

## Appendix G

### Water Supply Assessment

(The appendix to this report is available for review at the Department of City Planning.)



ANTONIO R. VILLARAIGOSA  
Mayor

Commission  
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*General Manager*  
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*Chief Operating Officer*

August 19, 2010

RECEIVED  
CITY OF LOS ANGELES

Mr. Vince Bertoni  
Acting Director of Planning  
City Planning Department  
Room 525, City Hall  
Mail Stop 395

SEP - 7 2010

CITY PLANNING DEPT  
EXECUTIVE OFFICE  
ROOM 525

Dear Mr. Bertoni:

Subject: Water Supply Assessment for the Jordan Downs Specific Plan

The Los Angeles Board of Water and Power Commissioners adopted the Water Supply Assessment for the Jordan Downs Specific Plan (Specific Plan) at its August 3, 2010 meeting. Enclosed is a copy of the adopted Resolution No. 011 044 and the Water Supply Assessment for the Specific Plan.

*As the Place*  
The proposed Specific Plan site is an approximately 118.5-acre property partially within the Southeast Los Angeles Community Plan. A portion of the Specific Plan site is located within the City of Los Angeles (City) and the remaining portion of the site is located within the jurisdictional boundaries of the County of Los Angeles (County). The proposed Specific Plan area is generally bounded by 97<sup>th</sup> Street on the north, Alameda Street on the east, 103<sup>rd</sup> Street on the south, and Grape Street on the west.

The implementation of the Specific Plan proposes zoning and development guidelines for the redevelopment of the Jordan Downs Housing Complex. The Specific Plan is based on the Housing Authority of the City of Los Angeles (HACLA) Board-approved Master Plan that includes the demolition of 700 existing public housing units and supportive buildings and Recreation Center, and its subsequent replacement with a vibrant urban village. The Specific Plan also includes David Starr Jordan High School Campus, the community garden located at the corner of Grape Street and 103<sup>rd</sup> Street, and the Non-HACLA owned parcels along Alameda Street. However, these parcels are not subject to the demolition and construction phases of the Master Plan. The Specific Plan only addresses the potential development through zoning to fit with the vision of the HACLA's Master Plan, and maintain consistency with the Southeast Los Angeles Community Plan.

Approximately 32.42 acres will be devoted to different right-of-ways, and the remaining site is anticipated to comprise of approximately 1,800 residential dwelling units, commercial office of approximately 87,500 square feet, retail space of approximately 255,000 square feet, warehouse space of approximately 108,750 square feet, industrial manufacturing of approximately 36,250 square feet, full-service restaurant of approximately 740 seats, fast-food restaurant of approximately 50 seats, community center of approximately 300 occupants, gym space of approximately 17,000 square feet, elementary school of approximately 650 students,

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high school expansion of approximately 750 students, swimming pool of approximately 4,000 square feet, surface parking of approximately 240,000 square feet, structured parking of approximately 770,000 square feet, and additional landscaping of approximately 497,867 square feet.

**This Water Supply Assessment will no longer be valid if modifications to the Specific Plan require greater water demand than stated. A revised Water Supply Assessment will then be required, which will need to be requested by the City Planning Department.**

The City Planning Department has acknowledged that all new projects in the City may be subject to additional requirements as a condition of water service, including a potential future fee to fund expansion of the recycled water program. The City Planning Department has also acknowledged that the issuance of a Water Supply Assessment does not exempt any projects within the Specific Plan from this potential future fee.

In an effort to maximize water-use efficiency within the City, the Los Angeles Department of Water and Power (LADWP) has discussed with the City Planning Department to encourage additional water conservation measures for the Specific Plan. The water conservation measures listed below that will be implemented on the Specific Plan are in addition to those required by law. A written commitment of the Specific Plan's water conservation plans submitted by the Planning Department is included in Appendix B of the Water Supply Assessment.

| <b>Water Conservation Measures for the Jordan Downs Specific Plan</b>  |
|--|
| <ul style="list-style-type: none"><li>• High-efficiency clothes washers (Residential) - water savings factor of 5.0 or less</li><li>• Waterless urinals (Non-residential)</li><li>• Low-flow showerheads - no more than one showerhead per stall (Residential)</li><li>• Rotating sprinkler nozzles for landscape irrigation - 0.5 gallons per minute</li><li>• Weather-based irrigation controller</li><li>• Drought-tolerant plants – 90 percent of total proposed additional landscaping</li><li>• High-efficiency clothes washers (Commercial) - water savings factor of 7.5 or less</li><li>• Domestic water heating system located close proximity to point(s) of use</li><li>• Individual metering and billing for water use</li><li>• Tankless and on-demand water heaters</li><li>• Cooling tower conductivity controllers or cooling tower PH conductivity controller</li><li>• Water-saving pool filter</li><li>• Leak detection system for swimming pool</li><li>• Drip/subsurface irrigation (micro-irrigation)</li><li>• Proper hydro-zoning (groups plants with similar water requirements together)</li><li>• Zoned irrigation</li><li>• Landscaping contouring to minimize precipitation runoff</li><li>• Comprehensive grey water system program</li></ul> |

Mr. Vince Bertoni  
Page 3  
August 19, 2010

**LADWP requests that the Planning Department make implementation of these water conservation commitments a part of the approval process for the Specific Plan.**

If you have any questions, please contact me at (213) 367-1338, or have a member of your staff contact Mr. Thomas M. Erb, Director of Water Resources, at (213) 367-0873.

Sincerely,

  
✓ Austin Beutner  
General Manager

NK:lsf  
Enclosures  
c/enc: Mr. Thomas M. Erb

WHEREAS, on April 14, 2010, the Los Angeles City Planning Department (Planning Department) requested LADWP to conduct a Water Supply Assessment for the Jordan Downs Specific Plan (Specific Plan) pursuant to California Water Code Sections 10910-10915; and

WHEREAS, the proposed Specific Plan will develop an approximately 118.5-acre site area of general commercial, institutional, and residential land use for commercial, institutional, industrial, retail, and residential land uses; and

WHEREAS, the proposed Specific Plan is partially located within the Southeast Los Angeles Community Plan areas within the boundaries of the City of Los Angeles (City), with the remainder of the Specific Plan land currently located in the unincorporated County of Los Angeles (County); and

WHEREAS, As part of the Specific Plan, the Specific Plan Applicant will also be requesting annexation of current County jurisdictional boundaries to the City through a Petition for Reorganization application with the Local Agency Formation Commission (LAFCO); and

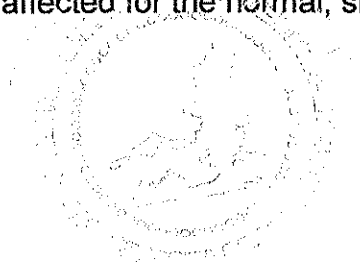
WHEREAS, LADWP has prepared a Water Supply Assessment for the Specific Plan in compliance with California Water Code Sections 10910-10915; and

WHEREAS, LADWP estimates the annual water demand savings from the proposed Specific Plan to be 4.8 acre-feet per year from existing total demand, based on review of information submitted by the Planning Department; and

WHEREAS, the Planning Department has agreed to implement additional conservation measures, as described in the Water Supply Assessment, that are in addition to those required by law; and

WHEREAS, LADWP's water supply system now serves the immediate existing specific Plan area, and would serve the proposed Specific Plan; and

WHEREAS, LADWP finds that the existing City and County total water demands of the Specific Plan area are currently within the City's 2005 Urban Water Management Plan (UWMP) and can be met for normal, single-dry, and multiple-dry years through the year 2030. Since the anticipated total water demand from the proposed Specific Plan is less than the existing total water demand, LADWP finds that the Jordan Downs Specific Plan's Water Supply Assessment can be approved based on the fact that this Specific Plan's water needs are less than existing total demand, therefore, the UWMP's projected water demands are unaffected for the normal, single-dry, and multiple-dry year hydrologic conditions; and



WHEREAS, issuance of the Water Supply Assessment does not exempt this Specific Plan from any future fees established by LADWP for recycled water infrastructure improvements; and

WHEREAS, the Planning Department acknowledges that all new projects in the City may be subject to additional requirements as a condition of water service, including a potential future fee to fund expansion of the recycled water program. The Planning Department acknowledges that the issuance of a Water Supply Assessment does not exempt the Specific Plan from this potential future fee; and

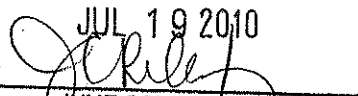
WHEREAS, the Board of Water and Power Commissioners (Board) has adopted Shortage Year Rates for water service effective June 1, 2009, which rates are expected to remain in effect until the water supply currently available to the City is found sufficient for normal demands. The Board finds that the City's current water shortage is due to a combination of hydrological and regulatory shortages, some of which are transitory in nature. The regulatory shortages are being addressed by various water supply planning actions, and the hydrological shortages experienced are consistent with historical multiple-dry-year water cycles accounted for in the 2005 Urban Water Management Plan. The Board further finds that the price signals contained in the Shortage Year Rates will result in reduced City-wide demands sufficient to meet the projected water demands of the City.

NOW, THEREFORE, BE IT RESOLVED, that the Board finds that LADWP can provide sufficient domestic water supplies to the Specific Plan area and approves the Water Supply Assessment prepared for the Specific Plan, now on file with the Secretary of the Board, and directs that the Water Supply Assessment and a certified copy of this resolution be transmitted to the Planning Department.

