

ENVIRONMENTAL SETTING

Existing Conditions

Water Supply

Glendale Water and Power provides water service for domestic, irrigation, and fire protection purposes to the City of Glendale. The City has four sources of water to meet existing and projected water demands. These sources consist of water imported from the Metropolitan Water District, groundwater from the San Fernando Groundwater Basin, groundwater from the Verdugo Groundwater Basin, and recycled water.

During the 2002-2003 fiscal year, the City of Glendale used 33,090 acre-feet of water. Of this total, approximately 78 percent (21,920 acre-feet) was provided by the Metropolitan Water District, 12 percent (8,509 acre-feet) was pumped from the San Fernando Basin, 6 percent (1,280 acre-feet) was pumped from the Verdugo Basin and the remaining 4 percent (1,381 acre-feet) was supplied by the City's water reclamation system.¹ Each of the City's four sources of water is described below.

Metropolitan Water District

The Metropolitan Water District provides supplemental water from Northern California via the State Water Project and the Colorado River via the Colorado River Aqueduct to the coastal area of Southern California. Within its service area, the Metropolitan has 26 member agencies that provide water to 16 million people. All member agencies use and develop as much of their local water supplies as possible, and purchase the remainder from the District to meet local demands.

Glendale is presently using about 22,000 acre-feet per year of Metropolitan Water District supplies. Metropolitan supplies are delivered to Glendale through three service connections with capacities of 48, 12, and 10 cubic feet per second, respectively. The capacity of these connections is more than adequate to meet current and future water demands.²

¹ Glendale Water & Power, *Water Supply Evaluation for the Glendale Town Center*, 2003, pg. 26.

² *Ibid.*, pg. 10.

Groundwater Supplies

Glendale receives its groundwater supply from the San Fernando and Verdugo Groundwater Basins. The City's right to San Fernando and Verdugo Basin groundwater supplies is defined by the decision of the California Supreme Court in *The City of Los Angeles vs. The City of San Fernando, et al.* (1979). The Court found that under "Pueblo" Water Rights, the City of Los Angeles owns all San Fernando Basin surface and ground water supplies, and that Glendale is entitled to an annual "Return Flow Credit" from the San Fernando Basin of 20 percent. The 20 percent figure is based on the assumption that 20 percent of the water used by the City percolates into the groundwater table and is equal to about 5,500 acre-feet per year, depending on the overall municipal use each year.³ This return flow credit is the City's primary water right in the San Fernando Basin. Glendale also has the right to extract additional water subject to payment to the City of Los Angeles at a cost generally equivalent to the cost of Metropolitan Water District supplies.

Due to groundwater contamination in the San Fernando Basin, the City has not been able to fully use its return flow credit since 1979. As a result, the City has accumulated 71,761 acre-feet of unused return flow credits in the basin.⁴ Glendale may, in any one year, extract from the San Fernando Basin an amount not to exceed 10 percent of its last annual credit for import return. This provides important year-to-year flexibility for the City in meeting water demands.

Water in the San Fernando Basin is currently available for municipal use and the City of Glendale currently utilizes approximately 8,500 acre-feet from the basin annually. The Glendale Water Treatment Plant and eight extraction wells pump, treat, and deliver water from the basin to Glendale via its Grandview Pumping Station. The plant, with a capacity of 5,000 gallons per minute, can reliably provide 7,200 acre-feet per year for municipal use in Glendale, 400 acre-feet per year for irrigation purposes at Forest Lawn Memorial Park, and 25 acre-feet for use at the Grayson Power Plant. Thus, from a planning perspective, Glendale has a dependable and firm water supply of 7,625 acre-feet from the San Fernando Basin.⁵ In order to access this supply, Glendale must utilize its return flow credit of 5,500 acre-feet per year as well as 2,125 acre-feet per year of its accumulated credit.

As for the Verdugo Basin, the judgment described above gives the City of Glendale the right to extract 3,856 acre-feet from this basin annually. Production of water has been highly variable in the past due to rainfall conditions and past contamination from septic tanks in the area. The Verdugo Park Water

³ Ibid., pg. 4.

⁴ Ibid.

⁵ Ibid., pg. 7.

Treatment Plant and five extraction wells pump, treat, and deliver water to the City for municipal use. The City currently utilizes approximately 1,300 acre-feet per year. The plant, with a capacity of 1,150 gallons per minute, can reliably produce about 2,300 acre-feet per year.⁶ Additional extraction capacity will need to be developed in order for the City to utilize its full rights to the basin.

