American Canal; and (2) a series of lawsuits which challenge the IID/SDCWA transfer. The All-American Canal litigation has been litigated and resolved in favor of the QSA parties, thus increasing the certainty of MWD's Colorado River supplies since the publication of the Blueprint Report (Consejo de Desarrollo Economico de Mexicali, A.C. v. United States 2007).

Several lawsuits against the Imperial Irrigation District/ San Diego County Water Authority transfer were brought by the County of Imperial, various landowners within IID and environmental advocacy groups, and have been consolidated in Sacramento County Superior Court. In 2 of those lawsuits, the County of Imperial sued the State Water Resources Control Board (SWRCB), Imperial Irrigation District and San Diego County Water Authority regarding the legitimacy of the QSA approvals. In November 2004, the Superior Court dismissed those cases with prejudice on the ground that the County had failed to name MWD and the Coachella Valley Water District as necessary and indispensable parties to the actions on a timely basis. Thereafter the County appealed that decision and the Court of Appeal affirmed the dismissal in 2007, which lifted a stay on the other QSA cases (County of Imperial v. Superior Court 2007). In addition, several demurrers have been filed and sustained in the consolidated cases, reducing the number of causes of action pending in the litigation (Imperial Irrigation District v. All Persons Interested in Any of the Following Contracts 2003). As of the date of this document, the water transfer challengers' motions for preliminary injunction have been denied, and thus, the parties are free to implement the provisions of the QSA, as appropriate. The full cases are expected to reach the court for decision during late 2009 and possibly into 2010.

While all significant issues in the QSA litigations have been resolved in favor of MWD and the other QSA parties to date, including the entire All-American Canal case, it is impossible to predict with absolute certainty how the remaining litigation will be resolved. MWD is actively involved in the

litigation, however, and plans to defend the QSA fully to prevent any impacts to its Colorado River supplies.

State Water Project (SWP). MWD possesses a contract with the California Department of Water Resources (DWR) that entitles it to water from the SWP (DWR 1960). MWD's share of the total SWP supply is approximately 46 percent based on its contracted Table A amount of 1,911,500 af/yr (MWD 2006). This supply is diverted from the Feather River at Lake Oroville, released and conveyed through the Sacramento-San Joaquin River Delta (Delta), and rediverted at the Harvey O. Banks Delta Pumping Plant for conveyance through the California Aqueduct to Southern California and MWD. MWD described and analyzed the reliability of its SWP supplies in the Blueprint Report (MWD 2003). MWD estimated the availability of SWP supplies "according to the historical record of hydrologic conditions, existing system capabilities, requests of the state water contractors and SWP contract provisions for allocating Table A, Article 21, and other SWP deliveries to each contractor" (MWD 2003). MWD estimated that in 2025, it will have 794,700 af available in multiple dry years, 418,000 af in a single dry year, 1,523,300 af in an average year and 1,741,000 af in a wet year (MWD 2003; MWD 2005).

Following the Blueprint Report, SWP supplies have been challenged through environmental litigation concerning the Delta. In addition, MWD has acknowledged that conveyance of water through the Delta can present challenges for SWP supplies due to water quality and environmental issues that can affect pumping operations. Risks to this supply also include potential levee failure. Actions being taken by DWR and MWD to avoid or mitigate these risks are described below.

Specific threats to the SWP include litigation concerning the Delta. In 2007, two courts ruled that California's major water delivery systems – the SWP and the Central Valley Project (CVP) – were violating state and federal environmental laws regarding a threatened fish species, the Delta smelt. First, Alameda County Superior Court Judge Roesch concluded that the SWP had failed to obtain a permit required under the California Endangered Species Act that would provide protections for Delta smelt, salmon and steelhead from the effects of water pumping for activities at the Harvey O. Banks Delta Pumping Plant in Tracy, California. Accordingly, Judge Roesch ordered the SWP pumps to be turned off unless appropriate permits were obtained within 60 days. DWR appealed that decision, automatically staying the decision pending the outcome of the appeal. (Watershed Enforcers v. California Department of Water Resources 2007). The stay has been extended through July 2009.

As a practical response to the pending litigation in state and federal courts, DWR shut down the Harvey O. Banks Delta Pumping Plant from May 31 to June 10, 2007, to protect the Delta smelt. DWR resumed pumping on June 10, 2007, and pumping has remained at normal operating levels.

