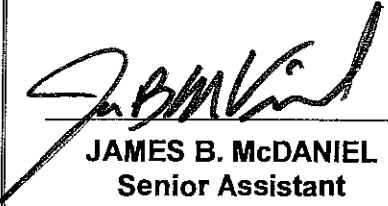
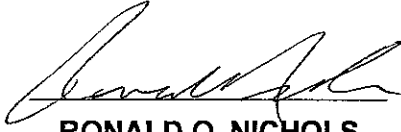


Appendix V

Water Supply Assessment for the Convention and Event Center Project



LOS ANGELES DEPARTMENT OF WATER AND POWER (LADWP) BOARD APPROVAL LETTER

TO: BOARD OF WATER AND POWER COMMISSIONERS		DATE: December 15, 2011
 JAMES B. McDANIEL Senior Assistant General Manager – Water System		SUBJECT: Water Supply Assessment for the Convention and Event Center Project
 RONALD O. NICHOLS General Manager		
		FOR COMMISSION OFFICE USE: RESOLUTION NO. _____
CITY COUNCIL APPROVAL REQUIRED: Yes ☐ No ☒	IF YES, BY WHICH CITY CHARTER SECTION:	

PURPOSE

The attached Resolution recommends approval of the Water Supply Assessment for the Convention and Event Center Project (Project).

Pursuant to California State Water Code Sections 10910-10915, the governing body of each public water system is required to make a determination on Water Supply Assessments for major projects as defined in the State Water Code. This Water Supply Assessment is for the Project located within the Central City Community Plan of the City of Los Angeles (City).

COST AND DURATION

LA Event Center LLC & LA Convention Hall LLC, the Project Developer, has paid LADWP the required \$10,000 fee to cover LADWP's expenses in preparing this Water Supply Assessment.

SUMMARY

Project Name:	The Convention and Event Center Project
Project Lead Agency:	Los Angeles City Planning Department
Project Developer:	LA Event Center LLC & LA Convention Hall LLC
Project General Scope:	Expansion and modernization of the Los Angeles Convention Center, construction of a new multi-use entertainment and sports facility, and related parking and support facilities
Project Site Boundaries:	Bordered by the I-110 Harbor Freeway to the west, Chick Hearn Court to the north, Figueroa Street to the east, and Venice Boulevard to the south.
Council District:	District 9 – Councilmember Jan Perry
Total New Water Demand: (less conservation savings, and existing uses)	194 acre-feet per year (AFY)

BACKGROUND

Water Supply Assessments are prepared in conformance with California law to ensure that proposed projects that utilize water resources are consistent with the City's long-term water supply availability, as detailed in the most recently adopted Urban Water Management Plan (UWMP). The UWMP is the water supply planning document for the City and is prepared by LADWP.

Each Water Supply Assessment performed by LADWP is carefully evaluated within the context of the 2010 UWMP and current conditions, such as restrictions on State Water Project (SWP) pumping from the Sacramento-San Joaquin Delta (Delta) imposed by a Federal Court. The Metropolitan Water District of Southern California (MWD), from whom the City purchases its State Water Project and Colorado River water supplies, has also been actively developing plans and making efforts to provide additional water supply reliability for the entire Southern California region. LADWP coordinates closely with MWD to ensure implementation of MWD's water resource development plans.

Part of MWD's planning effort is the implementation of their Integrated Water Resources Plan and Regional Urban Water Management Plan, which are designed to address potential shortfalls in water supply due to the effects of variable hydrologic conditions and regulatory restrictions on exports from the Delta. A set of resource options was developed based on the feasibility of various supply actions. These resource options focus on six main areas: conservation, Colorado River transactions, near-term Delta actions, SWP transactions, groundwater recovery, and local resource development.

The LADWP Board of Water and Power Commissioners adopted Shortage Year Rates and the Los Angeles City Council (City Council) implemented Phase III restrictions of the Water Conservation Ordinance (Ordinance), both of which became effective June 1, 2009. It is LADWP staff's judgment that the City's recent water shortage was due to a combination of hydrological and regulatory shortages, some of which are transitory in nature. Most of the regulatory shortages are being addressed through actions taken by MWD as stated above. The hydrological shortages experienced were consistent with historical multiple-dry year water cycles accounted for in LADWP's 2010 UWMP.

Projected Water Use and Conservation

On September 19, 2011, the Los Angeles City Planning Department (Planning Department), the lead agency for the proposed Project, requested LADWP to perform a Water Supply Assessment (request letter is included in Appendix A of the attached Water Supply Assessment). The proposed Project is located in the Central City Community Plan of the City. Based on information obtained from the Planning Department, the proposed Project will redevelop an approximately 68-acre site area within the Central City Community Plan. The first component of the Project is the expansion and modernization of the Los Angeles Convention Center (Convention Center) which is expected to serve approximately 4,020,959 attendances per year total. The Convention Center project scope will consist of: the demolition of the existing West Hall and construction of the New Hall; addition of approximately 3,975 sq. ft. of retail space and an approximate 3,250 sq. ft. bike station as part of the improvements for the Gil Lindsay Plaza; and potentially a new 8,000 sq. ft. event deck.

The second component of the Project is the development of the new Event Center, a multi-purpose, entertainment and sports facility, which is expected to serve approximately 6,094,200 attendances per year. The approximately 1,750,000 square-foot structure would include approximately 72,000 permanent seats with expandable seating capacity to approximately 76,250 seats for major marquee events, such as a Super Bowl. The Event Center would also be available for use as Convention Center exhibit and meeting room space, when not used for spectator events, providing roughly 245,650 square feet of usable exhibition and meeting room space.

The third component of the Project involves the replacement of the existing parking facilities with new larger, more efficient parking facilities.

The Project will also include: replacing the existing central plant cooling towers from 3 cycles of concentration to run at 5.5 cycles of concentration (7,490 tons for the Convention Center and 2,500 tons for the STAPLES Center), and construction of the new central plant cooling tower for the Event Center (4,550 tons); and existing landscaped areas will be replaced with total of 114,458 sq. ft. of landscaped areas, in addition to artificial turf for the Event Center football field, the Gil Lindsay Plaza will also include a decorative water fountain.

Upon receiving this Water Supply Assessment request, LADWP staff organized a meeting with LA Event Center LLC & LA Convention Hall LLC., the Developer, on November 2, 2011. During this meeting, LADWP staff recommended implementation of additional water conservation measures to maximize the potential water-use efficiency for the Project. The recommended conservation measures are in addition to those required by the City's current requirements.

The Developer is committed to implement the following additional measures that are beyond those required by current law:

- Waterless urinals for the Event Center
- Showerheads - No more than one showerhead per stall
- Commercial Kitchen Prep and Service Faucets with low-flow control aerators (1.8 gallons per minute)
- High-efficiency clothes washers (water factor 6.0 or less), Energy Star rated when possible
- Cooling Tower Conductivity Controllers or Cooling Tower pH Conductivity Controllers
- Weather-based irrigation controller with rain shutoff

- Matched precipitation (flow) rates for sprinkler heads
- Drip/microspray/subsurface irrigation where appropriate
- Bubbler heads for irrigation where appropriate
- A separate water meter (or submeter), flow sensor, and master valve shutoff shall be installed for irrigated landscape areas totaling 5,000 square feet and greater
- Proper hydro-zoning
- Use of landscape contouring to minimize precipitation runoff
- At minimum, whole building water meters for each facility that measure total potable water use and submeters on cooling towers and irrigation systems per above
- Domestic Water Heating System located close proximity to point(s) of use where feasible in some locations throughout each facility. Utilize recirculation loop in large common system areas.
- Artificial Turf (Event Center playing surface)
- For Cooling Towers and Irrigation systems: Install purple piping and associated connections (i.e., reclaimed water infrastructure) to the property line for potential future connection to LADWP reclaimed water supply.

A written commitment of the Project's planned water conservation measures was submitted by the Developer and is attached with the Water Supply Assessment in Appendix B. With these water conservation measures, the total additional water demand is approximately 194 AFY.

The Developer has also committed to comply with the Standard Urban Stormwater Mitigation Plan (SUSMP) and to implement Best Management Practices (BMPs) that have stormwater recharge or reuse benefits for the entire Project as applicable:

- Infiltration Basin (drainage area of 5-50 acres) – captures first-flush stormwater, removes particulate pollutants and some soluble pollutants, and contributes toward recharging groundwater.
- Infiltration Trench (drainage area of less than 5 acres) – similar to infiltration basin but used for smaller drainage areas.
- Catch Basin Insert - a device that can be inserted into an existing catch basin design to provide some level of runoff contaminant removal
- Catch Basin Screens
- Pervious Pavements – captures runoff by allowing stormwater to infiltrate the surface of pavement layer

LADWP has met with the Planning Department and Department of Building and Safety (Building and Safety) staff to discuss voluntary commitments made by developers as part of Water Supply Assessments. These two City departments have confirmed to LADWP that the voluntary measures committed to by developers as part of Water Supply Assessments will be incorporated as requirements for both the Planning Department's approval and Building and Safety's review and approval of the Projects. The anticipated 194 acre-feet of total additional annual water demand from the Project falls within the UWMP's projected water supplies for normal, single-dry, and multiple-dry years through the year 2035 and falls within the UWMP's 25-year water demand growth projection. Therefore, the Project is consistent with the 2010 UWMP.

RECOMMENDATION

It is recommended that your Honorable Board adopt the attached Resolution authorizing the Water Supply Assessment for the Convention and Event Center Project.

JLH:km

Attachments

e-c/att: Ronald O. Nichols
Richard M. Brown
Aram Benyamin
James B. McDaniel
Lorraine A. Paskett
Ann M. Santilli
Gary Wong
David R. Pettijohn
Jin L. Hwang
Natali Kassis

RESOLUTION NO. _____

WHEREAS, on September 19, 2011, the Los Angeles Department of City Planning (Planning Department), requested the Los Angeles Department of Water and Power (LADWP) to conduct a Water Supply Assessment for the Convention and Event Center Project (Project) pursuant to California Water Code Sections 10910-10915; and

WHEREAS, the proposed Project will redevelop an approximately 68-acre site area within the Central City Community Plan; and

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

WHEREAS, LADWP estimates the annual net increase in total water demand from the Project site, based on review of information submitted by the Planning Department and Project Proponent, is 194 acre-feet per year; and

WHEREAS, the Project Developer, LA Event Center LLC & LA Convention Hall LLC, 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, the proposed Project is located in the service area of LADWP's water supply system, and LADWP would serve the area of the proposed Project development; and

WHEREAS, LADWP anticipates that its projected water supplies available during normal, single-dry, and multiple-dry water years as included in the 25-year projection contained in its 2010 Urban Water Management Plan can accommodate the projected water demand associated with the Project, in addition to the existing and planned future demands on LADWP; and

WHEREAS, the Board of Water and Power Commissioners (Board) adopted Shortage Year Rates for water service effective June 1, 2009. The Board finds that the price signals contained in the Shortage Year Rates have resulted in reduced City-wide demands sufficient to meet demand projections.

NOW, THEREFORE, BE IT RESOLVED, that the Board finds that LADWP can provide sufficient domestic water supplies to the Project area and approves the Water Supply Assessment prepared for the Project, 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.

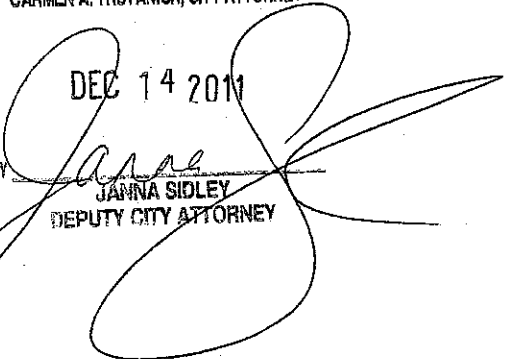
I HEREBY CERTIFY that the foregoing is a full, true, and correct copy of a Resolution adopted by the Board of Water and Power Commissioners of the City of Los Angeles at its meeting held

Secretary

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

DEC 14 2011

BY


JANNA SIDLEY
DEPUTY CITY ATTORNEY



WATER SUPPLY ASSESSMENT

FOR THE CONVENTION AND EVENT CENTER PROJECT

Prepared by:
Water Executive

January 3, 2012

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Appendices

- A. The Los Angeles Department of City Planning letter, Request for a Water Supply Assessment (dated September 15, 2011, revised on November 16, 2011, and November 23, 2011), and confirmation e-mail
- 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
- G. Metropolitan Water District of Southern California
- H. Water Supply Assessment Checklist

Introduction

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 Convention and Event Center Project (Project), has identified the Los Angeles Department of Water and Power (LADWP) as the public water system that will supply water to the Project. 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, as well as other water resource actions.

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 2010 Urban Water Management Plan (UWMP). The UWMP is incorporated by reference and is available for review through LADWP's website, www.ladwp.com.

Findings

The proposed Project is estimated to increase the total water demand within the site by approximately 194 acre feet (AF) annually based on review of information submitted by the Planning Department and Project Proponent. The Developer, LA Event Center LLC & LA Convention Hall LLC, has committed to implement additional water use efficiency measures that are beyond those required by current law.

LADWP's Water Supply Assessment finds that adequate water supplies will be available to meet the total additional water demand of 194 AF annually for the Project. LADWP anticipates that the projected water demand from the Project 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 developments is the LADWP'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, single-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 restrictions of the Water Conservation Ordinance, both of which became effective June 1, 2009. Governor Jerry Brown proclaimed an end to California's drought on March 30, 2011 following significant increases in statewide rainfall and mountain snowpack. It is LADWP staff's judgment that the City's recent water shortage was due to a combination of hydrological and regulatory shortages, some of which were transitory in nature. Most of the regulatory shortages are addressed by the Metropolitan Water District's (MWD) Integrated Resources Plan and Regional Urban Water Management Plan. The hydrological shortages experienced were consistent with historical multiple-dry year water cycles accounted for in LADWP's 2010 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 have 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 current implementation of Shortage Year Rates and higher phases of the Ordinance has resulted in reducing the total customer water usage, on average, by approximately 18.9 percent for the months of June 2009 through October 2011.

The anticipated water demand from the Project falls within the UWMP's projected water supplies for normal, single-dry, and multiple-dry years through the year 2035 and is within the UWMP's 25-year water demand growth projection. Therefore, the Project's Water Supply Assessment can be approved based on the fact that this Project's water need falls within the scope of the UWMP's projected increase in citywide water demands, while anticipating multi-dry year water supply conditions occurring at the same time.

Project Description

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

Project Name:	Convention and Event Center Project
Developer:	LA Event Center LLC & LA Convention Hall LLC
Planning Community:	Central City

The proposed Project will redevelop an approximately 68-acre site area within the Central City Community Plan. The Project site is generally bounded by I-110 Harbor Freeway to the west, Chick Hearn Court to the north, Figueroa Street to the east, and Venice Boulevard to the south. The first component of the Project is the expansion and modernization of the Los Angeles Convention Center (Convention Center) which is expected to serve approximately 4,020,959 attendances per year total. The Convention Center project scope will consist of: the demolition of the existing West Hall and construction of the New Hall; addition of approximately 3,975 sq. ft. of retail space and an approximate 3,250 sq. ft. bike station as part of the improvements for Gil Lindsay Plaza; and potentially a new 8,000 sq. ft. event deck.

The second component of the Project is the development of the new Event Center, a multi-purpose, entertainment and sports facility, which is expected to serve approximately 6,094,200 attendances per year. The approximately 1,750,000 square-foot structure would include approximately 72,000 permanent seats with expandable seating capacity to approximately 76,250 seats for major marquee events, such as a Super Bowl. The Event Center would also be available for use as a Convention Center exhibit and meeting room space, when not used for spectator events, providing roughly 245,650 square feet of usable exhibition and meeting room space.

The third component of the Project involves the replacement of the existing parking facilities with new larger, more efficient parking facilities.

The Project will also include: replacing the existing central plant cooling towers from 3 cycles of concentration to run at 5.5 cycles of concentration (7,490 tons for the Convention Center and 2,500 tons for the STAPLES Center), and construction of the new central plant cooling tower for the Event Center (4,550 tons); and existing landscaped areas will be replaced with a total of 114,458 sq. ft. of landscaped areas, in addition to artificial turf for the Event Center football field. Gil Lindsay Plaza will also include a decorative water fountain.

The Project is proposed to be implemented through adoption of a new Specific Plan and Community Plan Amendment.

This Water Supply Assessment will no longer be valid if modifications to the Project require a substantial increase in water demand for the Project. A revised Water Supply Assessment may then be required, which the Developer will need to request through the Planning Department.

Project Water Demand Estimate

The projected total water demand increase for the Project is estimated to be approximately 194 AF annually which includes annual water conservation.

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 for the Project. The types of use were derived from the Water Supply Assessment request letter and the scope verification e-mail in Appendix A. Table II estimates the total volume of water conservation based on conservation measures committed to by the Developer (Appendix B).

TABLE I
Convention and Event Center Project
Calculated Total Additional Water Demand

Existing Use To be Removed ¹				Existing Water Use			
				(gpd)		(afy)	
West Hall				10,448		11.70	
Central Plants							
Convention Center				22,485		25.19	
STAPLES Center				2,910		3.26	
Central Plants Total				25,394		28.45	
Irrigation Total				12,498		14.00	
Existing To be Removed Total				48,340		54.15	
Proposed Use ²		Quantity	Unit	Water Use Factor ³ (gpy/unit)	Base Demand (gpd)	Water Efficiency Requirements Ordinance Savings (gpd)	Proposed Water Demand (gpd) (af/y)
General Consumption							
Convention Center							
Patron Use		4,020,959	attendance	4.6874	51,638		
Retail (new for Gil Lindsay Plaza)		3,975	sf	29.20	318		
Bike Station (new for Gil Lindsay Plaza)		3,250	sf	29.20	260		
Event Deck		8,000	sf	29.20	640		
Convention Center General Consumption					52,856	5,612	47,244 52.92
Event Center General Consumption		6,094,190	attendance	8.8778	148,228	8,711	139,517 156.29
General Consumption Total							186,761 209.21
Central Plants							
Convention Center		7,490	ton				18,321
Event Center		4,550	ton				11,780
STAPLES Center		2,500	ton				2,384
Central Plants Total							32,485 36.38
Landscaping⁴							
Event Center Plaza		4,317	sf		283		
Gil Lindsay Plaza		69,485	sf		4,583		
LA LIVE Way Plaza		40,656	sf		2,681		
Football Field		57,600	sf		4,095		
Landscaping Total					11,641	0	11,641 13.04
Water Fountain					45		45 0.05
Proposed Water Demand Total							230,932 258
Less Existing to be Removed Total							-48,340 -54
Less Total Additional Conservation⁵							-9,024 -10
Proposed Total Additional Water Demand=							173,568 gpd 194 afy

¹ The Existing Water Uses are based on the 2010 billing record.

² Provided by the Los Angeles Planning Department.

³ Water Use Per Attendance Factors are based on existing metered General Consumption divided by the estimated existing annual attendance for year 2010. Existing Convention Center Water Use Per Attendance Factor is used to estimate the total Proposed Convention Center General Consumption water demand. The Event Center Water Use Per Attendance Factor is expected to be comparable to that of the existing STAPLES Center Water Use Per Attendance Factor. Indoor water uses for the new facilities at Gil Lindsay Plaza are based on City of Los Angeles Department of Public Works, Bureau of Sanitation Sewer Generation Rates table available at <http://www.environmentla.org/programs/Thresholds/M-Public%20Utilities.pdf>. Uses not listed are estimated by the closest type of use available in the table.

Water Use Per Attendance Factors are assumed to include water demand for parking facilities.

⁴ 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.

⁵ Water conservation due to additional conservation commitments agreed by the Developer. See Table II.

Abbreviations:

gpd - gallons per day gpy - gallons per year afy - acre feet per year sf - square feet

TABLE II							
Convention and Event Center Project							
Estimated Additional Water Conservation							
Conservation Measures ¹	Annual Days of Operation ²	Total Daily Uses ²	Duration	Water Saving Factor		Water Saved	
	(days/yr)	(use/day)	(min/use)	(gal/use)	(gal/min)	(gpd)	(afy)
Convention Center							
Faucet (Kitchen) - 1.8 gpm	260	588	0.25		0.4	42	0.05
Event Center							
Waterless Urinal - Spectator Event	67	13,089		0.125		300	0.34
Waterless Urinal - Exhibition Event	42	8,616		0.125		124	0.14
Waterless Urinal - Meeting Rooms	75	618		0.125		16	0.02
Plumbing Fixture Savings Total						482	0.54
Conservation Measures ¹	Annual Loads			Water Saving Factor	Water Saved		
	(loads/yr)				(gpd)	(afy)	
Event Center							
Clothes Washer: Energy Star	637			13		23	0.03
Appliance Savings Total						23	0.03
Conservation Measures ¹	Quantity	Units		Water Saving Factor	Water Saved		
					(gpd/unit)	(gpd)	(afy)
Landscaping ³							
Event Center Plaza: Drip and Bubblers	4,317	sf				70	0.08
Gil Lindsay Plaza: Drip and Bubblers	69,485	sf				1,265	1.42
L A LIVE Way Plaza: Drip and Bubblers	40,656	sf				744	0.83
Weather Based Irrigation Controller	2.63	acres		892.742		2,346	2.63
Football Field: Artificial Turf	57,600	sf				4,095	4.59
Landscaping Savings						8,519	9.54
Total Water Conserved =						9,024	10

¹ Water conservation measures agreed to by the Applicant. See Appendix B.

² Provided in the Request for Water Supply Assessment Letter. See Appendix A.

³ 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.

Abbreviations:

gpd - gallons per day afy - acre feet per year gpm - gallons per minute yr - year gal - gallon min - minute
 one acre foot = 325,850 gallons

Water Demand Forecast

The 2010 UWMP projects yearly water demand to reach 641,622 acre feet by year 2035 with passive and active water conservation, or an increase of 18-percent from year 2010 actual water demand. Water demand projections in 5-year increments through 2035 are available in the UWMP for each of the major customer classes single-family, multifamily, commercial/governmental, and industrial. Demographic data from the Southern California Association of Government's 2008 Regional Transportation Plan as well as billing data for each major customer class, weather, conservation, price of water, personal income, family size, economy, and drought conservation effect 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 2035.

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.

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 Water Resources 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 dry weather 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 – 2010 Urban Water Management Plan (UWMP)

The California Urban Water Management Planning Act (first effective on January 1, 1984) requires that every urban water supplier prepare and adopt an Urban Water Management Plan (UWMP) every five years. The main goal of the UWMP is to forecast future water

demands and water supplies under average and dry year conditions, identify future water supply projects such as recycled water, provide a summary of water conservation best management practices (BMPs), and provide a single and multi-dry year management strategy.¹

LADWP's 2010 UWMP, available for reference through www.ladwp.com, serves two purposes: (1) achieve full compliance with requirements of California's Urban Water Management Planning Act; and (2) serve as a master plan for water supply and resources management consistent with the City's goals and policy objectives.²

A number of important changes have occurred since LADWP prepared its 2005 UWMP. First, LADWP developed more focused strategies in 2008 to address the water reliability issues associated with the lowest snowpack on record in the Sierra Nevada (in 2007), it was the driest year on record for the Los Angeles Basin (in 2007), there was an increase in water required for environmental mitigation and enhancement in the Owens Valley, San Fernando Groundwater Basin contamination, and reduced imported water from the Sacramento-San Joaquin Delta (Delta) due to a prolonged water shortage and environmental restrictions on Delta exports. Second, a number of new requirements were added to the Urban Water Management Planning Act, such as addressing California's new mandate of reducing per capita water use by 20 percent by the year 2020. And third, LADWP developed a new water demand forecast based on a more rigorous analysis of water use trends and measurement of achieved water conservation.³

The 2010 UWMP projects a 15 percent lower water demand trend than what was projected in the previous 2005 UWMP. It outlines plans, as described below, to significantly increase water conservation and local water supplies by year 2035. This will allow the City to reduce water purchases from the Metropolitan Water District of Southern California by half.⁴

Conservation Strategies

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.⁵

Expanding the prohibited uses of water. In August 2009, and again in August 2010, the City updated the Emergency Water Conservation Plan Ordinance (No. 181288) by

¹ *City of Los Angeles Department of Water and Power 2010 Urban Water Management Plan*, at 1.

² *Id.* at 2.

³ *Id.* at 2.

⁴ *Id.* at 25.

⁵ *Id.* at 58-59.

clarifying prohibited uses of water, modifying certain water conservation requirements, and developing new phases of conservation depending on the severity of water shortages. Prohibited uses in effect at all times (Phase I) include:⁶

- 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 watering day 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 watering day per station.
- No large landscape irrigation systems without automatic shutoff rain sensors.
- No washing paved surfaces (sidewalks, walkways, driveways, or parking areas) 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 buildings requesting new water service.
- 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.

Phase II of the Water Conservation Ordinance is also currently in effect, and prohibits landscape irrigation on days other than Monday, Wednesday, or Friday for odd-numbered street addresses and Tuesday, Thursday, or Sunday for even-numbers street addresses. Watering time for non-conserving nozzles (spray head sprinklers and bubblers) is no more than 8 minutes per watering day per station. These provisions do not apply to drip irrigation supplying water to a food source or to hand-held hose watering vegetation, if the hose is equipped with a self-closing water shut-off device, which is allowed everyday during Phase II 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.⁷

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.

⁶ *Id.* at 54-55.

⁷ *Id.* at 59-61.

Long-Term Strategies

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

Goal: Increase water conservation savings to 64,368 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: 64,368 AFY by 2035.

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.⁸ Rebate and incentive programs include the following: 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. 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.

⁸ *Id.* at 51.

- Utilizing a \$3 million per year grant from LADWP, R&P installed 155 smart controllers at 67 Parks, resulting in a savings of 12 percent 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. 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, 2009.⁹

In addition, the City of Los Angeles adopted Ordinance No. 181899, also known as the "Low Impact Development" Ordinance. The purpose of this Ordinance includes rainwater harvesting and stormwater runoff management, water conservation, and recycled water reuse and gray water use. The Ordinance was effective as of November 14, 2011.

2.0 Water Recycling

The LADWP 2010 Urban Water Management Plan, identifies the goal of delivering 59,000 acre-feet per year to off-set imported water. This will increase recycled water use in the City of Los Angeles eight-fold—from the current 1 percent to 8 percent annually. In order to achieve this goal, the City is taking the following steps:

Recycled Water Master Plan: In 2009, LADWP initiated a Recycled Water Master Plan, to determine feasible project options to expand recycled water usage along with identifying long term initiatives to maximize recycled water use into the future. The plan is expected to be completed in 2012 and will specify projects to increase recycled water usage for irrigation and industrial uses along with implementing a Groundwater Replenishment (GWR) with purified recycled water utilizing advanced treatment for recharging the San Fernando Groundwater Basin.

Advance Treatment Pilot Studies: Pilot studies of the advanced treatment to purify recycled water as part of the GWR Project was completed in 2011. These studies will identify the most effective treatment processes to advance treat effluent from the Donald C. Tillman Reclamation Plant for recharging the San Fernando Groundwater basin.

GWR Environmental Documentation: Environmental documentation will be initiated in 2012 for the GWR Project.

⁹ *Id.* at 54.

Harbor Refineries Pipeline Project: Of the project's 40,000 feet of recycled water piping, approximately 95 percent has already been installed in the Harbor Area that will convey recycled water to large industrial and irrigation customers. This project is anticipated to be completed in 2013.

Recycled Water Outreach: LADWP is engaging stakeholders and the general public through a series of Recycled Water Advisory Group (RWAG) workshops, Recycled Water Forums, and presentations and information sharing with Elected Officials and staff, Neighborhood Councils, and other stakeholder groups. The RWAG was formed in 2009 and, in 2011, is comprised of approximately 65 diverse organizations representing a cross-section of stakeholder interests in the City. Seven (7) Recycled Water Forums have been held City wide in 2011 to reach out to the general public to provide information on the recycled water program and to get input before the Recycled Water Master Planning is complete.

3.0 Enhancing Stormwater Capture

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 25,000 AFY.¹⁰ 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 reconstruction 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.¹¹

- Schedule: Construction completed in August 2011.
- Budget: \$105 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.

¹⁰ *Id.* at 143.

¹¹ *Id.* at 144.

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 upgraded the methane gas extraction system at the Sheldon-Arleta Landfill that is necessary to allow the full use of the adjacent Tujunga Spreading Grounds. The spreading grounds were restricted to an operating capacity of 50 cubic feet per second (cfs) or 20 percent of the full operating capacity of 250 cfs.¹²

- 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 entered into Agreement No. 47739 to share the costs of the renovation of the Hansen Spreading Grounds Project with the District. The project increased 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, 2008.¹³

- 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.¹⁴

- Schedule: 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.

¹² *Id.*

¹³ *Id.* at 145.

¹⁴ *Id.*

- **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 the existing diversion structure, and add remote automation of the operating structures.¹⁵

- **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

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.¹⁶ 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 Control to find and hold polluters accountable for cleaning up the Basin.¹⁷

Groundwater System Improvement Study (GSIS): In February 2009, LADWP began a 6-year, approximately \$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.¹⁸ As part of the GSIS, LADWP will begin this year installing 4 new monitoring wells in the Tujunga area and approximately another 22 monitoring wells in other parts of the SFB that will provide vital water quality information necessary for the GSIS. 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

¹⁵ *Id.* at 146.

¹⁶ *Id.* at 125.

¹⁷ *Id.* at 122.

¹⁸ *Id.* at 126.

and extract water from future groundwater recharge efforts. LADWP is in the early stages of developing a groundwater treatment complex for the SFB. The construction of the treatment 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 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 was included in the budget for this work.

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
2001	266,480	80,241	302,594	1,675	-1,994	652,983
2002	179,237	85,153	401,303	1,944	-1,405	669,042
2003	251,340	86,341	317,774	1,759	2,528	654,687
2004	203,190	75,696	392,603	1,774	-2,958	676,221
2005	376,394	57,623	185,002	1,401	3,140	616,470
2006	380,235	67,299	189,975	3,893	-1,336	642,738
2007	127,392	88,041	438,344	3,595	1,044	656,327
2008	148,407	64,604	430,959	7,048	1,664	649,354
2009	137,261	66,998	357,005	7,570	3,052	565,782
2010	251,126	68,346	208,264	6,900	-938	534,478

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 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. As of April 1, 2010, LADWP has mitigated an additional 12.7 square miles. Upon completion of this latest phase, LADWP would have mitigated dust emissions from 39.5 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 221,289 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 approximately 254,000 AF.

Groundwater

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 456,146 AF of stored water credits in the San Fernando Basin as of October 2010 (126,469 AF of stored water credits that are available to be pumped now and 329,677 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 some background information on the Judgment are available for review at the office of the ULARA Watermaster or on-line at www.ularawatermaster.com.

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 2009 to September 2010, LADWP extracted 59,958 AF, 2,544 AF, and 11,135 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 (Oct-Sep)	San Fernando	Sylmar	Central
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
2009-2010	59,958	2,544	11,135

Note: Units are in AF

Metropolitan Water District of Southern California (MWD)

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 preferential rights. 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 to acquire its dry weather condition supplies from MWD .

In response to the 2009 regulatory restrictions on water supplies from Northern California, the MWD Board announced on April 14, 2009 that supply deliveries to the member agencies would be reduced by 10 percent. The reduced supply allocation was to be effective from July 1, 2009 through June 30, 2010, but in April 2010, the MWD Board approved an extension of the reduced supply allocation through June 30, 2011 primarily to restore the storage balances in MWD's groundwater and surface storage facilities.

On March 31, 2011, California Governor Jerry Brown declared an end to the statewide drought emergency that had been proclaimed earlier on February 27, 2009, by then-Governor of California Arnold Schwarzenegger. MWD's Board subsequently voted on April 12, 2011 to end implementation of the 2010/11 water supply allocation. In the same decision, the Board also voted to not implement a water supply allocation for 2011/12. These actions restored full imported water deliveries to member agencies without risk of allocation penalties effective April 2011.

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 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. These plans are contained in MWD's Integrated Water Resources Plan and Regional Urban Water Management Plan, which can be found at www.mwdh2o.com. Additionally, MWD has more than 5.0 million AF of storage capacity available in reservoirs and banking/transfer programs, with approximately 1.676 million AF in that storage and approximately 626 thousand AF in emergency storage in January 2011.

MWD established a policy objective for water supply reliability as part of its Integrated Water 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 (USFWS) 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. Metropolitan and other impacted agencies and stakeholders filed separate lawsuits in federal district court challenging the biological opinion, which the federal court consolidated under the caption Delta Smelt Consolidated Cases. On December 14, 2010, Judge Wanger issued a decision on summary judgment finding that there were major scientific and legal flaws in the Delta smelt biological opinion and remanding the biological opinion to the USFWS for reconsideration. The court's decision invalidates some of the restrictions on project operations contained in the Delta smelt biological opinion. On May 4, 2011, Judge Wanger issued a decision directing the USFWS to complete a new draft biological opinion by October 1, 2011, and to complete a final biological opinion with environmental documentation by December 1, 2013. These events have highlighted the challenges that water suppliers throughout the state currently face regarding supplies from the Delta.

On November 18, 2011, the DWR announced that its 2012 SWP initial allocation would be 60 percent of total contracted water deliveries to the SWP contractors. Sixty percent of 1,911,500 AFY, which is the MWD's contracted water delivery amount, is 1,146,900 AFY. The initial allocation figure 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 2012 projected 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 then 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. The bond measure is subject to voter authorization and was scheduled to be included on the November 2010 ballot; however, in August 2010 the Legislature postponed the bond election to 2012. 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 is 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 is 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. 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 transfers, seawater desalination, and stormwater reuse are considered and evaluated as part of the City's long-term water resources portfolio.

Rates

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 for operation and maintenance.

The water rate structure contains a Water Procurement Adjustment Factor under which the cost of purchased water from MWD is recovered, a Demand Side Management and Reclaimed Water Cost Adjustment Factor which recovers the cost of water conservation programs, and reclaimed water projects. In addition, the rate structure contains a Water Quality Improvement Adjustment Factor 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

The proposed Convention and Event Center Project is estimated to increase total water demand within the site by 194 acre feet annually based on review of information submitted by the Planning Department and Project Proponent.

The approximate 194 acre feet increase in the total water demand for the Project falls within the available and projected water supplies for normal, single-dry, and multiple-dry years through the year 2035 as described in LADWP's year 2010 UWMP. LADWP finds that it will be able to meet the proposed water demand of the Convention and Event Center Project, as well as existing and planned future water demands of its service area.

Appendix A

City of Los Angeles Department of City Planning
Request for Water Supply Assessment

CITY OF LOS ANGELES
CALIFORNIA



ANTONIO R. VILLARAIGOSA
MAYOR

DEPARTMENT OF

CITY PLANNING

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November 23, 2011

Mr. James McDaniel, Chief Operating Officer – Water System
LOS ANGELES DEPARTMENT OF WATER AND POWER
111 North Hope Street, Room 1455
Los Angeles, California 90012

**Re: REQUEST FOR WATER SUPPLY ASSESSMENT – CONVENTION AND
EVENT CENTER PROJECT – REVISION No. 2**

Dear Mr. McDaniel:

California Senate Bill (SB) 610, effective January 1, 2002, states that a water supply assessment must be provided to local governments for inclusion in any environmental documentation for certain projects subject to the California Environmental Quality Act (CEQA). Specifically, SB 610 requires that for certain projects, the CEQA lead agency must identify any public water system that may supply water to the proposed project and request the public water system to determine the water demand associated with the project and whether such demand was included as part of the most recently adopted Urban Water Management Plan (UWMP). Per Section 10912 of the California Water Code (CWC), a project which is subject to the requirements of SB 610 includes: (1) a shopping center or business establishment that will employ more than 1,000 persons or have more than 500,000 square feet of floor space; (2) a commercial office building that will employ more than 1,000 persons or have more than 250,000 square feet of space; or (3) any mixed-use project that would demand an amount of water equal to or greater than the amount of water needed to serve a 500 dwelling unit project.

The Convention and Event Center Project (hereafter referred to as the “Proposed Project”) meets the above thresholds requiring the preparation of a water supply assessment. As such, the Los Angeles Department of Water and Power (LADWP) has been identified as a public water system (as defined in CWC Section 10912 and CEQA Guidelines Section 15083.5(e)) that would serve the Proposed Project. Accordingly, the City Planning Department (CEQA lead agency for the Proposed Project) requests that the LADWP: (1) determine whether the estimated water demand associated with the Proposed Project was included as part of LADWP’s most recently adopted UWMP; and (2) prepare and approve a water supply assessment using the UWMP or new analyses for the Proposed Project pursuant to CWC Section 10910 et seq.

The requirements for a water supply assessment include the identification of existing water supply entitlements, water rights, or water service contracts held by LADWP’s public water system, and prior years’ water deliveries received by LADWP’s public water system. Please refer to CWC Section 10910 (d)(2) for the documentation required to verify any identified rights to a water supply. If the LADWP has not received water in prior years as described in CWC Section 10910 (e) or if groundwater is a source of supply as described in CWC Section 10910 (f), please comply with the requirements of those sections.

The City Planning Department requests that the water supply assessment for the Proposed Project include a discussion of whether LADWP’s public water system’s total projected water supplies available during normal, single dry, and multiple dry water years will meet the projected water demand associated with the Proposed Project, in addition to LADWP’s public water system’s existing and planned future uses, including agricultural and manufacturing uses, pursuant to CWC Section 10910 (c)(3).

The Proposed Project consists of the following three components: (1) expansion and modernization of the Los Angeles Convention Center (hereafter referred to as the “Convention Center”), (2) the construction of a new multi-use entertainment and sports facility (hereafter referred to as the “Event Center”), and (3) related parking and support facilities. The Proposed Project is located within an approximately 68-acre site that includes all of the existing Convention Center property, including the Bond Street Parking Lot and the Cherry Street Parking Garage, STAPLES Center, as well as the air space over Pico Boulevard and LA LIVE Way (hereafter referred to as the “Project Site”). The Project Site is generally bounded by the following major roadways: the I-110 Harbor Freeway to the west; Chick Hearn Court to the north; Figueroa Street to the east; and Venice Boulevard to the south. Figure 1 on page 3 depicts the location of the Proposed Project, whereas Figure 2 on page 4 provides an aerial view of the Project Site and its environs.

With the implementation of the Proposed Project, the Project Site would function as a unified center for convention, sports and entertainment uses. The Proposed Project is proposed to be implemented through adoption of a new Specific Plan and

LEGEND



Project Site Boundary



Source: Google Earth Pro 2011.

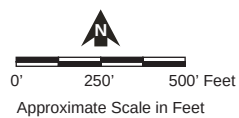


Figure 2
Aerial View of Project Site

Community Plan Amendment. Although the Specific Plan encompasses the entire Project Site, its primary focus would be on the regulation of the proposed buildings and related features, including signage, as well as the regulation of transportation and parking. In addition, notable elements of environmental sustainability would be comprehensively integrated into the Proposed Project and would be one of the key elements that would guide the design of the Proposed Project. Total building square footage to be constructed under the Proposed Project would be approximately 1.74 million square feet of net new gross floor area. A brief overview of each of the Proposed Project's three components is provided below.

The Proposed Project's first component would involve the demolition and replacement of the Convention Center's existing West Hall. The new structure (hereafter referred to as "New Hall"), would bridge over a portion of Pico Boulevard such that it would adjoin the Convention Center's existing South Hall and would consist of roughly the same amount of square footage as the former West Hall. While the total square footage would be comparable, the amount of functional space would substantially increase through a more efficient building design that among other benefits results in a substantial increase in contiguous floor space for the Convention Center.

The Proposed Project's second component is the development of the Event Center, a multi-purpose, entertainment and sports facility with a potentially retractable roof on the site of the former West Hall. The approximately 1,750,000 square-foot structure would include approximately 72,000 permanent seats with expandable seating capacity to approximately 76,250 seats for major marquee events, such as a Super Bowl. The Event Center would also be available for use as Convention Center exhibit and meeting room space, when not used for spectator events, providing roughly 245,650 square feet of usable exhibition and meeting room space.

The Proposed Project's third component would involve the construction of new larger, more efficient parking facilities on the existing Bond Street Parking Lot and Cherry Street Garage sites. As the West Hall would be demolished, the existing 1,625 parking spaces under the West Hall would be removed by the Proposed Project. The existing Cherry Street Garage would be rebuilt and expanded from the existing 858 spaces to approximately 2,950 parking spaces. A new parking garage would be constructed on the existing Bond Street Parking Lot, which would increase parking on that site from approximately 283 to 928 parking spaces. These improvements would result in a net increase of approximately 1,100 parking spaces. Additionally, above-ground pedestrian bridges would provide connectivity between these parking structures and the Event Center and New Hall, as well as to LA LIVE Way.

In addition to the above improvements, the Proposed Project includes approximately 47,000 square feet of renovations to the existing Concourse building. Changes to the Convention Center's existing South Hall would be limited to its interface

with the proposed New Hall. Existing parking under the South Hall and in the Convention Center's Venice Garage would not be affected by the Proposed Project.

Tabular summaries of the Proposed Project are provided in Tables 1 through 3 as presented on this and the following page.

Table 1
CONVENTION AND EVENT CENTER PROJECT
DEVELOPMENT PROGRAM OVERVIEW
(Square Feet of Gross Building Area)

	Existing	Proposed	Change	
			Number	Percent
Convention Center	2,083,879	2,076,169	(7,710)	(0.4%)
Event Center	-	1,750,000	1,750,000	100.0%
STAPLES Center	950,000	950,000	-	0.0%
Total Proposed Project	3,033,879	4,776,169	1,742,290	57.4%

() indicates a negative number.

Table 2
EXISTING AND PROPOSED CONVENTION CENTER
DEVELOPMENT PROGRAM
(Square Feet of Floor Area)

	Existing	Proposed	Change	
			Number	Percent
Convention Center				
Exhibit Halls	772,748	780,506	7,758	1.0%
Meeting Rooms	113,345	106,345	(7,000)	(6.2%)
Offices	89,414	87,441	(1,973)	(2.2%)
Restaurant/Commissary/ Food Court	74,330	76,500	2,170	2.9%
Other ^a	488,834	525,678	36,844	7.5%
Subtotal	1,538,671	1,576,470	37,799	2.5%

Notes:

() indicates a negative number.

^a The "Other" category includes areas used for pre-function, storage, restrooms, and back-of-house (e.g., mechanical equipment, etc.). In addition, the Proposed Project includes 3,975 square feet of retail use in Gil Lindsay Plaza and 3,250 square-foot bike station.

Table 3
CONVENTION AND EVENT CENTER PROJECT
COMPARISON OF EXISTING WEST HALL AND PROPOSED PICO HALL
(Square Feet of Floor Area)

	Existing West Hall ^a	Proposed New Hall	Change	
			Number	Percent
Exhibit Halls	232,242	240,000	7,758	3.3%
Meeting Rooms	46,000	39,000	(7,000)	(15.2%)
Offices	23,973	22,000	(1,973)	(8.2%)
Other ^b	159,986	199,000	39,014	24.4%
Total	462,201	500,000	37,799	8.2%

Notes:

^a Includes the existing West Hall.

^b The "Other" category includes areas used for pre-function, food preparation, storage, restrooms, and back-of-house (e.g., mechanical equipment, etc.).

The Proposed Project's proposed uses and an estimate of water consumption is provided in Tables 4 through 8 on pages 13 through 22. Table 4 presents the calculations setting forth the Project Site's existing water demand, whereas Tables 5 and 6 present the Proposed Project's water demand under two scenarios. The water demand forecast presented in Table 5 is based on existing water usage at the Project Site, whereas Table 6 presents the forecast of the Proposed Project's water demand using the City's Bureau of Sanitation standard factors. In addition to the buildings themselves, the Proposed Project includes central plant facilities that replace existing central plant facilities as well as new facilities that would support the Event Center. Supporting the aforementioned Proposed Project features are a number of landscaped areas. Table 7 provides a quantification of the water savings resulting from implementation of the Proposed Project's water conservation measures, whereas Table 8 identifies the net increase in on-site water consumption under both Option 1 and Option 2.

Provided below is a brief narrative describing the process used to forecast the water demand and savings shown in Tables 4 through 8.

Table 4: Existing Conditions

The forecast of total existing water usage is based on actual water usage for the 2010 calendar year as reported on the water bill data provided by the Los Angeles Convention Center (LACC) and Anschutz Entertainment Group (AEG).

Under both Options 1 and 2, water demand forecasts for the Convention Center and the Event Center are provided separately and are comprised of individual forecasts

for the following three components: (1) general consumption, (2) central plant, and (3) irrigation.

Table 5: Option 1 – Forecast of Proposed Project Water Demand Based on Actual Usage

The operators of the Convention Center, after a review of their records, concluded that attendance was the appropriate variable to forecast future general water consumption as the types of events and activities occurring at the Convention Center in the future would be similar to those occurring today, with the only difference being the number of attendees on an annual basis. As such, the forecast of Convention Center general water consumption is based on multiplying the existing per capita usage by the forecasted future attendance. The Proposed Project, also under the heading of general consumption, anticipates the construction of two new facilities as part of the improvements proposed for Gil Lindsay Plaza – a 3,975 square-foot retail facility and a 3,250 square-foot bike station intended to support the planned increased bicycle usage along the Figueroa Street Corridor resulting from the implementation of the City's ongoing planning efforts for the Figueroa Corridor between the Exposition Park area and the area north of the Project Site. The proposed retail facility and bike station are assumed to operate 365 days per year.

While the Event Center is a new facility, AEG, the operators of STAPLES Center, have concluded that existing water consumption at STAPLES Center on a per capita basis would be the most reliable factor upon which to forecast water usage at the Event Center. Due to some events at the Event Center lasting longer than existing events at STAPLES Center (i.e., a basketball game last approximately 2.5 hours versus a football game which lasts on the order of 3.5 hours), it was determined appropriate to incorporate an upward adjustment to the per capita water consumption level presently occurring at the STAPLES Center. Thus, the forecast of Event Center general water consumption is based on first multiplying the existing per capita usage at the STAPLES Center by a factor of 1.2 and then multiplying that result by the forecasted Event Center attendance.

Forecasts of central plant water consumption are provided by Syska Hennessy Group (see Attachment C). The forecasted irrigation water demand is based on the Proposed Project's conceptual landscape design plan and formulas from the included in the Eastern Municipal Water District's water budget guide (Riverside County, CA), which is provided as Attachment D to this letter. Under the Proposed Project, the use and function for Gil Lindsay Plaza will be changing from one that is oriented to the motor vehicle to one that is oriented to the pedestrian. To facilitate and enhance the realization of this objective the character of Gil Lindsay Plaza would change quite a bit under the Proposed Project. Current planning for this area includes the creation of broad pedestrian areas on the northern side of the plaza to ease the departure from the

Event Center and the creation of a water feature (e.g., fountain) to enhance the overall attractiveness of the plaza. The central and southern portions of the plaza are likely to be transformed into a landscaped amenity, including a turf area, that supports on-site activities as well as offering park space to the adjacent communities. While there would be some changes to irrigation quantities within the Farmers and LA Live Way Plazas, irrigation quantities within these two areas would be somewhat comparable to what occurs under existing conditions.

Table 6: Option 2 – Forecast of Proposed Project Water Demand Based on Standard City Factors

Several of the uses proposed to occur at the Convention Center are included on the City's list of land uses for which standard consumption factors have been developed. For those Convention Center uses not included on the list, the Bureau of Sanitation in their response to the Proposed Project's Notice of Preparation of an EIR identified factors for these uses which are recognized by the LADWP as acceptable for purposes of conducting a WSA. Specifically, water consumption at the rate of 80 and 150 gallons per one thousand square feet of floor area for exhibit halls and meeting rooms were identified by the City, respectively. Interior back-of-house uses are conservatively assigned the same consumption rates as the exhibit halls and the bike station was conservatively assigned the same rate as a retail use. Forecasts of event days for the exhibit halls and meeting rooms were developed based on actual usage occurring over the 2010/2011 fiscal year and adjusted upward by the percentage increase in event days forecasted to occur under the Proposed Project. Based on input from the operators of the Los Angeles Convention Center, water consumption associated with food service areas was forecasted to be comparable to that associated with a fast food restaurant.¹ Other floor area and food service areas are conservatively forecasted to operate whenever any event occurs at the Convention Center. Office uses were assumed to operate six days per week, whereas the retail facility and the bike station were assumed to operate 365 days per year.

The forecast of general water consumption at the Event Center for spectator events is based on the attendance at an event and the number of events per year. When the Event Center is used as an exhibit hall or for meeting rooms, general water consumption is based on the floor area used and the number of event days at the various usage levels. Based on input from AEG, the operators of the STAPLES Center, water consumption associated with food service areas was forecasted to consist of 540 restaurant seats, with the balance being comparable to that associated with a fast food restaurant.² Food services at the Event Center are conservatively forecasted to operate

¹ This approach is conservative in that fast food restaurants typically operate during longer hours than the food service areas at the Los Angeles Convention Center, which are limited to event hours. Therefore, actual water consumption is likely to be less.

² This approach is conservative in that fast food restaurants typically operate during longer hours than the food service areas at the Event Center, which are limited to event hours. Therefore, actual water consumption is likely to be less.

whenever any event occurs at the Event Center. Office uses were assumed to operate five days per week, whereas the retail facility is assumed to operate 365 days per year. Central plant water usage and water usage in support of the irrigated areas under Option 2 are the same as Option 1.

Table 7: Water Conservation

Sustainability, including but not limited to water conservation, are important everyday issues in the management of both the Los Angeles Convention Center and facilities operated by AEG. With a specific focus on water consumption, the following are the water conservation features that the respective Applicant's would incorporate into the Proposed Project:

Based on water savings data developed as part of the Project's water conservation program, the water savings attributable to the above list of water conservation measures have been quantified to the extent feasible. The forecasted level of water reductions would apply to both Options 1 and 2.

Table 8: Net Water Consumption

This table subtracts the water savings resulting from implementation of the water conservation features (Table 7) from the incremental increase in water consumption under both Options 1 and 2 (Tables 5 and 6). The final results of this analysis for the two Options are as follows:

	Net Increase in Annual Water Consumption (Gallons/Year)
Option 1: Actual Usage	61,604,690
Option 2: Standard Factors	58,703,884

* * * * *

To further assist the LADWP in the preparation of the Proposed Project's WSA, a copy of the Proposed Project's Notice of Preparation is also provided as an attachment to this letter (see Attachment G).

CWC Section 10910 (g)(1) requires submission of the assessment within 90 days of this request. The information presented herein supersedes that previously provided to LADWP. If you have any questions or need additional information, please give me a call at (213) 978-1357 or call the EIR consultant, Bruce Lackow of Matrix Environmental at (424) 207-5337.

Sincerely,

Hadar Plafkin, City Planner
Department of City Planning
200 N. Spring Street, Room 750
Los Angeles, CA 90012

Attachments:

- Attachment A: Tables 4 through 8
- Attachment B: Convention and Event Center Future Activity Forecasts
- Attachment C: Central Plant Existing and Future Water Demand
- Attachment D: Eastern Municipal Water District's Water Budget Guide (Riverside County, CA)
- Attachment E: Event Center Water Conservation Calculations
- Attachment F: Convention Center Water Conservation Calculations
- Attachment G: Notice of Preparation

Table 4
EXISTING CONDITIONS

General Consumption ^a		
	Annual Water Use	
	Gallons	Acre-Feet
Convention Center ^b	12,693,194	38.95
Sub-total	12,693,194	38.95
Central Plant ^c		
	Annual Water Use	
	Gallons	Acre-Feet
Convention Center	8,206,970	25.18
STAPLES Center	1,062,000	3.26
Subtotal	9,268,970	28.44
Irrigation ^d		
All Locations	4,564,000	14.00
SUMMARY - EXISTING CONDITIONS		
General Consumption	12,693,194	38.95
Central Plant	9,268,970	28.44
Irrigation	4,564,000	14.00
Total Existing Conditions	26,526,164	81.39
^a Excludes STAPLES Center as no changes are proposed to this existing facility under the Proposed Project. ^b Total annual water consumption for calendar year 2010 less water used for Central Plant (see below). Based on water meter data associated with the following water meter numbers: 90141780, 90141866, 90141781, and 46431391. All data provided by the Los Angeles Convention Center Inc., 2011. ^c Based on data provided by Syska Hennessy Group, Inc., 2011. Supporting documentation provided as Attachment C. ^d Total annual water consumption for calendar year 2010. Based on water meter data provided by the Los Angeles Convention Center Inc., 2011.		

Table 5
OPTION 1: FORECAST OF PROPOSED PROJECT WATER DEMAND BASED ON ACTUAL USAGE

General Consumption						
Convention Center						
			Per Capita Water Consumption	Forecasted Annual Attendance ^a	Annual Water Use	
					Gallons	Acre-Feet
Patron Use			4.69 ^b	4,020,959	18,858,298	57.87
	Floor Area	Water Consumption/ 1,000 Sq.Ft.	Water Consumption/ Day	Annual Days Open for Business	Annual Water Use	
					Gallons	Acre-Feet
Retail	3,975	80	318	365	116,070	0.36
Bike Station	3,250	80	260	365	94,900	0.29
Subtotal					19,069,268	58.52
Event Center						
			Per Capita Water Consumption ^c	Forecasted Annual Attendance ^a	Annual Water Use	
					Gallons	Acre-Feet
Spectator Events			10.94	4,122,500	45,100,150	138.39
Exhibition Events			7.29	1,971,690	14,373,620	44.1
Subtotal					59,473,770	182.49
Total General Consumption					78,543,038	241.01
Central Plant						
					Annual Water Use	
					Gallons	Acre-Feet
All Facilities (Convention Center, Event Center, STAPLES Center) ^d					11,857,133	36.38

Table 5

OPTION 1: FORECAST OF PROPOSED PROJECT WATER DEMAND BASED ON ACTUAL USAGE (Continued)

Irrigation						
	Area (Sq.Ft.) ^e	Species Factors ^f	Distribution Efficiency ^f	Application Efficiency ^f	Annual Water Use ^f	
					Gallons	Acre-Feet
Event Center Plaza						
Drip	1,567	0.5	0.90	0.85	36,166	0.11
Bubblers	2,750	0.5	0.85	0.85	67,202	0.21
Subtotal	4,317				103,368	0.32
Gil Lindsay Plaza						
Drip	66,785	0.5	0.90	0.85	1,541,373	4.73
Bubblers	27,000	0.5	0.85	0.85	65,980	0.2
Fountain ^g					16,400	0.05
Subtotal	93,785				1,623,753	4.98
LA LIVE Way Plaza						
Drip	40,656	0.5	0.90	0.85	938,325	2.88
Subtotal	40,656				938,325	2.88
Total Irrigation	138,758				2,665,446	8.18
SUMMARY - PROPOSED PROJECT BASED ON ACTUAL USAGE						
					Annual Water Use	
					Gallons	Acre-Feet
General Consumption					78,543,038	241.01
Central Plant					11,857,133	36.38
Irrigation					2,665,446	8.18
Total Proposed Project Conditions					93,065,617	285.57
OPTION 1: NET INCREASE IN WATER DEMAND -- PROPOSED PROJECT BASED ON ACTUAL USAGE						
					Annual Water Use	
					Gallons	Acre-Feet
Existing Development					26,526,164	81.39
Proposed Project					93,065,617	285.57
Net Increase in Annual Water Demand					66,539,453	204.18

Table 5

OPTION 1: FORECAST OF PROPOSED PROJECT WATER DEMAND BASED ON ACTUAL USAGE (Continued)

^a See Attachment B.

^b Per capita water consumption factor based on annual Existing General Consumption (see above) divided by estimated existing annual attendance (2,708,262 patrons). Existing General Consumption includes all sources including, but not limited to, restaurant, concessions, kitchens, commissaries, and pantries. The use of attendance as a predictor of future demand has been approved by the Los Angeles Convention Center Inc., 2011.

^c For Spectator Events, per capita water consumption factor based on 120% of that used at STAPLES Center to account for the increased duration of events at the Event Center compared to STAPLES Center (i.e., football game lasts approximately 3.5 hours versus 2.5 hours for a basketball game). The per capita consumption factor for STAPLES Center based on total annual water consumption at STAPLES Center (28,175,664 gallons), less central plant water usage (1,062,000 gallons), divided by estimated existing annual attendance (2,974,357 patrons). Existing General Consumption includes all sources including, but not limited to, retail, office, restaurant, concessions, kitchens, commissaries, and pantries. The amount of these uses is roughly proportional between STAPLES Center and the Event Center. The use of attendance as a predictor of future demand has been confirmed by AEG, 2011. For Exhibition Events per capita water consumption assumed to be 75% of existing STAPLES Center per capita consumption.

^d Based on forecast provided by Syska Hennessy Group, Inc., 2011. Supporting documentation provided as Attachment C.

^e Based on data provided by Melendrez, 2011.

^f The 0.5 plant species factor is appropriate, if not conservative, for the entire development as it reflects an average based on the use of turf in Gil Lindsay Plaza requiring a higher species factor but the remainder of the planting will be in the low to very low range (i.e., species factors of less than 0.3). Based on data provided by KPFF, 2011, per Eastern Municipal Water District's water budget guide (Riverside County, CA). This document is provided as Attachment D.

^g Based on a 2,000 gallon reservoir emptied and refilled three times per year for maintenance and 10% weekly evaporation loss.

Table 6

OPTION 2: FORECAST OF PROPOSED PROJECT WATER DEMAND BASED ON STANDARD CITY FACTORS

General Consumption						
	Floor Area	Water Consumption/ 1,000 Sq.Ft.	Water Consumption/ Event Day	Number of Event Days	Annual Water Use	
					Gallons	Acre-Feet
Convention Center						
Exhibit Space	780,506	80	62,440	293 ^a	18,294,920	56.14
Meeting Rooms	106,345	150	15,952	142 ^b	2,265,184	6.95
Offices	87,441	150	13,116	312 ^c	4,092,192	12.56
Other (Back-of-House)	525,678	80	42,054	355 ^d	14,929,170	45.81
Restaurant/Commissary/ Food Court	76,500	300 ^e	22,950	355 ^d	8,147,250	25.00
Retail	3,975	80	318	365	116,070	0.36
Bike Station	3,250	80 ^e	260	365	94,900	0.29
Subtotal Convention Center					47,939,686	147.11
	Attendance ^f	Number of Event Days ^f	Forecasted Annual Attendance ^f	Water Consumption/ Seat	Annual Water Use	
					Gallons	Acre-Feet
Event Center						
Spectator Event Attendance ^g						
Attendance Level 1	72,230	37	2,672,510	4	10,690,040	32.80
Attendance Level 2	55,000	20	1,100,000	4	4,400,000	13.50
Attendance Level 3	35,000	10	350,000	4	1,400,000	4.30
Subtotal		67	4,122,510		16,490,040	50.60

Table 6
OPTION 2: FORECAST OF PROPOSED PROJECT WATER DEMAND BASED ON STANDARD CITY FACTORS
(Continued)

Event Center (Continued)						
	Floor Area ^f	Water Consumption/ 1,000 Sq.Ft.	Water Consumption/ Event Day	Number of Event Days ^f	Annual Water Use	
					Gallons	Acre-Feet
Exhibition Event Use	143,500	80	11,480	42	482,160	1.48
Meeting Room Use ^h						
Meeting Level 1	102,150	150	15,323	15	229,838	0.71
Meeting Level 2	40,000	150	6,000	30	180,000	0.55
Meeting Level 3	22,500	150	3,375	30	101,250	0.31
Subtotal					511,088	1.57
		Floor Area ^f	Annual Days Open for Business ^f	Water Consumption/ 1,000 Sq.Ft.	Annual Water Use	
					Gallons	Acre-Feet
Other Water Consuming Uses						
Office		10,350	260	150	403,650	1.24
Retail		35,500	365	80	1,036,600	3.18
Restaurant		540 seats	184	30/seat	2,980,800	9.15
Kitchens/Concessions/Commissaries/ Pantry		105,040	184	300	5,798,208	17.79
Subtotal					10,219,258	31.36
Subtotal Event Center					27,702,546	85.01
Subtotal General Consumption					75,642,232	232.12

Table 6

**OPTION 2: FORECAST OF PROPOSED PROJECT WATER DEMAND BASED ON STANDARD CITY FACTORS
(Continued)**

Central Plant		
	Annual Water Use	
	Gallons	Acre-Feet
All Facilities (Convention Center, Event Center, STAPLES Center) ⁱ	11,857,133	36.38

Irrigation						
	Area (Sq.Ft.) ^j	Species Factors ^k	Distribution Efficiency ^k	Application Efficiency ^k	Annual Water Use	
					Gallons	Acre-Feet
Event Center Plaza						
Drip	1,567	0.5	0.90	0.85	36,166	0.11
Bubblers	2,750	0.5	0.85	0.85	67,202	0.21
Subtotal	4,317				103,368	0.32
Gil Lindsay Plaza						
Drip	66,785	0.5	0.90	0.85	1,541,373	4.73
Bubblers	2,700	0.5	0.85	0.85	65,980	0.20
Fountain ^l					16,400	0.05
Subtotal	69,485				1,623,753	4.98
LA LIVE Way Plaza						
Drip	40,656	0.5	0.90	0.85	938,325	2.88
Subtotal	40,656				938,325	2.88
Total Irrigation	114,458				2,665,446	8.18

SUMMARY - PROPOSED PROJECT BASED ON STANDARD CITY FACTORS

	Annual Water Use	
	Gallons	Acre-Feet
General Consumption	75,642,232	232.12
Central Plant	11,857,133	36.38
Irrigation	2,665,446	8.18
Total Proposed Project Conditions	90,164,811	276.68

Table 6

**OPTION 2: FORECAST OF PROPOSED PROJECT WATER DEMAND BASED ON STANDARD CITY FACTORS
(Continued)**

NET INCREASE IN WATER DEMAND -- PROPOSED PROJECT BASED ON STANDARD CITY FACTORS		
	Annual Water Use	
	Gallons	Acre-Feet
Existing Development	26,526,164	81.39
Proposed Project	90,164,811	276.68
Net Increase in Annual Water Demand	63,638,647	195.29

^a The number of exhibit hall event days is calculated based on the following: Based on data for the July 1, 2010 to June 30, 2011 time period, the exhibit halls were either partially or completely utilized on a total of 212 days. The forecast of future convention center activity shows an increase of 38% in event days for events utilizing some or all of the exhibit halls.

^b The number of meeting room event days is calculated based on the following: Based on data for the July 1, 2010 to June 30, 2011 time period, the meeting rooms were either partially or completely utilized on a total of 131 days. The forecast of future convention center activity shows an increase of 8.5% in event days for events utilizing some or all of the meeting rooms.

^c The number of office days are calculated based on a 6-day work week.

^d Assumes no activity at the convention center a total of 10 days per year.

^e Water consumption factors are not available for these uses. The uses most similar to these for which water consumption factors are available are fast food restaurant and retail uses, respectively.

^f Based on information provided by AEG, 2011. See Attachment B for Event Center Activity Forecasts.

^g A wide range of Spectator Events with varying attendance levels are forecasted to occur at the Event Center. Since the Event Center is not yet constructed, the Spectator Events that would use the Event Center have not been booked at this time. Based on information provided by AEG, Spectator Events that are anticipated to use the Event Center have been classified into one of three attendance categories with average attendance levels established for each attendance category. The average attendance for Attendance Level 1 events exceeds the normal capacity of the Event Center as this attendance category includes some events at the Event Center's maximum capacity level of 76,250.

^h The Event Center includes 102,150 square feet of meeting room space. A wide range of meeting types with varying attendance levels are forecasted to use the Event Center. Since the Event Center is not yet constructed, the meeting rooms have not been booked at this time. Based on information provided by AEG, when the Event Center is used for meeting room purposes, three meeting room usage levels have been identified.

ⁱ Based on forecast provided by Syska Hennessy Group, Inc., 2011. Supporting documentation provided as Attachment C.

^j Based on data provided by Melendrez, 2011.

^k The 0.5 plant species factor is appropriate, if not conservative, for the entire development as it reflects an average based on the use of turf in Gil Lindsay Plaza requiring a higher species factor but the remainder of the planting will be in the low to very low range (i.e., species factors of less than 0.3). Based on data provided by KPFF, 2011, per Eastern Municipal Water District's water budget guide (Riverside County, CA). This document is provided as Attachment D. Based on data provided by KPFF, 2011, per Eastern Municipal Water District's water budget guide (Riverside County, CA). This document is provided as Attachment D.

^l Based on a 2,000 gallon reservoir emptied and refilled three times per year for maintenance and 10% weekly evaporation loss.

Table 7
CALCULATION OF WATER CONSERVATION MEASURES

Water Conservation Feature		Water Savings Per Year	
		Gallons ^a	Acre-Feet
Convention Center			
Waterless Urinals and Ultra-Low Flow Lavatories		884,300	2.71
High Efficiency Dishwashers		27,590	0.08
Pre-rinse Faucets		72,000	0.22
Subtotal		983,890	3.01
Event Center			
Waterless Urinals and Ultra-Low Flow Lavatories		1,913,870	5.87
High Efficiency Dishwashers		317,124	0.97
High Efficiency Clothes Washers		8,281	0.03
Subtotal		2,239,275	6.87
Central Plant	See Attachment C	1,711,598	5.25
Total		4,934,763	15.13

a See Attachments E and F for the calculation of water savings from the identified water conservation measures for the Event Center and Convention Center, respectively..