Reclaimed Water System

The Los Angeles/Glendale Water Reclamation Plant provides reclaimed water in the city of Glendale for non-potable uses such as irrigation. The Reclamation Plant has a capacity of 20 million gallons per day and has been delivering recycled water to the City since the late 1970s. Based on a contract between the Cities of Los Angeles and Glendale, the City is entitled to 50 percent of any effluent produced at the plant or 10 million acre-feet per year. The City presently utilizes approximately 1,400 acre-feet per year of reclaimed water from the Reclamation Plant for non-potable uses such as irrigation. Treated wastewater not utilized by either Glendale or Los Angeles is discharged into the Los Angeles River.⁷

Glendale recently completed construction of a “backbone” recycled water distribution system consisting of pipelines, pumping plants, and storage tanks to deliver recycled water to users. The objective of this expansion is to eventually increase the use of recycled water to meet 10 percent of Glendale’s total water demands.

Water Distribution System

Potable Water System

The main water distribution system in the City of Glendale includes 28 pumping plants, 30 water tanks and reservoirs with a total capacity of 185 million gallons, 13 chlorination facilities, 7 water pressure zones, 378 miles of water mains, and 13 groundwater wells. Both the Glendale Water Treatment Plant and the Verdugo Park Water Treatment Plant provide treatment for up to 9 million gallons of water per day.⁸ Citywide water demand for fiscal year 2002-2003 was approximately 33,000 acre-feet with about 88 percent of water supplies used by residential customers, 10 percent by commercial users, 1 percent by industrial users, and 1 percent by other users.⁹

⁶ Ibid., pg. 8.

⁷ Ibid., pg. 13.

⁸ Glendale Water & Power, *Glendale Water and Power 2001-2002 Annual Report*, 2002, pg. 20.

⁹ Ibid., pg. 21.

There are 7 water pressure zones in the City's water system. The proposed project site is located within the Elevation 724 service zone, which is served by the Western and Diederich Reservoirs. The Western Reservoir has a 15 million gallon capacity and is located at 1705 Bel Aire Drive, approximately 4.5 miles from the project site. The Diederich Reservoir has a 54 million gallon capacity and is located at 1430 Campbell Street, approximately 2 miles from the project site.¹⁰

Water service to the project site is presently provided by existing water lines on and adjacent to the site. **Figure 4.12.1-1** shows the location of existing water lines serving the existing development on the site. Currently, a 16-inch line on Central Avenue, an 8-inch line on Colorado Street, and a 16-inch line on Brand Boulevard supply potable water to the site. In addition, a 16-inch main and a 10-inch main on Orange Street and a 6-inch main on Harvard Street also provide service.¹¹