In May 2007, U.S. District Court Judge Oliver Wanger ruled that a federal Endangered Species Act take permit that had been issued to protect Delta smelt at both the SWP pumps and the federal Jones Pumping Plant was not legally sufficient. At issue was a 2005 biological opinion (BO) that was issued by the USFWS pursuant to the Endangered Species Act, and concluded that current project operations and certain planned future actions would not jeopardize the continued existence of the Delta smelt or

adversely modify its critical habitat based on certain actions being taken by the CVP and SWP. The court found that the BO was legally inadequate because it did not provide a reasonable degree of certainty that mitigation measures will take place, use the best available science, address climate change, or address the impacts of joint project operations on the continued survival of the Delta smelt (Natural Resources Defense Council v. Kempthorne 2007).

By the time this decision was released, the SWP and CVP water agencies were aware that the incidental take permit was not preventing take of Delta smelt and had requested a new permit. The consultation process with USFWS is expected to result in a new BO and take permit in late 2008. On August 31, 2007, Judge Wanger issued an interim oral decision that allowed the SWP and CVP to continue operating under the prior take permit as long as they complied with a USFWS-proposed 5-point action matrix, as modified slightly, plus certain increased monitoring plans requested by the plaintiffs and other actions that do not have a water cost.

At the remedy proceeding before Judge Wanger, the Chief of the SWP Operations Planning Branch testified that in an average year, when combined deliveries of the CVP and SWP would be 5.9 million af, reductions in deliveries due to compliance with the USFWS matrix will range from 820,000 to 2.17 million af, which represent 14 and 37 percent of baseline deliveries, respectively. In a dry year, when combined deliveries would be 3.2 million af, reductions will range from 183,000 to 814,000 af, which represent reductions from baseline deliveries of 6 and 25 percent, respectively (DWR 2007). The modifications to the USFWS matrix by Judge Wanger will increase the delivery reductions by an amount that was not modeled by DWR, but it is expected that the actual impacts of Judge Wanger's order may be slightly greater than those figures.

Judge Wanger's order will impact diversions from December 25, 2007 until the new USFWS BO is issued in late 2008. However, it should be expected that the USFWS will include similar restrictions in the final BO to those that were in its action matrix adopted by Judge Wanger. Thus, the SWP and CVP will likely see long-term reductions in deliveries based on this litigation. Among other results, the decision likely will increase the political pressure for construction of the Peripheral Canal to avoid use of the south Delta pumping plants. In response to this decision and other water supply and quality issues, MWD has reported that "[i]n the short and long term, continued investment in regional and local resources will help ensure and diversify reliable water supplies to meet Southern California's future needs" (MWD 2007a). MWD has embarked on many proactive programs to deal with potential future delivery restrictions, should they occur.

For example, MWD is one of the parties that are drafting the Bay-Delta Conservation Plan to provide state and federal Endangered Species Act coverage for the SWP operations. The Bay-Delta Conservation Plan allows water contractors, who must comply with the federal and state Endangered Species Acts, to work cooperatively to attain incidental take coverage via a habitat conservation plan and natural community conservation plan. Development of this plan is now underway under the aegis of the California Resources Agency, and a draft report is due in 2008, with the appropriate permits and completion of an environmental impact statement/impact report expected in late 2009.

MWD is also focusing on voluntary Central Valley storage and transfer programs to bank MWD's SWP water supplies. In its 2006 Integrated Water Resources Plan Implementation Report, MWD reported that "492,000 af of dry-year yield has been developed in Central Valley storage and transfer programs," and "[p]otential partners and programs have been identified to meet Integrated Resources Plan targets." This flexibility will assist MWD in addressing shortages due to drought or court-imposed cutbacks to protect Delta smelt. Further, MWD has employed conjunctive use programs which utilize groundwater basins to store water during wet seasons, which provides a buffer supply that MWD can extract during dry periods. In 2006, MWD developed groundwater storage capable of providing 135,000 af of dry year supply. MWD continues to seek additional opportunities in Southern California to expand groundwater conjunctive use storage programs (MWD 2006).

In December of 2008, USFWS issued a revised BO (2008). The BO is effective immediately and sets guidelines for pumping operations for the SWP and CVP to ensure the continued existence of delta smelt and its habitat. At the time, the effect of the BO was seen as likely to result in the reduction of water deliveries from the CVP and SWP.

In the face of these new environmental restrictions and California entering the third year of drought, in October 2008, DWR issued an initial 15 percent allocation to MWD of SWP supplies in 2009 (DWR 2009a). In addition, MWD expects continued reduced deliveries from the Colorado River as that watershed continues to recover from record drought (MWD 2009). In February 2009, the Governor proclaimed a state of emergency and ordered a range of actions to manage the drought crisis (Office of Governor 2009).