Table 8
COMPARATIVE ANALYSIS -- NET INCREASE IN WATER DEMAND

	Gallons	Acre-Feet
OPTION 1: Proposed Project Based on Actual Usage		
Forecasted Water Demand	66,539,453	204.18
Forecasted Water Savings	4,934,763	15.13
Forecasted Net Water Demand	61,604,690	189.05
OPTION 2: Proposed Project Based on City Standard Factors		
Forecasted Water Demand	63,638,647	195.29
Forecasted Water Savings	4,934,763	15.13
Forecasted Net Water Demand	58,703,884	180.16
Difference in Water Consumption (Actual Usage Compared to Factors)		
Number	2,900,806	8.89
Percent Change	4.9%	4.9%

CONVENTION and EVENT CENTER PROJECT

ACTIVITY FORECAST

EXISTING CONDITIONS

LOS ANGELES CONVENTION CENTER

	Number of Events Per Year	Total Number of Days Per Year			Attendance	
		Event Days	Set-Up/ Tear Down	Total	Average Per Event	Total Annual
Conventions	24	98	120	218	33,748	812,616
Trade Shows	27	70	74	144	7,151	193,270
Consumer Shows	48	126	139	265	13,808	1,261,500
Meeting Room	189	335	136	471	386	73,030
Banquets	9	14	19	33	1,343	12,530
Assemblies/Other	66	86	104	190	5,433	359,394
TOTAL	363	729	592	1,321	2,053	2,712,340

FUTURE CONDITIONS

EVENT CENTER

	Number of Events Per Year	Total Number of Days Per Year			Attendance	
		Event Days	Set-Up/ Tear Down	Total	Average Per Event Day	Total Annual
SPECTATOR EVENTS						
Attendance Level 1 (65,000+)	37	37	74	111	72,230	2,672,500
Attendance Level 2 (45,000 - 64,999)	10	20	50	70	55,000	1,100,000
Attendance Level 3 (25,000 - 44,999)	5	10	25	35	35,000	350,000
TOTAL	52	67	149	216	61,530	4,122,500
EXHIBITION EVENTS						
Attendance Level 1 (65,000+)	0	0	0	0	0	0
Attendance Level 2 (45,000 - 64,999)	2	6	14	20	50,000	300,000
Attendance Level 3 (25,000 - 44,999)	12	36	48	84	40,000	1,440,000
TOTAL	14	42	62	104	41,429	1,740,000
MEETING ROOMS						
In Conjunction With Exhibit Floor Usage ^{a, b}						
Attendance Level 1 (65,000+) ^c	0	0	0	0	0	0
Attendance Level 2 (45,000 - 64,999)	2	6	0	6	0	0
Attendance Level 3 (25,000 - 44,999) ^d	12	36	0	36	0	0
TOTAL	14	42	0	42	0	0
Meeting Room Use Only ^{e, f, g}						
Meeting Level 1 (50,000+ sq. ft.) ^h	15	15	15	30	6,946	104,190
Meeting Level 2 (30,000 - 49,999 sq.ft.)	30	30	30	60	2,720	81,600
Meeting Level 3 (15,000 - 29,999 sq. ft.)	30	30	30	60	1,530	45,900
TOTAL	75	75	75	150	3,089	231,690
^a Assumes all meeting room attendees are included in the head count for the Exhibition Event.						
^b Assumes meeting rooms are used for an average of six hours per day.						
^c Assumes 100 percent usage of all 76,000 square feet of meeting room space.						
^d Assumes 50 percent usage of all 76,000 (or 38,000) square feet of meeting room space.						
^e Total number of days meeting rooms used calculated as 30 percent of the days the Event Center is not used for actual events (i.e., event days).						
^f Square footage of meeting room usage calculated as the midpoint of the usage level and an occupancy of 6.8 persons per 100 square (based on average across all meeting room usage at existing LACC).						
^g Distribution of meeting room usage is as follows: (a) Meeting Room Level 1 -- 20%; (b) Meeting Room Level 2 -- 40%, and (c) Meeting Room Level 3 -- 40%.						
^h Assumes upper end of range as all 102,150 square feet of meeting room space.						

SUMMARY OF EVENT CENTER ANNUAL EVENTS and ATTENDANCE

	Annual Event Days	Attendance	
		Per Event	Total All Events
Spectator Events	67	61,530	4,122,500
Exhibition Events & Meeting Rooms	42	41,429	1,740,000
Meeting Rooms ^a	75	3,089	231,690
TOTAL	184	33,121	6,094,190

^a Excludes meeting room usage in conjunction with exhibition events held at the Events Center.

LOS ANGELES CONVENTION CENTER

	Number of Events Per Year	Total Number of Days Per Year			Attendance	
		Event Days	Set-Up/ Tear Down	Total	Average Per Event	Total Annual
Conventions	38	155	190	345	43,423	1,650,074
Trade Shows	47	122	129	251	7,780	365,660
Consumer Shows	53	139	154	293	14,810	1,384,930
Meeting Room	207	366	149	515	396	81,972
Banquets	27	41	56	96	1,433	38,691
Assemblies/Other	84	109	133	242	5,948	499,632
TOTAL	456	932	811	1,742	4,314	4,020,959

PROJECT TOTAL ANNUAL EVENTS and ATTENDANCE

	Annual Event Days	Attendance	
		Per Event	Total All Events
Event Center	184	33,121	6,094,190
Convention Center	932	4,314	4,020,959
TOTAL	1,116	9,064	10,115,149

To: Bruce Lackow Date: November 21, 2011

From: Hamish List

Re: Central Plant Water Use, Existing and New Proj. No. LACC01

Copies to: Rob Stephens, Chris Landry, Sandy Eeds, Mike Hart, Bill Larwood

Central Plant:

Central Plant systems provide chilled water for HVAC cooling to the existing Convention Center and Staples Center, and will provide similar for the future Event Center (Stadium). Systems include chillers, pumps and cooling towers, with the cooling tower equipment rejecting heat to the atmosphere by way of evaporation. The cooling towers use water from LADWP supply through evaporation, drift and through "bleed".

As a result of evaporation, dissolved solids concentration will continually increase unless reduced by bleed off. Bleed water comes from the circulating cooling tower water system and is discharged to sewer. This is done to ensure that the dissolved solids concentration in the water stays below a maximum allowable limit.

Existing cooling towers at the Convention Center and at Staples Center run at approximately (3) cycles of concentration ("CoC"). Water use reduction estimate is based on the use of new cooling towers with increased cycles of concentration (increased from 3 to 5.5) in order to reduce the cooling tower water bleed off rate.

$$\text{Cycles of Concentration} = (\text{make up water}) / (\text{bleed rate})$$

Table 1, below, summarizes water use for the central plant cooling towers at the Convention Center and Staples Center, at (3) cycles of concentration. Note that the water use for the Convention Center is based on 2010 usage, increased based on the future projected visitor numbers (increase from 2.7 million to 4.0 million).

Table 2, below, summarizes future projected water use for the central plant cooling towers at the remodeled Convention Center and Staples Center, and shows the water savings of the new central plant when cooling towers are operated at (5.5) cycles of concentration.

Table 3, below, summarizes future projected water use for the central plant cooling towers at the new Events Center (Stadium), the remodeled Convention Center and Staples Center, to show the grand total water use of the three sites' central plant when cooling towers are operated at (5.5) cycles of concentration.

Table 1: Projected Central Plant Cooling Tower Water Use Existing Convention Center & Staples Center			
Central Plant Service	Existing Make-Up Water (gal/yr) ¹	Annual Bleed at 3 cycles (gal/yr)	Annual Water Use Evaporation and Drift
LACC: 7490 ton Central Plant	8,206,970	2,735,657	5,471,313
Staples Center: 2500 ton Central Plant	1,062,000	354,000	712,000
Totals	9,268,970	3,089,657	6,183,313

Notes:

1: Existing make up water values from Facilities water meter at central plant cooling towers for 2010. LACC number includes factor for projected increased attendance from 2.7million to 4.0 million visitors.

Table 2: Future Projected Central Plant Cooling Tower Water Savings and Use New Event Center (Stadium), remodeled Convention Center & Staples Center			
Central Plant Service	Proposed Annual Make-up Water (gal/yr)	Proposed Annual Bleed at 5.5 cycles (gal/yr)	Total Makeup Water <u>Savings</u> from existing (gal/yr) ³
LACC: 7490 ton Central Plant	6,687,160	1,215,847	(1,519,810)
Staples Center: 2500 ton Central Plant	870,222	158,222	(191,788)
Totals	7,557,382	1,374,069	(1,711,598)

Notes:

1: Decrease in uses in (parenthesis), increase in use is not.

Table 3: Future Projected Central Plant Cooling Towers New Event Center (Stadium), and Grand Total Future Water Use			
Central Plant Service	Proposed Annual Make-up Water (gal/yr)	Proposed Annual Bleed at 5.5 cycles (gal/yr)	
Event Center: 4550 ton Central Plant ¹	4,299,751	781,773	
<i>Total From Table 2, above</i>	<i>7,557,382</i>	<i>1,374,069</i>	
Totals	11,857,133	2,155,842	

Notes:

1: Event Center utilizes a cooling tower make up rate based on the blended rate of Convention Center and Staples Center. To be confirmed by ME Engineers as design develops.



RIVERSIDE COUNTY, CALIFORNIA

A Guide to Preparing Water Budgets

February 14, 2007

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Purpose

- A. The intent of this guide is to aid landscape architects to determine the Estimated Annual Water Use (EAWU), generate a monthly Target water budget (TARGET) and formulate an Annual Maximum Allowable Water Budget (AMAWB) for landscape irrigation systems.
- B. Eastern Municipal Water District (EMWD) will not review, approve or ensure the adequacy, efficiency or functional ability of any blue print drawings or as built plans, but **IF** Recycled water is determined to be available the involved landscape and irrigation plans must be designed and approved in accordance with the Procedural Guide and General Design Requirements for Construction of Recycled Water Facilities.
- C. EMWD's Customer Service Department will make the determination if recycled water is to be used.

EXHIBIT A

ESTIMATED ANNUAL WATER USE

This is provided to assist architects and designers in estimating the water needs of plant materials listed in the WUCOLS plant guide.

The estimated annual water use for the entire landscaped area per individual irrigation meter can be determined by following these steps:

- STEP 1 Calculate the estimated annual water use (EAWU) for each hydrozone in the landscaped area (per the formula in this exhibit).
- STEP 2 Add the EAWU of all hydrozones in the landscaped area.
- STEP 3 Round off the sum of EAWU for all hydrozones to the nearest whole number as follows: if $\geq .50$, round UP; if $\leq .49$, round DOWN.

The estimated annual water use of a hydrozone can be calculated using the following formula:

$$\text{EAWU} = \frac{(56.65)(ks)(HA)}{(DE)(AE)(1200)}$$

EAWU = Estimated Annual Water Use in billing units per year (one billing unit = 100 cubic feet = 748 gallons)

56.65 = Reference evapotranspiration in inches of water per year

ks = Species Factors (for a specific plant from the WUCOLS plant guide)

HA = Hydrozone Area in square feet

DE = Distribution Efficiency of the irrigation system expressed as a decimal (found later in this exhibit)

AE = Application Efficiency of the irrigation system expressed as a decimal (found later in this exhibit)

1200 = Conversion factor to produce an answer in billing units (to convert the answer to gallons, multiply the formula by 748)

Typical irrigation system DISTRIBUTION EFFICIENCY or DE for the various types of irrigation heads or emitters are expressed in the following decimals:

- < 0.60 for spray heads
- < 0.85 for gear-driven, impact, or ball-driven rotors
- < 0.85 for bubbler heads
- < 0.90 for drip irrigation systems

Irrigation system APPLICATION EFFICIENCY or AE is expressed as a decimal for the following systems:

- < 0.85 for irrigation systems that have a centralized control system or controllers that measure or can be programmed to use evapotranspiration rates, or systems that use other controls such as moisture sensors.
- < 0.65 for irrigation systems which do not have any of the above soil or weather-driven type of controls.

EXHIBIT B

EXAMPLE OF CALCULATING WATER USE

For a small, individually metered landscape project with two hydrozones and a total landscaped area of 8,000 square feet:

EAWU for hydrozone no. 1	=	$\frac{(56.65)(0.5)(3,000)}{(0.9)(0.85)(1,200)}$	=	92.56 billing units
EAWU for hydrozone no. 2	=	$\frac{(56.65)(0.5)(5,000)}{(0.7)(0.85)(1,200)}$	=	198.35 billing units
SUBTOTAL	=	92.56 + 198.35	=	290.91 billing units (round off to nearest whole number per previous instructions)
TOTAL EAWU FOR THIS PROJECT	=		=	291 billing units per year

NOTE: The EAWU for the total established landscaped area per individual irrigation meter **SHOULD NOT EXCEED** the Annual Maximum Allowable Water Budget (AMAWB) for that landscaped area.

EXHIBIT C

ANNUAL MAXIMUM ALLOWABLE WATER BUDGET

The annual maximum allowable water budget for the total landscaped area per individual irrigation meter can be determined by following these steps:

STEP 1 Calculate the annual maximum allowable water budget (AMAWB) (per the formula in this exhibit).

STEP 2 Round off the AMAWB to the nearest whole number as follows: if $\geq .50$, round UP; if $< .50$, round DOWN.

The annual maximum allowable water budget for the total landscaped area per individual irrigation meter should be calculated using the following formula:

$$\text{AMAWB} = \frac{(56.65)(A_{\text{pnf}})(A_{\text{nf}})((K_{\text{nf}})(K_s))}{1200} + \frac{(56.65)(A_{\text{pf}})(A_{\text{f}})((K_{\text{f}})(K_s))}{1200} = \text{AMAWB}$$

AMAWB = Annual Maximum Allowable Water Budget in billing units per year (one billing unit = 100 cubic feet = 748 gallons).

56.65 = reference evapotranspiration in inches of water per year

A_{pnf} = Allowable Percentage Non Functional Turf of ETo

A_{pf} = Allowable Percentage Functional Turf of ETo

EMWD will provide applicant with the Annual Maximum Allowable Water Budget (AMAWB) to be used in the scheduling of irrigation systems, which shall include a water budget for Non Functional and Functional Turf as follows:

Non Functional Turf: (A_{pnf})

- Any customer with a signed EMWD Landscape Irrigation Water Budget Agreement dated prior to February 14, 2007 will retain the water budget calculated using 100% of Reference Evapotranspiration (ETo) for Non Functional Turf.
- Any customer who signs an EMWD Landscape Irrigation Water Budget Agreement dated February 14, 2007 or later will have a water budget that is calculated using 80% of Reference Evapotranspiration for Non Functional Turf.

Functional Turf: (A_{pf})

- Water budgets for Functional Turf are calculated using 125% of Reference Evapotranspiration.

(Additional adjustments, based on site specific conditions, may be considered).

A_{nf} = Area of non-functional landscape in square feet

A_{f} = Area of functional landscape in square feet

K_{nf} = Irrigation Efficiency Adjustment Factor for non-functional landscape

$$K_{\text{nf}} = \frac{(K_{\text{Cnf}}) * 10,000}{(DE_{\text{nf}})(AE_{\text{nf}})} \quad (\text{Default Value} = 1.00)$$

- K_f = Irrigation Efficiency Adjustment Factor for functional landscape
- $$K_f = \frac{(KC_f) * 10,000}{(DE_f)(AE_f)} \quad (\text{Default Value} = 1.25)$$
- K_s = Soil Adjustment Factor (Default Value = 1.00)
- KC_f = Crop Coefficient for functional landscape (Default Value = .80)
- KC_{nf} = Crop Coefficient for non-functional landscape (Default Value = .60)
- DE_f = Distribution Uniformity Efficiency in % for functional landscape (Default Value = 80%)
- DE_{nf} = Distribution Uniformity Efficiency in % for non-functional landscape (Default Value = 60%)
- AE_f = Application Efficiency in % for functional landscape (Default Value = 80%)
- AE_{nf} = Application Efficiency in % for non-functional landscape (Default Value = 100%)
- 1200 = Conversion factor to produce an answer in billing units (to convert the answer to gallons, multiply the formula by 748).

CALCULATION EXAMPLE;

An individually-metered landscape project with a total landscaped area of 40,000 square feet:

$$\begin{aligned} \text{AMAWB} &= \frac{(56.65)(.80)(40,000)(1.00)(1.00)}{1200} + \frac{(56.65)(1.0)(10,000)(1.25)(1.00)}{1200} = 2100.77 \\ &= (2100.77 \text{ rounded off to the nearest whole number per previous instructions}) \\ &= \mathbf{2,101 \text{ Billing Units per Year}} \end{aligned}$$

EXHIBIT D

MONTHLY TARGET WATER BUDGET

The schedule of monthly target water budgets for the total landscaped area per individual irrigation meter is determined by following these steps:

- STEP 1 Calculate the monthly target water budget (Target) for each month of the year (per the formula in this exhibit).
- STEP 2 Round off each Target to the nearest whole number as follows: if .50, round UP; if .49, round DOWN.

Each monthly target water budget for the total landscaped area per individual irrigation meter is calculated using the following formula:

- TARGET = (AMAWB)(MAF)
- TARGET = Monthly Target Water Budget in billing units per the month chosen to be calculated.
- AMAWB = Annual Maximum Allowable Water Budget in billing units per year (rounded off to the nearest whole number and calculated per instructions in EXHIBIT C).
- MAF = Monthly Adjustment Factor for the month chosen to be calculated and taken from the following table:

JAN	0.037	MAY	0.108	SEP	0.108
FEB	0.051	JUN	0.125	OCT	0.073
MAR	0.071	JUL	0.140	NOV	0.046
APR	0.073	AUG	0.134	DEC	0.034

CALCULATION EXAMPLE;

For the TARGET for the month of August for an individually-metered landscape project with a total landscaped area of 50,000 square feet and an AMAWB of 2,478 billing units per year:

- TARGET** = (2101)(0.134)
- = (281.53) rounded off to the nearest whole number per previous instructions)
- = **282** Billing units for the month of August

EXHIBIT E

"SPECIES FACTORS AND PLANT WATER NEEDS"

This list is provided to assist architects and designers in estimating the water needs of many (but not all) plant materials.

The water needs of the plants (listed in the WUCOLS guide) appear in the form of a "Species Factor"

For the purpose of this guide, the WUCOLS plant list is organized into one of four categories, each representing a range of Species Factors (ks) as follows:

VERY LOW	Species Factor (VL): ks less than 0.1
LOW	Species Factor (L): ks range = 0.1 - 0.3
MODERATE	Species Factor (M): ks range = 0.4 - 0.6
HIGH	Species Factor (H): ks range = 0.7 - 0.9

A suggestion for using these (ks) values is to use the lower portion of the range if a plant is located in shaded or Northerly exposures, and to use the higher (ks) portion of the range if the plant is located in direct sun or Southerly exposures.

NOTE:

The (ks) values provided in this exhibit reflect good estimates of the water needs of many plant materials, (ks) have not been scientifically determined for all landscape plants. Although extensive, the WUCOLS plant guide is by no means complete. Horticultural reference books and horticulturists can provide useful information in estimating the water needs of plants not found in the WUCOLS plants guide. **REMEMBER**, this guide **DOES NOT REQUIRE** that only the plants listed be used. The WUCOLS plant guide will be amended as further data is made available.

GLOSSARY

The words used in this guide have the meaning set forth below:

- A. **"ALLOWABLE PERCENTAGE"** (A_{pf} or A_{pnf}) means a factor of 1.25 (125%) or .80 (80%) that when applied to reference evapotranspiration, determines the annual maximum allowable water budget for an individually metered landscape project.
- B. **"ANNUAL MAXIMUM ALLOWABLE WATER BUDGET"** or "AMAWB" the limit of water use for the entire landscaped area per individual irrigation meter. It is based upon reference evapotranspiration, the allowable percentage and the size of the landscaped area.
- C. **"APPLICATION EFFICIENCY"** or " AE_f " for functional landscape (default value 80%) or " AE_{nf} " for non-functional landscape (default value 100%) is based upon characteristics of the various types of irrigation system controls such as moisture sensors, etc.
- D. **"CROP COEFFICIENT"** or " KC_f " for functional landscape (default value .80) and " KC_{nf} " for non-functional landscape (default value .60)
- E. **"DISTRIBUTION EFFICIENCY"** or "DE" - Typical irrigation system "DE" for the various types of irrigation heads or emitters are expressed in the following decimals:
1. 0.60 for spray heads
 2. 0.85 for gear-driven, impact, or ball-driven rotors
 3. 0.85 for bubbler heads
 4. 0.90 for drip irrigation systems
- F. **"ESTIMATED ANNUAL WATER USE"** or "EAWU" means the estimated annual water use for an established landscape area as calculated in EXHIBIT A. It is based upon reference evapotranspiration, the crop coefficient of the plants involved, and the size of the landscaped area. The EAWU for the entire landscaped area per individual irrigation meter equals the sum of the estimated water use of all hydrozones in that landscape area. NOTE: the EAWU for the entire landscape area per individual irrigation meter SHALL NOT EXCEED the annual maximum allowable water budget of that landscape area.
- G. **"EVAPOTRANSPIRATION"** means the quantity of water evaporated from adjacent soil surfaces and transpired by plants during a specific time. Evapotranspiration data is collected from the Riverside UCR, CIMIS Field Station # 44.
- H. **"FUNCTIONAL LANDSCAPE"** or " A_f " a landscaped turf area that serves as a surface for such purposes as playing a sport or gathering for group activities.
- I. **"HYDROZONE"** means a portion of the landscape area having plants with similar water needs.
- J. **"IRRIGATION EFFICIENCY ADJUSTMENT FACTOR"** or " K_f " (for functional landscape) & " K_{nf} " (for non-functional landscape) mean the measurement of the amount of water beneficially used divided by the amount of water applied. IRRIGATION EFFICIENCY is a product of distribution efficiency (DE) - based upon characteristics of the various types of sprinklers/emitters, and application efficiency (AE) - based upon characteristics of the various types of irrigation system controls such as moisture sensors, etc.
1. Example: $K_f = \frac{(KC_f) * 10,000}{(DE_f)(AE_f)}$ (default 1.25)
- $K_{nf} = \frac{(KC_{nf}) * 10,000}{(DE_{nf})(AE_{nf})}$ (default 1.00)

- K. **"LANDSCAPED AREA"** means the parcel less the building footprint, driveways, non-irrigated portions of parking lots, hardscape-such as decks and patios-and other non-porous areas. Water features are included in the calculations of the landscaped area.
- L. **"MAXIMUM ALLOWABLE WATER BUDGET"** means the upper limit of water use (either "ANNUAL" or "TARGET") for the entire landscaped area per individual irrigation meter. It is based upon reference evapotranspiration, the allowable percentage (1.25 or 80%) and the size of the landscaped area.
- M. **"MONTHLY ADJUSTMENT FACTOR"** or "MAF" means a factor, expressed as a decimal, that, when multiplied by the annual maximum allowable water budget for an individually metered landscape project, determines the target monthly water budget for that project. MAFs are based upon monthly historic average reference evapotranspiration for the area of Riverside County. The MAFs for the twelve months of the year are;

JAN	0.037	MAY	0.108	SEP	0.108
FEB	0.051	JUN	0.125	OCT	0.073
MAR	0.071	JUL	0.140	NOV	0.046
APR	0.073	AUG	0.134	DEC	0.034

- N. **"NON COMPLIANCE SETTLEMENT CHARGE TIERS"** means a tier structure using the AMAWB as the Base Rate (budget). Any water used over the budget will be billed within the appropriate tiers, as described in section V of the Procedural Guide for Procuring Landscape Irrigation Water. Non compliance settlement charge tiers apply to any landscape irrigation water account that exceeds its AMAWB or ETo (whichever is highest) at year=s end.
- O. **"NON-FUNCTIONAL LANDSCAPE"** or " A_{nf} " a landscaped turf area, including trees, shrubs, and ground covers, used for aesthetic purposes.
- P. **"REFERENCE EVAPOTRANSPIRATION"** or 56.65 inches means a standard measurement of environmental parameters which affect the water use of plants. REFERENCE EVAPOTRANSPIRATION, is given as 56.65 inches of water per year, and represents the annual historic average evapotranspiration of a large field of 4-7 inch tall, cool-season grass that is well watered and located in the area of Riverside County. REFERENCE EVAPOTRANSPIRATION is used as the basis of determining the maximum allowable water budgets.
- Q. **"SOIL ADJUSTMENT FACTOR"** or " K_s " is an adjustment factor that is applied to the texture of the soil (Sand, Loam, Clay) with a default of 1.00.
- R. **"SPECIES FACTOR"** or " k_s " are classified as high (H), moderate (M), low (L), or very low (VL) in irrigation water needs. Each classification corresponds to a species factor range (a numerical value) which is expressed as a percentage of reference evapotranspiration (ETo). Species factors are used with ETo values to quantify water needs for a species. (for more information see the WUCOLS guide).
- S. **"Target"** refers to the monthly water budget, and is uses as an indicator in relationship to the AMAWB
- T. **"WATER USE CLASSIFICATION OF LANDSCAPE SPECIES"** or **"WUCOLS"** list is intended solely as a guide to help landscape professionals identify irrigation water needs of landscape species. It can be used either for the selection of species or to assist in developing irrigation schedules for existing landscapes. It is not intended to be used as a **required or approved** list by EMWD for selection of plant species.



LEED 2009 for New Construction and Major Renovations

WE PREREQUISITE 1: WATER USE REDUCTION

20% REDUCTION

All fields and uploads are required unless otherwise noted.

ALL OPTIONS

This active sample form has been modified for offline access. Modified fields and instructions are indicated in purple. Sample forms are for reference only.

The Table. Daily Occupancy below is a linked submittal from PI Form 3: Occupant and Usage Data to be used for reference only. PI Form 3 must be completed before values will display in WE Prerequisite 1. These values should inform, but not necessarily parallel, the numbers entered in the Table. Fixture Groups Definition.

Table WEp1-1. Daily Occupancy

FTE	Average Transients (Student/ Visitor)	Average Retail Customers	Residents	Total
4,348	72,230			76,578

Fixture Groups Introduction:

This table allows for project occupants to be organized in a way that best represents fixture usage patterns in the project. Occupants can be grouped together or separated into sub-groups at the option of the project team. The usage groups defined must be derived from daily occupancy data for the project building. Accordingly, all project occupants, as recorded in the Daily Occupancy tables from PI Form 3: Occupant and Usage Data must be represented in the Table. Fixture Groups Definition below. All residential occupants should be represented separately from non-residential occupants. Refer to the additional guidance document in the Credit Resources section.

Table WEp1-2. Fixture Groups Definition

Group Name	Annual Days of Operation	FTE	Transients (Student / Visitor)	Retail Customers	Residents	% Female	% Male
Spectator Event	67	783	61,530	0	0	50	50
Exhibition Event	42	330	41,429	0	0	50	50
Meeting Rooms	75	0	3,089	0	0	50	50
Players (Show)	67	73	0	0	0	38	62

Add Row

Delete Row

Briefly describe the inputs in the Table. Fixture Groups Definition. Explain the methodology used to define each fixture group, as well as the derivation of data in each row. Additionally, provide a detailed explanation if the default gender ratio is not used.

Table WEp1-3. Flush Fixture Data

Enter flush fixture data for each fixture group defined in the Table, Fixture Groups Definition.

Note: Click "Calculate" placed next to the Add and Delete to perform the calculations in the table. "Calculate" must be run after any or all the data is entered in the table to obtain the values in the summary section, the Baseline Flush Rate, IPC/UPC Baseline and the Performance Case. "Calculate" needs to be run to perform Water Savings Calculation and document Credit compliance.

Fixture Groups						Flush Rate (GPF)		Annual Water Consumption (kGal)	
Select	Display	Fixture ID ¹	Fixture Family	Fixture Type	Total Daily Uses ²	Base-line	In-stalled ³	IPC/UPC Baseline	Performance Case
Spectator Eve	Spectator Eve	PL-1	Urinal	IPC/UPC (Conventional	13,089	1	0	876.96	0
Spectator Eve	Spectator Eve	PL-1A	Water Closet	IPC/UPC (Conventional	20,025	1.6	1.28	2,146.68	1,717.34
Exhibition Eve	Exhibition Eve	PL-2	Urinal	IPC/UPC (Conventional	8,615.8	1	0	361.86	0
Exhibition Eve	Exhibition Eve	PL-2A	Water Closet	IPC/UPC (Conventional	13,088.4	1.6	1.28	879.56	703.65
Meeting Room	Meeting Room	PL-3	Urinal	IPC/UPC (Conventional	617.8	1	0	46.34	0
Meeting Room	Meeting Room	PL-3A	Water Closet	IPC/UPC (Conventional	926.7	1.6	1.28	111.2	88.96
Total calculated flush fixture water use annual volume, baseline case (kGal)					4,422.6				
Total calculated flush fixture water use annual volume, performance case (kGal)					2,509.95				
Percent reduction of water use in flush fixtures (%)					43				

Add Row

Delete Row

Calculate

¹ Define a reference name or descriptor that can be used to identify each fixture family/type.

² May be modified for special circumstances. Provide a narrative and upload daily use calculations to justify modifications. Refer to the additional guidance document in the Credit Resources section.

³ To account for dual-flush fixtures, enter a weighted average flush rate.

Table WEp1-4.. Flow Fixture Data

Enter flow fixture data for each fixture group defined in the Table. Fixture Groups Definition.

Note: Click "Calculate" placed next to the Add and Delete to perform the calculations in the table. "Calculate" must be run after any or all the data is entered in the table to obtain the values in the summary section, the Baseline Flush Rate, IPC/UPC Baseline and the Performance Case. "Calculate" needs to be run to perform Water Savings Calculation and document Credit compliance.

Fixture Groups							Flow Rate (GPM / GPC)		Annual Water Consumption (kGal)	
Select	Display	Fixture ID ¹	Fixture Family	Fixture Type	Total Daily Uses ²	Dura- tion (Secs) ²	Base- line	In- stalled ³	IPC/ UPC Base- line	Perfor- mance Case
Spectator	Spectator Eve	LAV-1	Public Lavatory Fau	IPC/UPC (Convention	33114	15	0.5	0.5	277.33	277.33
Players (\$	Players (Shov	SH-1	Shower	IPC/UPC (Convention	7.3	300	2.5	2	6.11	4.89
Exhibition	Exhibition Eve	LAV-2	Public Lavatory Fau	IPC/UPC (Convention	21704.5	15	0.5	0.5	113.95	113.95
Meeting R	Meeting Room	LAV-3	Public Lavatory Fau	IPC/UPC (Convention	1544.5	15	0.5	0.5	14.48	14.48
Total calculated flow fixture water use annual volume, baseline case (kGal)						411.87				
Total calculated flow fixture water use annual volume, performance case (kGal)						410.65				
Percent reduction of water use in flow fixtures (%)						0				

¹ Define a reference name or descriptor that can be used to identify each fixture family/type.

² May be modified for special circumstances. Also, a reasonable estimate MUST be provided for pre-rinse spray valves when selected in the table above. In either case, provide a narrative and upload calculations to justify modifications. Refer to the additional guidance document in the Credit Resources section.

³ When using the metering lavatory faucet, please convert all flow rates in gallons per minute (GPM) to gallons per cycle (GPC) based on duration from the product specifications. Provide a narrative or calculations to support the installed flow rate. The "Duration" is not applicable and therefore should not be modified.

Upload WEp1-1. Provide the plumbing fixture and fitting schedule for the project highlighting flush and flow rates for all applicable plumbing fixtures and fittings within the project building.

Files:

Table WEp1-5. Flush & Flow Fixtures Summary Statistics

Total calculated fixture water use annual volume, baseline case (kGal)	4834.47
Total calculated fixture water use annual volume, performance case (kGal)	2920.6
Percent reduction of water use in all fixtures (%)	40

A 20% reduction of water use in fixtures is required to document compliance with WE Prerequisite 1.

ADDITIONAL DETAILS

- ☐ Special circumstances preclude documentation of credit compliance with the submittal requirements outlined in this form.
- ☐ The project team is using an alternative compliance approach in lieu of standard submittal paths.

SUMMARY

WE Prerequisite 1: Water Use Reduction - 20% Reduction
Compliance Documented:

N

ATTACHMENT E

Event Center Clothes Washer Water Use

3-Nov-11

Event Types	Venue Attendance	# of Events per Year	Loads/Event*	Annual Loads	Annual Water Use (gal)		
					Non-Energy Star Clothes Washer	Energy Star Clothes Washer	Savings (gal)
					31	18 (gal/load)***	
Daily Base Use	varies	312	1	312	9672	5616	4056
Level 1	72,230	37	5	185	5735	3330	2405
Level 2	55,000	20	5	100	3100	1800	1300
Level 3	35,000	10	4	40	1240	720	520
					19747	11466	8281

Event Center Dishwasher Water Use - Stadium will have two machines: Flight Type Large Capacity and Conveyor Type Smaller Capacity

Event Types	Venue Attendance	# of Events per Year	Hours per Day (or Event) of Use*		Non-Energy Star / Low Efficiency Model Annual Use			Energy Star/ High Efficiency Model Water Use			
			Flight Type Large DW	Conveyor DW	Hobart FT900 Flight Type DW (gal/hour)*	Champion 84 Series (gal/hour)*	Total Use (gal)	Champion EUCCW4 Flight Type DW (gal/hour)*	Champion 64 Series Conveyor Type DW	Total Use (gal)	Savings (gal)
					168	356		117	124		
Daily Base Use	varies	260	0	4	0	370240	370240	0	128960	128960	241280
Level 1	72,230	37	4	4	24864	52688	77552	17316	18352	35668	41884
Level 2	55,000	20	4	4	13440	28480	41920	9360	9920	19280	22640
Level 3	35,000	10	4	4	6720	14240	20960	4680	4960	9640	11320
					45024	465648	510672	31356	162192	193548	317124

* Based on conversations with stadium food service consultant - 11/03/2011. Final manufacturer and model is TBD.

** 31 gallons per load for commercial washer taken from the energystar.gov calculator

*** 18 gallons per load for efficient clothes washer calculated from Maytag commercial product data (MLG19). Actual model to be used in stadium is TBD.



LEED 2009 for New Construction and Major Renovations

WE PREREQUISITE 1: WATER USE REDUCTION

20% REDUCTION

All fields and uploads are required unless otherwise noted.

ALL OPTIONS

This active sample form has been modified for offline access. Modified fields and instructions are indicated in purple. Sample forms are for reference only.

The Table. Daily Occupancy below is a linked submittal from PI Form 3: Occupant and Usage Data to be used for reference only. PI Form 3 must be completed before values will display in WE Prerequisite 1. These values should inform, but not necessarily parallel, the numbers entered in the Table. Fixture Groups Definition.

Table WEp1-1. Daily Occupancy

FTE	Average Transients (Student/ Visitor)	Average Retail Customers	Residents	Total
2,245				2,245

Fixture Groups Introduction:

This table allows for project occupants to be organized in a way that best represents fixture usage patterns in the project. Occupants can be grouped together or separated into sub-groups at the option of the project team. The usage groups defined must be derived from daily occupancy data for the project building. Accordingly, all project occupants, as recorded in the Daily Occupancy tables from PI Form 3: Occupant and Usage Data must be represented in the Table. Fixture Groups Definition below. All residential occupants should be represented separately from non-residential occupants. Refer to the additional guidance document in the Credit Resources section.

Table WEp1-2. Fixture Groups Definition

Group Name	Annual Days of Operation	FTE	Transients (Student / Visitor)	Retail Customers	Residents	% Female	% Male
Attendees	260	2,001	0	0	0	50	50
Employees	260	588	5,033	0	0	50	50

Add Row

Delete Row

Briefly describe the inputs in the Table. Fixture Groups Definition. Explain the methodology used to define each fixture group, as well as the derivation of data in each row. Additionally, provide a detailed explanation if the default gender ratio is not used.

Employee FTE is taken from Matrix Environmental's Total FTE Incremental FTE Employees Max * 0.33.
 Attendee FTE is taken from Matrix Environmental's Tables dated 8-19-11 ((Event Days * Average Attendees * Hours in Building) / 8)*0.33.
 The 0.33 is used to account for the Pico Hall project only being 1/3 of the Convention Center Project.

Table WEp1-3. Flush Fixture Data

Enter flush fixture data for each fixture group defined in the Table. Fixture Groups Definition.

Note: Click "Calculate" placed next to the Add and Delete to perform the calculations in the table. "Calculate" must be run after any or all the data is entered in the table to obtain the values in the summary section, the Baseline Flush Rate, IPC/UPC Baseline and the Performance Case. "Calculate" needs to be run to perform Water Savings Calculation and document Credit compliance.

Fixture Groups						Flush Rate (GPF)		Annual Water Consumption (kGal)	
Select	Display	Fixture ID ¹	Fixture Family	Fixture Type	Total Daily Uses ²	Base-line	In-stalled ³	IPC/UPC Baseline	Perfor-mance Case
Attendees	Attendees		Water Closet	IPC/UPC (Conventional	4,002	1.6	1.28	1,664.83	1,331.87
Employees	Employees		Water Closet	IPC/UPC (Conventional	488	1.6	1.28	203.01	162.41
Attendees	Attendees		Urinal	IPC/UPC (Conventional	2,001	1	0.125	520.26	65.03
Employees	Employees		Urinal	IPC/UPC (Conventional	244	1	0.125	63.44	7.93
Total calculated flush fixture water use annual volume, baseline case (kGal)					2,451.54				
Total calculated flush fixture water use annual volume, performance case (kGal)					1,567.24				
Percent reduction of water use in flush fixtures (%)					36				
Add Row		Delete Row		Calculate					

¹ Define a reference name or descriptor that can be used to identify each fixture family/type.

² May be modified for special circumstances. Provide a narrative and upload daily use calculations to justify modifications. Refer to the additional guidance document in the Credit Resources section.

³ To account for dual-flush fixtures, enter a weighted average flush rate.

Table WEp1-4.. Flow Fixture Data

Enter flow fixture data for each fixture group defined in the Table. Fixture Groups Definition.

Note: Click "Calculate" placed next to the Add and Delete to perform the calculations in the table. "Calculate" must be run after any or all the data is entered in the table to obtain the values in the summary section, the Baseline Flush Rate, IPC/UPC Baseline and the Performance Case. "Calculate" needs to be run to perform Water Savings Calculation and document Credit compliance.

Fixture Groups							Flow Rate (GPM / GPC)		Annual Water Consumption (kGal)	
Select	Display	Fixture ID ¹	Fixture Family	Fixture Type	Total Daily Uses ²	Duration (Secs) ²	Base-line	In-stalled ³	IPC/UPC Base-line	Performance Case
Attendees	Attendees		Public Lavatory Fau	IPC/UPC (Convention	6003	15	0.5	0.5	195.1	195.1
Employee	Employees		Public Lavatory Fau	IPC/UPC (Convention	4280.5	15	0.5	0.5	139.12	139.12
Employee	Employees		Kitchen Sink	IPC/UPC (Convention	588	15	2.2	2.2	84.08	84.08
Total calculated flow fixture water use annual volume, baseline case (kGal)						418.3				
Total calculated flow fixture water use annual volume, performance case (kGal)						418.3				
Percent reduction of water use in flow fixtures (%)						0				

Add Row

Delete Row

Calculate

¹ Define a reference name or descriptor that can be used to identify each fixture family/type.

² May be modified for special circumstances. Also, a reasonable estimate MUST be provided for pre-rinse spray valves when selected in the table above. In either case, provide a narrative and upload calculations to justify modifications. Refer to the additional guidance document in the Credit Resources section.

³ When using the metering lavatory faucet, please convert all flow rates in gallons per minute (GPM) to gallons per cycle (GPC) based on duration from the product specifications. Provide a narrative or calculations to support the installed flow rate. The "Duration" is not applicable and therefore should not be modified.

Upload WEp1-1. Provide the plumbing fixture and fitting schedule for the project highlighting flush and flow rates for all applicable plumbing fixtures and fittings within the project building.

Upload

Files:

Table WEp1-5. Flush & Flow Fixtures Summary Statistics

Total calculated fixture water use annual volume, baseline case (kGal)	2869.84
Total calculated fixture water use annual volume, performance case (kGal)	1985.54
Percent reduction of water use in all fixtures (%)	31

A 20% reduction of water use in fixtures is required to document compliance with WE Prerequisite 1.

ADDITIONAL DETAILS

☐ Special circumstances preclude documentation of credit compliance with the submittal requirements outlined in this form.

☐ The project team is using an alternative compliance approach in lieu of standard submittal paths.

SUMMARY

WE Prerequisite 1: Water Use Reduction - 20% Reduction
Compliance Documented:

N

ATTACHMENT F

LA Convention Center - Pico Hall - Water Consumption Comparison									
Flight-Type Dishwasher									
			Meiko (Proposed)	Champion		Water Savings (Gal.)			
			M-iQ B-M74 V8	EEUCCW8 (Existing)					
Water Consumption (Gals./hr.)			56.8	134		77.2			
Daily Consumption (Gal.)			180.93	364.86		183.93			
						Water Savings per year (Gal.)			
						(assuming 150 days/ year operation)			
						27,589.50			
Pre-Rinse Faucet									
(assuming 2 hours/day usage)									
						Water Savings (Gals./ day)			
Low-flow unit vs. typical spray valve						120			
Waste water						120			
Total						240			
Assuming (2) units in facility						480			
						Water Savings per year (Gal.)			
						(assuming 150 days/ year operation)			
						72,000			
Total Water Savings per year (Gal.)						99,589.50			

Source: Cini-Little International, Inc ., 2011.

DEPARTMENT OF
CITY PLANNING
200 N. SPRING STREET, ROOM 525
LOS ANGELES, CA 90012-4801
AND
6262 VAN NUYS BLVD., SUITE 351
VAN NUYS, CA 91401

CITY PLANNING COMMISSION

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VACANT
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March 17, 2011

NOTICE OF PREPARATION AND NOTICE OF PUBLIC SCOPING MEETING

EAF NO.: ENV 2011-0585-EIR

PROJECT NAME: Convention Center Modernization and Farmers Field Project

PROJECT LOCATION/ADDRESS: The Project Site is generally bounded by Chick Hearn Court on the north, Figueroa Street on the east, Venice Boulevard on the south, and the 110 Harbor Freeway on the west, in the downtown Los Angeles area

COMMUNITY PLANNING AREA: Central City

COUNCIL DISTRICT: 9

DUE DATE FOR PUBLIC COMMENTS: April 18, 2011

The City of Los Angeles, Department of City Planning, will be the Lead Agency and will require the preparation of an environmental impact report ("EIR") for the project identified herein (the "Project"). The Department of City Planning requests your comments as to the scope and content of the EIR. The purpose of the Scoping Meeting is to receive input from the public as to what areas the EIR should study. No decisions about the project are made at the scoping meeting. The Project description, location, and the potential environmental effects are set forth below. Also included below are the date, time, and location of the Scoping Meeting that will be held in order to solicit input regarding the content of the Draft EIR. The Scoping Meeting is in an open house format. **THIS IS NOT THE REQUIRED PUBLIC HEARING FOR MUNICIPAL CODE ENTITLEMENT REQUESTS, which will be scheduled after preparation of the EIR.** A copy of the Initial Study prepared for the Project is not attached but is available for public review at the Department of City Planning, 200 North Spring Street, Room 601, Los Angeles, CA 90012.

PROJECT DESCRIPTION: The Project Applicants, the City of Los Angeles and L.A. Event Center, LLC, proposes the expansion and modernization of the Los Angeles Convention Center and the development of Farmers Field which combined consist of 1,750,000 million square feet of net new gross floor area. The Project involves the following three major components: (1) the West Hall would be demolished and replaced with a new hall built in part over Pico Boulevard so as to be contiguous with the South Hall (the "Replacement Hall"); (2) Farmers Field, a new multi-use event center, that can be configured with 72,000 seats expandable to 76,250 seats for spectator events or as 169,650 square feet of useable exhibition space and 56,000 square feet of useable meeting room space for a combined total of 225,650 square feet of useable floor area, would be constructed on the former West Hall site; (3) and two parking structures would be constructed to replace the existing Bond Street surface parking lot and the Lot C (formerly Cherry Street) Garage to provide approximately 1,290 net additional parking spaces on the west side of LA LIVE Way to support the new development. With the implementation of the Project,

the Project Site would function as a unified center for convention, sports and entertainment uses.

The Project Applicants are seeking the following discretionary approvals from the City of Los Angeles as part of the proposed Project: approval of transactional agreements with respect to financing and development of the Replacement Hall and for the right to privately construct and operate Farmers Field, adoption of a Specific Plan to regulate development within the Project Site; General Plan Amendment to establish a Specific Plan land use designation for the Project Site; Vesting Zone Change or Zone Change to effectuate the new Specific Plan; Development Agreement; approval of signage pursuant to the new Specific Plan or Supplemental Use District; a Haul Route Permit; Creation/vacation of air space parcels over Pico Boulevard and LA LIVE Way; Cultural Affairs Commission approval of the design of the Replacement Hall and Farmers Field; bond financing for the Replacement Hall and any additional actions that may be determined necessary.

PROJECT LOCATION: The Project Site is comprised of approximately 68 acres located in the Downtown area of the City of Los Angeles. The Project Site includes all of the existing Los Angeles Convention Center property (Convention Center), STAPLES Center, as well as the Bond Street Parking Lot and the Lot C Garage (formerly the Cherry Street Parking Garage). The Project Site is generally bounded by the following major roadways: the I-110 Harbor Freeway to the west; Chick Hearn Court to the north; Figueroa Street to the east; and Venice Boulevard to the south.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED: Aesthetics; Air Quality; Cultural Resources; Geology and Soils; Greenhouse Gas Emissions; Hazards and Hazardous Materials; Hydrology and Water Quality; Land Use and Planning; Noise; Public Services; Recreation; Transportation/Traffic/Parking/Pedestrian Circulation; Utilities/Service Systems; and Mandatory Findings of Significance.

PUBLIC SCOPING MEETING DATE AND LOCATION: The public scoping meeting will be held on March 30, 2011 from 4:00 p.m. to 8:00 p.m. at the Los Angeles Convention Center. The purpose of the scoping meeting is to solicit public comments regarding issues to be addressed in the Draft EIR. The scoping meeting will provide information regarding the Project and the anticipated scope of analyses to be contained in the Draft EIR. The Department of City Planning encourages all interested individuals and organizations to attend this meeting. There will be no verbal comments or public testimony taken at this open house meeting.

Date: March 30, 2011

Time: 4:00 p.m. to 8:00 p.m.

Location: Los Angeles Convention Center
West Hall
Meeting Room 501ABC
1201 South Figueroa Street
Los Angeles, CA 90015

An Environmental Impact Report (EIR) will be prepared and submitted to the Department of City Planning. The Department of City Planning welcomes all comments regarding the environmental impacts of the proposed Project and the issues to be addressed in the EIR. All comments will be considered in the preparation of the EIR. **Written comments** must be submitted to this office by April 18, 2011. Written comments will also be accepted at the scoping meeting described above.

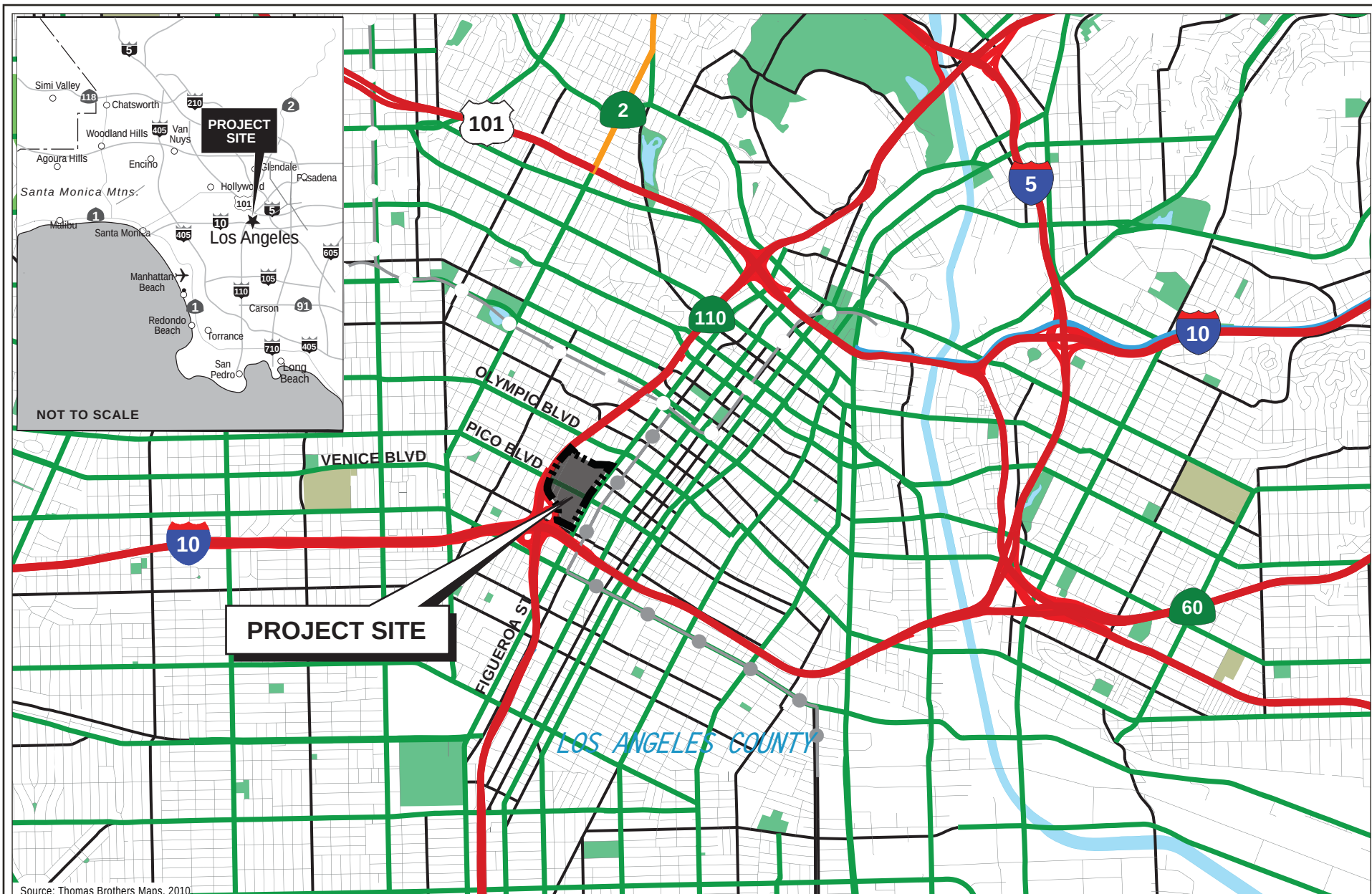
Please direct your comments to:

Hadar Plafkin, City Planner
Department of City Planning
200 N. Spring Street, Room 750
Los Angeles, CA 90012
Fax: (213) 978-1343
Hadar.Plafkin@lacity.org

Michael J. Lo Grande
Director of Planning

Handwritten signatures of Hadar Plafkin and Michael J. Lo Grande. The signature on the left is 'Hadar' and the signature on the right is 'Michael J. Lo Grande'.

Hadar Plafkin, City Planner
Project Manager



Source: Thomas Brothers Maps, 2010.

LEGEND



Project Site Boundary



Source: Google Earth Pro 2011.

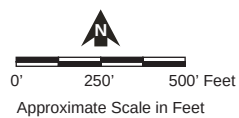
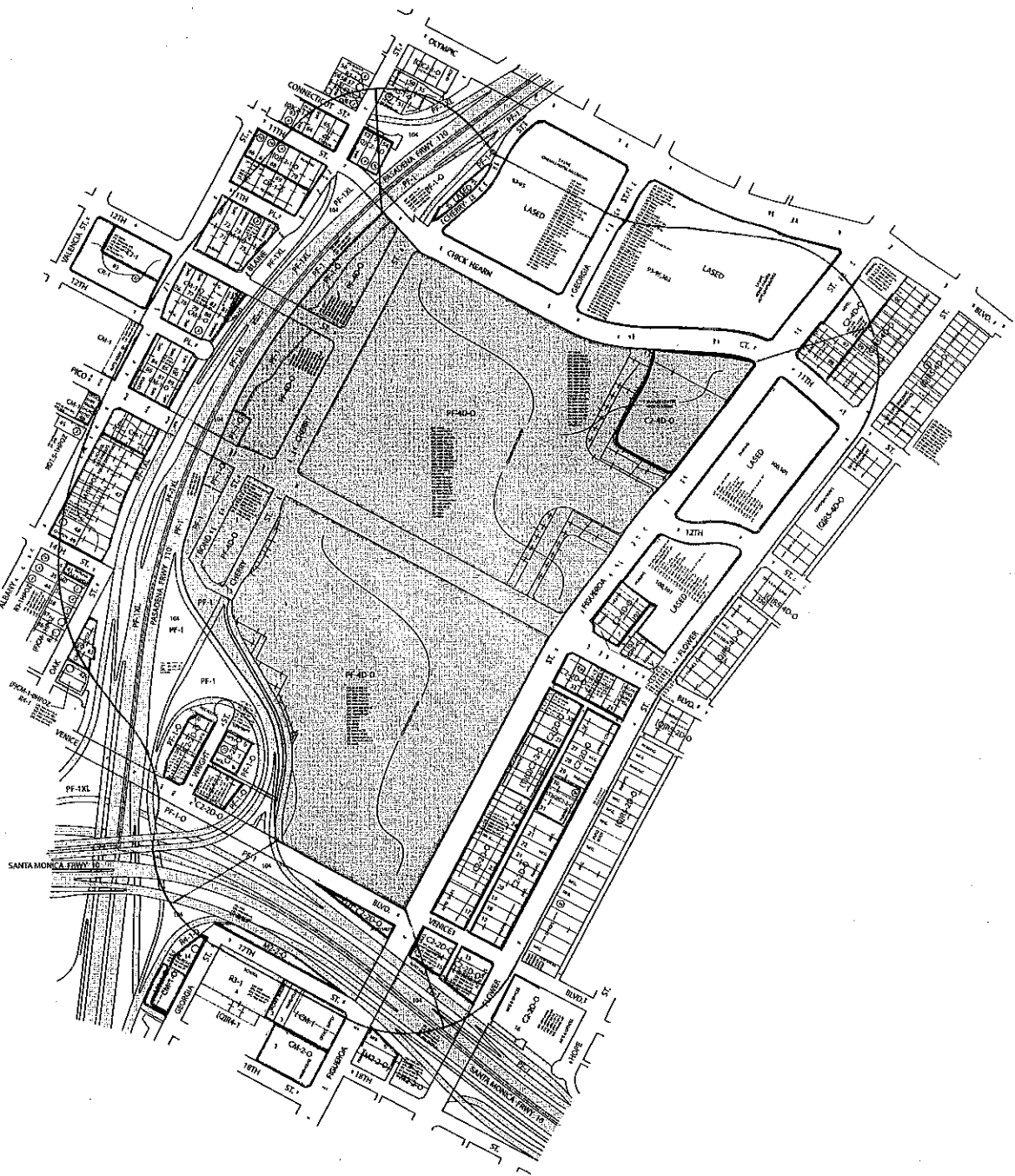


Figure 2
Aerial View of Project Site



NOTICE OF PREPARATION-500 FT RADIUS MAP



Quality Mapping Service

14549 Archwood St. Suite 301
Van Nuys, California 91405
Phone (818) 997-7849 - Fax (818) 997-0351
qmapping@qms.com

DRAWN BY:

THOMAS BROTHERS

Page: 634 Grid: D-6

LEGAL

LOT: SEE APPLICATIONS

TRACT:

CONTACT: ARMBRUSTER & GOLDSMITH

CD: 9

CT: 2077.10

PA: 110-CENTRAL CITY

USES: FIELD

CASE NO:

SCALE: 1"=200'

124.5A203, 124.5A205, 124.5A207
D.M., 126A203, 125A207, 126A207
127.5A203, 127.5A205, 127.5A207
129A203, 129A205, 129A207

PHONE: 310-254-9052

DATE: 03-02-11

Update: _____

NORTH

QMS:11-0334

DEPARTMENT OF

CITY PLANNING

200 N. SPRING STREET, ROOM 525
LOS ANGELES, CA 90012-4801
AND
6262 VAN NUYS BLVD., SUITE 351
VAN NUYS, CA 91401

CITY PLANNING COMMISSION

WILLIAM ROSCHEN
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MATT EPSTEIN

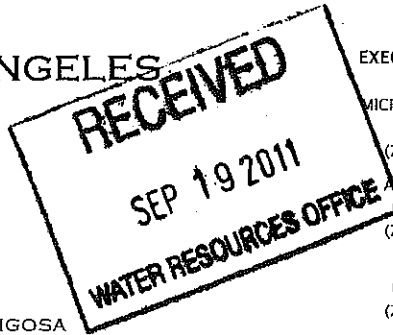
BARBARA ROMERO
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VACANT
VACANT

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INFORMATION
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September 15, 2011

Mr. James McDaniel, Chief Operating Officer – Water System
LOS ANGELES DEPARTMENT OF WATER AND POWER
111 North Hope Street, Room 1455
Los Angeles, California 90012

**Re: REQUEST FOR WATER SUPPLY ASSESSMENT – CONVENTION AND
EVENTER CENTER PROJECT**

Dear Mr. McDaniel:

California Senate Bill (SB) 610, effective January 1, 2002, states that a water supply assessment must be provided to local governments for inclusion in any environmental documentation for certain projects subject to the California Environmental Quality Act (CEQA). Specifically, SB 610 requires that for certain projects, the CEQA lead agency must identify any public water system that may supply water to the proposed project and request the public water system to determine the water demand associated with the project and whether such demand was included as part of the most recently adopted Urban Water Management Plan (UWMP). Per Section 10912 of the California Water Code (CWC), a project which is subject to the requirements of SB 610 includes: (1) a shopping center or business establishment that will employ more than 1,000 persons or have more than 500,000 square feet of floor space; (2) a commercial office building that will employ more than 1,000 persons or have more than 250,000 square feet of space; or (3) any mixed-use project that would demand an amount of water equal to or greater than the amount of water needed to serve a 500 dwelling unit project.

The Convention and Event Center Project (hereafter referred to as the "Proposed Project") meets the above thresholds requiring the preparation of a water supply assessment. As such, the Los Angeles Department of Water and Power (LADWP) has been identified as a public water system (as defined in CWC Section 10912 and CEQA Guidelines Section 15083.5(e)) that would serve the Proposed Project. Accordingly, the City Planning Department (CEQA lead agency for the Proposed Project) requests that the LADWP: (1) determine whether the estimated water demand associated with the Proposed Project was included as part of LADWP's most recently adopted UWMP; and (2) prepare and approve a water supply assessment using the UWMP or new analyses for the Proposed Project pursuant to CWC Section 10910 et seq.

The requirements for a water supply assessment include the identification of existing water supply entitlements, water rights, or water service contracts held by LADWP's public water system, and prior years' water deliveries received by LADWP's public water system. Please refer to CWC Section 10910 (d)(2) for the documentation required to verify any identified rights to a water supply. If the LADWP has not received water in prior years as described in CWC Section 10910 (e) or if groundwater is a source of supply as described in CWC Section 10910 (f), please comply with the requirements of those sections.

The City Planning Department requests that the water supply assessment for the Proposed Project include a discussion of whether LADWP's public water system's total projected water supplies available during normal, single dry, and multiple dry water years will meet the projected water demand associated with the Proposed Project, in addition to LADWP's public water system's existing and planned future uses, including agricultural and manufacturing uses, pursuant to CWC Section 10910 (c)(3).

The Proposed Project consists of the following three components: (1) expansion and modernization of the Los Angeles Convention Center (hereafter referred to as the "Convention Center"), (2) the construction of a new multi-use entertainment and sports facility (hereafter referred to as the "Event Center"), and (3) related parking and support facilities. The Proposed Project is located within an approximately 68-acre site that includes all of the existing Convention Center property, including the Bond Street Parking Lot and the Cherry Street Parking Garage, STAPLES Center, as well as the air space over Pico Boulevard and LA LIVE Way (hereafter referred to as the "Project Site"). The Project Site is generally bounded by the following major roadways: the I-110 Harbor Freeway to the west; Chick Hearn Court to the north; Figueroa Street to the east; and Venice Boulevard to the south. Figure 1 on page 3 depicts the location of the Proposed Project, whereas Figure 2 on page 4 provides an aerial view of the Project Site and its environs.

With the implementation of the Proposed Project, the Project Site would function as a unified center for convention, sports and entertainment uses. The Proposed Project is proposed to be implemented through adoption of a new Specific Plan and

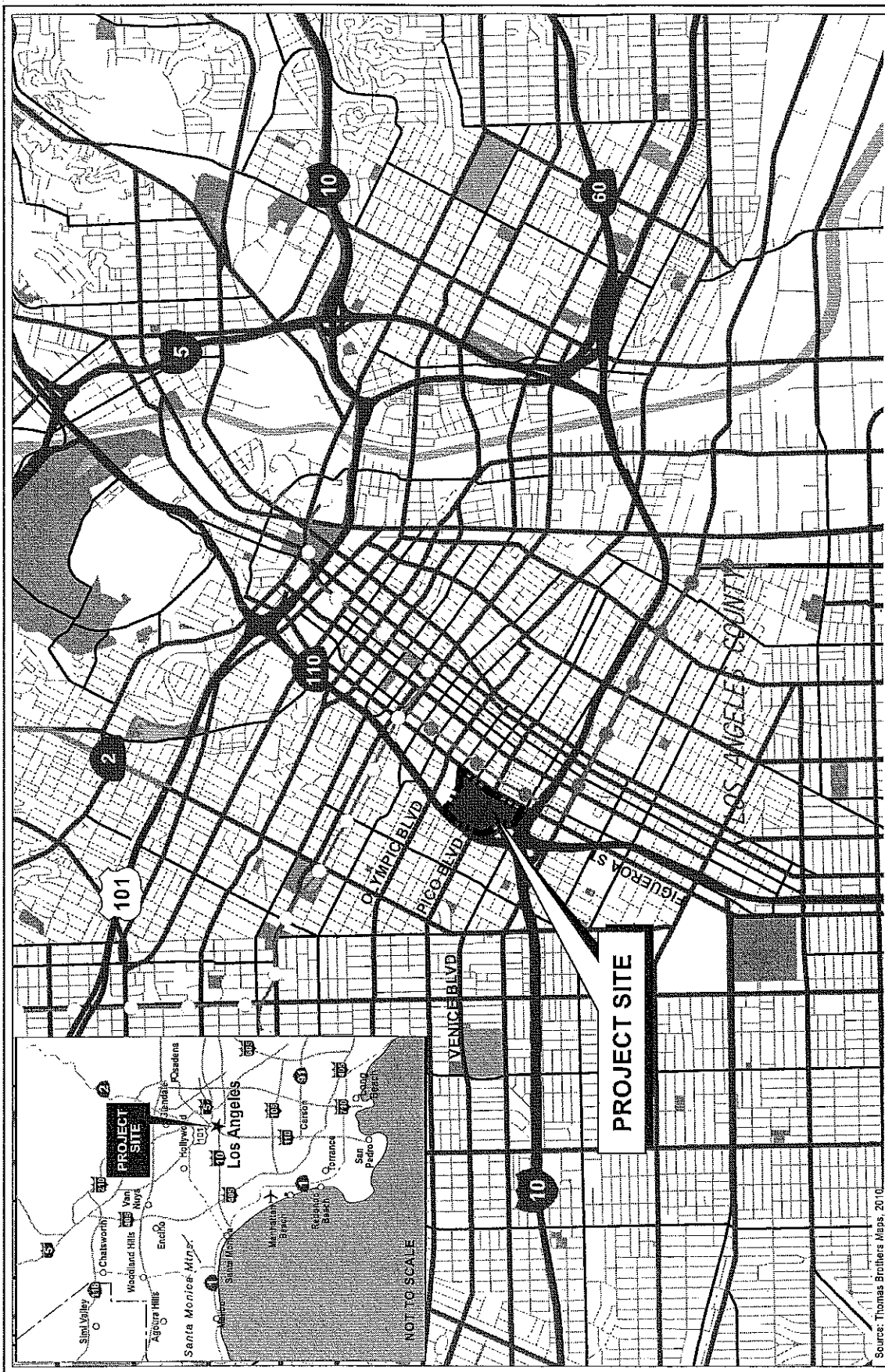


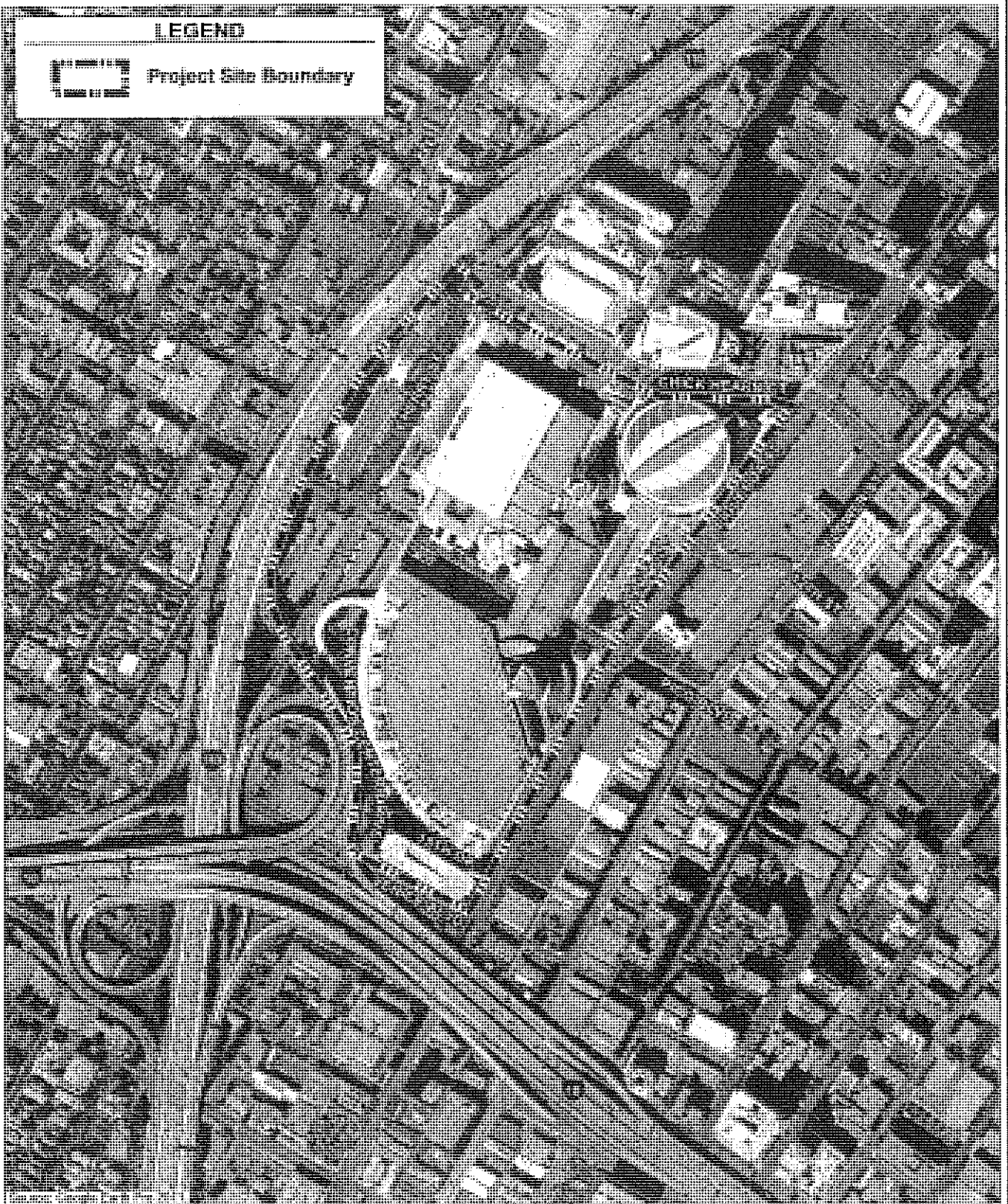
Figure 1
Regional Vicinity Map



LEGEND



Project Site Boundary



matrix
environmental



Figure 2
Aerial View of Project Site

Community Plan Amendment. Although the Specific Plan encompasses the entire Project Site, its primary focus would be on the regulation of the proposed buildings and related features, including signage, as well as the regulation of transportation and parking. In addition, notable elements of environmental sustainability would be comprehensively integrated into the Proposed Project and would be one of the key elements that would guide the design of the Proposed Project. Total building square footage to be constructed under the Proposed Project would be approximately 1.74 million square feet of net new gross floor area. A brief overview of each of the Proposed Project's three components is provided below.