Reclaimed Water System

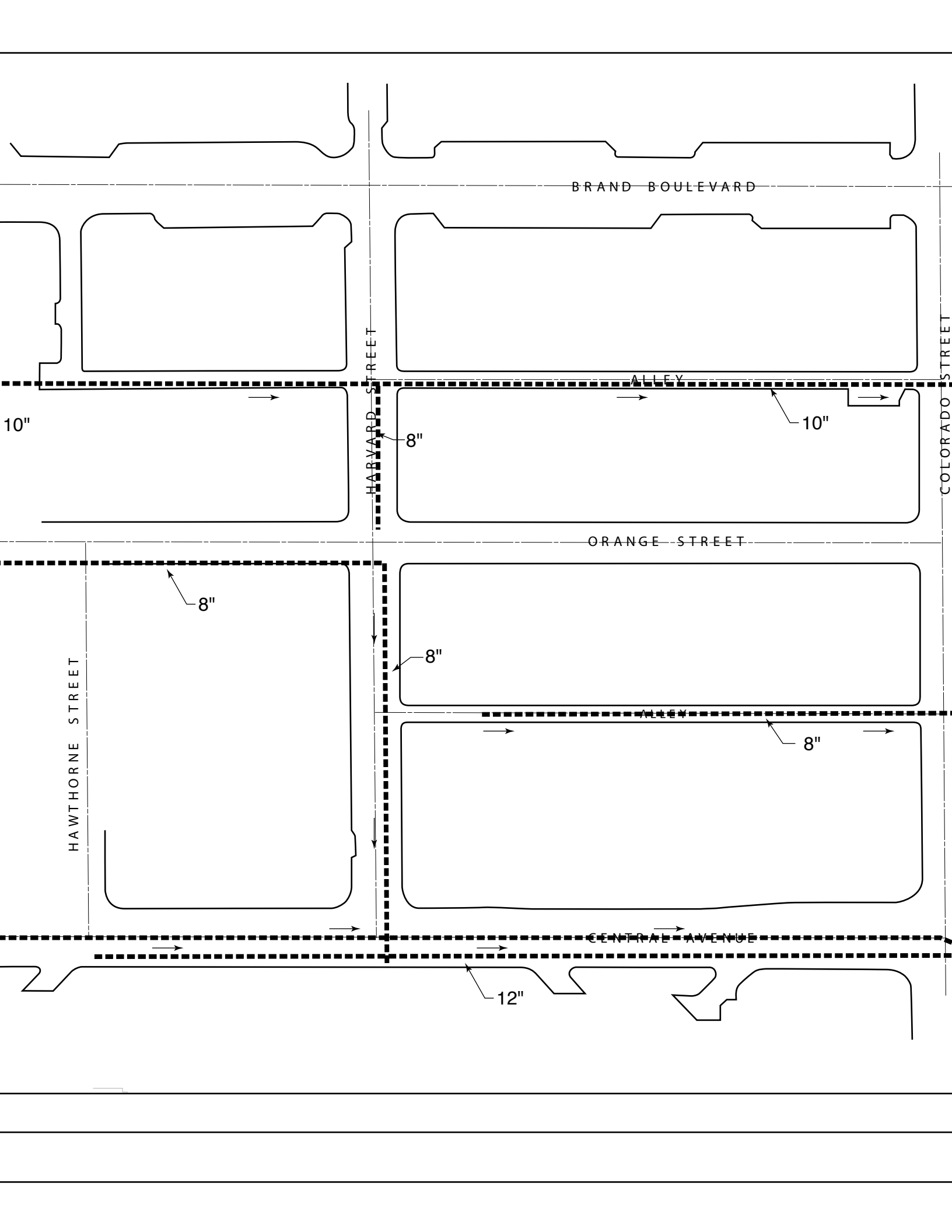
The City of Glendale has an established reclaimed water system consisting of 5 reservoirs with a total capacity of 1.1 million gallons, 6 pumping plants, and 20 miles of recycled water lines. Reclaimed water derived from the Los Angeles/Glendale Water Reclamation Plant serves a number of public and private users that consume approximately 1.4 million gallons of reclaimed water per day.¹² As illustrated in **Figure 4.12.1-1**, reclaimed water lines currently do not extend into the project site. An existing 30-inch recycled water line is located at the southeast corner of the site as it runs north along Brand Boulevard and east in Colorado Street.¹³

¹⁰ Written correspondence from Donald Froelich, Water Services Administrator, Glendale Water and Power, to Mark Berry, Project Manager, Glendale Redevelopment Agency, July 2003.

¹¹ Ibid.

¹² Glendale Water & Power, *Glendale Water and Power 2001-2002 Annual Report*, 2002, pg. 20.

¹³ Written correspondence from Donald Froelich, Water Services Administrator, Glendale Water and Power, to Mark Berry, Project Manager, Glendale Redevelopment Agency, July 2003.



Existing Water Use

Table 4.12.1-1 provides an estimate of water use by existing land uses on the project site. Total water demand generated by existing uses on the site is estimated at approximately 4.6 million gallons per year or 14.1 acre-feet per year.

**Table 4.12.1-1
Existing Water Demand**

| Use | Area (sq. ft.) | Factor | Unit | Daily Demand (gallon/day) | Annual Demand (gallon/year) | Annual Demand (acre-feet/year) |
|--------------|----------------|------------------|------------------|---------------------------|-----------------------------|--------------------------------|
| Office | 22,240 | 0.2 ¹ | gal./day/sq. ft. | 4,448 | 1,623,520 | |
| Retail | 80,960 | 0.1 | gal./day/sq. ft. | 8,096 | 2,955,040 | |
| Vacant | 98,293 | -- | -- | -- | -- | |
| Total | | | | 12,544 | 4,578,560 | 14.1 |

Source: Impact Sciences, Inc., 2003.

¹ Commercial use factor.

REGULATORY FRAMEWORK

A number of regulations and ordinances regarding water supply and water use apply to the project site and the proposed development. These regulations and ordinances are discussed on the following pages.

Glendale General Plan Policies

There are goals and policies set forth by the City of Glendale in the General Plan Community Facilities Element that relate to water services. A description of applicable goals and policies is provided in **Section 4.1, Land Use and Planning**. As discussed in **Section 4.1**, the project does not conflict with all applicable General Plan goals and policies relating to water services.

