APPENDIX C2
Water Study

WATER STUDY

Prepared by Bill Bielefeld
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Environmental Setting

The project site is vacant. Baseline (existing) conditions are assumed by this analysis to be zero.

The Los Angeles Department of Water and Power (LADPW) has complete charge and control of its distribution system inside the City of Los Angeles under the provisions of the City Charter. The Department's Water Operating Division, under authority extended by Board of Water and Power commissioners, owns, operates and maintains all water facilities within the City.

In terms of the City's overall water supply condition, the water requirements for any project that is consistent with the City's General Plan has been taken into account in the planned growth of the Water System. Together with local groundwater sources, the City operates the Los Angeles Owens River Aqueduct and is a member of the Metropolitan Water District of Southern California (MWD). These three sources will supply the City's water needs for many years to come[1].

Statewide drought conditions in the mid-1970s and the late-1980s dramatically illustrate the need for water conservation in periods of water shortage. However, water should be conserved even in years of normal climate because electrical energy is required to deliver supplemental MWD water supplies to the City. Conserving water will minimize purchases from MWD and will save energy[2]. The Water Operating Division will assist all water users in their efforts to conserve water. In addition, the provisions contained in the City's Water Conservation Ordinance of April 1988 must be adhered to.

In recent years, conservation has become an important element of the water supply system. In order to reduce the impact of potential supply deficiencies, the Los Angeles City Council enacted ordinances mandating measures to reduce water consumption. Ordinance nos. 163532 and 164093, enacted in 1988, require new buildings to install all low-flush toilets and urinals (1.5 gallons per flush) in order to obtain building permits. In addition, Title 20 of the California Administrative Code Section 1604 establishes efficiency standards (i.e. maximum flow rates) for

[1] City of Los Angeles Department of Water and Power, "Impact of the Proposed Project on the Water System and Methods of Conserving Water." 1998 Department statement, June 1998.
[2] City of Los Angeles Department of Water and Power, op cit.

11444 West Olympic Blvd.
Suite 750
West Los Angeles, CA 90064-1549

310.954.3700
310.954.3777 Fax
www.psomas.com

all new showerheads, lavatory faucets, and sink faucets, and prohibits the sale of fixtures that do not comply with the regulations. Ordinance No. 170978 also contains provisions requiring xeriphytic or low-water consumption landscaping. These measures are considered baseline project permitting conditions. Other applicable State laws which would apply in both the City and County areas include:

- Health and Safety Code Section 17921.3 requires all new buildings, as of January 1, 1983, to install water conservation water closets, as defined by American National Standards Institute (ANSI) Standard A112.19.2, and urinals and associated flushometer valves that use less than an average 1.5 gallons per flush.

- Title 20, California Administrative Code Section 1604(f) establishes efficiency standards that give the maximum flow rate of all new showerheads, lavatory and sink faucets, as specified in ANSI A112.18.1M-1979.

- Title 20, California Administrative Code Section 1606(b) prohibits the sale of fixtures that do not comply with regulations.

- Title 24, California Administrative Code Section 205307(b) prohibits the installation of fixtures unless the manufacturer has certified compliance with the flow rate standard.

- Title 24, California Administrative Code Section 2-5352(i) and (j) address pipe insulation requirements which can reduce water used before hot water reaches fixtures.

- Health and Safety Code Section 4047 prohibits installation of residential water softening appliances unless accompanied by water conservation devices on fixtures using softened water.

- Government Code Section 7800 specifies that all public facilities constructed after January 1, 1985, must equip lavatories with self closing faucets that limit flow of hot water.

The LADWP distributes reclaimed water, when and where available, within the City. However, there is no reclaimed water available in the vicinity of the proposed tract development, and there is no plan for future distribution in the area. Reclaimed water is available near its sources – the Sepulveda Basin Sewage Treatment Plant and Hyperion Sewage Treatment Plant. These sources are too distant to be useful for this tract development.

Environmental Impact Analysis

Project-related water demand can be estimated by applying consumption factors to the proposed land uses. Residential use consumption factors are derived from and based on recommended methodology supplied by the City of Los Angeles Department of Public Works, Bureau of Engineering, Wastewater Program Management.

The proposed project would consume a total of 11,600 gallons of water per day (GPD), as tabulated in Table 1. Also tabulated in Table 1 is the expected daily construction water consumption use. Construction water use is estimated to be 250,000 GPD and is expected to last for 50 days[3]. This water will be used as a dust palliative and used to moisten the fill dirt to achieve the required compaction. Irrigation of common areas, fill slopes and cut slopes will require approximately 3,650 gallons per day per acre. It is anticipated that the project will consume a total of 18,250 GPD for landscape irrigation.

Table 1
Project-Related Water Demand

Land Use	Number of Units or Acres	Generation Factor (GPD)	Gallons Per Day (GPD)
Residential	29 u	396	11,484
Construction	-	250,000	250,000
Irrigation	5 a	3,650	18,250

As stated previously, any project water requirements that are consistent with the City's general plan will be met by the planned growth of the water system. This projects future daily water consumption will be approximately 29,734 GPD and is a small part of the nearly 450,000,000 GPD consumed by the general population of the City of Los Angeles.