The Proposed Project's first component would involve the demolition and replacement of the Convention Center's existing West Hall. The new structure (hereafter referred to as "New Hall"), would bridge over a portion of Pico Boulevard such that it would adjoin the Convention Center's existing South Hall and would consist of roughly the same amount of square footage as the former West Hall. While the total square footage would be comparable, the amount of functional space would substantially increase through a more efficient building design that among other benefits results in a substantial increase in contiguous floor space for the Convention Center.

The Proposed Project's second component is the development of the Event Center, a multi-purpose, entertainment and sports facility with a potentially retractable roof on the site of the former West Hall. The approximately 1,750,000 square-foot structure would include approximately 72,000 permanent seats with expandable seating capacity to approximately 76,250 seats for major marquee events, such as a Super Bowl. The Event Center would also be available for use as Convention Center exhibit and meeting room space, when not used for spectator events, providing roughly 245,650 square feet of usable exhibition and meeting room space.

The Proposed Project's third component would involve the construction of new larger, more efficient parking facilities on the existing Bond Street Parking Lot and Cherry Street Garage sites. As the West Hall would be demolished, the existing 1,625 parking spaces under the West Hall would be removed by the Proposed Project. The existing Cherry Street Garage would be rebuilt and expanded from the existing 858 spaces to approximately 3,000 parking spaces. A new parking garage would be constructed on the existing Bond Street Parking Lot, which would increase parking on that site from approximately 190 to 928 parking spaces. These improvements would result in a net increase of approximately 1,100 parking spaces. Additionally, above-ground pedestrian bridges would provide connectivity between these parking structures and the Event Center and New Hall, as well as to LA LIVE Way.

In addition to the above improvements, the Proposed Project includes approximately 97,160 square feet of renovations to the existing Concourse building. Changes to the Convention Center's existing South Hall would be limited to its interface

with the proposed New Hall. Existing parking under the South Hall and in the Convention Center's Venice Garage would not be affected by the Proposed Project.

Tabular summaries of the Proposed Project are provided in Tables 1 through 3 as presented on this and the following page.

Table 1
CONVENTION AND EVENT CENTER PROJECT
DEVELOPMENT PROGRAM OVERVIEW
(Square Feet of Gross Building Area)

	Existing	Proposed	Change	
			Number	Percent
Convention Center	2,083,879	2,076,169	(7,710)	(0.4%)
Event Center	-	1,750,000	1,750,000	100.0%
STAPLES Center	811,108	811,108	-	0.0%
Total Proposed Project	2,894,987	4,637,277	1,742,290	60.2%

() indicates a negative number.

Table 2
CONVENTION AND EVENT CENTER PROJECT
DETAILED DEVELOPMENT PROGRAM
(Square Feet of Usable Floor Area)

	Existing	Proposed	Change	
			Number	Percent
Convention Center				
Exhibit Halls	772,748	780,506	7,758	1.0%
Meeting Rooms	113,345	106,345	(7,000)	(6.6%)
Auditoriums	5,829	5,829	0	0.0%
Offices	89,414	88,000	(1,414)	(1.6%)
Other ^a	557,335	566,640	9,305	1.6%
Subtotal	1,538,671	1,547,320	8,649	0.6%
Event Center (When Used for Non-Spectator Events)				
Exhibit Halls	-	143,500	143,500	100.0%
Meeting Rooms	-	102,150	102,150	100.0%
Subtotal	-	245,650	245,650	100.0%
Total Proposed Project				
Exhibit Halls	772,748	924,006	151,258	18.7%
Meeting Rooms	113,345	208,495	69,000	37.8%
	886,093	1,132,501	246,408	
Auditoriums	5,829	5,829	-	0.0%
Offices	89,414	88,000	(1,414)	(1.6%)
Other ^a	557,335	566,640	9,305	1.6%
Subtotal	1,538,671	1,792,970	254,299	14.2%

Notes:

() indicates a negative number.

^a The "Other" category includes areas used for pre-function, food preparation, storage, restrooms, and back-of-house (e.g., mechanical equipment, etc.).

Table 3
CONVENTION AND EVENT CENTER PROJECT
COMPARISON OF EXISTING WEST HALL AND PROPOSED PICO HALL

	Existing West Hall ^a	Proposed New Hall	Change	
			Number	Percent
Exhibit Halls	232,242	240,000	7,758	3.2%
Meeting Rooms	46,000	39,000	(7,000)	(17.9%)
Offices	23,973	22,559	(1,414)	(6.3%)
Other ^b	159,986	169,291	9,305	5.5%
Total	462,201	470,850	8,649	1.8%

Notes:

^a Includes the existing West Hall.

^b The "Other" category includes areas used for pre-function, food preparation, storage, restrooms, and back-of-house (e.g., mechanical equipment, etc.).

The Proposed Project's proposed uses and an estimate of water consumption is provided in Tables 4 through 8 on pages 13 through 22. Table 4 presents the calculations setting forth the Project Site's existing water demand, whereas Tables 5 and 6 present the Proposed Project's water demand under two scenarios. The water demand forecast presented in Table 5 is based on existing water usage at the Project Site, whereas Table 6 presents the forecast of the Proposed Project's water demand using the City's Bureau of Sanitation standard factors. In addition to the buildings themselves, the Proposed Project includes central plant facilities that replace existing central plant facilities as well as new facilities that would support the Event Center. Supporting the aforementioned Proposed Project features are a number of landscaped areas. Table 7 provides a quantification of the water savings resulting from implementation of the Proposed Project's water conservation measures, whereas Table 8 identifies the net increase in on-site water consumption under both Option 1 and Option 2.

Provided below is a brief narrative describing the process used to forecast the water demand and savings shown in Tables 4 through 8.

Table 4: Existing Conditions

The forecast of total existing water usage is based on actual water usage averaged over the last three years as reported on the water bills provided by the Los Angeles Convention Center (LACC) and Anschutz Entertainment Group (AEG). Whereas central plant water usage is also based on actual use data, irrigation water usage is calculated by the Project's landscape architect based on the amount of irrigated square footage at the Project Site and the method of irrigation (e.g., conventional spray head), as well as formula's included in the Eastern Municipal Water

District's water budget guide (Riverside County, CA), which is provided as Attachment C to this letter.

Under both Options 1 and 2, water demand forecasts for the Convention Center and the Event Center are provided separately and are comprised of individual forecasts for the following three components: (1) general consumption, (2) central plant, and (3) irrigation.

Table 5: Option 1 – Forecast of Proposed Project Water Demand Based on Actual Usage

The operators of the Convention Center, after a review of their records, concluded that attendance was the appropriate variable to forecast future general water consumption as the types of events and activities occurring at the Convention Center in the future would be similar to those occurring today, with the only difference being the number of attendees on an annual basis. As such, the forecast of Convention Center general water consumption is based on multiplying the existing per capita usage by the forecasted future attendance. The Proposed Project, also under the heading of general consumption, anticipates the construction of two new facilities as part of the improvements proposed for Gil Lindsay Plaza – a 3,975 square-foot retail facility and a 3,250 square-foot bike station intended to support the planned increased bicycle usage along the Figueroa Street Corridor resulting from the implementation of the City's ongoing planning efforts for the Figueroa Corridor between the Exposition Park area and the area north of the Project Site. The proposed retail facility and bike station are assumed to operate 365 days per year.

While the Event Center is a new facility, AEG, the operators of STAPLES Center, have concluded that water consumption on a per capita basis at the Event Center would be comparable to that presently occurring at the STAPLES Center. This conclusion reflects the determination that the ratios of attendance to food service and restroom usage would be comparable at the two facilities. Thus, the forecast of Event Center general water consumption is based on multiplying the existing per capita usage by the forecasted future attendance.

Forecasts of central plant water consumption are provided by Arup (see Attachment D). Whereas the irrigation water demand is based on the Proposed Project's conceptual landscape design plan and formulas from the same source used to forecast existing irrigation water demand. Under the Proposed Project, the use and function for Gil Lindsay Plaza will be changing from one that is oriented to the motor vehicle to one that is oriented to the pedestrian. To facilitate and enhance the realization of this objective the character of Gil Lindsay Plaza would change quite a bit under the Proposed Project. Current planning for this area includes the creation of broad pedestrian areas on the northern side of the plaza to ease the departure from the

Event Center and the creation of a water feature (e.g., fountain) to enhance the overall attractiveness of the plaza. The central and southern portions of the plaza are likely to be transformed into a landscaped amenity, including a turf area, that supports on-site activities as well as offering park space to the adjacent communities. While there would be some changes to irrigation quantities within the Farmers and LA Live Way Plazas, irrigation quantities within these two areas would be somewhat comparable to what occurs under existing conditions.

Table 6: Option 2 – Forecast of Proposed Project Water Demand Based on Standard City Factors

Several of the uses proposed to occur at the Convention Center are included on the City's list of land uses for which standard consumption factors have been developed. For those Convention Center uses not included on the list, the Bureau of Sanitation in their response to the Proposed Project's Notice of Preparation of an EIR identified factors for these uses which are recognized by the LADWP as acceptable for purposes of conducting a WSA. Specifically, water consumption at the rate of 80 and 150 gallons per one thousand square feet of floor area for exhibit halls and meeting rooms were identified by the City, respectively. Interior back-of-house uses are conservatively assigned the same consumption rates as the exhibit halls and the bike station was conservatively assigned the same rate as a retail use. Forecasts of event days for the exhibit halls and meeting rooms were developed based on actual usage occurring over the 2010/2011 fiscal year and adjusted upward by the percentage increase in event days forecasted to occur under the Proposed Project. Based on input from the operators of the Los Angeles Convention Center, water consumption associated with food service areas was forecasted to be comparable to that associated with a fast food restaurant.¹ Other floor area and food service areas are conservatively forecasted to operate whenever any event occurs at the Convention Center. Office uses were assumed to operate six days per week, whereas the retail facility and the bike station were assumed to operate 365 days per year.

The forecast of general water consumption at the Event Center for spectator events is based on the attendance at an event and the number of events per year. When the Event Center is used as an exhibit hall or for meeting rooms, general water consumption is based on the floor area used and the number of event days at the various usage levels. Based on input from AEG, the operators of the STAPLES Center, water consumption associated with food service areas was forecasted to be comparable to that associated with a fast food restaurant.² Food services at the Event Center are conservatively forecasted to operate whenever any event occurs at the Event Center.

¹ This approach is conservative in that fast food restaurants typically operate during longer hours than the food service areas at the Los Angeles Convention Center, which are limited to event hours. Therefore, actual water consumption is likely to be less.

² This approach is conservative in that fast food restaurants typically operate during longer hours than the food service areas at the Event Center, which are limited to event hours. Therefore, actual water consumption is likely to be less.

Office uses were assumed to operate five days per week, whereas the retail facility and the restaurant are assumed to operate 365 days per year. Central plant water usage and water usage in support of the irrigated areas under Option 2 are the same as Option 1.

Table 7: Water Conservation

Sustainability, including but not limited to water conservation, are important everyday issues in the management of both the Los Angeles Convention Center and facilities operated by AEG. With a specific focus on water consumption, the following are the water conservation features that the respective Applicant's would incorporate into the Proposed Project:

Commercial/Public Facility Water Conservation Measures	
Toilets	High-efficiency toilets (maximum 1.28 gallons per flush), including dual-flush water closets
Urinals	No-flush or waterless urinals
Restroom Sink Faucets	- Low-flow restroom faucets with a maximum flow rate of 0.5 gallons per minute - Restroom faucets will be of a self-closing design (i.e., that would automatically turn off when not in use)
Low-Flow Shower Faucets	Install no more than one showerhead per shower stall, having a flow rate no greater than 2 gallons per minute.
Commercial Kitchens	Pre-rinse valves that use 1.6 gallons per minute or less
Dishwashers	High-efficiency Energy Star-rated dishwashers within kitchen/food preparation area
Clothes Washers	High-efficiency clothes washers (water factor of 6.0 or less), Energy Star rated when possible. Includes both large and small washers to accommodate variances in load sizes.
Cooling Equipment	Operation of cooling towers at a minimum of 3 cycles and target of 4 cycles of concentration
Landscaping Water Conservation Measures	
Smart Irrigation Controllers	- Weather-based irrigation controller with rain shutoff - Matched precipitation (flow) rates for sprinkler heads - Drip/microspray/subsurface irrigation where appropriate - Minimum irrigation system distribution uniformity of 75 percent - A separate water meter (or submeter), flow sensor, and master valve shutoff shall be installed for irrigated landscape areas totaling 5,000 square feet and greater
Landscape Design & Plant Selection	- Proper hydro-zoning - Use of landscape contouring to minimize precipitation runoff

Landscaping Water Conservation Measures (Continued)	
Reclaimed Water Infrastructure	Install purple piping (i.e., reclaimed water infrastructure) provided that LADWP is able to provide the reclaimed water supply and associated connections.
Water Performance Measurement	
Meters	At minimum, install a whole building water meter that measures total potable water use for the entire building. If possible, install submeters on cooling towers and other subsystems that consume the most potable water.

Based on water savings data developed as part of the Project's water conservation program, the water savings attributable to the above list of water conservation measures have been quantified to the extent feasible. The forecasted level of water reductions would apply to both Options 1 and 2.

Table 8: Net Water Consumption

This table subtracts the water savings resulting from implementation of the water conservation features (Table 7) from the incremental increase in water consumption under both Options 1 and 2 (Tables 5 and 6). The final results of this analysis for the two Options are as follows:

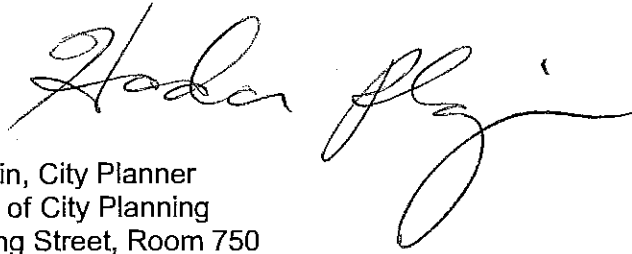
	Net Increase in Annual Water Consumption (Gallons/Year)
Option 1: Actual Usage	59,607,033
Option 2: Standard Factors	52,982,391

* * * * *

To further assist the LADWP in the preparation of the Proposed Project's WSA, a copy of the Proposed Project's Notice of Preparation is also provided as an attachment to this letter (see Attachment G).

CWC Section 10910 (g)(1) requires submission of the assessment within 90 days of this request. We would appreciate the receipt of the water assessment within that timeframe. Enclosed is a check in the amount of \$10,000.00, as required by the LADWP for the preparation of the water supply assessment. If you have any questions or need additional information, please give me a call at (213) 978-1357 or call the EIR consultant, Bruce Lackow of Matrix Environmental at (424) 207-5337.

Sincerely,

A handwritten signature in black ink, appearing to read 'Hadar Plafkin', with a long, sweeping horizontal stroke extending to the right.

Hadar Plafkin, City Planner
Department of City Planning
200 N. Spring Street, Room 750
Los Angeles, CA 90012

Attachments:

- Attachment A: Tables 4 through 8
- Attachment B: Convention and Event Center Future Activity Forecasts
- Attachment C: Central Plant Existing and Future Water Demand
- Attachment D: Eastern Municipal Water District's Water Budget Guide(Riverside County, CA)
- Attachment E: Event Center Water Conservation Calculations
- Attachment F: Convention Center Water Conservation Calculations
- Attachment G: Notice of Preparation

Table 4
EXISTING CONDITIONS

General Consumption ^a						
					Annual Water Use	
					Gallons	Acre-Feet
Convention Center ^{b, c, d}					17,995,981	55.22
Sub-total					17,995,981	55.22
Central Plant ^e						
					Annual Water Use	
					Gallons	Acre-Feet
Convention Center					8,206,970	25.18
STAPLES Center					1,062,000	3.26
Subtotal					9,268,970	28.44
Irrigation						
	Area (Sq.Ft.) ^f	Species Factors ^g	Distribution Efficiency ^g	Application Efficiency ^g	Annual Water Use ^g	
					Gallons	Acre-Feet
Event Center Plaza						
Conventional Spray Head	8,698	0.5	0.65	0.85	277,957	0.85
Gil Lindsay Plaza						
Conventional Spray Head	18,031	0.5	0.65	0.85	576,206	1.77
LA LIVE Way Plaza						
Conventional Spray Head	14,732	0.5	0.65	0.85	470,782	1.44
Total Existing Conditions	41,461				1,324,945	4.06
SUMMARY - EXISTING CONDITIONS						
General Consumption					17,995,981	55.22
Central Plant					9,268,970	28.44
Irrigation					1,324,945	4.06
Total Existing Conditions					28,589,896	87.72

Table 4
EXISTING CONDITIONS (Continued)

^a Excludes STAPLES Center as no changes are proposed to this existing facility under the Proposed Project.

^b Total annual water consumption averaged over the 2008-2010 time period less water used for Central Plant and irrigation (see below). Based on data provided by the Los Angeles Convention Center Inc., 2011.

^c Includes approximately 16,000 square feet of kitchen area.

^d Includes approximately 42,600 square feet of meeting room space and approximately 8,450 square feet of office space.

^e Based on data provided by Syska Hennessy Group, Inc., 2011. Supporting documentation provided as Attachment C.

^f Based on data provided by Melendrez, 2011.

^g Based on data provided by KPFF, 2011, per Eastern Municipal Water District's water budget guide (Riverside County, CA). This document is provided as Attachment D.

Table 5

OPTION 1: FORECAST OF PROPOSED PROJECT WATER DEMAND BASED ON ACTUAL USAGE

General Consumption						
Convention Center						
			Per Capita Water Consumption	Forecasted Annual Attendance ^a	Annual Water Use	
					Gallons	Acre-Feet
Patron Use			6.64 ^b	4,020,959	26,699,168	81.92
	Floor Area	Water Consumption/ 1,000 Sq.Ft.	Water Consumption/ Day	Annual Days Open for Business	Annual Water Use	
					Gallons	Acre-Feet
Retail	3,975	80	318	365	116,070	0.36
Bike Station	3,250	80	260	365	94,900	0.29
Subtotal					26,910,138	82.57
Event Center						
			Per Capita Water Consumption	Forecasted Annual Attendance ^a	Annual Water Use	
					Gallons	Acre-Feet
All Activities			8.31 ^c	6,055,280	50,319,377	154.4
Subtotal					77,229,515	236.97
Central Plant						
					Annual Water Use	
					Gallons	Acre-Feet
All Facilities (Convention Center, Event Center, STAPLES Center) ^d					13,411,700	41.15

Table 5

OPTION 1: FORECAST OF PROPOSED PROJECT WATER DEMAND BASED ON ACTUAL USAGE (Continued)

Irrigation						
	Area (Sq.Ft.) ^e	Species Factors ^f	Distribution Efficiency ^f	Application Efficiency ^f	Annual Water Use ^f	
					Gallons	Acre-Feet
Event Center Plaza						
Drip	1,567	0.5	0.90	0.85	36,166	0.11
Bubblers	2,750	0.5	0.85	0.85	67,202	0.21
Subtotal	4,317				103,368	0.32
Gil Lindsay Plaza						
Drip	66,785	0.5	0.90	0.85	1,541,373	4.73
Bubblers	27,000	0.5	0.85	0.85	65,980	0.2
Fountain ^g					16,400	0.05
Subtotal	93,785				1,623,753	4.98
LA LIVE Way Plaza						
Drip	40,656	0.5	0.90	0.85	938,325	2.88
Subtotal	40,656				938,325	2.88
Total Irrigation	138,758				2,665,446	8.18
SUMMARY - PROPOSED PROJECT BASED ON ACTUAL USAGE						
					Annual Water Use	
					Gallons	Acre-Feet
General Consumption					77,229,515	236.97
Central Plant					13,411,700	41.15
Irrigation					2,665,446	8.18
Total Proposed Project Conditions					93,306,661	286.30
OPTION 1: NET INCREASE IN WATER DEMAND -- PROPOSED PROJECT BASED ON ACTUAL USAGE						
					Annual Water Use	
					Gallons	Acre-Feet
Existing Development					28,589,896	87.72
Proposed Project					93,306,661	286.30
Net Increase in Annual Water Demand					64,716,765	198.58

ATTACHMENT A
Table 5

^a See Attachment B.

^b Per capita water consumption factor based on annual Existing General Consumption (see above) divided by estimated existing annual attendance (2,708,262 patrons). Existing General Consumption includes all sources including, but not limited to, restaurant, concessions, kitchens, commissaries, and pantries. The use of attendance as a predictor of future demand has been approved by the Los Angeles Convention Center Inc., 2011.

^c Per capita water consumption factor based on annual Existing General Consumption at STAPLES Center (32,040,606 gallons), less central plant water usage (1,062,000 gallons), divided by estimated existing annual attendance (2,974,357 patrons). Existing General Consumption includes all sources including, but not limited to, retail, office, restaurant, concessions, kitchens, commissaries, and pantries. The amount of these uses is roughly proportional between STAPLES Center and the Event Center. The use of attendance as a predictor of future demand has been confirmed by AEG, 2011.

^d Based on forecast provided by Syska Hennessy Group, Inc., 2011. Supporting documentation provided as Attachment C.

^e Based on data provided by Melendrez, 2011.

^f Based on data provided by KPFF, 2011, per Eastern Municipal Water District's water budget guide (Riverside County, CA). This document is provided as Attachment D.

^g Based on a 2,000 gallon reservoir emptied and refilled three times per year for maintenance and 10% weekly evaporation loss.

Table 6

OPTION 2: FORECAST OF PROPOSED PROJECT WATER DEMAND BASED ON STANDARD CITY FACTORS

General Consumption						
	Floor Area ^b	Water Consumption/ 1,000 Sq.Ft.	Water Consumption/ Event Day	Number of Event Days	Annual Water Use	
					Gallons	Acre-Feet
Convention Center						
Exhibit Space	780,506	80	62,440	293 ^c	18,294,920	56.14
Meeting Rooms	112,174	150	16,826	142 ^d	2,389,292	7.33
Offices	88,000	150	13,200	312 ^e	4,118,400	12.64
Other (Back-of-House)	532,840	80	42,627	355 ^e	15,132,585	46.43
Restaurant/Commissary/ Food Court	33,800	300 ^f	10,140	355 ^e	3,599,700	11.05
Retail	3,975	80	318	365	116,070	0.36
Bike Station	3,250	80	260	365	94,900	0.29
Subtotal Convention Center					43,745,867	134.24
	Attendance ^g	Number of Event Days ^g	Forecasted Annual Attendance ^g	Water Consumption/ Seat	Annual Water Use	
					Gallons	Acre-Feet
Event Center						
Spectator Event Attendance						
Attendance Level 1	72,230	37	2,672,510	4	10,690,040	32.80
Attendance Level 2	55,000	20	1,100,000	4	4,400,000	13.50
Attendance Level 3	35,000	10	350,000	4	1,400,000	4.30
Subtotal		67	4,122,510		16,490,040	50.60

Table 6

**OPTION 2: FORECAST OF PROPOSED PROJECT WATER DEMAND BASED ON STANDARD CITY FACTORS
(Continued)**

Event Center (Continued)						
	Floor Area ^g	Water Consumption/ 1,000 Sq.Ft.	Water Consumption/ Event Day	Number of Event Days ^g	Annual Water Use	
					Gallons	Acre-Feet
Exhibition Event Use	143,500	80	11,480	42	482,160	1.48
Meeting Room Use						
Meeting Level 1	102,150	150	15,323	15	229,838	0.71
Meeting Level 2	40,000	150	6,000	30	180,000	0.55
Meeting Level 3	22,500	150	3,375	30	101,250	0.31
Subtotal					511,088	1.57
	Floor Area ^g	Open for Business ^g	Consumption/ 1,000 Sq.Ft.	Annual Water Use		
				Gallons	Acre-Feet	
Other Water Consuming Uses						
Office	10,350	260	150	403,650	1.24	
Retail	35,500	365	80	1,036,600	3.18	
Restaurant	5,000	365	300	547,500	1.68	
Kitchens/Concessions/Commissaries/ Pantry	133,840	184	300	7,387,968	22.67	
Subtotal				9,375,718	28.77	
Subtotal Event Center				26,859,006	82.42	
Subtotal General Consumption				70,604,873	216.66	

Table 6

**OPTION 2: FORECAST OF PROPOSED PROJECT WATER DEMAND BASED ON STANDARD CITY FACTORS
(Continued)**

Central Plant		
		Annual Water Use
		Gallons Acre-Feet
All Facilities (Convention Center, Event Center, STAPLES Center) ^h		13,411,700 41.15

Irrigation						
	Area (Sq.Ft.) ⁱ	Species Factors ^j	Distribution Efficiency ^j	Application Efficiency ^j	Annual Water Use ^o	
					Gallons	Acre-Feet
Event Center Plaza						
Drip	1,567	0.5	0.90	0.85	36,166	0.11
Bubblers	2,750	0.5	0.85	0.85	67,202	0.21
Subtotal	4,317				103,368	0.32
Gil Lindsay Plaza						
Drip	66,785	0.5	0.90	0.85	1,541,373	4.73
Bubblers	2,700	0.5	0.85	0.85	65,980	0.20
Fountain ^k					16,400	0.05
Subtotal	69,485				1,623,753	4.98
LA LIVE Way Plaza						
Drip	40,656	0.5	0.90	0.85	938,325	2.88
Subtotal	40,656				938,325	2.88
Total Irrigation	114,458				2,665,446	8.18

SUMMARY - PROPOSED PROJECT BASED ON STANDARD CITY FACTORS

	Annual Water Use	
	Gallons	Acre-Feet
General Consumption	70,604,873	216.66
Central Plant	13,411,700	41.15
Irrigation	2,665,446	8.18
Total Proposed Project Conditions	86,682,019	265.99

Table 6

**OPTION 2: FORECAST OF PROPOSED PROJECT WATER DEMAND BASED ON STANDARD CITY FACTORS
(Continued)**

NET INCREASE IN WATER DEMAND -- PROPOSED PROJECT BASED ON STANDARD CITY FACTORS		
	Annual Water Use	
	Gallons	Acre-Feet
Existing Development	28,589,896	87.72
Proposed Project	86,682,019	265.99
Net Increase in Annual Water Demand	58,092,123	178.27

^a Under the Proposed Project the existing West and Petree Halls are replaced by New Hall which would provide the same square footage and uses as contained in the existing West and Petree Halls. Therefore, the water demand for New Hall is the same as the existing West and Petree Halls.

^b Based on information provided by the Los Angeles Convention Center, Inc, 2011

^c The number of exhibit hall event days is calculated based on the following: Based on data for the July 1, 2010 to June 30, 2011 time period, the exhibit halls were either partially or completely utilized on a total of 212 days. The forecast of future convention center activity shows an increase of 38% in event days for events utilizing some or all of the exhibit halls.

^d The number of meeting room event days is calculated based on the following: Based on data for the July 1, 2010 to June 30, 2011 time period, the meeting rooms were either partially or completely utilized on a total of 131 days. The forecast of future convention center activity shows an increase of 8.5% in event days for events utilizing some or all of the meeting rooms.

^e The number of office, restaurant/commissary/food court, and back-of-house days are calculated based on the following: Based on data for the July 1, 2010 to June 30, 2011 time period, the Los Angeles Convention Center was either partially or completely utilized on a total of 277 days. The forecast of future convention center activity shows an increase of 28% in event days.

^f Water consumption factors are not available for these uses. The uses most similar to these for which water consumption factors are available are fast food restaurant uses.

^g Based on information provided by AEG, 2011. See Attachment B for Event Center Activity Forecasts.

^h Based on forecast provided by Syska Hennessy Group, Inc., 2011. Supporting documentation provided as Attachment C.

ⁱ Based on data provided by Melendrez, 2011.

^j Based on data provided by KPFF, 2011, per Eastern Municipal Water District's water budget guide (Riverside County, CA). This document is provided as Attachment D.

^k Based on a 2,000 gallon reservoir emptied and refilled three times per year for maintenance and 10% weekly evaporation loss.

ATTACHMENT A

Table 7

Water Conservation Feature	Water Savings Per Year		
	Gallons ^a	Acre-Feet	
Convention Center			
Waterless Urinals and Ultra-Low Flow Lavatories	957,260	2.94	
High Efficiency Dishwashers	27,590	0.08	
Pre-rinse Faucets	72,000	0.22	
Subtotal	1,056,850	3.24	
Event Center			
Waterless Urinals and Ultra-Low Flow Lavatories	2,418,560	7.42	
High Efficiency Dishwashers	378,216	1.16	
High Efficiency Clothes Washers	8,281	0.03	
Subtotal	2,805,057	8.61	
Central Plant	See Attachment C	1,247,825	3.83
Total	5,109,732	15.68	

a See Attachments E and F for the calculation of water savings from the identified water conservation measures for the Event Center and Convention Center, respectively..

Table 8
COMPARATIVE ANALYSIS -- NET INCREASE IN WATER DEMAND

	Gallons	Acre-Feet
OPTION 1: Proposed Project Based on Actual Usage		
Forecasted Water Demand	64,716,765	198.58
Forecasted Water Savings	5,109,732	15.68
Forecasted Net Water Demand	59,607,033	182.90
OPTION 2: Proposed Project Based on City Standard Factors		
Forecasted Water Demand	58,092,123	178.27
Forecasted Water Savings	5,109,732	15.68
Forecasted Net Water Demand	52,982,391	162.59
Difference in Water Consumption (Actual Usage Compared to Factors)		
Number	6,624,643	20.23
Percent Change	12.5%	12.4%

CONVENTION and EVENT CENTER PROJECT

ACTIVITY FORECAST

EXISTING CONDITIONS

LOS ANGELES CONVENTION CENTER

	Number of Events Per Year	Total Number of Days Per Year			Attendance	
		Event Days	Set-Up/ Tear Down	Total	Average Per Event	Total Annual
Conventions	24	98	120	218	33,748	812,616
Trade Shows	27	70	74	144	7,151	193,270
Consumer Shows	48	126	139	265	13,808	1,261,500
Meeting Room	189	335	136	471	386	73,030
Banquets	9	14	19	33	1,343	12,530
Assemblies/Other	66	86	104	190	5,433	359,394
TOTAL	363	729	592	1,321	2,053	2,712,340

FUTURE CONDITIONS EVENT CENTER

	Number of Events Per Year	Total Number of Days Per Year			Attendance	
		Event Days	Set-Up/ Tear Down	Total	Average Per Event Day	Total Annual
SPECTATOR EVENTS						
Attendance Level 1 (65,000+)	37	37	74	111	72,230	2,672,500
Attendance Level 2 (45,000 - 64,999)	10	20	50	70	55,000	1,100,000
Attendance Level 3 (25,000 - 44,999)	5	10	25	35	35,000	350,000
TOTAL	52	67	149	216	61,530	4,122,500
EXHIBITION EVENTS						
Attendance Level 1 (65,000+)	0	0	0	0	0	0
Attendance Level 2 (45,000 - 64,999)	2	6	14	20	50,000	300,000
Attendance Level 3 (25,000 - 44,999)	12	36	48	84	40,000	1,440,000
TOTAL	14	42	62	104	41,429	1,740,000
MEETING ROOMS						
In Conjunction With Exhibit Floor Usage ^{a, b}						
Attendance Level 1 (65,000+) ^c	0	0	0	0	0	0
Attendance Level 2 (45,000 - 64,999)	2	6	0	6	0	0
Attendance Level 3 (25,000 - 44,999) ^d	12	36	0	36	0	0
TOTAL	14	42	0	42	0	0
Meeting Room Use Only ^{e, f, g}						
Meeting Level 1 (50,000+ sq. ft.) ^h	15	15	15	30	6,946	104,190
Meeting Level 2 (30,000 - 49,999 sq.ft.)	30	30	30	60	2,720	81,600
Meeting Level 3 (15,000 - 29,999 sq. ft.)	30	30	30	60	1,530	45,900
TOTAL	75	75	75	150	3,089	231,690
^a Assumes all meeting room attendees are included in the head count for the Exhibition Event.						
^b Assumes meeting rooms are used for an average of six hours per day.						
^c Assumes 100 percent usage of all 76,000 square feet of meeting room space.						
^d Assumes 50 percent usage of all 76,000 (or 38,000) square feet of meeting room space.						
^e Total number of days meeting rooms used calculated as 30 percent of the days the Event Center is not used for actual events (i.e., event days).						
^f Square footage of meeting room usage calculated as the midpoint of the usage level and an occupancy of 6.8 persons per 100 square (based on average across all meeting room usage at existing LACC).						
^g Distribution of meeting room usage is as follows: (a) Meeting Room Level 1 -- 20%; (b) Meeting Room Level 2 -- 40%, and (c) Meeting Room Level 3 -- 40%.						
^h Assumes upper end of range as all 102,150 square feet of meeting room space.						

ATTACHMENT B

SUMMARY OF EVENT CENTER ANNUAL EVENTS and ATTENDANCE

	Annual Event Days	Attendance	
		Per Event	Total All Events
Spectator Events	67	61,530	4,122,500
Exhibition Events & Meeting Rooms	42	41,429	1,740,000
Meeting Rooms ^a	75	3,089	231,690
TOTAL	184	33,121	6,094,190

^a Excludes meeting room usage in conjunction with exhibition events held at the Events Center.

LOS ANGELES CONVENTION CENTER

	Number of Events Per Year	Total Number of Days Per Year			Attendance	
		Event Days	Set-Up/ Tear Down	Total	Average Per Event	Total Annual
Conventions	38	155	190	345	43,423	1,650,074
Trade Shows	47	122	129	251	7,780	365,660
Consumer Shows	53	139	154	293	14,810	1,384,930
Meeting Room	207	366	149	515	396	81,972
Banquets	27	41	56	96	1,433	38,691
Assemblies/Other	84	109	133	242	5,948	499,632
TOTAL	456	932	811	1,742	4,314	4,020,959

PROJECT TOTAL ANNUAL EVENTS and ATTENDANCE

	Annual Event Days	Attendance	
		Per Event	Total All Events
Event Center	184	33,121	6,094,190
Convention Center	932	4,314	4,020,959
TOTAL	1,116	9,064	10,115,149

ATTACHMENT C: CENTRAL PLANT EXISTING AND FUTURE WATER DEMAND



A member company of SH Group, Inc.

Memorandum

To: Bruce Lacklow

Date: Aug. 30, 2011

From: Bill Larwood

Re: LACC Water Central Plant Water Use and Savings

Proj. No. LACC01

Copies to: Rob Stephens - ICON, Sandy Eeds-Populous

The Central Plant water use reduction estimate is based on the use of new cooling towers with increased cycles of concentration (from 3 to 4) in order to reduce the cooling tower water bleed off rate.

As a result of evaporation, dissolved solids concentration continually increases unless reduced by bleed off, thus cooling tower water bleed off is necessary to help reduce dissolved solids concentration.

Make-up water for the cooling towers (approximately 1.7% of the overall condenser water flow) replenishes system water loss due to evaporation, drift and bleed off; make-up water for bleed off is approximately 0.5% of cooling tower flow.

An increase from 3 to 4 cycles of concentration yields a 30% reduction in bleed off and provides the following savings:

Central Plant and Cooling Tower Water Savings and Use (LACC, Farmers Field and Staples Center)					
Central Plant Service	Existing Make-Up Water (GAL/YR)	Full Load CT Flow (GPM)	Annual Bleed (GAL)	Savings with 4 cycles (GAL)*	Future Use (GAL/YR)
LACC: 7490 ton Central Plant CT water use	8,206,970	22,470	2,413,815	724,144	7,482,826
Farmers Field: 4550 ton Central Plant CT water use**	N/A	13,650	1,433,250	429,975	3,712,755
Staples Center: 2500 ton Central Plant CT water use	1,062,000	7,500	312,353	93,706	968,294
Totals	9,268,970	43,620	4,159,418	1,247,825	12,163,875

* Annual bleed rate for Farmers Field based on 350 full load hours at cooling tower flow rate

** Farmers Field utilizes a CT make up rate based on the blended rate of CC and Staples Center.

C:\Documents and Settings\Bruce.Lacklow\Local Settings\Temporary Internet Files\Content.Outlook\A2CTWNE5\LACC Central Plant Water Savings and Use Estimate - wjl - 08302011.docx

**ATTACHMENT D: EASTERN MUNICIPAL WATER DISTRICT'S WATER BUDGET GUIDE
(RIVERSIDE COUNTY, CA)**



RIVERSIDE COUNTY, CALIFORNIA

A Guide to Preparing Water Budgets

February 14, 2007

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Purpose

- A. The intent of this guide is to aid landscape architects to determine the Estimated Annual Water Use (EAWU), generate a monthly Target water budget (TARGET) and formulate an Annual Maximum Allowable Water Budget (AMAWB) for landscape irrigation systems.
- B. Eastern Municipal Water District (EMWD) will not review, approve or ensure the adequacy, efficiency or functional ability of any blue print drawings or as built plans, but if Recycled water is determined to be available the involved landscape and irrigation plans must be designed and approved in accordance with the Procedural Guide and General Design Requirements for Construction of Recycled Water Facilities.
- C. EMWD's Customer Service Department will make the determination if recycled water is to be used.

EXHIBIT A

ESTIMATED ANNUAL WATER USE

This is provided to assist architects and designers in estimating the water needs of plant materials listed in the WUCOLS plant guide.

The estimated annual water use for the entire landscaped area per individual irrigation meter can be determined by following these steps:

- STEP 1 Calculate the estimated annual water use (EAWU) for each hydrozone in the landscaped area (per the formula in this exhibit).
- STEP 2 Add the EAWU of all hydrozones in the landscaped area.
- STEP 3 Round off the sum of EAWU for all hydrozones to the nearest whole number as follows: if $\geq .50$, round UP; if $\leq .49$, round DOWN.

The estimated annual water use of a hydrozone can be calculated using the following formula:

$$\text{EAWU} = \frac{(56.65)(ks)(HA)}{(DE)(AE)(1200)}$$

EAWU = Estimated Annual Water Use in billing units per year (one billing unit = 100 cubic feet = 748 gallons)

56.65 = Reference evapotranspiration in inches of water per year

ks = Species Factors (for a specific plant from the WUCOLS plant guide)

HA = Hydrozone Area in square feet

DE = Distribution Efficiency of the irrigation system expressed as a decimal (found later in this exhibit)

AE = Application Efficiency of the irrigation system expressed as a decimal (found later in this exhibit)

1200 = Conversion factor to produce an answer in billing units (to convert the answer to gallons, multiply the formula by 748)

Typical irrigation system DISTRIBUTION EFFICIENCY or DE for the various types of irrigation heads or emitters are expressed in the following decimals:

- < 0.60 for spray heads
- < 0.85 for gear-driven, impact, or ball-driven rotors
- < 0.85 for bubbler heads
- < 0.90 for drip irrigation systems

Irrigation system APPLICATION EFFICIENCY or AE is expressed as a decimal for the following systems:

- < 0.85 for irrigation systems that have a centralized control system or controllers that measure or can be programmed to use evapotranspiration rates, or systems that use other controls such as moisture sensors.
- < 0.65 for irrigation systems which do not have any of the above soil or weather-driven type of controls.

EXHIBIT B

EXAMPLE OF CALCULATING WATER USE

For a small, individually metered landscape project with two hydrozones and a total landscaped area of 8,000 square feet:

EAWU for hydrozone no. 1	=	$\frac{(56.65)(0.5)(3,000)}{(0.9)(0.85)(1,200)}$	=	92.56 billing units
EAWU for hydrozone no. 2	=	$\frac{(56.65)(0.5)(5,000)}{(0.7)(0.85)(1,200)}$	=	198.35 billing units
SUBTOTAL	=	92.56 + 198.35	=	290.91 billing units (round off to nearest whole number per previous instructions)
TOTAL EAWU FOR THIS PROJECT	=		=	291 billing units per year

NOTE: The EAWU for the total established landscaped area per individual irrigation meter **SHOULD NOT EXCEED** the Annual Maximum Allowable Water Budget (AMAWB) for that landscaped area.

EXHIBIT C

ANNUAL MAXIMUM ALLOWABLE WATER BUDGET

The annual maximum allowable water budget for the total landscaped area per individual irrigation meter can be determined by following these steps:

- STEP 1 Calculate the annual maximum allowable water budget (AMAWB) (per the formula in this exhibit).
- STEP 2 Round off the AMAWB to the nearest whole number as follows: if $\geq .50$, round UP; if $< .50$, round DOWN.

The annual maximum allowable water budget for the total landscaped area per individual irrigation meter should be calculated using the following formula:

$$\text{AMAWB} = \frac{(56.65)(A_{pnf})(A_{nf})(K_{nf})(K_s)}{1200} + \frac{(56.65)(A_{pf})(A_f)(K_f)(K_s)}{1200} = \text{AMAWB}$$

AMAWB = Annual Maximum Allowable Water Budget in billing units per year (one billing unit = 100 cubic feet = 748 gallons).

56.65 = reference evapotranspiration in inches of water per year

A_{pnf} = Allowable Percentage Non Functional Turf of ETo

A_{pf} = Allowable Percentage Functional Turf of ETo

EMWD will provide applicant with the Annual Maximum Allowable Water Budget (AMAWB) to be used in the scheduling of irrigation systems, which shall include a water budget for Non Functional and Functional Turf as follows:

Non Functional Turf: (A_{pnf})

- Any customer with a signed EMWD Landscape Irrigation Water Budget Agreement dated prior to February 14, 2007 will retain the water budget calculated using 100% of Reference Evapotranspiration (ETo) for Non Functional Turf.
- Any customer who signs an EMWD Landscape Irrigation Water Budget Agreement dated February 14, 2007 or later will have a water budget that is calculated using 80% of Reference Evapotranspiration for Non Functional Turf.

Functional Turf: (A_{pf})

- Water budgets for Functional Turf are calculated using 125% of Reference Evapotranspiration.

(Additional adjustments, based on site specific conditions, may be considered).

A_{nf} = Area of non-functional landscape in square feet

A_f = Area of functional landscape in square feet

K_{nf} = Irrigation Efficiency Adjustment Factor for non-functional landscape

$$K_{nf} = \frac{(K_{C_{nf}})*10,000}{(DE_{nf})(AE_{nf})} \quad (\text{Default Value} = 1.00)$$

- K_f = Irrigation Efficiency Adjustment Factor for functional landscape

$$K_f = \frac{(KC_f) * 10,000}{(DE_f)(AE_f)}$$
 (Default Value = 1.25)
- K_s = Soil Adjustment Factor (Default Value = 1.00)
- KC_f = Crop Coefficient for functional landscape (Default Value = .80)
- KC_{nf} = Crop Coefficient for non-functional landscape (Default Value = .60)
- DE_f = Distribution Uniformity Efficiency in % for functional landscape (Default Value = 80%)
- DE_{nf} = Distribution Uniformity Efficiency in % for non-functional landscape (Default Value = 60%)
- AE_f = Application Efficiency in % for functional landscape (Default Value = 80%)
- AE_{nf} = Application Efficiency in % for non-functional landscape (Default Value = 100%)
- 1200 = Conversion factor to produce an answer in billing units (to convert the answer to gallons, multiply the formula by 748).

CALCULATION EXAMPLE;

An individually-metered landscape project with a total landscaped area of 40,000 square feet:

$$\begin{aligned}
 \text{AMAWB} &= \frac{(56.65)(.80)(40,000)(1.00)(1.00)}{1200} + \frac{(56.65)(1.0)(10,000)(1.25)(1.00)}{1200} = 2100.77 \\
 &= (2100.77 \text{ rounded off to the nearest whole number per previous instructions}) \\
 &= 2,101 \text{ Billing Units per Year}
 \end{aligned}$$

EXHIBIT D

MONTHLY TARGET WATER BUDGET

The schedule of monthly target water budgets for the total landscaped area per individual irrigation meter is determined by following these steps:

- STEP 1 Calculate the monthly target water budget (Target) for each month of the year (per the formula in this exhibit).
- STEP 2 Round off each Target to the nearest whole number as follows: if .50, round UP; if .49, round DOWN.

Each monthly target water budget for the total landscaped area per individual irrigation meter is calculated using the following formula:

TARGET	=	(AMAWB)(MAF)
TARGET	=	Monthly Target Water Budget <u>in billing units per the month chosen to be calculated.</u>
AMAWB	=	Annual Maximum Allowable Water Budget <u>in billing units per year</u> (rounded off to the nearest whole number and calculated per instructions in EXHIBIT C).
MAF	=	Monthly Adjustment Factor <u>for the month chosen to be calculated</u> and taken from the following table:
		JAN 0.037 MAY 0.108 SEP 0.108
		FEB 0.051 JUN 0.125 OCT 0.073
		MAR 0.071 JUL 0.140 NOV 0.046
		APR 0.073 AUG 0.134 DEC 0.034

CALCULATION EXAMPLE;

For the TARGET for the month of August for an individually-metered landscape project with a total landscaped area of 50,000 square feet and an AMAWB of 2,478 billing units per year:

TARGET	=	(2101)(0.134)
	=	(281.53) rounded off to the nearest whole number per previous instructions)
	=	282 Billing units for the month of August

EXHIBIT E

"SPECIES FACTORS AND PLANT WATER NEEDS"

This list is provided to assist architects and designers in estimating the water needs of many (but not all) plant materials.

The water needs of the plants (listed in the WUCOLS guide) appear in the form of a "Species Factor"

For the purpose of this guide, the WUCOLS plant list is organized into one of four categories, each representing a range of Species Factors (ks) as follows:

VERY LOW	Species Factor (VL): ks less than 0.1
LOW	Species Factor (L): ks range = 0.1 - 0.3
MODERATE	Species Factor (M): ks range = 0.4 - 0.6
HIGH	Species Factor (H): ks range = 0.7 - 0.9

A suggestion for using these (ks) values is to use the lower portion of the range if a plant is located in shaded or Northerly exposures, and to use the higher (ks) portion of the range if the plant is located in direct sun or Southerly exposures.

NOTE: The (ks) values provided in this exhibit reflect good estimates of the water needs of many plant materials, (ks) have not been scientifically determined for all landscape plants. Although extensive, the WUCOLS plant guide is by no means complete. Horticultural reference books and horticulturists can provide useful information in estimating the water needs of plants not found in the WUCOLS plants guide. **REMEMBER**, this guide **DOES NOT REQUIRE** that only the plants listed be used. The WUCOLS plant guide will be amended as further data is made available.

GLOSSARY

The words used in this guide have the meaning set forth below:

- A. **"ALLOWABLE PERCENTAGE"** (A_{pf} or A_{pnf}) means a factor of 1.25 (125%) or .80 (80%) that when applied to reference evapotranspiration, determines the annual maximum allowable water budget for an individually metered landscape project.
- B. **"ANNUAL MAXIMUM ALLOWABLE WATER BUDGET"** or **"AMAWB"** the limit of water use for the entire landscaped area per individual irrigation meter. It is based upon reference evapotranspiration, the allowable percentage and the size of the landscaped area.
- C. **"APPLICATION EFFICIENCY"** or **" AE_f "** for functional landscape (default value 80%) or **" AE_{nf} "** for non-functional landscape (default value 100%) is based upon characteristics of the various types of irrigation system controls such as moisture sensors, etc.
- D. **"CROP COEFFICIENT"** or **" KC_f "** for functional landscape (default value .80) and **" KC_{nf} "** for non-functional landscape (default value .60)
- E. **"DISTRIBUTION EFFICIENCY"** or **"DE"** - Typical irrigation system "DE" for the various types of irrigation heads or emitters are expressed in the following decimals:
 1. 0.60 for spray heads
 2. 0.85 for gear-driven, impact, or ball-driven rotors
 3. 0.85 for bubbler heads
 4. 0.90 for drip irrigation systems
- F. **"ESTIMATED ANNUAL WATER USE"** or **"EAWU"** means the estimated annual water use for an established landscape area as calculated in EXHIBIT A. It is based upon reference evapotranspiration, the crop coefficient of the plants involved, and the size of the landscaped area. The EAWU for the entire landscaped area per individual irrigation meter equals the sum of the estimated water use of all hydrozones in that landscape area. NOTE: the EAWU for the entire landscape area per individual irrigation meter SHALL NOT EXCEED the annual maximum allowable water budget of that landscape area.
- G. **"EVAPOTRANSPIRATION"** means the quantity of water evaporated from adjacent soil surfaces and transpired by plants during a specific time. Evapotranspiration data is collected from the Riverside UCR, CIMIS Field Station # 44.
- H. **"FUNCTIONAL LANDSCAPE"** or **" A_f "** a landscaped turf area that serves as a surface for such purposes as playing a sport or gathering for group activities.
- I. **"HYDROZONE"** means a portion of the landscape area having plants with similar water needs.
- J. **"IRRIGATION EFFICIENCY ADJUSTMENT FACTOR"** or **" K_f "** (for functional landscape) & **" K_{nf} "** (for non-functional landscape) mean the measurement of the amount of water beneficially used divided by the amount of water applied. IRRIGATION EFFICIENCY is a product of distribution efficiency (DE) - based upon characteristics of the various types of sprinklers/emitters, and application efficiency (AE) - based upon characteristics of the various types of irrigation system controls such as moisture sensors, etc.
 1. Example: $K_f = \frac{(KC_f) * 10,000}{(DE_f)(AE_f)}$ (default 1.25)
 - $K_{nf} = \frac{(KC_{nf}) * 10,000}{(DE_{nf})(AE_{nf})}$ (default 1.00)

K. **"LANDSCAPED AREA"** means the parcel less the building footprint, driveways, non-irrigated portions of parking lots, hardscape-such as decks and patios-and other non-porous areas. Water features are included in the calculations of the landscaped area.

L. **"MAXIMUM ALLOWABLE WATER BUDGET"** means the upper limit of water use (either "ANNUAL" or "TARGET") for the entire landscaped area per individual irrigation meter. It is based upon reference evapotranspiration, the allowable percentage (1.25 or 80%) and the size of the landscaped area.

M. **"MONTHLY ADJUSTMENT FACTOR"** or "MAF" means a factor, expressed as a decimal, that, when multiplied by the annual maximum allowable water budget for an individually metered landscape project, determines the target monthly water budget for that project. MAFs are based upon monthly historic average reference evapotranspiration for the area of Riverside County. The MAFs for the twelve months of the year are;

JAN	0.037	MAY	0.108	SEP	0.108
FEB	0.051	JUN	0.125	OCT	0.073
MAR	0.071	JUL	0.140	NOV	0.046
APR	0.073	AUG	0.134	DEC	0.034

N. **"NON COMPLIANCE SETTLEMENT CHARGE TIERS"** means a tier structure using the AMAWB as the Base Rate (budget). Any water used over the budget will be billed within the appropriate tiers, as described in section V of the Procedural Guide for Procuring Landscape Irrigation Water. Non compliance settlement charge tiers apply to any landscape irrigation water account that exceeds its AMAWB or ETo (whichever is highest) at year=s end.

O. **"NON-FUNCTIONAL LANDSCAPE"** or "A_{nf}" a landscaped turf area, including trees, shrubs, and ground covers, used for aesthetic purposes.

P. **"REFERENCE EVAPOTRANSPIRATION"** or 56.65 inches means a standard measurement of environmental parameters which affect the water use of plants. **REFERENCE EVAPOTRANSPIRATION**, is given as 56.65 inches of water per year, and represents the annual historic average evapotranspiration of a large field of 4-7 inch tall, cool-season grass that is well watered and located in the area of Riverside County. **REFERENCE EVAPOTRANSPIRATION** is used as the basis of determining the maximum allowable water budgets.

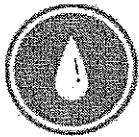
Q. **"SOIL ADJUSTMENT FACTOR"** or "K_s" is an adjustment factor that is applied to the texture of the soil (Sand, Loam, Clay) with a default of 1.00.

R. **"SPECIES FACTOR"** or "ks" are classified as high (H), moderate (M), low (L), or very low (VL) in irrigation water needs. Each classification corresponds to a species factor range (a numerical value) which is expressed as a percentage of reference evapotranspiration (ETo). Species factors are used with ETo values to quantify water needs for a species. (for more information see the WUCOLS guide).

S. **"Target"** refers to the monthly water budget, and is uses as an indicator in relationship to the AMAWB

T. **"WATER USE CLASSIFICATION OF LANDSCAPE SPECIES"** or "WUCOLS" list is intended solely as a guide to help landscape professionals identify irrigation water needs of landscape species. It can be used either for the selection of species or to assist in developing irrigation schedules for existing landscapes. It is not intended to be used as a required or approved list by EMWD for selection of plant species.

ATTACHMENT E: EVENT CENTER WATER CONSERVATION CALCULATIONS



LEED 2009 for New Construction and Major Renovations

WE PREREQUISITE 1: WATER USE REDUCTION

20% REDUCTION

All fields and uploads are required unless otherwise noted.

ALL OPTIONS

This active sample form has been modified for offline access. Modified fields and instructions are indicated in purple. Sample forms are for reference only.

The Table. Daily Occupancy below is a linked submittal from PI Form 3: Occupant and Usage Data to be used for reference only. PI Form 3 must be completed before values will display in WE Prerequisite 1. These values should inform, but not necessarily parallel, the numbers entered in the Table. Fixture Groups Definition.

Table WEp1-1. Daily Occupancy

FTE	Average Transients (Student/ Visitor)	Average Retail Customers	Residents	Total
4,348	72,230			76,578

Fixture Groups Introduction:

This table allows for project occupants to be organized in a way that best represents fixture usage patterns in the project. Occupants can be grouped together or separated into sub-groups at the option of the project team. The usage groups defined must be derived from daily occupancy data for the project building. Accordingly, all project occupants, as recorded in the Daily Occupancy tables from PI Form 3: Occupant and Usage Data must be represented in the Table. Fixture Groups Definition below. All residential occupants should be represented separately from non-residential occupants. Refer to the additional guidance document in the Credit Resources section.

Table WEp1-2. Fixture Groups Definition

Group Name	Annual Days of Operation	FTE	Transients (Student / Visitor)	Retail Customers	Residents	% Female	% Male
Spectator Events	67	1,750	72,230	0	0	50	50
Exhibition Events	42	2,500	50,000	0	0	50	50
Meeting Rooms	75	0	0	0	0	50	50
Players (Shows)	67	45	0	0	0	0	100

Add Row

Delete Row

Briefly describe the inputs in the Table. Fixture Groups Definition. Explain the methodology used to define each fixture group, as well as the derivation of data in each row. Additionally, provide a detailed explanation if the default gender ratio is not used.

Table WEp1-3. Flush Fixture Data

Enter flush fixture data for each fixture group defined in the Table. Fixture Groups Definition.

Note: Click "Calculate" placed next to the Add and Delete to perform the calculations in the table. "Calculate" must be run after any or all the data is entered in the table to obtain the values in the summary section, the Baseline Flush Rate, IPC/UPC Baseline and the Performance Case. "Calculate" needs to be run to perform Water Savings Calculation and document Credit compliance.

Fixture Groups						Flush Rate (GPF)		Annual Water Consumption (kGal)	
Select	Display	Fixture ID ¹	Fixture Family	Fixture Type	Total Daily Uses ²	Baseline	In-stalled ³	IPC/UPC Baseline	Performance Case
Spectator Eve	Spectator Eve	PL-1	Urinal	IPC/UPC (Conventional	16,196	1	0	1,085.13	0
Spectator Eve	Spectator Eve	PL-1A	Water Closet	IPC/UPC (Conventional	25,169	1.6	1.28	2,698.12	2,158.49
Exhibition Eve	Exhibition Eve	PL-2	Urinal	IPC/UPC (Conventional	12,500	1	0	525	0
Exhibition Eve	Exhibition Eve	PL-2A	Water Closet	IPC/UPC (Conventional	20,000	1.6	1.28	1,344	1,075.2
Meeting Room	Meeting Room	PL-3	Urinal	IPC/UPC (Conventional	0	1	0	0	0
Meeting Room	Meeting Room	PL-3A	Water Closet	IPC/UPC (Conventional	0	1.6	1.28	0	0
Total calculated flush fixture water use annual volume, baseline case (kGal)					5,652.25				
Total calculated flush fixture water use annual volume, performance case (kGal)					3,233.69				
Percent reduction of water use in flush fixtures (%)					43				

¹ Define a reference name or descriptor that can be used to identify each fixture family/type.

² May be modified for special circumstances. Provide a narrative and upload daily use calculations to justify modifications. Refer to the additional guidance document in the Credit Resources section.

³ To account for dual-flush fixtures, enter a weighted average flush rate.

Table WEp1-4.. Flow Fixture Data

Enter flow fixture data for each fixture group defined in the Table. Fixture Groups Definition.

Note: Click "Calculate" placed next to the Add and Delete to perform the calculations in the table. "Calculate" must be run after any or all the data is entered in the table to obtain the values in the summary section, the Baseline Flush Rate, IPC/UPC Baseline and the Performance Case. "Calculate" needs to be run to perform Water Savings Calculation and document Credit compliance.

Fixture Groups							Flow Rate (GPM / GPC)		Annual Water Consumption (kGal)	
Select	Display	Fixture ID ¹	Fixture Family	Fixture Type	Total Daily Uses ²	Duration (Secs) ²	Base-line	Installed ³	IPC/UPC Base-line	Performance Case
Spectator	Spectator Eve	LAV-1	Public Lavatory Fau	IPC/UPC (Convention	41365	15	0.5	0.5	346.43	346.43
Players (S	Players (Shov	SH-1	Shower	IPC/UPC (Convention	4.5	300	2.5	2	3.77	3.02
Exhibition	Exhibition Eve	LAV-2	Public Lavatory Fau	IPC/UPC (Convention	32500	15	0.5	0.5	170.63	170.63
Meeting R	Meeting Room	LAV-3	Public Lavatory Fau	IPC/UPC (Convention	0	15	0.5	0.5	0	0
Total calculated flow fixture water use annual volume, baseline case (kGal)					520.83					
Total calculated flow fixture water use annual volume, performance case (kGal)					520.08					
Percent reduction of water use in flow fixtures (%)					0					

Add Row Delete Row Calculate

¹ Define a reference name or descriptor that can be used to identify each fixture family/type.

² May be modified for special circumstances. Also, a reasonable estimate MUST be provided for pre-rinse spray valves when selected in the table above. In either case, provide a narrative and upload calculations to justify modifications. Refer to the additional guidance document in the Credit Resources section.

³ When using the metering lavatory faucet, please convert all flow rates in gallons per minute (GPM) to gallons per cycle (GPC) based on duration from the product specifications. Provide a narrative or calculations to support the installed flow rate. The "Duration" is not applicable and therefore should not be modified.

Upload WEp1-1. Provide the plumbing fixture and fitting schedule for the project highlighting flush and flow rates for all applicable plumbing fixtures and fittings within the project building.

Upload

Files:

Table WEp1-5. Flush & Flow Fixtures Summary Statistics

Total calculated fixture water use annual volume, baseline case (kGal)	6173.08
Total calculated fixture water use annual volume, performance case (kGal)	3753.77
Percent reduction of water use in all fixtures (%)	39

A 20% reduction of water use in fixtures is required to document compliance with WE Prerequisite 1.

ADDITIONAL DETAILS

- ☐ Special circumstances preclude documentation of credit compliance with the submittal requirements outlined in this form.
- ☐ The project team is using an alternative compliance approach in lieu of standard submittal paths.

SUMMARY

WE Prerequisite 1: Water Use Reduction - 20% Reduction
Compliance Documented:

N

REFERENCE ONLY

Event Center Clothes Washer Water Use

31-Aug-11

Event Types	Venue Attendance	# of Events per Year	Loads/Event*	Annual Loads	Annual Water Use (gal)		
					Non-Energy Star Clothes Washer (gal/load)**	Energy Star Clothes Washer (gal/load)***	Savings (gal)
Daily Base Use	varies	312	1	312	31	18	4056
Level 1	72,230	37	5	185	9672	5616	2405
Level 2	55,000	20	5	100	5735	3330	1300
Level 3	35,000	10	4	40	3100	1800	520
					1240	720	
					19747	11466	8281

Event Center Dishwasher Water Use - Stadium will have two machines: Flight Type Large Capacity and Conveyor Type Smaller Capacity

Event Types	Venue Attendance	# of Events per Year	Hours per Day (or Event) of Use	Non-Energy Star Annual Use (gal)			Energy Star Annual Use (gal/hour)			Savings (gal)
				Non-Energy Star Large DW	Non-Energy Star Flight Type	Non-Energy Star Conveyor DW	Flight Type DW (gal/hour)*	Energy Star Conveyor (gal/hour)*	Total Use (gal)	
Daily Base Use	varies	260	0	450	0	350	132	126	131040	232960
Level 1	72,230	37	4	66600	51800	364000	19536	18648	131040	80216
Level 2	55,000	20	4	36000	28000	118400	10560	10080	38184	43360
Level 3	35,000	10	4	18000	14000	64000	5280	5040	20640	21680
				120600	457800	578400	35376	164808	200184	378216

* Based on conversations with stadium food service consultant - 08/31/11 and 09/09/11, based on Energy Star Hobart models FL900 series and Hobart CLS66E conveyor model. Actual quantities and usage rates may vary.

** 31 gallons per load for commercial washer taken from the energystar.gov calculator

*** 18 gallons per load for efficient clothes washer calculated from Maytag commercial product data (MLG19). Actual model to be used in stadium is TBD.

ATTACHMENT F: CONVENTION CENTER WATER CONSERVATION CALCULATIONS



LEED 2009 for New Construction and Major Renovations

WE PREREQUISITE 1: WATER USE REDUCTION

20% REDUCTION

All fields and uploads are required unless otherwise noted.

ALL OPTIONS

This active sample form has been modified for offline access. Modified fields and instructions are indicated in purple. Sample forms are for reference only.

The Table. Daily Occupancy below is a linked submittal from PI Form 3: Occupant and Usage Data to be used for reference only. PI Form 3 must be completed before values will display in WE Prerequisite 1. These values should inform, but not necessarily parallel, the numbers entered in the Table. Fixture Groups Definition.

Table WEp1-1. Daily Occupancy

FTE	Average Transients (Student/ Visitor)	Average Retail Customers	Residents	Total
2,245				2,245

Fixture Groups Introduction:

This table allows for project occupants to be organized in a way that best represents fixture usage patterns in the project. Occupants can be grouped together or separated into sub-groups at the option of the project team. The usage groups defined must be derived from daily occupancy data for the project building. Accordingly, all project occupants, as recorded in the Daily Occupancy tables from PI Form 3: Occupant and Usage Data must be represented in the Table. Fixture Groups Definition below. All residential occupants should be represented separately from non-residential occupants. Refer to the additional guidance document in the Credit Resources section.

Table WEp1-2. Fixture Groups Definition

Group Name	Annual Days of Operation	FTE	Transients (Student / Visitor)	Retail Customers	Residents	% Female	% Male
Attendees	260	2,001	0	0	0	50	50
Employees	260	244	0	0	0	50	50

Add Row

Delete Row

Briefly describe the inputs in the Table. Fixture Groups Definition. Explain the methodology used to define each fixture group, as well as the derivation of data in each row. Additionally, provide a detailed explanation if the default gender ratio is not used.

Employee FTE is taken from Matrix Environmental's Total FTE Incremental FTE Employees Max * 0.33.
Attendee FTE is taken from Matrix Environmental's Tables dated 8-19-11 ((Event Days * Average Attendees * Hours in Building) / 8)*0.33.

The 0.33 is used to account for the Pico Hall project only being 1/3 of the Convention Center Project.

Table WEp1-3. Flush Fixture Data

Enter flush fixture data for each fixture group defined in the Table. Fixture Groups Definition.

Note: Click "Calculate" placed next to the Add and Delete to perform the calculations in the table. "Calculate" must be run after any or all the data is entered in the table to obtain the values in the summary section, the Baseline Flush Rate, IPC/UPC Baseline and the Performance Case. "Calculate" needs to be run to perform Water Savings Calculation and document Credit compliance.

Fixture Groups						Flush Rate (GPF)		Annual Water Consumption (kGal)	
Select	Display	Fixture ID ¹	Fixture Family	Fixture Type	Total Daily Uses ²	Base-line	In-stalled ³	IPC/UPC Baseline	Performance Case
Attendees	Attendees		Water Closet	IPC/UPC (Conventional)	4,002	1.6	1.28	1,664.83	1,331.87
Employees	Employees		Water Closet	IPC/UPC (Conventional)	488	1.6	1.28	203.01	162.41
Attendees	Attendees		Urinal	IPC/UPC (Conventional)	2,001	1	0	520.26	0
Employees	Employees		Urinal	IPC/UPC (Conventional)	244	1	0	63.44	0
Total calculated flush fixture water use annual volume, baseline case (kGal)					2,451.54				
Total calculated flush fixture water use annual volume, performance case (kGal)					1,494.28				
Percent reduction of water use in flush fixtures (%)					39				

¹ Define a reference name or descriptor that can be used to identify each fixture family/type.

² May be modified for special circumstances. Provide a narrative and upload daily use calculations to justify modifications. Refer to the additional guidance document in the Credit Resources section.

³ To account for dual-flush fixtures, enter a weighted average flush rate.

Table WEp1-4.. Flow Fixture Data

Enter flow fixture data for each fixture group defined in the Table. Fixture Groups Definition.

Note: Click "Calculate" placed next to the Add and Delete to perform the calculations in the table. "Calculate" must be run after any or all the data is entered in the table to obtain the values in the summary section, the Baseline Flush Rate, IPC/UPC Baseline and the Performance Case. "Calculate" needs to be run to perform Water Savings Calculation and document Credit compliance.

Fixture Groups							Flow Rate (GPM / GPC)		Annual Water Consumption (kGal)	
Select	Display	Fixture ID ¹	Fixture Family	Fixture Type	Total Daily Uses ²	Duration (Secs) ²	Base-line	In-stalled ³	IPC/UPC Base-line	Performance Case
Attendees	Attendees		Public Lavatory Faucet	IPC/UPC (Convention)	6003	15	0.5	0.5	195.1	195.1
Employee	Employees		Public Lavatory Faucet	IPC/UPC (Convention)	732	15	0.5	0.5	23.79	23.79
Employee	Employees		Kitchen Sink	IPC/UPC (Convention)	244	15	2.2	2.2	34.89	34.89
Total calculated flow fixture water use annual volume, baseline case (kGal)					253.78					
Total calculated flow fixture water use annual volume, performance case (kGal)					253.78					
Percent reduction of water use in flow fixtures (%)					0					

¹ Define a reference name or descriptor that can be used to identify each fixture family/type.

² May be modified for special circumstances. Also, a reasonable estimate MUST be provided for pre-rinse spray valves when selected in the table above. In either case, provide a narrative and upload calculations to justify modifications. Refer to the additional guidance document in the Credit Resources section.

³ When using the metering lavatory faucet, please convert all flow rates in gallons per minute (GPM) to gallons per cycle (GPC) based on duration from the product specifications. Provide a narrative or calculations to support the installed flow rate. The "Duration" is not applicable and therefore should not be modified.

Upload WEp1-1. Provide the plumbing fixture and fitting schedule for the project highlighting flush and flow rates for all applicable plumbing fixtures and fittings within the project building.