Glendale Water Conservation Policies

The City of Glendale has adopted a mandatory water conservation plan. Section 13.36 of the Glendale Municipal Code describes programs the City is implementing to reduce demand for water. For example, this section of the Code contains a “no water waste” policy which outlines prohibited uses of water such as hosing of sidewalks, walkways, driveways or parking areas. This section also prohibits landscape

irrigation between 10:00 AM and 5:00 PM, failure to repair leaks of any sort, and water fountains without a recirculating water system.¹⁴

All commercial and industrial customers of the public service department using 25,000 billing units per year (one unit equals 748 gallons) or more must submit a quarterly water conservation plan to the City Manager's Office and the Director of Public Service.

The City's existing reclaimed water system is only available in limited sections of the City. Where recycled water use is feasible for a development, the City requires its use in lieu of potable water. Service connections and extensions to areas outside of this system are subject to approval by the Director of Public Works. Recycled water facilities are required in new developments when it is determined that recycled water would be supplied in the future, regardless of whether or not the area is being served by the City's reclaimed water system during new construction.

Senate Bill 221 and Senate Bill 610

These pieces of legislation amend existing California law regarding land use planning and water supply availability by requiring more information and assurance of supply than required in the City Urban Water Management Plans. As of January 1, 2002, the law requires water retail providers like Glendale Water and Power to demonstrate that sufficient and reliable supplies are available to serve large-scale developments prior to completion of the environmental review process and approval of such large-scale projects. The Water Supply Evaluation prepared for the Glendale Town Center referenced throughout this section fulfills this requirement.

Urban Water Management Plan

All urban water suppliers, except for the smaller systems, are required by state law to prepare an Urban Water Management Plan by December 31 for years ending in "0" and "5". This planning document provides information on how suppliers will meet current and projected water demands for the next 20 years. The suppliers are also required to discuss their demand management programs (water conservation) including "Best Management Practices," such as recycled water use practices. The most recent plan was updated in 2000 and relevant information was incorporated into the water supply evaluation.

¹⁴ City of Glendale Municipal Code, Section 13.36.060

State Regulations

The Glendale Town Center is required to comply with Title 20 and Title 24 and of the California Code of Regulations. Title 24 contains California Building Standards, including the California Plumbing Code (Part 5) that promotes water conservation. Title 20 of the code addresses Public Utilities and Energy and includes appliance efficiency standards that promote water conservation.

ENVIRONMENTAL IMPACTS

Methodology

Existing and future water demand calculations were based on water use factors by land use contained in the Water Supply Evaluation, prepared by Glendale Water and Power. To demonstrate how water demand resulting from implementation of the Glendale Town Center project would be accommodated, the evaluation was based on the conceptual development program described in **Section 3.0, Project Description**.

Thresholds of Significance

The following thresholds for determining the significance of impacts related to water resources are contained in the environmental checklist form contained in Appendix G of the most recent update of the California Environmental Quality Act *Guidelines*. Impacts related to water resources analyzed include whether the proposed project would:

- Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.
- Require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Impact Analysis

Each applicable threshold of significance is listed below, followed by analysis of the significance of any potential impacts and identification and discussion of any design features of the project that would lessen or avoid potential impacts, as well as other measures identified which would lessen or avoid potential impacts. Finally, the significance of potential impacts after the implementation of all identified mitigation measures is presented.

Threshold: Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.

Impact Analysis:

Short-Term Construction Water Demand – The demolition, grading, and construction activities associated with implementation of the Glendale Town Center project would require water for soil watering to control dust and clean up. The additional water demand generated by project construction activities would be offset by the reduction in water consumption from demolition of existing uses, which are currently estimated to use approximately 12,500 gallons per day of water. Therefore, construction activities would not have a significant impact on the existing water system or available water supplies.

Long-Term Water Demand – New development on the project site would result in an increase in demand for operational uses, including landscape irrigation, maintenance and other activities on the site. As indicated in **Table 4.12.1-2**, water demand at buildout would be approximately 7.7 million gallons per year or 236 acre-feet per year. In addition, it is estimated that irrigation of landscaping included in the project would consume approximately 10 acre-feet per year.¹⁵ Combined, this represents a total of 246 acre-feet per year, an increase of about 232 acre-feet per year over the approximately 14 acre-feet per year used by existing uses on the project site.