I HEREBY CERTIFY that the foregoing is a full, true, and correct copy of a resolution adopted by the Board of Water and Power Commissioners of the City of Los Angeles at its meeting held AUG 03 2010

APPROVED AS TO FORM AND LEGALITY  
CARMEN A. TRUTANICH, CITY ATTORNEY

  
Secretary

JUL 19 2010  
BY   
JULIE CONBOY RILEY  
DEPUTY CITY ATTORNEY





**WATER SUPPLY ASSESSMENT**  
**FOR THE JORDAN DOWNS SPECIFIC PLAN**

Prepared by:  
Water Resources Division

August 3, 2010

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| Green Book for the Long-Term Groundwater Management Plan for the<br>Owens Valley and Inyo County     |    |



## Appendices

- A. The Los Angeles Department of City Planning letter, dated April 14, 2010, request for a Water Supply Assessment, and scope verification email dated June 24, 2010
- B. Water Conservation Commitment Letter
- C. Project Location Maps
- D. Groundwater Pumping Right Judgments
- E. Water Supply Assessment Provisions – California Water Code Section 10910-10915
- F. Report on Metropolitan's Water Supplies 2003
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## Introduction

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Proposed major projects subject to certain requirements in the California Water Code require that the City or County identify any public water system that may supply water to the proposed project and request the public water system to determine whether the projected water demand associated with the proposed project was included as part of the most recently adopted Urban Water Management Plan per California Water Code Section 10910.

The Los Angeles Department of City Planning (Planning Department) serving as the lead agency as prescribed by the California Environmental Quality Act (Public Resources Code Section 21000 et seq.), for the proposed Jordan Downs Specific Plan (Specific Plan) has identified the Los Angeles Department of Water and Power (LADWP) as the public water system that will supply water to the Specific Plan. In response to the Planning Department's request for a Water Supply Assessment, LADWP has performed the assessment contained herein.

LADWP has served the City of Los Angeles (City) a safe and reliable water supply for over a century. Over time, the City's water supplies have evolved from primarily local groundwater to predominantly imported supplies. Today, the City relies on over 85 percent of its water from imported sources. As such, LADWP has taken an active role in regional and statewide water management. The sustainability of Los Angeles' water supplies are dependent on the City's ability to maximize water conservation and increase recycled water use. The City's Water Supply Action Plan (Plan), dated May 2008, states that the City will develop significant additional water conservation and water recycling, as well as other water resource actions to ensure a reliable water supply.

This Water Supply Assessment has been prepared to meet the applicable requirements of state law as set forth in California State Water Code Sections 10910-10915. Significant references and data for this assessment are from the City's 25-year water resource plan, entitled City of Los Angeles Department of Water and Power 2005 Urban Water Management Plan (UWMP). The UWMP is incorporated by reference and is available for review through LADWP's website, [www.ladwp.com](http://www.ladwp.com).

## Findings

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The proposed Specific Plan is estimated to have a reduction in water demand of approximately 4.8 acre-feet (AF) annually from existing total water demands based on review of information submitted by the Planning Department. The Planning Department has committed to requiring implementation of additional water conservation measures on all new developments within the Specific Plan that are beyond those required by law.

The Planning Department has acknowledged that all new projects in the City of Los Angeles may be subject to additional requirements as a condition of water service, including a potential future fee to fund expansion of the recycled water program. The Planning Department has also acknowledged that the issuance of a Water Supply Assessment does not exempt the Specific Plan from this potential future fee.

## Project Description

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The following Specific Plan information was obtained from the Planning Department's Water Supply Assessment Request Letter, and confirming email (Appendix A).

|                                     |                                      |
|-------------------------------------|--------------------------------------|
| Specific Plan Name:                 | Jordan Downs Specific Plan           |
| Developer:                          | Department of City Planning          |
| Planning Community within the City: | Southeast Los Angeles Community Plan |

The proposed Specific Plan site is an approximately 118.5-acre property partially within the Southeast Los Angeles Community Plan. A portion of the Specific Plan site is located within the City and the remaining portion of the site is currently located within the jurisdictional boundaries of the County of Los Angeles (County). As part of the Specific Plan, the Specific Plan Applicant will also be requesting annexation of current County jurisdictional boundaries to the City through a Petition for Reorganization application with the Local Agency Formation Commission (LAFCO).

The proposed Specific Plan area is generally bounded by 97<sup>th</sup> Street on the north, Alameda Street on the east, 103<sup>rd</sup> Street on the south, and Grape Street on the west. The implementation of the Specific Plan proposes zoning and development guidelines for the redevelopment of the Jordan Downs Housing Complex. The Specific Plan is based on the HACLA's Board approved Master Plan that includes the demolition of 700 existing public housing units and supportive buildings and Recreation Center, and its subsequent replacement with a vibrant urban village. The Specific Plan also includes David Starr Jordan High School Campus, the community garden located at the corner of Grape Street and 103<sup>rd</sup> Street, and the Non-HACLA owned parcels along Alameda Street. However, these parcels are not subject to the demolition and construction phases of the Master Plan. The Specific Plan only addresses the potential development through zoning to fit with the vision of the HACLA's Master Plan, and maintain consistency with the Southeast Los Angeles Community Plan. Approximately 32.42 acres will be devoted to different right-of-ways, and the remaining site is anticipated to comprise of approximately 1,800 residential dwelling units, commercial office of approximately 87,500 square feet, retail space of approximately 255,000 square feet, warehouse space of approximately 108,750 square feet, industrial manufacturing of approximately 36,250 square feet, full-service restaurant of approximately 740 seats, fast-food restaurant of approximately 50 seats, community center of approximately 300 occupants, gym space of approximately 17,000 square feet, elementary school of approximately 650 students, high school expansion of approximately 750 students, swimming pool of approximately 4,000 square feet, surface parking of approximately 240,000 square feet, structured parking of approximately 770,000 square feet, and additional landscaping of approximately 497,867 square feet.

The site intended for development requires a General Plan Amendment and Zone Change to conform to the density and use of the Specific Plan.

This Water Supply Assessment will no longer be valid if modifications to the Specific Plan require greater water demand than stated above. A revised Water Supply Assessment will then be required, which will need to be requested by the Planning Department.

LADWP's Water Supply Assessment finds that adequate water supplies will be available to meet the water demands of the Specific Plan. LADWP anticipates that the projected water demand from the Specific Plan can be met during normal, single-dry, and multiple-dry water years, in addition to the existing and planned future demands on LADWP.

The basis for approving Water Supply Assessments for new developments is the City's UWMP. LADWP's water demand forecast as contained in the UWMP uses long-term demographic projection such as land use, population, and employment. The California Urban Water Management Planning Act requires water suppliers to develop an UWMP every five years to identify short-term and long-term water resources management measures to meet growing water demands during normal, dry, and multiple-dry years.

The LADWP Board of Water and Power Commissioners adopted Shortage Year Rates and the Los Angeles City Council implemented Phase III of the Water Conservation Ordinance, both of which became effective June 1, 2009. Shortage Year Rates and higher phases of the Water Conservation Ordinance are expected to remain in effect until it is determined that the water supply currently available to the City is found sufficient for normal demands. It is LADWP staff's judgment that the City's current water shortage is due to a combination of hydrological and regulatory shortages, some of which are transitory in nature. Most of the regulatory shortages are being addressed by five-year supply actions considered by the Metropolitan Water District (MWD), and the hydrological shortages experienced are consistent with historical multiple-dry year water cycles accounted for in LADWP's 2005 UWMP and MWD's comprehensive supplemental supply plan as documented in their March 25, 2003 document entitled, "Report on Metropolitan's Water Supplies", Appendix F.

The imposition of Shortage Year Rates and Phase III conservation has reduced demands consistent with what occurred in 1991, when the City first implemented water rationing and associated financial penalties for overuse. Water rationing and financial penalties began in March 1991, and remained in place until May 1992. During this period of time, customers were required to reduce water usage by 15 percent. Each customer's allotment of water was 85 percent of their historical usage. Water usage above a customer's allotment was a violation of the Ordinance and was billed at the penalty rate. This action resulted in total City water conservation of approximately 25 percent. The imposition of Shortage Year Rates and higher phases of the Ordinance resulted in reducing the total customer water usage, on average, by approximately 18.9-percent for the months of June 2009 through May, 2010.

The existing City and County total water demands have been accounted for LADWP's water supply planning efforts. Since the anticipated total water demand from the proposed Specific Plan is less than the existing total water demands, LADWP finds that the Jordan Downs Specific Plan's Water Supply Assessment can be approved based on the fact that this Specific Plan's water needs are less than existing demands, therefore, the UWMP's projected water demands are unaffected for the normal, single-dry, and multiple-dry year hydrologic conditions.

The proposed Specific Plan is estimated to decrease water demand within the existing City areas by approximately 172.5 AF annually, and increase water demand within the current County areas (proposed to be annexed to the City) by approximately 167.7 AF annually, based on review of information submitted by the Planning Department. The net water demand from the proposed Specific Plan results in a savings of approximately 4.8 AF annually, which includes additional annual water conservation.