However, after recent precipitation events in late winter 2009 that increased snowpack to nearly 90 percent of normal, in March 2009, DWR revised its allocations upward to 20 percent (DWR 2009b). At the same time, DWR's most recent snow survey of the winter season indicates snowpack water content statewide is 81 percent of normal, and as a result in April 2009 DWR increased the 2009 SWP delivery allocation to 30 percent. "DWR's new approval considered several factors, including existing storage in SWP conservation reservoirs, SWP operational constraints, including the conditions of the recent BO for Delta smelt, and 2009 contractor demands (DWR 2009c)." While this is an improvement from DWR's March allocation of 20 percent, drought conditions continue and DWR strongly urges continued conservation (DWR 2009d).

Delta Levees. The state is actively studying the risk of levee failure and potential impacts to SWP supplies and developing a plan to protect the Delta. There are several concurrent processes for resolving these challenges. In the spring of 2006, at the recommendation of CALFED, an interagency effort that includes 23 state and federal agencies that have management or regulatory responsibility for the Delta, DWR began a 2-year Delta Risk Management Study to analyze risks to the levee system. The Stage I analysis includes a discussion of the region's assets, existing problems with the system, the degree of risk that exists and the potential consequences of multiple levee failures. Stage II addresses levee risk reductions. The Delta Risk Management Study report is part of the Delta Vision Report, which was finalized for submission to the State Legislature and Governor in January 2008 (DWR 2008a).

Following completion of the Delta Vision Report, the panel established by Governor Schwarzenegger will begin studying long-term strategic solutions for the conflicts in the Delta. That process, which started taking place during 2008, is a strategic planning stage that assesses alterative implementing measures and management practices to implement the Delta Vision recommendations. The final recommendations will include modifications to existing land uses and services in the Delta, and will assess governance, funding mechanisms, water resource uses and ecosystem management practices. The Delta Vision Committee will publish a public review draft of its Delta Strategic Plan by October 31, 2008, and submit the final plan to the Governor and Legislature by December 31, 2008 (Delta Vision Committee 2008).

The Delta Vision Committee completed its Implementation Report in December of 2008, and recommended to the Governor, based upon its review of the Strategic Plan document, action on a list of near-term actions necessary to achieve Delta sustainability, including priority "fundamental actions" (Delta Vision Committee 2008). The next steps in the process include drafting of the Bay Delta Conservation Plan EIS/EIR and implementation, all of which are expected to be complete by the end of 2010 (Delta Vision Committee 2008).

Additional Actions to Mitigate Supply Risks. In addition to the actions described in the previous sections that seek to avoid or mitigate risks facing the Colorado River or SWP individually, MWD also has several programs that address its overall supply reliability. Several of those programs are described below.

Water Surplus and Drought Management Plan (WSDM). In 1999, MWD incorporated the water shortage contingency analysis that is required as part of any urban water management plan into a separate, more detailed plan, called the WSDM (MWD 1999). That plan provides policy guidance to manage MWD's supplies and achieve the goals laid out in the agency's Integrated Resources Plan. The WSDM also "identifies the expected sequence of resource management actions that [MWD] will execute during surpluses and shortages to minimize the probability of severe shortages and eliminate the possibility of extreme shortages and shortages allocations." MWD's 10-year WSDM categorizes its ability to deliver water to its customers by distinguishing between surpluses, shortages, severe shortages and extreme shortages (MWD 2005). The WSDM's integration of management actions taken during times of surplus and shortages reflects MWD's belief that these actions are interrelated.

For example, MWD's regional storage facilities, such as Lake Skinner, Lake Mathews and Diamond Valley Lake, along with storage capacity available to MWD in Castaic Lake and Lake Perris, provide MWD with flexibility in managing its supplies. MWD's storage supplies and existing management practices allow MWD to mitigate shortages without having to impact retail municipal and industrial demands, except in severe or extreme shortages (MWD 1999). MWD's 2005 UWMP shows its expected ability to meet demands in single dry years by water supply source. For example, in 2010 MWD expects to have 831,000 af in potential reserve and replenishment supplies, primarily through in-basin storage. In 2030, MWD estimates that it will have 716,000 af in potential reserve and replenishment supplies. Anytime MWD withdraws from storage to meet demands, it is considered to be in a shortage stage. MWD has spent decades building up its storage reserves and groundwater management programs in order

to prepare for a variety of shortage conditions. "Each [shortage] stage is associated with specific resource management actions designed to: (1) avoid an Extreme Shortage to the maximum extent possible; and (2) minimize adverse impacts to retail customers if an Extreme Shortage occurs." MWD notes that the "overriding goal of the WSDM Plan is to never reach Shortage Stage 7, an Extreme Shortage" (MWD 2005).