**Table 4.12.1-2
Glendale Town Center Water Demand**

| Use | Area (sq. ft.) | Persons | Factor | Unit | Daily Demand (gal./day) | Annual Demand (gal./yr.) | Annual Demand (acre-ft./yr.) |
|------------------|----------------|---------|--------|------------------|-------------------------|--------------------------|------------------------------|
| Department Store | 170,000 | 850 | 0.05 | gal./sq. ft./day | 8,500 | 3,102,500 | |
| Retail Shops | 168,500 | 843 | 0.1 | gal./sq. ft./day | 16,850 | 6,150,250 | |
| Cinema | 70,000 | 3,500 | 5 | gal./seat/day | 17,500 | 6,387,500 | |
| Restaurants | 66,500 | 2,217 | 50 | gal./seat/day | 110,850 | 40,460,250 | |
| Condominium | 96,162 | 280 | 60 | gal./person/day | 16,800 | 6,132,000 | |
| Apartment | 260,750 | 667 | 60 | gal./person/day | 40,020 | 14,607,300 | |
| Total | | | | | 210,520 | 76,839,800 | 236 |

Source: City of Glendale, *Water Supply Evaluation for the Glendale Town Center*, 2003.

Water demand for the City of Glendale was projected using an economic model developed by the Metropolitan Water District. The projection is based on population, housing, and employment projections contained in the City's General Plan. Data obtained from Glendale's Planning Department and the Southern California Association of Governments was programmed into the model along with a weather variable. As shown in **Table 4.12.1-3**, overall "normal year" demand for Glendale would be

¹⁵ Glendale Water & Power, *Water Supply Evaluation for the Glendale Town Center*, 2003, pg. 3.

approximately 32,554 acre-feet year for year 2005 and about 38,300 acre-feet per year for year 2025. **Table 4.12.1-3** also shows projected water demands under wet, single-dry, and multiple-dry year period conditions.

Table 4.12.1-3
Projected Water Demands For Various Hydrologic Conditions Without Town Center Demands within Glendale's Projected Water Demands (acre-feet per year)

| Year | Normal | Wet | Single-Dry Year | Single Year Within Multiple-Dry Year Period |
|------|--------|--------|-----------------|---|
| 2005 | 32,554 | 30,601 | 34,507 | 34,507 |
| 2010 | 33,824 | 31,795 | 35,853 | 35,853 |
| 2015 | 35,091 | 32,986 | 37,196 | 37,196 |
| 2020 | 36,821 | 34,612 | 39,030 | 39,030 |
| 2025 | 38,295 | 36,000 | 40,593 | 40,593 |

Source: City of Glendale, Water Supply Evaluation for the Glendale Town Center, 2003.

The year 2025 demand reflects a modest increase over current use, as Glendale is essentially built-out. These projections incorporate the 1991 and 1992 California Plumbing Code changes requiring ultra low flush toilets beginning in 1992, along with a continuation of current drought-oriented public education and information programs.

Water use for the proposed project is incorporated into Glendale's current water demand projections, as shown in **Table 4.12.1-3**. For purposes of this assessment, the demands of the proposed Glendale Town Center project were assumed to not have been included in these figures. In order to yield a more conservative analysis, the project's water demands were added to the City's total demand projections as shown in **Table 4.12.1-4**.

Table 4.12.1-4
Projected Water Demands For Various Hydrologic Conditions With Town Center Demands In Addition to Glendale's Projected Water Demands (acre-feet per year)

| Year | Normal | Wet | Single-Dry Year | Single Year Within Multiple-Dry Year Period |
|------|--------|--------|-----------------|---|
| 2005 | 32,800 | 30,833 | 34,769 | 34,769 |
| 2010 | 34,070 | 32,026 | 36,114 | 36,114 |
| 2015 | 35,337 | 33,217 | 37,456 | 37,456 |
| 2020 | 37,067 | 34,843 | 39,290 | 39,290 |
| 2025 | 38,541 | 36,234 | 40,858 | 40,858 |

Source: City of Glendale, Water Supply Evaluation for the Glendale Town Center, 2003.

In accordance with the requirements for a Water Supply Assessment defined in Senate Bill 610, **Table 4.12.1-5**, identifies water sources available to meet Citywide demand plus project demand over a 25-year period for normal, wet, dry and multi-dry year conditions.

Table 4.12.1-5
Glendale's Water Demands and Sources of Supply to Meet Demands during Normal, Wet, and Dry Years (acre-feet), and Single-Year within Multiple-Year Dry Periods

| Source | Normal year | | | | | |
|--|---------------|---------------|---------------|---------------|---------------|---------------|
| | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 |
| San Fernando | 515 | 7,625 | 7,625 | 7,625 | 7,625 | 7,625 |
| Verdugo Wells | 2,451 | 2,300 | 2,300 | 2,300 | 2,300 | 2,300 |
| MWD | 28,731 | 20,875 | 22,125 | 23,372 | 25,082 | 26,556 |
| Recycled Water | 1,738 | 2,000 | 2,020 | 2,040 | 2,060 | 2,060 |
| Total Supply (equals Total Projected Demand) | 33,435 | 32,800 | 34,070 | 35,337 | 37,067 | 38,541 |