The implementation of additional water conservation measures reduced the Specific Plan's potable water demand by approximately 60.1 acre-feet per year (AFY), or approximately 9.31 percent. Table I shows a breakdown of current and proposed types of use and the corresponding estimated volume of usage with the implementation of the conservation measures committed to by the Planning Department. The types of use were derived from the Water Supply Assessment request letter and confirming email in Appendix A. The Specific Plan's total water demand is based on the projected water use taking into account the conservation measures the Planning Department plans to require of all new developments within the Specific Plan area. Table II estimates the total volume of water conservation based on conservation measures committed to by the Planning Department (Appendix B).

The existing City and County total water demands have been accounted for in LADWP's water supply planning efforts. The water demand forecast model used to develop forecasts for the 2005 UWMP was developed using LADWP total water use, including water served by LADWP for use outside the City. As stated in Chapter 6 of the 2005 UWMP, a service area reliability assessment was performed for three hydrologic conditions: average year, single dry year, and multiple-dry years; and a Shortage Contingency Plan was developed to provide a sufficient and continuous supply in LADWP's service area. This Shortage Contingency Plan also included water provided for use outside the City.

An important part of the water planning process is for LADWP to work collaboratively with MWD to ensure that anticipated water demands are incorporated into MWD's Regional Urban Water Management Plan, their long-term water resources development plan, and their water supply allocation plan. The City's allotment of MWD water supplies under MWD's water supply allocation plan is based on the City's total water demand which includes services to areas outside the City.

As provided by the Water Rates Ordinance, LADWP can serve surplus water supplies outside of the City. There are approximately 4,500 services for customers outside of the City, with combined annual water use less than 1 percent of all water delivered. Water served outside of the City includes a surcharge to account for increased MWD purchased water.

| Table I: 1,800 Dwelling Units Scenario<br>Jordan Downs Specific Plan<br>Estimated Increase in Water Use |          |           |                               |                    |   |                       |                |
|---|----------|-----------|-------------------------------|--------------------|---|-----------------------|----------------|
| Existing Use  | Quantity | Unit      | Water Use Factor              | Existing Water Use |   |                       |                |
|   |          |           |                               | (gpd)              | (af/y)  |                       |                |
| County of Los Angeles   |          |           |                               |                    |   |                       |                |
| Existing Water Use <sup>1</sup>   | N/A      | N/A       | N/A                           |                    | 698.31  | 0.78                  |                |
| City of Los Angeles   |          |           |                               |                    |   |                       |                |
| Existing Water Use <sup>1</sup>   | N/A      | N/A       | N/A                           |                    | 526,678.94                                      | 589.96                |                |
| <b>Existing Total</b>   |          |           |                               |                    | <b>527,377.25</b>                               | <b>590.74</b>         |                |
| Proposed Use <sup>2</sup>   | Quantity | Unit      | Water Use Factor <sup>3</sup> | Base Demand        | Water Efficiency Requirements Ordinance Savings | Proposed Water Demand |                |
|   |          |           |                               |                    |   | (gpd)                 | (af/y)         |
| <b>County of Los Angeles (to be annexed to the City of Los Angeles)</b>                                 |          |           |                               |                    |   |                       |                |
| Residential - 2 Bdrm Townhouse <sup>4</sup>   | 63       | du        | 300                           | 18,900.00          | 768.29  | 18,131.72             | 20.31          |
| Residential - 3 Bdrm Townhouse <sup>4</sup>   | 43       | du        | 383                           | 16,483.33          | 1,085.21  | 15,398.12             | 17.25          |
| Residential - 4 Bdrm Townhouse <sup>4</sup>   | 59       | du        | 467                           | 27,533.33          | 2,258.52  | 25,274.81             | 28.31          |
| Residential - 1 Bdrm Apt.   | 82       | du        | 120                           | 9,840.00           | 999.99  | 8,840.01              | 9.90           |
| Residential - 2 Bdrm Apt.   | 63       | du        | 160                           | 10,080.00          | 1,589.96  | 8,490.04              | 9.51           |
| Residential - 3 Bdrm Apt.   | 71       | du        | 200                           | 14,200.00          | 2,717.88  | 11,482.12             | 12.86          |
| Residential - 4 Bdrm Apt.   | 11       | du        | 240                           | 2,640.00           | 516.73  | 2,123.28              | 2.38           |
| Residential - 5 Bdrm Apt.   | 8        | du        | 280                           | 2,240.00           | 375.80  | 1,864.20              | 2.09           |
| Commercial Office   | 87,500   | sf        | 0.15                          | 13,125.00          | 246.85  | 12,878.35             | 14.43          |
| Retail  | 245,000  | sf        | 0.08                          | 19,600.00          | 1,716.76  | 17,883.24             | 20.03          |
| Warehouse   | 108,750  | sf        | 0.02                          | 2,175.00           | 128.87  | 2,046.13              | 2.29           |
| Manufacturing <sup>5</sup>  | 48       | employees | 98                            | 4,736.87           | 128.87  | 4,607.80              | 5.16           |
| Restaurant - Full Service, Indoor Seat  | 740      | seats     | 30                            | 22,200.00          | 361.42  | 21,838.58             | 24.46          |
| Restaurant - Fast Food, Indoor Seat   | 50       | seats     | 20                            | 1,000.00           | 78.17   | 921.83                | 1.03           |
| Surface Parking   | 240,000  | sf        | 0.02                          | 4,800.00           | N/A   | 4,800.00              | 5.38           |
| Total Water Demand =  |          |           |                               | 189,553.33         | 12,973.11                                       | 156,580.22            | 175.39         |
| Less Existing Water Use in the LA County Portion of the Plan =  |          |           |                               |                    |   | -698.31               | -0.78          |
| Less Additional Conservation <sup>6</sup> =   |          |           |                               |                    |   | -6,181.34             | -6.94          |
| <b>Total Additional Water Demand =</b>  |          |           |                               |                    |   | <b>149,690.57</b>     | <b>167.67</b>  |
| <b>City of Los Angeles</b>  |          |           |                               |                    |   |                       |                |
| Residential - 2 Bdrm Townhouse <sup>4</sup>   | 218      | du        | 300                           | 65,400.00          | 2,658.51  | 62,741.49             | 70.28          |
| Residential - 3 Bdrm Townhouse <sup>4</sup>   | 192      | du        | 383                           | 73,600.00          | 4,845.80  | 68,754.40             | 77.01          |
| Residential - 4 Bdrm Townhouse <sup>4</sup>   | 162      | du        | 467                           | 75,600.00          | 6,201.36  | 69,398.64             | 77.74          |
| Residential - 1 Bdrm Apt  | 204      | du        | 120.00                        | 24,480.00          | 2,487.78  | 21,992.22             | 24.63          |
| Residential - 2 Bdrm Apt  | 158      | du        | 160.00                        | 24,960.00          | 3,937.05  | 21,022.95             | 23.55          |
| Residential - 3 Bdrm Apt  | 179      | du        | 200.00                        | 35,800.00          | 6,852.12  | 28,947.88             | 32.43          |
| Residential - 4 Bdrm Apt  | 29       | du        | 240.00                        | 6,960.00           | 1,362.28  | 5,597.73              | 6.27           |
| Residential - 5 Bdrm Apt  | 21       | du        | 280.00                        | 5,880.00           | 986.48  | 4,893.53              | 5.48           |
| Residential - 1 Bdrm Condo  | 24       | du        | 120.00                        | 2,880.00           | 292.68  | 2,587.32              | 2.90           |
| Residential - 2 Bdrm Condo  | 98       | du        | 160.00                        | 15,680.00          | 2,473.28  | 13,206.73             | 14.79          |
| Residential - 3 Bdrm Condo  | 101      | du        | 200.00                        | 20,200.00          | 3,866.28  | 16,333.72             | 18.30          |
| Residential - 4 Bdrm Condo  | 16       | du        | 240.00                        | 3,840.00           | 751.60  | 3,088.40              | 3.46           |
| Swimming Pool   | 4,000    | sf        | 0.34                          | 1,360.84           | 0.00  | 1,360.84              | 1.52           |
| Community Center  | 300      | Occupants | 4.00                          | 1,200.00           | 212.03  | 987.97                | 1.11           |
| Gym   | 17,000   | sf        | 0.25                          | 4,250.00           | 304.12  | 3,945.88              | 4.42           |
| Existing to remain (High School + Community Garden) <sup>1</sup>  |          |           |                               | 47,023.07          | N/A <sup>7</sup>                                | 47,023.07             | 52.67          |
| Potential Elementary School   | 650      | Students  | 8.00                          | 5,200.00           | 925.07  | 4,274.93              | 4.79           |
| Potential High School Expansion   | 750      | Students  | 12.00                         | 9,000.00           | 1,082.92  | 7,917.08              | 8.87           |
| Retail  | 10,000   | sf        | 0.08                          | 800.00             | 64.43   | 735.57                | 0.82           |
| Structured Parking  | 770,000  | sf        | 0.00                          | 0.00               | N/A   | 0.00                  | 0.00           |
| Landscaping <sup>8,9</sup> (additional proposed)  | 497,867  | sf        |                               | 35,398.23          | N/A   | 35,398.23             | 39.65          |
| Total Water Demand =  |          |           |                               | 459,512.14         | 39,303.59                                       | 426,208.55            | 470.69         |
| Less Existing Water Use in the LA City Portion of the Plan =  |          |           |                               |                    |   | -526,678.94           | -589.96        |
| Less Additional Conservation <sup>6</sup> =   |          |           |                               |                    |   | -47,479.83            | -53.18         |
| <b>Total Additional Water Demand =</b>  |          |           |                               |                    |   | <b>-163,950.22</b>    | <b>-172.45</b> |
| <b>TOTAL ADDITIONAL WATER DEMAND</b>  |          |           |                               |                    |   | <b>-4,259.64</b>      | <b>-4.77</b>   |

<sup>1</sup> Existing water use was obtained from historical water billing records (2004-2009).