In an actual shortage, MWD will take one or more of the following actions: (1) draw on storage out of reservoirs; (2) draw on out-of-region storage in the Semitropic and Arvin-Edison groundwater banks; (3) reduce or suspend long-term seasonal and groundwater replenishment deliveries; (4) draw on groundwater storage programs; (5) draw on SWP terminal reservoir storage; (6) reduce Interruptible Agricultural Water Program deliveries; (7) call on water transfer options contracts; (8) purchase additional water; and (9) reduce imported supplies to its members agencies by an allocation method. MWD clarifies that this list is not in any particular order, "although it is clear that the last action [taken] will be the curtailment of firm deliveries to the member agencies" (MWD 1999). If MWD were obligated to curtail firm deliveries, it would enforce these shortage allocations using rate surcharges. For example, if deliveries exceed 102 percent of a customer's allotment, the customer will be assessed a surcharge (MWD 2005). MWD's actions in 2007 are instructive in demonstrating how the WSDM Plan is implemented in practice.

Prior to the start of calendar year 2007, MWD estimated that water demands would exceed annual supplies (not including stored water) by approximately 300,000 af (MWD 2007b). In response, MWD took the following actions: (1) called for water stored in its Central Valley storage programs; (2) initiated replenishment cuts and notified participating agencies with in-basin groundwater storage programs; (3) embarked on a public outreach and media conservation campaign; and (4) announced reductions in Interruptible Agricultural Water Program agricultural supplies (MWD 2007b).

Regarding reductions in agricultural water deliveries, before MWD imposes any restrictions on the PWP's Tier 1 water, it will reduce deliveries of discounted agricultural supplies. In 1994, MWD established the Interruptible Agricultural Water Program to deliver surplus water for irrigation purposes at a reduced rate that is more affordable for certain sectors of the agricultural industry (MWD Administrative Code Section 4900 et seq.). In exchange for the discounted rate, the MWD General Manager has the authority to reduce Interruptible Agricultural Water Program deliveries up to 30 percent before it imposes mandatory allocations to municipal and industrial retail customers under its WSDM (MWD Administrative Code Section 4905).

Due to dry conditions and the pending Delta smelt litigation in 2007 that may affect MWD's supplies, MWD will implement the water shortage actions which it outlined in its WSDM, which include a 30 percent reduction in PWP deliveries. On October 9, 2007, MWD's Board of Directors announced that it will reduce PWP deliveries over a 12-month calendar year beginning in January 2008 (MWD 2007c). At this time, MWD has stated that it will not reduce water purchased by its member agencies at the full service rate (MWD 2007c). PWP's supplies are currently secure as it purchases non-discounted non-interruptible supplies from MWD.

MWD implemented a strategic approach for 2008 regarding its WSDM Plan. Besides exercising interruptions to the Interruptible Agricultural Water Program, MWD's major strategies are as follows (MWD 2007b):

- Continue conservation campaign;
- Maximize recovery of water from Central Valley storage and banking programs;
- Purchase additional supplies to augment existing supplies; and
- Develop and implement a shortage allocation plan.

MWD is presently developing a long-term Drought Allocation Plan that may include reductions of full service deliveries (MWD 2007b). MWD has used several of these types of initiatives in the past, for example during the droughts of 1977-78 and 1989-92, which allowed the agency to meet the needs of its member agencies. Past experience demonstrates that MWD has always provided its members agencies with sufficient supplies in the face of variable weather conditions, new environmental and water quality regulations, and evolving political and legal challenges (MWD 2005).

Integrated Resources Plan. MWD first adopted its IRP in 1996. The most updated IRP, which was adopted in 2004, discussed local water supply initiatives – e.g., local groundwater conjunctive use programs – and established a buffer supply to mitigate against the risks associated with implementation of local and imported water supply programs (MWD 2004). The 2004 IRP noted that future water supply reliability depends not only upon actions by MWD to secure reliable imported supplies, but also further development of local projects by local agencies.

On October 10, 2006, MWD released its 2006 Integrated Water Resources Plan Implementation Report (2006 Implementation Report) to report on progress toward implementing the targets from the 2004 IRP Update. The 2006 Implementation Report included a summary of each of MWD's water resource development categories: (1) conservation; (2) local resources; (3) Colorado River Aqueduct; (4) SWP supplies; (5) Central Valley storage and transfer programs; (6) in-region groundwater conjunctive use storage; and (7) in-region surface water storage. This recent report concluded that "while changes occur in all resource areas, Metropolitan is able to maintain supply reliability through its diversified water resources portfolio (MWD 2006)."