| Source | Dry Year & Single Year within Multiple-Year Dry Period | | | | | |
|--|--|---------------|---------------|---------------|---------------|---------------|
| | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 |
| San Fernando | 515 | 7,625 | 7,625 | 7,625 | 7,625 | 7,625 |
| Verdugo Wells | 2,451 | 2,300 | 2,300 | 2,300 | 2,300 | 2,300 |
| MWD | 28,731 | 22,844 | 24,169 | 25,491 | 27,305 | 28,873 |
| Recycled Water | 1,738 | 2,000 | 2,020 | 2,040 | 2,060 | 2,060 |
| Total Supply (equals Total Projected Demand) | 33,435 | 34,769 | 36,114 | 37,456 | 39,290 | 40,858 |

| Source | Wet Year | | | | | |
|--|---------------|---------------|---------------|---------------|---------------|---------------|
| | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 |
| San Fernando | 515 | 7,625 | 7,625 | 7,625 | 7,625 | 7,625 |
| Verdugo Wells | 2,451 | 2,300 | 2,300 | 2,300 | 2,300 | 2,300 |
| MWD | 28,731 | 18,908 | 20,081 | 21,252 | 22,858 | 24,249 |
| Recycled Water | 1,738 | 2,000 | 2,020 | 2,040 | 34,843 | 2,060 |
| Total Supply (equals Total Projected Demand) | 33,435 | 30,833 | 32,026 | 33,217 | 34,843 | 36,234 |

Source: City of Glendale, Water Supply Evaluation for the Glendale Town Center, 2003.

As shown in **Table 4.12.1-5**, the City of Glendale has identified sufficient water supplies to meet City demands under every hydrological condition. Due to an increasing reliance on local resources, the amount of water the City would purchase from Metropolitan Water District to meet demand is projected to remain stable or slightly increase between now and the year 2025. However, Metropolitan water would continue to be the main source of supply for the City.

Based on available water supplies, the Metropolitan Water District has indicated that it can meet 100 percent of its member agencies' needs over the next 20 years under average and normal conditions.

Existing Metropolitan water supplies may not have the capability, however, to meet 100 percent of the projected needs of its member agencies between year 2020 and year 2025 under both worst case single-dry year drought conditions or multiple-dry year drought conditions. Under a worst-case scenario for a multiple dry year, the District may experience a potential minor shortage of 300,000 acre-feet, or about 10 percent of member agency demands. If these deficiencies were equally applied to all Metropolitan member agencies, the Glendale shortage in a single- or multiple-dry year could be a maximum of about 3,000 acre-feet a year.¹⁶

To prepare for this possible deficiency the City of Glendale would need to increase its production of local water supplies. The most likely source of local water supply is the San Fernando Basin. With a return flow credit of 5,500 acre-feet per year and an additional 71,761 acre-feet of storage credits, the City has sufficient supplies to meet this possible shortfall. Under the worst-case scenario, the City would need to pump an additional 3,000 acre-feet from the basin during infrequent dry periods. However, over a 20-year period, Glendale would most likely have to utilize this source 3 or 4 times during drought periods, for a total additional use of 12,000 acre-feet per year.¹⁷

The likelihood of worst-case drought conditions occurring is small. The probability of a multi-year dry period and a single-year dry period occurring is 2.6 percent and 1.3 percent, respectively.¹⁸ In addition, the Metropolitan Water District has sufficient existing supplies from the Colorado River Aqueduct deliveries, California Aqueduct Deliveries, and in-basin storage deliveries, as well as funding for development of additional supplies to meet future demand. Recently, Metropolitan officials signed the Colorado River Water Delivery Agreement with 3 other Southern California water districts and the United States Department of Interior, which guarantees the Metropolitan District rights to excess Colorado River water over the next decade.¹⁹

It should also be noted that hypothetical Metropolitan Water District shortages would not occur until 2020. As this point in time draws near, if it became apparent that such a worst-case scenario was becoming more likely, the City would have adequate time to fund and construct the additional facilities needed to compensate for possible Metropolitan water reductions, as described above. In addition, in cases of true water emergencies, Glendale has historically experienced success in reducing water demands through the implementation of water conservation measures.

¹⁶ Ibid., pg.28.

¹⁷ Ibid., pg. 30.

¹⁸ Ibid., pg. 20.

¹⁹ U.S. Department of the Interior Press Release, October 16, 2003.