<sup>2</sup> Provided by the City of Los Angeles Department of City Planning.

<sup>3</sup> Based on City of Los Angeles Department of Public Works, Bureau of Sanitation Sewer Generation Rates table. Uses not listed are estimated by the closest type of use available in the table.

<sup>4</sup> The Sewer Generation Factor assumes 80% sewage to water ratio for single family dwelling units. The landscaping total provided by the Planning Department is exclusive of the front and back yards of the single family dwelling units. Hence, the factors were adjusted to reflect 100% indoor water use.

<sup>5</sup> Industrial water demand was calculated using the Industrial use factor listed in the 2005 UWMP. The number of employees was estimated by dividing the area by 750 as provided by the Planning Department.

<sup>6</sup> Water conservation due to additional conservation commitments agreed to by the City of Los Angeles Department of City Planning. See Table II

<sup>7</sup> The Ordinance savings are not applicable because the high school and community garden already exist.

<sup>8</sup> Landscaping water use is estimated by Landscape Water Management Program v1.4 developed by Irrigation Training and Research Center of California Polytechnic State University, San Luis Obispo.

<sup>9</sup> The additional proposed landscaping is exclusive of the front and back yards of the single family dwelling units.

Abbreviations:

gpd - gallons per day    sf - square feet    af/y - acre feet per year    N/A - not applicable    bdrm - bedroom    du - dwelling unit    Apt - Apartment

| <b>Table II<br/>Jordan Downs Specific Plan<br/>Estimated Additional Voluntary Water Conservation</b> |          |       |   |                  |              |
|--|----------|-------|---|------------------|--------------|
| Conservation Measures <sup>1</sup>   | Quantity | Units | Water Saving<br>Factor <sup>2</sup><br><br>(gpd/unit) | Water Saved      |              |
|  |          |       |   | (gpd)            | (af/y)       |
| <b>County of Los Angeles (to be annexed to the City of Los Angeles)</b>                              |          |       |   |                  |              |
| Residential Clothes Washers  | 400      | ea    | 15.00   | 6,000.00         | 6.72         |
| Waterless Urinals - non Residential  | 14       | ea    | 13.67   | 191.34           | 0.21         |
| <b>Savings Subtotal=</b>   |          |       |   | <b>6,191.34</b>  | <b>6.94</b>  |
| <b>City of Los Angeles</b>   |          |       |   |                  |              |
| Residential Clothes Washers  | 1400     | ea    | 15.00   | 21,000           | 23.52        |
| Waterless Urinals - non Residential  | 46       | ea    | 13.67   | 628.69           | 0.70         |
| Smart Irrigation Controllers   | 11       | ac    | 892.74  | 10,203.53        | 11.43        |
| Native Plants and Rotating Sprinkler <sup>3</sup><br>(90% Native Plants of 11 acres of landscaping)  |          |       |   | 15,647.61        | 17.53        |
| <b>Savings Subtotal=</b>   |          |       |   | <b>47,479.83</b> | <b>53.18</b> |
| <b>Total Water Conserved=</b>  |          |       |   | <b>53,671.17</b> | <b>60.12</b> |

<sup>1</sup> Water conservation measures agreed to by the Los Angeles Department of City Planning. See Appendix B

<sup>2</sup> Based on the Handbook of Water Use and Conservation by Amy Vickers, MWD - Save A Buck Program, and LADWP estimates.

<sup>3</sup> Native plants and rotating sprinkler savings is estimated by Landscape Water Management Program v1.4 developed by Irrigation Training and Research Center of California Polytechnic State University, San Luis Obispo.

Abbreviations:

gpd - gallons per day      af/y - acre feet per year      ea - each      ac - acre

## Water Demand Forecast

The UWMP projects yearly water demand to reach 776,000 acre feet by year 2030, or an increase of 17-percent from year 2005 projections. Water demand projections in 5-year increments through 2030 are available in the UWMP for each of the major customer classes single-family, multi-family, commercial, governmental, and industrial. Demographic data from the Southern California Association of Government's 2004 Regional Transportation Plan as well as billing data for each major customer class, weather, and conservation were factors used in forecasting future water demand growth.

The UWMP used a service area-wide method in developing its water demand projections. This methodology does not rely on individual development demands to determine area-wide growth. Rather, the growth in water use for the entire service area was considered in developing long-term water projections for the City of Los Angeles through the year 2030.

The UWMP is updated every five years as required by California law. This process entails, among other requirements, an update of water supply and water demand projections for water agencies.

Efforts are underway to increase water recycling, further conserve local stormwater runoff, and expand LADWP's water conservation program to decrease reliance on imported water for future demand. The City plans to meet all future increases in water demand through a combination of water conservation and water recycling as explained in LADWP's Water Supply Action Plan.

Collaboration between LADWP and the MWD is critical in ensuring that the City's anticipated water demands are incorporated into the development of MWD's long-term Integrated Regional Plan (IRP). MWD's IRP directs a continuous regional effort to develop regional water resources involving all of MWD's member agencies. Successful implementation of MWD's IRP has resulted in reliable supplemental water supplies for the City from MWD.

State law further regulates distribution of water in extreme drought conditions. Section 350-354 of the California Water Code states that when a governing body of a distributor of a public water supply declares a water shortage emergency within its service area, water will be allocated to meet needs for domestic use, sanitation, fire protection, and other priorities. This will be done equitably and without discrimination between customers using water for the same purpose(s).

## **LADWP - Water Supply Action Plan**

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In response to water supply uncertainties, including those impacting MWD, LADWP released the Water Supply Action Plan (Plan) on May 17, 2008. The plan, entitled "Securing L.A.'s Water Supply," serves as a blueprint for creating sustainable sources of water for the future of Los Angeles to reduce dependence on imported supplies. It is an aggressive multi-pronged approach that includes: investments in state-of-the-art technology; a combination of rebates and incentives; the installation of smart sprinklers, efficient washers and urinals; and long-term measures such as expansion of water recycling and investment in cleaning up the local groundwater supply.<sup>1</sup> The Plan also takes into account the realities of climate change and the dangers of drought and dry weather.

The premise of the Plan is that the City will meet all new demand for water due to projected population growth through a combination of water conservation and water recycling. In total, the City will conserve or recycle 32.6 billion gallons of water a year.<sup>2</sup> Half of all new demand will be filled by a six-fold increase in recycled water supplies and by 2030 the other half will be met through ramped-up conservation efforts.<sup>3</sup>

The Plan also specifically addresses current and future State Water Project (SWP) supply shortages. The California Department of Water Resources estimates that the December 15, 2008, U.S. Fish and Wildlife Service's Biological Opinion on Delta Smelt will limit MWD exports of their anticipated SWP supply by up to 50 percent in a normal

<sup>1</sup> LADWP, *Securing L.A.'s Water Supply*, at 1 (May 2008).

<sup>2</sup> *Securing L.A.'s Water Supply* at 1.

<sup>3</sup> *Securing L.A.'s Water Supply* at 1.



year.<sup>4</sup> The Plan concludes, however, that MWD's actions in response to this threat will ensure continued reliability of its water deliveries. The Plan further states that "despite concerns about ongoing water shortages and higher costs, MWD has upheld its pledge to plan for emergencies and natural disasters throughout this region." MWD's calendar year 2009 non-emergency storage was 1,072,000 acre-feet in surface and groundwater storage accounts - including Diamond Valley Lake near Hemet – plus an additional 670,000 acre-feet of storage reserved for emergencies. MWD estimates its calendar year 2010 non-emergency storage is currently projected to be 935,000 acre-feet.<sup>5</sup> In total, this reserve of water supplies will be utilized to buffer the severity of a potential shortage.<sup>6</sup> Furthermore, by focusing on demand reduction, implementation of the Plan will ensure that long-term dependence on MWD supplies will not be exacerbated by potential future shortages.

The Plan includes key short-term and long-term strategies to secure water supply described below.

## **Short-Term Conservation Strategies**

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***Enforcing prohibited uses of water.*** The prohibited uses of water are intended to eliminate waste and increase awareness of the need to conserve water. While in effect at all times, the prohibited uses have not been actively enforced since the early 1990s. In November 2007, LADWP resurrected its Drought Buster (now called the "Water Conservation Team") Program to heighten awareness and educate customers about the prohibited uses. Under enforcement, failure to comply would be subject to penalties, which can range from a written warning for a first violation to monetary fines and water service shutoff for continued non-compliance.<sup>7</sup>

***Expanding the prohibited uses of water.*** In August 2008, the City updated and strengthened its Emergency Water Conservation Plan Ordinance (No. 180148) by expanding the list of prohibited uses of water, developing new phases of conservation depending on the severity of water shortages, and increasing financial penalties for non-compliance. Prohibited uses in effect at all times include:

- No water leaks are allowed to go unattended.
- No outdoor irrigation between the hours of 9:00 a.m. to 4:00 p.m.
- No outdoor irrigation that results in excess water flow leaving the property.
- No outdoor irrigation during rain events.
- No outdoor irrigation with spray head sprinklers and bubblers for more than 10 minutes per station.
- No outdoor irrigation with standard rotors and multi-stream rotary heads for more than 15 minutes per cycle and up to 2 cycles per station.
- No large landscape irrigation systems without automatic shutoff rain sensors.
- No washing paved surfaces (sidewalks, walkways, driveways, or parking areas)

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<sup>4</sup> Appendix G page A-7.