Files:  

Table WEp1-5. Flush & Flow Fixtures Summary Statistics

Total (calculated) fixture water use annual volume, baseline case (kGal)	253.78
Total (calculated) fixture water use annual volume, performance case (kGal)	195.1
Percent reduction of water use in all fixtures (%)	23

A 20% reduction of water use in fixtures is required to document compliance with WE Prerequisite 1.

ADDITIONAL DETAILS

- ☐ Special circumstances preclude documentation of credit compliance with the submittal requirements outlined in this form.
- ☐ The project team is using an alternative compliance approach in lieu of standard submittal paths.

SUMMARY

WE Prerequisite 1: Water Use Reduction - 20% Reduction
Compliance Documented:

N

LA Convention Center - Pico Hall - Water Consumption Comparison									
Flight-Type Dishwasher									
			Meiko (Proposed)	Champion		Water Savings (Gal.)			
			M-iQ B-M74 V8	EEUCCW8 (Existing)					
Water Consumption (Gals./hr.)			56.8	134		77.2			
Daily Consumption (Gal.)			180.93	364.86		183.93			
						Water Savings per year (Gal.)			
						(assuming 150 days/ year operation)			
						27,589.50			
Pre-Rinse Faucet									
(assuming 2 hours/day usage)									
						Water Savings (Gals./ day)			
Low-flow unit vs. typical spray valve						120			
Waste water						120			
Total						240			
Assuming (2) units in facility						480			
						Water Savings per year (Gal.)			
						(assuming 150 days/ year operation)			
						72,000			
Total Water Savings per year (Gal.)						99,589.50			

Source: Cini-Little International, Inc ., 2011.

ATTACHMENT G: NOTICE OF PREPARATION

DEPARTMENT OF
CITY PLANNING
200 N. SPRING STREET, ROOM 525
LOS ANGELES, CA 90012-4801
AND
6262 VAN NUYS BLVD., SUITE 351
VAN NUYS, CA 91401

CITY PLANNING COMMISSION

WILLIAM ROSCHEN
PRESIDENT
REGINA M. FREER
VICE-PRESIDENT
SEAN O. BURTON
DIEGO CARDOSO
MATT EPSTEIN
BARBARA ROMERO
MICHAEL K. WOO
VACANT
VACANT

JAMES WILLIAMS
COMMISSION EXECUTIVE ASSISTANT

CITY OF LOS ANGELES
CALIFORNIA



ANTONIO R. VILLARAIGOSA
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EXECUTIVE OFFICES

MICHAEL J. LOGRANDE
DIRECTOR
(213) 978-1271

ALAN BELL, AICP
DEPUTY DIRECTOR
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VACANT
DEPUTY DIRECTOR
(213) 978-1274

EVA YUAN-MCDANIEL
DEPUTY DIRECTOR
(213) 978-1273

FAX: (213) 978-1275

INFORMATION
www.planning.lacity.org

March 17, 2011

NOTICE OF PREPARATION AND NOTICE OF PUBLIC SCOPING MEETING

EAF NO.: ENV 2011-0585-EIR

PROJECT NAME: Convention Center Modernization and Farmers Field Project

PROJECT LOCATION/ADDRESS: The Project Site is generally bounded by Chick Hearn Court on the north, Figueroa Street on the east, Venice Boulevard on the south, and the 110 Harbor Freeway on the west, in the downtown Los Angeles area

COMMUNITY PLANNING AREA: Central City

COUNCIL DISTRICT: 9

DUE DATE FOR PUBLIC COMMENTS: April 18, 2011

The City of Los Angeles, Department of City Planning, will be the Lead Agency and will require the preparation of an environmental impact report ("EIR") for the project identified herein (the "Project"). The Department of City Planning requests your comments as to the scope and content of the EIR. The purpose of the Scoping Meeting is to receive input from the public as to what areas the EIR should study. No decisions about the project are made at the scoping meeting. The Project description, location, and the potential environmental effects are set forth below. Also included below are the date, time, and location of the Scoping Meeting that will be held in order to solicit input regarding the content of the Draft EIR. The Scoping Meeting is in an open house format. **THIS IS NOT THE REQUIRED PUBLIC HEARING FOR MUNICIPAL**

CODE ENTITLEMENT REQUESTS, which will be scheduled after preparation of the EIR.

A copy of the Initial Study prepared for the Project is not attached but is available for public review at the Department of City Planning, 200 North Spring Street, Room 601, Los Angeles, CA 90012.

PROJECT DESCRIPTION: The Project Applicants, the City of Los Angeles and L.A. Event Center, LLC, proposes the expansion and modernization of the Los Angeles Convention Center and the development of Farmers Field which combined consist of 1,750,000 million square feet of net new gross floor area. The Project involves the following three major components: (1) the West Hall would be demolished and replaced with a new hall built in part over Pico Boulevard so as to be contiguous with the South Hall (the "Replacement Hall"); (2) Farmers Field, a new multi-use event center, that can be configured with 72,000 seats expandable to 76,250 seats for spectator events or as 169,650 square feet of useable exhibition space and 56,000 square feet of useable meeting room space for a combined total of 225,650 square feet of useable floor area, would be constructed on the former West Hall site; (3) and two parking structures would be constructed to replace the existing Bond Street surface parking lot and the Lot C (formerly Cherry Street) Garage to provide approximately 1,290 net additional parking spaces on the west side of LA LIVE Way to support the new development. With the implementation of the Project,

the Project Site would function as a unified center for convention, sports and entertainment uses.

The Project Applicants are seeking the following discretionary approvals from the City of Los Angeles as part of the proposed Project: approval of transactional agreements with respect to financing and development of the Replacement Hall and for the right to privately construct and operate Farmers Field; adoption of a Specific Plan to regulate development within the Project Site; General Plan Amendment to establish a Specific Plan land use designation for the Project Site; Vesting Zone Change or Zone Change to effectuate the new Specific Plan; Development Agreement; approval of signage pursuant to the new Specific Plan or Supplemental Use District; a Haul Route Permit; Creation/vacation of air space parcels over Pico Boulevard and LA LIVE Way; Cultural Affairs Commission approval of the design of the Replacement Hall and Farmers Field; bond financing for the Replacement Hall and any additional actions that may be determined necessary.

PROJECT LOCATION: The Project Site is comprised of approximately 68 acres located in the Downtown area of the City of Los Angeles. The Project Site includes all of the existing Los Angeles Convention Center property (Convention Center), STAPLES Center, as well as the Bond Street Parking Lot and the Lot C Garage (formerly the Cherry Street Parking Garage). The Project Site is generally bounded by the following major roadways: the I-110 Harbor Freeway to the west; Chick Hearn Court to the north; Figueroa Street to the east; and Venice Boulevard to the south.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED: Aesthetics; Air Quality; Cultural Resources; Geology and Soils; Greenhouse Gas Emissions; Hazards and Hazardous Materials; Hydrology and Water Quality; Land Use and Planning; Noise; Public Services; Recreation; Transportation/Traffic/Parking/Pedestrian Circulation; Utilities/Service Systems; and Mandatory Findings of Significance.

PUBLIC SCOPING MEETING DATE AND LOCATION: The public scoping meeting will be held on March 30, 2011 from 4:00 p.m. to 8:00 p.m. at the Los Angeles Convention Center. The purpose of the scoping meeting is to solicit public comments regarding issues to be addressed in the Draft EIR. The scoping meeting will provide information regarding the Project and the anticipated scope of analyses to be contained in the Draft EIR. The Department of City Planning encourages all interested individuals and organizations to attend this meeting. There will be no verbal comments or public testimony taken at this open house meeting.

Date: March 30, 2011

Time: 4:00 p.m. to 8:00 p.m.

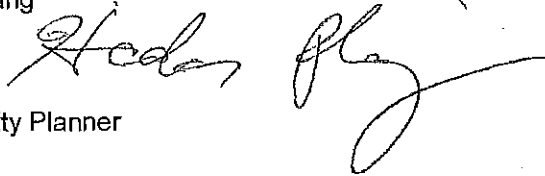
Location: Los Angeles Convention Center
West Hall
Meeting Room 501ABC
1201 South Figueroa Street
Los Angeles, CA 90015

An Environmental Impact Report (EIR) will be prepared and submitted to the Department of City Planning. The Department of City Planning welcomes all comments regarding the environmental impacts of the proposed Project and the issues to be addressed in the EIR. All comments will be considered in the preparation of the EIR. **Written comments** must be submitted to this office by April 18, 2011. Written comments will also be accepted at the scoping meeting described above.

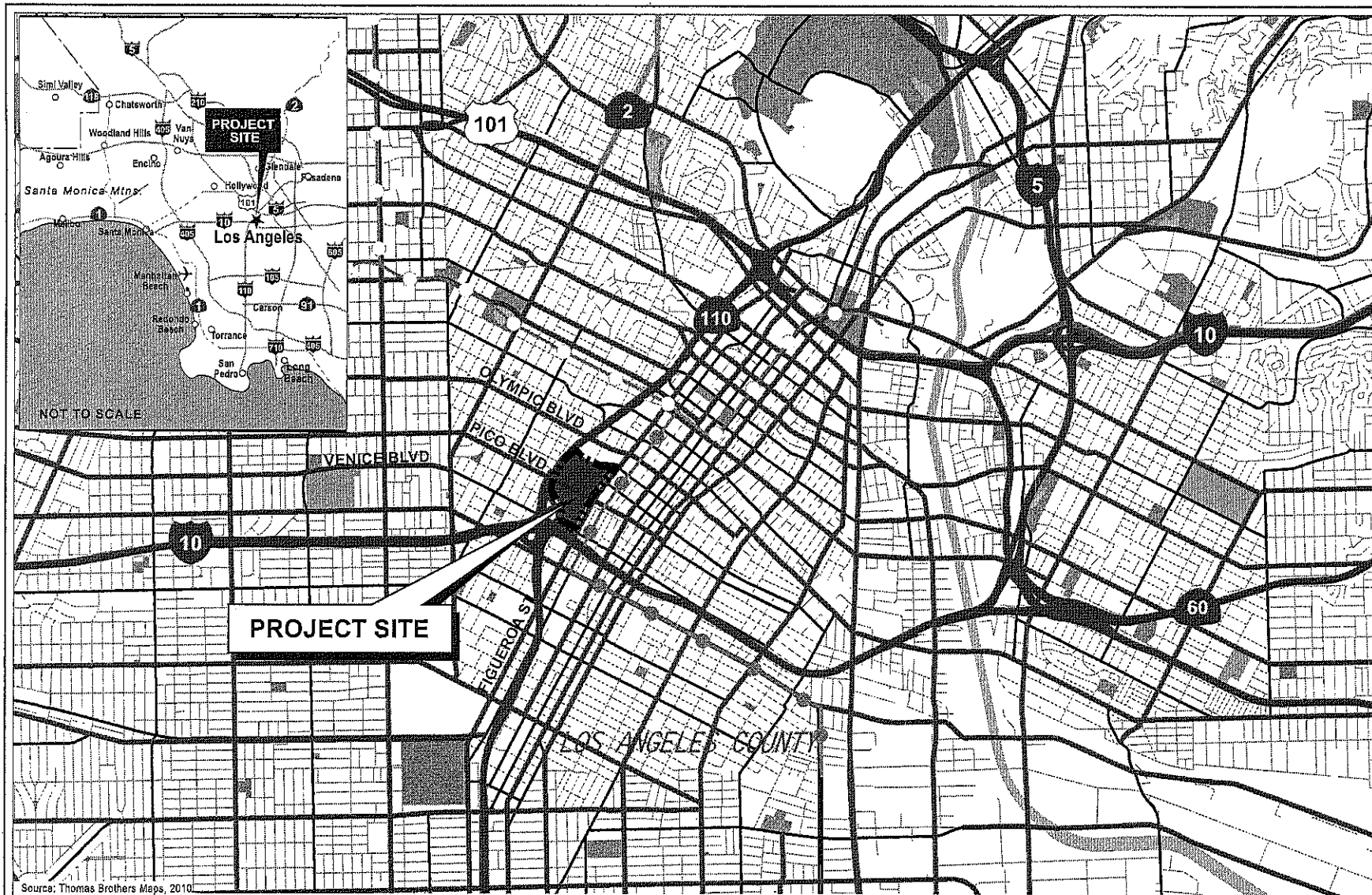
Please direct your comments to:

Hadar Plafkin, City Planner
Department of City Planning
200 N. Spring Street, Room 750
Los Angeles, CA 90012
Fax: (213) 978-1343
Hadar.Plafkin@lacity.org

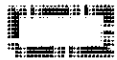
Michael J. Lo Grande
Director of Planning

A handwritten signature in black ink, appearing to read 'Hadar Plafkin', with a long horizontal flourish extending to the right.

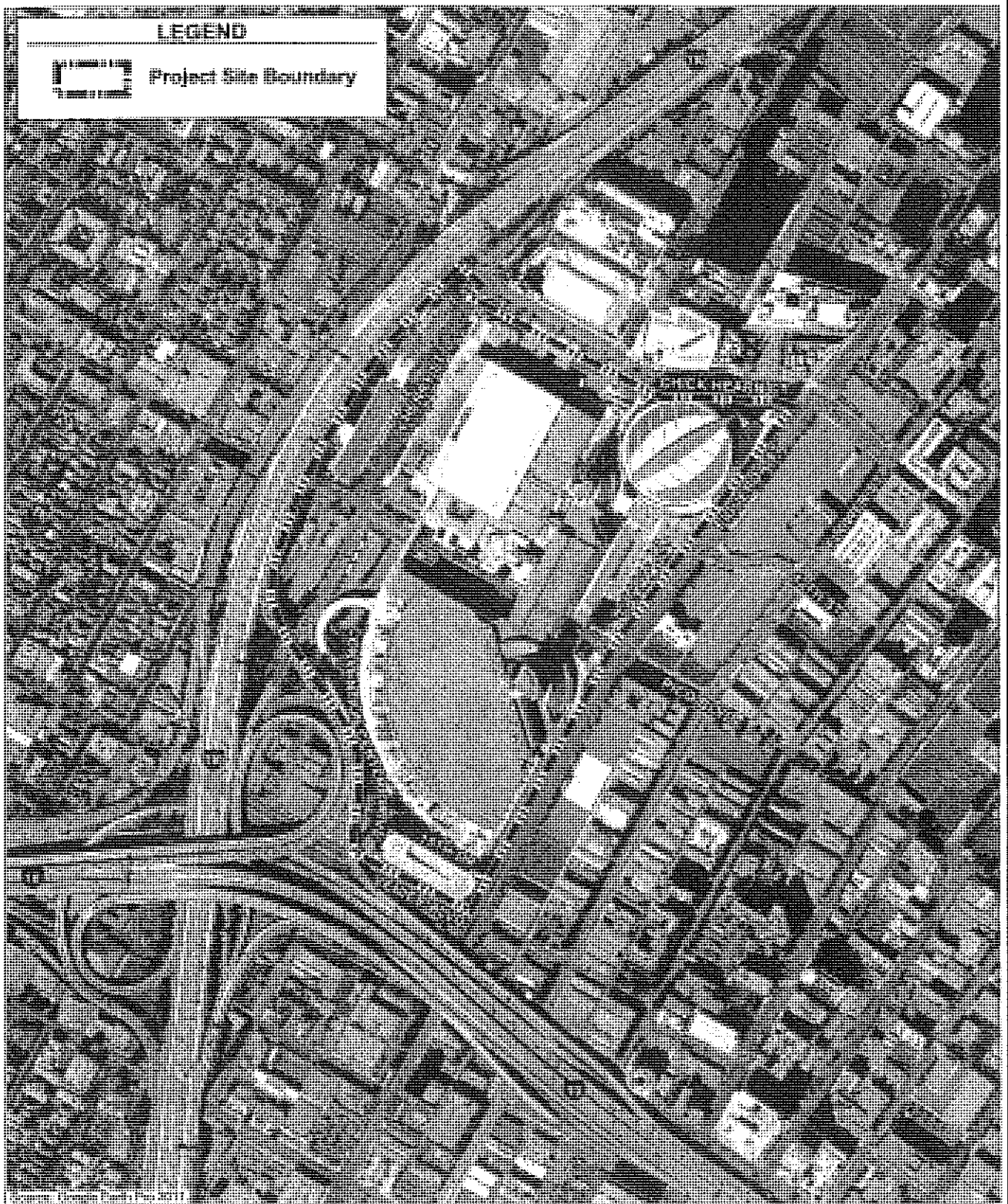
Hadar Plafkin, City Planner
Project Manager



LEGEND



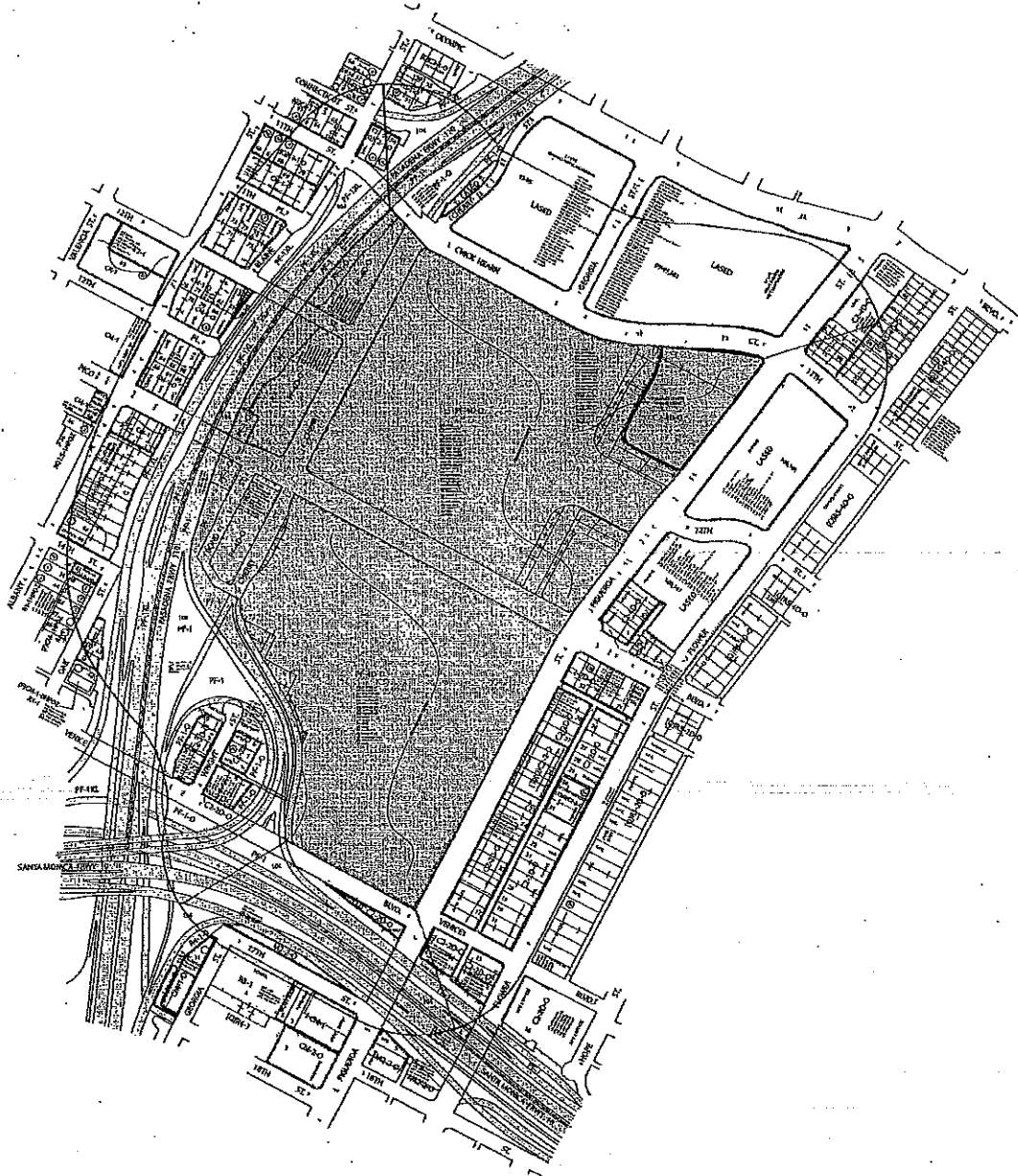
Project Site Boundary



matrix
environmental



Figure 2
Aerial View of Project Site



NOTICE OF PREPARATION-500 FT RADIUS MAP



Quality Mapping Service

14549 Archwood St. Suite 301
Van Nuys, California 91405
Phone (818) 987-7943 - Fax (818) 987-0351
qmapping@qms.com

DRAWN BY:

THOMAS BROTHERS

Page: 634 Grid: D-5

LEGAL

LOT: SEE APPLICATIONS

TRACT:

CONTACT: ARMBRUSTER & GOLDSMITH

CD: 9

CT: 2077.10

PA: 110-CENTRAL CITY

USES: FIELD

CASE NO:

SCALE: 1"=200'

D.M. 124.SA203, 124.SA205, 124.SA207
126.SA203, 126.SA207, 126.SA209
127.SA203, 127.SA205, 127.SA207
129.SA203, 129.SA205, 129.SA207

PHONE: 310-254-9052

DATE: 03-02-11

Update:

NORTH

QMS-11-0334

DEPARTMENT OF

CITY PLANNING

200 N. SPRING STREET, ROOM 525
LOS ANGELES, CA 90012-4801

AND

6262 VAN NUYS BLVD., SUITE 351
VAN NUYS, CA 91401

CITY PLANNING COMMISSION

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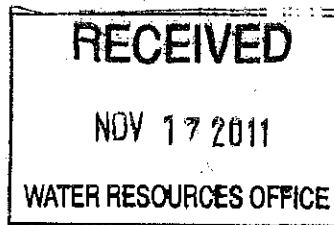
COMMISSION EXECUTIVE ASSISTANT

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INFORMATION

www.planning.lacity.org

November 16, 2011

Mr. James McDaniel, Chief Operating Officer – Water System
LOS ANGELES DEPARTMENT OF WATER AND POWER
111 North Hope Street, Room 1455
Los Angeles, California 90012

**Re: REVISED REQUEST FOR WATER SUPPLY ASSESSMENT – CONVENTION
AND EVENTER CENTER PROJECT**

Dear Mr. McDaniel:

California Senate Bill (SB) 610, effective January 1, 2002, states that a water supply assessment must be provided to local governments for inclusion in any environmental documentation for certain projects subject to the California Environmental Quality Act (CEQA). Specifically, SB 610 requires that for certain projects, the CEQA lead agency must identify any public water system that may supply water to the proposed project and request the public water system to determine the water demand associated with the project and whether such demand was included as part of the most recently adopted Urban Water Management Plan (UWMP). Per Section 10912 of the California Water Code (CWC), a project which is subject to the requirements of SB 610 includes: (1) a shopping center or business establishment that will employ more than 1,000 persons or have more than 500,000 square feet of floor space; (2) a commercial office building that will employ more than 1,000 persons or have more than 250,000 square feet of space; or (3) any mixed-use project that would demand an amount of water equal to or greater than the amount of water needed to serve a 500 dwelling unit project.

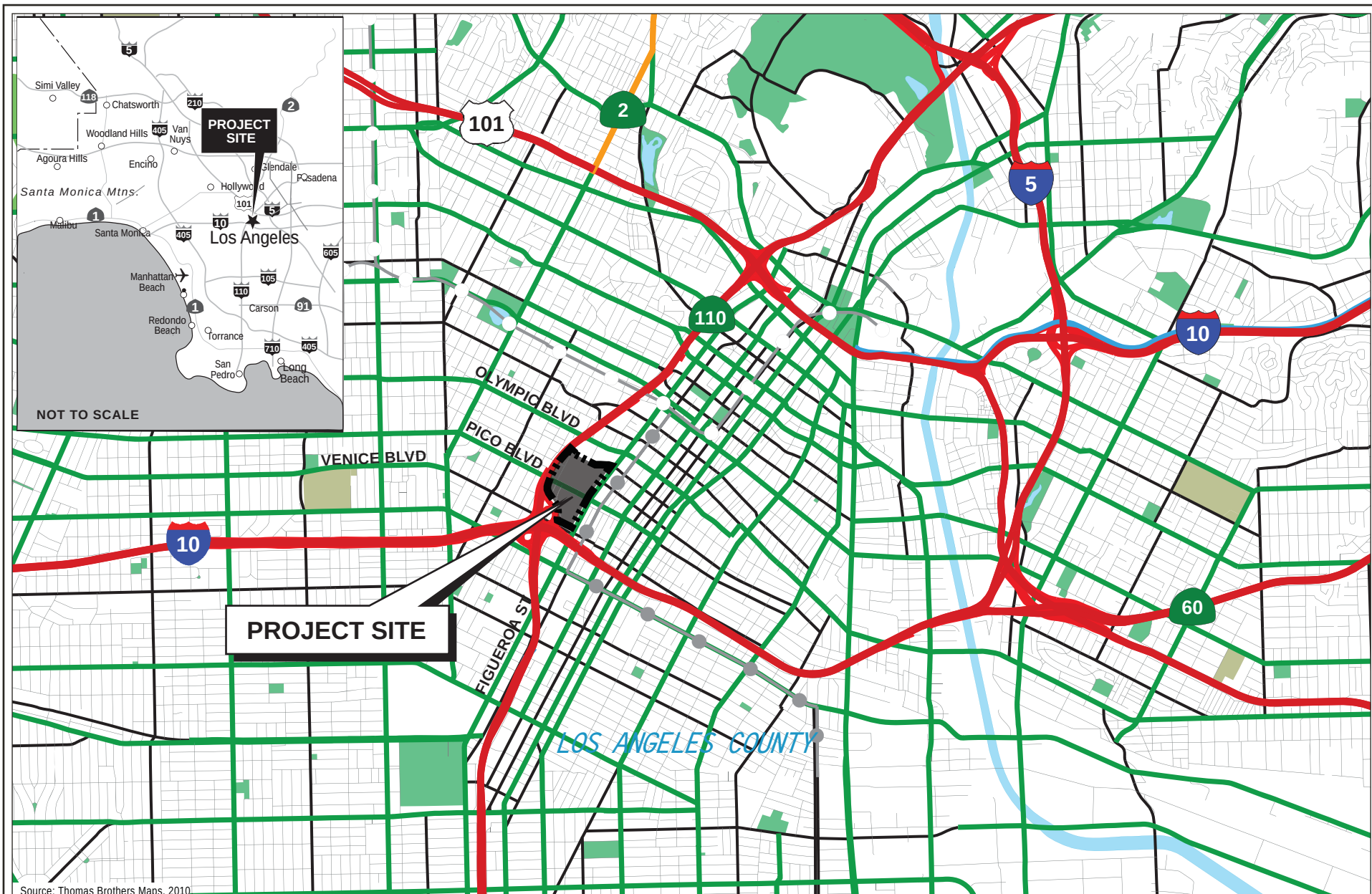
The Convention and Event Center Project (hereafter referred to as the “Proposed Project”) meets the above thresholds requiring the preparation of a water supply assessment. As such, the Los Angeles Department of Water and Power (LADWP) has been identified as a public water system (as defined in CWC Section 10912 and CEQA Guidelines Section 15083.5(e)) that would serve the Proposed Project. Accordingly, the City Planning Department (CEQA lead agency for the Proposed Project) requests that the LADWP: (1) determine whether the estimated water demand associated with the Proposed Project was included as part of LADWP’s most recently adopted UWMP; and (2) prepare and approve a water supply assessment using the UWMP or new analyses for the Proposed Project pursuant to CWC Section 10910 et seq.

The requirements for a water supply assessment include the identification of existing water supply entitlements, water rights, or water service contracts held by LADWP’s public water system, and prior years’ water deliveries received by LADWP’s public water system. Please refer to CWC Section 10910 (d)(2) for the documentation required to verify any identified rights to a water supply. If the LADWP has not received water in prior years as described in CWC Section 10910 (e) or if groundwater is a source of supply as described in CWC Section 10910 (f), please comply with the requirements of those sections.

The City Planning Department requests that the water supply assessment for the Proposed Project include a discussion of whether LADWP’s public water system’s total projected water supplies available during normal, single dry, and multiple dry water years will meet the projected water demand associated with the Proposed Project, in addition to LADWP’s public water system’s existing and planned future uses, including agricultural and manufacturing uses, pursuant to CWC Section 10910 (c)(3).

The Proposed Project consists of the following three components: (1) expansion and modernization of the Los Angeles Convention Center (hereafter referred to as the “Convention Center”), (2) the construction of a new multi-use entertainment and sports facility (hereafter referred to as the “Event Center”), and (3) related parking and support facilities. The Proposed Project is located within an approximately 68-acre site that includes all of the existing Convention Center property, including the Bond Street Parking Lot and the Cherry Street Parking Garage, STAPLES Center, as well as the air space over Pico Boulevard and LA LIVE Way (hereafter referred to as the “Project Site”). The Project Site is generally bounded by the following major roadways: the I-110 Harbor Freeway to the west; Chick Hearn Court to the north; Figueroa Street to the east; and Venice Boulevard to the south. Figure 1 on page 3 depicts the location of the Proposed Project, whereas Figure 2 on page 4 provides an aerial view of the Project Site and its environs.

With the implementation of the Proposed Project, the Project Site would function as a unified center for convention, sports and entertainment uses. The Proposed Project is proposed to be implemented through adoption of a new Specific Plan and



Source: Thomas Brothers Maps, 2010.

LEGEND



Project Site Boundary



Source: Google Earth Pro 2011.

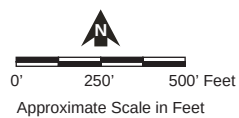


Figure 2
Aerial View of Project Site

Community Plan Amendment. Although the Specific Plan encompasses the entire Project Site, its primary focus would be on the regulation of the proposed buildings and related features, including signage, as well as the regulation of transportation and parking. In addition, notable elements of environmental sustainability would be comprehensively integrated into the Proposed Project and would be one of the key elements that would guide the design of the Proposed Project. Total building square footage to be constructed under the Proposed Project would be approximately ~~1.79~~⁷⁴ million square feet of net new gross floor area. A brief overview of each of the Proposed Project's three components is provided below.

The Proposed Project's first component would involve the demolition and replacement of the Convention Center's existing West Hall. The new structure (hereafter referred to as "New Hall"), would bridge over a portion of Pico Boulevard such that it would adjoin the Convention Center's existing South Hall and would consist of roughly the same amount of square footage as the former West Hall. While the total square footage would be comparable, the amount of functional space would substantially increase through a more efficient building design that among other benefits results in a substantial increase in contiguous floor space for the Convention Center.

The Proposed Project's second component is the development of the Event Center, a multi-purpose, entertainment and sports facility with a potentially retractable roof on the site of the former West Hall. The approximately 1,750,000 square-foot structure would include approximately 72,000 permanent seats with expandable seating capacity to approximately 76,250 seats for major marquee events, such as a Super Bowl. The Event Center would also be available for use as Convention Center exhibit and meeting room space, when not used for spectator events, providing roughly 245,650 square feet of usable exhibition and meeting room space.

The Proposed Project's third component would involve the construction of new larger, more efficient parking facilities on the existing Bond Street Parking Lot and Cherry Street Garage sites. As the West Hall would be demolished, the existing 1,625 parking spaces under the West Hall would be removed by the Proposed Project. The existing Cherry Street Garage would be rebuilt and expanded from the existing 858 spaces to approximately 2,950 parking spaces. A new parking garage would be constructed on the existing Bond Street Parking Lot, which would increase parking on that site from approximately 283 to 928 parking spaces. These improvements would result in a net increase of approximately 1,100 parking spaces. Additionally, above-ground pedestrian bridges would provide connectivity between these parking structures and the Event Center and New Hall, as well as to LA LIVE Way.

In addition to the above improvements, the Proposed Project includes approximately 47,000 square feet of renovations to the existing Concourse building. Changes to the Convention Center's existing South Hall would be limited to its interface

with the proposed New Hall. Existing parking under the South Hall and in the Convention Center's Venice Garage would not be affected by the Proposed Project.

Tabular summaries of the Proposed Project are provided in Tables 1 through 3 as presented on this and the following page.

Table 1
CONVENTION AND EVENT CENTER PROJECT
DEVELOPMENT PROGRAM OVERVIEW
(Square Feet of Gross Building Area)

	Existing	Proposed	Change	
			Number	Percent
Convention Center	2,083,879	2,076,169	(7,710)	(0.4%)
Event Center	-	1,750,000	1,750,000	100.0%
STAPLES Center	950,000	950,000	-	0.0%
Total Proposed Project	3,033,879	4,776,169	1,742,290	57.4%

() indicates a negative number.

Table 2
EXISTING AND PROPOSED CONVENTION CENTER
DEVELOPMENT PROGRAM
(Square Feet of Floor Area)

	Existing	Proposed	Change	
			Number	Percent
Convention Center				
Exhibit Halls	772,748	780,506	7,758	1.0%
Meeting Rooms	113,345	106,345	(7,000)	(6.2%)
Offices	89,414	87,441	(1,973)	(2.2%)
Restaurant/Commissary/ Food Court	74,330	76,500	2,170	2.9%
Other ^a	488,834	525,678	36,844	7.5%
Subtotal	1,538,671	1,576,470	37,799	2.5%

Notes:

() indicates a negative number.

^a The "Other" category includes areas used for pre-function, storage, restrooms, and back-of-house (e.g., mechanical equipment, etc.). In addition, the Proposed Project includes 3,975 square feet of retail use in Gil Lindsay Plaza and 3,250 square-foot bike station.

Table 3
CONVENTION AND EVENT CENTER PROJECT
COMPARISON OF EXISTING WEST HALL AND PROPOSED PICO HALL
(Square Feet of Floor Area)

	Existing West Hall ^a	Proposed New Hall	Change	
			Number	Percent
Exhibit Halls	232,242	240,000	7,758	3.3%
Meeting Rooms	46,000	39,000	(7,000)	(15.2%)
Offices	23,973	22,000	(1,973)	(8.2%)
Other ^b	159,986	199,000	39,014	24.4%
Total	462,201	500,000	37,799	8.2%

Notes:

^a Includes the existing West Hall.

^b The "Other" category includes areas used for pre-function, food preparation, storage, restrooms, and back-of-house (e.g., mechanical equipment, etc.).

The Proposed Project's proposed uses and an estimate of water consumption is provided in Tables 4 through 8 on pages 13 through 22. Table 4 presents the calculations setting forth the Project Site's existing water demand, whereas Tables 5 and 6 present the Proposed Project's water demand under two scenarios. The water demand forecast presented in Table 5 is based on existing water usage at the Project Site, whereas Table 6 presents the forecast of the Proposed Project's water demand using the City's Bureau of Sanitation standard factors. In addition to the buildings themselves, the Proposed Project includes central plant facilities that replace existing central plant facilities as well as new facilities that would support the Event Center. Supporting the aforementioned Proposed Project features are a number of landscaped areas. Table 7 provides a quantification of the water savings resulting from implementation of the Proposed Project's water conservation measures, whereas Table 8 identifies the net increase in on-site water consumption under both Option 1 and Option 2.

Provided below is a brief narrative describing the process used to forecast the water demand and savings shown in Tables 4 through 8.

Table 4: Existing Conditions

The forecast of total existing water usage is based on actual water usage averaged over the 2010 calendar year as reported on the water bill data provided by the Los Angeles Convention Center (LACC) and Anschutz Entertainment Group (AEG).

Under both Options 1 and 2, water demand forecasts for the Convention Center and the Event Center are provided separately and are comprised of individual forecasts

for the following three components: (1) general consumption, (2) central plant, and (3) irrigation.

Table 5: Option 1 – Forecast of Proposed Project Water Demand Based on Actual Usage

The operators of the Convention Center, after a review of their records, concluded that attendance was the appropriate variable to forecast future general water consumption as the types of events and activities occurring at the Convention Center in the future would be similar to those occurring today, with the only difference being the number of attendees on an annual basis. As such, the forecast of Convention Center general water consumption is based on multiplying the existing per capita usage by the forecasted future attendance. The Proposed Project, also under the heading of general consumption, anticipates the construction of two new facilities as part of the improvements proposed for Gil Lindsay Plaza – a 3,975 square-foot retail facility and a 3,250 square-foot bike station intended to support the planned increased bicycle usage along the Figueroa Street Corridor resulting from the implementation of the City's on-going planning efforts for the Figueroa Corridor between the Exposition Park area and the area north of the Project Site. The proposed retail facility and bike station are assumed to operate 365 days per year.

While the Event Center is a new facility, AEG, the operators of STAPLES Center, have concluded that existing water consumption at STAPLES Center on a per capita basis would be the most reliable factor upon which to forecast water usage at the Event Center. Due to some events at the Event Center lasting longer than existing events at STAPLES Center (i.e., a basketball game last approximately 2.5 hours versus a football game which lasts on the order of 3.5 hours), it was determined appropriate to incorporate an upward adjustment to the per capita water consumption level presently occurring at the STAPLES Center. Thus, the forecast of Event Center general water consumption is based on first multiplying the existing per capita usage at the STAPLES Center by a factor of 1.2 and then multiplying that result by the forecasted Event Center attendance.

Forecasts of central plant water consumption are provided by Arup (see Attachment D). The forecasted irrigation water demand is based on the Proposed Project's conceptual landscape design plan and formulas from the included in the Eastern Municipal Water District's water budget guide (Riverside County, CA), which is provided as Attachment C to this letter. Under the Proposed Project, the use and function for Gil Lindsay Plaza will be changing from one that is oriented to the motor vehicle to one that is oriented to the pedestrian. To facilitate and enhance the realization of this objective the character of Gil Lindsay Plaza would change quite a bit under the Proposed Project. Current planning for this area includes the creation of broad pedestrian areas on the northern side of the plaza to ease the departure from the

Event Center and the creation of a water feature (e.g., fountain) to enhance the overall attractiveness of the plaza. The central and southern portions of the plaza are likely to be transformed into a landscaped amenity, including a turf area, that supports on-site activities as well as offering park space to the adjacent communities. While there would be some changes to irrigation quantities within the Farmers and LA Live Way Plazas, irrigation quantities within these two areas would be somewhat comparable to what occurs under existing conditions.

Table 6: Option 2 – Forecast of Proposed Project Water Demand Based on Standard City Factors

Several of the uses proposed to occur at the Convention Center are included on the City's list of land uses for which standard consumption factors have been developed. For those Convention Center uses not included on the list, the Bureau of Sanitation in their response to the Proposed Project's Notice of Preparation of an EIR identified factors for these uses which are recognized by the LADWP as acceptable for purposes of conducting a WSA. Specifically, water consumption at the rate of 80 and 150 gallons per one thousand square feet of floor area for exhibit halls and meeting rooms were identified by the City, respectively. Interior back-of-house uses are conservatively assigned the same consumption rates as the exhibit halls and the bike station was conservatively assigned the same rate as a retail use. Forecasts of event days for the exhibit halls and meeting rooms were developed based on actual usage occurring over the 2010/2011 fiscal year and adjusted upward by the percentage increase in event days forecasted to occur under the Proposed Project. Based on input from the operators of the Los Angeles Convention Center, water consumption associated with food service areas was forecasted to be comparable to that associated with a fast food restaurant.¹ Other floor area and food service areas are conservatively forecasted to operate whenever any event occurs at the Convention Center. Office uses were assumed to operate six days per week, whereas the retail facility and the bike station were assumed to operate 365 days per year.

The forecast of general water consumption at the Event Center for spectator events is based on the attendance at an event and the number of events per year. When the Event Center is used as an exhibit hall or for meeting rooms, general water consumption is based on the floor area used and the number of event days at the various usage levels. Based on input from AEG, the operators of the STAPLES Center, water consumption associated with food service areas was forecasted to consist of 540 restaurant seats, with the balance being comparable to that associated with a fast food restaurant.² Food services at the Event Center are conservatively forecasted to operate

¹ This approach is conservative in that fast food restaurants typically operate during longer hours than the food service areas at the Los Angeles Convention Center, which are limited to event hours. Therefore, actual water consumption is likely to be less.

² This approach is conservative in that fast food restaurants typically operate during longer hours than the food service areas at the Event Center, which are limited to event hours. Therefore, actual water consumption is likely to be less.

whenever any event occurs at the Event Center. Office uses were assumed to operate five days per week, whereas the retail facility ~~are~~ is assumed to operate 365 days per year. Central plant water usage and water usage in support of the irrigated areas under Option 2 are the same as Option 1.

Table 7: Water Conservation

Sustainability, including but not limited to water conservation, are important everyday issues in the management of both the Los Angeles Convention Center and facilities operated by AEG. With a specific focus on water consumption, the following are the water conservation features that the respective Applicant's would incorporate into the Proposed Project:

Based on water savings data developed as part of the Project's water conservation program, the water savings attributable to the above list of water conservation measures have been quantified to the extent feasible. The forecasted level of water reductions would apply to both Options 1 and 2.

Table 8: Net Water Consumption

This table subtracts the water savings resulting from implementation of the water conservation features (Table 7) from the incremental increase in water consumption under both Options 1 and 2 (Tables 5 and 6). The final results of this analysis for the two Options are as follows:

	Net Increase in Annual Water Consumption (Gallons/Year)
Option 1: Actual Usage	59,473,120
Option 2: Standard Factors	58,015,336

* * * * *

To further assist the LADWP in the preparation of the Proposed Project's WSA, a copy of the Proposed Project's Notice of Preparation is also provided as an attachment to this letter (see Attachment G).

CWC Section 10910 (g)(1) requires submission of the assessment within 90 days of this request. The information presented herein supersedes that previously provided to LADWP. If you have any questions or need additional information, please give me a call at (213) 978-1357 or call the EIR consultant, Bruce Lackow of Matrix Environmental at (424) 207-5337.

Sincerely,

Hadar Plafkin, City Planner
Department of City Planning
200 N. Spring Street, Room 750
Los Angeles, CA 90012

Attachments:

- Attachment A: Tables 4 through 8
- Attachment B: Convention and Event Center Future Activity Forecasts
- Attachment C: Central Plant Existing and Future Water Demand
- Attachment D: Eastern Municipal Water District's Water Budget Guide (Riverside County, CA)
- Attachment E: Event Center Water Conservation Calculations
- Attachment F: Convention Center Water Conservation Calculations
- Attachment G: Notice of Preparation

Table 4
EXISTING CONDITIONS

General Consumption ^a		
	Annual Water Use	
	Gallons	Acre-Feet
Convention Center ^b	10,513,974	32.26
Sub-total	10,513,974	32.26
Central Plant ^c		
	Annual Water Use	
	Gallons	Acre-Feet
Convention Center	8,206,970	25.18
STAPLES Center	1,062,000	3.26
Subtotal	9,268,970	28.44
Irrigation ^d		
All Locations	6,743,220	20.69
SUMMARY - EXISTING CONDITIONS		
General Consumption	10,513,974	32.26
Central Plant	9,268,970	28.44
Irrigation	6,743,220	20.69
Total Existing Conditions	26,526,164	81.39
^a Excludes STAPLES Center as no changes are proposed to this existing facility under the Proposed Project. ^b Total annual water consumption for calendar year 2010 less water used for Central Plant (see below). Based on water meter data associated with the following water meter numbers: 90141780, 90141866, 90141781, and 46431391. All data provided by the Los Angeles Convention Center Inc., 2011. ^c Based on data provided by Syska Hennessy Group, Inc., 2011. Supporting documentation provided as Attachment C. ^d Total annual water consumption for calendar year 2010. Based on water meter data associated with the following water meter numbers: 49138887, 49246919, 96100513, 90230148, 46431291, 46431289, and 46431391. All data provided by the Los Angeles Convention Center Inc., 2011.		

Table 5

OPTION 1: FORECAST OF PROPOSED PROJECT WATER DEMAND BASED ON ACTUAL USAGE

General Consumption						
Convention Center						
			Per Capita Water Consumption	Forecasted Annual Attendance ^a	Annual Water Use	
					Gallons	Acre-Feet
Patron Use			3.88 ^b	4,020,959	15,601,321	47.87
	Floor Area	Water Consumption/ 1,000 Sq.Ft.	Water Consumption/ Day	Annual Days Open for Business	Annual Water Use	
					Gallons	Acre-Feet
Retail	3,975	80	318	365	116,070	0.36
Bike Station	3,250	80	260	365	94,900	0.29
Subtotal					15,812,291	48.52
Event Center						
			Per Capita Water Consumption ^c	Forecasted Annual Attendance ^a	Annual Water Use	
					Gallons	Acre-Feet
Spectator Events			10.94	4,122,500	45,100,150	138.39
Exhibition Events			8.21	1,971,690	16,187,575	49.67
Subtotal					61,287,725	188.06
Total General Consumption					77,100,016	236.58
Central Plant						
					Annual Water Use	
					Gallons	Acre-Feet
All Facilities (Convention Center, Event Center, STAPLES Center) ^d					11,512,854	35.33

Table 5

OPTION 1: FORECAST OF PROPOSED PROJECT WATER DEMAND BASED ON ACTUAL USAGE (Continued)

Irrigation						
	Area (Sq.Ft.) ^e	Species Factors ^f	Distribution Efficiency ^f	Application Efficiency ^f	Annual Water Use ^f	
					Gallons	Acre-Feet
Event Center Plaza						
Drip	1,567	0.5	0.90	0.85	36,166	0.11
Bubblers	2,750	0.5	0.85	0.85	67,202	0.21
Subtotal	4,317				103,368	0.32
Gil Lindsay Plaza						
Drip	66,785	0.5	0.90	0.85	1,541,373	4.73
Bubblers	27,000	0.5	0.85	0.85	65,980	0.2
Fountain ^g					16,400	0.05
Subtotal	93,785				1,623,753	4.98
LA LIVE Way Plaza						
Drip	40,656	0.5	0.90	0.85	938,325	2.88
Subtotal	40,656				938,325	2.88
Total Irrigation	138,758				2,665,446	8.18
SUMMARY - PROPOSED PROJECT BASED ON ACTUAL USAGE						
					Annual Water Use	
					Gallons	Acre-Feet
General Consumption					77,100,016	236.58
Central Plant					11,512,854	35.33
Irrigation					2,665,446	8.18
Total Proposed Project Conditions					91,278,316	280.09
OPTION 1: NET INCREASE IN WATER DEMAND -- PROPOSED PROJECT BASED ON ACTUAL USAGE						
					Annual Water Use	
					Gallons	Acre-Feet
Existing Development					26,526,164	81.39
Proposed Project					91,278,316	280.09
Net Increase in Annual Water Demand					64,752,152	198.70

Table 5

^a See Attachment B.

^b Per capita water consumption factor based on annual Existing General Consumption (see above) divided by estimated existing annual attendance (2,708,262 patrons). Existing General Consumption includes all sources including, but not limited to, restaurant, concessions, kitchens, commissaries, and pantries. The use of attendance as a predictor of future demand has been approved by the Los Angeles Convention Center Inc., 2011.

^c For Spectator Events, per capita water consumption factor based on 120% of that used at STAPLES Center to account for the increased duration of events at the Event Center compared to STAPLES Center (i.e., football game lasts approximately 3.5 hours versus 2.5 hours for a basketball game). The per capita consumption factor for STAPLES Center based on total annual water consumption at STAPLES Center (28,175,664 gallons), less central plant water usage (1,062,000 gallons), divided by estimated existing annual attendance (2,974,357 patrons). Existing General Consumption includes all sources including, but not limited to, retail, office, restaurant, concessions, kitchens, commissaries, and pantries. The amount of these uses is roughly proportional between STAPLES Center and the Event Center. The use of attendance as a predictor of future demand has been confirmed by AEG, 2011. For Exhibition Events per capita water consumption assumed to be 90% of existing STAPLES Center per capita consumption.

^d Based on forecast provided by Syska Hennessy Group, Inc., 2011. Supporting documentation provided as Attachment C.

^e Based on data provided by Melendrez, 2011.

^f The 0.5 plant species factor is appropriate, if not conservative, for the entire development as it reflects an average based on the use of turf in Gil Lindsay Plaza requiring a higher species factor but the remainder of the planting will be in the low to very low range (i.e., species factors of less than 0.3). Based on data provided by KPFF, 2011, per Eastern Municipal Water District's water budget guide (Riverside County, CA). This document is provided as Attachment D.

^g Based on a 2,000 gallon reservoir emptied and refilled three times per year for maintenance and 10% weekly evaporation loss.

Table 6

OPTION 2: FORECAST OF PROPOSED PROJECT WATER DEMAND BASED ON STANDARD CITY FACTORS

General Consumption						
	Floor Area	Water Consumption/ 1,000 Sq.Ft.	Water Consumption/ Event Day	Number of Event Days	Annual Water Use	
					Gallons	Acre-Feet
Convention Center						
Exhibit Space	780,506	80	62,440	293 ^a	18,294,920	56.14
Meeting Rooms	106,345	150	15,952	142 ^b	2,265,184	6.95
Offices	87,441	150	13,116	312 ^c	4,092,192	12.56
Other (Back-of-House)	525,678	80	42,054	355 ^d	14,929,170	45.81
Restaurant/Commissary/ Food Court	76,500	300 ^e	22,950	355 ^d	8,147,250	25.00
Retail	3,975	80	318	365	116,070	0.36
Bike Station	3,250	80 ^e	260	365	94,900	0.29
Subtotal Convention Center					47,939,686	147.11
	Attendance ^f	Number of Event Days ^f	Forecasted Annual Attendance ^f	Water Consumption/ Seat	Annual Water Use	
					Gallons	Acre-Feet
Event Center						
Spectator Event Attendance ^g						
Attendance Level 1	72,230	37	2,672,510	4	10,690,040	32.80
Attendance Level 2	55,000	20	1,100,000	4	4,400,000	13.50
Attendance Level 3	35,000	10	350,000	4	1,400,000	4.30
Subtotal		67	4,122,510		16,490,040	50.60

Table 6

**OPTION 2: FORECAST OF PROPOSED PROJECT WATER DEMAND BASED ON STANDARD CITY FACTORS
(Continued)**

Event Center (Continued)						
	Floor Area ^f	Water Consumption/ 1,000 Sq.Ft.	Water Consumption/ Event Day	Number of Event Days ^f	Annual Water Use	
					Gallons	Acre-Feet
Exhibition Event Use	143,500	80	11,480	42	482,160	1.48
Meeting Room Use ^h						
Meeting Level 1	102,150	150	15,323	15	229,838	0.71
Meeting Level 2	40,000	150	6,000	30	180,000	0.55
Meeting Level 3	22,500	150	3,375	30	101,250	0.31
Subtotal					511,088	1.57
		Floor Area ^f	Annual Days Open for Business ^f	Water Consumption/ 1,000 Sq.Ft.	Annual Water Use	
					Gallons	Acre-Feet
Other Water Consuming Uses						
Office		10,350	260	150	403,650	1.24
Retail		35,500	365	80	1,036,600	3.18
Restaurant		540 seats	184	30/seat	2,980,800	9.15
Kitchens/Concessions/Commissaries/ Pantry		105,040	184	300	5,798,208	17.79
Subtotal					10,219,258	31.36
Subtotal Event Center					27,702,546	85.01
Subtotal General Consumption					75,642,232	232.12

Table 6

**OPTION 2: FORECAST OF PROPOSED PROJECT WATER DEMAND BASED ON STANDARD CITY FACTORS
(Continued)**

Central Plant		
	Annual Water Use	
	Gallons	Acre-Feet
All Facilities (Convention Center, Event Center, STAPLES Center) ⁱ	11,512,854	35.33

Irrigation						
	Area (Sq.Ft.) ^j	Species Factors ^k	Distribution Efficiency ^k	Application Efficiency ^k	Annual Water Use	
					Gallons	Acre-Feet
Event Center Plaza						
Drip	1,567	0.5	0.90	0.85	36,166	0.11
Bubblers	2,750	0.5	0.85	0.85	67,202	0.21
Subtotal	4,317				103,368	0.32
Gil Lindsay Plaza						
Drip	66,785	0.5	0.90	0.85	1,541,373	4.73
Bubblers	2,700	0.5	0.85	0.85	65,980	0.20
Fountain ^l					16,400	0.05
Subtotal	69,485				1,623,753	4.98
LA LIVE Way Plaza						
Drip	40,656	0.5	0.90	0.85	938,325	2.88
Subtotal	40,656				938,325	2.88
Total Irrigation	114,458				2,665,446	8.18

SUMMARY - PROPOSED PROJECT BASED ON STANDARD CITY FACTORS

	Annual Water Use	
	Gallons	Acre-Feet
General Consumption	75,642,232	232.12
Central Plant	11,512,854	35.33
Irrigation	2,665,446	8.18
Total Proposed Project Conditions	89,820,532	275.63

Table 6

**OPTION 2: FORECAST OF PROPOSED PROJECT WATER DEMAND BASED ON STANDARD CITY FACTORS
(Continued)**

NET INCREASE IN WATER DEMAND -- PROPOSED PROJECT BASED ON STANDARD CITY FACTORS		
	Annual Water Use	
	Gallons	Acre-Feet
Existing Development	26,526,164	81.39
Proposed Project	89,820,532	275.63
Net Increase in Annual Water Demand	63,294,368	194.24

^a The number of exhibit hall event days is calculated based on the following: Based on data for the July 1, 2010 to June 30, 2011 time period, the exhibit halls were either partially or completely utilized on a total of 212 days. The forecast of future convention center activity shows an increase of 38% in event days for events utilizing some or all of the exhibit halls.

^b The number of meeting room event days is calculated based on the following: Based on data for the July 1, 2010 to June 30, 2011 time period, the meeting rooms were either partially or completely utilized on a total of 131 days. The forecast of future convention center activity shows an increase of 8.5% in event days for events utilizing some or all of the meeting rooms.

^c The number of office days are calculated based on a 6-day work week.

^d Assumes no activity at the convention center a total of 10 days per year.

^e Water consumption factors are not available for these uses. The uses most similar to these for which water consumption factors are available are fast food restaurant and retail uses, respectively.

^f Based on information provided by AEG, 2011. See Attachment B for Event Center Activity Forecasts.

^g A wide range of Spectator Events with varying attendance levels are forecasted to occur at the Event Center. Since the Event Center is not yet constructed, the Spectator Events that would use the Event Center have not been booked at this time. Based on information provided by AEG, Spectator Events that are anticipated to use the Event Center have been classified into one of three attendance categories with average attendance levels established for each attendance category. The average attendance for Attendance Level 1 events exceeds the normal capacity of the Event Center as this attendance category includes some events at the Event Center's maximum capacity level of 76,250.

^h The Event Center includes 102,150 square feet of meeting room space. A wide range of meeting types with varying attendance levels are forecasted to use the Event Center. Since the Event Center is not yet constructed, the meeting rooms have not been booked at this time. Based on information provided by AEG, when the Event Center is used for meeting room purposes, three meeting room usage levels have been identified.

ⁱ Based on forecast provided by Syska Hennessy Group, Inc., 2011. Supporting documentation provided as Attachment C.

^j Based on data provided by Melendrez, 2011.

^k The 0.5 plant species factor is appropriate, if not conservative, for the entire development as it reflects an average based on the use of turf in Gil Lindsay Plaza requiring a higher species factor but the remainder of the planting will be in the low to very low range (i.e., species factors of less than 0.3). Based on data provided by KPFF, 2011, per Eastern Municipal Water District's water budget guide (Riverside County, CA). This document is provided as Attachment D. Based on data provided by KPFF, 2011, per Eastern Municipal Water District's water budget guide (Riverside County, CA). This document is provided as Attachment D.

^l Based on a 2,000 gallon reservoir emptied and refilled three times per year for maintenance and 10% weekly evaporation loss.

Table 7

Water Conservation Feature	Water Savings Per Year	
	Gallons^a	Acre-Feet
Convention Center		
Waterless Urinals and Ultra-Low Flow Lavatories	884,300	2.71
High Efficiency Dishwashers	27,590	0.08
Pre-rinse Faucets	72,000	0.22
Subtotal	983,890	3.01
Event Center		
Waterless Urinals and Ultra-Low Flow Lavatories	1,913,870	5.87
High Efficiency Dishwashers	317,124	0.97
High Efficiency Clothes Washers	8,281	0.03
Subtotal	2,239,275	6.87
Central Plant	See Attachment C	
	2,055,867	6.31
Total	5,279,032	16.19

a See Attachments E and F for the calculation of water savings from the identified water conservation measures for the Event Center and Convention Center, respectively..

Table 8
COMPARATIVE ANALYSIS -- NET INCREASE IN WATER DEMAND

	Gallons	Acre-Feet
OPTION 1: Proposed Project Based on Actual Usage		
Forecasted Water Demand	64,752,152	198.70
Forecasted Water Savings	5,279,032	16.19
Forecasted Net Water Demand	59,473,120	182.51
OPTION 2: Proposed Project Based on City Standard Factors		
Forecasted Water Demand	63,294,368	194.24
Forecasted Water Savings	5,279,032	16.19
Forecasted Net Water Demand	58,015,336	178.05
Difference in Water Consumption (Actual Usage Compared to Factors)		
Number	1,457,784	4.46
Percent Change	2.5%	2.5%

CONVENTION and EVENT CENTER PROJECT

ACTIVITY FORECAST

EXISTING CONDITIONS

LOS ANGELES CONVENTION CENTER

	Number of Events Per Year	Total Number of Days Per Year			Attendance	
		Event Days	Set-Up/ Tear Down	Total	Average Per Event	Total Annual
Conventions	24	98	120	218	33,748	812,616
Trade Shows	27	70	74	144	7,151	193,270
Consumer Shows	48	126	139	265	13,808	1,261,500
Meeting Room	189	335	136	471	386	73,030
Banquets	9	14	19	33	1,343	12,530
Assemblies/Other	66	86	104	190	5,433	359,394
TOTAL	363	729	592	1,321	2,053	2,712,340

FUTURE CONDITIONS

EVENT CENTER

	Number of Events Per Year	Total Number of Days Per Year			Attendance	
		Event Days	Set-Up/ Tear Down	Total	Average Per Event Day	Total Annual
SPECTATOR EVENTS						
Attendance Level 1 (65,000+)	37	37	74	111	72,230	2,672,500
Attendance Level 2 (45,000 - 64,999)	10	20	50	70	55,000	1,100,000
Attendance Level 3 (25,000 - 44,999)	5	10	25	35	35,000	350,000
TOTAL	52	67	149	216	61,530	4,122,500
EXHIBITION EVENTS						
Attendance Level 1 (65,000+)	0	0	0	0	0	0
Attendance Level 2 (45,000 - 64,999)	2	6	14	20	50,000	300,000
Attendance Level 3 (25,000 - 44,999)	12	36	48	84	40,000	1,440,000
TOTAL	14	42	62	104	41,429	1,740,000
MEETING ROOMS						
In Conjunction With Exhibit Floor Usage ^{a, b}						
Attendance Level 1 (65,000+) ^c	0	0	0	0	0	0
Attendance Level 2 (45,000 - 64,999)	2	6	0	6	0	0
Attendance Level 3 (25,000 - 44,999) ^d	12	36	0	36	0	0
TOTAL	14	42	0	42	0	0
Meeting Room Use Only ^{e, f, g}						
Meeting Level 1 (50,000+ sq. ft.) ^h	15	15	15	30	6,946	104,190
Meeting Level 2 (30,000 - 49,999 sq.ft.)	30	30	30	60	2,720	81,600
Meeting Level 3 (15,000 - 29,999 sq. ft.)	30	30	30	60	1,530	45,900
TOTAL	75	75	75	150	3,089	231,690
^a Assumes all meeting room attendees are included in the head count for the Exhibition Event.						
^b Assumes meeting rooms are used for an average of six hours per day.						
^c Assumes 100 percent usage of all 76,000 square feet of meeting room space.						
^d Assumes 50 percent usage of all 76,000 (or 38,000) square feet of meeting room space.						
^e Total number of days meeting rooms used calculated as 30 percent of the days the Event Center is not used for actual events (i.e., event days).						
^f Square footage of meeting room usage calculated as the midpoint of the usage level and an occupancy of 6.8 persons per 100 square (based on average across all meeting room usage at existing LACC).						
^g Distribution of meeting room usage is as follows: (a) Meeting Room Level 1 -- 20%; (b) Meeting Room Level 2 -- 40%, and (c) Meeting Room Level 3 -- 40%.						
^h Assumes upper end of range as all 102,150 square feet of meeting room space.						

SUMMARY OF EVENT CENTER ANNUAL EVENTS and ATTENDANCE

	Annual Event Days	Attendance	
		Per Event	Total All Events
Spectator Events	67	61,530	4,122,500
Exhibition Events & Meeting Rooms	42	41,429	1,740,000
Meeting Rooms ^a	75	3,089	231,690
TOTAL	184	33,121	6,094,190

^a Excludes meeting room usage in conjunction with exhibition events held at the Events Center.

LOS ANGELES CONVENTION CENTER

	Number of Events Per Year	Total Number of Days Per Year			Attendance	
		Event Days	Set-Up/ Tear Down	Total	Average Per Event	Total Annual
Conventions	38	155	190	345	43,423	1,650,074
Trade Shows	47	122	129	251	7,780	365,660
Consumer Shows	53	139	154	293	14,810	1,384,930
Meeting Room	207	366	149	515	396	81,972
Banquets	27	41	56	96	1,433	38,691
Assemblies/Other	84	109	133	242	5,948	499,632
TOTAL	456	932	811	1,742	4,314	4,020,959

PROJECT TOTAL ANNUAL EVENTS and ATTENDANCE

	Annual Event Days	Attendance	
		Per Event	Total All Events
Event Center	184	33,121	6,094,190
Convention Center	932	4,314	4,020,959
TOTAL	1,116	9,064	10,115,149

ATTACHMENT C: CENTRAL PLANT EXISTING AND FUTURE WATER DEMAND

To: Bruce Lackow

Date: November 08, 2011

From: Hamish List

Re: LACC Water Use

Proj. No. LACC01

Copies to: Rob Stephens - ICON, Sandy Eeds-Populous, Mike Hart – ME Engineers, Bill Larwood

Central Plant:

The Central Plant water use reduction estimate is based on the use of new cooling towers with increased cycles of concentration (from 3 to 5.5) in order to reduce the cooling tower water bleed off rate.

As a result of evaporation, dissolved solids concentration continually increases unless reduced by bleed off, thus cooling tower water bleed off is necessary to help reduce dissolved solids concentration. Make-up water for the cooling towers replenishes system water loss due to evaporation, drift and bleed off.

An increase from 3 to 5.5 cycles of concentration reduces bleed off and provides the following savings:

Central Plant and Cooling Tower Water Savings and Use (LACC, Farmers Field and Staples Center)					
Central Plant Service	Existing Make-Up Water (gal/yr)	Full Load CT Flow (GPM)	Annual Bleed at 3 cycles (gal/yr)	Annual Bleed at 5.5 cycles (gal/yr)	Make-Up with 5.5 cycles (gal)*
LACC: 7490 ton Central Plant CT water use	8,206,970	22,470	2,735,657	1,492,176	1,243,480
Farmers Field: 4550 ton Central Plant CT water use**	N/A	13,650	1,433,250	781,773	651,477
Staples Center: 2500 ton Central Plant CT water use	1,062,000	7,500	354,000	193,091	160,909
Totals	9,268,970	43,620	4,522,907	2,467,040	2,055,867

* Annual bleed rate for Farmers Field based on 350 full load hours at cooling tower flow rate

** Farmers Field utilizes a CT make up rate based on the blended rate of CC and Staples Center.

Above to be confirmed by ME Engineers.

**ATTACHMENT D: EASTERN MUNICIPAL WATER DISTRICT'S WATER BUDGET GUIDE
(RIVERSIDE COUNTY, CA)**



RIVERSIDE COUNTY, CALIFORNIA

A Guide to Preparing Water Budgets

February 14, 2007

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Purpose

- A. The intent of this guide is to aid landscape architects to determine the Estimated Annual Water Use (EAWU), generate a monthly Target water budget (TARGET) and formulate an Annual Maximum Allowable Water Budget (AMAWB) for landscape irrigation systems.
- B. Eastern Municipal Water District (EMWD) will not review, approve or ensure the adequacy, efficiency or functional ability of any blue print drawings or as built plans, but **IF** Recycled water is determined to be available the involved landscape and irrigation plans must be designed and approved in accordance with the Procedural Guide and General Design Requirements for Construction of Recycled Water Facilities.
- C. EMWD's Customer Service Department will make the determination if recycled water is to be used.

EXHIBIT A

ESTIMATED ANNUAL WATER USE

This is provided to assist architects and designers in estimating the water needs of plant materials listed in the WUCOLS plant guide.

The estimated annual water use for the entire landscaped area per individual irrigation meter can be determined by following these steps:

- STEP 1 Calculate the estimated annual water use (EAWU) for each hydrozone in the landscaped area (per the formula in this exhibit).
- STEP 2 Add the EAWU of all hydrozones in the landscaped area.
- STEP 3 Round off the sum of EAWU for all hydrozones to the nearest whole number as follows: if $\geq .50$, round UP; if $\leq .49$, round DOWN.

The estimated annual water use of a hydrozone can be calculated using the following formula:

$$\text{EAWU} = \frac{(56.65)(ks)(HA)}{(DE)(AE)(1200)}$$

EAWU = Estimated Annual Water Use in billing units per year (one billing unit = 100 cubic feet = 748 gallons)

56.65 = Reference evapotranspiration in inches of water per year

ks = Species Factors (for a specific plant from the WUCOLS plant guide)

HA = Hydrozone Area in square feet

DE = Distribution Efficiency of the irrigation system expressed as a decimal (found later in this exhibit)

AE = Application Efficiency of the irrigation system expressed as a decimal (found later in this exhibit)

1200 = Conversion factor to produce an answer in billing units (to convert the answer to gallons, multiply the formula by 748)

Typical irrigation system DISTRIBUTION EFFICIENCY or DE for the various types of irrigation heads or emitters are expressed in the following decimals:

- < 0.60 for spray heads
- < 0.85 for gear-driven, impact, or ball-driven rotors
- < 0.85 for bubbler heads
- < 0.90 for drip irrigation systems

Irrigation system APPLICATION EFFICIENCY or AE is expressed as a decimal for the following systems:

- < 0.85 for irrigation systems that have a centralized control system or controllers that measure or can be programmed to use evapotranspiration rates, or systems that use other controls such as moisture sensors.
- < 0.65 for irrigation systems which do not have any of the above soil or weather-driven type of controls.

EXHIBIT B

EXAMPLE OF CALCULATING WATER USE

For a small, individually metered landscape project with two hydrozones and a total landscaped area of 8,000 square feet:

EAWU for hydrozone no. 1	=	$\frac{(56.65)(0.5)(3,000)}{(0.9)(0.85)(1,200)}$	=	92.56 billing units
EAWU for hydrozone no. 2	=	$\frac{(56.65)(0.5)(5,000)}{(0.7)(0.85)(1,200)}$	=	198.35 billing units
SUBTOTAL	=	92.56 + 198.35	=	290.91 billing units (round off to nearest whole number per previous instructions)
TOTAL EAWU FOR THIS PROJECT	=		=	291 billing units per year

NOTE: The EAWU for the total established landscaped area per individual irrigation meter **SHOULD NOT EXCEED** the Annual Maximum Allowable Water Budget (AMAWB) for that landscaped area.