The construction of additional pumping facilities that would be necessary to extract additional groundwater would cost the City \$5 million and could be funded through a “Water Adjustment Cost” identified in Section 13.08 of the Glendale Municipal Code.²⁰ As described in the Code, the Water Adjustment Cost is a component of the water rate that is adjustable at an administrative level to pay costs of pumping, treating, and purchasing groundwater.²¹ This funding mechanism was recently used to fund the construction of other water treatment systems.

Overall, the status of Glendale’s water supply is highly reliable. The San Fernando and Verdugo Basins, to which Glendale possesses water rights, are managed under court order by a court-appointed watermaster in order to preserve water levels in these basins, thereby, assuring reliability of those in possession of pumping rights. Glendale is one of the original member agencies of the Metropolitan Water District, and has reliably received water from it for over 60 years, and would continue to receive water from it into the future. Additionally, Glendale has a sizable source of reclaimed water available to it, and has recently completed a reclaimed water distribution system. The usage of reclaimed water is important, as it frees potable water in Glendale’s system to be used to satisfy other water users. These water sources enable the City to meet all projected demands, including those of the Glendale Town Center, for all hydrologic scenarios analyzed in the Water Supply Evaluation. Consequently, this impact is less than significant.

Project Design Features: The following project design feature will reduce the impact of the proposed Glendale Town Center on water supplies available to the City of Glendale.

PDF 4.12.1-1(a) The proposed project will establish a connection with the City of Glendale water reclamation system to provide reclaimed water for project irrigation and landscaping needs.

Level of Significance Before Mitigation: Less than significant.

Mitigation Measures: None are required.

Level of Significance After Mitigation: Less than significant.

Threshold: **Would the project require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.**

²⁰ City of Glendale, Water Supply Evaluation for the Glendale Town Center, 2003, pg. 31.

²¹ City of Glendale Municipal Code, Section 13.08.150.

Impact Analysis: As the amount of groundwater production relied upon in the supply-demand analysis to meet future demands may be obtained by using current water treatment facilities, no additional groundwater extraction facilities are required to meet water demands associated with the Glendale Town Center. However, in the remote chance that the Metropolitan Water District cannot supply enough water to meet Citywide demand, construction of new treatment facilities would be required to extract and treat additional groundwater supplies. To determine the environmental effects associated with these new facilities, a separate environmental review would be completed to assess the impacts of each treatment plant and related facilities. Based on the analysis of the groundwater basins in the City's Urban Water Management Plan and the Water Supply Evaluation prepared for this project, it is anticipated that these facilities could be constructed and operated without significant impact.

Construction of the proposed northern parking structure would require the abandonment or relocation of the existing 6-inch potable water line along Harvard Street between Central Avenue and Orange Street. In addition, since the proposed project would utilize reclaimed water for irrigation of street landscaping and public open and park space elements, the project would require a connection to the City's water reclamation system. Replacement lines will be built and operational before relocation of the existing water line and connection to the reclaimed water system to ensure service to existing uses is not interrupted. The short-term impacts associated with these improvements are addressed in **Sections 4.6, Traffic, Circulation and Parking, 4.7, Air Quality, and 4.8, Noise**. Therefore, the impacts of the relocation of the existing water line and the connection of the project to the reclaimed water system is less than significant.

Project Design Features: The following are project design features that would mitigate the impact of the proposed project on existing water facilities:

PDF 4.12.1-2(a) The applicant will construct the new lines or provide for temporary lines prior to the abandonment of the existing lines to allow for the switching over of water service to the new lines or temporary lines.

PDF 4.12.1-2(b) The applicant will construct a temporary line prior to connecting to the reclaimed water system to allow for the switching of water service to the temporary line.

Level of Significance Before Mitigation: Less than significant.

Mitigation Measures: None are required.

Level of Significance After Mitigation: Less than significant.

Cumulative Impacts

The following cumulative analysis evaluates the impact of the proposed project and Citywide Projects on water services. Each applicable threshold is listed below in bold, and followed by an analysis of the cumulative impact of the project and Citywide Projects and their potential significance.

Threshold: **Are sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.**

Impact Analysis: As indicated in **Table 4.12.1-6**, development of Citywide Projects will result in a demand of approximately 150.5 million gallons of water per year or about 462 acre-feet per year. Combined, the increase generated by the proposed Glendale Town Center and the amount demanded by Citywide Projects will generate an overall future water demand of approximately 694 acre-feet per year.