<sup>5</sup> MWD's *Water Surplus and Drought Management Plan* (November 19, 2009)

<sup>6</sup> *Securing L.A.'s Water Supply* at 8.

<sup>7</sup> *Id.* at 11.

unless using a LADWP-approved water conserving spray cleaning device.

- No water for decorative fountains, ponds, or lakes unless the water is part of a recirculating system.
- No installation of single-pass cooling systems in new buildings.
- No installation of non-recirculating systems in new commercial laundry facilities.
- No installation of non-recirculating systems in new conveyor car washes.
- No car washing with a hose, unless an automatic shut-off device is attached.
- No water served to customers in eating establishments, unless requested.
- No daily towel and linen service option must be offered to Hotel and Motel guests.

In addition, the Los Angeles City Council implemented Phase III of the Water Conservation Ordinance which went into effect on June 1, 2009. Phase III conservation prohibits landscape irrigation on days other than Monday and Thursday. This prohibition excludes watering with a self-closing equipped hose, which is allowed everyday of the week except between the hours of 9:00 a.m. and 4:00 p.m.

**Extending outreach efforts.** Over the last several years, LADWP has expanded conservation outreach and education. Some activities to promote conservation include: increased communication with ratepayers to include LADWP vehicle placards, newspapers, radio, and television, among other types of media; outreach to Homeowner Associations and Neighborhood Councils to promote water conservation; distribution of hotel towel door hangers and restaurant table tent cards; and ramping up marketing of water conservation incentive and rebate programs.<sup>8</sup>

**Encouraging regional conservation measures.** LADWP has worked with MWD to encourage all water agencies in the region to adopt water conservation ordinances which include prohibited uses and enforcement.<sup>9</sup>

## **Long-Term Strategies**

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### **1.0 Increase water conservation through reduction of outdoor water use and new technology.**

Goal: Increase water conservation savings to 53,419 AFY by cutting back on outdoor water use, expanding rebates and incentives, improving water efficiency at public facilities, and enhancing savings through review of new developments

Water Savings: 53,419 AFY by 2030.

Action Plan:

**Conservation Rebates and Incentives:** LADWP is continuing to expand rebates and incentives for homeowners and business owners to encourage them to purchase water-saving technology.<sup>10</sup> Rebate and incentive programs include the following:

<sup>8</sup> *Id.* at 12.

<sup>9</sup> *Id.*

<sup>10</sup> *Id.* at 14.

High Efficiency Clothes Washers Program; Commercial Rebate Program; High Efficiency Urinal Programs. In addition, as part of the City's ongoing effort to encourage customers to adopt passive water conservation measures (i.e., measures that can help customers conserve water on a daily basis without thinking about it) in their homes and businesses, LADWP continues to distribute water-saving bathroom and kitchen faucet aerators and shower heads free-of-charge. LADWP also plans to add rebates for products such as high-efficiency dishwashers for residential customers to help increase their daily conservation efforts.<sup>11</sup> In an effort to reduce outdoor water use, LADWP launched the Residential and Commercial Drought Resistant Landscape Incentive Program in 2009. This Landscape Program pays customers \$1.00 per square foot of turf removed and replaced with drought tolerant plants, mulch, or permeable hardscapes. A similar rebate program exists for synthetic turf.

**Action by Public Agencies:** LADWP will assist City Departments and other public agencies in leveraging incentive funds to retrofit their facilities. Significant accomplishments include the following highlights:

- In January 2009, a Memorandum of Understanding was signed between LADWP and City's General Services Department (GSD) to install 600 water-efficient urinals and 250 high efficiency toilets in city facilities. By the end of June 2009, over 60 percent of these devices had been installed.
- In an effort to reduce water waste and identify areas of potential water conservation, LADWP provided on-site water audit training for GSD Plumbers, Recreation and Parks (R&P) landscapers and Port of Los Angeles (POLA) staff and conducted nearly 200 facility audits.
- Ten high-use City facilities have been retrofitted with water efficient toilets, urinals, and facets saving approximately 23 AFY. Locations include City Hall, City Hall East, Pershing Square and LADWP Headquarters.
- Utilizing a \$3M/yr grant from LADWP, R&P installed 155 smart controllers at 67 Parks, resulting in a savings of 12% of normal water usage.

**Enhancing Conservation through Review of New Developments:** LADWP will continue working with the City's Green Building Team to pursue desired changes in local codes and standards to promote water efficiency in new construction projects and major building renovations.<sup>12</sup> One of the significant accomplishments was the approval of Water Efficiency Ordinance by the City Council, which modifies the City Municipal Code to establish new requirements for water conservation in construction of new buildings, and the installation of new plumbing fixtures in existing buildings to minimize the effects of any water shortages on the customers of the City, effective December 1, 2009.

## 2.0 Water Recycling

The City's goal is to increase the total amount of recycled water used in the City of Los Angeles six-fold by approximately 2028—expanding from the current 1% to 6% of annual

<sup>11</sup> *Id.* at 15.

<sup>12</sup> *Id.* at 21.

water demand. This will result in a planned water savings of 50,000 AFY. In order to achieve this goal, the City will take the following actions:

**Develop a Recycled Water Master Plan.** In 2009, LADWP began a detailed Recycled Water Master Plan that will outline the steps and costs of boosting the City's recycled water level to 6 percent of total demand for the City and concepts for going beyond 6 percent. The Master Plan will provide a blueprint for reaching this goal by expanding the existing recycled water pipeline system and using recycled water for groundwater replenishment.<sup>13</sup>

**Increase Recycled Water for Irrigation and Industrial Use.** LADWP's current Water Recycling capital budget provides funding for approximately 20 large capital projects that will increase recycled water deliveries from 4,500 AFY to 19,350 AFY by 2014, adding more than 106,300 feet of new pipe and saving potable water for nearly 31,000 households throughout the City.<sup>14</sup> Potential customers in future years include several parks (Elysian, Branford, and Balboa parks); Harbor and Scattergood Generating Stations; Hansen Dam and Van Nuys golf courses; oil refineries in the Harbor area; LAX cooling towers; schools in the Sepulveda Basin, and the Los Angeles Zoo. Under the City's Water/Wastewater Integrated Resources Plan, 30,250 AFY of treated water will continue to be used to support habitat in the Japanese Gardens, Lake Balboa, the Wildlife Lake and the Los Angeles River.<sup>15</sup>

**Use Recycled Water for Groundwater Replenishment.** Advanced treated recycled water can be sent to spreading basins to percolate underground and become part of the City's groundwater system for later use. This process, also termed groundwater replenishment, is a proven alternative for expanding locally produced, safe, high-quality drinking water. The process has been successfully implemented in Orange County, Australia, and Singapore, and is being considered in other U.S. and worldwide locations.<sup>16</sup>

**Recycled Water Advisory Group.** LADWP is engaging stakeholders through the Recycled Water Advisory Group process. The Recycled Water Advisory Group meets regularly to discuss recycled water plans and issues.

**Upgrade Tillman Wastewater Treatment Plant:** Groundwater replenishment will require upgrading the Tillman Plant with state-of-the-art, advanced treatment capability similar to the Orange County Water District's recently implemented Groundwater Replenishment System, which has received widespread support. Advanced treatment would be constructed at the Tillman Plant, and the highly treated wastewater would be piped to spreading basins for groundwater recharge.<sup>17</sup>

### 3.0 Enhancing Stormwater Capture

<sup>13</sup> *Securing L.A.'s Water Supply* at 24.

<sup>14</sup> *Id.*

<sup>15</sup> *Id.*

<sup>16</sup> *Id.*

<sup>17</sup> *Id.*

The City's goal is to increase groundwater recharge by retrofitting the Big Tujunga Dam and other large-scale projects through cooperative efforts with the Los Angeles County Flood Control District and other agencies. LADWP is moving forward with several stormwater capture projects with the goal of increasing long-term groundwater recharge by a minimum of 20,000 AFY.<sup>18</sup> The following are the large-scale projects that are expected to be completed or in construction within the next several years:

**Big Tujunga Dam – San Fernando Basin Groundwater Enhancement Project:**

On September 18, 2007, the LADWP Board approved Agreement No. 47717 to provide \$9 million to the Los Angeles County Flood Control District for the construction of the Big Tujunga Dam Project – an effort to seismically retrofit the dam, increase its water storage capacity, improve its reliability as a supply source, enhance flood protection measures, and green the environment. The restoration of the dam is conservatively estimated to result in the additional capture and recharge of 4,500 AFY at the Hansen and Tujunga Spreading Grounds, and more in wet years. The project will make structural improvements to Big Tujunga Dam to restore its historical retention capacity of 6,000 acre-feet; currently the dam is restricted to 1,500 acre-feet of storage capacity.<sup>19</sup>

- Schedule: In construction; scheduled to be completed by January 2011.
- Budget: \$100 million of which LADWP is providing \$9 million.
- Resources: Los Angeles County Flood Control District is the project manager.
- Potential Water Savings: Capture an additional 4,500 AFY of stormwater on average, up to 10,000 AFY or more in extremely wet years.