MWD supported this conclusion by providing detailed updates for each of its resource categories, restating dry-year IRP targets and examining current considerations, changed conditions, implementation strategies and identified programs, implementation challenges and cost information. A brief summary of each of MWD's water resource development categories (other than the Colorado River and SWP supplies, which were discussed in detail in previous sections of this Water Supply Agreement) is provided below (MWD 2006):

- *Conservation*: In 2006, MWD invested $10.6 million in conservation programs and initiatives, including executing a 10-year residential master conservation funding agreement with member

agencies, encouraging the use of high-efficiency toilets, strengthening outdoor conservation programs and introducing new Industrial Process Improvement programs. In 2005-2006, MWD programs conserved approximately 762,000 af, which was an increase of approximately 30,000 AF over the previous fiscal year. MWD's 2010 target for conservation savings is 865,000 af.

- *Local Resources—Recycling, Groundwater Recovery and Seawater Desalination*: MWD has invested $213 million with its member agencies to develop local resource programs. MWD contributed approximately $24.5 million toward the production of 127,000 af of local resource production supplies in 2006, which is an increase of 16,000 af from 2005. MWD's 2010 target for regional water recycling and groundwater recovery is 410,000 af. Further, three desalination project agreements have been signed.

- *Central Valley Storage and Transfer Programs*: MWD has developed significant water storage and transfer program partnerships in the Central Valley and has witnessed increased cooperation with DWR and federal agencies to facilitate water transfers. MWD continues to pursue transfers with Central Valley parties and has worked to improve existing storage programs with existing SWP storage partners. For 2008, MWD is currently seeking to acquire up to 250,000 af by temporary transfer from the Central Valley.

- In-Region Groundwater Storage: The 2006 Implementation Report identified that components of MWD's in-region groundwater storage program may not meet its 2010 dry-yield target of 275,000 af. As of October 2006, groundwater storage had been developed to provide about 135,000 af. In response, MWD conducted a groundwater basin assessment to explore other groundwater storage opportunities. MWD's recent Groundwater Basin Assessment Study provided new information to focus on meeting this goal. MWD will continue to develop new strategies for groundwater storage.

MWD's 2007 Implementation Report demonstrates that the agency has continued to react aggressively to address challenges facing water resources (MWD 2007d). By amending existing strategies, MWD has made significant progress in most resource areas toward meeting the IRP targets. For example, in fiscal year 2006-2007, MWD saved approximately 812,000 af through conservation efforts and is expected to meet its 2010 target. Local resource production is expected to exceed the 2010 target of 426,000 af based on current production and expansion of existing programs. Existing supplies in Central Valley storage programs are also expected to exceed the 2010 target of 300,000 af (MWD 2007d). While in-region groundwater storage programs are currently falling short of MWD's 2010 IRP target, MWD is actively working to find new ways to meet this goal, and the success of other programs, such as Central Valley storage, can avoid any negative impacts from failure to meet this single goal. For example, MWD has already exceeded its 2010 IRP target for dry-year surface water storage. While SWP supplies are not projected to meet the 2010 or longer-term targets, MWD is actively seeking to resolve the risks associated with that supply (MWD 2007d).

MWD is in the process of updating the 2004 IRP for release in 2009. The updated IRP will address existing and new challenges, such as the Delta smelt litigation and climate change (MWD 2008a). As can be seen by these ongoing studies, MWD is continually updating its plans to meet ever-changing challenges to its water supplies.

Five-Year Supply Plan. A Five-Year Supply Plan is being prepared to identify the specific resource and conservation actions that would be implemented over the next five years to manage water deliveries under continued drought conditions and court ordered restrictions (MWD 2008b). Since April 2008, staff has been working with the member agencies through a series of meetings and workshops to develop and implement the Five-Year Supply Plan. The Plan was initiated in response to a number of extraordinary events, including regulatory actions that reduced water supplies from the SWP to protect Delta smelt, as well as a record-dry hydrology that will result in about 1.1 million af of withdrawals from Metropolitan storage from January 2007 through December 2008 (MWD 2008b).

The Five-Year Supply Plan includes a number of various programs to enhance supplies through conservation, Colorado River transactions, near term Delta actions, SWP transactions, groundwater recovery, and local resource enhancement programs. There are numerous specific projects and transactions that have been identified as potential resource options for the next 5 years. These programs are anticipated to result in an additional 519,000 af/yr to 1,255,500 af/yr in 2009, with additional increases beyond 2009 as some improvements would require more than one year to bring online (MWD 2008b).

Summary of MWD Water Supply Reliability. MWD has engaged in significant water supply projection and planning efforts. As noted above, those efforts have included the water demands of the City's service area as projected in the 2005 Urban Water Management Plan in their projections. In its 2003 Blueprint Report and 2005 Regional Urban Water Management Plan, MWD has consistently found that its existing water supplies, when managed according to its water resource plans, such as the WSDM and IRP, are and will be 100 percent reliable for at least a 20-year planning period. Since publication of those reports, MWD has continued to implement its water supply programs, as reported in its 2006 and 2007 Implementation Reports, the latter of which was published on October 9, 2007. Although water supply conditions are always subject to uncertainties, MWD has maintained its supply reliability in the face of such uncertainties in the past, and is actively managing its supplies to ensure the same 100 percent reliability for the future.