EXHIBIT C

ANNUAL MAXIMUM ALLOWABLE WATER BUDGET

The annual maximum allowable water budget for the total landscaped area per individual irrigation meter can be determined by following these steps:

STEP 1 Calculate the annual maximum allowable water budget (AMAWB) (per the formula in this exhibit).

STEP 2 Round off the AMAWB to the nearest whole number as follows: if $\geq .50$, round UP; if $< .50$, round DOWN.

The annual maximum allowable water budget for the total landscaped area per individual irrigation meter should be calculated using the following formula:

$$\text{AMAWB} = \frac{(56.65)(A_{\text{pnf}})(A_{\text{nf}})((K_{\text{nf}})(K_s))}{1200} + \frac{(56.65)(A_{\text{pf}})(A_{\text{f}})((K_{\text{f}})(K_s))}{1200} = \text{AMAWB}$$

AMAWB = Annual Maximum Allowable Water Budget in billing units per year (one billing unit = 100 cubic feet = 748 gallons).

56.65 = reference evapotranspiration in inches of water per year

A_{pnf} = Allowable Percentage Non Functional Turf of E_{To}

A_{pf} = Allowable Percentage Functional Turf of E_{To}

EMWD will provide applicant with the Annual Maximum Allowable Water Budget (AMAWB) to be used in the scheduling of irrigation systems, which shall include a water budget for Non Functional and Functional Turf as follows:

Non Functional Turf: (A_{pnf})

- Any customer with a signed EMWD Landscape Irrigation Water Budget Agreement dated prior to February 14, 2007 will retain the water budget calculated using 100% of Reference Evapotranspiration (E_{To}) for Non Functional Turf.
- Any customer who signs an EMWD Landscape Irrigation Water Budget Agreement dated February 14, 2007 or later will have a water budget that is calculated using 80% of Reference Evapotranspiration for Non Functional Turf.

Functional Turf: (A_{pf})

- Water budgets for Functional Turf are calculated using 125% of Reference Evapotranspiration.

(Additional adjustments, based on site specific conditions, may be considered).

A_{nf} = Area of non-functional landscape in square feet

A_{f} = Area of functional landscape in square feet

K_{nf} = Irrigation Efficiency Adjustment Factor for non-functional landscape

$$K_{\text{nf}} = \frac{(K_{\text{Cnf}}) * 10,000}{(DE_{\text{nf}})(AE_{\text{nf}})} \quad (\text{Default Value} = 1.00)$$

- K_f = Irrigation Efficiency Adjustment Factor for functional landscape
- $$K_f = \frac{(KC_f) * 10,000}{(DE_f)(AE_f)} \quad (\text{Default Value} = 1.25)$$
- K_s = Soil Adjustment Factor (Default Value = 1.00)
- KC_f = Crop Coefficient for functional landscape (Default Value = .80)
- KC_{nf} = Crop Coefficient for non-functional landscape (Default Value = .60)
- DE_f = Distribution Uniformity Efficiency in % for functional landscape (Default Value = 80%)
- DE_{nf} = Distribution Uniformity Efficiency in % for non-functional landscape (Default Value = 60%)
- AE_f = Application Efficiency in % for functional landscape (Default Value = 80%)
- AE_{nf} = Application Efficiency in % for non-functional landscape (Default Value = 100%)
- 1200 = Conversion factor to produce an answer in billing units (to convert the answer to gallons, multiply the formula by 748).

CALCULATION EXAMPLE;

An individually-metered landscape project with a total landscaped area of 40,000 square feet:

$$\begin{aligned} \text{AMAWB} &= \frac{(56.65)(.80)(40,000)(1.00)(1.00)}{1200} + \frac{(56.65)(1.0)(10,000)(1.25)(1.00)}{1200} = 2100.77 \\ &= (2100.77 \text{ rounded off to the nearest whole number per previous instructions}) \\ &= \mathbf{2,101 \text{ Billing Units per Year}} \end{aligned}$$

EXHIBIT D

MONTHLY TARGET WATER BUDGET

The schedule of monthly target water budgets for the total landscaped area per individual irrigation meter is determined by following these steps:

- STEP 1 Calculate the monthly target water budget (Target) for each month of the year (per the formula in this exhibit).
- STEP 2 Round off each Target to the nearest whole number as follows: if .50, round UP; if .49, round DOWN.

Each monthly target water budget for the total landscaped area per individual irrigation meter is calculated using the following formula:

$$\begin{aligned} \text{TARGET} &= (\text{AMAWB})(\text{MAF}) \\ \text{TARGET} &= \text{Monthly Target Water Budget in billing units per the month chosen to be calculated.} \\ \text{AMAWB} &= \text{Annual Maximum Allowable Water Budget in billing units per year (rounded off to the nearest whole number and calculated per instructions in EXHIBIT C).} \\ \text{MAF} &= \text{Monthly Adjustment Factor for the month chosen to be calculated and taken from the following table:} \end{aligned}$$

JAN	0.037	MAY	0.108	SEP	0.108
FEB	0.051	JUN	0.125	OCT	0.073
MAR	0.071	JUL	0.140	NOV	0.046
APR	0.073	AUG	0.134	DEC	0.034

CALCULATION EXAMPLE;

For the TARGET for the month of August for an individually-metered landscape project with a total landscaped area of 50,000 square feet and an AMAWB of 2,478 billing units per year:

$$\begin{aligned} \text{TARGET} &= (2101)(0.134) \\ &= (281.53) \text{ rounded off to the nearest whole number per previous instructions} \\ &= \mathbf{282} \text{ Billing units for the month of August} \end{aligned}$$

EXHIBIT E

"SPECIES FACTORS AND PLANT WATER NEEDS"

This list is provided to assist architects and designers in estimating the water needs of many (but not all) plant materials.

The water needs of the plants (listed in the WUCOLS guide) appear in the form of a "Species Factor"

For the purpose of this guide, the WUCOLS plant list is organized into one of four categories, each representing a range of Species Factors (ks) as follows:

VERY LOW	Species Factor (VL): ks less than 0.1
LOW	Species Factor (L): ks range = 0.1 - 0.3
MODERATE	Species Factor (M): ks range = 0.4 - 0.6
HIGH	Species Factor (H): ks range = 0.7 - 0.9

A suggestion for using these (ks) values is to use the lower portion of the range if a plant is located in shaded or Northerly exposures, and to use the higher (ks) portion of the range if the plant is located in direct sun or Southerly exposures.

NOTE: The (ks) values provided in this exhibit reflect good estimates of the water needs of many plant materials, (ks) have not been scientifically determined for all landscape plants. Although extensive, the WUCOLS plant guide is by no means complete. Horticultural reference books and horticulturists can provide useful information in estimating the water needs of plants not found in the WUCOLS plants guide. **REMEMBER**, this guide **DOES NOT REQUIRE** that only the plants listed be used. The WUCOLS plant guide will be amended as further data is made available.

GLOSSARY

The words used in this guide have the meaning set forth below:

- A. **"ALLOWABLE PERCENTAGE"** (A_{pf} or A_{pnf}) means a factor of 1.25 (125%) or .80 (80%) that when applied to reference evapotranspiration, determines the annual maximum allowable water budget for an individually metered landscape project.
- B. **"ANNUAL MAXIMUM ALLOWABLE WATER BUDGET"** or "AMAWB" the limit of water use for the entire landscaped area per individual irrigation meter. It is based upon reference evapotranspiration, the allowable percentage and the size of the landscaped area.
- C. **"APPLICATION EFFICIENCY"** or " AE_f " for functional landscape (default value 80%) or " AE_{nf} " for non-functional landscape (default value 100%) is based upon characteristics of the various types of irrigation system controls such as moisture sensors, etc.
- D. **"CROP COEFFICIENT"** or " KC_f " for functional landscape (default value .80) and " KC_{nf} " for non-functional landscape (default value .60)
- E. **"DISTRIBUTION EFFICIENCY"** or "DE" - Typical irrigation system "DE" for the various types of irrigation heads or emitters are expressed in the following decimals:
1. 0.60 for spray heads
 2. 0.85 for gear-driven, impact, or ball-driven rotors
 3. 0.85 for bubbler heads
 4. 0.90 for drip irrigation systems
- F. **"ESTIMATED ANNUAL WATER USE"** or "EAWU" means the estimated annual water use for an established landscape area as calculated in EXHIBIT A. It is based upon reference evapotranspiration, the crop coefficient of the plants involved, and the size of the landscaped area. The EAWU for the entire landscaped area per individual irrigation meter equals the sum of the estimated water use of all hydrozones in that landscape area. NOTE: the EAWU for the entire landscape area per individual irrigation meter SHALL NOT EXCEED the annual maximum allowable water budget of that landscape area.
- G. **"EVAPOTRANSPIRATION"** means the quantity of water evaporated from adjacent soil surfaces and transpired by plants during a specific time. Evapotranspiration data is collected from the Riverside UCR, CIMIS Field Station # 44.
- H. **"FUNCTIONAL LANDSCAPE"** or " A_f " a landscaped turf area that serves as a surface for such purposes as playing a sport or gathering for group activities.
- I. **"HYDROZONE"** means a portion of the landscape area having plants with similar water needs.
- J. **"IRRIGATION EFFICIENCY ADJUSTMENT FACTOR"** or " K_f " (for functional landscape) & " K_{nf} " (for non-functional landscape) mean the measurement of the amount of water beneficially used divided by the amount of water applied. IRRIGATION EFFICIENCY is a product of distribution efficiency (DE) - based upon characteristics of the various types of sprinklers/emitters, and application efficiency (AE) - based upon characteristics of the various types of irrigation system controls such as moisture sensors, etc.
1. Example: $K_f = \frac{(KC_f) * 10,000}{(DE_f)(AE_f)}$ (default 1.25)
- $K_{nf} = \frac{(KC_{nf}) * 10,000}{(DE_{nf})(AE_{nf})}$ (default 1.00)

- K. **"LANDSCAPED AREA"** means the parcel less the building footprint, driveways, non-irrigated portions of parking lots, hardscape-such as decks and patios-and other non-porous areas. Water features are included in the calculations of the landscaped area.
- L. **"MAXIMUM ALLOWABLE WATER BUDGET"** means the upper limit of water use (either "ANNUAL" or "TARGET") for the entire landscaped area per individual irrigation meter. It is based upon reference evapotranspiration, the allowable percentage (1.25 or 80%) and the size of the landscaped area.
- M. **"MONTHLY ADJUSTMENT FACTOR"** or "MAF" means a factor, expressed as a decimal, that, when multiplied by the annual maximum allowable water budget for an individually metered landscape project, determines the target monthly water budget for that project. MAFs are based upon monthly historic average reference evapotranspiration for the area of Riverside County. The MAFs for the twelve months of the year are;

JAN	0.037	MAY	0.108	SEP	0.108
FEB	0.051	JUN	0.125	OCT	0.073
MAR	0.071	JUL	0.140	NOV	0.046
APR	0.073	AUG	0.134	DEC	0.034

- N. **"NON COMPLIANCE SETTLEMENT CHARGE TIERS"** means a tier structure using the AMAWB as the Base Rate (budget). Any water used over the budget will be billed within the appropriate tiers, as described in section V of the Procedural Guide for Procuring Landscape Irrigation Water. Non compliance settlement charge tiers apply to any landscape irrigation water account that exceeds its AMAWB or ETo (whichever is highest) at year=s end.
- O. **"NON-FUNCTIONAL LANDSCAPE"** or " A_{nf} " a landscaped turf area, including trees, shrubs, and ground covers, used for aesthetic purposes.
- P. **"REFERENCE EVAPOTRANSPIRATION"** or 56.65 inches means a standard measurement of environmental parameters which affect the water use of plants. REFERENCE EVAPOTRANSPIRATION, is given as 56.65 inches of water per year, and represents the annual historic average evapotranspiration of a large field of 4-7 inch tall, cool-season grass that is well watered and located in the area of Riverside County. REFERENCE EVAPOTRANSPIRATION is used as the basis of determining the maximum allowable water budgets.
- Q. **"SOIL ADJUSTMENT FACTOR"** or " K_s " is an adjustment factor that is applied to the texture of the soil (Sand, Loam, Clay) with a default of 1.00.
- R. **"SPECIES FACTOR"** or " k_s " are classified as high (H), moderate (M), low (L), or very low (VL) in irrigation water needs. Each classification corresponds to a species factor range (a numerical value) which is expressed as a percentage of reference evapotranspiration (ETo). Species factors are used with ETo values to quantify water needs for a species. (for more information see the WUCOLS guide).
- S. **"Target"** refers to the monthly water budget, and is uses as an indicator in relationship to the AMAWB
- T. **"WATER USE CLASSIFICATION OF LANDSCAPE SPECIES"** or **"WUCOLS"** list is intended solely as a guide to help landscape professionals identify irrigation water needs of landscape species. It can be used either for the selection of species or to assist in developing irrigation schedules for existing landscapes. It is not intended to be used as a **required or approved** list by EMWD for selection of plant species.

ATTACHMENT E: EVENT CENTER WATER CONSERVATION CALCULATIONS



LEED 2009 for New Construction and Major Renovations

WE PREREQUISITE 1: WATER USE REDUCTION

20% REDUCTION

All fields and uploads are required unless otherwise noted.

ALL OPTIONS

This active sample form has been modified for offline access. Modified fields and instructions are indicated in purple. Sample forms are for reference only.

The Table. Daily Occupancy below is a linked submittal from PI Form 3: Occupant and Usage Data to be used for reference only. PI Form 3 must be completed before values will display in WE Prerequisite 1. These values should inform, but not necessarily parallel, the numbers entered in the Table. Fixture Groups Definition.

Table WEp1-1. Daily Occupancy

FTE	Average Transients (Student/ Visitor)	Average Retail Customers	Residents	Total
4,348	72,230			76,578

Fixture Groups Introduction:

This table allows for project occupants to be organized in a way that best represents fixture usage patterns in the project. Occupants can be grouped together or separated into sub-groups at the option of the project team. The usage groups defined must be derived from daily occupancy data for the project building. Accordingly, all project occupants, as recorded in the Daily Occupancy tables from PI Form 3: Occupant and Usage Data must be represented in the Table. Fixture Groups Definition below. All residential occupants should be represented separately from non-residential occupants. Refer to the additional guidance document in the Credit Resources section.

Table WEp1-2. Fixture Groups Definition

Group Name	Annual Days of Operation	FTE	Transients (Student / Visitor)	Retail Customers	Residents	% Female	% Male
Spectator Event	67	783	61,530	0	0	50	50
Exhibition Event	42	330	41,429	0	0	50	50
Meeting Rooms	75	0	3,089	0	0	50	50
Players (Show)	67	73	0	0	0	38	62

Add Row

Delete Row

Briefly describe the inputs in the Table. Fixture Groups Definition. Explain the methodology used to define each fixture group, as well as the derivation of data in each row. Additionally, provide a detailed explanation if the default gender ratio is not used.

Table WEp1-3. Flush Fixture Data

Enter flush fixture data for each fixture group defined in the Table, Fixture Groups Definition.

Note: Click "Calculate" placed next to the Add and Delete to perform the calculations in the table. "Calculate" must be run after any or all the data is entered in the table to obtain the values in the summary section, the Baseline Flush Rate, IPC/UPC Baseline and the Performance Case. "Calculate" needs to be run to perform Water Savings Calculation and document Credit compliance.

Fixture Groups						Flush Rate (GPF)		Annual Water Consumption (kGal)	
Select	Display	Fixture ID ¹	Fixture Family	Fixture Type	Total Daily Uses ²	Base-line	In-stalled ³	IPC/UPC Baseline	Performance Case
Spectator Eve	Spectator Eve	PL-1	Urinal	IPC/UPC (Conventional	13,089	1	0	876.96	0
Spectator Eve	Spectator Eve	PL-1A	Water Closet	IPC/UPC (Conventional	20,025	1.6	1.28	2,146.68	1,717.34
Exhibition Eve	Exhibition Eve	PL-2	Urinal	IPC/UPC (Conventional	8,615.8	1	0	361.86	0
Exhibition Eve	Exhibition Eve	PL-2A	Water Closet	IPC/UPC (Conventional	13,089	1.6	1.28	879.56	703.65
Meeting Room	Meeting Room	PL-3	Urinal	IPC/UPC (Conventional	617.8	1	0	46.34	0
Meeting Room	Meeting Room	PL-3A	Water Closet	IPC/UPC (Conventional	926.7	1.6	1.28	111.2	88.96
Total calculated flush fixture water use annual volume, baseline case (kGal)					4,422.6				
Total calculated flush fixture water use annual volume, performance case (kGal)					2,509.95				
Percent reduction of water use in flush fixtures (%)					43				

Add Row

Delete Row

Calculate

¹ Define a reference name or descriptor that can be used to identify each fixture family/type.

² May be modified for special circumstances. Provide a narrative and upload daily use calculations to justify modifications. Refer to the additional guidance document in the Credit Resources section.

³ To account for dual-flush fixtures, enter a weighted average flush rate.

Table WEp1-4.. Flow Fixture Data

Enter flow fixture data for each fixture group defined in the Table. Fixture Groups Definition.

Note: Click "Calculate" placed next to the Add and Delete to perform the calculations in the table. "Calculate" must be run after any or all the data is entered in the table to obtain the values in the summary section, the Baseline Flush Rate, IPC/UPC Baseline and the Performance Case. "Calculate" needs to be run to perform Water Savings Calculation and document Credit compliance.

Fixture Groups							Flow Rate (GPM / GPC)		Annual Water Consumption (kGal)	
Select	Display	Fixture ID ¹	Fixture Family	Fixture Type	Total Daily Uses ²	Dura- tion (Secs) ²	Base- line	In- stalled ³	IPC/ UPC Base- line	Perfor- mance Case
Spectator	Spectator Eve	LAV-1	Public Lavatory Fau	IPC/UPC (Convention	33114	15	0.5	0.5	277.33	277.33
Players (\$	Players (Shov	SH-1	Shower	IPC/UPC (Convention	7.3	300	2.5	2	6.11	4.89
Exhibition	Exhibition Eve	LAV-2	Public Lavatory Fau	IPC/UPC (Convention	21704.5	15	0.5	0.5	113.95	113.95
Meeting R	Meeting Room	LAV-3	Public Lavatory Fau	IPC/UPC (Convention	1544.5	15	0.5	0.5	14.48	14.48
Total calculated flow fixture water use annual volume, baseline case (kGal)						411.87				
Total calculated flow fixture water use annual volume, performance case (kGal)						410.65				
Percent reduction of water use in flow fixtures (%)						0				

¹ Define a reference name or descriptor that can be used to identify each fixture family/type.

² May be modified for special circumstances. Also, a reasonable estimate MUST be provided for pre-rinse spray valves when selected in the table above. In either case, provide a narrative and upload calculations to justify modifications. Refer to the additional guidance document in the Credit Resources section.

³ When using the metering lavatory faucet, please convert all flow rates in gallons per minute (GPM) to gallons per cycle (GPC) based on duration from the product specifications. Provide a narrative or calculations to support the installed flow rate. The "Duration" is not applicable and therefore should not be modified.

Upload WEp1-1. Provide the plumbing fixture and fitting schedule for the project highlighting flush and flow rates for all applicable plumbing fixtures and fittings within the project building.

Files:

Table WEp1-5. Flush & Flow Fixtures Summary Statistics

Total calculated fixture water use annual volume, baseline case (kGal)	4834.47
Total calculated fixture water use annual volume, performance case (kGal)	2920.6
Percent reduction of water use in all fixtures (%)	40

A 20% reduction of water use in fixtures is required to document compliance with WE Prerequisite 1.

ADDITIONAL DETAILS

- ☐ Special circumstances preclude documentation of credit compliance with the submittal requirements outlined in this form.
- ☐ The project team is using an alternative compliance approach in lieu of standard submittal paths.

SUMMARY

WE Prerequisite 1: Water Use Reduction - 20% Reduction
Compliance Documented:

N

ATTACHMENT E

Event Center Clothes Washer Water Use

3-Nov-11

Event Types	Venue Attendance	# of Events per Year	Loads/Event*	Annual Loads	Annual Water Use (gal)		
					Non-Energy Star Clothes Washer	Energy Star Clothes Washer	Savings (gal)
					31	18	
Daily Base Use	varies	312	1	312	9672	5616	4056
Level 1	72,230	37	5	185	5735	3330	2405
Level 2	55,000	20	5	100	3100	1800	1300
Level 3	35,000	10	4	40	1240	720	520
					19747	11466	8281

Event Center Dishwasher Water Use - Stadium will have two machines: Flight Type Large Capacity and Conveyor Type Smaller Capacity

Event Types	Venue Attendance	# of Events per Year	Hours per Day (or Event) of Use*		Non-Energy Star / Low Efficiency Model Annual Use			Energy Star/ High Efficiency Model Water Use			
			Flight Type Large DW	Conveyor DW	Hobart FT900 Flight Type DW (gal/hour)*	Champion 84 Series (gal/hour)*	Total Use (gal)	Champion EUCCW4 Flight Type DW (gal/hour)*	Champion 64 Series Conveyor Type DW	Total Use (gal)	Savings (gal)
					168	356		117	124		
Daily Base Use	varies	260	0	4	0	370240	370240	0	128960	128960	241280
Level 1	72,230	37	4	4	24864	52688	77552	17316	18352	35668	41884
Level 2	55,000	20	4	4	13440	28480	41920	9360	9920	19280	22640
Level 3	35,000	10	4	4	6720	14240	20960	4680	4960	9640	11320
					45024	465648	510672	31356	162192	193548	317124

* Based on conversations with stadium food service consultant - 11/03/2011. Final manufacturer and model is TBD.

** 31 gallons per load for commercial washer taken from the energystar.gov calculator

*** 18 gallons per load for efficient clothes washer calculated from Maytag commercial product data (MLG19). Actual model to be used in stadium is TBD.

Briefly describe the inputs in the Table. Fixture Groups Definition. Explain the methodology used to define each fixture group, as well as the derivation of data in each row. Additionally, provide a detailed explanation if the default gender ratio is not used.

Employee FTE is taken from Matrix Environmental's Total FTE Incremental FTE Employees Max * 0.33.
 Attendee FTE is taken from Matrix Environmental's Tables dated 8-19-11 ((Event Days * Average Attendees * Hours in Building) / 8)*0.33.
 The 0.33 is used to account for the Pico Hall project only being 1/3 of the Convention Center Project.

Table WEp1-3. Flush Fixture Data

Enter flush fixture data for each fixture group defined in the Table. Fixture Groups Definition.

Note: Click "Calculate" placed next to the Add and Delete to perform the calculations in the table. "Calculate" must be run after any or all the data is entered in the table to obtain the values in the summary section, the Baseline Flush Rate, IPC/UPC Baseline and the Performance Case. "Calculate" needs to be run to perform Water Savings Calculation and document Credit compliance.

Fixture Groups						Flush Rate (GPF)		Annual Water Consumption (kGal)	
Select	Display	Fixture ID ¹	Fixture Family	Fixture Type	Total Daily Uses ²	Base-line	In-stalled ³	IPC/UPC Baseline	Perfor-mance Case
Attendees	Attendees		Water Closet	IPC/UPC (Conventional	4,002	1.6	1.28	1,664.83	1,331.87
Employees	Employees		Water Closet	IPC/UPC (Conventional	488	1.6	1.28	203.01	162.41
Attendees	Attendees		Urinal	IPC/UPC (Conventional	2,001	1	0.125	520.26	65.03
Employees	Employees		Urinal	IPC/UPC (Conventional	244	1	0.125	63.44	7.93
Total calculated flush fixture water use annual volume, baseline case (kGal)					2,451.54				
Total calculated flush fixture water use annual volume, performance case (kGal)					1,567.24				
Percent reduction of water use in flush fixtures (%)					36				
Add Row		Delete Row		Calculate					

¹ Define a reference name or descriptor that can be used to identify each fixture family/type.

² May be modified for special circumstances. Provide a narrative and upload daily use calculations to justify modifications. Refer to the additional guidance document in the Credit Resources section.

³ To account for dual-flush fixtures, enter a weighted average flush rate.

Table WEp1-4.. Flow Fixture Data

Enter flow fixture data for each fixture group defined in the Table. Fixture Groups Definition.

Note: Click "Calculate" placed next to the Add and Delete to perform the calculations in the table. "Calculate" must be run after any or all the data is entered in the table to obtain the values in the summary section, the Baseline Flush Rate, IPC/UPC Baseline and the Performance Case. "Calculate" needs to be run to perform Water Savings Calculation and document Credit compliance.

Fixture Groups							Flow Rate (GPM / GPC)		Annual Water Consumption (kGal)	
Select	Display	Fixture ID ¹	Fixture Family	Fixture Type	Total Daily Uses ²	Duration (Secs) ²	Base-line	In-stalled ³	IPC/UPC Base-line	Performance Case
Attendees	Attendees		Public Lavatory Fau	IPC/UPC (Convention	6003	15	0.5	0.5	195.1	195.1
Employee	Employees		Public Lavatory Fau	IPC/UPC (Convention	4280.5	15	0.5	0.5	139.12	139.12
Employee	Employees		Kitchen Sink	IPC/UPC (Convention	588	15	2.2	2.2	84.08	84.08
Total calculated flow fixture water use annual volume, baseline case (kGal)						418.3				
Total calculated flow fixture water use annual volume, performance case (kGal)						418.3				
Percent reduction of water use in flow fixtures (%)						0				

Add Row

Delete Row

Calculate

¹ Define a reference name or descriptor that can be used to identify each fixture family/type.

² May be modified for special circumstances. Also, a reasonable estimate MUST be provided for pre-rinse spray valves when selected in the table above. In either case, provide a narrative and upload calculations to justify modifications. Refer to the additional guidance document in the Credit Resources section.

³ When using the metering lavatory faucet, please convert all flow rates in gallons per minute (GPM) to gallons per cycle (GPC) based on duration from the product specifications. Provide a narrative or calculations to support the installed flow rate. The "Duration" is not applicable and therefore should not be modified.

Upload WEp1-1. Provide the plumbing fixture and fitting schedule for the project highlighting flush and flow rates for all applicable plumbing fixtures and fittings within the project building.

Upload

Files:

Table WEp1-5. Flush & Flow Fixtures Summary Statistics

Total calculated fixture water use annual volume, baseline case (kGal)	2869.84
Total calculated fixture water use annual volume, performance case (kGal)	1985.54
Percent reduction of water use in all fixtures (%)	31

A 20% reduction of water use in fixtures is required to document compliance with WE Prerequisite 1.

ADDITIONAL DETAILS

☐ Special circumstances preclude documentation of credit compliance with the submittal requirements outlined in this form.

☐ The project team is using an alternative compliance approach in lieu of standard submittal paths.

SUMMARY

WE Prerequisite 1: Water Use Reduction - 20% Reduction
Compliance Documented:

N

ATTACHMENT F

LA Convention Center - Pico Hall - Water Consumption Comparison									
Flight-Type Dishwasher									
			Meiko (Proposed)	Champion		Water Savings (Gal.)			
			M-iQ B-M74 V8	EEUCCW8 (Existing)					
Water Consumption (Gals./hr.)			56.8	134		77.2			
Daily Consumption (Gal.)			180.93	364.86		183.93			
						Water Savings per year (Gal.)			
						(assuming 150 days/ year operation)			
						27,589.50			
Pre-Rinse Faucet									
(assuming 2 hours/day usage)									
						Water Savings (Gals./ day)			
Low-flow unit vs. typical spray valve						120			
Waste water						120			
Total						240			
Assuming (2) units in facility						480			
						Water Savings per year (Gal.)			
						(assuming 150 days/ year operation)			
						72,000			
Total Water Savings per year (Gal.)						99,589.50			

Source: Cini-Little International, Inc ., 2011.

ATTACHMENT G: NOTICE OF PREPARATION

DEPARTMENT OF
CITY PLANNING
200 N. SPRING STREET, ROOM 525
LOS ANGELES, CA 90012-4801
AND
6262 VAN NUYS BLVD., SUITE 351
VAN NUYS, CA 91401

CITY PLANNING COMMISSION

WILLIAM ROSCHEN
PRESIDENT
REGINA M. FREER
VICE-PRESIDENT
SEAN O. BURTON
DIEGO CARDOSO
MATT EPSTEIN
BARBARA ROMERO
MICHAEL K. WOO
VACANT
VACANT
JAMES WILLIAMS
COMMISSION EXECUTIVE ASSISTANT

CITY OF LOS ANGELES
CALIFORNIA



ANTONIO R. VILLARAIGOSA
MAYOR

EXECUTIVE OFFICES

MICHAEL J. LOGRANDE
DIRECTOR
(213) 978-1271
ALAN BELL, AICP
DEPUTY DIRECTOR
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VACANT
DEPUTY DIRECTOR
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EVA YUAN-MCDANIEL
DEPUTY DIRECTOR
(213) 978-1273
FAX: (213) 978-1275

INFORMATION
www.planning.lacity.org

March 17, 2011

NOTICE OF PREPARATION AND NOTICE OF PUBLIC SCOPING MEETING

EAF NO.: ENV 2011-0585-EIR

PROJECT NAME: Convention Center Modernization and Farmers Field Project

PROJECT LOCATION/ADDRESS: The Project Site is generally bounded by Chick Hearn Court on the north, Figueroa Street on the east, Venice Boulevard on the south, and the 110 Harbor Freeway on the west, in the downtown Los Angeles area

COMMUNITY PLANNING AREA: Central City

COUNCIL DISTRICT: 9

DUE DATE FOR PUBLIC COMMENTS: April 18, 2011

The City of Los Angeles, Department of City Planning, will be the Lead Agency and will require the preparation of an environmental impact report ("EIR") for the project identified herein (the "Project"). The Department of City Planning requests your comments as to the scope and content of the EIR. The purpose of the Scoping Meeting is to receive input from the public as to what areas the EIR should study. No decisions about the project are made at the scoping meeting. The Project description, location, and the potential environmental effects are set forth below. Also included below are the date, time, and location of the Scoping Meeting that will be held in order to solicit input regarding the content of the Draft EIR. The Scoping Meeting is in an open house format. **THIS IS NOT THE REQUIRED PUBLIC HEARING FOR MUNICIPAL CODE ENTITLEMENT REQUESTS, which will be scheduled after preparation of the EIR.** A copy of the Initial Study prepared for the Project is not attached but is available for public review at the Department of City Planning, 200 North Spring Street, Room 601, Los Angeles, CA 90012.

PROJECT DESCRIPTION: The Project Applicants, the City of Los Angeles and L.A. Event Center, LLC, proposes the expansion and modernization of the Los Angeles Convention Center and the development of Farmers Field which combined consist of 1,750,000 million square feet of net new gross floor area. The Project involves the following three major components: (1) the West Hall would be demolished and replaced with a new hall built in part over Pico Boulevard so as to be contiguous with the South Hall (the "Replacement Hall"); (2) Farmers Field, a new multi-use event center, that can be configured with 72,000 seats expandable to 76,250 seats for spectator events or as 169,650 square feet of useable exhibition space and 56,000 square feet of useable meeting room space for a combined total of 225,650 square feet of useable floor area, would be constructed on the former West Hall site; (3) and two parking structures would be constructed to replace the existing Bond Street surface parking lot and the Lot C (formerly Cherry Street) Garage to provide approximately 1,290 net additional parking spaces on the west side of LA LIVE Way to support the new development. With the implementation of the Project,

the Project Site would function as a unified center for convention, sports and entertainment uses.

The Project Applicants are seeking the following discretionary approvals from the City of Los Angeles as part of the proposed Project: approval of transactional agreements with respect to financing and development of the Replacement Hall and for the right to privately construct and operate Farmers Field, adoption of a Specific Plan to regulate development within the Project Site; General Plan Amendment to establish a Specific Plan land use designation for the Project Site; Vesting Zone Change or Zone Change to effectuate the new Specific Plan; Development Agreement; approval of signage pursuant to the new Specific Plan or Supplemental Use District; a Haul Route Permit; Creation/vacation of air space parcels over Pico Boulevard and LA LIVE Way; Cultural Affairs Commission approval of the design of the Replacement Hall and Farmers Field; bond financing for the Replacement Hall and any additional actions that may be determined necessary.

PROJECT LOCATION: The Project Site is comprised of approximately 68 acres located in the Downtown area of the City of Los Angeles. The Project Site includes all of the existing Los Angeles Convention Center property (Convention Center), STAPLES Center, as well as the Bond Street Parking Lot and the Lot C Garage (formerly the Cherry Street Parking Garage). The Project Site is generally bounded by the following major roadways: the I-110 Harbor Freeway to the west; Chick Hearn Court to the north; Figueroa Street to the east; and Venice Boulevard to the south.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED: Aesthetics; Air Quality; Cultural Resources; Geology and Soils; Greenhouse Gas Emissions; Hazards and Hazardous Materials; Hydrology and Water Quality; Land Use and Planning; Noise; Public Services; Recreation; Transportation/Traffic/Parking/Pedestrian Circulation; Utilities/Service Systems; and Mandatory Findings of Significance.

PUBLIC SCOPING MEETING DATE AND LOCATION: The public scoping meeting will be held on March 30, 2011 from 4:00 p.m. to 8:00 p.m. at the Los Angeles Convention Center. The purpose of the scoping meeting is to solicit public comments regarding issues to be addressed in the Draft EIR. The scoping meeting will provide information regarding the Project and the anticipated scope of analyses to be contained in the Draft EIR. The Department of City Planning encourages all interested individuals and organizations to attend this meeting. There will be no verbal comments or public testimony taken at this open house meeting.

Date: March 30, 2011

Time: 4:00 p.m. to 8:00 p.m.

Location: Los Angeles Convention Center
West Hall
Meeting Room 501ABC
1201 South Figueroa Street
Los Angeles, CA 90015

An Environmental Impact Report (EIR) will be prepared and submitted to the Department of City Planning. The Department of City Planning welcomes all comments regarding the environmental impacts of the proposed Project and the issues to be addressed in the EIR. All comments will be considered in the preparation of the EIR. **Written comments** must be submitted to this office by April 18, 2011. Written comments will also be accepted at the scoping meeting described above.

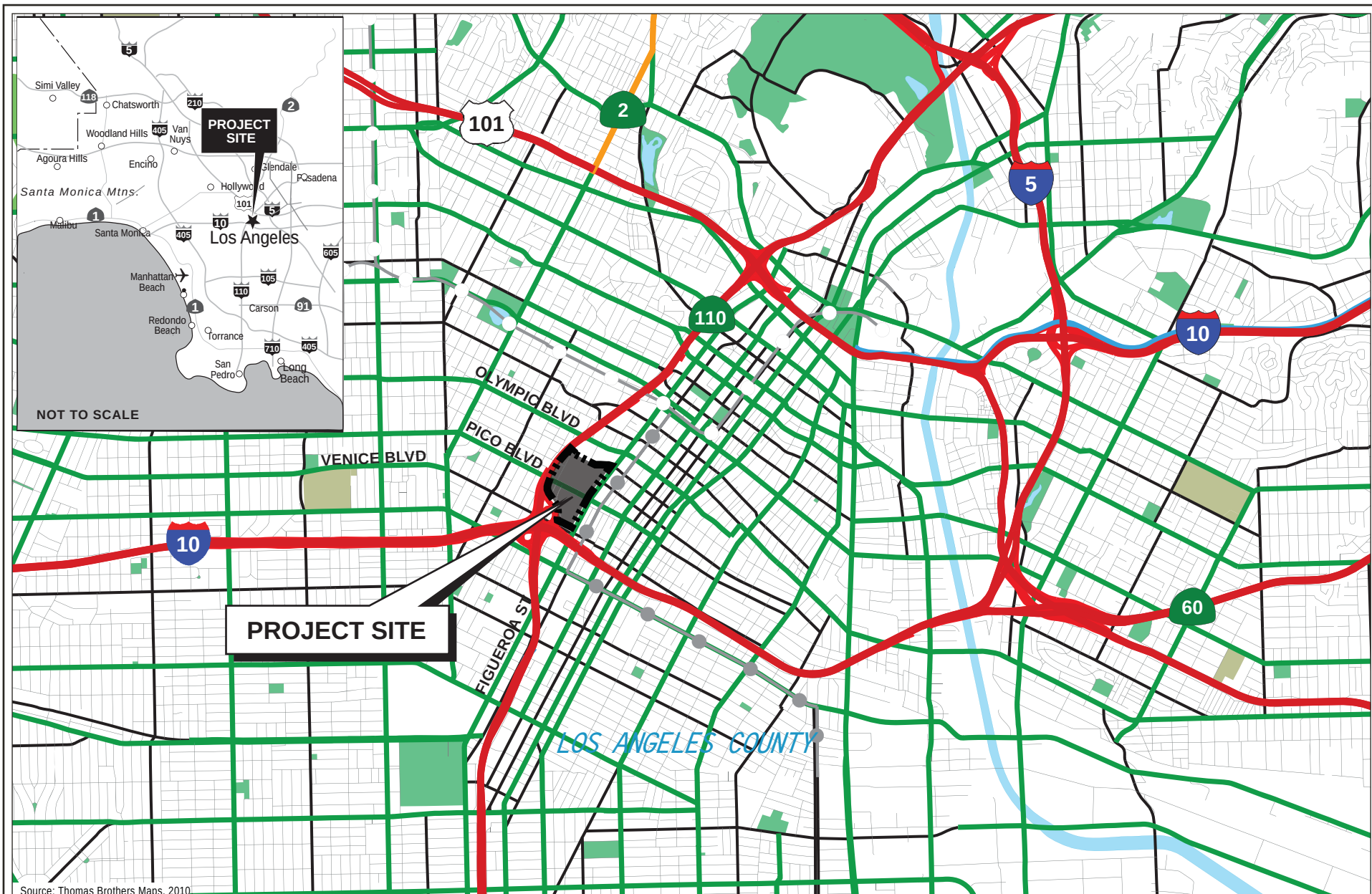
Please direct your comments to:

Hadar Plafkin, City Planner
Department of City Planning
200 N. Spring Street, Room 750
Los Angeles, CA 90012
Fax: (213) 978-1343
Hadar.Plafkin@lacity.org

Michael J. Lo Grande
Director of Planning

Handwritten signatures of Hadar Plafkin and Michael J. Lo Grande. The signature on the left is 'Hadar' and the signature on the right is 'Michael J. Lo Grande'.

Hadar Plafkin, City Planner
Project Manager



Source: Thomas Brothers Maps, 2010.

LEGEND



Project Site Boundary



Source: Google Earth Pro 2011.

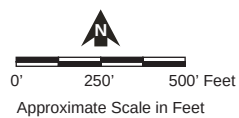


Figure 2
Aerial View of Project Site



From: Bruce Lackow [b.lackow@matrixeir.com]

Sent: Thursday, December 08, 2011 1:30 PM

To: Kwan, Delon; Hadar Plafkin

Cc: Pettijohn, David; Hwang, Jin; Kassis, Natali; JON.FOREMAN@LACITY.ORG; Rob Stephens (rstephens); ttanner@aegworldwide.com; William Delvac; Dale Goldsmith; David Goldberg

Subject: RE: Convention and Event Center Project - Revised WSA

Delon,

Thank you very much for the itemized list. Here is the feedback you requested.

First Bullet: No further comments.

Second Bullet: It is my understanding that the comments from the 12/6/11 e-mail will be reflected in the revised commitment letter.

Third Bullet: I am scheduled to receive the revised commitment letter signed by AEG today.

Fourth Bullet: The scope is accurate. Please note Hadar is on vacation and out of the country until after the first of the year. If you need City concurrence it will need to come from Jon Foreman or one of his designees.

Looks like we are down to a revised and signed commitment letter. Do you agree?

I will forward the letter upon receipt. Once again, thank you for the excellent work you and your staff have provided as well as the patience you have shown.

Bruce Lackow

From: Kwan, Delon [mailto:Delon.Kwan@ladwp.com]

Sent: Thursday, December 08, 2011 11:01 AM

To: Bruce Lackow; Hadar Plafkin

Cc: Pettijohn, David; Hwang, Jin; Kassis, Natali; JON.FOREMAN@LACITY.ORG

Subject: RE: Convention and Event Center Project - Revised WSA

Bruce,

Here are the items that I need by today to finalize our documents:

- Advise of any remaining issues, comments, or concerns regarding draft Table I and II calcs. Any concerns with our response below regarding not using a scale factor for Event Center type events (exhibition, spectator) for total consumption demand?
- Refer to email on 12/6/11 regarding comments / questions to the draft conservation commitment letter. Still need your responses to the questions. Example: Is single pass cooling system applicable, if not, delete from letter. Also regarding **cooling equipment** and **reclaimed water infrastructure**, not sure what disclaimer is in regards to "pending confirmation of water chemical profile for acceptable use". I don't believe it's applicable, therefore, suggest removing this statement. Suggest also grouping in the letter the ordinance requirements and additional savings commitment separately. We can discuss if need to clarify.
- Correct, revise, and submit signed (by authorized signer) the conservation commitment letter to me asap to be included as attachment to WSA document.
- Based on your comments to the scope verification, need you / Planning to confirm by email asap that the scope outlined below is correct:

Existing to be Demolished¹

Uses	Quantity	Unit
West Hall		
Exhibit Halls	232,242	sf
Meeting Rooms	46,000	sf
Offices	23,973	sf
Other	135,659	sf
Food Preparation	24,327	sf
Central Plant		
Convention Center	7,490	Ton
STAPLES Center	2,500	Ton
Landscaping	41,461	sf
Parking		
Cherry Parking	319,584	sf
Bond Parking	52,416	sf
West Hall Parking	690,755	sf

1. Existing water demands are estimated based on the 2010 billing record. Square footage of the existing structures are shown for informational purposes.

Proposed

Uses	Quantity	Unit
General Consumption		
Convention Center		
Patron Use	4,020,959	Attendance
Retail (new for Gil Lindsay Plaza)	3,975	sf
Bike Station (new for Gil Lindsay Plaza)	3,250	sf
Event Deck (no additional water demand)	8,000	sf
Event Center		
Patron Use	6,094,190	Attendance
Central Plants		
Convention Center	7,490	Ton
Event Center	4,550	Ton
STAPLES Center	2,500	Ton
Landscaping		
Event Center Plaza	4,317	sf
Gil Lindsay Plaza	69,485	sf
LA LIVE Way Plaza	40,656	sf
Football Field (Artificial Turf)	57,600	sf
Water Fountain	1	each

sf: square feet afy: acre-foot per year

Thanks,
Delon

From: Bruce Lackow [mailto:b.lackow@matrixeir.com]

Appendix B

Water Conservation Commitment Letter



Ted Tanner
Executive Vice President

December 8, 2011

James McDaniel
Senior Assistant General Manager for Water Systems
Los Angeles Department of Water & Power
111 North Hope Street, Room 1455
Los Angeles, CA 90012-5701

Re: WATER CONSERVATION COMMITMENTS FOR THE CONVENTION CENTER
AND EVENT CENTER PROJECT

Dear Mr. McDaniel:

LA Event Center LLC & LA Convention Hall LLC (Developers) propose to develop the Convention and Event Center Project (Project) within the Los Angeles Convention Center site.. The project site, which encompasses approximately 68 acres, is generally bounded by Chick Hearn Court to the north, Figueroa Street to the east, Venice Boulevard to the south, and I-110 Harbor Freeway to the west. The proposed project would develop approximately 2.25 million combined square feet of new construction. The project would also include 1.44 million square feet of structured parking. As part of the project, the existing West Hall of the Convention Center that comprise(s) approximately 462,000 square feet of floor area on-site would be removed as well as the existing Cherry St. garage.

The Developer understands the City of Los Angeles' policy that future water needs shall be met by expanding water recycling and conservation. The Developer has committed to implement the following water conservation measures for the project:

Commercial/Public Facility Water Conservation Measures	
Toilets	High-efficiency toilets (maximum 1.28 gallons per flush),
Urinals	High efficiency urinals (0.125 gallons/flush for the Convention Center, waterless urinals for the Event Center
Restroom Sink Faucets	Low-flow faucets for public and most private locations with a maximum flow rate of 0.5 gallons per minute. Low-flow faucets will be of a self-closing design (i.e., that would automatically turn off when not in use)
Low-Flow Shower Faucets	Install no more than one showerhead per shower stall, having a flow rate no greater than 2 gallons per minute
Commercial Kitchens	Prep and Service faucets with low flow control aerators - 1.8 gpm in lieu of standard 2.2 gpm flow aerators.
Dishwashers	High-efficiency Energy Star-rated dishwashers within kitchen/food preparation area minimum per ordinance requirements below
Clothes Washers	High-efficiency clothes washers (water factor of 6.0 or less), Energy Start rated when possible. Includes both large and small washers to accommodate

	variances in load sizes.
Cooling Equipment	• Cooling Tower Conductivity Controllers or Cooling Tower pH Conductivity Controllers • For Cooling Towers: Install purple piping and associated connections (<i>i.e.</i>, reclaimed water infrastructure) to the property line for potential future connection to LADWP reclaimed water supply, pending confirmation of water chemical profile for acceptable use.

Landscaping Water Conservation Measures

Smart Irrigation Controllers	• Weather-based irrigation controller with rain shutoff • Matched precipitation (flow) rates for sprinkler heads • Drip/microspray/subsurface irrigation/bubblers where appropriate • Minimum irrigation system distribution uniformity of 85 percent • A separate water meter (or submeter), flow sensor, and master valve shutoff shall be installed for irrigated landscape areas totaling 5,000 square feet and greater
Landscape Design & Plant Selection	• Proper hydro-zoning • Use of landscape contouring to minimize precipitation runoff
Reclaimed Water Infrastructure	• For Irrigation systems: Install purple piping and associated connections (<i>i.e.</i>, reclaimed water infrastructure) to the property line for potential future connection to LADWP reclaimed water supply, pending confirmation of water chemical profile for acceptable use.

Water Performance Measurement

Meters	• At minimum, whole building water meters for each facility that measure total potable water use.. Submeters on cooling towers and irrigation systems per above

- Domestic Water Heating System located close proximity to point(s) of use where feasible in some locations throughout each facility. Utilize recirculation loop in large common system areas.
- Artificial Turf (Event Center playing surface)

The Developer has also committed to comply with the Standard Urban Stormwater Mitigation Plan (SUSMP) and to implement Best Management Practices that have stormwater recharge or reuse benefits for the Project as applicable:

- Infiltration Basin (drainage area of 5-50 acres) – captures first-flush stormwater, removes particulate pollutants and some soluble pollutants, and contributes toward recharging groundwater.
- Infiltration Trench (drainage area of less than 5 acres) – similar to infiltration basin but used for smaller drainage areas.
- Catch Basin Insert - a device that can be inserted into an existing catch basin design to provide some level of runoff contaminant removal
- Catch Basin Screens
- Pervious Pavements – captures runoff by allowing stormwater to infiltrate the surface of pavement layer

In addition to the commitments above that are compliant with the requirements by City Ordinance No.180822, effective Dec. 1, 2009, The Developer acknowledges compliance with the additional following requirements for the entire Convention and Event Center Project:

- Pre-rinse Spray Valve installed in Commercial Kitchens – 1.6 gallons per minute

The maximum water use for high efficiency commercial dishwashers shall be in accordance with the following table:

Type	High-Temperature Maximum gallons per rack	Chemical-Maximum gallons per rack
Conveyer	0.70	0.62
Door	0.95	1.16
Undercounter	0.90	0.98

NOTE THIS CHART DOES NOT DISCUSS THE FLIGHT TYPE MACHINES, WHICH ARE ANTICIPATED TO BE UTILIZED, AS THEY ARE NOT RATED BY THE RACK – STRICTLY BY THE HOUR

- The maximum water use per washing cycle for high efficiency domestic dishwashers shall be 5.8 gallons.
- All cooling towers must operate at a minimum of 5.5 cycles of concentration
- Single-pass cooling systems are strictly prohibited for use in devices, processes, or equipment installed in commercial, industrial, or multi-family residential buildings. This prohibition shall not apply to devices, processes, or equipment installed for health or safety purposes that cannot operate safely otherwise.

Should you have any questions, please do not hesitate to call at (213) 7427870.

Sincerely,

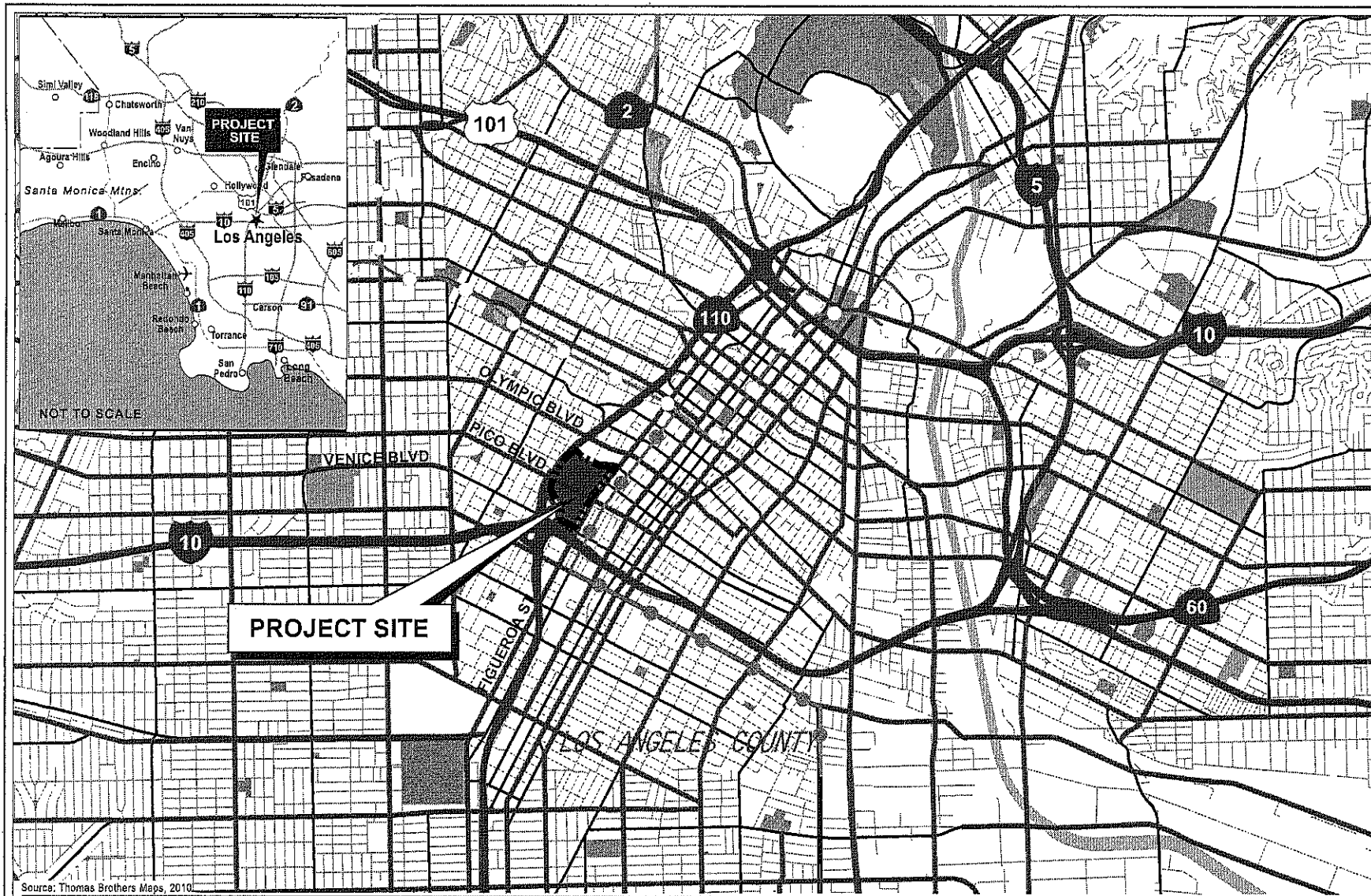


Ted Tanner

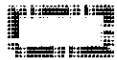
On behalf of
LA Event Center LLC & LA Convention Hall LLC

Appendix C

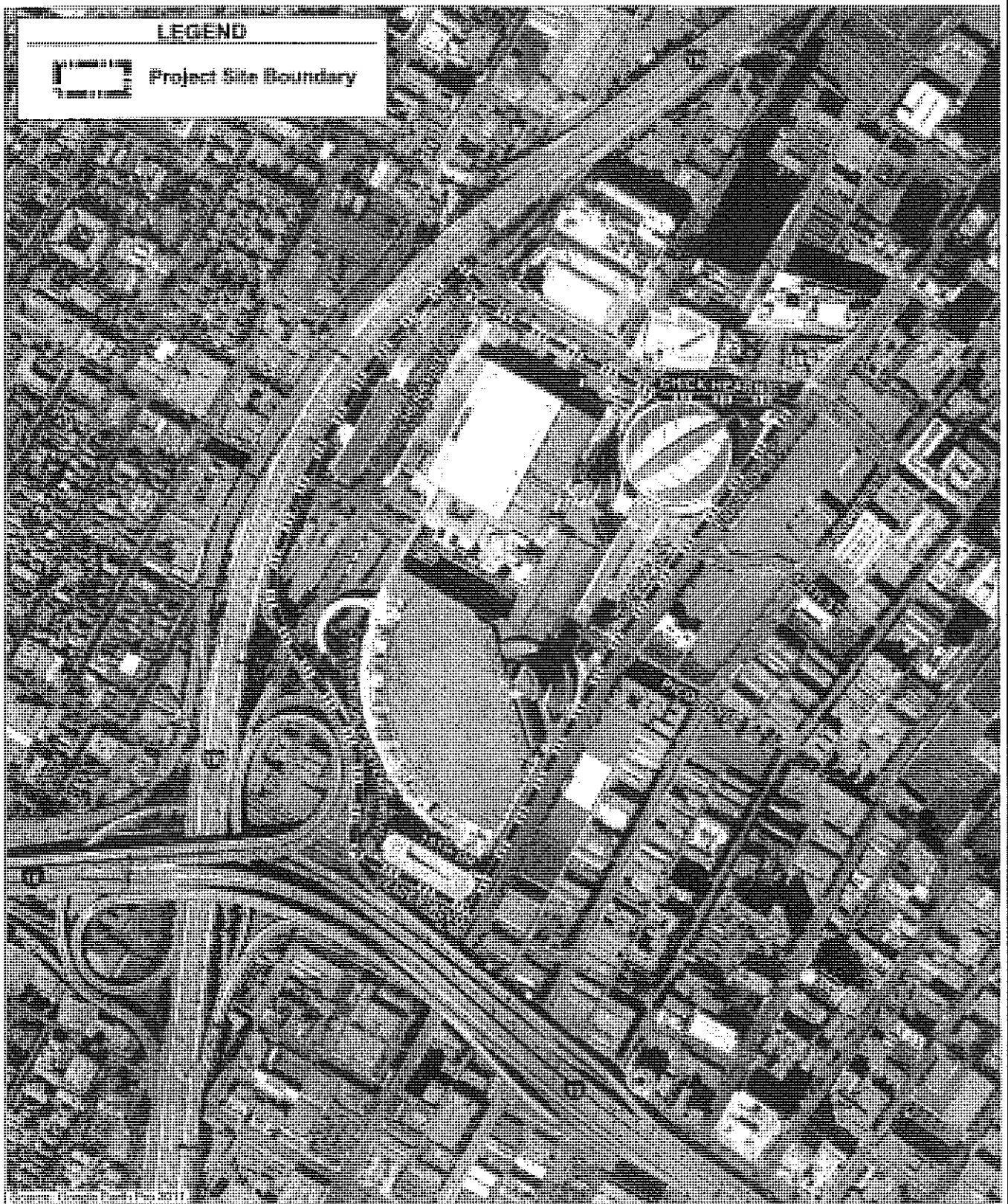
Project Location Maps



LEGEND



Project Site Boundary



matrix
environmental



Figure 2
Aerial View of Project Site

Appendix D

Adjudicated Groundwater Basin Judgments

- San Fernando Basin – Judgment No. 650079
- Sylmar Basin – Judgment No. 650079
- Central Basin – Judgment No, 786656

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3
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7
8 SUPERIOR COURT OF THE STATE OF CALIFORNIA
9 FOR THE COUNTY OF LOS ANGELES
10

11 THE CITY OF LOS ANGELES,)

12 Plaintiff,)

13 vs.)

14 CITY OF SAN FERNANDO, ET AL.)

15 Defendants.)
16

No. 650079

JUDGMENT

17
18 There follows by consecutive paging Recitals (page 4), Definitions and List of Attachments
19 (pages 1 to 6), Designation of Parties (page 6), Declaration re Geology and Hydrology (pages
20 6 to 12), Declaration of Rights (pages 12 to 21), Injunctions (pages 21 to 22), Continuing
21 Jurisdiction (page 23), Watermaster (pages 23 to 29), Physical Solution (pages 29 to 34), and
22 Miscellaneous Provisions (pages 34 to 35), and Attachments (pages 36 to 46). Each and all of
23 said several parts constitute a single integrated Judgment herein.
24
25
26
27
28

1 4.2.3 Separate Ground Water Basins. The physical and geologic characteristics of each
2 of the ground water basins, Eagle rock, Sylmar, Verdugo and San Fernando, cause impediments
3 to inter-basin ground water flow whereby there is created separate underground reservoirs. Each
4 of said basins contains a common source of water supply to parties extracting ground water from
5 each of said basins. The amount of underflow from Sylmar Basin, Verdugo Basin and Eagle
6 Rock Basin to San Fernando Basin is relatively small, and on the average has been
7 approximately 540 acre feet per year from the Sylmar Basin; 80 acre feet per year from Verdugo
8 Basin; and 50 acre feet per year from Eagle Rock Basin. Each has physiographic, geologic and
9 hydrologic differences; one from the other, and each meets the hydrologic definition of "basin".
10 The extractions of water in the respective basins affect the other water users within that basin but
11 do not significantly or materially affect the ground water levels in any of the other basins. The
12 underground reservoirs of Eagle Rock, Verdugo and Sylmar Basins are independent of one
13 another and of the San Fernando Basin.

14 4.2.4 Safe Yield and Native Safe Yield. The safe yield and native safe yield, stated in
15 acre feet, of the three largest basins for the year 1964-65 was as follows:

<u>Basin</u>	<u>Safe Yield</u>	<u>Native Safe Yield</u>
17 San Fernando	90,680	43,660
18 Sylmar	6,210	3,850
19 Verdugo	7,150	3,590

20 The safe yield of Eagle Rock Basin is derived from imported water delivered by Los Angeles.
21 There is no measurable native safe yield.

22 4.2.5 Separate Basins -- Separate Rights. The rights of the parties to extract ground
23 water within ULARA are separate and distinct as within each of the several ground water basins
24 within said watershed.

25 4.2.6 Hydrologic Condition of Basins. The several basins within ULARA are in varying
26 hydrologic conditions, which result in different legal consequences.

27 4.2.6.1 San Fernando Basin. The first full year of overdraft in San Fernando
28 Basin was 1954-55. It remained in overdraft continuously until 1968, when an injunction

1 LAGERLOF, SENICAL, DRESCHER & SWIFT

2 301 North Lake Avenue, 10th Floor

3 Pasadena, California 91101

4 (818) 793-9400 or (213) 385-4345

5

6

7

8

SUPERIOR COURT OF THE STATE OF CALIFORNIA

9

FOR THE COUNTY OF LOS ANGELES

10

11 CENTRAL AND WEST BASIN WATER
REPLENISHMENT DISTRICT, etc.,

) No. 786,656
) SECOND AMENDED
) JUDGMENT

12

Plaintiff,)

13

v.

) (Declaring and establishing water rights in
) Central Basin and enjoining extractions
) therefrom in excess of specified quantities.)

14

CHARLES E. ADAMS, et al.,

15

)
)
) Defendants,)

16

CITY OF LAKEWOOD, a municipal
corporation,

17

)
)
) Cross-Complaint,)

18

v.

19

20

CHARLES E. ADAMS, et al.,

21

)
)
) Cross-Defendants,)

22

23

24

25

26

27

The above-entitled matter duly and regularly came on for trial in Department 73
of the above-entitled Court (having been transferred thereto from Department 75 by order of the
presiding Judge), before the Honorable Edmund M. Moor, specially assigned Judge, on May 17,
1965, at 10:00 a.m. Plaintiff was represented by its attorneys BEWLEY, KNOOP,

1 of the close of the water year ending September 30, 1978 in accordance with the Watermaster
2 Reports on file with this Court and the records of the Plaintiff. This tabulation does not take into
3 account additions or subtractions from any Allowed Pumping Allocation of a producer for the
4 1978-79 water year, nor other adjustments not representing change in fee title to water rights,
5 such as leases of water rights, nor does it include the names of lessees of landowners where the
6 lessees are exercising the water rights. The exercise of all water rights is subject, however, to the
7 provisions of this Judgment is hereinafter contained. All of said rights are of the same legal
8 force and effect and are without priority with reference to each other. Each party whose name is
9 hereinafter set forth in the tabulation set forth in Appendix "2" of this judgment, and after whose
10 name there appears under the column "Total Water Right" the figure "0" owns no rights to
11 extract any ground water from Central Basin, and has no right to extract any ground water from
12 Central Basin.

13 (b) Defendant The City of Los Angeles is the owner of the right to extract fifteen
14 thousand (15,000) acre feet per annum of ground water from Central Basin. Defendant
15 Department of Water and Power of the City of Los Angeles has no right to extract ground water
16 from Central Basin except insofar as it has the right, power, duty or obligation on behalf of
17 defendant The City of Los Angeles to exercise the water rights in Central Basin of defendant The
18 City of Los Angeles. The exercise of said rights are subject, however, to the provisions of this
19 judgment hereafter contained, including but not limited to, sharing with other parties in any
20 subsequent decreases or increases in the quantity of extractions permitted from Central Basin,
21 pursuant to continuing jurisdiction of the Court, on the basis that fifteen thousand (15,000) acre
22 feet bears to the Allowed Pumping Allocations of the other parties.

23 (c) No party to this action is the owner of or has any right to extract ground water
24 from Central Basin except as herein affirmatively determined.

25 2. Parties Enjoined as Regards Quantities of Extractions.
26
27

Appendix E

Water Supply Assessment Provisions
California Water Code Section 10910-10915

WATER CODE

SECTION 10910-10915

10910. (a) Any city or county that determines that a project, as defined in Section 10912, is subject to the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) under Section 21080 of the Public Resources Code shall comply with this part.

(b) The city or county, at the time that it determines whether an environmental impact report, a negative declaration, or a mitigated negative declaration is required for any project subject to the California Environmental Quality Act pursuant to Section 21080.1 of the Public Resources Code, shall identify any water system that is, or may become as a result of supplying water to the project identified pursuant to this subdivision, a public water system, as defined in Section 10912, that may supply water for the project. If the city or county is not able to identify any public water system that may supply water for the project, the city or county shall prepare the water assessment required by this part after consulting with any entity serving domestic water supplies whose service area includes the project site, the local agency formation commission, and any public water system adjacent to the project site.

(c) (1) The city or county, at the time it makes the determination required under Section 21080.1 of the Public Resources Code, shall request each public water system identified pursuant to subdivision (b) to determine whether the projected water demand associated with a proposed project was included as part of the most recently adopted urban water management plan adopted pursuant to Part 2.6 (commencing with Section 10610).

(2) If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f), and (g).

(3) If the projected water demand associated with the proposed project was not accounted for in the most recently adopted urban water management plan, or the public water system has no urban water management plan, the water supply assessment for the project shall include a discussion with regard to whether the public water system's

total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses, including agricultural and manufacturing uses.

(4) If the city or county is required to comply with this part pursuant to subdivision (b), the water supply assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses.

(d) (1) The assessment required by this section shall include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts.

(2) An identification of existing water supply entitlements, water rights, or water service contracts held by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall be demonstrated by providing information related to all of the following:

(A) Written contracts or other proof of entitlement to an identified water supply.

(B) Copies of a capital outlay program for financing the delivery of a water supply that has been adopted by the public water system.

(C) Federal, state, and local permits for construction of necessary infrastructure associated with delivering the water supply.

(D) Any necessary regulatory approvals that are required in order to be able to convey or deliver the water supply.

(e) If no water has been received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts, the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall also include in its water supply assessment pursuant to subdivision (c), an

identification of the other public water systems or water service contractholders that receive a water supply or have existing water supply entitlements, water rights, or water service contracts, to the same source of water as the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has identified as a source of water supply within its water supply assessments.

(f) If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water supply assessment:

(1) A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project.

(2) A description of any groundwater basin or basins from which the proposed project will be supplied. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long-term overdraft condition.

(3) A detailed description and analysis of the amount and location of groundwater pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), for the past five years from any groundwater basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), from any basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available,

including, but not limited to, historic use records.

(5) An analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project.

A water supply assessment shall not be required to include the information required by this paragraph if the public water system determines, as part of the review required by paragraph (1), that the sufficiency of groundwater necessary to meet the initial and projected water demand associated with the project was addressed in the description and analysis required by paragraph (4) of subdivision (b) of Section 10631.

(g) (1) Subject to paragraph (2), the governing body of each public water system shall submit the assessment to the city or county not later than 90 days from the date on which the request was received. The governing body of each public water system, or the city or county if either is required to comply with this act pursuant to subdivision (b), shall approve the assessment prepared pursuant to this section at a regular or special meeting.

(2) Prior to the expiration of the 90-day period, if the public water system intends to request an extension of time to prepare and adopt the assessment, the public water system shall meet with the city or county to request an extension of time, which shall not exceed 30 days, to prepare and adopt the assessment.

(3) If the public water system fails to request an extension of time, or fails to submit the assessment notwithstanding the extension of time granted pursuant to paragraph (2), the city or county may seek a writ of mandamus to compel the governing body of the public water system to comply with the requirements of this part relating to the submission of the water supply assessment.

(h) Notwithstanding any other provision of this part, if a project has been the subject of a water supply assessment that complies with the requirements of this part, no additional water supply assessment shall be required for subsequent projects that were part of a larger project for which a water supply assessment was completed and that has complied with the requirements of this part and for which the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has concluded that its water supplies are sufficient to meet the projected water demand associated with the proposed project, in addition to the existing and planned future uses, including, but not limited to, agricultural and industrial uses, unless one or more of the following changes occurs:

(1) Changes in the project that result in a substantial increase

in water demand for the project.

(2) Changes in the circumstances or conditions substantially affecting the ability of the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), to provide a sufficient supply of water for the project.

(3) Significant new information becomes available which was not known and could not have been known at the time when the assessment was prepared.

10911. (a) If, as a result of its assessment, the public water system concludes that its water supplies are, or will be, insufficient, the public water system shall provide to the city or county its plans for acquiring additional water supplies, setting forth the measures that are being undertaken to acquire and develop those water supplies. If the city or county, if either is required to comply with this part pursuant to subdivision (b), concludes as a result of its assessment, that water supplies are, or will be, insufficient, the city or county shall include in its water supply assessment its plans for acquiring additional water supplies, setting forth the measures that are being undertaken to acquire and develop those water supplies. Those plans may include, but are not limited to, information concerning all of the following:

(1) The estimated total costs, and the proposed method of financing the costs, associated with acquiring the additional water supplies.

(2) All federal, state, and local permits, approvals, or entitlements that are anticipated to be required in order to acquire and develop the additional water supplies.