**Sheldon-Arleta Project – Cesar Chavez Recreation Complex Project Phase I:**

On December 19, 2006, the Board of Water and Power Commissioners approved Agreement No. 47448 to provide up to \$5.25 million to the City of Los Angeles Department of Public Works for the construction of the project (the total project cost is about \$9 million). The project will upgrade the methane gas extraction system at the Sheldon-Arleta Landfill that is necessary to allow the full use of the adjacent Tujunga Spreading Grounds. Currently, the spreading grounds are restricted to an operating capacity of 50 cubic feet per second (cfs) or 20 percent of the full operating capacity of 250 cfs.<sup>20</sup>

- Schedule: Construction completed in November 2009.
- Budget: \$9 million of which LADWP provided \$5.25 million.
- Resources: Los Angeles Department of Public Works is the project manager.
- Potential Water Savings: Capture of an additional 2,000 to 8,000 AFY of stormwater for the adjacent Tujunga Spreading Grounds.

**Hansen Spreading Grounds Enhancement Project:** LADWP has entered into Agreement No. 47739 to share the costs of the renovation of the Hansen Spreading

<sup>18</sup> *Id.* at 26.

<sup>19</sup> *Id.* at 27.

<sup>20</sup> *Id.*

Grounds Project with the District. The project will increase the capacity and efficiency of the spreading grounds by: 1) combining and deepening the existing basins, and 2) installing and building a new rubber dam, intake structure, control house, and upgrading the telemetry system. The Los Angeles County Board of Supervisors approved the agreement on March 11, 2008, and the LADWP Board of Commissioners approved it on April 1, 2008.<sup>21</sup>

- Schedule: Construction was completed in December 2009.
- Budget: \$10 million of which LADWP is providing up to \$5 million.
- Resources: Los Angeles County Flood Control District is the project manager.
- Potential Water Savings: Capture of an additional 1,200 to 3,000 AFY of stormwater.

**Tujunga Spreading Grounds Enhancement Project**: This project proposes to deepen the spreading basins, increase their storage capacity, replace the existing diversion structure with two diversion structures, and add remote automation of the operating structures.<sup>22</sup>

- Schedule: Planning and design 2010-11; construction in 2012-13.
- Budget: \$1.0 million for design; \$24 million for construction (LADWP funded).
- Resources: LADWP will be the project manager.
- Potential Water Savings: Capture of an additional 8,000 to 12,000 AFY of stormwater.

**Pacoima Spreading Grounds Enhancement Project**: This project proposes to deepen the spreading basins, increase their storage capacity, replace existing diversion structure, and add remote automation of the operating structures.<sup>23</sup>

- Schedule: Planning and design 2011-12; construction in 2013-14.
- Budget: \$2.0 million for design; \$28 million for construction (LADWP may provide some funding for this project).
- Resources: Los Angeles County Flood Control District will be the project manager.
- Potential Water Savings: Capture of an additional 1,500 to 3,000 AFY of stormwater.

## 4.0 Accelerating Clean-Up of the San Fernando Groundwater Basin

<sup>21</sup> *Id.* at 27-28.

<sup>22</sup> *Id.* at 28.

<sup>23</sup> *Id.*

The City's goal is to clean up the contaminated San Fernando Groundwater Basin to expand groundwater storage and the ability to fully utilize the City's groundwater supplies. The result will be a reduction of imported water supply of up to 87,000 AFY – LADWP's annual allocation of San Fernando Valley groundwater supplies.<sup>24</sup> LADWP will also work to ensure that this Basin remains a consistent, stable and reliable resource for years to come. The following actions are proposed to achieve this goal:

**Work with Regulatory Agencies and Governmental Officials:** LADWP will continue to encourage the EPA to develop a long-term, comprehensive solution for existing and emerging contamination issues in the Basin. In addition to the EPA, LADWP will work with the Los Angeles Regional Water Quality Control Board and the California Department of Toxic Substances to find and hold polluters accountable for cleaning up the Basin.<sup>25</sup>

**Groundwater System Improvement Study (GSIS):** LADWP has begun a 6-year, \$19.0-million Groundwater System Improvement Study (GSIS) in the San Fernando Basin (SFB) that will provide vital information to evaluate the groundwater quality in the SFB and recommend treatment options to maximize the utility of the groundwater supply.<sup>26</sup> As part of the GSIS, LADWP will be securing a monitoring well drilling contract by mid-2010 to install approximately 40 new monitoring wells in the SFB that will provide vital water quality information necessary for the Groundwater System Improvement Study.<sup>27</sup> The critical water supply picture in the region has forced LADWP to initiate a fast-tracked and ambitious undertaking to restore its lost groundwater production. This undertaking will also prepare LADWP to safely manage and extract water from future groundwater recharge efforts. LADWP is in the early stages of developing a groundwater purification complex for the SFB. The construction of the purification complex will greatly reduce LADWP's reliance on costly and diminishing imported water supplies, and will compliment LADWP's strategies for securing the City of Los Angeles' future water supply through sustainable means.

**Interim Wellhead Treatment:** LADWP has just completed the installation of interim treatment for 2 wells in the Tujunga Well Field in order to maintain groundwater pumping production. A capital amount of approximately \$7 million has been included in the budget for this work.<sup>28</sup>

## 5.0 Expanding Groundwater Storage

LADWP is investigating opportunities for increased storage of groundwater, creating a cost-effective, environmentally friendly reserve of water resources in case of extreme drought or other emergencies. Currently, the City has significant amounts of stored

<sup>24</sup> *Id.* at 29.

<sup>25</sup> *Id.* at 30.

<sup>26</sup> *Id.*

<sup>27</sup> *Id.*

<sup>28</sup> *Id.*

groundwater in the San Fernando Basin. However, as noted above, contamination restricts the ability to effectively utilize this resource.<sup>29</sup>

LADWP is investigating the following opportunities: groundwater storage along the Los Angeles Aqueduct; a groundwater conjunctive use storage project in the Los Angeles County groundwater basins; and construction of an interconnection between the First Los Angeles Aqueduct and the east branch of the State Water Project, located where the two aqueducts intersect in the Antelope Valley. The interconnection will allow for water transfers or exchanges, and could be used to help move water to facilitate groundwater storage opportunities. The design phase of the interconnection is almost complete. LADWP has obtained a permit to build on land owned by the Department of Water Resources (DWR).<sup>30</sup> LADWP plans to begin construction in late 2010.

## Water Supplies

The Los Angeles Aqueducts (LAA), local groundwater, purchased water from the MWD, and recycled water are the primary sources of water supplies for the City of Los Angeles. Table III shows LADWP water supplies over the last ten years from these sources.

TABLE III  
LADWP Water Supply

| Year | Los Angeles Aqueducts | Local Groundwater | MWD     | Recycled Water | Transfer, Spread, Spills, and Storage | Total   |
|------|-----------------------|-------------------|---------|----------------|---------------------------------------|---------|
| 2000 | 255,183               | 87,946            | 327,657 | 1,998          | 2,569                                 | 670,215 |
| 2001 | 266,923               | 79,073            | 302,116 | 1,675          | -1,994                                | 651,781 |
| 2002 | 179,338               | 92,376            | 400,700 | 1,945          | -1,405                                | 675,763 |
| 2003 | 251,942               | 90,835            | 318,341 | 1,759          | 2,528                                 | 660,349 |
| 2004 | 202,547               | 71,831            | 391,834 | 1,774          | -2,958                                | 670,944 |
| 2005 | 368,839               | 56,547            | 185,346 | 1,401          | 3,140                                 | 608,993 |
| 2006 | 378,922               | 63,270            | 188,781 | 4,890          | -1,336                                | 637,199 |
| 2007 | 129,400               | 89,018            | 439,436 | 3,639          | 1,044                                 | 660,449 |
| 2008 | 147,365               | 60,149            | 429,110 | 7,051          | 1,664                                 | 642,011 |
| 2009 | 137,084               | 64,996            | 354,789 | 7,489          | 3,052                                 | 561,306 |

Note: Units are in AF

## Los Angeles Aqueducts

Snowmelt runoff from the Eastern Sierra Nevada Mountains is collected and conveyed to the City of Los Angeles via the Los Angeles Aqueducts (LAA). LAA supplies come primarily from snowmelt and secondarily from groundwater pumping, and can fluctuate yearly due to the varying hydrologic conditions. In recent years, LAA supplies have been

<sup>29</sup> *Id.*

<sup>30</sup> *Id.* at 31.



less than the historical average because of environmental restoration obligations in Mono and Inyo Counties.

The City holds water rights in the Eastern Sierra Nevada where LAA supplies originate. These supplies originate from both streams and from groundwater. In 1905, the City approved a bond measure for the purchase of land and water rights in the Owens River Valley. By 1913, the First LAA began its deliveries of water to the City primarily from surface water diversions from the Owens River and its tributaries. Historically, these supplies were augmented from time to time by groundwater extractions from beneath the lands that the City had purchased in the Owens Valley.