Climate Change

Uncertainty remains with respect to the overall impact of global climate change on future water supplies in California. Studies have found that "considerable uncertainty about precise impacts of climate change on California hydrology and water resources will remain until we have more precise and consistent information about how precipitation patterns, timing, and intensity will change" (Kiparsky and Gleick 2003).

The DWR report on climate change and effects on the SWP, the CVP, and the Delta concludes that "[c]climate change will likely have a significant effect on California's future water resources . . . [and] future water demand." It also reports that "much uncertainty about future water demand [remains], especially [for] those aspects of future demand that will be directly affected by climate change and warming. While climate change is expected to continue through at least the end of this century, the magnitude and, in some cases, the nature of future changes is uncertain" (DWR 2006).

This uncertainty serves to complicate the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood (DWR 2006). DWR adds that "[i]t is unlikely that this level of uncertainty will diminish significantly in the foreseeable future." Still, changes in water supply are expected to occur, and many regional studies have shown that large changes in the reliability of water yields from reservoirs could result from only small changes in inflows (DWR 2006; Cayan, Dettings, and Knowles 2006a and 2006b).

WASTEWATER

Pasadena's local sewer system, owned by the City and operated by the Department of Public Works Engineering Division, consists of two pumping stations and approximately 311 miles of pipeline. The City's location in the foothills of the San Gabriel Mountains allows the sewer system to operate primarily via gravity flow. Sewage generated in Pasadena is carried through County of Los Angeles Department of Public Works (LACDPW) local sewers to trunk sewers operated by the Los Angeles County Sanitation Districts (LACSD), located south of the City boundary. It is estimated that the existing site currently generates 27,780 gpd, or 31.1 af/yr, of wastewater (City of Pasadena 2007).[1] Wastewater generated on-site connects to the City's sewer system through connections located on Del Mar Boulevard and San Gabriel Boulevard and to the County's trunk line on El Nido Avenue. The City's wastewater system in the project vicinity is not presently deficient (City of Pasadena Department of Public Works 2008).

Wastewater, or sewage, generated by the City of Pasadena is carried by the local collector system to trunk sewers maintained by the LACSD. Pasadena is part of County Sanitation District No. 16, which includes the cities of South Pasadena, San Marino, and Alhambra. Sewage from Pasadena goes to one of four facilities operated by the LACSD: the Joint Water Pollution Control plant, the Los Coyotes Water Reclamation plant, the Whittier Narrows Water Reclamation plant, or the San Jose Creek Water Reclamation Plant (City of Pasadena 2004). According to LACSD, wastewater generated by the proposed project site would be conveyed to the Lamanda Park Trunk Line located in El Nido Avenue at Del Mar Boulevard. The 22-inch diameter trunk sewer has a design capacity of 16.4 million gpd and conveys a peak flow of 1.7 million gpd when last measured in 2006. The wastewater generated by the proposed project would be treated at the San Jose Creek Water Reclamation Plant located adjacent to the City of Industry. This plant has a design capacity of 100 million gpd and currently processes an average flow of 86.3 million gpd. Wastewater flows that exceed the capacity of San Jose Creek Water

[1] Based on generation factors of 85 gpd per convalescent hospital bed, 200 gpd per 1,000 square feet of office, 100 gpd per single apartment dwelling unit, and 250 gpd per three-bedroom dwelling unit.

Reclamation Plant and all biosolids are diverted to and treated at the Joint Water Pollution Control Plant located in Carson (Frazen 2007).

3.7.2 ENVIRONMENTAL IMPACTS

THRESHOLDS OF SIGNIFICANCE

As part of the Initial Study (see Appendix A), it was determined that the proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities for parks, schools, and other public facilities; and that the proposed project would be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs and comply with federal, state, and local statutes and regulations related to solid waste. Accordingly, these issues are not further analyzed in the EIR. Refer to Chapter 3.5 for the analysis of impacts to storm water drainage.