**Table 4.12.1-6
Water Demand of Citywide Projects**

| Use | Area/Unit | Persons | Factor | Unit | Daily Demand (gal./day) | Annual Demand (gal./year) | Annual Demand (acre-feet/year) |
|--------------|-----------------|------------------|-------------------|------------------|-------------------------|---------------------------|--------------------------------|
| Hotel | 190,000 sq. ft. | 554 ¹ | 75 | gal/person/day | 41,550 | 15,165,750 | |
| Office | 989,455 sq. ft. | -- | 0.2 | gal/sq. ft./day | 197,891 | 72,230,215 | |
| Retail | 281,524 sq. ft. | -- | 0.1 | gal/sq. ft./day | 28,152 | 10,275,480 | |
| Industrial | 15,060 sq. ft. | -- | 0.09 | gal./sq. ft./day | 1,355 | 494,575 | |
| Hospital | 125,671 sq. ft. | | 0.07 ² | gal/sq. ft./day | 8,797 | 3,210,905 | |
| Residential | 801 units | 2,243 | 60 | gal./person/day | 134,580 | 49,121,700 | |
| Total | | | | | 412,325 | 150,498,625 | 462 |

Source: Impact Sciences, Inc., 2003.

¹ Based on 227 rooms, 2 persons per room.

² Institutional factor.

As discussed earlier, the City of Glendale has identified sufficient water supplies to meet additional water demand associated with the Glendale Town Center and general plan build out, which includes the development of Citywide Projects, through year 2025. Under normal year hydrologic conditions, projected water demand under proposed project and General Plan build-out conditions is expected to grow by 5,541 acre-feet per year from approximately 33,000 acre-feet per year in 2002-2003 to 38,541 acre-feet per year in 2025. The overall demand of 694 acre-feet associated with the project and Citywide Projects per year is included within this growth increment. Based on this information, the cumulative impact of the project and Citywide Projects will not be significant, as sufficient reliable supplies have been identified to meet projected demands.

However, during single-dry year or multiple-dry year conditions, the City may experience a shortfall in water supply. As explained above, there is a remote possibility that the Metropolitan Water District, Glendale's largest supplier, may not be able to deliver enough water to meet water demand in the City under project and General Plan build-out conditions starting in 2020. Under these conditions, the District may experience a potential shortage of 300,000 acre-feet, or about 10 percent of member agency demands. If these deficiencies were equally applied to all Metropolitan member agencies, the Glendale shortage during a single-dry year or multiple-dry year could be a maximum of about 3,000 acre-feet per year in the year 2025. Cumulative impacts within the Metropolitan District service area are considered significant for this reason.

However, the contribution of the Glendale to this impact is not cumulatively considerable. As explained above, the City has identified local supplies that could be accessed to make up for this deficiency. The most likely local source is from the San Fernando Ground Water Basin. The City has sufficient accumulated water credits in the San Fernando basin such that it could increase production from the basin in order to compensate for this deficiency. Therefore, in the event that the Metropolitan Water District cannot meet Glendale's water demand, the City has sufficient supplies to meet the demands associated with the Glendale Town Center and Citywide Projects. Based on this information, the cumulative impact of the proposed project and Citywide Projects on available water supplies is less than significant.

Project Design Features: None are required.

Level of Significance Before Mitigation: Less than significant.

Mitigation Measures: None are required.

Level of Significance After Mitigation: Less than significant.

Threshold: **Would the project require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.**

Impact Analysis: As the amount of groundwater production relied upon in the supply-demand analysis to meet future demands may be obtained by using current water extraction and treatment facilities, no additional facilities would be required to meet the combined water needs of the Glendale Town Center and build out of the general plan. However, in the remote chance that the Metropolitan Water District cannot supply enough water to meet Citywide demand, construction of new facilities will be required to extract and treat additional groundwater supplies. To determine the environmental effects associated with these new facilities, a separate environmental review would be completed to assess the impacts of

each treatment plant. Based on the analysis of the groundwater basins in the City's Urban Water Management Plan and the Water Supply Evaluation prepared for this project, it is anticipated that these facilities could be constructed and operated without significant impact.

The Glendale Town Center would require the relocation of existing water lines, upgrades to existing water lines and the installation of new lines. Citywide Projects will also require improvements to the City's water distribution system. These relocations and/or improvements could result in short-term service interruptions to services area users that could cause potentially significant impacts. However, the City will require that temporary water service lines be installed and operational prior to construction to avoid service interruptions on a project-by-project basis. Given this process, the impact of the proposed project and Citywide Projects on the City's water distribution system is less than significant.

Project Design Features: None are required.

Level of Significance Before Mitigation: Less than significant.

Mitigation Measures: None are required.

Level of Significance After Mitigation: Less than significant.