In 1940, the First LAA was extended north to deliver Mono Basin water to the City pursuant to water rights permits and licenses granted by the State Water Resources Control Board. In 1970, the Second LAA was completed increasing total delivery capacity of the LAA system to approximately 561,000 AF per year. The Second Los Angeles Aqueduct was to be filled by completing the Mono Basin diversions originally authorized in 1940, by a more effective use of water for agricultural purposes on City-owned lands in the Owens Valley and Mono Basin and by increased groundwater pumping from the City's lands in the Owens Valley.

In 1972, Inyo County filed a California Environmental Quality Act lawsuit challenging the City's groundwater pumping program for the Owens Valley. The lawsuit was finally ended in 1997, with the County of Inyo and the City of Los Angeles entering into a long-term water agreement for the management of groundwater in the Owens Valley. That water agreement, entered as a judgment of the Superior Court in the County of Inyo (County of Inyo vs. City of Los Angeles, Superior Court No. 12908) outlines the management of the City's Owens Valley groundwater resources. As a result of this water agreement and subsequent Memorandum of Understanding, LADWP has dedicated 37,000 AF of water annually for enhancement and mitigation projects throughout Owens Valley which includes the rewatering of 62 miles of the Lower Owens River. LADWP also provides approximately 80,000 AF of water annually for other uses in the Owens Valley such as irrigation, town water supplies, stockwater, wildlife and recreational purposes.

Further, in September 1994 by virtue of the public trust doctrine, the State Water Resources Control Board issued Decision 1631 which placed conditions on LADWP's water gathering activities from Mono Basin. LADWP currently export approximately 16,000 AF of water annually from the Mono Basin. LADWP has implemented an extensive restoration and monitoring programs in Mono Basin to increase the level of Mono Lake and to improve stream conditions, fisheries and waterfowl habitats in Walker, Parker, Rush and Lee Vining Creeks. With reduced diversions from the Mono Basin and favorable hydrologic conditions, Mono Lake's elevation has risen overtime. Once the elevation of Mono Basin reaches 6,391 feet above mean sea level, a moderate increase in water exports from the Mono Basin will be permitted pursuant to the Decision 1631. Currently, up to 74,000 AF of water annually is being utilized for environmental restoration in Mono Basin.

In July 1998, LADWP and the Great Basin Unified Air Pollution Control District (GBUAPCD) entered into a Memorandum of Agreement to mitigate dust emissions from Owens Lake. As of December 31, 2008, LADWP has mitigated dust emissions from 29.8

square miles of Owens Lake in accordance with the GBUAPCD's 2003 revised State Implementation Plan. LADWP is currently working on mitigating dust emissions from an additional 12.7 square miles of Owens Lake in accordance with the GBUAPCD's 2008 State Implementation Plan. Upon completion of this latest phase by April 2010, LADWP would have mitigated dust emissions from 39 square miles of Owens Lake requiring approximately 95,000 AF of water annually to sustain the dust mitigation program.

Average deliveries from the LAA system have been approximately 239,100 AF of water annually over the last five fiscal years. Based on computer modeling results, LADWP projects that the average annual LAA delivery is expected to be between approximately 200,000 AF and 230,000 AF.

## Groundwater

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LADWP traditionally extracts groundwater from nine wellfields throughout the Owens Valley and four local groundwater basins. LADWP owns approximately 315,000 acres of property in the Owens Valley. Groundwater pumping by LADWP from beneath its lands in Owens Valley is used in Owens Valley and in Los Angeles in accordance with a long-term groundwater management plan. Additionally, LADWP currently exercises its adjudicated extraction rights in three local groundwater basins: San Fernando, Sylmar, and Central.

The Owens Valley, located on the eastern slope of the Sierra Nevada Mountains, encompasses approximately 3,300 square miles of drainage area. LADWP has extracted the following quantities of groundwater from the Owens Valley in the last five runoff years (April 1 – March 31):

- 2004-2005 85,820 AF
- 2005-2006 57,412 AF
- 2006-2007 58,621 AF
- 2007-2008 60,337 AF
- 2008-2009 68,149 AF

Owens Valley is not identified as an overdrafted basin in the California Department of Water Resources California's Groundwater Bulletin 118 Update 2003. Further, Bulletin 118 Update 2003 does not project the Owens Valley to become overdrafted if present groundwater management conditions continue.

In 1990, the City of Los Angeles and Inyo County as part of the preparation of the long-term groundwater management agreement, prepared the "Green Book for the Long-Term Groundwater Management Plan for the Owens Valley and Inyo County". It contains plans and procedures to prevent overdraft conditions from groundwater pumping as well as to manage vegetation in the Owens Valley.

The San Fernando and Sylmar basins are subject to the judgment in City of San Fernando vs. the City of Los Angeles. Pumping is reported to the court-appointed Upper Los Angeles River Area (ULARA) Watermaster. The Central Basin is also subject to

court judgments. Pumping is reported to the California Department of Water Resources (DWR) who acts as Watermaster.

The San Fernando Basin is the largest of four basins within ULARA. The basin consists of 112,000 acres of land and comprises 91.2 percent of the ULARA valley fill. LADWP has accumulated nearly 406,313 AF of stored water credits in the San Fernando Basin as of October 2008 (120,560 AF of stored water credits that are available to be pumped now and 285,753 AF that are held in reserve). This is water LADWP can withdraw from the basin during normal and dry years or in an emergency, in addition to LADWP's approximately 87,000 AF annual entitlement in the basin. The majority of LADWP's groundwater is extracted from the San Fernando Basin. Sylmar Basin is located in the northern part of the ULARA, consisting of 5,600 acres and comprises 4.6 percent of the ULARA valley fill. LADWP currently has an annual entitlement of 3,405 AF from the Sylmar Basin.

The court decision on pumping rights in the ULARA was implemented in a judgment on January 26, 1979. Enclosed with the assessment are copies of those pages from the judgment showing the entitlements (see Appendix D). Further information about the ULARA is in the ULARA Watermaster Report. The ULARA Watermaster report and the judgment are available for review at the office of the ULARA Watermaster.

LADWP additionally has adjudicated rights to extract groundwater from the Central Basin. Annual entitlement to the Central Basin is 15,000 AF. See Appendix D for copies of relevant portions of the judgments. The complete judgments are available for review at DWR.

For the period of October 2008 to September 2009, LADWP extracted 52,896 AF, 868 AF, and 11,817 AF from the San Fernando, Sylmar, and Central Basins, respectively. LADWP plans to continue production from its groundwater basins in the coming years to offset reductions in imported supplies. Extraction from the basins will however be limited by water quality and overdraft protection. Both LADWP and DWR have programs in place to monitor wells to prevent overdrafting. LADWP's groundwater pumping practice is based on a "safe yield" operation. The objective, over a period of years, is to extract an amount of groundwater equal to the native and imported water that recharges the basin. Extractions by LADWP from the San Fernando, Sylmar, and Central Basins for the last available 5 years are shown on Table IV.

TABLE IV  
Local Groundwater Basin Supply

| Water Year<br>(Oct-Sep) | San Fernando | Sylmar | Central |
|-------------------------|--------------|--------|---------|
| 2004-2005               | 49,085       | 1,110  | 13,401  |
| 2005-2006               | 38,042       | 2,175  | 13,725  |
| 2006-2007               | 76,251       | 3,919  | 13,609  |
| 2007-2008               | 50,009       | 2,997  | 10,754  |
| 2008-2009               | 52,896       | 868    | 11,817  |

Note: Units are in AF

## **Metropolitan Water District of Southern California (MWD)**

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MWD is the largest water wholesaler for domestic and municipal uses in Southern California. As one of 26 member agencies, LADWP purchases water from MWD in addition to the supplies from local groundwater and the LAA. MWD imports a portion of its water supplies from Northern California through the State Water Project's California Aqueduct and from the Colorado River through MWD's own Colorado River Aqueduct. LADWP will continue to rely on MWD to meet its current and future water needs.

In ongoing efforts to evaluate MWD's own import reliability, an assessment was done to address changes in demand and supply conditions, and to provide additional resource reserves to mitigate against uncertainties in demand projections and risks in implementing supply programs. All these efforts went into MWD's blueprint for securing reliable water supplies in their report entitled, "Report on Metropolitan's Water Supplies" dated March 25, 2003, in Appendix F.

All 26-member agencies have preferential rights to purchase water from MWD. Pursuant to Section 135 of the MWD Act, "Each member public agency shall have a preferential right to purchase from the district for distribution by such agency, or any public utility therein empowered by such agency for the purpose, for domestic and municipal uses within the agency a portion of the water served by the district which shall, from time to time, bear the same ratio to all of the water supply of the district as the total accumulation of amounts paid by such agency to the district on tax assessments and otherwise, excepting purchase of water, toward the capital cost and operating expense of the district's works shall bear to the total payments received by the district on account of tax assessments and otherwise, excepting purchase of water, toward such capital cost and operating expense." This is known as a preferential right. As of June 30, 2006, LADWP has a preferential right to purchase 21.16 percent of MWD's total water supply.

LADWP has worked with MWD in developing a plan for allocating water supplies during periods of shortage. On February 12, 2008, the MWD Board adopted its Water Supply Allocation Plan. LADWP supported the adoption of this plan and intends to work within the plan to acquire its drought supplies from MWD in the future.