(3) Based on the considerations set forth in paragraphs (1) and (2), the estimated timeframes within which the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), expects to be able to acquire additional water supplies.

(b) The city or county shall include the water supply assessment provided pursuant to Section 10910, and any information provided pursuant to subdivision (a), in any environmental document prepared for the project pursuant to Division 13 (commencing with Section 21000) of the Public Resources Code.

(c) The city or county may include in any environmental document an evaluation of any information included in that environmental

document provided pursuant to subdivision (b). The city or county shall determine, based on the entire record, whether projected water supplies will be sufficient to satisfy the demands of the project, in addition to existing and planned future uses. If the city or county determines that water supplies will not be sufficient, the city or county shall include that determination in its findings for the project.

10912. For the purposes of this part, the following terms have the following meanings:

(a) "Project" means any of the following:

(1) A proposed residential development of more than 500 dwelling units.

(2) A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.

(3) A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.

(4) A proposed hotel or motel, or both, having more than 500 rooms.

(5) A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.

(6) A mixed-use project that includes one or more of the projects specified in this subdivision.

(7) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

(b) If a public water system has fewer than 5,000 service connections, then "project" means any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of the public water system's existing service connections, or a mixed-use project that would demand an amount of water equivalent to, or greater than, the amount of water required by residential development that would represent an increase of 10 percent or more in the number of the public water system's existing service connections.

(c) "Public water system" means a system for the provision of piped water to the public for human consumption that has 3000 or more service connections. A public water system includes all of the

following:

(1) Any collection, treatment, storage, and distribution facility under control of the operator of the system which is used primarily in connection with the system.

(2) Any collection or pretreatment storage facility not under the control of the operator that is used primarily in connection with the system.

(3) Any person who treats water on behalf of one or more public water systems for the purpose of rendering it safe for human consumption.

10914. (a) Nothing in this part is intended to create a right or entitlement to water service or any specific level of water service.

(b) Nothing in this part is intended to either impose, expand, or limit any duty concerning the obligation of a public water system to provide certain service to its existing customers or to any future potential customers.

(c) Nothing in this part is intended to modify or otherwise change existing law with respect to projects which are not subject to this part.

(d) This part applies only to a project for which a notice of preparation is submitted on or after January 1, 1996.

10915. The County of San Diego is deemed to comply with this part if the Office of Planning and Research determines that all of the following conditions have been met:

(a) Proposition C, as approved by the voters of the County of San Diego in November 1988, requires the development of a regional growth management plan and directs the establishment of a regional planning and growth management review board.

(b) The County of San Diego and the cities in the county, by agreement, designate the San Diego Association of Governments as that review board.

(c) A regional growth management strategy that provides for a comprehensive regional strategy and a coordinated economic development and growth management program has been developed pursuant to Proposition C.

(d) The regional growth management strategy includes a water element to coordinate planning for water that is consistent with the

requirements of this part.

(e) The San Diego County Water Authority, by agreement with the San Diego Association of Governments in its capacity as the review board, uses the association's most recent regional growth forecasts for planning purposes and to implement the water element of the strategy.

(f) The procedures established by the review board for the development and approval of the regional growth management strategy, including the water element and any certification process established to ensure that a project is consistent with that element, comply with the requirements of this part.

(g) The environmental documents for a project located in the County of San Diego include information that accomplishes the same purposes as a water supply assessment that is prepared pursuant to Section 10910.

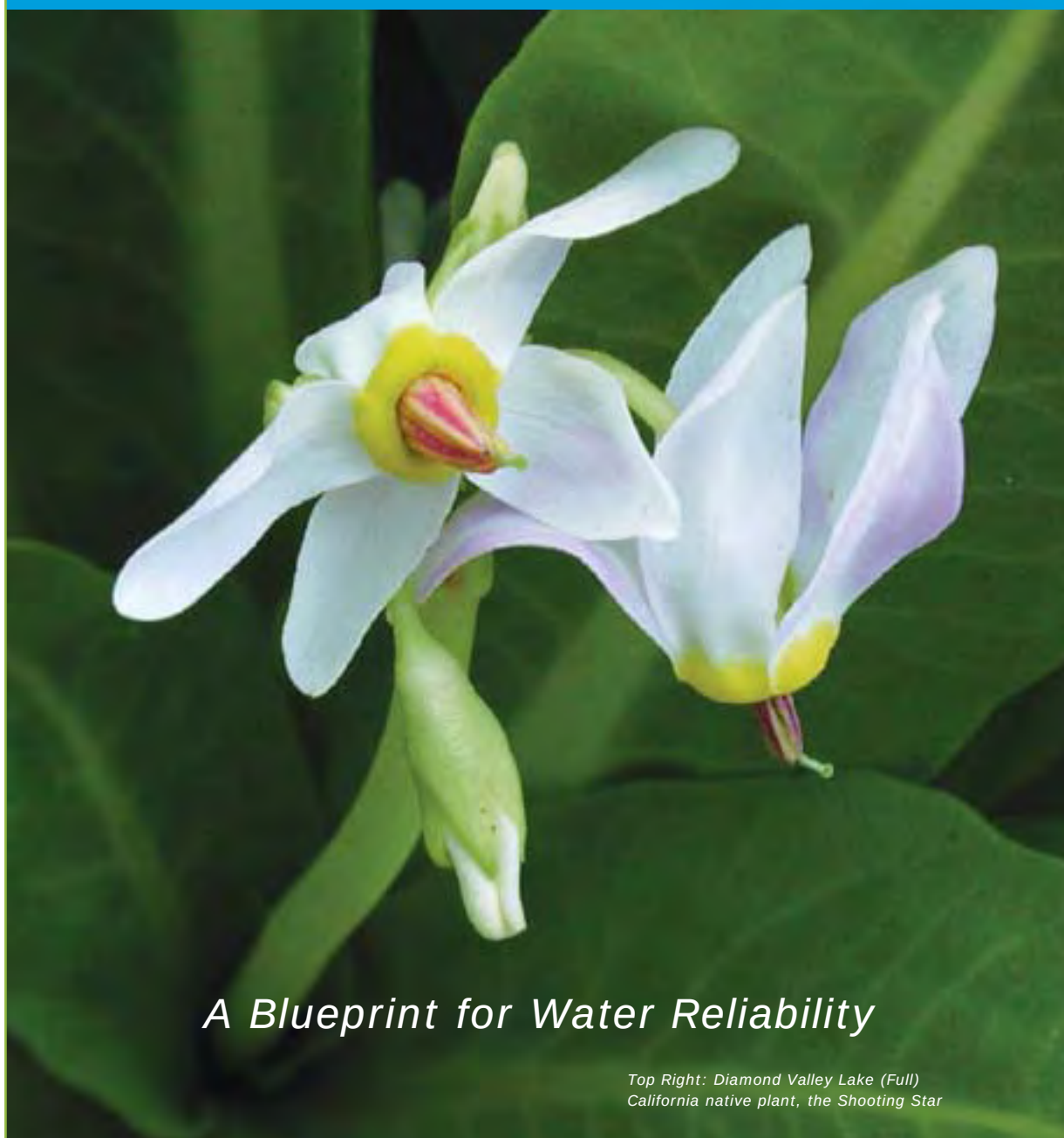
Appendix F

Report on Metropolitan's Water Supplies 2003



Report on Metropolitan's Water Supplies

March 25, 2003



A Blueprint for Water Reliability

*Top Right: Diamond Valley Lake (Full)
California native plant, the Shooting Star*

Report on Metropolitan's Water Supplies

A Blueprint for Water Reliability

Dated March 25, 2003

Report on Metropolitan's Water Supplies

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INTRODUCTION

OBJECTIVE OF THE REPORT

This document, *Report on Metropolitan's Water Supplies*, provides the member public agencies, retail water utilities, cities and counties within the service area of The Metropolitan Water District of Southern California (Metropolitan), with information that may assist in their compliance with SB 221 (Kuehl) and SB 610 (Costa). The recently enacted laws require new development to meet certain criteria and provide "substantial evidence" of available water supplies in the event of drought. The responsibility the new law placed on water districts is to develop and publish information on available and planned future water supplies to assist local public agencies making land use decisions on new development. This report recognizes that retail water supply reliability is dependent on the development of both local resources and supplemental imported water supplies. In addition, the report identifies actual and projected demands for water from Metropolitan, as well as the water supplies available to Metropolitan to meet those demands. This report will be updated as new information and circumstances warrant. Information presented in this report is consistent with Metropolitan's February 2003 annual progress report to the California Legislature (SB60) on Conservation, Recycling and Groundwater Recharge. The approach in evaluating water supplies and demands is consistent with Metropolitan's December 2000 Regional Urban Water Management Plan.

This report serves four primary purposes. These purposes are to:

- Address recent changes in demand and supply conditions as compared to Metropolitan's December 2000 Regional Urban Water Management Plan and February 11, 2002 *Report on Metropolitan's Water Supplies*.
- Demonstrate Metropolitan's ability to meet projected demands over the next 20 years and provide additional resource reserves as a "margin-of-safety" that mitigates against uncertainties in demand projections and risks in implementing supply programs.
- Demonstrate that Metropolitan has a blueprint for water supply reliability and is implementing a comprehensive plan to secure reliable water supplies in accordance with policy principles and objectives established by Metropolitan's Board of Directors.
- Provide a planning tool for local and retail agencies providing local water supplies.

MANAGING CHANGE IN SOUTHERN CALIFORNIA'S WATER RESOURCES

Water providers continuously face the challenge of managing the planned and unexpected changes in water demands and supplies. Changes have resulted from variable weather conditions, political and legal issues, environmental and water quality regulations, and breakthroughs in the development of new resources. Such changes either present challenges or opportunities for water supply reliability. In 2003, six major changes in the region's water resources occurred. These changes include:

Changes Affecting Water Resources

Challenge	Opportunity
• Reduced Colorado River deliveries • Water quality constraints	• Full Diamond Valley Lake • Re-operation of storage and transfer programs • Enhanced conservation programs • Development of additional local resources

In California's dynamic hydrologic, economic, and political environment change is constant. In working closely with its 26 member public agencies, Metropolitan is prepared to adjust to change and maintain water supply reliability through its development of diversified resources and its financial strength.

Regional Approach: Insuring Water Supply Reliability Against Risks. In 2002, Metropolitan's service area faced record-breaking weather, as hot temperatures and dry conditions caused drought conditions in nearly half of the 48 contiguous states. Many parts of the Southland, including San Diego and Los Angeles, endured the driest rainfall season in recorded history. In addition to drought, California faces a reduction of about 35 percent of its draw of Colorado River water. Metropolitan, having a lower priority right to Colorado River water in California, bears the major portion of this reduction. Pursuant to the 1964 U.S. Supreme Court Decree in *Arizona v. California* and the Boulder Canyon Project Act, California must live within its 4.4 million acre-feet basic annual apportionment of Colorado River water in the absence of surplus river water and unused river water apportionments of Arizona and Nevada.

Southern California can withstand these hydrologic and political risks and expects to have a reliable water supply for the foreseeable future because of the integrated resources planning effort of Metropolitan and its member agencies. This integrated resources planning effort has created a diverse resource portfolio, complemented by an aggressive conservation program. As prudent utility managers, Metropolitan and its member agencies have developed supply contingencies to protect the reliability of its entire system. Two years ago, Metropolitan began aggressively preparing for the possibility that the Colorado River supply could be curtailed, either by drought or the failure of potential Colorado River agreements. Metropolitan maximized storage and water transfer options and today has more than 2 million acre-feet of water in storage and will purchase up to 250,000 acre-feet of additional short-term water supplies. Long-term plans to meet reliability needs through water transfer programs, outdoor conservation measures, and development of additional local resources, such as recycling, brackish water desalination, and seawater desalination has been expedited.

Financial Strength: Key to Adaptability. The hallmark of Metropolitan's success in securing water supplies in anticipation of future demand is its strong financial standing – reflected in one of the highest public bond ratings in California. Recently, Metropolitan approved a new rate structure that provides added flexibility and adaptability for meeting an expanding range of uncertainties. Uncertainties include: (1) difficulty in predicting growth changes over the next several years, (2) risks in implementing new local and regional supplies, (3) future water quality and environmental restrictions, and (4) climate change, currently being studied as another factor that may affect water availability. Experts have cited Metropolitan's ability to invest in necessary supply and infrastructure projects as key to the region's adaptability to these uncertainties. For example, the \$1.2 billion Inland Feeder will allow Southern California to import and store greater volumes of water through the State Water Project when it's available. In addition, Metropolitan's new rate structure gives agencies the flexibility to secure their supplies from Metropolitan's imported sources and through expanded development of conservation, recycling, desalination or water transfers.

CONTENTS OF THE REPORT

The sections of the report are as follows:

- **Background:** This section discusses Metropolitan's policy objectives for water supply reliability, its resource strategy, and the implementation of the policy objectives and resource strategy.
- **Approach:** This section describes the major steps in forecasting water demands, assessing supply capabilities, and evaluating the sufficiency of the supplies to meet demands.
- **Managing Change:** This section describes the changes that occurred in 2002, the potential impact to Metropolitan's near- and long-term supply outlook, and the way the changes are being managed.
- **Findings:** This section evaluates the availability of Metropolitan's water supplies to meet projected supplemental demands and reserve supplies that provide a margin of safety to mitigate against uncertainties in demand projections and risks in implementing supply programs.
- **Appendix A:** This appendix documents Metropolitan's demand forecasts.
- **Appendix B:** This appendix presents an inventory of the resource programs that can be reasonably relied upon to deliver supplies through the Colorado River Aqueduct, documents the source of supply, expected supply capability, and provides supporting information for each program.
- **Appendix C:** This appendix presents an inventory of the resource programs that can be reasonably relied upon to deliver supplies through the California Aqueduct,

documents the source of supply, expected supply capability, and provides supporting information for each program.

- **Appendix D:** This appendix presents an inventory of the resource programs that can be reasonably relied upon to deliver supplies from in-basin storage, documents the source of supply, expected supply capability, and provides supporting information for each program.
- **Appendix E:** This appendix provides a statement of disclosure for this report.

BACKGROUND

METROPOLITAN'S POLICY OBJECTIVES FOR WATER SUPPLIES

Metropolitan's Board of Directors has established policy objectives for water supply reliability and Metropolitan's role and defined responsibilities in providing water service to the region on a wholesale basis.

Water Supply Reliability. Metropolitan's Board established the policy objective for water supply reliability as part of its Integrated Resources Plan (IRP), approved by the Board in January 1996. This policy objective is:

Through the implementation of the IRP, Metropolitan and its member agencies will have the full capability to meet full-service demands at the retail level at all times.

This policy objective calls for close coordination among Metropolitan, its member agencies and retail providers to integrate the development of imported and local resources and efficiently and affordably meet retail demands. Previous to the IRP, wholesale and retail water providers, including Metropolitan, had been independently planning investments in projects and programs within the service area to address water reliability needs. Without a coordinated and balanced regional response by water providers to growing demands, the region could run the risk of failing to demonstrate the availability of sufficient water supplies and risk overspending on its water supply and infrastructure.

Metropolitan's Role and Responsibilities. Recognizing the need for coordination with member agencies and retail providers, the IRP and the Strategic Plan Policy Principles, adopted in December 1999, established Metropolitan's role as a regional provider and redefined its responsibilities. The policy objective on water supply reliability places significant responsibility on Metropolitan to provide leadership in several areas. These areas include: (1) implementing water management programs that support the development of cost-effective local resources, (2) securing additional imported supplies as necessary through programs that increase the availability of water delivered through the Colorado River Aqueduct and the State Water Project, (3) providing the infrastructure needed to integrate imported and local sources, (4) establishing a comprehensive management plan dealing with periodic surplus and shortage conditions, and (5) developing a rate structure that strengthens Metropolitan's financial capabilities to implement water supply programs and make infrastructure improvements.

METROPOLITAN'S WATER RESOURCE STRATEGY

Metropolitan's challenge is to develop and execute a comprehensive water resource strategy that can adapt to continuous change, safeguard against uncertainties, and benefit from new opportunities. The key elements of Metropolitan's strategy are:

Portfolio of Diversified Supplies. Metropolitan continues to develop a portfolio of diversified supplies in accordance with targets set by the IRP and outlined in Metropolitan's Regional Urban Water Management Plan (RUWMP). The IRP established policy guidelines for investing in water conservation, recycling, desalination, Colorado River deliveries, State Water Project deliveries, water transfers, and storage in groundwater basins and surface reservoirs. The RUWMP was adopted by Metropolitan's Board in December 2000 in compliance with the California Urban Water Management Planning Act (Water Code Sections 10610 through 10656). The RUWMP presents Metropolitan's plans for reasonable and practical efficient water uses, including recycling and conservation activities, and drought contingencies.

The investments described in the IRP and RUWMP reduce the risk of failure in any single part of Metropolitan's resource portfolio. It also reduces the potential impact of a severe drought or an emergency, such as a major earthquake. The portfolio of diversified supplies avoids the pitfalls of "putting all your eggs in one basket."

Supply Reserves to Mitigate Uncertainties. Metropolitan plans to guard against supply uncertainties by continuing to secure supplies and make infrastructure improvements that are available in advance of the time of need and can provide back-up capabilities. This adaptive management approach creates supply reserves that maintain Metropolitan's flexibility in response to changes in demand and supply conditions.

New Rate Structure. Metropolitan's Board approved a new rate structure in October 2001. The rate structure provides the necessary financing capabilities to support the IRP and strategic planning vision that Metropolitan is a regional provider of services. As a regional provider, Metropolitan maintains the reliable delivery of imported water supplies, encourages the development of additional local supplies, like recycling and conservation, and accommodates a water transfer market. Through its regional services, Metropolitan ensures a baseline of reliability and quality for imported water deliveries. By unbundling its full-service water rate, Metropolitan provides greater opportunity for member agencies to competitively manage supplies and demand to meet future needs in a responsible, cost effective manner.

IMPLEMENTING POLICY OBJECTIVES AND RESOURCE STRATEGY

To demonstrate the availability of sufficient water supplies for the region, Metropolitan must continue to fulfill its responsibilities as the regional provider under the IRP and Strategic Plan. Metropolitan's progress in these areas of responsibility is as follows:

Realizing water management programs that support development of cost-effective local resources. Metropolitan has established programs that provide member agencies with financial incentives to develop local resources. These programs include the Local Resources Program (water recycling and groundwater recovery), Conservation Credits Program, and the recent Request-for-Proposal process for seawater desalination. With the local supply production that is currently outlined and projected to be available, these programs are meeting IRP resource objectives.

Metropolitan's efforts to support the development of conservation and local resources management programs are documented in Metropolitan's RUWMP and Metropolitan's February 2003 Annual Progress Report to the California State Legislature on Achievements in Conservation, Recycling and Groundwater Recharge.

Securing additional imported supplies through programs that increase the availability of water delivered through the Colorado River Aqueduct and the State Water Project. Metropolitan has several programs that continue the reliable deliveries of water supplies through the Colorado River Aqueduct, the California Aqueduct, and the development of in-basin groundwater storage. These efforts include participating in Federal and state initiatives such as California's Colorado River Water Use Plan, the CALFED Bay-Delta Program, and the Sacramento Valley Water Management Agreement. Beyond these initiatives, Metropolitan acquired additional supplies through cooperative agreements and business partnerships in the Central Valley and within the Colorado River Basin to execute water transfers, storage, conservation and land management programs. Finally, in accordance with Metropolitan's IRP and Strategic Plans, Metropolitan and the member agencies have maximized storage of available water supplies through in-basin groundwater conjunctive use programs.

Metropolitan's programs to secure additional supplemental imported water supplies are documented in Metropolitan's RUWMP and this document, 'Report on Metropolitan's Water Supplies.'

Providing the infrastructure needed to integrate imported and local sources of supply. Metropolitan's Capital Investment Plan (CIP) includes projects that have been identified in studies of projected water needs that are embodied in Board Approved documents such as the IRP, Distribution System Overview Study, and the Chief Executive Officer's Business Plan. The CIP identifies, assesses and prioritizes 155 reliability and rehabilitation projects.

The status and progress of Metropolitan's infrastructure improvements are documented in Metropolitan's Capital Investment Plan, which is presented to Metropolitan's Board as part of its annual budget review.

Establishing a comprehensive management plan for dealing with surplus and shortage conditions. In April 1999, Metropolitan's Board adopted the Water Surplus and Drought Management Plan (WSDM Plan). This plan guides the management of Metropolitan's water supplies during surplus and shortage conditions to achieve the IRP reliability goals.

The RUWMP and Metropolitan Report No. 1150, 'Water Surplus and Drought Management Plan' document the establishment of the comprehensive management plan for dealing with surplus and shortage conditions.

The new rate structure strengthens Metropolitan's financial capabilities to implement water supply programs and make infrastructure improvements. The approval of the new rate structure is documented in the October 2001 Board Letter.

APPROACH

Evaluating the availability of Metropolitan's imported supplies involves three basic steps: (1) forecasting supplemental water demands, (2) assessing Metropolitan's supply capabilities, and (3) comparing supplemental demand forecasts and supply capabilities.

DEMAND FORECASTS

Water demands on Metropolitan are affected by four key parameters -- retail demands, local replenishment demands, local supplies, and Metropolitan system storage requirements. The methodology and estimates of water demand projections are documented in Appendix A.

Retail Demands. To forecast retail water demands, Metropolitan uses an econometric model, the MWD-MAIN Water Use Forecasting System, that relates water use to independent variables such as, housing, employment, income, price, and weather. Many water resource agencies across the country use similar versions of this model including the U.S. Army Corps of Engineers, the U.S. Geological Survey, the state of New York, the Cities of Phoenix, Las Vegas, and Portland, and some of Metropolitan's member agencies.

The model's demographic and economic variables are based on the Southern California Association of Governments (SCAG) Regional Transportation Plan and the San Diego Association of Government (SANDAG) 2020 Forecast. Metropolitan contracted with the Center for Continuing Study of the California Economy (CCSCE) and SCAG to extend these projections to 2050. SCAG and SANDAG demographic projections are supported by environmental impact reports and based on city, county and regional general plans. If a proposed development within Metropolitan's service area is included in the local general plans in the SCAG and SANDAG projections, there should be a linkage between the water demands for that development and the supplies made available by Metropolitan and the member agencies.

Local Replenishment Demands. Local replenishment demands refer to the member agencies' need for water to recharge groundwater basins and surface reservoirs. Some of this need is met by the member agencies' purchases of deliveries under Metropolitan's Long-Term Seasonal Storage Program. These demands include Metropolitan water deliveries to member agencies and stored by member agencies for use in future years and not the current year.

Local Supplies. Local supplies include local groundwater and surface water, Los Angeles Aqueduct deliveries, water recycling, groundwater recovery, and seawater desalination. Member agencies and retail providers produce these local supplies. With plans to aggressively develop additional local resources, Metropolitan's member agencies have projected local resources production will increase by 21 percent over the next 20 years and meet up to 56 percent of the total retail demands in 2025.

Metropolitan System Storage Requirements. As part of Metropolitan's resource strategy, imported water deliveries during average and wet years would be stored in Metropolitan's surface reservoirs and groundwater storage accounts located within its service area and from the California Aqueduct and Colorado River Aqueduct systems. In addition to meeting consumptive and replenishment demands, Metropolitan also requires supplies in average and wet years to refill its surface reservoirs and groundwater storage accounts.

Water demands on Metropolitan are calculated as the retail demands plus local replenishment demands less local supplies. In average and wet years, Metropolitan's system replenishment requirements are included, consistent with Metropolitan's RUWP. Demand forecasts on Metropolitan are calculated in this manner and are shown in the following table. A comparison of the supplemental demands on Metropolitan according to the member agencies' urban water management plans also is shown. Metropolitan's supplemental projected demands on Metropolitan are 6 to 16 percent higher than member agencies projections. This difference indicates that Metropolitan's supplies, developed in accordance with this water supply update, provide a level of "margin of safety" or flexibility to accommodate delays in local resources development or adjustments in development plans.

Demands on Metropolitan
(million acre-feet per year)

Demands on Metropolitan (Average Year)	2005	2010	2015	2020
Metropolitan Projections	1.99	1.94	2.13	2.34
Member Agencies Plans ¹	1.68	1.82	1.94	2.09
Difference	0.31 16%	0.12 6%	0.19 9%	0.25 11%

¹ Based on Metropolitan review of urban water management plans submitted by member agencies in December 2000.

SUPPLY CAPABILITIES

Metropolitan's supply capability equals the water that can be provided by specific supply programs included in Metropolitan's resource plan. Supply capabilities presented in this report vary according to year types (wet, average, and dry hydrologic conditions). To determine Metropolitan's supply capabilities, available supply sources have been inventoried and the associated supply yields have been estimated. The supply inventory and yields are documented in Appendices A, B, and C.

Supply Inventory. Metropolitan's available supplies have been inventoried in three basic categories: (1) Colorado River Aqueduct Deliveries, (2) California Aqueduct Deliveries, and (3) In-Basin Storage Deliveries.

In addition, the supplies are further categorized according to their status. Currently available supplies have a high degree of certainty and reliability because they have been successfully completed. Currently available supplies are those resource programs that have completed environmental review, have funds appropriated or budgeted for execution or construction, have requested or received permits and regulatory approvals, and are operational. Supplies that are under development are subject to some uncertainties in timing and supply yield, as they have not yet completed the critical implementation requirements. Supplies under development are resource programs that are undergoing technical feasibility studies, environmental review, and negotiations for final agreements to implement and operate. The inventory of Metropolitan's available supplies is shown in the following table.

Supply Capabilities. The maximum-supply capability of each of the resource programs has been estimated for various hydrologic events in years 2005, 2010, 2015, 2020 and 2025. The hydrologic events included are;

- ***Multiple-year dry period.*** A repeat of the 1990 to 1992 multi-year drought condition that occurred twice during the historic 77-year record. Thus having a probability of occurrence of 2.6%,
- ***Single dry-year.*** A repeat of 1977 below-normal conditions that occurred once during the historic 77-year record. Thus having a probability of occurrence of 1.3%,
- ***Average year.*** Statistical average of 77 historical hydrological conditions. When combined with above-normal conditions (wet-years) having a probability of occurrence of 73%, and
- ***Wet year.*** A repeat of 1985 above-normal condition.

The expected supply capability has been estimated according to two key considerations.

- Delivery from the Colorado River Aqueduct, California Aqueduct and in-basin storage are based on historical sequence of 77 hydrologic years from 1922 to 1998 are repeated into the future to determine Metropolitan's water delivery capabilities under the weather and system operating conditions for the year types.
- Delivery ability is based on historical record, ability of projects to comply with contractual rights to supply, written contracts or other proof, financing, and federal, state, and local permits/approvals to the extent each is applicable.

Supply Sufficiency. Demand forecasts and supply capabilities have been compared over the next 20 years under varying hydrologic conditions. These comparisons determine supplies that can be reasonably relied upon to meet projected supplemental demands and to provide reserves that can assure a "margin of safety" to mitigate against uncertainties in demand projections and supply program risks.

Metropolitan's Water Supplies

Colorado River Aqueduct Deliveries

- Currently Available: Basic Apportionment (Priority 4)
IID/MWD Conservation Program
Priority 5 Apportionment
Coachella & All-American Canal Lining Projects
Off Aqueduct Storage
- Hayfield Storage Program
 - Central Arizona Banking Demonstration Program
- Under Development: IID/MWD Conservation Program (Including Coachella Option)
Interim Surplus Guidelines
IID/SDCWA Transfer
PVID Land Management Program
Off-Aqueduct Storage/Transfer Programs
- Lower Coachella Valley Groundwater Storage Program
 - Chuckwalla Storage Program
 - Central Arizona Banking Program

California Aqueduct Deliveries

- Currently Available: SWP Deliveries
San Luis Reservoir Carryover Storage
Advance Delivery with Coachella Valley WD and Desert WA
Semitropic Water Banking and Exchange Program
Arvin-Edison Water Management Program
San Bernardino Valley MWD Program
Kern Delta WD Program
Market Transfer Options
- Under Development: Delta Improvements (CALFED Implementation)
Additional Transfers/Storage (San Bernardino Conjunctive Use Program, Westside Valley Transfers, and Eastside Valley Transfers)

In-Basin Storage Deliveries

- Currently Available: Metropolitan Surface Storage (DVL, Lakes Mathews and Skinner)
Flexible Storage in Castaic Lake and Lake Perris
Groundwater Conjunctive Use Programs
- Long-Term Seasonal Storage Program
 - North Las Posas Storage Program
- Under Development: Groundwater Conjunctive Use Programs
- Raymond Basin Storage Program
 - Proposition 13 Storage Programs
 - Additional Programs

MANAGING CHANGES IN SOUTHERN CALIFORNIA'S WATER RESOURCES

Change is inherent in the business of providing water to residents and businesses in Southern California. There are two major types of change: those that create challenges and those that create opportunities. For example, a source of supply can be curtailed due to drought conditions, political and legal challenges, and environmental and water quality regulations. On the other hand, the successful identification and implementation of additional resource programs and key infrastructure improvements present new opportunities to improve the region's ability to effectively manage supplies that are available in average and wet hydrology and meet demands during critical drought events.

Water supply reliability for Southern California is dependent on how well water providers manage and leverage these changes. Metropolitan and its member agencies have aggressively invested in a portfolio of diversified water resources to manage risks and enhance their supply capabilities. In 2002, six major changes in the region's water resources have occurred as both supply risks and supply improvements. These changes include:

Changes Affecting Water Resources

Challenge	Opportunity
• Reduced Colorado River deliveries • Water quality constraints	• Full Diamond Valley Lake • Re-operation of storage and transfer programs • Enhanced conservation programs • Development of additional local resources

The effectiveness of the approach to diversify water resources in managing supply challenges and leveraging opportunities is now being tested. Each change, its potential impact to Metropolitan's near- and long-term supply outlook, and the manner in which the change is being managed to maintain regional supply reliability are addressed in the following discussion.

REDUCED COLORADO RIVER DELIVERIES - Challenge

Changed Condition. California has recently lost access to more than 35 percent of its expected Colorado River supply. This reduction resulted from California's failure to execute the Quantification Settlement Agreement (QSA) by December 31, 2002 and the unprecedented drought in the Colorado River basin.

- **No QSA.** California has long used supplies in addition to its basic 4.4 million acre-feet apportionment of Colorado River water. California is entitled under federal law to use surplus and other states unused water when it is available. However, it is clear that surpluses will be less frequently available because of growth in the other Colorado River Basin States. As a result, California has acknowledged the need to wean itself from this extra water. Under a plan adopted by the state's Colorado River Board (the "4.4" Plan or California Plan"), California has identified steps to gradually reduce the state's use of Colorado River water. The US Department of the Interior (DOI) responded by adopting Colorado River Interim Surplus Guidelines (ISG) that allowed California to take more surplus water than would otherwise be expected to be available for 15 years. A predicate of the ISG was an agreement among Metropolitan, the Imperial Irrigation District (IID) and the Coachella Valley Water District (CVWD) to quantify agricultural water use by IID and CVWD. It also was expected that IID would reduce its water use and transfer conserved water to CVWD and the San Diego County Water Authority (SDCWA). Metropolitan would receive rights to use other conserved water (e.g. All-American Canal lining water and Palo Verde Irrigation District [PVID] conserved water). This agreement was known as the Quantification Settlement Agreement (QSA).

On January 1, 2003, DOI suspended the ISG because of the inability of the California water agencies to reach agreement on a QSA and related agreements. As a result, California's access to use surplus Colorado River water in 2003 year has been suspended.

- **Record Drought Conditions.** The Colorado River Basin has experienced an unprecedented drought over the last three years. In 2002, unregulated inflow into Lake Mead was only 25 percent of average. In January 2003, Lake Mead was 65 percent full. Under these conditions, a Bureau of Reclamation (Bureau) study indicates Metropolitan's access to surplus water from the ISG would not have been available in each of the next 15 years, as was anticipated when the California Plan was drafted in 1998. Even if the ISG are reinstated and average hydrology occurs in the Colorado River watershed ending current drought conditions, the Bureau study further estimates that special surplus deliveries would only be half of the amount originally planned over the next 12 years..

Managing the Change. At a special January 6, 2003, board meeting, Metropolitan staff briefed its Board on the situation. The message provided and widely reported in the media was simple: The suspension of certain provisions of the ISG and absence of an executed QSA is a very serious matter, but it is not an emergency. The reason that it is not an emergency is the contingency planning by Metropolitan and its member agencies for the region and its 18 million people.

- **Contingency Planning.** Two years ago, Metropolitan and its member agencies began aggressively preparing for the possibility that Colorado River supplies could be curtailed by either drought conditions or the failure of a QSA. Reductions in Colorado River deliveries can be offset with the use of more than 2.2 million acre-feet of water

stored in reservoirs and existing banking programs in the Central Valley and Southern California; options to purchase up to 250,000 acre-feet of additional transfer water from sellers in Sacramento, San Joaquin and San Bernardino valleys; enhanced conservation programs; and the development of additional local resources, including recycling, brackish desalination, and seawater desalination.

- ***Maintaining Reliability.*** As a result of contingency planning, Southern California will meet water demands over the next two years even under worst-case conditions, which if it occurred would consist of concurrent record drought in Southern California, the Colorado River watershed, and SWP system. Under historic conditions, Metropolitan and its member agencies would be able to meet demands for up to 10 years. Finally, Metropolitan, in partnership with member agencies, will continue to execute conservation, recycling, groundwater storage, seawater desalination projects as well as available water transfers to provide sufficient water supplies for at least 20 years. The necessity to maintain this level of reliability will not diminish even if the Interim Surplus Guidelines are reinstated in light of the existing low storage levels in Lake Mead lowered by the extended drought.

WATER QUALITY CONSTRAINTS - Challenge

Changed Condition. Metropolitan faces two water quality challenges in meeting the Microbial Disinfection By-Products Rule established by the U.S. Environmental Protection Agency. These challenges are: (1) increased levels of total organic carbons (TOC) and bromides in SWP deliveries and (2) limitations in the blend of CRA and SWP deliveries due to the expected reductions in CRA deliveries. These conditions impose additional treatment and operational requirements on Metropolitan to maintain consistent compliance with primary drinking water standards.

- ***High Organics and Bromides in SWP Deliveries.*** In the past two years, increased levels of total organic carbons (TOC) and bromides have been detected in SWP deliveries through the East Branch of the California Aqueduct. The additional treatment facilities currently being developed at Metropolitan's five treatment plants can treat import water with TOC levels below 4 mg/l without forming disinfectant by-products. During the period of 1981 to 2000, TOC levels at Lake Silverwood remained low, only exceeding 4 mg/l seven percent of the time. However, between 2000 and 2002, TOC levels exceeded 4 mg/l 36 percent of the time. During that same two-year period, bromides reached 5 mg/l, creating additional treatment difficulties.
- ***Reduced Colorado River Deliveries.*** One approach to lowering the organic and bromide levels is to blend CRA and SWP deliveries. The quality of Colorado River water does not have the same organic and bromide characteristics as SWP water. A full or near full CRA delivery every year would help to ensure against risks of high organic and bromide levels. However, reductions in CRA deliveries are expected because of the record drought conditions in the Colorado River watershed.

Managing the Change. To manage the increased organic and bromide levels in SWP deliveries at Metropolitan's water treatment plants and comply with drinking water standards, Metropolitan's Board reviewed several water quality and treatment recommendations at the February 2003 Engineering and Operation Committee and the Water Planning, Quality & Resources Committee. These recommendations include:

- Altering available treatment processes at Metropolitan's Weymouth, Diemer, and Skinner filtration plants whenever feasible.
- Install additional solid handling facilities at the plants including, chemical storage, sludge pumps, sludge thickeners, belt presses, and earthen sludge lagoons.
- Pursue water quality improvements. These improvements would include maximizing deliveries of better quality water from existing banking programs and water exchanges along the California Aqueduct; securing additional Colorado River supply; and drafting DVL.
- Maintain the schedule for an alternative disinfectant at the Skinner filtration plant to meet primary drinking water standards.
- Accelerate the schedule for an alternative disinfectant at the Weymouth and Diemer filtration plants to meet primary drinking water standards.

FULL DIAMOND VALLEY LAKE - Opportunity

Changed Condition. Diamond Valley Lake (DVL) is now fully operational completing initial fill, final inspection by the Department of Safety of Dams, and the increased conveyance capacity for refill of system storage.

- ***Completion of Initial Fill Operations.*** DVL initial fill was completed by the end of 2002. DVL is full with 800,000 acre-feet of stored water and is being drafted to meet ongoing needs.
- ***Division of Safety of Dams.*** With the completion of initial fill operations, the State Department of Water Resources Division of Safety of Dams provided its Certificate of Approval for full operations of DVL to spillway crest, in 2002. As part of this approval, DVL's full capacity is operational and Metropolitan can release up to 600,000 acre-feet within a six-month period. As of January 2003, DVL can be fully operated in accordance with Metropolitan's operating criteria.
- ***Increased Conveyance Capacity for Refill of DVL.*** As of December 2002 the intertie between the existing Foothill Pipeline, owned and operated by San Bernardino Valley Municipal Water District, and the existing segment of Metropolitan's Inland Feeder, has been completed and is operational. This intertie allows Metropolitan to move SWP water from the East Branch of the California Aqueduct, through the Foothill Pipeline, and Inland Feeder segment, and into DVL and the Colorado River Aqueduct.

As a result, the intertie increases Metropolitan's capability to replenish and maintain storage in DVL by 260 cubic feet per second.

Supplies to refill Metropolitan's system storage are available in years of normal and wet hydrology. SWP allocations greater than 40 percent would occur under 69 of the 77 years of hydrologic record. In addition, over 1.65 million acre-feet of SWP water was actually available to Metropolitan 50 percent of the time. Due to conveyance and storage constraints, Metropolitan has not taken delivery of all available SWP water. With greater replenishment capabilities, however, Metropolitan can take delivery of greater amounts of the available SWP water during wet and normal-year to and maintain system storage.

Managing the Change. With a full DVL and increased refill capacity, operations of Southern California reservoirs have been coordinated to maximize use of storage and meet emergency, regulatory, drought, and water quality needs. The primary reservoirs available for use within Metropolitan's service area include Metropolitan's facilities (DVL, Lake Mathews, and Lake Skinner) and DWR facilities (Castaic Lake, Lake Perris, Pyramid Lake, Silverwood Lake and Elderberry Forebay).

- ***Updated Emergency Storage Requirements.*** Metropolitan's criteria for determining emergency storage requirements are established in the October 1991 Final Environmental Impact Report for the Eastside Reservoir (DVL) Project and in Southern California's March 1996 Integrated Resources Plan. Metropolitan's Board approved both documents. Emergency storage requirements are based on the potential for a major earthquake to damage the Colorado River, California and Los Angeles aqueducts. Emergency water reserves are essential within Metropolitan's service area to supplement local production during an emergency, or severe water shortages will occur during the period the aqueducts are out of service. Damage from such an event could render the aqueducts out of service for six months. During this period, all interruptible service deliveries would be suspended, accompanied by a mandatory water supply reduction of 25 percent from normal-year demand levels. Also water stored in surface reservoirs and groundwater basins under Metropolitan's interruptible program would be made available, and it is anticipated that full local groundwater production would be sustained. This emergency storage also would be used during other situations, including unexpected disruptions of aqueduct deliveries due to environmental and water quality regulations.

Storage reserved in system reservoirs for emergency purposes changes over the next 20 years in accordance with the projected demands on Metropolitan as shown below.

- ***Updated Storage Requirements for Dry-Year Supply and Seasonal Needs.*** Storage capacity in system reservoirs, including DVL, also is earmarked for dry-year supply and system regulation purposes. Dry-year supply storage within Metropolitan's service area is required to meet the additional water demands that occur during single-year and extended droughts. This storage requirement is the difference between normal-year demand and above-normal demand during dry years. Seasonal storage is

required to meet seasonal peak demands during the year, and is the difference between normal winter demands and normal summer demands. Dry-year supply and seasonal storage also provide sufficient reserves to permit about 5 percent downtime for rehabilitation, repair and maintenance of raw water transmission facilities. Full use of this storage capacity also is required to improve blends with SWP water and reduce the total organic carbons at the Weymouth, Diemer and Skinner treatment facilities.

The storage reserved in system reservoirs for dry-year supply and seasonal needs are shown below.

Surface Storage Requirements
Average-year
(acre-feet)

	Average-Year Storage Projection				
	2005	2010	2015	2020	2025
Surface Storage in MWD Service Area	1,669,100	1,669,100	1,669,100	1,669,100	1,669,100
Emergency	508,400	401,000	433,600	493,300	540,500
Dry-Year/Seasonal	1,160,700	1,268,100	1,235,500	1,175,800	1,128,600

RE-OPERATION OF STORAGE AND TRANSFER PROGRAMS - Opportunity

Changed Condition. In 2003, Metropolitan developed additional storage and transfer capabilities and completed filling local resources to achieve full storage accounts in operational reservoirs and banking/transfer programs. The benefits of storage and transfer capabilities as of January 1, 2003 are:

- ***System Integration.*** With a fully operational DVL and increased conveyance capacity to refill system storage, Metropolitan can integrate operations of reservoirs and banking/transfer programs to maximize supplies and meet dry-year demands and water quality needs.
- ***Increased Storage Capacity.*** More than 4.0 million acre-feet of storage capacity are available to Metropolitan in reservoirs and banking/transfer programs. Metropolitan's access to this storage capacity over the long-term is allowed by ownership or contracts that extend to years 2028 to 2035. In this past year, 266,000 acre-feet of storage capacity has been developed through long-term banking agreements with member agencies: The City of Long Beach and Three Valleys Municipal Water District; and the Kern Delta Water District in California's San Joaquin Valley.

Of the total storage capacity, 85 percent or 3.45 million acre-feet is currently reserved for Metropolitan's use to meet demands during single-year and multiple-year droughts. The remaining 15 percent or approximately 0.55 million acre-feet is dedicated for emergencies.

- **Increased Dry-Year Supplies.** Metropolitan has over 2.0 million acre-feet of "wet" water stored and available for immediate use during single-year and multiple-year droughts. This amount of stored water is greater than what is required to meet one year of Metropolitan's expected demands.
- **Potential Water Quality Improvements.** Water quality improvements in SWP deliveries can be achieved through the return of water from Metropolitan's banking/transfer programs along the California Aqueduct. Water returned from banking/transfer programs has better water quality than the SWP supplies in terms of total organic carbons and bromides.
- **Market Transfer Options.** Metropolitan has access to transfer options of 80,000 acre-feet per year in the San Bernardino Valley. In addition, Metropolitan has acquired 167,000 acre-feet of transfer options on a single-year basis through executed agreements with Sacramento Valley water districts. These agreements demonstrate that Metropolitan has increased access to market transfers through direct agreements with Sacramento Valley water interests. In addition, in 2003 DWR made available dry-year purchases through the Dry-year Purchase Program. This demonstrates the potential value of single-year transfer options market every year.

Managing the Change. Opportunity to maximize supply yield by re-operating banking/transfer programs and reservoir storage.

- **Maximizing Banking/Transfer Programs.** With a full DVL, operation of these banking/transfer programs that deliver supplies through the California Aqueduct can now be coordinated with reservoir operations to make the most of the supply yields and water quality benefits.

Current Programs. Current banking/transfer programs that deliver supplies via the California Aqueduct include:

Semitropic Water Banking and Exchange Program, Wasco
Arvin-Edison Water Management Program, Arvin
San Bernardino Valley Municipal Water District Program, San Bernardino
Kern Delta Water District Water Management Program, Taft
Desert Water Agency/Coachella Valley Water District Exchange Program, Coachella
Market Transfer Options, DWR Dry-year Purchase Program and Sacramento Valley
Transfer Agreements

These programs are currently are operating from periods that range from 2028 to 2035, with provisions for extensions. The programs provide Metropolitan with a total

storage capacity of more than 1.1 million acre-feet and dry-year supply yield of more than 500,000 acre-feet per year. These programs were originally envisioned to be operated during the four summer months of critical dry years. As a result, these programs would provide minimum supply benefits during infrequent droughts, which have occurred 8 out of 77 years of record.

Re-operation of Banking/Transfer Programs. To maximize supply yield, the re-operation of banking/transfer programs are based on the following criteria:

- Initiate supply returns to the California Aqueduct from the banking/transfer programs early in the calendar year, to blend down high organic and bromide levels, and if needed continue supply returns from the banking/transfer programs through the spring, summer and fall, to make the most of dry-year supply yields.
- Accelerate the implementation of banking/transfer programs in Central and Southern California. These programs include: (1) Kern Delta Water District Water Management Program, which completed environmental review and was approved in 2003, and (2) Proposition 13 Groundwater Conjunctive Use Programs within Metropolitan's service area.
- Access market transfer options through the DWR Dry-year Purchase Program and/or direct agreements with water interests in the Sacramento Valley and San Joaquin Valley to secure additional supplies on an as needed basis to meet demands during severe droughts and to refill system storage during wet and normal years.

Increasing Supply Yield. Compared to February 11, 2002 estimates, the re-operation of banking/transfer programs that deliver supplies through the California Aqueduct would more than double the supply yields in single-years and multiple-years and provide water quality improvements. Documentation of each banking/transfer program and their expected supply yield is provided in Appendix C.

It should be noted that there are additional banking/transfer programs along the Colorado River Aqueduct and groundwater conjunctive use programs within Metropolitan's service area. However, due to the drought in the Colorado River watershed and the water quality blend constraints, Metropolitan does not have the opportunity to re-operate these programs at this time and the supply yield from these programs remain unchanged.

- **Maximizing Reservoir Yields.** Metropolitan has the use of storage capacity in 14 reservoirs that are owned and operated by Metropolitan and DWR. With a full DVL and the re-operation of banking/transfer programs, these storage capacities can be fully combined to produce higher supply yields during dry years.

Metropolitan Reservoirs. Metropolitan owns and operates nine reservoirs. DVL, Lake Mathews, and Lake Skinner provide 96 percent of Metropolitan's storage

capacity and can be operated in conjunction with DWR reservoirs to meet emergency, dry-year supply and seasonal needs. These reservoirs are:

Diamond Valley Lake, Hemet
Lake Mathews, Riverside
Lake Skinner, Winchester
Copper Basin, Parker Dam
Live Oak, La Vern
Garvey, Monterey Park
Palos Verdes, Rolling Hills
Gene Wash, Parker Dam
Orange County, Brea

DWR Reservoirs. There are five reservoirs, owned and operated by DWR located within or adjacent to Metropolitan's service area. Based on the SWP contract between DWR and Metropolitan, Metropolitan has rights to use specified portions of SWP southern reservoirs to supply water in addition to approved SWP deliveries. These reservoirs are:

Pyramid Lake, Piru Creek
Castaic Lake, Ventura County
Elderberry Forebay, Ventura County
Lake Perris, Riverside County
Silverwood Lake, San Bernardino County

Re-operation of Reservoirs. Reservoir re-operation to maximize yield with the following criteria:

- Coordinate operation of Metropolitan and DWR reservoirs with the re-operation of Metropolitan's banking/transfer programs to meet emergency, dry-year supply, system regulation and water quality needs. Storage capacity available for Metropolitan's use is 1.67 million acre-feet. This usable storage does not include dead storage and water allocations to other SWP contractors.
- Utilize reservoirs to provide peak deliveries. Reservoirs provide flexibility with the capability to withdraw larger volumes of water in short periods. Reservoirs can be drawn to meet peak, above normal demands that typically occur during the summer and early fall. In addition, reservoir deliveries would be used to adjust SWP water blends when high organic levels unexpectedly spike in the deliveries from the California Aqueduct.
- Utilize reservoirs to provide dry-year deliveries. Dry-year supply storage within Metropolitan's service area is required to meet the additional water demands that occur during single-year and extended droughts. Surface reservoirs provide significant flexibility in meeting potential droughts conditions by storing water when available. In Metropolitan's October 1991 Final Environmental Impact

Report for the Eastside Reservoir (DVL) Project and in Southern California's March 1996 Integrated Resources Plan criteria for utilizing storage to meet drought requirements has been established. These criteria provided that surface reservoirs could be expected to withdraw all drought storage water within a two-year period.

Increasing Supply Yield. Compared to February 11, 2002 estimates, the re-operation of reservoirs could provide 70 percent higher dry-year storage capacity; more than double the reservoir yields during a single dry-year; and provide up to 65 percent higher reservoir yields during multiple dry-year events. Documentation on Metropolitan's reservoirs and DWR's reservoirs and the supply yields capability are provided in Appendix D.

ENHANCED CONSERVATION PROGRAMS - Opportunity

Changed Condition. The latest entry in the expanding resource portfolio is Metropolitan's initiative to enhance conservation efforts. Launched in summer 2002, a new campaign is designed: to encourage more efficient outdoor water use and promote innovative conservation measures.

- ***Native and Drought-Proof Plant Program.*** This program marks an expansion of Metropolitan's successful indoor conservation program to outdoor conservation in order to tap into an area with great potential for savings. An estimated 30 to 70 percent of residential water use in Metropolitan's service area goes outside to water the landscape. This program begins a new initiative to achieve new water savings through outdoor conservation.
- ***Innovative Conservation Program.*** Last year, Metropolitan's first Innovative Conservation Program (ICP) was completed, providing more than \$200,000 for 10 promising conservation ideas. As a result of the program, two new conservation tools – a re-circulating X-ray film developer and a pressurized water broom – were adopted within Metropolitan's rebate program.
- ***Expanded Conservation Credits Program.*** In addition to the existing Conservation Credits Program discussed in the February 11, 2002 report, Metropolitan's Board has approved additional rebates for dual-flush toilets, rebates for evapotranspiration (ET) landscape irrigation controllers, and a hotel/motel/restaurant customer water conservation education card program.
- ***Commercial, Industrial and Institutional Program.*** In May 2002, Metropolitan's Board authorized a time extension and a funding increase for the Commercial, Industrial and Institutional (CII) rebate program to fund the purchase of non-residential water conserving hardware, including ULFT's, urinals, water-efficient cloths washers and cooling tower retrofits.

Managing the Change. Estimates show that 7 to 12 percent of water demands can be offset with the enhanced conservation programs. These water savings have been incorporated into forecasts of demands on Metropolitan.

DEVELOPMENT OF ADDITIONAL LOCAL RESOURCES - Opportunity

Changed Condition. Metropolitan and its member agencies have embarked on an aggressive campaign to develop additional local resources. There are promising opportunities to develop seawater desalination and expand the Local Resources Program.

- ***Seawater Desalination.*** Turning seawater into drinking water became more viable with the introduction of Metropolitan's Seawater Desalination Program. Launched in the summer of 2001, the program will provide financial and technical support for the development of local cost-effective seawater desalination projects. A call for proposals produced five projects proposed by member agencies, which were evaluated by Metropolitan's review committee of staff and consultants. Collectively, the projects could produce about 132,000 acre-feet of drinking water per year. The program is in its early stages and projects are subject to approval by Metropolitan's board.
- ***Local Resources Program.*** In 1982, Metropolitan initiated the Local Projects Program to promote the development of water recycling projects that reduced demand for imported water and improved regional water supply reliability. In 1991, the Groundwater Recovery Program was implemented to similarly promote the recovery of local degraded groundwater supplies. In 1995, both programs were combined into the Local Resources Program. Currently the Local Resources Program, encompassing both recycling and groundwater recovery, has implemented 53 recycled water projects yielding over 235,000 acre feet of local supply and 22 groundwater recovery projects yielding over 80,000 acre feet of local supply.

Managing the Change. In accordance with the IRP, Metropolitan's regional production target is 500,000 acre-feet by 2020 for its Local Resources Program. Metropolitan continues to provide financial incentives through its Local Resources Program to its member agencies to encourage development of local water resource process. These expected water supply benefits are incorporated into the forecasts of demand on Metropolitan.

FINDINGS

In summary, this analysis finds that current practices of diversifying water supplies and securing supply reserves allow Metropolitan and its member agencies to adjust to changes in demands and supplies and to maintain a high degree of reliability. If all imported water supply programs and local projects proceed as planned, without changes in demand projections, reliability would be assured beyond 20 years.

The availability of Metropolitan's water supplies is determined by comparing total projected water demands and conservatively estimated water supplies over the next 20 years. These comparisons are shown in the following graphs and tables. They demonstrate that sufficient supplies can be reasonably relied upon to meet projected supplemental demands. The comparison also shows that additional reserve supplies could provide a "margin of safety" to guard against uncertainties in demand projections and risks in fully implementing all supply programs under development.

In more detail, the findings of the *Report on Metropolitan's Water Supplies* are:

RETAIL WATER SUPPLY RELIABILITY. Retail water supply reliability is provided through a combination of both local resources and supplemental imported water supplies.

The local resources include groundwater, recycling, seawater desalination, and local surface water. The existing and planned local resources required for the region are described in the urban water management plans and updated information prepared by the member agencies and retailers. Supplemental water supplies include available deliveries from the Colorado River Aqueduct, California Aqueduct, and in-basin storage (reservoirs and groundwater conjunctive use programs). These supplemental supplies meet demands that exceed local supplies. The existing and planned supplemental imported water supplies required for the region are described in Metropolitan's comprehensive supply plan as documented in this Report. Metropolitan and its member agencies are working together to implement local and supplemental supply plans to maintain retail water supply reliability.

COMPREHENSIVE SUPPLEMENTAL SUPPLY PLAN. Metropolitan has a comprehensive supply plan to provide sufficient supplemental water supplies and to provide a prudent supply reserve over the next 20 years and beyond.

Diversified Resources. Metropolitan continues to develop a portfolio of diversified supplies in accordance with a comprehensive supply plan. This plan is based on the Integrated Resources Plan and Regional Urban Management Plan, which establish policy guidelines for investing in water conservation, recycling, desalination, Colorado River deliveries, State Water Project deliveries, water transfers, and storage in groundwater basins and surface reservoirs. The implementation of Metropolitan's comprehensive supply plan would provide sufficient water supplies to meet projected supplemental demands over the next 20 years and beyond.

Prudent Supply Reserves. Consistent with current practice, Metropolitan has and will continue to have the capability to develop supplies that are available at least 10 years in advance of need and ensure water supply reliability. This recognizes that a program may require several years to become fully operational and reach ultimate production capability. In addition, the advance supply provides a reserve that safeguards against potential demand and supply uncertainties during the interim years, while being an investment that is fully utilized at the time of need. This practice provides reliability without wasted cost.

Flexibility in Demand Projections. The comprehensive resources plan provides flexibility in demand projections. Based on a conservative approach, Metropolitan estimates that the supplemental demand projections on Metropolitan are 6 to 16 percent higher than the projections presented in the member agencies' urban water management plans. This difference indicates that Metropolitan's water supplies developed in accordance with this water supply update would provide a "margin of safety" or measure of flexibility to accommodate some delays in local resources development.

IMPLEMENTING THE PLAN. If Metropolitan's supply programs were implemented under this comprehensive resource plan, Metropolitan would have the capability to reliably meet projected supplemental water demands through 2030.

Implementing the Plan – Existing and Planned Supplies. Metropolitan is implementing a comprehensive plan that secures water resources to meet projected supplemental water demands and to maintain supply reserves. From a resource management standpoint, it is prudent for Metropolitan to secure supplies in advance of need and maintain a high degree of reliability. From a benefit/cost standpoint, it is important that Metropolitan times its supply investments such that value can be derived from the use of these investments in the near term and Metropolitan is able to take advantage of favorable market conditions in the future. As a result, Metropolitan has supplies that are currently available at least 10 years in advance of need and supplies that are under development for longer-term needs.

- **Existing Supplies.** Based on water supplies that are currently available, Metropolitan already has in place the existing capability to:

Average and Wet Years (73% Occurrence)

- Meet 100 percent of its member agencies' projected supplemental demands (consumptive and replenishment) over the next 20 years.
- Provide significant surplus supplies to refill system storage.

Multiple Dry Years (2.6% Occurrence)

- Meet 100 percent of its member agencies' projected supplemental demands (consumptive and replenishment) even under the repeat of the worst multiple-year drought event over the next 15 years.
- Provide 8 to 26 percent reserve supply even under the repeat of the worst multiple-year drought event over the next 15 years. The supply reserve would mitigate

unexpected changes in demand or supply conditions and facilitate the refill of system storage in this 15-year period.

Single Dry-Year (1.3% Occurrence)

- Meet 100 percent of its member agencies' projected supplemental demands (consumptive and replenishment) even under the repeat of the worst single-year drought event over the next 15 years.
- Provide 8 to 25 percent reserve supply even under the repeat of the worst single-year drought event over the next 15 years. The supply reserve would mitigate unexpected changes in demand or supply conditions and facilitate the refill of system storage in this dry condition over the next 15 years.

➤ **Planned Supplies.** With the addition of all water supplies that are under development, Metropolitan would have the total capability (existing and planned supplies) to:

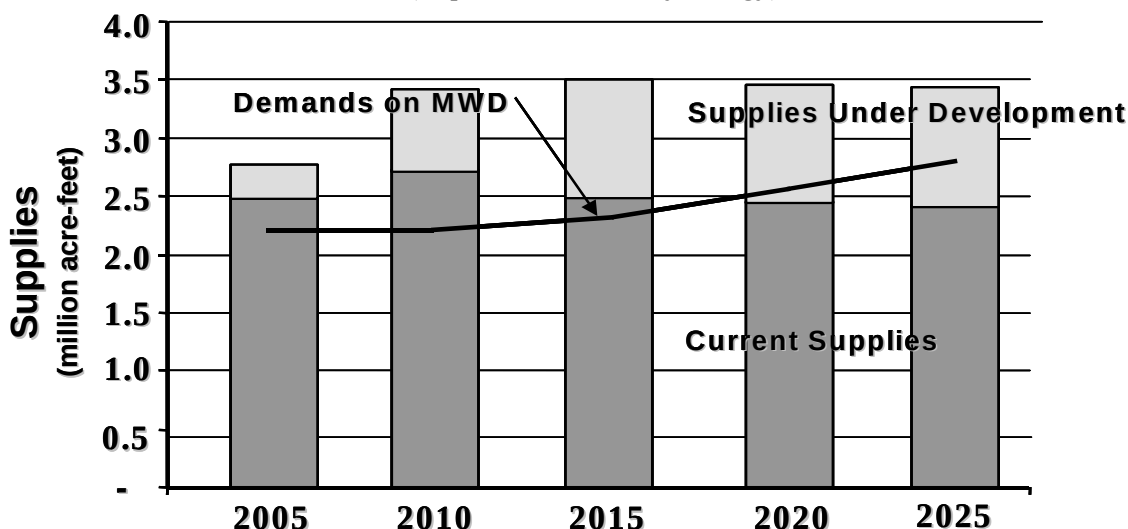
- Meet 100 percent of its member agencies' projected supplemental demands (consumptive and replenishment) through 2030 even under a repeat of the worst drought.
- Provide a 20 to 25 percent reserve supply (depending on hydrologic conditions) that can manage the risk of local or imported resource projects not performing up to expectations and provide greater assurances in meeting demands during dry years.

MANAGING CHANGE: Diversified resources and prudent supply reserves assure reliable water supplies for the region.

➤ **Challenges and Opportunities.** In 2002, there have occurred changes that create both challenges and opportunities for Southern California's water resources. Metropolitan and its member agencies have aggressively prepared for two possible risks to imported water supplies: (1) the reduction of Colorado River supply due to either the unprecedented drought or the absence of a Quantification Settlement Agreement and (2) increasing water quality constraints on imported water supplies. These risks have been offset by significant improvements in the region's supply capabilities: (1) a fully operational DVL and increased refill capabilities; (2) integrating the use of reservoirs and banking/transfer programs to fully use more than 2 million acre-feet of water available in storage and access up to 250,000 acre-feet of additional transfer options; (3) enhanced conservation programs, (4) aggressive development of additional local resources (groundwater, recycling and ocean desalination), and (5) treatment plant improvements.

Multiple Dry-year Supply Capability¹ & Projected Demands²

(Repeat of 1990-92 Hydrology)



Supply Capability¹ & Potential Reserve or Replenishment

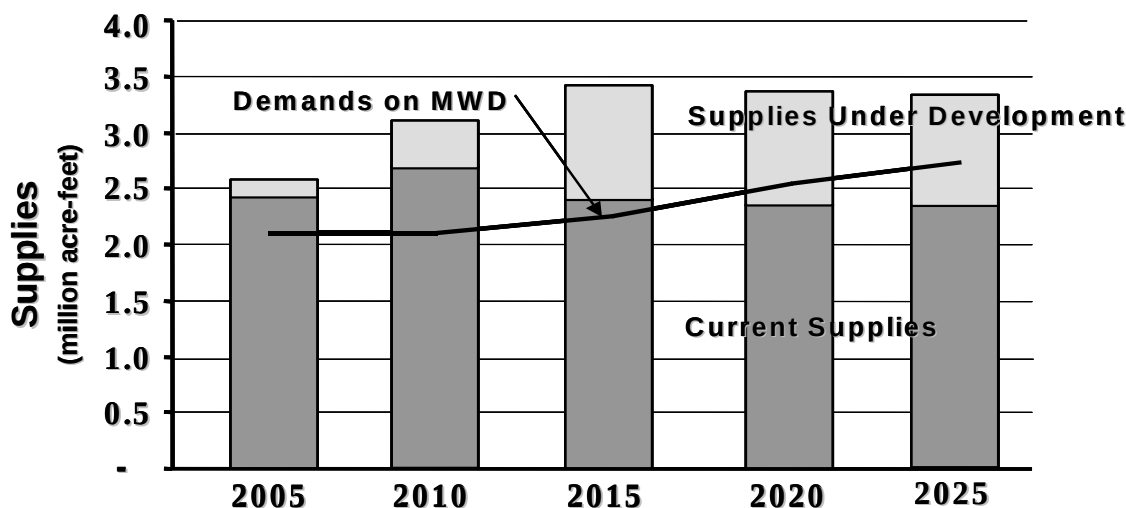
	2005	2010	2015	2020	2025
	(acre-feet per year)				
<u>Current Supplies</u>					
Colorado River ²	721,330	833,292	833,292	833,292	833,292
California Aqueduct	1,290,300	1,376,100	1,146,100	1,120,300	1,120,300
In-Basin Storage	455,300	531,700	530,400	513,000	499,200
<u>Supplies Under Development</u>					
Colorado River ²	167,300	416,708	416,708	416,708	416,708
California Aqueduct	20,000	195,000	390,000	390,000	390,000
In-Basin Storage	-	89,000	200,000	200,000	200,000
Maximum Supply Capability¹	2,654,200	3,441,800	3,516,500	3,473,300	3,459,500
Total Demands on Metropolitan³ (Firm & Replenishment)	2,245,200	2,175,600	2,320,900	2,534,100	2,688,500
Potential Reserve & System Replenishment Supply	602,900	1,266,200	1,195,600	939,200	771,000

1 -- Represents expected supply capability for resource programs.

2 -- Total Colorado River Aqueduct Deliveries limited to 1,250,000 acre-feet per year.

3 -- Based on SCAG 98 RTP, SANDAG 1998 forecasts and member agency projections of local supplies.

**Single Dry-year Supply Capability¹
& Projected Demands²**
(Repeat of 1977 Hydrology)



Supply Capability¹ & Potential Reserve or Replenishment

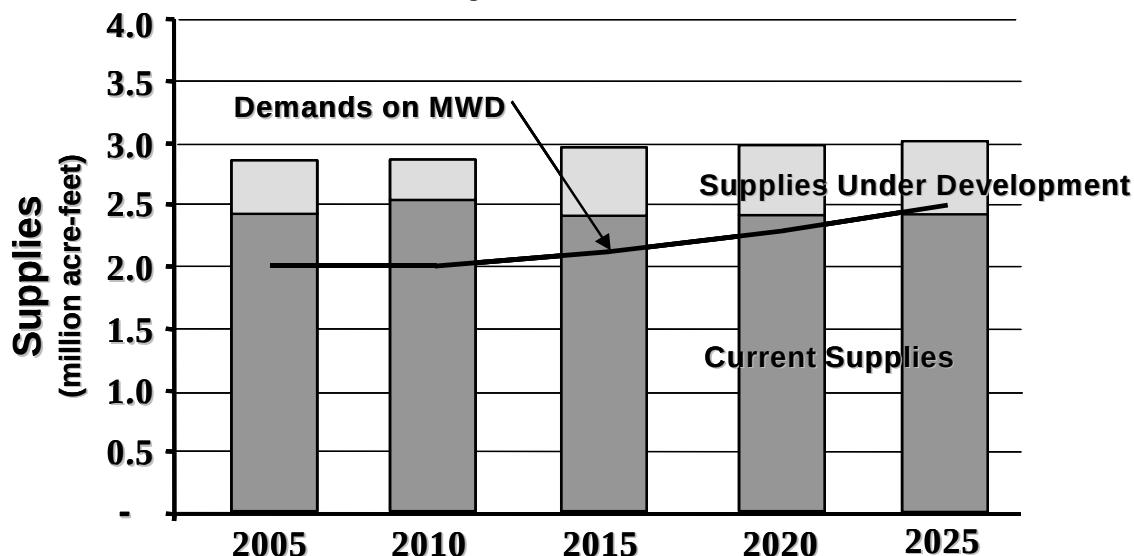
	2005	2010	2015	2020	2025
	(acre-feet per year)				
<u>Current Supplies</u>					
Colorado River ²	721,330	833,292	833,292	833,292	833,292
California Aqueduct	997,300	997,300	822,300	822,300	822,300
In-Basin Storage	730,400	790,000	787,800	757,900	734,300
<u>Supplies Under Development</u>					
Colorado River ²	208,600	230,538	416,708	416,708	416,708
California Aqueduct	20,000	195,000	390,000	390,000	390,000
In-Basin Storage	-	89,000	200,000	200,000	200,000
Maximum Supply Capability¹	2,677,630	3,135,130	3,450,100	3,420,200	3,396,600
Total Demands on Metropolitan³ (Firm & Replenishment)	2,169,300	2,096,100	2,266,500	2,487,900	2,618,700
Potential Reserve & System Replenishment Supply	508,330	1,039,030	1,183,600	932,300	777,900

1 -- Represents expected supply capability for resource programs.

2 -- Total Colorado River Aqueduct Deliveries limited to 1,250,000 acre-feet per year.

3 -- Based on SCAG 98 RTP, SANDAG 1998 forecasts and member agency projections of local supplies.