The CEQA Guidelines establish that a proposed project would have a significant effect on public services and utilities if it would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities in order to maintain acceptable service ratios, response times, or other performance objectives;
- Result in substantial adverse physical impacts associated with the provision of new or physically altered police protection facilities in order to maintain acceptable service ratios, response times, or other performance objectives;
- Result in a determination by the water provider, that serves or may serve the project, that it has sufficient water supplies to serve the project from existing entitlements and resources;
- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board; or
- Result in a determination by the wastewater treatment provider, which serves or may serve the project, that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

IMPACT ANALYSIS

PS-1: *The proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities in order to maintain acceptable service ratios, response times, or other performance objectives.*

As part of the site functions, Las Encinas would continue to staff the site with personnel trained in CPR, first aid, Automatic External Defibrillators, and contract with a private ambulance service. All psychiatric functions would be accommodated on-site in the new psychiatric hospital. Only in-patient psychiatric functions would take place at the proposed new psychiatric hospital. Emergency medical services or other medical hospital functions are not proposed. The proposed project would result in new on-site population in the independent living units and assisted living units and 309,012 square feet of net new site structures. Therefore, it would result in the potential for a corresponding increase in response calls to the project site from the City of Pasadena Fire Department. In an emergency situation, Fire Station No. 34 would be the first on call. The Pasadena Fire Department averages a response time of 5 minutes after receiving a call. While an increase in the need for fire protection services at the site is anticipated, the City of Pasadena Fire Department predicts it would be able to absorb this additional demand from its existing fire station, and the construction of new or expanded facilities would not be required (Pasadena Fire Department 2008).

The applicant would be required to install the following fire safety devices in all new and renovated buildings: fire sprinkler systems, fire detection and early warning systems, and smoke evacuation systems. The applicant would be required to provide on-site fire hydrants and design all access/walkways to be accessible to Fire Department equipment with a minimum of 20 feet clearance and no bollards or curbs that would inhibit access. The applicant would be required to provide a water flow report to ensure that there is sufficient water pressure within the project site for fire protection. Compliance with the fire code standards would be verified during the plan check process and Fire Department review prior to the issuance of building permits. Construction of new or expansion of existing fire facilities would not be required as a result of the proposed project. Therefore, the proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered facilities. The impact would be less than significant.

PS-2: *The proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered police protection facilities in order to maintain acceptable service ratios, response times, or other performance objectives.*

As part of the site functions, Las Encinas would continue to use a private security team to ensure the safety and privacy of patients and residents. The guard station would be maintained and visitors would continue to be required to check-in at the main desk. The site would continue to be secured with walls and gates to secure driveways when not in use. As under current conditions, outpatients can enter the site without checking at the guard station or main desk. In addition, the City of Pasadena Police Department provides police protection services for the project site and the vicinity, and existing staffing levels are adequate to serve the existing uses. However, each additional development that provides net new square footage or residential units creates a greater demand on existing resources. The proposed project would add 232 net new residential units, made up of assisted living and independent living units. The approximately 113,714 square feet of existing nonresidential square footage would be replaced with approximately 191,102 square feet of nonresidential square footage, a net increase of 77,388 square feet

of nonresidential square footage. The increased development of the site would be expected to increase the frequency of calls for police protection services.

According to the Pasadena Police Department, the increased development at the project site could be served by existing personnel. The Pasadena Police Department anticipates that the project would not result in the need for additional law enforcement service and administrative staffing (Pasadena Police Department 2008). In addition, the proposed project would comply with the police protection requirements of the Police Department, including defensible design, lighting, and landscaping. Further, the project site would continue to maintain its private security service. The construction of new or expansion of existing police facilities would not be required as a result of the proposed project. Therefore, the proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered facilities. The impact would be less than significant.

PS-3: *There would not be sufficient water supplies to serve the project from existing entitlements and resources. No new or expanded entitlements would be needed.*

At buildout of the 2007 Master Development Plan, there would be a permanent increase in water demand in the City of Pasadena as a result of the proposed project. The proposed project would be expected to increase water consumption at the project site to approximately 60,697 gpd, or 68.0 af/yr, a net increase in water consumption of approximately 25,972 gpd, or 29.1 af/yr (City of Pasadena 2007).[2] PWP is planning to supply approximately 41,291 af/yr in 2015 through a combination of 24,741 af/yr of imported water and 16,935 af/yr groundwater and water extracted through spreading credits (PWP 2005). The water supply is intended to meet future projected water demand of 41,291 af/yr needed throughout the City, an increase of 6,199 af/yr compared to existing water demand/supply. Future water demand is based on population projections at buildout of the City's General Plan. Because the proposed project is within the development capacity of the General Plan, PWP has accounted for this increased development. As such, the increase in demand for potable water associated with the proposed project is within the anticipated future water supply. However, due to the uncertain nature of future water supplies and the current drought being experienced in California, the proposed project would be required to reduce water consumption in order to reduce the increased demand on PWP supplies. New buildings constructed on site must comply with the City's green building ordinance. This ordinance requires new structures to comply with LEED's 20% reduction in water usage. In addition, implementation of mitigation measures PS-A and PS-B would be required to reduce the amount of water required for operation of the proposed project. With implementation of mitigation, the impact of the proposed project to future water supply would be less than significant.