MWD has also been developing plans and taking efforts to provide additional water supply reliability for the entire southern California region. LADWP coordinates closely with MWD to ensure implementation of these water resource development plans. Part of MWD's planning efforts is the implementation of a Five-Year Supply Action Plan which is a comprehensive plan to pursue five-year supply actions to address potential shortfalls in the five-year planning horizon for water supply due to the effects of on-going dry hydrologic conditions and regulatory restrictions on exports from the Sacramento-San Joaquin Delta (Delta). A set of resource options for the next five years was developed based on the feasibility of projects and transactions and they focus on six main areas: conservation, Colorado River transactions, near-term Delta actions, State Water Project (SWP) transactions, groundwater recovery, and local resources. MWD's long-term plans

to meet its member agencies' growing reliability needs are through water transfer programs, outdoor conservation measures, and development of additional local resources, such as recycling, brackish water desalination, and seawater desalination. Additionally, MWD has more than 5.0 million AF of storage capacity available in reservoirs and banking/transfer programs, with approximately 1.08 million AF currently in that storage.

MWD established a policy objective for water supply reliability as part of its Integrated Resources Plan (IRP). The policy objective is: Through the implementation of the IRP, MWD and its member agencies will have the full capability to meet full-service demands at the retail level at all times.

### *Recent Issues Related to the State Water Project*

Federal Endangered Species Act (ESA) Litigation filed by several environmental interest groups in the United States District Court for the Eastern District of California alleged that existing biological opinions and incidental take statements inadequately analyzed impacts on listed species under the Federal ESA. On May 25, 2007, Federal District Judge Wanger issued a decision on summary judgment finding the United States Fish and Wildlife Service's biological opinion for Delta smelt was invalid. On December 14, 2007, Judge Wanger issued his Interim Remedial Order requiring that the State Water Project and Central Valley Project operate according to certain specified criteria until a new biological opinion for the Delta smelt is issued. The United States Fish and Wildlife Service released the new biological opinion on December 15, 2008. Based on the Water Allocation Analysis released by the California Department of Water Resources (DWR) on December 19, 2008, which analyzed the biological opinion's effects on State Water Project operations, export restrictions under median hydrologic conditions reduce deliveries to Metropolitan by approximately 500,000 acre-feet. These events have highlighted the challenges that water suppliers throughout the state currently face regarding supplies from the Delta.

On June 22, 2010, the DWR announced that its 2010 SWP allocation would increase from 45 percent to 50 percent of total contracted water deliveries to the SWP contractors. Fifty percent of 1,911,500 AFY, which is the MWD's contracted water delivery amount, would be 955,750 AFY. The allocation figure increase reflects the recent precipitation conditions, existing storage in SWP conservation reservoirs, SWP operational constraints such as the conditions of the recent Biological Opinions for delta smelt and salmonids and the longfin smelt incidental take permit, and 2010 contractor demands. DWR may revise allocations if warranted by the year's developing hydrologic and water supply conditions.

- **Delta Policy Legislation**

In November 2009, the State Legislature and Governor Arnold Schwarzenegger passed the 2009 Comprehensive Water Package which consists of four policy bills and an \$11.14 billion bond proposal designed to address the water supply reliability needs for California as well as to restore the Sacramento-San Joaquin Delta. Senate Bill No. 1, the Delta Governance bill, repeals the current CALFED Bay Delta Authority governing structure and mandates the creation or reconstitution of several entities

responsible for governing the Delta. These include the Delta Stewardship Council, the Delta Conservancy, the Delta Protection Commission, the Delta Watermaster, and the Delta Independent Science Board and Delta Science Program. These entities would be tasked with the co-equal goals of providing for California's water supply needs and restoring and enhancing the ecosystem of the Delta.

The responsibilities of the entities created by the Delta Governance bill are as follows:

- **Delta Stewardship Council**
  - The Delta Stewardship Council will be an independent agency of the state composed of seven members with the responsibility to oversee and coordinate state agency actions within the Delta.
  - The Council will develop a Delta Plan that will include all state and federal Delta ecosystem, flood management, water supply, and local economic sustainability efforts and will serve as a guide for state and local agencies to ensure that their actions are consistent with the Council's policies.
  - The Council will develop Performance measures to assess the progress of achieving the goals of the Delta Plan.
  - The Council will determine compliance with the Delta Plan and will serve as the appellate body in the event of disputes over the consistency of a project with the Delta Plan.
  - The Council will also ensure the consistency of the Bay-Delta Conservation Plan with the co-equal goals of water supply reliability and Delta restoration.
- **Delta Conservancy**
  - The Delta Conservancy will be an eleven member entity with the responsibility to develop and adopt a strategic plan that will coordinate investments in the Delta's natural and cultural resources.
  - The Conservancy shall promote the economic vitality in the Delta through increased tourism and the promotion of Delta legacy communities.
  - The Conservancy shall also promote environmental education about, and the public use of, public lands in the Delta.
- **Delta Protection Commission**
  - The Delta Protection Commission will reduce its membership from 23 to 15 members and will continue to provide a forum for Delta residents to engage in decisions regarding actions to recognize and enhance the cultural, recreational, and agricultural resources of the Delta.
  - The Commission is to also adopt an economic sustainability plan for the Delta, which is to include flood protection recommendations to state and local agencies. The economic sustainability plan developed by the Commission is to be included in the Delta Stewardship Council's Delta Plan.
- **Delta Watermaster**
  - The Delta Watermaster will exercise of the authority of the State Water Resources Control Board and will monitor and enforce Board orders as well as license and permit terms and conditions relating to water diversions in the Delta.

- Delta Independent Science Board and Delta Science Program
  - The Delta Independent Science Board will consist of no more than ten members and will provide oversight of the scientific research, monitoring, and assessment programs that support adaptive management of the Delta.
  - The Delta Science Program will be led by a Delta Stewardship Council appointed lead scientist, and will provide unbiased scientific information to inform decision-making in the Delta.

In addition to the Delta Governance bill, the proposed \$11.14 billion bond would allocate \$2.25 billion for projects to assist in maintaining and restoring the Delta ecosystem. The bond investment will help to reduce the risk posed by seismic activities to water supplies from the Delta, protect drinking water quality and help to alleviate conflicts between water management and environmental protection.

In response to these recent developments in the Delta, MWD is engaged in planning processes that will identify local solutions that, when combined with the rest of its supply portfolio, will ensure a reliable long-term water supply for its member agencies. In the near-term MWD will continue to rely on the plans and policies outlined in its Regional Urban Water Management Plan (RUWMP) and Integrated Water Resources Plan to address water supply shortages and interruptions (including potential shut downs of SWP pumps) to meet water demands. Campaigns for voluntary conservation, curtailment of replenishment water and agricultural water delivery, and mandatory water allocations for municipal and industrial water use are some of the actions currently being taken by MWD which are outlined in the RUWMP. An in-depth discussion on MWD is attached in Appendix G.

## **Secondary Sources and Other Considerations**

Water conservation and recycling will play an increasing role in meeting future water demands. LADWP has implemented conservation and recycling programs with efforts under way to further promote and increase the level of these programs. LADWP is committed to supply a higher percentage of the City's water demand through conservation and recycling.

Integrated planning has also filled an important role in developing secondary sources of supply for Los Angeles. It is generally true for large undertakings that a concerted effort with others who share a common goal will produce a higher degree of success. This is an approach that has been taken in southern California with overall water resources planning. The City of Los Angeles works closely with MWD, the City's Bureau of Sanitation (wastewater agency), other regional water providers, and various stakeholder groups to develop and implement programs that reduce overall water use. The City has also pioneered community-based job programs to assist in conservation program implementation. While significantly assisting with program implementation, these community-based organizations also provide important social and economic benefits to neighborhoods.

Integrated resources planning is a process that is being used by many water and wastewater providers to meet their future needs in the most effective way possible, and

with the greatest public support. The planning process differs from traditional planning processes in that it incorporates:

- public stakeholders in an open, participatory process;
- multiple objectives such as reliability, cost, water quality, environmental stewardship, and quality of life;
- risk and uncertainty; and
- partnerships with other agencies, institutions, and non-governmental organizations.

Through integrated planning, not only water-use efficiency and recycling activities are maximized, but potential alternative supplies such as water transfer, seawater desalination, and stormwater runoff reuse are considered and evaluated as part of the City's long-term water resources portfolio.

## **Rates**

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Capital costs to finance facilities for the delivery of water supply to LADWP's service area are supported through customer-billed water rates. The LADWP Board of Commissioners (Board) sets the rates subject to approval of the City Council by ordinance. The Board is obligated by the City Charter to establish water rates and collect charges in an amount sufficient to service the water system indebtedness and to meet its expenses of operation and maintenance.

The water rate structure contains water procurement adjustments under which the cost of purchased water from MWD, demand-side management programs which includes water conservation programs, and reclaimed water projects are recovered. In addition, the rate structure contains a water quality improvement adjustment to recover expenditures to upgrade and equalize water quality throughout the City of Los Angeles and to construct facilities to meet state and federal water quality standards, including the payment of debt service on bonds issued for such purposes.

## **Findings**

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The proposed Jordan Downs Specific Plan is estimated to have a net water demand savings of approximately 4.8 acre feet annually from existing demands, based on review of information submitted by the Planning Department.

LADWP anticipates that the net savings of 4.8 acre feet will not impact the available and projected water supplies for normal, single-dry, and multiple-dry years through the year 2030 as described in LADWP's year 2005 UWMP. LADWP finds that it will be able to meet the water demand of the proposed Jordan Downs Specific Plan as well as existing and planned future water demands of its service area.