The water distribution system within the City is divided into service zones. The various service zones are established to distribute water to as large an area as possible at pressures that range from 45 pounds per square inch (psi) to 80 psi. Pressures less than 45 psi require special agreements and hydropneumatic pumps-tank systems for each lot. Pressure regulators are required for each lot when pressures exceed 80 psi. The various service zones are supplied by gravity, reservoir, or hilltop tank and its supply pump.

[3] Tom Morgan, Goplen Excavating and Engineering Contractors, telephone conversation, April 28, 1998.

This tract development will be supplied by the 1636 service zone. The 1636 service zone consists of two pump stations, two storage tanks, connecting trunk mains and an assortment of distribution mains. Immediately adjacent to the south end of the proposed development area is one of the storage tanks. This tank, Mountaingate Tank, can be described as follows:

High Water	Elevation 1629
Outlet	Elevation 1601
Capacity	3.3 Million Gallons
Type	Welded Steel
Put in Service	September, 1983

Important operational features of the 1636 service zone can be summarized as follows:

Maximum Water Elevation – 1,700 feet
Minimum Water Elevation – 1,610 feet

The maximum water elevation is due to the pumps supplying water to the tanks and maximum water elevation dictates the use of pressure regulators on individual lots. The minimum water elevations allow for fire storage in the tank. Fire storage is normally the bottom one-third of all mountain storage tanks. The Mountaingate tank, therefore, provides 1.1 million gallons of water to be used only for fire fighting.

Water is supplied to and distributed from Mountaingate Tank by a 24-inch steel trunk main. This trunk main connects the pump stations and the second tank in the service zone providing a loop system. This 24-inch main will be relocated to the proposed Canyonback Road within the development. The LADWP has not, at this time, indicated an allowable down-time for this trunk main. LADWP's report, dated March 20, 1998, acknowledges the relocation and the requirement for a 20-foot easement[4]. Service for the lots adjacent to Canyonback Road will be off the relocated 24-inch main. The adjacent Mountaingate tract of homes and golf courses will continue to be served by the second 1636 service zone tank during the planned relocation and tract construction.

Water will be distributed through the existing water system to a point of connection at the south end of Stoney Hill Road. It is anticipated that an eight-inch steel main will be installed in Stoney Hill Road. This installation will create a long dead end main. While the City of Los Angeles Fire Department has not conditioned the Tentative Map at this time, it is certain that there is enough fire flow capacity to meet City requirements.

[4] City of Los Angeles, Department of Water and Power, Tract No. 52428, South of Mountaingate Drive and West of Sepulveda Boulevard.

The LADWP letter – dated March 20, 1998 - setting the conditions under which water service can be provided to this tract, states that all lots above elevation 1490 feet will require individually installed hydropneumatic pump-tank systems. Also, all lots above elevation 1506 feet will require oversized plumbing in accordance with the Los Angeles City Plumbing Code. The letter goes on to define the location of individual pressure regulators, fire hydrants and easements. When adequate drawings are prepared for the above-mentioned main relocations, main installations, fire hydrants and services, a financial agreement can be completed with the developer. Included in the financial agreement will be an acreage supply charge so the project can pay its share of the existing service zone facilities. When all financial arrangements are concluded, the final Tract Map will be released for recordation.

Cumulative Impacts

The Mountaingate tract was originally planned for the construction of approximately 476 units (homes). The proposed project is a small part of this total, and together would consume a daily cumulative total of approximately 238,946 gallons of water, as tabulated in Table 2.

Table 2
Cumulative Water Demand

Land Use	Number of Units or Acres or Square Feet	Generation Factor (GPD)	Gallons Per Day (GPD)
Proposed Residential Project	29 u	396	11,484
Proposed Project Irrigation	5 a	3,650	18,250
Existing Residential	447 u	396	177,012
Office	48,000 sf	150	7,200
Restaurant	26,544 sf	800	21,200
Retail	47,499 sf	80	3,800
TOTAL	**476 u**		**238,946**

The LADWP is equipped to provide water service to meet the demands of the cumulative planned community. This growth in consumption is less than significant since the demand has been incorporated into long-range plans for regional growth.

Mitigation Measures

1. The proposed project shall comply to the City-mandated water conservation program. Water used for landscaping purposes shall be reduced through implementation of the Landscape Ordinance No. 170978.

2. Water distribution system improvements shall be provided to the satisfaction of the DWP and the Advisory Agency in accordance with a City-approved and signed street improvement plan.

3. Installation of water softening or conditioning appliances shall be provided in accordance with City of Los Angeles Health and Safety Code Section 4047, which requires such appliances be accompanied by water conservation devices.

4. Water pressure greater than 80 psi shall be reduced to 80 psi or less by means of a pressure-reducing valve. This affects all lots below elevation 1,515 feet.

5. Plumbing on lots above elevation 1,506 feet must have oversized plumbing. Water service agreements will be required for all lots above 1,529 feet.

6. Lawn areas, including dichondra, shall be required to be separated from planting areas in the irrigation system for commonly-owned areas.

7. Mulch shall be utilized in commonly-owned areas wherever possible.

8. As part of the project's mitigation, a manual will be provided to new homeowners which would advise them as to the appropriate use of water resources in the area, and appropriate types of landscaping.

Adverse Impacts

The proposed project would create additional water service demand in the Mountaingate area. Following implementation of all recommended mitigation measures and standard code requirements, no significant adverse environmental impacts would result for the water supply.