PS-4: *The proposed project would not exceed the wastewater treatment requirements of the applicable Regional Water Quality Control Board or result in a determination by the wastewater treatment provider, which serves or may serve the project, that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.*

[2] Based on 80 percent of water used becoming wastewater.

At buildout of the 2007 Master Development Plan, there would be a permanent increase in wastewater generated by the proposed project site. The proposed project would be expected to increase wastewater to approximately 50,581 gpd, or 56.7 af/yr, a net increase of 22,801 gpd, or 25.4 af/yr (City of Pasadena 2007).[3]

Sewage generated in Pasadena is carried through LACDPW local sewers to trunk sewers operated by LACSD. Wastewater generated on-site would connect to the City's sewer system through existing connections located on Del Mar Boulevard and San Gabriel Boulevard. The City's wastewater system in the project vicinity is not presently deficient and the addition of wastewater generated by the proposed project would not exceed the capacity of the City's wastewater system in the project vicinity. No direct upgrades are anticipated to accommodate increased wastewater generated by the proposed project (City of Pasadena Department of Public Works 2008). However, because the proposed project would increase the amount of wastewater discharged into the City's sewer network, the proposed project would be required to pay the City's Sewer Facility Charge. The Sewer Facility Charge is calculated by developing a value of the City's sewer system, adding in new cash improvements necessary to meet future demand, and unitizing this value by dividing the ultimate system demands. The system value is calculated based on a system life of 100 years. The resulting value of the City's sewer system is estimated to be $6.19 per gpd for new or increased sewer discharge. In accordance with the City's Sewer Facility Charge, the applicant would be required to pay a one-time fee of approximately $232,477 to fund improvements to the City's sewer infrastructure. Compliance with existing City regulations would ensure that the City has adequate capacity to serve the project's projected demand in addition to existing commitments. The impact to the City's sewer system would be less than significant.

Sewage generated by the proposed project would be treated at the existing regional facilities serving the City of Pasadena and operated by LACSD. Specifically, project sewage would be treated at the San Jose Creek Water Reclamation Plant located adjacent to the City of Industry. This plant has a design capacity of 100 million gpd and currently processes an average flow of 86.3 million gpd (Frazen 2007). The proposed project would contribute an additional 0.02 million gpd to this facility. As such, the additional wastewater generated by the proposed project is within the capacity of LACSD. In addition, LACSD is empowered by the California Health and Safety Code to charge a fee for connecting to the LACSD sewage system or to increase the wastewater output from parcels already connected to the system. This connection fee is used by LACSD to construct incremental expansions of the LACSD system to accommodate the proposed project (Frazen 2007). The impact to the regional wastewater treatment system would be less than significant.

3.7.3 MITIGATION MEASURES

PS-A Water usage of buildings to be retained shall be reduced by 20 percent. In order to demonstrate this reduction, the applicant shall use Worksheet WS-1 and WS-2, in Chapter 11

[3] Based on generation factors of 85 gpd per convalescent hospital bed, 200 gpd per 1,000 square feet of office, 100 gpd per single apartment dwelling unit, and 250 gpd per 3-bedroom dwelling unit.

of the California Green Building Code entitled "Baseline Water Use" and "20% Reduction Water Use Calculation Table." Plumbing permits required in order to complete this reduction for the Oaks (Buildings 9 and 10) shall be finalized prior to a certificate of occupancy being released on Buildings 36. Plumbing permits required in order to complete this reduction for all other buildings (such as Buildings 1, 8, 19, 6 and 37) shall be finalized prior to permits being finalized for the proposed rehabilitation of Building 1 (Phase 5).

PS-B The applicant shall submit a detailed landscape plan that proposes the planting of "California Friendly" plants and the use of high efficiency irrigation technology. Landscape and irrigation plans shall be submitted for review with each phase of the proposed project and shall be reviewed by the Design Commission in combination with building plans. Areas of the acute psychiatric hospital (Building 35) that are not tied into the phasing plan (such as the areas to the north and south of Building 1) shall be completed with the improvements in Phase 3. The project's landscape architect shall work with a historical consultant to develop a landscape plan for the historically eligible landscape features.

3.7.4 Significance after Mitigation

The impacts to police, fire, and wastewater would be less than significant. With implementation of mitigation measures PS-A and PS-B, the proposed project would reduce its additional demand for potable water to within the future projected supply capacity of PWP. The impact would be reduced to a less than significant level.