Average-year Supply Capability¹ & Projected Demands



Supply Capability¹ & Potential Reserve or Replenishment

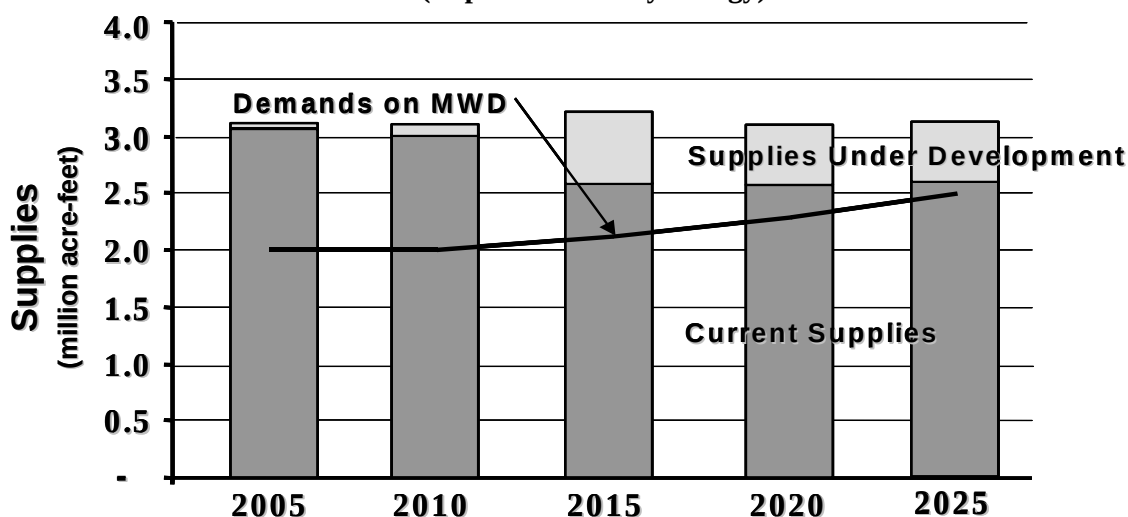
	2005	2010	2015	2020	2025
	(acre-feet per year)				
Current Supplies					
Colorado River ²	695,330	735,222	719,292	707,292	719,292
California Aqueduct	1,780,800	1,783,200	1,723,900	1,714,900	1,705,900
In-Basin Storage	-	-	-	-	-
Supplies Under Development					
Colorado River ²	321,500	228,608	260,538	350,038	360,538
California Aqueduct	20,000	65,000	220,000	220,000	220,000
In-Basin Storage	-	-	-	-	-
Maximum Supply Capability¹	2,817,630	2,812,030	2,923,730	2,995,230	3,005,730
Total Demands on Metropolitan³ (Firm & Replenishment)	1,969,700	1,886,500	2,054,800	2,274,000	2,402,300
Potential Reserve & System Replenishment Supply	847,930	925,530	868,930	721,230	603,430

1 -- Represents expected supply capability for resource programs.

2 -- Total Colorado River Aqueduct Deliveries limited to 1,250,000 acre-feet per year.

3 -- Based on SCAG 98 RTP, SANDAG 1998 forecasts and member agency projections of local supplies

**Wet-year Supply Capability¹
& Projected Demands**
(Repeat of 1985 Hydrology)



Supply Capability¹ & Potential Reserve or Replenishment

	2005	2010	2015	2020	2025
	(acre-feet per year)				
Current Supplies					
Colorado River ²	1,156,330	1,156,830	683,292	683,292	683,292
California Aqueduct	1,882,200	1,882,200	1,882,200	1,882,200	1,882,200
In-Basin Storage	-	-	-	-	-
Supplies Under Development					
Colorado River ²	93,670	93,170	503,138	353,038	360,538
California Aqueduct	20,000	65,000	220,000	220,000	220,000
In-Basin Storage	-	-	-	-	-
Maximum Supply Capability¹	3,152,200	3,197,200	3,288,630	3,138,530	3,146,030
Total Demands on Metropolitan³ (Firm & Replenishment)	1,932,700	1,871,500	2,046,200	2,272,500	2,406,000
Potential Reserve & System Replenishment Supply	1,219,500	1,325,700	1,242,430	866,030	740,030

1 -- Represents expected supply capability for resource programs.

2 -- Total Colorado River Aqueduct Deliveries limited to 1,250,000 acre-feet per year.

3 -- Based on SCAG 98 RTP, SANDAG 1998 forecasts and member agency projections of local supplies.

Demand Projections

RETAIL DEMAND FORECAST OVERVIEW

Water demand in the Metropolitan service area has experienced several discernable trends in the past five years. Southern California emerged from a severe recession in the mid-1990s. Despite a sustained recovery that has led to a robust economy, the intense developments of long-term conservation programs and increases in pricing have succeeded in suppressing growth in per capita water demands. Metropolitan projects that retail water demand will continue along this trend; per capita water demand will not return to its pre-drought highs, with conservation programs and water pricing offsetting water demand growth.

To forecast urban retail water demands, Metropolitan uses the MWD-MAIN Water Use Forecasting System. MWD-MAIN is a model combining statistical and end-use methods that has been adapted to conditions in Southern California. The statistical portion of the model incorporates projections of demographic and economic variables from regional planning agencies (the Southern California Association of Governments, or SCAG, and the San Diego Association of Governments, or SANDAG) into statistically estimated water demand models to produce forecasts of water demand. The end-use portion of the model derives estimates of conservation by adding additional information on how that water is utilized.

The MWD-MAIN system features a separate unique model for each sector. In the residential sector, the forecasts of water demand per dwelling unit are ultimately combined with the forecasts of dwelling units from the regional planning agencies to yield an estimate of total sector water demand. Similarly, in the nonresidential sector, water use per employee is combined with forecasts of employment to yield an estimate of total non-residential water demand.

The SCAG and SANDAG demographic projections used in the retail demand forecast are developed primarily for transportation planning, air quality management, and other regional planning purposes. The SCAG and SANDAG forecasts provide a linkage to local development and land use plans through the inclusion of sub-regional plans, and through extensive stakeholder input and feedback processes. Final plans adopted by SCAG and SANDAG are supported by EIR/EIS documentation.

The SCAG and SANDAG projections currently used by Metropolitan extend to 2020. Metropolitan contracted with the Center for Continuing Study of the California Economy (CCSCE) and SCAG to extend these projections to 2050. CCSCE developed projections for the six counties served by Metropolitan from national projections produced by the US Census Bureau. Member agency demographics for 2050 were then derived using SCAG's GIS-based allocation models. Demographics for interim years such as 2025 were interpolated from the 2020 SCAG/SANDAG projections and the 2050 estimates developed by CCSCE.

In addition to accounting for future demographic trends, Metropolitan's water demand forecasts incorporate current and future water demand management (conservation) efforts: In 1991, Metropolitan signed a Memorandum of Understanding Regarding Urban Water Conservation in California (MOU). The MOU commits Metropolitan to implement a number of long-term water conservation measures referred to as Best Management Practices (BMPs).

The MWD-MAIN model embeds a detailed accounting of water conservation, distinguishing between:

- *Passive Conservation* - Water saved as a result of changes in water efficiency requirements for plumbing fixtures in plumbing codes. This form of conservation would occur without any water agency action.
- *Active Conservation* - Water saved directly as a result of conservation programs by water agencies (including implementation of Best Management Practices). This form of conservation is unlikely to occur without agency action.
- *Price-effect Conservation* - Water saved by retail customers attributable to the effect of changes in the real (inflation-adjusted) price of water. There may be some overlap between this form of conservation and the previous two. For example, increased water prices might induce a consumer to take part in one of the active conservation programs run by the providing agency.

Metropolitan's demand projections account for the effects of the conservation BMPs, including projected changes in the price of water. The forecast is based on expected BMP participation, recognizing that some of the region's retail agencies are not BMP signatories and that some BMPs are not cost effective in Metropolitan's service area.

TRENDS IN SOUTHERN CALIFORNIA

Population: The population of Metropolitan's service area was approximately 15.8 million in 1995 and has grown to approximately 16.9 million in 2000. This represents an annual addition over this five-year period of about 211,000 people per year. The population in the entire service area is projected to be approximately 22.1 million by the year 2020, constituting an average annual increase of about 208,000 people per year.

Industrial and Commercial: Southern California generates a significant portion of the state's economy, accounting for approximately 53 percent of the state's total personal income. In 2001, total personal income in Southern California was estimated to be \$600 billion. Employment growth is not projected to occur at the same rate across the six counties. Over the 25-year period between 2000 and 2025, the greatest employment increases are expected to occur in Los Angeles County, with more than one million additional jobs expected. Relative to existing employment, Riverside and

San Bernardino counties are expected to have the fastest rates of growth (114 and 100 percent), followed by Ventura and Orange counties (66 and 44 percent), and San Diego and Los Angeles counties (32 and 28 percent). The number of people employed is expected to increase from 7.9 million in 2000 to about 10.9 million in 2025. This increase of about 39 percent is greater than the projected population (31 percent) and housing growth (36 percent), suggesting that a somewhat greater proportion of the population will be employed over time.

Residential Consumers: SCAG and SANDAG have projected residential housing growth in all geographic areas of Metropolitan's service area. The total occupied housing stock is expected to increase about 36 percent from 2000 to 2025 (from 5.4 to 7.4 million housing units). Much of this growth is forecasted to occur in inland areas. Within the service area, the average household size (household population divided by total occupied dwelling units) is forecasted to remain at around three persons per household. Annexations to Metropolitan's service area are not projected to have a significant impact on population, housing or demand growth.

Water Demands: Historical retail water demands in Metropolitan's service area have increased from 3.1 million acre-feet in 1980 to 3.9 million acre-feet in 1990. Due to the recession, wet weather, unprecedented conservation efforts, and lingering drought impacts, water use was lower for several years in the mid-nineties. Of the 3.5 million acre-feet used in 1998, 3.2 million acre-feet (91 percent) were used for municipal and industrial purposes (M&I), and 0.3 million acre-feet (9 percent) were used for agricultural purposes. The relative share of M&I water use to total water use has been increasing over time as agricultural water use has declined due to urbanization and market factors, including the price of water. Agricultural water use accounted for 14 percent in 1980, 11 percent in 1990, 9 percent in 1995, and 8.3 percent in 1997. Total water use is projected to grow from a projected 3.8 million acre-feet in 2000 to 4.9 million acre-feet in 2025. All water demand projections discussed here reflect normal weather conditions. These water demand forecasts account for water savings resulting from plumbing codes, price effects, and actual and projected implementation of Best Management Practices. The demand models account for the effect of increasing regional income, growing penetration rates of water-using appliances, and growth in hot and dry areas. As a result per capita water demand is forecast to remain relatively constant over the 25-year forecast horizon

- *By County* - Total retail water demand is not expected to grow uniformly across counties. Following the pattern of the demographic projections, the greatest increase in urban water demands is expected to occur in Los Angeles, Riverside, and San Diego counties. The largest absolute increase in water demand is expected to occur in Los Angeles County, an increase of over 400,000 acre-feet between 2000 and 2025. On a percentage basis, demands in Riverside County are expected to increase at the fastest rate (51 percent between 2000 and 2025), while Los Angeles and Orange Counties are expected to increase with the lowest rate.

- *By Sector* - Water use can also be broken down by sector. Between 2000 and 2025, single-family residential water use is expected to increase by 27 percent, while multifamily water use is expected to increase by 47 percent. Nonresidential water use between 2000 and 2025 is expected to increase by 29 percent. Water use projections for the nonresidential sector generally follow the employment projections shown in Table A.1-3. There is an additional sector, which is needed to account for system losses and any other retail demand.

RESIDENTIAL WATER USE

Although single-family homes account for about 55 percent of the total occupied housing stock, they account for about 70 percent of total residential water demands. This variation occurs because single-family households tend to use more water than households in a multi-family structure (such as apartment buildings) on a per housing-unit basis. Single-family households tend to have more persons living in the household; they are likely to have more water-using appliances and fixtures; and they tend to have more landscaping per home.

NONRESIDENTIAL WATER USE

Nonresidential water use represents about 25 percent of the total M&I demand in Metropolitan's service area. The nonresidential sector represents water that is used by businesses, services, government, institutions (such as hospitals and schools), and industrial (or manufacturing) establishments. Within the commercial/institutional category, the top water users include schools, hospitals, hotels, amusement parks, colleges, laundries, and restaurants. In Southern California, the major industrial users include electronics, aircraft, petroleum refining, beverages, food processing, and other industries that use water as a major component of the manufacturing process.

AGRICULTURAL WATER USE

Agricultural water use currently constitutes about 8 percent of total regional water demand in Metropolitan's service area. Metropolitan has historically provided water supplies to meet 30 to 50 percent of total agricultural water demand. Remaining agricultural water demands are met by local water supplies.

LOCAL SUPPLIES

The Integrated Resources Plan (IRP) was formulated to address the region's water supply needs through a comprehensive planning process that identifies a diverse mix of water resources. The IRP was a collaborative effort by Metropolitan and its member agencies to achieve regional objectives for water reliability, water quality and cost containment by establishing goals for development of the various water resource options. Since it was adopted in 1996, the IRP promoted steady progress towards improving the region's supply reliability in a cost-effective manner. In November 2002, Metropolitan provided an update of the IRP resource targets and strategies to ensure water supply reliability through 2025 against multiple uncertainties and reasonable assumptions of resource implementation risk. As part of this IRP update, the status of developing local supplies such as, groundwater, water recycling, groundwater recovery, and seawater desalination was reevaluated. In addition to these local supplies, Metropolitan initiated a new program, enhancement of water conservation efforts. These local water resources are summarized below.

Local Groundwater Supplies: Groundwater accounts for about 90 percent of the natural local water supplies, in Southern California, and is one of the regions most valuable water assets. In addition to supplying a basic source of water, groundwater basins provide a critical storage function that allows for reduced dependency on imported water during dry years and droughts, as well as during peak summer periods. Within a given year, a groundwater basin production peaks in the summer and replenishes during the winter. Because groundwater basins contain such a large volume of stored water, it is possible to produce more water than is naturally recharged, in the short-term, and be replenished from imported supplies, when available. During a dry-year or drought, replenishment deliveries can be curtailed, further reducing the demand for imported supplies. To compensate for this curtailment it is necessary to replenish groundwater supplies when imported water becomes available. The major groundwater basins in Southern California provide an average annual supply of approximately 1.36 million acre-feet. Most of this production is naturally recharged by surface runoff, but about 200,000 acre-feet per year is replenished by Metropolitan using available imported water. By 2025 it is estimated that groundwater production will increase to about 1.58 million acre-feet, thus requiring Metropolitan to provide about 415,000 acre-feet of replenishment water.

Local Surface Water And Los Angeles Aqueduct Supplies: In addition to groundwater supplies, local agencies maintain surface reservoir capacity and imported supply facilities for the development of local yield. Through the use of local surface reservoirs, the average annual yield from local watersheds is estimated at approximately 135,000 acre-feet per year. Local runoff and falls within San Diego County Water Authority's service area provide most of this local supply, 80,000 acre-feet per year. In addition to these local surface supplies the City of Los Angeles maintains the Los Angeles Aqueduct. The Los Angeles Aqueduct is estimated to provide an average-year supply of approximately 300,000 acre-feet per year. During a

repeat of a historical dry period, this supply is estimated to decrease to less than 150,000 acre-feet.

Seawater Desalination: The ocean represents a potentially abundant source of water supply. Although there is public support for this resource, seawater desalination has in the past been limited by its relatively high costs, environmental impacts of brine disposal, and siting considerations. Emerging technology may alleviate high costs and environmental constraints and may warrant further analysis of seawater desalination as a viable source of supply in the near-term. As part of its local supply strategy, Metropolitan's Board adopted and updated policy principles to guide development of seawater desalination in 1995 and 2001, and reviewed the status of the approach in November 2002. Initially, 50,000 acre-feet per year was targeted in Metropolitan's request for proposals (RFP) process that was initiated in November 2001. As a result, five proposals were submitted by member agencies and were evaluated by Metropolitan for participation. These proposals have a combined potential to produce more than 130,000 acre-feet per year of desalinated seawater within Metropolitan's service area. Most of this production is currently scheduled to be available by 2010, 100,000 acre-feet, with the remainder coming on line by 2015.

Water Recycling And Groundwater Recovery: Water recycling (reclamation of wastewater to produce water which is safe and acceptable for various non-potable uses) has provided a valuable source of water supply for Southern California. Southern California has been a leader in developing recycled water projects. As a result, recycled water is currently used for numerous applications including groundwater recharge, seawater intrusion barriers, landscape and agricultural irrigation, and in industrial processes. Water recycling can improve reliability not only during a drought, but also during normal and wet years. Currently, Metropolitan has entered into agreements covering 53 projects through its Local Resource Program that have the capability to produce about 235,000 acre-feet per year. Presently 37 of these water recycling projects are partially operational and will have the ultimate capability to produce an additional 200,000 acre-feet per year when fully operational.

Recovery of contaminated groundwater supplies is an important resource strategy for Southern California. This resource option is usually more expensive than other resources, but has the potential to control existing contamination and prevent this contamination from spreading and further reducing the usefulness of groundwater. Currently, Metropolitan has entered into agreements covering 22 projects with an ultimate yield of about 82,000 acre-feet per year. Presently 12 of these groundwater recovery projects are partially operational and will have the capability to produce about 55,000 acre-feet per year when fully operational. The combined IRP regional targets for water recycling and groundwater recovery projects is about 460,000 acre-feet year by 2010 and 500,000 acre-feet year by 2020.

Enhanced Water Conservation: Metropolitan has initiated a heightened public awareness and incentive program to reduce outdoor water use in its service area. A

reduction in water use within Metropolitan's service area will have a measurable and lasting impact in ensuring water supply reliability. Encouraging reductions in outdoor water use has the potential to reduce household landscape water use by 30 to 60 percent for those households that are using water for landscapes. Metropolitan's Board of Directors has approved an accelerated public outreach program. A target estimate of 7 to 12 percent of household water use has been established for the summer of 2003. As an integral part of Metropolitan's conservation supplies, the Outdoor Conservation Program will be instrumental in meeting the IRP goals for Southern California's water supply portfolio.

As discussed above, local agencies have developed and continue to implement significant local resources. Based on these local agency supply plans and demand reduction due to enhanced water conservation, on-average it is projected that local supplies will be provide 2,294,100 acre-feet per year by 2005 and 2,949,600 acre-feet per year by 2025.

DEMAND SUMMARY TABLES

The following tables show total retail demands (municipal and industrial, and agricultural), total replenishment demands, total locally produced water supplies, and the supplemental demands for water that are met by Metropolitan. The figures below are derived using a historical sequence of hydrologic outcomes from 1922 through 1998, for each of the forecasted years shown. The “Average” is the statistical mean, calculated over 77 hydrologic outcomes from 1922 through 1998. “Wet” is the outcome from the hydrologic year 1985. “Single Dry” is the outcome from the hydrologic year 1977. “Multiple Dry” is the average outcome over three sequential hydrologic years from 1990-1992.

Estimated Water Demands
Forecast Year 2005
 (acre-feet per year)

	Multiple Dry- years (1990-1992)	Single Dry- year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
Retail Demand (MI & AG)	4,141,600	4,097,600	4,057,400	4,148,600
GW Replenishment	212,600	206,400	206,400	206,500
Local Supplies	2,109,000	2,134,700	2,294,100	2,422,400
Demands On Metropolitan	<u>2,245,200</u>	<u>2,169,300</u>	<u>1,969,700</u>	<u>1,932,700</u>

Forecast Year 2025
 (acre-feet per year)

	Multiple Dry- years (1990-1992)	Single Dry- year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
Retail Demand (MI & AG)	5,065,000	4,985,900	4,938,400	5,053,100
GW Replenishment	420,300	420,400	413,500	431,100
Local Supplies	2,796,800	2,787,600	2,949,600	3,078,200
Demands On Metropolitan	<u>2,688,500</u>	<u>2,618,700</u>	<u>2,402,300</u>	<u>2,406,000</u>

Colorado River Aqueduct Deliveries

Colorado River Aqueduct Deliveries Program Capabilities¹

Year 2005
(acre-feet per year)

	Event Occurring in 2005			
	Multiple Dry Years (1990-92)	Single Dry Year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
<u>Current Programs</u>				
Base Apportionment – Priority 4	550,000	550,000	550,000	550,000
IID/MWD Conservation Program	105,130	105,130	105,130	105,130
Priority 5 Apportionment	-	-	19,000	480,000
Coachella & All-American Canals Lining Projects	21,200	21,200	21,200	21,200
Off-Aqueduct Storage				
• Hayfield Storage Program	45,000	45,000	-	-
Subtotal of Current Programs	721,330	721,330	695,330	1,156,330
<u>Programs Under Development</u>				
Interim Surplus Guidelines	26,300	67,600	180,500	-
IID/MWD Conservation Program	-	-	-	-
SDCWA Transfer	30,000	30,000	30,000	30,000
PVID Land Management Program	111,000	111,000	111,000	111,000
Off-Aqueduct Storage/Transfers				
• Lower Coachella Storage Program	-	-	-	-
• Chuckwalla Storage Program	-	-	-	-
• Central Arizona Banking	-	-	-	-
Subtotal of Proposed Programs	167,300	208,600	321,500	141,000
Maximum Supply Capability²	888,600	929,930	1,016,830	1,297,330
Maximum Expected CRA Deliveries³	888,600	929,930	1,016,830	1,250,000

1 -- Represents expected supply capability for resource programs.

2 -- Total maximum supply capability is shown to be greater than the CRA capacity. This indicates that full CRA deliveries can be maintained even with the loss or deferral of individual programs and that Metropolitan has the operational flexibility to optimize the use of programs.

3 - Total Colorado River Aqueduct Deliveries limited to 1,250,000 acre-feet per year.

Colorado River Aqueduct Deliveries Program Capabilities¹ Year 2010 (acre-feet per year)

	Event Occurring in 2010			
	Multiple Dry Years (1990-92)	Single Dry Year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
<u>Current Programs</u>				
Base Apportionment – Priority 4	550,000	550,000	550,000	550,000
IID/MWD Conservation Program	55,592	55,592	57,522	105,130
Priority 5 Apportionment	-	-	50,000	424,000
Coachella & All-American Canals Lining Projects	77,700	77,700	77,700	77,700
Off-Aqueduct Storage • Hayfield Storage Program	150,000	150,000	-	-
Subtotal of Current Programs	833,292	833,292	735,222	1,156,830
<u>Programs Under Development</u>				
Interim Surplus Guidelines	324,300	-	-	-
IID/MWD Conservation Program	49,538	49,538	47,608	-
SDCWA Transfer	70,000	70,000	70,000	70,000
PVID Land Management Program	111,000	111,000	111,000	111,000
Off-Aqueduct Storage/Transfers • Lower Coachella Storage Program	-	-	-	-
• Chuckwalla Storage Program	-	-	-	-
• Central Arizona Banking	33,000	-	-	-
Subtotal of Proposed Programs	587,838	230,538	228,608	181,000
Maximum Supply Capability²	1,421,130	1,063,830	963,830	1,337,830
Maximum Expected CRA Deliveries³	1,250,000	1,063,830	963,830	1,250,000

1 -- Represents expected supply capability for resource programs.

2 -- Total maximum supply capability is shown to be greater than the CRA capacity. This indicates that full CRA deliveries can be maintained even with the loss or deferral of individual programs and that Metropolitan has the operational flexibility to optimize the use of programs.

3 - Total Colorado River Aqueduct Deliveries limited to 1,250,000 acre-feet per year.

Colorado River Aqueduct Deliveries Program Capabilities¹ Year 2015 (acre-feet per year)

	Event Occurring in 2015			
	Multiple Dry Years (1990-92)	Single Dry Year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
<u>Current Programs</u>				
Base Apportionment – Priority 4	550,000	550,000	550,000	550,000
IID/MWD Conservation Program	55,592	55,592	55,592	55,592
Priority 5 Apportionment	-	-	36,000	-
Coachella & All-American Canals Lining Projects	77,700	77,700	77,700	77,700
Off-Aqueduct Storage				
• Hayfield Storage Program	150,000	150,000	-	-
Subtotal of Current Programs	833,292	833,292	719,292	683,292
<u>Programs Under Development</u>				
Interim Surplus Guidelines	275,300	-	-	242,600
IID/MWD Conservation Program	49,538	49,538	49,538	49,538
SDCWA Transfer	100,000	100,000	100,000	100,000
PVID Land Management Program	111,000	111,000	111,000	111,000
Off-Aqueduct Storage/Transfers				
• Lower Coachella Storage Program	150,000	150,000	-	-
• Chuckwalla Storage Program	150,000	150,000	-	-
• Central Arizona Banking	14,000	-	-	-
Subtotal of Proposed Programs	849,838	560,538	260,538	503,138
Maximum Supply Capability²	1,683,130	1,393,830	979,830	1,186,430
Maximum Expected CRA Deliveries³	1,250,000	1,250,000	979,830	1,186,430

1 -- Represents expected supply capability for resource programs.

2 -- Total maximum supply capability is shown to be greater than the CRA capacity. This indicates that full CRA deliveries can be maintained even with the loss or deferral of individual programs and that Metropolitan has the operational flexibility to optimize the use of programs.

3 - Total Colorado River Aqueduct Deliveries limited to 1,250,000 acre-feet per year.

Colorado River Aqueduct Deliveries Program Capabilities¹ Year 2020 (acre-feet per year)

	Event Occurring in 2020			
	Multiple Dry Years (1990-92)	Single Dry Year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
<u>Current Programs</u>				
Base Apportionment – Priority 4	550,000	550,000	550,000	550,000
IID/MWD Conservation Program	55,592	55,592	55,592	55,592
Priority 5 Apportionment	-	-	24,000	-
Coachella & All-American Canals Lining Projects	77,700	77,700	77,700	77,700
Off-Aqueduct Storage • Hayfield Storage Program	150,000	150,000	-	-
Subtotal of Current Programs	833,292	833,292	707,292	683,292
<u>Programs Under Development</u>				
Interim Surplus Guidelines	-	-	-	-
IID/MWD Conservation Program	49,538	49,538	49,538	49,538
SDCWA Transfer	192,500	192,500	192,500	192,500
PVID Land Management Program	111,000	111,000	111,000	111,000
Off-Aqueduct Storage/Transfers • Lower Coachella Storage Program	150,000	150,000	-	-
• Chuckwalla Storage Program	150,000	150,000	-	-
• Central Arizona Banking	-	-	-	-
Subtotal of Proposed Programs	653,038	653,038	353,038	353,038
Maximum Supply Capability²	1,486,330	1,486,330	1,060,330	1,036,330
Maximum Expected CRA Deliveries³	1,250,000	1,250,000	1,060,330	1,036,330

1 -- Represents expected supply capability for resource programs.

2 -- Total maximum supply capability is shown to be greater than the CRA capacity. This indicates that full CRA deliveries can be maintained even with the loss or deferral of individual programs and that Metropolitan has the operational flexibility to optimize the use of programs.

3 - Total Colorado River Aqueduct Deliveries limited to 1,250,000 acre-feet per year.

Colorado River Aqueduct Deliveries Program Capabilities¹ Year 2025 (acre-feet per year)

	Event Occurring in 2025			
	Multiple Dry Years (1990-92)	Single Dry Year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
<u>Current Programs</u>				
Base Apportionment – Priority 4	550,000	550,000	550,000	550,000
IID/MWD Conservation Program	55,592	55,592	55,592	55,592
Priority 5 Apportionment	-	-	36,000	-
Coachella & All-American Canals Lining Projects	77,700	77,700	77,700	77,700
Off-Aqueduct Storage • Hayfield Storage Program	150,000	150,000	-	-
Subtotal of Current Programs	833,292	833,292	719,292	683,292
<u>Programs Under Development</u>				
Interim Surplus Guidelines	-	-	-	-
IID/MWD Conservation Program	49,538	49,538	49,538	49,538
SDCWA Transfer	200,000	200,000	200,000	200,000
PVID Land Management Program	111,000	111,000	111,000	111,000
Off-Aqueduct Storage/Transfers • Lower Coachella Storage Program	150,000	150,000	-	-
• Chuckwalla Storage Program	150,000	150,000	-	-
• Central Arizona Banking	-	-	-	-
Subtotal of Proposed Programs	660,538	660,538	360,538	360,538
Maximum Supply Capability²	1,493,830	1,493,830	1,079,830	1,043,830
Maximum Expected CRA Deliveries³	1,250,000	1,250,000	1,079,830	1,043,830

1 -- Represents expected supply capability for resource programs.

2 -- Total maximum supply capability is shown to be greater than the CRA capacity. This indicates that full CRA deliveries can be maintained even with the loss or deferral of individual programs and that Metropolitan has the operational flexibility to optimize the use of programs.

3 - Total Colorado River Aqueduct Deliveries limited to 1,250,000 acre-feet per year.

COLORADO RIVER AQUEDUCT DELIVERIES

BASIC APPORTIONMENT - PRIORITY 4

UNUSED / SURPLUS WATER – PRIORITY 5

SOURCE OF SUPPLY

Under “The Law of the River”, Metropolitan’s priorities to Colorado River water yield an annual supply that is delivered to Metropolitan’s service area via its Colorado River Aqueduct (CRA). This supply is currently available and consists of a firm annual supply of 550,000 acre-feet per year, Metropolitan’s fourth priority to California’s basic apportionment, water covered through the IID/MWD Water Conservation Program and surplus water when available. The amount of surplus water available is determined annually by the Secretary of Interior (Secretary). Metropolitan diverts surplus water in accordance with Metropolitan’s fifth priority and surplus water contract. Metropolitan conveys Colorado River water 242 miles from its Lake Havasu intake through the CRA and distribution system to Metropolitan’s terminal reservoirs. Metropolitan’s terminal reservoirs include Lake Mathews, located near the City of Riverside, and Diamond Valley Lake, located near the City of Hemet.

EXPECTED SUPPLY CAPABILITY

Metropolitan’s dependable water supply from its fourth priority apportionment of California’s Colorado River water is expected to be 550,000 acre-feet in every of the next 20 years. In other words, it is expected that the supply would be available during all year types, including wet, average, single dry-year, and multiple dry-year weather.

**Estimated Water Supplies Available for Metropolitan’s Use
Under the Basic Apportionment - Priority 4 ***
(acre-feet per year)

Year	Multiple Dry- years (1990-1992)	Single Dry- year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	550,000	550,000	550,000	550,000
2010	550,000	550,000	550,000	550,000
2015	550,000	550,000	550,000	550,000
2020	550,000	550,000	550,000	550,000
2025	550,000	550,000	550,000	550,000

* --Represents expected supply capability for the resource program.

The Secretary of the Interior has allowed Metropolitan to divert surplus water and water that is unused by Arizona and Nevada under Metropolitan’s fifth priority to California’s apportionment in the past. The Colorado River water supply available under the fifth priority is projected through to simulations of future Colorado River system reservoirs operations.

**Estimated Water Supplies Available for Metropolitan's Use
Under the Unused/Surplus Allocation - Priority 5
Without Execution of the Quantification Settlement Agreement ***
(acre-feet per year based on Bureau's of Reclamation methodology utilized in FEIS)

Year	Multiple Dry- years (1990-1992)	Single Dry- year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	-	-	19,000	480,000
2010	-	-	50,000	424,000
2015	-	-	36,000	-
2020	-	-	24,000	-
2025	-	-	36,000	-

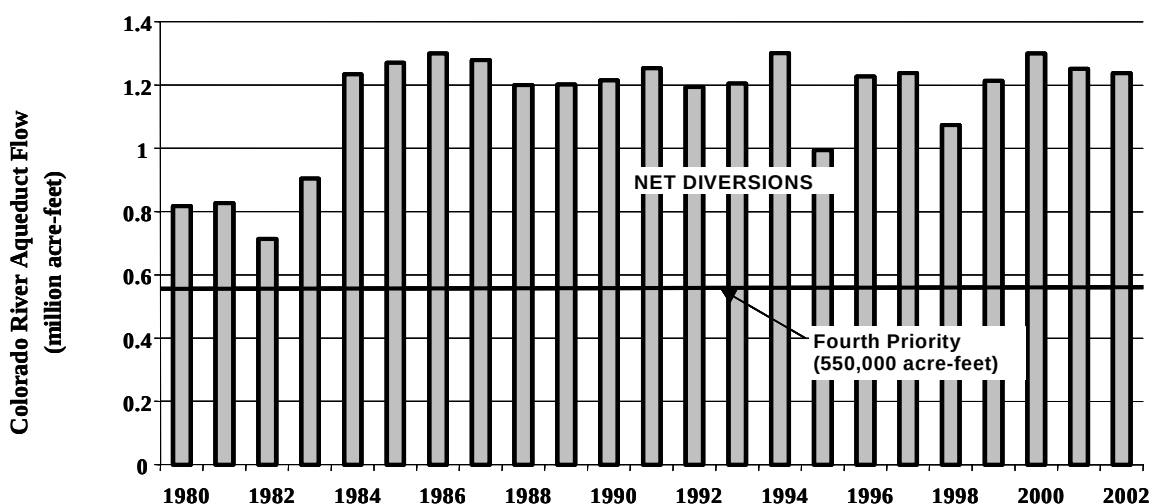
* Represents expected supply capability for the resource program.

RATIONALE FOR EXPECTED SUPPLY

Implementation Status: Water supply under Metropolitan's apportionment of Colorado River water has been delivered since 1939 and by existing contract would continue to be available in perpetuity.

Historical Record: The historical record for available Colorado River water that could be diverted by Metropolitan under its fourth priority to California's apportionment is shown in the following graph. Over the last 20 years, an average of 1.212 million acre-feet per year has been available for Metropolitan's use, enabling Metropolitan to maintain essentially full CRA delivery capability each year. The historical record indicates that Metropolitan's fourth priority supply has been available in every year and can reasonably be expected to be available over the next 20 years.

Metropolitan's Net Colorado River Diversions



Written Contracts or Other Proof: Metropolitan's entitlement to Colorado River water is based on "The Law of the River". The "Law of the River" is a collective body of laws, court decrees, compacts, agreements, regulations, and an international treaty that govern the distribution and management of Colorado River water. The documents that specifically determine Metropolitan's dependable supplies are as follows:

- **1931 Seven Party Agreement.** The 1931 Agreement recommended California's Colorado River use priorities and has no termination date. California's basic annual apportionment is 4.4 million acre-feet. Palo Verde Irrigation District (PVID), Yuma Project (Reservation Division), Imperial Irrigation District (IID), Coachella Valley Water District (CVWD), and Metropolitan are the entities that hold the priorities. These priorities are included in the contracts that the Department of the Interior executed with the California agencies in the 1930's for water from Hoover Dam. These priorities are shown in the following table. Metropolitan has the fourth priority to California's Basic Apportionment of Colorado River water and utilizes this water, 550,000 acre-feet per year, every year. In addition, Metropolitan has access to additional Colorado River water, up to 662,000 acre-feet per year, through its fifth priority in the California apportionment. Since the initial Central Arizona Project deliveries in 1985 the Secretary of the Interior determines the availability of certain fifth priority water on an annual basis. The fifth priority water consists of: (1) water apportioned to, but unused, by Arizona and Nevada, (2) surplus Colorado River water, (3) water unused by holders of priorities 1 to 3 in California, and (4) an amount of water equal to the amount conserved under the 1988 and 1989 agreements with Imperial Irrigation District. This year, the department of the Interior has chosen to deduct from the amount of water available to Metropolitan, 28,500 acre-feet, the amount projected to be used by holders of Indian and miscellaneous presented perfected rights and others adjacent to the Colorado River who divert water. Use of water by holders of Indian and miscellaneous presented perfected rights are not specifically addressed in the Seven Party Agreement. The U.S. Supreme Court in its 1964, 1979, and 2000 decrees quantified these rights.
- **Metropolitan's Basic Contracts.** Metropolitan's 1930, 1931, and 1946 basic contracts with the Secretary permit the delivery of 1.212 million acre-feet per year when sufficient water is available. Metropolitan's 1987 surplus flow contract with Reclamation permits the delivery of water to fill the remainder of the Colorado River Aqueduct when water is available. Certain programs discussed subsequently are being implemented and planned to increase assurances that this water will be available.
- **1964 Court Decree.** The 1964 U.S. Supreme Court Decree confirmed the Arizona, California, and Nevada basic apportionments of 2.8 million acre-feet per year, 4.4 million acre-feet per year and 300,000 acre-feet per year, respectively. The Decree also permits the Secretary of the Interior to make water unused by one of the states available for use in the other two states. In addition, it permits the Secretary to make available surplus water.

Priority in Seven-Party Agreement and Water Delivery Contracts

Priority	Description	Acre-feet Annually
1	Palo Verde Irrigation District gross area of 104,500 acres of land in the Palo Verde valley	
2	Yuma Project (Reservation Division) not exceeding a gross area of 25,000 acres in California	
3(a)	Imperial Irrigation District and land in Imperial and Coachella Valleys ¹ to be served by the All American Canal	
3(b)	Palo Verde Irrigation District – 16,000 acres of land on the Lower Palo Verde Mesa	
4	Metropolitan Water District of Southern California for use on the coastal plain	
	subtotal	<u>550,000</u> 4,400,000
5(a)	Metropolitan Water District of Southern California for use on the coastal plain	550,000
5(b)	Metropolitan Water District of Southern California for use on the coastal plain ²	112,000
6(a)	Imperial Irrigation District and land in Imperial and Coachella Valleys ¹ to be served by the All American Canal	
6(b)	Palo Verde Irrigation District – 16,000 acres of land on the Lower Palo Verde Mesa	300,000
7	Agricultural Use in the Colorado River Basin in California	--
	total	<u>5,362,000</u>

¹ – The Coachella Valley Water District now serves Coachella Valley

² – In 1946, the City of San Diego, San Diego County Water Authority, Metropolitan, and the Secretary of the Interior entered into a contract that merged and added the City of San Diego's rights to storage and delivery of Colorado River water to the rights of Metropolitan. The conditions of that agreement have since been satisfied.

Financing: The cost of delivering fourth priority Colorado River water is included in Metropolitan's budget. These costs are paid from water sales revenue.

Regulatory Permits for Delivery of Supply: Metropolitan's fourth priority Colorado River water is currently available. Delivery of the Basic apportionment is assured under this priority.

COLORADO RIVER AQUEDUCT DELIVERIES INTERIM SURPLUS GUIDELINES

SOURCE OF SUPPLY

On January 16, 2001, the Secretary of the Interior signed a Record of Decision to implement the Colorado River Interim Surplus Guidelines (ISG). Adoption of the ISG recognizes California's Colorado River Water Use Plan and its commitment to reduce its draw of Colorado River water.

The Bureau of Reclamation uses the ISG to determine the availability of surplus water to Metropolitan and Southern Nevada Water Authority through 2016. Under a seven-state agreement, California has 15 years to reduce its draw on the river from about 5.2 million acre-feet to its basic apportionment of 4.4 million acre-feet a year in the absence of surplus water. During the 15-year ramp-down period, California would continue to receive surplus water from the river; the annual amount depends on whether there is a flood control release, or a full or partial domestic surplus condition.

The Secretary could, and did, suspend certain provisions of the ISG because the Quantification Settlement Agreement (QSA) was not implemented by December 31, 2002, and they will remain suspended until such time as either the QSA is executed or such other actions as are required by the Secretary of the Interior are completed. The ISG also included specific benchmarks for reduced agricultural water use that must be satisfied to avoid a reduction in surplus water availability to Metropolitan. The framework for meeting those benchmarks was agreed to in mid-October 2002.

EXPECTED SUPPLY CAPABILITY

In the Final Environmental Impact Statement (EIS) for the ISG, the U.S. Bureau of Reclamation (Bureau) reported the results of its simulation of Colorado River deliveries and Lake Mead operations under the ISG and estimated the available ISG water over the next twenty years. If certain provisions of ISG were reinstated, incremental increases in water supplies would be available for Metropolitan's use during dry-year conditions. However, Metropolitan may be required to provide deliveries to Arizona to offset water shortages in Arizona caused by certain provisions of the ISG. The incremental increases or decreases in deliveries under the ISG have been estimated based on the Bureau's simulation modeling methodology and are shown as follows:

**Estimated Incremental Water Supplies Available for Metropolitan's Use
Under the Interim Surplus Guidelines
With Execution of the Quantification Settlement Agreement ***
(acre-feet per year based on Bureau's methodology utilized in FEIS)

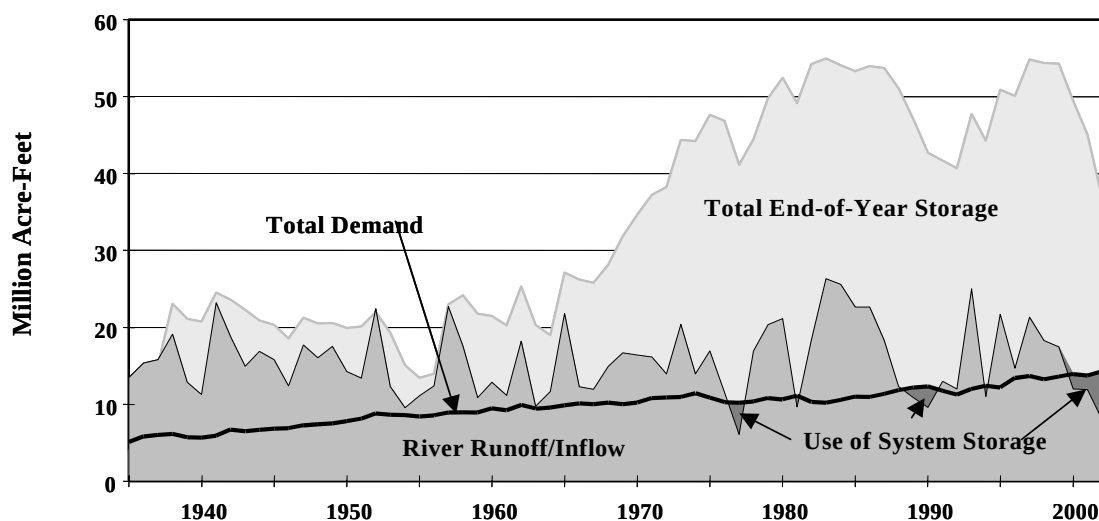
Year	Multiple Dry-years (1990-1992)	Single Dry-year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	26,300	67,600	180,500	-
2010	324,300	-	-	-
2015	275,300	-	-	242,600
2020	-	-	-	-
2025	-	-	-	-

- * After 2016 the ISG are no longer in effect and the availability of surplus and unused Colorado River water is determined by the Secretary on an annual basis under Metropolitan's Priority 5 entitlement.
- * If the ISG creates a shortage in the Central Arizona Project (CAP), Metropolitan would be obligated to pay back, up to 1.0 million acre-feet of water to the CAP over an agreed period of time.
- * Represents expected supply capability for the resource program.

RATIONALE FOR EXPECTED SUPPLY

Implementation Status: The ISG were implemented in January 2002 and extends through December 2016.

Historical Colorado River Supply & Demand



Historical Record: The historical record of Colorado River system annual runoff, demands and storage conditions demonstrate that the River's reservoirs can be managed to provide Arizona, California, and Nevada with more predictable water supply for an interim period. The historical record is depicted below. The total storage capacity in the Colorado River Basin is approximately 60 million acre-feet, almost four times the River's average annual

flow. As of the end of December 2002, total storage in the system reservoirs was over 36.8 million acre-feet, about 62% of capacity.

Written Contracts or Other Proof:

- Adoption of Interim Surplus Guidelines. The Interim Surplus Guidelines were approved by the Secretary of the Interior on January 16, 2001. The ISG are effective for a 15-year term (2002 – 2016). Certain provisions of the ISG were suspended in 2003 as the proposed Quantification Settlement Agreement (QSA) was not executed. These provisions can be reinstated with execution of the QSA or by California completing all required actions and reducing the aggregate use of Colorado River water by the Palo Verde Irrigation District, Yuma Project Reservation Division, Coachella Valley Water District and Imperial Irrigation District to meet specified targets by specified years.
- Agreement with Arizona. The Metropolitan-Arizona Interim Surplus Guidelines Agreement was executed in May 2001. Under this agreement, Metropolitan would mitigate Colorado River shortages in Arizona due to the ISG.
- Agreement with Nevada. The Metropolitan-Southern Nevada Water Authority Interim Surplus Guidelines Agreement was executed in May 2002. This agreement establishes the allocation of unused Arizona water and determines the priority for storing water in the Arizona Water Bank between Metropolitan and Southern Nevada Water Authority.

Financing: The cost of delivering the ISG water supply is included in Metropolitan's annual O&M budget and long-range financial plan.

Federal, State and Local Permits/Approvals:

- EIS for ISG. The Final Environmental Impact Statement for Interim Surplus Criteria was published by the U. S. Bureau of Reclamation in December 2000. The Record of Decision was approved by the Secretary of the Interior on January 16, 2001.

COLORADO RIVER AQUEDUCT DELIVERIES

IID - METROPOLITAN CONSERVATION PROGRAM

SOURCE OF SUPPLY

The IID-Metropolitan Conservation Program provides an annual supply that is delivered to Metropolitan's service area via its CRA over a minimum 35-year period following full program implementation. In 1988, Metropolitan executed a Conservation Agreement to fund water efficiency improvements within the Imperial Irrigation District's (IID) service area in return for the right to divert the water conserved by those improvements. The program consists of structural and non-structural measures, including the concrete lining of existing canals, the construction of local reservoirs and spill-interceptor canals, installation of non-leak gates, and automation of the distribution system. Other implemented projects include the delivery of water to farmers on a 12-hour basis rather than a 24-hour basis and improvements in on-farm water management through the installation of tailwater pumpback systems, drip irrigation systems, and linear-move irrigation systems.

EXPECTED SUPPLY CAPABILITY

The IID-Metropolitan Conservation Program has been operational since 1990 and is expected to yield 105,130 acre-feet per year of conserved water. The program agreement provides Coachella Valley Water District the option to call up to 45,130 acre-feet of conserved water if needed to meet its demands under non-surplus conditions. Based upon Coachella's water resources plans, its projected water demands through 2005 can be met by Priority 3 water delivered at current levels. As a result, it is expected that Metropolitan's dependable water supply from the IID-Metropolitan Conservation Program would be 105,130 acre-feet in the near-term. During dry conditions, without implementation of the QSA, it has been assumed, that Metropolitan and Coachella Valley Water District would share in the conserved water, with Metropolitan receiving 60,000 acre-feet and remaining conserved water being utilized by Coachella Valley Water District.

**Estimated Water Supplies Available for Metropolitan's Use
Under the IID - Metropolitan Conservation Program
Without Execution of the Quantification Settlement Agreement ***
(acre-feet per year)

Year	Multiple Dry- years (1990-1992)	Single Dry- year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	105,130	105,130	105,130	105,130
2010	55,592	55,592	57,522	105,130
2015	55,592	55,592	55,592	55,592
2020	55,592	55,592	55,592	55,592
2025	55,592	55,592	55,592	55,592

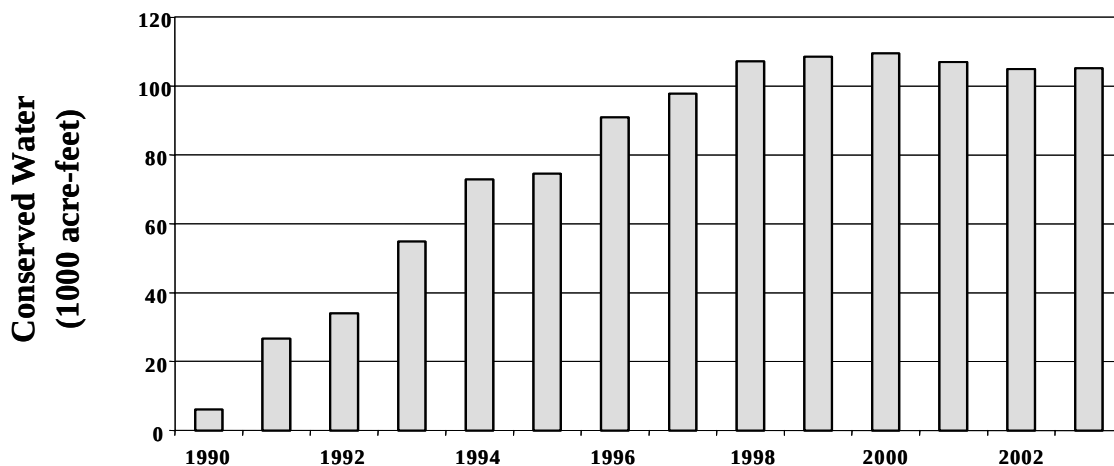
* --Represents expected supply capability for the resource program.

RATIONALE FOR EXPECTED SUPPLY

Implementation Status: The IID-Metropolitan Conservation Program has been operational since 1990 and by existing agreements will continue to be in place with a possible extension to 2077 with implementation of the QSA.

Historical Record: The historical record for conserved water that has been diverted by Metropolitan under the IID-Metropolitan Conservation Program is shown in the following graph. With operations beginning in 1990, the program has conserved up to 106,880 acre-feet per year to date, with 105,130 acre-feet available to Metropolitan in 2003 and could reach a yield of 110,000 acre-feet per year in 2004. The historical record indicates that Metropolitan's expected supply of 90,000 acre-feet per year with implementation of the quantification settlement has been available since 1996 and would be available over the next 20 years and beyond.

Imperial-Metropolitan Water Conservation Program



Written Contracts or Other Proof: Metropolitan's annual supply from the IID-Metropolitan Conservation Program is based on three agreements.

- **1988 IID-Metropolitan Conservation and Use of Conserved Water Agreement.** This Agreement was executed in December 1988 by Imperial Irrigation District and Metropolitan for a 35-year term following completion of program implementation (1998 – 2033).
- **1989 Approval Agreement.** This Agreement secured the approval of Palo Verde Irrigation District and Coachella Valley Water District to not divert an amount of water equal to the amount conserved except under limited circumstances. The Agreement was executed in December 1989.
- **1989 Supplemental Approval Agreement.** This Agreement was executed in December 1989 between Metropolitan and Coachella Valley Water District to coordinate Colorado River diversions and the use of the conserved water provided by the Program.

- Key Terms for Quantification Settlement. The Key Terms for Quantification Settlement were signed by the State of California, Metropolitan, Imperial Irrigation District, and Coachella Valley Water District in October 1999. These key terms provide the basis for completing detailed agreements to quantify the rights and uses of Colorado River water with respect to Priorities 3a and 6a of the 1931 California Seven-Party Agreement. Included in the Key Terms is the provision that approximately 90,000 acre-feet per year of water obtained through this Program would continue to be available to Metropolitan for an extended term ending as late as 2078. The remainder of the conserved water from this program (20,000 acre-feet per year) would be available to CVWD.

Financing: The water efficiency improvements under this Program have already been funded, constructed and put into operation. The cost of Program operation and maintenance and delivering the conserved water under the IID-Metropolitan Conservation Program is included in Metropolitan's 10-year capital and O&M budget.

Federal, State, and Local Permits/Approvals: A comprehensive environmental review process supported implementation.

- EIR for Program. The Imperial Irrigation District Board certified the final Environmental Impact Report for the Program in December 1986.
- EIR for Supplemental Program. The Imperial Irrigation District Board certified the final Environmental Impact Report for the Completion Program in June 1994.

COLORADO RIVER DELIVERIES HAYFIELD GROUNDWATER STORAGE PROJECT

SOURCE OF SUPPLY

The Hayfield Groundwater Storage Project (Hayfield Project) is planned to supply up to 150,000 acre-feet annually during dry year or non-surplus Colorado River conditions. The Hayfield Project is also planned to provide additional supplemental supplies from previously stored CRA water during normal year conditions. During wet and surplus years, Metropolitan would replenish the Hayfield Project from the CRA.

EXPECTED SUPPLY CAPABILITY:

It is estimated that the Hayfield aquifer can hold up to 800,000 acre-feet of additional CRA water. This water could be extracted during dry year conditions at a rate of up to 150,000 acre-feet per year. This supply would be available to Metropolitan in any year, but delivery is constrained by the existing capacity of the CRA. Incremental deliveries of water to the CRA from the Hayfield Project can be made during wet or normal years depending on operating conditions along the CRA. For example, the Hayfield Project may provide operational efficiencies in meeting delivery obligations at Whitewater or other locations along the CRA.

RATIONALE FOR EXPECTED SUPPLY

As an integral part of the Colorado River resource strategy for storage programs, the Hayfield Project could be used to assist in keeping the CRA full in 2010 and following years when surpluses may not be available. The water supply available to Metropolitan is presented below:

**Estimated Water Supplies Available for Metropolitan's Use
Under the Hayfield Groundwater Storage Program ***
(acre-feet per year)

Year	Multiple Dry- years (1990-1992)	Single Dry- year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	45,000	45,000	-	-
2010	150,000	150,000	-	-
2015	150,000	150,000	-	-
2020	150,000	150,000	-	-
2025	150,000	150,000	-	-

* -- Represents expected supply capability for the resource program.

Program Facilities: The Hayfield Program would consist of facilities in two general areas, as follows:

- 390 acres of spreading basins;
- A well field, consisting of 40 new wells, to extract water from the aquifer and pump it back to the Colorado River Aqueduct;

Historical Record: Metropolitan's Board of Directors authorized implementation of the Hayfield Project in April 1999. Approximately 67,000 acre-feet of water have been stored in the Hayfield aquifer since the Project was approved.

Written Contracts or Other Proof: The Hayfield Project has been implemented as a component of California's Colorado River Water Use Plan. The following actions have occurred:

- 1998 Memorandum of Understanding (MOU) between Metropolitan and the U. S. Department of the Interior Bureau of Land Management (BLM). This MOU describes the intent of both Metropolitan and the BLM to exchange properties overlying the Hayfield Basin in order to support the implementation of the Hayfield Project. Approximately 3,800 acres of Federally owned property in the Hayfield valley would be exchanged with like properties held by Metropolitan. The purpose of this exchange of properties is to manage the underlying groundwater resource and protect water quality.
- April 1999 Board of Directors Adoption of the CEQA Document. Metropolitan's Board of Directors adopted the Mitigated Negative Declaration for the Hayfield Project at their regularly scheduled Board of Directors meeting in April 1999.
- June 2000 Board of Directors Approval of the Hayfield Project. Metropolitan's Board of Directors approved the Hayfield Project and appropriated an additional \$7.35 million for land acquisition, preliminary design, continued water quality monitoring, additional aquifer testing and other tasks. The Board authorized storage of up to 800,000 acre-feet of CRA water.
- October 2001 Reimbursement Agreement Number 4600001909 from the California Department of Water Resources. Metropolitan and the Department of Water Resources entered into a Reimbursement Agreement in accordance with the California Water Code Section 15262. This section of Water Code calls for the DWR to reimburse up to \$35 million for groundwater conjunctive use programs along the Colorado River Aqueduct. This Agreement was effective October 9, 2001.
- December 2002 Board of Directors Appropriation of Design, Testing and Construction Funds. Metropolitan authorized expenditure of an additional \$18 million to implement the Hayfield Project. The action increased the authorized funding to implement the Hayfield Project to more than \$27 million. Schedule on line date for the Hayfield Project is 2007.

Financing: The capital cost of the Hayfield Project is estimated to be approximately \$75 million. This budget is included in Metropolitan's 10-year capital budget and would be financed through a combination of bonds and water sales revenue. A portion of this capital cost would be reimbursed to Metropolitan from Agreement No. 4600001909 with the DWR.

Federal, State and Local Permits for Construction: Metropolitan has applied for and requested all appropriate Federal, State and Local permits for construction. For example, Metropolitan is currently conducting long term water quality baseline monitoring in support of a possible Source Water Permit application from the Department of Health Services. Monitoring wells and production wells were completed in accordance with Riverside County permitting procedures. Necessary environmental permits would be acquired as needed.

COLORADO RIVER DELIVERIES

ARIZONA/METROPOLITAN GROUNDWATER BANKING PROGRAM

SOURCE OF SUPPLY

Interstate off stream water banking of unused basic and/or surplus Colorado River water apportionments provides an added water management opportunity for meeting the water supply needs of Arizona, California, and Nevada. In 1992, Metropolitan entered into an agreement with the Central Arizona Water Conservation District (CAWCD) to implement a demonstration program that allowed unused Colorado River water to be stored in central Arizona aquifers, thus capturing water that otherwise would not have been diverted due to future flood control releases from Lake Mead. Unused capacity in the Central Arizona Project (CAP) was used to transport Colorado River water to central Arizona. The Southern Nevada Water Authority also participated in the program.

In 1996, the Arizona Legislature created the Arizona Water Banking Authority (AWBA). It was created specifically to protect Arizona's supply of Colorado River water and to provide opportunities for interstate banking. Its major objective is to store Arizona's unused Colorado River apportionment. The statute provides a role for interstate storage programs, limiting the annual recovery amount to no more than 100,000 acre-feet in total for entities in California and Nevada.

In November 1999, the Department of the Interior issued a Final Rule to facilitate voluntary interstate offstream storage of Colorado River water among Arizona, California and Nevada. The Final Rule establishes a framework for the Secretary to follow in considering, participating in, and administering storage and interstate release agreements among entities in Arizona, California and Nevada. The final rule permits state-authorized entities in Nevada and California to have Colorado River water stored off stream in groundwater basins. In years in which Nevada and/or California entities wish to receive the benefit of stored water, Arizona would reduce its diversion of Colorado River water resulting in intentionally created unused apportionment (ICUA). The ICUA would be made available to the Secretary for release and use in another of the three states that is party to a storage and interstate release agreement.

EXPECTED SUPPLY CAPABILITY

When Metropolitan wishes to recover the stored water, expected to be in either 2003 or 2004, CAWCD would reduce its CAP diversions, and the Secretary of the Interior would allocate the unused CAP apportionment to Metropolitan. This mechanism can be exercised in a year when Arizona's Colorado River supply is at least 2.8 million acre-feet. The maximum recoverable amount is 15,000 acre-feet per month. When Metropolitan recovers any of the water stored under this program, Metropolitan's storage credits would be debited by 110 percent of the recovered water. The factor of 110 percent is to comply with Arizona's state law, which requires that a portion of any stored water be left underground. As of December 2002, Metropolitan had a storage account balance of 89,000 acre-feet of which about 81,000 acre-feet is available for return to Metropolitan (after losses). This amount of

water is scheduled for use prior to 2005 and is not considered available in the 20-year assessment of the report.

AWBA and Metropolitan are discussing the implementation of a long-term program. Water Supplies available under the long-term program are estimated as follows:

**Estimated Water Supplies Available for Metropolitan's Use
Under a Long-term Arizona Groundwater Banking Program ***
(acre-feet per year)

Year	Multiple Dry- years (1990-1992)	Single Dry- year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	-	-	-	-
2010	33,000	-	-	-
2015	14,000	-	-	-
2020	-	-	-	-
2025	-	-	-	-

* -- Represents expected supply capability for the resource program.

RATIONALE FOR EXPECTED SUPPLY

Historical Record: This Program is one of many identified in California's Colorado River Water Use Plan. As of December 2002, Metropolitan has a storage account balance of 89,000 acre-feet under the demonstration program of which about 81,000 acre-feet is available for return to Metropolitan (after losses). While water has been stored, it has not been necessary to have it withdrawn to date and remains available for use in the future.

Written Contracts or Other Proof:

- 1992 Central Arizona Water Conservation District-Metropolitan Agreement. This Agreement was executed in 1992 by the Central Arizona Water Conservation District and Metropolitan to store unused Colorado River water in the groundwater basins underlying central Arizona through 2000.
- 1999 Department of the Interior final rule. This final rule established a framework for the Secretary to follow in considering, participating in, and administering new storage and interstate release agreements among entities in Arizona, California and Nevada.

Financing: The total estimated cost of this program is approximately \$270 million. The remaining estimated program cost is \$262 million that would be paid from Metropolitan's Water Transfer Fund.

Federal, State, and Local Permits for Construction: The project which is the subject of the 1992 agreement was exempt from the provisions of CEQA as it consisted of a minor alteration of the operation of existing facilities. The Bureau of Reclamation issued a Final

Programmatic Environmental Assessment for the 1999 final rule. A Finding of No Significant Impact was prepared as part of completion of the NEPA process for the final rule.

COLORADO RIVER DELIVERIES

ALL AMERICAN CANAL AND COACHELLA CANAL LINING PROJECTS

SOURCE OF SUPPLY

The All American Canal and Coachella Canal Lining Projects can provide an annual supply that is delivered to Metropolitan's service area via the Colorado River Aqueduct. In 1988, Public Law 100-675 authorized the Secretary of the Interior to reduce seepage from portions of the existing earthen All American Canal and to concrete line the Coachella Canal. The All American Canal Lining Project consists of constructing a concrete-lined canal parallel to 23 miles of the existing All American Canal from Pilot Knob to Drop 3. The Coachella Canal Lining Project consists of lining 33 miles of the Coachella Canal from Siphon 7 to 14 and from Siphon 15 to 32. The law also authorized the Secretary to enter into a construction or funding agreement with one or more of the California contractors holding a delivery contract for Colorado River water.

EXPECTED SUPPLY CAPABILITY

The All American Canal and Coachella Canal Lining Projects are expected to yield 77,700 acre-feet per year of supply to Metropolitan's service area via the Colorado River Aqueduct, other than when surplus Colorado River water is available for California's use when IID elects to use such water and such use does not adversely affect Metropolitan. Metropolitan would receive 56,200 acre-feet per year from the All American Canal Lining Project and 21,500 acre-feet per year from the Coachella Canal Lining Project for up to 75 years. The water supply that would be available to Metropolitan is presented below:

**Estimated Water Supplies Available for Metropolitan's Use
Under the Coachella & All American Canal Lining Projects ***
(acre-feet per year)

Year	Multiple Dry- years (1990-1992)	Single Dry- year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	21,200	21,200	21,200	21,200
2010	77,700	77,700	77,700	77,700
2015	77,700	77,700	77,700	77,700
2020	77,700	77,700	77,700	77,700
2025	77,700	77,700	77,700	77,700

* -- Represents expected supply capability for the resource program.

RATIONALE FOR EXPECTED SUPPLY

Implementation Status: Design of the Coachella Canal Lining Project was 90 percent completed as of January 2003. An Advance Funding Agreement to complete the Environmental Commitment Plan and a programmatic agreement with the State Historic Preservation Office for the Project, and initiate All American Canal Lining Project management was executed in December 2002 by the Bureau of Reclamation, IID and Metropolitan.

Written Contracts: The following actions have been taken to proceed towards project implementation.

- 1988, Public Law 100-675. Authorized the Department of the Interior to reduce seepage from the existing earthen All American and Coachella Canals. This law calls for the conservation of water from lining the canals and the delivery of this conserved water to the party who pays for the linings.
- 2001, California Department of Water Resources-Metropolitan Funding Agreement. Reimburse Metropolitan for project work necessary to construct the lining of the Coachella Canal in an amount not to exceed \$74 million.
- 2001, California Department of Water Resources-IID Funding Agreement. Reimburse Imperial Irrigation District for project work necessary to construct a lined All American Canal in an amount not exceed \$126 million.
- 2002, Metropolitan-CVWD Assignment and Delegation of Design Obligations Agreement. Assigns design of the Coachella Canal Lining Project to CVWD.
- 2002, Metropolitan-CVWD Financial Arrangements Agreement for Design Obligations. Obligates Metropolitan to advance funds to CVWD to cover costs for Coachella Canal Lining Project design and CVWD to invoice Metropolitan to permit the Department of Water Resources to be billed for work completed.

Financing: The advancing of funds for the Coachella Canal Lining Project is included in Metropolitan's long-range financial plan and capital investment plan. Metropolitan would initially fund this project. Up to \$200 million of the costs of constructing the projects would be reimbursed by the State of California in accordance with the executed funding agreements.

Federal, State and Local Permits for Construction

- March 1994. The Bureau of Reclamation released the Final EIS/EIR for the All American Canal Lining Project.
- April 2001. The Bureau of Reclamation released the Final EIS/EIR for the Coachella Canal Lining Project.

COLORADO RIVER DELIVERIES SAN DIEGO WATER TRANSFER

SOURCE OF SUPPLY

On April 29, 1998, the Imperial Irrigation District (IID) and the San Diego County Water Authority (Authority) executed the Agreement for Transfer of Conserved Water (Transfer Agreement). Under this market-based transaction, the Authority would pay IID a unit price to arrange for water to be conserved within its service area and transfer the conserved water to the Authority. To conserve water IID would (i) contract with landowners in its service area to undertake water conservation efforts and reduce its use of Colorado River water, and/or (ii) make improvements to its distribution system in order to reduce system losses. To facilitate the Authority's receipt of water from IID, in November 1998 Metropolitan and the Authority entered into an Exchange Agreement under which the Authority would transfer the water received from IID to Metropolitan for diversion into the Colorado River Aqueduct. In exchange, Metropolitan would deliver to the Authority a like amount and quality of water from whatever sources and using such facilities as Metropolitan determines.

EXPECTED SUPPLY CAPABILITY

Under the Exchange Agreement Metropolitan would annually receive 200,000 acre-feet of Colorado River water for diversion into the Colorado River Aqueduct of water IID conserves and transfers to the Authority under the Transfer Agreement. Under the ramp-up schedule, 200,000 acre-feet of water would be available annually by the year 2021. The Transfer Agreement between the Authority and IID has an initial term of 45 years and may be extended to a total of 75 years. The Exchange Agreement between Metropolitan and the Authority has a term of 30 years. The first increment of 10,000 acre-feet may be available as soon as 2003. The maximum water supply that would be available to Metropolitan is presented below:

**Estimated Water Supplies Available for Metropolitan's Use
Under the San Diego Water Transfer Program ***
(acre-feet per year)

Year	Multiple Dry- years (1990-1992)	Single Dry- year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	30,000	30,000	30,000	30,000
2010	70,000	70,000	70,000	70,000
2015	100,000	100,000	100,000	100,000
2020	192,500	192,500	192,500	192,500
2025	200,000	200,000	200,000	200,000

* -- Represents expected supply capability for the resource program.

RATIONALE FOR EXPECTED SUPPLY

Historical Record: Under the 1988 IID-Metropolitan Conservation and Use of Conserved Water Agreement, IID has been conserving water within its service area at Metropolitan's cost and making the conserved water available for diversion by Metropolitan. With operations beginning in 1990, the program has conserved up to 106,880 acre-feet per year to date.

Written Contracts or Other Proof: Metropolitan's annual supply from the proposed IID/Authority transfer is based primarily on two agreements.

- 1998 Agreement for Transfer of Conserved Water by and between IID and the Authority, 2000 Amendment no. 1 and 2, 2001 Amendment No. 3, and 2003 Fourth Amendment. This Agreement provides for a market-based transaction in which the Authority would pay IID a unit price for water conserved by IID and transferred to the Authority.
- 1998 Authority/Metropolitan Exchange Agreement. This Agreement provides for the Authority to transfer the water received from IID to Metropolitan for diversion into the Colorado River Aqueduct. In exchange, Metropolitan would deliver to the Authority a like amount and quality of water from whatever sources and using such facilities as Metropolitan determines.

Financing: Under the first 20 years of the Exchange Agreement the Authority would pay to Metropolitan \$90 (increasing by 1.55 percent for every year after 1998) for each acre-foot Metropolitan delivers to the Authority in exchange for receiving water conserved by IID. During the final 10 years of the Exchange Agreement the Authority would pay to Metropolitan \$80 (increasing by 1.44 percent for every year after 1998) for each acre foot Metropolitan delivers to the Authority in exchange for receiving water conserved by IID. To offset the discount provided by Metropolitan to the Authority under the Exchange Agreement, the State Legislature enacted and the Governor approved SB 1765 in 1998, which appropriated \$200 million from the State's General Fund for lining portions of the All-American and Coachella canals and appropriated \$35 million to help fund groundwater storage projects along the Colorado River Aqueduct. Assuming Metropolitan receives the yield from these projects, the State appropriations would make Metropolitan financially whole with respect to the Exchange Agreement.

Federal, State and Local Permits/Approvals: Environmental review has been undertaken and permits are sought by IID before it would implement the transfer program.

- EIR/EIS for Program. IID certified its Final EIR/EIS for the IID Water Conservation and Transfer Project on June 28, 2002. The June 2002 Final EIR/EIS incorporated the Draft EIR/EIS, together with modifications and additions thereto set forth in an Errata, copies of all written and oral comments received on the Draft EIR/EIS, and responses to those comments. In order to comply with Council on Environmental Quality regulations implementing NEPA, related to the use of errata, Reclamation prepared a fully integrated, stand alone October 2002 Final EIR/EIS. IID published an Addendum to the Final EIR for the IID Water Conservation and Transfer Project and its Mitigation Monitoring and Reporting Program for the Project in December 2002. A Record of Decision must still be issued by the Bureau of Reclamation.

- ESA/CESA Permitting. The transfer could proceed with ESA/CESA permits from both the US Fish & Wildlife Service and the California Department of Fish & Game as soon as the program was implemented. IID would then seek an HCP from the US Fish & Wildlife Service and an NCCP from the California Department of Fish & Game to be developed while the transfer was underway. IID would receive the assistance from San Diego County Water Authority and Metropolitan and Coachella Valley Water District in seeking this broader ESA/CESA coverage. IID has developed a Habitat Conservation Plan (HCP) in consultation with the US Fish & Wildlife Service, a draft of which is appended to the June 2002 and October 2002 Final EIR/EIS.
- State Water Resources Control Board (SWRCB) Petition. IID requested the SWRCB to make certain findings before it would implement the IID/Authority Water Transfer Agreement. The hearing process resulted in SWRCB Order WRO 2002 – 0013 in October 2002 and SWRCB Order WRO 2002 – 16 in December 2002. The SWRCB conditionally approved the joint petition filed by IID and the Authority for approval of a long-term transfer of conserved water from IID to SDCWA pursuant to an agreement between IID and SDCWA, and conditionally approved a petition filed by IID to change the point of diversion, place of use, and purpose of use under Permit No. 7643. This Order was conditional upon execution of the QSA by December 31 2002 and thus is not effective at the time. For the transfer to proceed, the SWRCB order would need to be reinstated.

COLORADO RIVER DELIVERIES

PALO VERDE IRRIGATION DISTRICT LAND MANAGEMENT, CROP ROTATION AND WATER SUPPLY PROGRAM

SOURCE OF SUPPLY

The Palo Verde Irrigation District (PVID) and Metropolitan have entered into Principles of Agreement for a Land Management, Crop Rotation and Water Supply Program. Metropolitan would develop a flexible water supply for 35 years and assist in stabilizing the local farm economy in the Palo Verde Valley. PVID has the first priority for Colorado River use under the U.S. water delivery contracts.

EXPECTED SUPPLY CAPABILITY

It is estimated that the PVID/Metropolitan Program would provide up to 111,000 acre-feet per year of additional Colorado River water. This water would be available in any year as needed and in accordance with the provisions described in the Principles of Agreement. The water supply available to Metropolitan is presented below:

**Estimated Water Supplies Available for Metropolitan's Use
Under the Palo Verde Irrigation District Land Management,
Crop Rotation and Water Supply Program ***
(acre-feet per year)

Year	Multiple Dry- years (1990-1992)	Single Dry- year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	111,000	111,000	111,000	111,000
2010	111,000	111,000	111,000	111,000
2015	111,000	111,000	111,000	111,000
2020	111,000	111,000	111,000	111,000
2025	111,000	111,000	111,000	111,000

* -- Represents expected supply capability for the resource program.

RATIONALE FOR EXPECTED SUPPLY

Historical Record: Metropolitan and PVID have tested the concept of developing a water supply for Metropolitan by entering into an agreement in 1992. Agreements were signed with landowners and lessees in the Palo Verde Valley to forego irrigation for a two-year period from August 1992 to July 1994. Water unused by PVID, in the amount of 186,000 acre-feet was stored in Lake Mead for Metropolitan. Both PVID and Metropolitan signed approved Principles of Agreement in 2001. The Final Environmental Impact Report for the Proposed Palo Verde Irrigation District Land management, Crop Rotation and Water Supply Program was issued by PVID in September 2002. The next step for the program is to enter into agreements through which the farmers would manage lands and rotate crops making a water supply available to Metropolitan.

Written Contracts or Other Proof:

- 2001 Principles of Agreement. Metropolitan's Board of Directors approved Principles of Agreement in 2001.

Financing: The cost of the PVID/Metropolitan Program is included in Metropolitan's O&M budget and would be funded from the Water Transfer Fund.

Federal, State and Local Permits: A Notice of Preparation for the PVID/Metropolitan Program was published on October 29, 2001. The CEQA documentation was completed in September 2002.

COLORADO RIVER DELIVERIES LOWER COACHELLA VALLEY GROUNDWATER STORAGE PROGRAM

SOURCE OF SUPPLY

Metropolitan has identified the feasibility of developing a conjunctive use storage program in the Lower Coachella groundwater basin. The basin is currently in an over-drafted condition. The Lower Coachella groundwater basin underlies the service area of the Coachella Valley Water District (CVWD). The CVWD transports its Colorado River entitlement by way of the All American and Coachella Canal systems. The projected growth for the CVWD service area is expected to gradually increase to a build out to 2015. Wet year hydrology on the Colorado River could provide surplus supplies even without the Interim Surplus Guidelines in place. This program provides Metropolitan with the flexibility of being able to store water while continuing to convey a full CRA.

EXPECTED SUPPLY CAPABILITY

The Program has potential to provide up to 500,000 acre-feet of storage capacity. The Program is expected to produce 100,000 to 175,000 acre-feet per year of dry year supplies with a scheduled on-line date by 2015, the water supply that could be available to Metropolitan is presented below:

**Estimated Water Supplies Available for Metropolitan's Use
Under the Lower Coachella Groundwater Storage Program ***
(acre-feet per year)

Year	Multiple Dry- years (1990-1992)	Single Dry- year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	-	-	-	-
2010	-	-	-	-
2015	150,000	150,000	-	-
2020	150,000	150,000	-	-
2025	150,000	150,000	-	-

* -- Represents expected supply capability for the resource program.

RATIONALE FOR EXPECTED SUPPLY

This Program is one of many identified in California's Colorado River Water Use Plan. If implemented, it would assist in positioning California to reduce its use of Colorado River water.

The storage and dry-year program capacity does not influence the ability to maintain a full Colorado River Aqueduct in the future. However, the use of Colorado River water to put

water into the Lower Coachella Valley Storage Program may be influenced by other Colorado River related storage/transfer programs. Program storage and extraction capacities as well as up-front payments and capital outlays for construction may impact Metropolitan's budget.

Written Contracts or Other Proof: The terms of the proposed program agreement must be negotiated with CVWD.

Financing: This program would be funded through the Water Transfer Fund

Environmental Review: The implementation of a groundwater storage project in Coachella Valley could result in the availability of additional Colorado River water to allow for the reduction in groundwater use so that current rates of groundwater overdraft would be reduced. The feasibility report identified the environmental checklist in accordance to CEQA guidelines.

COLORADO RIVER DELIVERIES CHUCKWALLA GROUNDWATER STORAGE PROGRAM

SOURCE OF SUPPLY

The Chuckwalla Groundwater Basin Feasibility Study (Chuckwalla Study) was identified in Phase I investigations as a groundwater basin along the Colorado River Aqueduct having the potential to store available supplies of CRA water. Up to 150,000 acre-feet per year would be returned to the CRA in dry years or non-surplus Colorado River conditions. Metropolitan has initiated the Chuckwalla Study, which will investigate the potential for such a program. This feasibility study is in progress with emphasis on ambient groundwater quality conditions. During wet and surplus years, Metropolitan would replenish the Upper Chuckwalla Basin with available deliveries from the CRA. The Upper Chuckwalla Valley is located near Metropolitan's Eagle Mountain Pumping Plant.

EXPECTED SUPPLY CAPABILITY:

It is estimated that the Upper Chuckwalla groundwater basin could hold up to 500,000 acre-feet of CRA water. This water would be extracted during dry year conditions at a rate of up to 150,000 acre-feet per year. This supply would be available to Metropolitan in any year, but delivery is constrained by the existing capacity of the CRA, the water supply that would be available to Metropolitan under this program is presented below:

**Estimated Water Supplies Available for Metropolitan's Use
Under the Chuckwalla Groundwater Storage Program ***
(acre-feet per year)

Year	Multiple Dry- years (1990-1992)	Single Dry- year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	-	-	-	-
2010	-	-	-	-
2015	150,000	150,000	-	-
2020	150,000	150,000	-	-
2025	150,000	150,000	-	-

* -- Represents expected supply capability for the resource program.

RATIONALE FOR EXPECTED SUPPLY:

As an integral part of the Colorado River resource strategy for storage programs, deliveries of water previously stored under the Chuckwalla Project could be used to assist in keeping the CRA full in 2015 and the following years during dry years.

Program Facilities: The Chuckwalla Project would consist of facilities in three general areas, as follows:

- 400 acres of spreading basins;

- Water conveyance facilities, including approximately 10 miles of pipeline and a pumping station, to pump water from the extraction wells to the Colorado River Aqueduct; and
- A well field, consisting of 40 new wells to extract water from the aquifer and pump it back to the Colorado River Aqueduct.

Historical Record: Metropolitan's Board of Directors approved the Chuckwalla Study in June 2000. A consultant has been selected and has begun conducting this feasibility study. The Chuckwalla Study is scheduled to be completed in 2003

Written Contracts or Other Proof: The Chuckwalla Study has been initiated as a potential component of California's Colorado River Water Use Plan. The following actions have occurred:

- 1998 Phase I Feasibility Report for Off stream Storage on the Colorado River Aqueduct. This Report identified the Upper Chuckwalla Basin as having the potential for off stream storage of CRA water.
- June 2000 Board of Directors Approved the Upper Chuckwalla Feasibility Study. Metropolitan's Board of Directors approved the Upper Chuckwalla Feasibility Study, made a CEQA determination and appropriated \$2 million to complete geophysical, hydrogeological, infiltration, water quality and risk assessment investigations for the study.
- June 2001 Department of Water Resources awarded Metropolitan an AB 303 Study Grant of \$250,000 to complete the Upper Chuckwalla Feasibility Investigations. In accordance with AB 303, a planning grant of \$250,000 was awarded to Metropolitan for the Upper Chuckwalla Feasibility Study. Metropolitan is currently executing the contract for this grant.
- March 2001 Consultant Contract Awarded. Metropolitan's Board of Directors approved a contract to conduct feasibility investigations. An agreement was executed in May 2001 and the feasibility study is in progress.

Financing: The cost of the Upper Chuckwalla Feasibility Study is estimated to be approximately \$2 million. This amount is included in Metropolitan's 10 year capital and O&M budget. In addition, an AB 303 planning grant of \$250,000 will be reimbursed to Metropolitan by contract with the DWR.

Federal, State and Local Permits for Construction: Metropolitan would acquire all appropriate Federal, State and Local permits for construction. For example, Metropolitan is currently conducting long term water quality baseline monitoring in support of a possible Source Water Permit application from the Department of Health Services. Monitoring wells and production wells would be completed in accordance with Riverside County permitting procedures. Additional necessary environmental permits would be acquired as needed.

California Aqueduct Deliveries

California Aqueduct Deliveries Program Capabilities*

Year 2005
(acre-feet per year)

	Event Occurring in 2005			
	Multiple Dry Years (1990-92)	Single Dry Year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
<u>Current Programs</u>				
SWP Deliveries	794,700	418,000	1,549,100	1,741,000
San Luis Reservoir Carryover	-	50,000	128,600	-
Advance Delivery with Coachella Valley WD and Desert WA	24,600	12,300	46,100	61,200
Semitropic Program	107,000	107,000	-	-
Arvin Edison Program	90,000	90,000	-	-
San Bernardino Valley MWD Program	54,000	70,000	57,000	80,000
Kern Delta WD Program	20,000	50,000	-	-
Market Transfer Options	200,000	200,000	-	-
Subtotal of Current Programs	1,290,300	997,300	1,780,800	1,882,200
<u>Programs Under Development</u>				
Delta Improvements	-	-	-	-
Additional Transfers/Storage	20,000	20,000	20,000	20,000
• San Bernardino Valley MWD Conjunctive-use Program • Westside Valley Transfers • Eastside Valley Transfers				
Subtotal of Proposed Programs	20,000	20,000	20,000	20,000
Maximum Supply Capability	1,310,300	1,017,300	1,800,800	1,902,200

* -- Represents expected supply capability for resource programs.

California Aqueduct Deliveries Program Capabilities*

Year 2010

(acre-feet per year)

	Event Occurring in 2010			
	Multiple Dry Years (1990-92)	Single Dry Year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
<u>Current Programs</u>				
SWP Deliveries	794,700	418,000	1,549,100	1,741,000
San Luis Reservoir Carryover	55,800	50,000	131,000	-
Advance Delivery with Coachella Valley WD and Desert WA	24,600	12,300	46,100	61,200
Semitropic Program	107,000	107,000	-	-
Arvin Edison Program	90,000	90,000	-	-
San Bernardino Valley MWD Program	54,000	70,000	57,000	80,000
Kern Delta WD Program	50,000	50,000	-	-
Market Transfer Options	200,000	200,000	-	-
Subtotal of Current Programs	1,376,100	997,300	1,783,200	1,882,200
<u>Programs Under Development</u>				
Delta Improvements	45,000	45,000	45,000	45,000
Additional Transfers/Storage	150,000	150,000	20,000	20,000
• San Bernardino Valley MWD Conjunctive-use Program				
• Westside Valley Transfers				
• Eastside Valley Transfers				
Subtotal of Proposed Programs	195,000	195,000	65,000	65,000
Maximum Supply Capability	1,571,100	1,192,300	1,848,200	1,947,200

* -- Represents expected supply capability for resource programs.

California Aqueduct Deliveries
Program Capabilities*
Year 2015
(acre-feet per year)

	Event Occurring in 2015			
	Multiple Dry Years (1990-92)	Single Dry Year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
<u>Current Programs</u>				
SWP Deliveries	794,700	418,000	1,538,100	1,741,000
San Luis Reservoir Carryover	25,800	75,000	82,700	-
Advance Delivery with Coachella Valley WD and Desert WA	24,600	12,300	46,100	61,200
Semitropic Program	107,000	107,000	-	-
Arvin Edison Program	90,000	90,000	-	-
San Bernardino Valley MWD Program	54,000	70,000	57,000	80,000
Kern Delta WD Program	50,000	50,000	-	-
Market Transfer Options	-	-	-	-
Subtotal of Current Programs	1,146,100	822,300	1,723,900	1,882,200
<u>Programs Under Development</u>				
Delta Improvements	200,000	200,000	200,000	200,000
Additional Transfers/Storage	190,000	190,000	20,000	20,000
• San Bernardino Valley MWD Conjunctive-use Program • Westside Valley Transfers • Eastside Valley Transfers				
Subtotal of Proposed Programs	390,000	390,000	220,000	220,000
Maximum Supply Capability	1,536,100	1,212,300	1,943,900	2,102,200

* -- Represents expected supply capability for resource programs.

California Aqueduct Deliveries Program Capabilities*

Year 2020
(acre-feet per year)

	Event Occurring in 2020			
	Multiple Dry Years (1990-92)	Single Dry Year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
<u>Current Programs</u>				
SWP Deliveries	794,700	418,000	1,530,700	1,741,000
San Luis Reservoir Carryover	-	75,000	81,100	-
Advance Delivery with Coachella Valley WD and Desert WA	24,600	12,300	46,100	61,200
Semitropic Program	107,000	107,000	-	-
Arvin Edison Program	90,000	90,000	-	-
San Bernardino Valley MWD Program	54,000	70,000	57,000	80,000
Kern Delta WD Program	50,000	50,000	-	-
Market Transfer Options	-	-	-	-
Subtotal of Current Programs	1,120,300	822,300	1,714,900	1,882,200
<u>Programs Under Development</u>				
Delta Improvements	200,000	200,000	200,000	200,000
Additional Transfers/Storage	190,000	190,000	20,000	20,000
• San Bernardino Valley MWD Conjunctive-use Program • Westside Valley Transfers • Eastside Valley Transfers				
Subtotal of Proposed Programs	390,000	390,000	220,000	220,000
Maximum Supply Capability	1,510,300	1,212,300	1,934,900	2,102,200

* -- Represents expected supply capability for resource programs.

California Aqueduct Deliveries Program Capabilities*

Year 2025
(acre-feet per year)

	Event Occurring in 2025			
	Multiple Dry Years (1990-92)	Single Dry Year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
<u>Current Programs</u>				
SWP Deliveries	794,700	418,000	1,523,300	1,741,000
San Luis Reservoir Carryover	-	75,000	79,500	-
Advance Delivery with Coachella Valley WD and Desert WA	24,600	12,300	46,100	61,200
Semitropic Program	107,000	107,000	-	-
Arvin Edison Program	90,000	90,000	-	-
San Bernardino Valley MWD Program	54,000	70,000	57,000	80,000
Kern Delta WD Program	50,000	50,000	-	-
Market Transfer Options	-	-	-	-
Subtotal of Current Programs	1,120,300	822,300	1,705,900	1,882,200
<u>Programs Under Development</u>				
Delta Improvements	200,000	200,000	200,000	200,000
Additional Transfers/Storage	190,000	190,000	20,000	20,000
• San Bernardino Valley MWD Conjunctive-use Program • Westside Valley Transfers • Eastside Valley Transfers				
Subtotal of Proposed Programs	390,000	390,000	220,000	220,000
Maximum Supply Capability	1,510,300	1,212,300	1,925,900	2,102,200

* -- Represents expected supply capability for resource programs.

CALIFORNIA AQUEDUCT DELIVERIES STATE WATER PROJECT DELIVERIES

SOURCE OF SUPPLY

The State Water Project provides imported water to the Metropolitan service area and has historically provided from 25 to 50 percent of Metropolitan's supplies. In accordance with its contract with the Department of Water Resources (DWR), Metropolitan has under contract a Table A allocation of 2,011,500 acre-feet per year from the State Water Project. Actual deliveries have never reached this amount and depend on availability of supplies as determined by DWR. The availability of SWP supplies for delivery through the California Aqueduct over the next 23 years is estimated according to the historical record of hydrologic conditions, existing system capabilities, requests of the state water contractors and SWP contract provisions for allocating Table A, Article 21 and other SWP deliveries to each contractor. As a result, the estimates of SWP deliveries to Metropolitan as shown in this report are more conservative than the estimates provided in the "The State Water Project Delivery Reliability Report, Draft" prepared by the California Department of Water Resources in August 2002.

As part of its contract with DWR, Metropolitan pays both fixed costs of financing SWP facilities construction and variable costs of operations, maintenance, power and replacement costs for water delivered each year. SWP water is delivered to Metropolitan through the East Branch at Devils Canyon Power Plant afterbay, along the Santa Ana Valley Pipeline and at Lake Perris. Metropolitan takes delivery from the West Branch at Castaic Lake.

EXPECTED SUPPLY CAPABILITY

The Edmund G. Brown California Aqueduct is capable of transporting Metropolitan's full contract amount of 2,011,500 acre-feet per year. The quantity of water available for export through the California Aqueduct, however, can vary significantly year to year. The amount of precipitation and runoff in the Sacramento and San Joaquin watersheds, system reservoir storage, regulatory requirements and contractor demands for SWP supplies impact the quantity of water available to Metropolitan.

Prior to the execution of the Bay-Delta Accord in December 1994, significant uncertainties existed regarding how much of the water in the Sacramento San Joaquin Bay-Delta would be available for export and how much would be required to meet regulatory requirements for meeting water quality standards and sustaining endangered species. The Bay-Delta Accord and the subsequent CALFED process removed significant uncertainties associated with regulatory requirement thus providing a base for the DWR and the SWP contractors to estimate available water supplies. As discussed in a subsequent section, actions being undertaken by the CALFED process and the Phase 8 water rights process should enhance the reliability of supplies in the future.

Utilizing the regulatory standards in the Bay-Delta Accord, and historic precipitation and runoff data and reservoir levels, DWR estimates the water supply available for export to

Metropolitan and the SWP contractors. These estimated base supplies are shown on the table below.

RATIONALE FOR EXPECTED SUPPLY

Metropolitan and 28 other public entities have contracts with the State of California, for a State Water Project water supply. These contracts require the state through its DWR, utilize reasonable efforts to develop and maintain the SWP water supply. The state has made significant investment in infrastructure. It has constructed 28 dams and reservoirs,

Estimated Water Supplies Available for Metropolitan's Use Under the State Water Project Deliveries * (acre-feet per year)

Year	Multiple Dry- years (1990-1992)	Single Dry- year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	794,700	418,000	1,549,100	1,741,000
2010	794,700	418,000	1,549,100	1,741,000
2015	794,700	418,000	1,538,100	1,741,000
2020	794,700	418,000	1,530,700	1,741,000
2025	794,700	418,000	1,523,300	1,741,000

* --Represents expected supply capability for the resource program.

26 pumping and generation plants and about 660 miles of aqueducts. Over 19 million of residents benefit from water from the SWP. To date the project has delivered in excess of 56 million acre-feet with the single year deliveries exceeding 3.5 million acre-feet in 2000. DWR estimates that with current facilities and regulatory environment the project will on average deliver 3 million acre-feet per year. Under its contract Metropolitan may utilize 48% of this quantity.

Further, under the water supply contract DWR is required to utilize reasonable efforts to maintain and increase the reliability of service to Metropolitan. As discussed in a subsequent section DWR is participating in the CALFED process to achieve these requirements.

Historical Record: The historic record shows significant accomplishments by DWR in providing its contractors with SWP water supplies. To date the project has delivered in excess of 56 million acre-feet. Deliveries exceeded 3.5 million acre-feet in 2000. DWR has continued to invest in SWP facilities to deliver water to its contractors. Some of the significant projects are listed below:

Written Contracts or Other Proof:

- 1960 Contract between the State of California and the Metropolitan Water District of Southern California for a Water Supply. This Contract, initially executed in 1960 and amended numerous times since, is the basis for SWP deliveries to Metropolitan. It

requires the DWR to make reasonable efforts to secure water supplies for Metropolitan and its other contractors. The contract expires in 2035, however, Metropolitan has the option to renew the contract under the same basic conditions.

Financing: Metropolitan's payments for its State Water contract obligation are approved each year by Metropolitan's Board of Directors and currently constitute approximately 35% of Metropolitan's annual budget.

Federal, State and Local Permits: The DWR is responsible for acquiring, maintaining and complying with numerous Federal and State permits for operation of the SWP. In 2000, the DWR has taken a leading role in acquiring and delivering power in California. Metropolitan has been active in monitoring the issues affecting its contract with DWR.

- Environmental Impact Report for the Eastbranch Enlargement. In April 1984 DWR prepared and finalized an Environmental Impact Report for the Enlargement of the East Branch of the Governor Edmund G. Brown California Aqueduct.
- Environmental Impact Report for the Harvey O. Banks Pumping Plant. In January 1986 DWR prepared and finalized an Environmental Impact Report for the Additional Pumping Units at Harvey O. Banks Delta Pumping Plant.
- Environmental Impact Report for the Mission Hills Extension. In 1990 DWR prepared and finalized an Environmental Impact Report for the State Water Project Coastal Branch, Phase II and Mission Hills Extension.
- East Branch Extension Project Phase 1. In 1998 DWR completed an EIR to extend the East Branch of the California Aqueduct to provide service to San Geronimo Pass Water Agency. Construction of phase 1 will be completed in 2002.

CALIFORNIA AQUEDUCT DELIVERIES DESERT WATER AGENCY/COACHELLA VALLEY WATER DISTRICT/METROPOLITAN WATER EXCHANGE PROGRAM

SOURCE OF SUPPLY

The Desert Water Agency (DWA) and Coachella Valley Water District (CVWD), both in Riverside County, have rights to State Water Project (SWP) deliveries, but do not have any physical connections to the SWP facilities. Both Agencies are adjacent to the Colorado River Aqueduct. In order for DWA and CVWD to obtain water equal to their SWP allocations, Metropolitan has agreed to exchange an equal quantity of its Colorado River water for DWA and CVWD's SWP water. DWA has a SWP Table A contract right of 38,100 acre-feet per year and CVWD has a SWP Table A contract right of 23,100 acre-feet per year, for a total of 61,200 acre-feet per year.

EXPECTED SUPPLY CAPABILITY

Under the existing agreements, Metropolitan provides water from its Colorado River Aqueduct to DWA and CVWD in exchange for SWP deliveries. Metropolitan can deliver additional water to its DWA/CVWD service connections permitting these agencies to store water. When supplies are needed, Metropolitan can then receive its full Colorado River supply as well as the State Water Project allocation from the two agencies, while the two agencies can rely on the stored water for meeting their water supply needs. As of the end of September 2001, there was 238,795 acre-feet in the Advance Delivery account. The combined SWP Table A contract right of DWA and CVWD is 61,200 acre-feet. The water supply available to Metropolitan is presented below:

**Estimated Water Supplies Available for Metropolitan's Use
Under the Desert Water Agency & Coachella Valley Water District
Water Exchange Program ***
(acre-feet per year)

Year	Multiple Dry- years (1990-1992)	Single Dry- year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	24,600	12,300	46,100	61,200
2010	24,600	12,300	46,100	61,200
2015	24,600	12,300	46,100	61,200
2020	24,600	12,300	46,100	61,200
2025	24,600	12,300	46,100	61,200

* --Represents expected supply capability for the resource program.

RATIONALE FOR EXPECTED SUPPLY

The DWR estimates the amount of supplies that are available each year. Metropolitan uses a forecasting method for SWP deliveries based on historical patterns of precipitation, runoff and actual deliveries of water.

Historical Record: The DWA and CVWD Exchange Program is currently in operation. The Advance Delivery Agreement has been in place since 1967 and modified in 1984.

Written Contracts or Other Proof:

- 1967 and 1983 Water Exchange Contract and Agreements. The DWA and CVWD Program is currently in operation. The DWA and CVWD water exchange contracts have been in place since 1967, amended in 1972 and were modified with execution of additional agreements in 1983.
- 1984 Advance Delivery Agreement. DWA, CVWD and Metropolitan executed an Advance Delivery Agreement. This Advance Delivery Agreement allows Metropolitan to supply DWA and CVWD with Colorado River water in advance of the time these agencies are entitled to receive water under the Exchange Agreement. In future years, Metropolitan can recover this water by reducing its deliveries under the exchange agreement.

Financing: The funds for deliveries under this Program are included in Metropolitan's O&M budget and Long-range Financial Plan.

Federal, State, and Local Permits for Construction: The DWR is responsible for acquiring, maintaining and complying with numerous Federal and State permits for operation of the SWP.

- July 26, 1983 CVWD Negative Declaration, Whitewater River Spreading Area expansion Phase 1.
- February 1983, DWA Final EIR for the proposed extension of time for utilizing Colorado River water to recharge the upper Coachella Valley groundwater basins to the year 2035, Volume I and II, April 1983 Volume III

CALIFORNIA AQUEDUCT DELIVERIES SEMITROPIC WATER BANKING AND EXCHANGE PROGRAM

SOURCE OF SUPPLY

The agreement between Semitropic Water Storage District (Semitropic) and Metropolitan was implemented in February 1994. Semitropic obtains water from the SWP through its contracts with the Kern County Water Agency. SWP supplies irrigate an area of 161,200 acres within Semitropic's service area. When this surface water is not available, these growers withdraw water from the underlying aquifer. The agreement between Semitropic and Metropolitan to allow Metropolitan to make use of 35% of the additional storage in Semitropic's groundwater basin. In years of plentiful supply, Metropolitan could deliver available SWP supplies to Semitropic through the California Aqueduct. During dry years, Metropolitan could withdraw this stored water. Four other banking partners participate in this Program and utilize the remaining 65% of the additional storage in Semitropic's groundwater basin.

EXPECTED SUPPLY CAPABILITY

The Semitropic-Metropolitan Program provides Metropolitan with the capacity to store up to 350,000 acre-feet of water under the current agreement. During dry years, Metropolitan can recover its stored water through a combination of direct pumping of the groundwater and the release of Semitropic's SWP Table A contract right. Based on the terms and conditions of the program agreements, the return of water to Metropolitan ranges from a minimum of 31,000 acre-feet per year (peak 4-month summer period) up to 170,000 acre-feet (over a 12-month period).

**Estimated Water Supplies Available for Metropolitan's Use
Under the Semitropic Water Banking and Exchange Program ***
(acre-feet per year)

Year	Multiple Dry- years (1990-1992)	Single Dry- year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	107,000	107,000	-	-
2010	107,000	107,000	-	-
2015	107,000	107,000	-	-
2020	107,000	107,000	-	-
2025	107,000	107,000	-	-

* --Represents expected supply capability for the resource program based on 10-month operation.

RATIONALE FOR EXPECTED SUPPLY

Implementation Status: The Semitropic-Metropolitan Water Banking & Exchange Program has been operational since 1994 and with existing agreements will continue to operate over the term of 41 years (1994-2035). Metropolitan has 360,000 acre-feet in its storage account and withdrew 40,000 acre-feet in 2001.

Written Contracts or Other Proof:

- 1992 Turn-in/out Construction, Operation and Maintenance Agreement. This Agreement was executed in 1992 by the Department of Water Resources and Semitropic to allow construction, operation and maintenance of the Semitropic California Aqueduct Turn in/out.
- 1993 Temporary Semitropic-Metropolitan Water Banking Agreement. This Agreement was executed in February 1993 by Semitropic and Metropolitan to allow the storage of available Metropolitan Supplies in advance of execution of the long-term agreement.
- 1994 Semitropic/Metropolitan Water Banking and Exchange Agreement. This Agreement was executed in December 1994 by Semitropic and Metropolitan to implement the program for a 41 year term (1994-2035).
- 1995 Point of Delivery Agreement. This agreement, with The Department of Water Resources, Kern County Water Agency and Metropolitan, allows Metropolitan to divert water from the California Aqueduct into Semitropic's service area.
- 1995 Introduction of Local water into the California Aqueduct. This agreement, with The Department of Water Resources, Kern County Water Agency and Semitropic, allows Metropolitan to receive water from the program into the California Aqueduct.

Financing: Metropolitan's payments for the Semitropic Program are included in the O&M budget and paid out of the Water Transfer Fund.

Federal, State and Local Permits for Construction:

- Final EIR. Semitropic acting as the Lead agency under CEQA and Metropolitan acting as a responsible agency jointly completed the Environmental Impact Report for the Program. The EIR was certified by Semitropic In July 1994 and adopted by Metropolitan in August 1994
- Regulatory Approvals. All regulatory approvals are in place and program is operational.

CALIFORNIA AQUEDUCT DELIVERIES ARVIN-EDISON WATER MANAGEMENT PROGRAM

SOURCE OF SUPPLY

The Arvin-Edison Water Storage District (Arvin-Edison) manages the delivery of local groundwater and water imported into its service area from the Central Valley Project's (CVP) Millerton Reservoir via the Friant-Kern Canal. The surface water service area consists of 132,000 acres of predominantly agricultural land, and to a minor degree, municipal and industrial uses. It is situated in Kern County. Arvin-Edison operates its supplies conjunctively, storing water in the underlying aquifer when imported supplies are available and withdrawing that water when the availability of imported supplies are reduced. In 1997, Metropolitan entered into an agreement with the Arvin-Edison Water Storage District. The agreement allows Metropolitan to store available water in Arvin-Edison's groundwater basin, either through direct spreading operations, or through deliveries to growers in Arvin-Edison's service area. Similar to Arvin-Edison's own usage, this previously stored water could be withdrawn when the availability of imported supplies to Metropolitan is reduced.

EXPECTED SUPPLY CAPABILITY

The Arvin-Edison/Metropolitan Program provides Metropolitan with the capacity to store up to 250,000 acre-feet of water under the current agreement, and the option to increase the storage capacity to 350,000 acre-feet. During dry years, Metropolitan can recover its stored water either through direct pumping of the groundwater or through exchange. Based on the terms and conditions of the program agreement, the return of water to Metropolitan ranges from a minimum of 40,000 acre-feet per year (peak 4-month summer period) up to 110,000 acre-feet (over a 12-month period).

Estimated Water Supplies Available for Metropolitan's Use Under the Arvin-Edison Water Banking Program *

(acre-feet per year)

Year	Multiple Dry- years (1990-1992)	Single Dry- year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	90,000	90,000	-	-
2010	90,000	90,000	-	-
2015	90,000	90,000	-	-
2020	90,000	90,000	-	-
2025	90,000	90,000	-	-

* --Represents expected supply capability for the resource program based on 10-month operation.

RATIONALE FOR EXPECTED SUPPLY

Implementation Status: The Arvin-Edison/Metropolitan Water Management Program has been operational since 1997 and by existing agreements will continue to operate over the term of 30 years (1997-2027) with a possible extension to 2035. Metropolitan has 230,000 acre-feet in its storage account and withdrew 20,000 acre-feet in 2001.

Written Contracts or Other Proof:

- 1997 Arvin-Edison/Metropolitan Water Management Agreement. This Agreement was executed in December 1997 by Arvin-Edison and Metropolitan to implement the program for a 30-year term (1997-2027).
- 1998 Turn-in/out Construction and Maintenance Agreement. This Agreement was executed in 1998 by the Department of Water Resources, Kern County Water Agency, Arvin-Edison and Metropolitan to allow construction, operation and maintenance of the Arvin-Edison California Aqueduct Turn in/out.
- 1998-2002 Water Delivery and Return Agreements. These agreements, with the Department of Water Resources, Kern County Water Agency, Arvin-Edison and Metropolitan, allow Metropolitan to divert water from, and introduce water to, the California Aqueduct.

Financing: Metropolitan's payments for the Arvin-Edison Program are included in the O&M budget and paid out of the Water Transfer Fund.

Federal, State and Local Permits for Construction:

- Regulatory Approvals. All regulatory approvals are in place
- Environmental Status. The Negative Declaration was completed in 1996.

CALIFORNIA AQUEDUCT DELIVERIES SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT PROGRAM

SOURCE OF SUPPLY

The San Bernardino Valley Municipal Water District Program allows Metropolitan to purchase a dependable annual supply, as well as, an additional supply for dry year needs. Under this program, Metropolitan purchases water provided to San Bernardino Valley Municipal Water District (Valley District) from its annual State Water Project (SWP) water allocation. Valley District delivers the purchased supplies to Metropolitan's service area through the coordinated use of facilities and interconnections within the water conveyance system of the two districts.

The purchased SWP supply is provided to Metropolitan as direct deliveries of annual SWP water through the California Aqueduct to Metropolitan's service area and as deliveries of recaptured SWP water previously stored in the San Bernardino groundwater basin to Metropolitan's service area. Under this Program, Metropolitan purchases a minimum of 20,000 acre-feet per year of SWP allocation every year. In addition, Metropolitan has the option to purchase Valley District's additional SWP allocation, if available, and the first-right-of-refusal to purchase additional SWP supplies available beyond the minimum and option amounts. In the event that Metropolitan's operational needs do not require all, or a portion of the minimum purchased water, that unused amount may be carried forward up to a total of 50,000 acre-feet for later delivery. Finally, the program establishes a critical dry year supply account for Metropolitan, which could provide additional amounts of dry year supplies. During any year designated by DWR as a critically dry year, Valley District could deliver from this account up to 50,000 acre-feet of recaptured SWP water previously stored in the San Bernardino groundwater basin.

In order to facilitate the transfer, the program also provides the coordinated use of existing facilities, including the Valley District's Foothill Pipeline and Inland Feeder, to improve the conveyance capabilities of the delivery of SWP water to the service areas of both districts. The intertie between the foothill Pipeline and existing segment of the Inland Feeder has been constructed and is operational as of December 2002. This intertie allows Metropolitan to move SWP water from the East Branch of the California Aqueduct through the Foothill Pipeline, Inland Feeder and into DVL and the Colorado River Aqueduct. As a result of this intertie, the conveyance capacity into Metropolitan's system has been increased by 260 cfs, thus increasing Metropolitan's capability to refill and maintain storage in DVL.

EXPECTED SUPPLY CAPABILITY

Based on contract provisions for the minimum, option, first-right-of-refusal, and critical dry year supply account purchases of available SWP water from Valley District, the water supply available to Metropolitan are as follows:

RATIONALE OF EXPECTED SUPPLY

Implementation Status: The San Bernardino Valley Municipal Water District Program began operations in 2001 and is expected to remain in effect on an evergreen term basis.

Historical Record: Metropolitan has purchased 20,000 acre-feet of water under this Program in July 2001 and is scheduled to purchase at least 20,000 acre-feet of water in 2002.

**Estimated Water Supplies Available for Metropolitan's Use
Under the San Bernardino Valley Municipal Water District Program ***
(acre-feet per year)

Year	Multiple Dry- years (1990-1992)	Single Dry- year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	54,000	70,000	57,000	80,000
2010	54,000	70,000	57,000	80,000
2015	54,000	70,000	57,000	80,000
2020	54,000	70,000	57,000	80,000
2025	54,000	70,000	57,000	80,000

* --Represents expected supply capability for the resource program.

Written Contracts or Other Proof: Metropolitan's dependable annual and dry-year supplies from the San Bernardino Valley Municipal Water District Program are based on Metropolitan Board actions and agreements.

- 2000 Board Approval of Coordinated Operating Agreement. In June 2000, Metropolitan's Board authorized entering into a Coordinated Operating Agreement between Metropolitan and Valley District to develop projects that could provide benefits to both districts through the coordinated use of facilities and SWP supplies.
- 2000 Coordinated Operating Agreement. The Coordinate Operating Agreement between Metropolitan and Valley District was executed in July 2000.
- 2001 Board Approval of the Coordinated Use Agreement. In April 2001, Metropolitan's Board authorized entering into the Coordinated Use Agreement for Conveyance Facilities and SWP Water Supplies between Metropolitan and Valley District for the purchase of dependable annual and dry year supplies by Metropolitan.
- 2001 Coordinated Use Agreement. The Coordinated Use Agreement for Conveyance Facilities and SWP Water Supplies between Metropolitan and Valley District for the purchase of dependable annual and dry year supplies by Metropolitan was executed May 2001. The Agreement is effective as of July 1, 2001 for an "evergreen" term (10-year term with automatic annual extensions unless otherwise notified).

Financing: The funds to purchase Program water are included in Metropolitan's Water Transfer Fund and O&M budget.

Federal, State, and Local Permits/Approvals: The Program is effective as of July 1, 2001. An environmental review process and regulatory approval supported implementation.

- **Final EIR.** Final Regional Water Facilities Master Plan Environmental Impact Report dated February 1, 2001 was certified by Valley District, as lead agency, and by Metropolitan, as responsible agency. Notices of determinations were filed by Valley District and Metropolitan on May 29, 2001 and April 18, 2001, respectively.
- **State Water Contractors' Review.** In May 2001 the State Water Contractors reviewed and issued a letter supporting the program.
- **DWR Review.** The California Department of Water Resources agreed to the program in December 2001.

CALIFORNIA AQUEDUCT DELIVERIES BAY-DELTA IMPROVEMENTS

SOURCE OF SUPPLY

Improving the water supply reliability of the State Water Project (SWP) is a primary focus of Metropolitan's long-term planning efforts. Metropolitan's strategy is to reduce its dependence on SWP supplies during dry years, when risks to the Bay-Delta ecosystem are greatest, and to maximize its deliveries of available SWP water during wetter years to store in surface reservoirs and groundwater basins for later use during droughts and emergencies. Restoring and stabilizing the environmental health and supply reliability of the Bay-Delta through the implementation of CALFED's Bay-Delta Program and the Sacramento Valley Water Management Agreement are important steps to accomplishing this objective. These improvements are necessary for Metropolitan to attain its goal of 650,000 acre-feet of supply yield from the Bay-Delta in dry years by 2020. This yield is 200,000 to 250,000 acre-feet over existing available dry-year supplies, as described in its July 1999 policy direction regarding the Bay-Delta and CALFED. This goal means that Metropolitan rely on only 32.5 percent of its total SWP contract amount of 2.0 million acre-feet per year in dry years. In addition, Metropolitan policy objectives for Bay-Delta improvements include an average of 1.5 million acre-feet of supply yield to Metropolitan over all year types.

The SWP conveys water from the western slope of the Sierra Nevada to water users both north and south of the Bay-Delta. Specifically, SWP is delivered to Metropolitan's service area through a system of reservoirs, the Bay-Delta, pumping plants and the California Aqueduct. Owned and operated by the California Department of Water Resources (DWR), the SWP provides municipal and agricultural water to 29 State Water Contractors. Annual deliveries for the SWP average about 2.5 million acre-feet. Municipal uses account for about 60 percent of annual deliveries, with the remaining 40 percent going to agriculture.

CALFED Bay-Delta Program: CALFED is a process involving numerous stakeholders (federal and state resource agency representatives, water users, environmental entities, and other interests) to develop solutions for Bay-Delta problems. On August 28, 2000, CALFED's Bay-Delta Program was approved and laid out final implementation plans for the first phase – the first seven years – of what is conceived to be up to 30 years of improvements in the Bay-Delta. This Program would be implemented through 11 major elements.

- **Storage.** By pursuing more water storage capacity in both surface reservoirs and underground aquifers, the Program could help to meet the needs of California's growing population, and provide much-needed flexibility to improve water quality and restore ecosystems. This Storage Element provides for the development of up to 950,000 acre-feet of new surface storage capacity and up to 1 million acre-feet of new groundwater storage capacity in Stage 1 of CALFED.
- **Conveyance.** Moving water through the Bay-Delta as efficiently as possible could increase the water system's flexibility and boost ecosystem health, water quality and levee stability. The Conveyance Element commits to through-delta conveyance

improvements, such as channel enlargements, the possibility of a screened Sacramento River water diversion to the Central Delta, and South of Delta programs.

- Water Use Efficiency. The Program proposes significant investments in water-use efficiency to generate real water supply benefits in the short-term. The Water Use Efficiency Element establishes the following annual targets: urban conservation savings of 520,000 to 680,000 acre-feet; agricultural savings of 260,000 to 350,000 acre-feet; and savings from water recycling of 225,000 to 310,000 acre-feet.
- Water Transfers. Through development of an effective water transfer market, CALFED aims to stretch existing water supplies by promoting transfers from willing sellers to buyers while protecting other water users, local economies and the environment. The Water Transfer Element seeks to streamline the approval process of state and federal agencies for water transfers and to create an Internet-based Water Transfers Information Clearinghouse.
- Ecosystem Restoration. Improvements in ecosystem health could reduce the conflict between environmental water use and other beneficial uses, and could allow more flexibility in water management decisions. The Ecosystem Restoration Element could recover at-risk native species; rehabilitate natural processes related to hydrology, stream channels, sediment, floodplains, and ecosystem water quality; maintain and enhance populations of species critical to commercial fisheries; protect and restore functional habitats; reduce the negative impacts of invasive species; and improve and maintain water and sediment quality.
- Environmental Water Account. Under the Environmental Water Account, water is acquired, stored and allocated to better protect fish and habitats at critical times. Many water users, including Metropolitan have transferred water supplies to this account. In return for the environmental benefits of water under this account, there are regulatory assurances that the existing deliveries of SWP and Central Valley Project water would not be disrupted.
- Watersheds. By providing financial and technical assistance for local watershed projects, CALFED would support projects that reduce water quality problems, restore and protect habitats, and improve water supply reliability. The Watershed Element seeks to foster local leadership by encouraging landowners, community members, environmental organizations and local public agencies to come together on watershed projects.
- Drinking Water Quality. The Drinking Water Quality Element identifies four actions for implementation: implement programs to manage salt loadings in the San Joaquin Valley; implement source control programs to reduce contaminants from Delta and upstream sources; invest in water treatment technology demonstration projects for UV disinfection and desalination; and control runoff into the California Aqueduct with the construction of necessary physical improvements.
- Levee System Integrity. This Program element provides for the stabilization and improvement of Delta levees to protect in-Delta as well as export users. It seeks to improve levees to a higher standard for greater protection; improve emergency response capabilities; reduce conflicts between levee maintenance and habitat needs;

improve coordination permit processes; and develop adequate and reliable funding for levee maintenance.

- Science Methods. The Bay-Delta Program commits to a science program to guide adaptive management decisions. The program includes the appointment of an eminent lead scientist to be assisted by an Independent Science Board. The Board will issue annual reports regarding the status and effectiveness of program measures and will recommend adjustments.
- Program Tracking and Accountability. Performance measures are used to translate program goals and objectives into measurable benchmarks of program success. They present information on conditions, trends and their significance. The Program will develop a project tracking system; track each project's performance, cost and schedule; measure progress to assure balance across all elements of the Program; and provide monthly status information on each project.

Sacramento Valley Water Management Agreement: Along with other SWP contractors, Metropolitan has worked to ensure the burden of meeting flow requirements set out by the 1995 Water Quality Control Plan (WQCP) was fairly shared across all Bay-Delta water users in the State Water Resources Control Board (SWRCB) Phase 8 hearing process. This hearing process was stayed in April 2001 to allow discussions on a settlement agreement between the parties. The goal of the settlement agreement was to draft a work plan to develop and manage water resources to meet Sacramento Valley in-basin needs, environmental needs under the WQCP, and export supply needs for consumptive demands and water quality.

In December 2002, the Phase 8 parties signed a settlement agreement referred to as the Sacramento Valley Water Management Agreement. This agreement includes a work plan detailing projects that could provide benefits by the 2003 and 2004 water years. This plan comprises over 60 projects that have been submitted for evaluation by the Work Plan Development Team from 16 entities in the Sacramento Valley. These projects can be divided into four categories; (1) conjunctive use projects involving development of groundwater supplies to be used in conjunction with surface water to provide for additional in-basin and export needs, including the WQCP relief, (2) system improvement projects involving the lining of canals, diversion modifications and improvement in water measurement, (3) groundwater planning and monitoring projects intended to better characterize the resource and allow for expansion of conjunctive use and water transfer activities, and (4) resolution of certain regulatory or institutional issues which present impediments to resolution of in-basin needs or water transfers. About 185,000 acre-feet of water annually are expected to be produced by the conjunctive use projects in the Sacramento Valley and would be available for use under a settlement. Metropolitan's allotment of this new yield is projected to be 45, 000 acre-feet per year.

EXPECTED SUPPLY CAPABILITY

Based on the work plans for CALFED's Bay-Delta Program and the Phase 8 SWRCB Water Rights Proceedings, annual and dry-year supplies capabilities are projected as follows:

**Estimated Water Supplies Available for Metropolitan's Use
Under the Bay-Delta Improvements**
(acre-feet per year)

Year	Multiple Dry-years (1990-1992)	Single Dry-year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	-	-	-	-
2010 *	45,000	45,000	45,000	45,000
2015 **	200,000	200,000	200,000	200,000
2020 **	200,000	200,000	200,000	200,000
2025 **	200,000	200,000	200,000	200,000

* Based on the short-term work plan for the Sacramento Valley Water Management Agreement.

** Based on the medium and long-term work plans for the Sacramento Valley Water Management Agreement and approved implementation plan for CALFED's Bay-Delta Program.

RATIONALE FOR EXPECTED SUPPLY

Implementation Status: Expected supplies are projected in accordance with the approved implementation plan for CALFED's Bay-Delta Program and with the work plans for the Sacramento Valley Water Management Agreement.

Written Contracts or Other Proof: Metropolitan's projected dependable annual and dry-year supplies from planned Bay-Delta improvements are based on Metropolitan Board actions and agreements.

- CALFED's Bay-Delta Program.
 - Bay-Delta Accord approved in December 1994.
 - Proposition 204 funds approved by voter in November 1996.
 - Metropolitan policy direction regarding CALFED's Bay-Delta Program adopted in July 1999. This policy direction established water supply goals.
 - Proposition 13 funds approved by voters in March 2000.
 - CALFED Framework announced in June 2000.
 - Final implementation plans for the first phase of CALFED's Bay-Delta Program approved in August 2000, in conjunction with the approval of the Program and conclusion of the environmental review process.
 - Proposition funds approved by voters in November 2002.
 - Annual Federal appropriations.
- Sacramento Valley Water Management Agreement.
 - Work plans detailing projects that could provide benefits by the 2002 and 2003 water years were developed in October 2001.
 - Statement of settlement policy principles recommended in December 2001 by negotiators for approval.

- Statement of settlement policy principles approved by Metropolitan's Board in January 2002.
- A Sacramento Valley Water Management Agreement was signed and approved by settlement parties in December 2002.

Financing. Financing for Bay-Delta improvements are as follows:

- CALFED's Bay-Delta Program. Overall cost-sharing plans assume an equal distribution of the program costs among state, federal, and user/local funds. Final cost-sharing arrangements will depend on the specific projects that are implemented, and will vary year by year. Initial years could be heavily funded by federal and state dollars. This initial funding will not include the cost of constructing major storage or conveyance elements. Final cost shares, including reimbursement of up-front funding, are intended to be based upon a "beneficiaries pay" principle.
 - Year 1 funding arrangements were established in July 2000.

State	\$528.1 million
Federal	\$ 78.0 million
Other	\$221.0 million
Unmet	\$ 77.7 million
 - Year 2 funding arrangements were initiated in July 2001.

State	\$553.1 million
Federal and Unmet Needs	\$370.0 million
Other	\$ 33.5 million

Federal, State, and Local Permits/Approvals:

- CALFED's Bay-Delta Program.
 - Programmatic Environmental Impact Report/Statement finalized in July 2000.
 - Record of Decision issued in August 2000 for the final Programmatic Environmental Impact Report/Statement regarding the CALFED Bay-Delta Program.
- Sacramento Valley Water Management Agreement.
 - Settlement parties approved Sacramento Valley Management Agreement in December 2002.
 - Environmental review will be conducted by the applicable lead agencies on the various work plan projects to comply with the California Environmental Quality Act, and as appropriate the National Environmental Policy Act.

CALIFORNIA AQUEDUCT DELIVERIES KERN DELTA WATER MANAGEMENT PROGRAM

SOURCE OF SUPPLY

In December 1999 Metropolitan advertised a request for proposals for participation in “The California Aqueduct Dry-year Transfer Program.” As a result of this request for proposals, four programs were selected for further consideration of which Kern Delta Water District (Kern Delta) was part. In 2001, Metropolitan entered into Principles of Agreement with Kern Delta for the development of a Dry-year supply program. Kern Delta serves 125,000 acres of actively farmed highly productive farmland located in the San Joaquin Valley portion of southern Kern County. Kern Delta has under contract 180,000 acre-feet per year of good quality highly reliable pre- 1914 Kern River water and 25,500 acre-feet per year of SWP Table A contract right (under contract with Kern County Water Agency).

The dry-year supply program between Kern Delta and Metropolitan involves the storage of water with Kern Delta. Basically, in years of plentiful supply the agreement allows Metropolitan to store water in Kern Delta's groundwater basin, either through direct spreading operations, or through deliveries to growers in Kern Delta's service area. Metropolitan has access to the capacity to store up to 250,000 acre-feet of water at any one time and 400,000 acre-feet of water at any one time over the term of the agreement. When needed, Metropolitan can recover its stored water either through direct pumping of the groundwater or exchange at a rate of 50,000 acre-feet per year. The duration of the program will be from 2002 to 2027 with provisions allowing the water to be withdrawn until 2033.

EXPECTED SUPPLY CAPABILITY

The Kern Delta/Metropolitan Program provides Metropolitan with the capacity to store up to 250,000 acre-feet of water at any one time, and the option to store 400,000 acre-feet of water at any one time over the term of the agreement. When needed, Metropolitan can recover its stored water either through direct pumping of the groundwater or exchange at a rate of 50,000 acre-feet per year.

Estimated Water Supplies Available for Metropolitan's Use Under the Kern Delta Water Management Program (acre-feet per year)

Year	Multiple Dry- years (1990-1992)	Single Dry- year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	20,000	50,000	-	-
2010	50,000	50,000	-	-
2015	50,000	50,000	-	-
2020	50,000	50,000	-	-
2025	50,000	50,000	-	-

* --Represents expected supply capability for the resource program.

RATIONALE FOR EXPECTED SUPPLY

Implementation Status: Expected supplies are projected in accordance with accepted detailed groundwater modeling that has been accomplished for the program. In addition, the Kern Delta/Metropolitan Water Management Program will be operational and accepting water for storage by fall of 2003.

Financing: Metropolitan's payments for the Kern Delta/Metropolitan Program are included in the O&M budget and paid out of the Water Transfer Fund.

Written Contracts or Other Proof:

- 2001 Kern Delta/Metropolitan Principles of Agreement. Principles of agreement were entered into between Kern Delta and Metropolitan in June 2001, covering program costs, operational aspects and risks/responsibilities.
- 2002 Kern Delta and Metropolitan Boards of Directors approved executing the Long-term Agreement. The Long-term Water Banking Agreement between Kern Delta and Metropolitan, delineates program operations, costs, and risks/responsibilities

Federal, State and Local Permits for Construction: Kern Delta, acting as lead agency under CEQA has prepared a full Environmental Impact Report. As part of this EIR, Kern Delta published a Notice of Preparation, and held meetings with the general public, interested agencies and resource agencies. In November 2002 the Final EIR certified by Kern Delta and adopted by Metropolitan.

CALIFORNIA AQUEDUCT DELIVERIES MARKET TRANSFER OPTIONS

SOURCE OF SUPPLY

Metropolitan has acquired dry-year supplies through spot market water transfers in the past 10 years. Spot market water transfers involve water that is purchased only during the time of need (usually a drought). Payment for these transfers occurs only when water is needed. It is expected that water could continue to be available for spot market water purchases in the future. Up to 27 million acre-feet of water (80 percent of California's developed water) is delivered for agricultural use every year. Over half of this water is in the Central Valley; and much of it is delivered by, or adjacent to, SWP and Central Valley Project (CVP) conveyance facilities. This allows for the voluntary transfer of water to many urban areas, including Metropolitan, via the California Aqueduct.

Recent events indicate that a portion of this water could be available through mutually beneficial transfer agreements:

- The Governor's Water Bank (Bank) in 1991, 1992, and 1994 secured 140,000 acre-feet per year to 820,000 acre-feet per year of water supply. Further, the Department of Water Resource's (DWR's) Dry Year Water Purchase Program (Purchase Program) in 2001, 2002 and 2003 secured a total of 162,000 acre-feet. Finally, DWR is facilitating a Water Transfer Program in 2003 specifically to meet Metropolitan's needs and assisted Metropolitan in securing 167,200 acre-feet. The DWR established and administered the Bank and the Purchase Program by facilitating purchasing water from willing sellers and transferring the water to those with critical needs using the State Water Project (SWP) facilities. Sellers, such as farmers and water districts, made water available for the Bank, Purchase Program, and Water Transfer Program by fallowing crops, shifting crops, releasing surplus reservoir storage, and by substituting groundwater for surface supplies.
- Under the Central Valley Improvement Act, passed by Congress in October 1992, water agencies, such as Metropolitan, may for the first time be able to acquire a portion of the Central Valley Project's 7.8 million acre-feet per year of supply.
- Many member of the agricultural community are actively promoting the economic benefits resulting from the voluntary transfer of some of their water supplies.

EXPECTED SUPPLY CAPABILITY

Metropolitan could purchase dry year supplies from the Bank and/or Purchase Program on an "as-needed" basis. The acquired water provides a reserve supply that could be available to Metropolitan to mitigate for unforeseen uncertainties that may impact expected supply capabilities. Metropolitan has purchased water from the Bank varying in amounts from 100 to 215,000 acre-feet in a given year. Since initiating in 2001 the DWR Dry Year Water Purchase Program, from 1,500 to 139,000 acre-feet were purchased in a given year.

RATIONALE FOR EXPECTED SUPPLY

Implementation Status: The availability of dry year supplies from the Bank, Purchase Program, and/or Water Transfer Program has been demonstrated 1991, 1992, 1994, 2001, 2002, and 2003.

Historical Record The historical record for purchases from the Bank, Purchase Program, and Water Transfer Program and the number of sellers and buyers participating in these Programs is a strong indicator that there are significant amounts of water that can be purchased through spot market water transfers during dry year. This historical record is summarized as follows:

**Historical Record
Market Water Purchases**

Program	Purchases from Bank (acre-feet per year)		Participants	
	Total	Metropolitan	Sellers	Buyers
1991 Governor's Water Bank	820,000	215,000	351	13
1992 Governor's Water Bank	193,246	10,000	18	16
1994 Governor's Water Bank	220,000	100	6	15
2001 Dry-year Purchase Program	138,000	80,000	9	8
2003 Water Transfer Program	167,200	167,200	11	1

Written Contracts or Other Proof:

- Executive Order. In response to the extended 1987-92 drought, Governor Wilson issued an executive order establishing a Drought Action Team. This team, made up of state and federal officials, developed an action plan to lessen the impacts of the continuing drought (State 1991). One of the proposed actions was the formation of an emergency water bank managed by DWR. The purpose of the bank would be to help California's urban, agricultural, and environmental interests meet their critical water supply needs.
- Agreements with Buyers. Preceding the implementation of the 1995 and 2001 Banks contracts between DWR and agencies interested in buying were executed. The essential terms and conditions for negotiating purchases, including maximum offering price, quantity of water needed, and the timing of delivery, were established in these contracts.
- Agreements with Sellers. Purchases of water for the Bank, Purchase Program and Water Transfer Program have been secured through written contracts signed by DWR and sellers.
- 1999 Board Directive. Metropolitan's Board has authorized the acquisition and call of spot market water transfers in accordance with the Water Surplus and Drought

Management Plan (WSDM Plan) adopted in April 1999. The WSDM Plan is a comprehensive policy guideline for managing Metropolitan's water supply during periodic surplus and shortage conditions. During shortage conditions, the plan specifies the type, priority and timing of drought actions, including the purchase of transfers on the spot market that could be taken in order to prevent or mitigate negative impacts on retail demands.

Financing: Funds for spot market water purchases are included in Metropolitan's annual O&M budget. Spot market purchases are paid out of Metropolitan's Water Transfer Fund.

Federal, State, and Local Permits/Approvals:

- Environmental Impact Report for the Bank. In November 1993, DWR prepared and finalized a programmatic Environmental Impact Report for the operation of the drought water banks during future drought events.
- Water Transfer Program. In 2002-2003, individual sellers prepared CEQA documentation to support their transfers. In addition, the U.S. Bureau of Reclamation prepared NEPA documentation for those transfers requiring federal approval.

In-Basin Storage Deliveries

In-Basin Storage Deliveries Program Capabilities*

Year 2005

(acre-feet per year)

	Event Occurring in 2005			
	Multiple Dry Years (1990-92)	Single Dry Year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
<u>Current Programs</u>				
Metropolitan Surface Storage (DVL, Mathews, Skinner)	274,400	470,400	-	-
Flexible Storage in Castaic Lake and Lake Perris	64,200	110,000	-	-
Groundwater Conjunctive-use				
• Long-term Seasonal Storage	100,000	100,000	-	-
• North Las Posas Storage Program	16,700	50,000	-	-
Subtotal of Current Programs	455,300	730,400	-	-
<u>Programs Under Development</u>				
Groundwater Conjunctive-use Programs				
• 2010 Programs (Raymond and Proposition 13 Programs)	-	-	-	-
• Additional Programs	-	-	-	-
Subtotal of Proposed Programs	-	-	-	-
Maximum Supply Capability	455,300	730,400	-	-

* -- Represents expected supply capability for resource programs.

In-Basin Storage Deliveries Program Capabilities*

Year 2010
(acre-feet per year)

	Event Occurring in 2010			
	Multiple Dry Years (1990-92)	Single Dry Year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
<u>Current Programs</u>				
Metropolitan Surface Storage (DVL, Mathews, Skinner)	297,500	510,000	-	-
Flexible Storage in Castaic Lake and Lake Perris	64,200	110,000	-	-
Groundwater Conjunctive-use				
• Long-term Seasonal Storage	100,000	100,000	-	-
• North Las Posas Storage Program	70,000	70,000	-	-
Subtotal of Current Programs	531,700	790,000	-	-
<u>Programs Under Development</u>				
Groundwater Conjunctive-use Programs				
• 2010 Programs (Raymond and Proposition 13 Programs)	89,000	89,000	-	-
• Additional Programs	-	-	-	-
Subtotal of Proposed Programs	89,000	89,000	-	-
Maximum Supply Capability	620,700	879,000	-	-

* -- Represents expected supply capability for resource programs.

In-Basin Storage Deliveries Program Capabilities*

Year 2015
(acre-feet per year)

	Event Occurring in 2015			
	Multiple Dry Years (1990-92)	Single Dry Year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
<u>Current Programs</u>				
Metropolitan Surface Storage (DVL, Mathews, Skinner)	296,200	507,800	-	-
Flexible Storage in Castaic Lake and Lake Perris	64,200	110,000	-	-
Groundwater Conjunctive-use				
• Long-term Seasonal Storage	100,000	100,000	-	-
• North Las Posas Storage Program	70,000	70,000	-	-
Subtotal of Current Programs	530,400	787,800	-	-
<u>Programs Under Development</u>				
Groundwater Conjunctive-use Programs				
• 2010 Programs (Raymond and Proposition 13 Programs)	89,000	89,000	-	-
• Additional Programs	111,000	111,000	-	-
Subtotal of Proposed Programs	200,000	200,000	-	-
Maximum Supply Capability	730,400	987,800	-	-

* -- Represents expected supply capability for resource programs.

In-Basin Storage Deliveries Program Capabilities*

Year 2020

(acre-feet per year)

	Event Occurring in 2020			
	Multiple Dry Years (1990-92)	Single Dry Year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
<u>Current Programs</u>				
Metropolitan Surface Storage (DVL, Mathews, Skinner)	278,800	477,900	-	-
Flexible Storage in Castaic Lake and Lake Perris	64,200	110,000	-	-
Groundwater Conjunctive-use				
• Long-term Seasonal Storage	100,000	100,000	-	-
• North Las Posas Storage Program	70,000	70,000	-	-
Subtotal of Current Programs	513,000	757,900	-	-
<u>Programs Under Development</u>				
Groundwater Conjunctive-use Programs				
• 2010 Programs (Raymond and Proposition 13 Programs)	89,000	89,000	-	-
• Additional Programs	111,000	111,000	-	-
Subtotal of Proposed Programs	200,000	200,000	-	-
Maximum Supply Capability	713,000	957,900	-	-

* -- Represents expected supply capability for resource programs.

In-Basin Storage Deliveries Program Capabilities*

Year 2025

(acre-feet per year)

	Event Occurring in 2025			
	Multiple Dry Years (1990-92)	Single Dry Year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
<u>Current Programs</u>				
Metropolitan Surface Storage (DVL, Mathews, Skinner)	265,000	454,300	-	-
Flexible Storage in Castaic Lake and Lake Perris	64,200	110,000	-	-
Groundwater Conjunctive-use				
• Long-term Seasonal Storage	100,000	100,000	-	-
• North Las Posas Storage Program	70,000	70,000	-	-
Subtotal of Current Programs	499,200	734,300	-	-
<u>Programs Under Development</u>				
Groundwater Conjunctive-use Programs				
• 2010 Programs (Raymond and Proposition 13 Programs)	89,000	89,000	-	-
• Additional Programs	111,000	111,000	-	-
Subtotal of Proposed Programs	200,000	200,000	-	-
Maximum Supply Capability	699,200	934,300	-	-

* -- Represents expected supply capability for resource programs.

IN-BASIN STORAGE DELIVERIES

SURFACE STORAGE

SOURCE OF SUPPLY

Surface storage is a critical element of Southern California's water resources strategy. Because California experiences dramatic swings in weather and hydrology, surface storage is important to regulate those swings and mitigate against possible supply shortages. Simply put, surface storage provides a means of storing water during normal and wet years for later use during dry years, when imported supplies are limited.

Since the early twentieth century the Department of Water Resources and Metropolitan have constructed surface water reservoirs to meet emergency, drought/seasonal and regulatory water needs for Southern California. These reservoirs include, Pyramid Lake, Castaic Lake, Elderberry Forebay, Silverwood Lake, Lake Perris, Lake Skinner, Lake Mathews, Live Oak Reservoir, Garvey Reservoir, Palos Verdes Reservoir, Orange County Reservoir and Metropolitan's recently completed Diamond Valley Lake. Some reservoirs such as; Live Oak Reservoir, Garvey Reservoir, Palos Verdes Reservoir, and Orange County Reservoir, which have a total combined capacity of about 3,500 acre-feet, are used solely for regulatory purposes. The remaining surface reservoirs are primarily utilized to meet emergency, drought and seasonal requirements. The total gross storage capacity for these larger remaining reservoirs is 1,768,100 acre-feet. However, not all of the gross storage capacity is available to Metropolitan, dead storage and storage allocated to others reduce the amount of storage that is available to Metropolitan down to 1,669,100 acre-feet.

EXPECTED SUPPLY CAPABILITY

Surface storage reservoirs are an integral component of Metropolitan meeting the water needs of its service area. As discussed in the Final Environmental Impact Report for the Eastside Reservoir (DVL) Project dated October 1991, and in Southern California's Integrated Resources Plan, dated March 1996, the allocation of available surface storage can be divided into two primary components: emergency, and drought/seasonal. As specified by Metropolitan's Board of Directors in the Final EIR for DVL, "Metropolitan shall maintain sufficient water reserves within its service area to supplement local production during an emergency, or severe water shortage." With the completion of Diamond Valley Lake and it becoming operational, Metropolitan can now re-operate the surface reservoirs and meet the Board's stated objectives.

Updated Emergency Storage Requirements: Metropolitan's criteria for determining emergency storage requirements, which was approved by Metropolitan's Board, was established in the Final EIR for DVL and further discussed in the IRP. Emergency Storage requirements are based on the potential for a major earthquake to damage the Colorado River Aqueduct, Los Angeles Aqueduct, and both branches of the California Aqueducts. It is necessary that emergency water reserves are available within Metropolitan's service area to supplement local production during an emergency, or severe water shortages will occur during the period while the aqueducts are out of service. Damage would be severe enough from such an event that the aqueducts would be out of service for 6 months. During this

period, all interruptible service deliveries would be suspended, accompanied by a mandatory reduction in water use of 25 percent from normal-year demand levels, water stored in surface reservoirs and groundwater basins under Metropolitan's interruptible program would be made available, and full local groundwater production would be sustained. The storage reserved in system reservoirs for emergency purposes changes over the next 20 years in accordance with the projected demands on Metropolitan as shown below. The residual storage available to meet other needs, dry-year/seasonal, is also shown below and is discussed in further detail in this appendix.

Updated Storage Requirements for Dry-Year Supply and Seasonal Needs: Storage capacity in system reservoirs, including DVL, is also earmarked for dry-year supply and system regulation purposes. Dry-year supply storage within Metropolitan's service area is required to meet the additional water demands that occur during single-year and extended droughts. As specified in the Final EIR for DVL and further discussed in the IRP, this storage requirement is defined as the difference between normal-year demand and above-normal demand during dry years. In addition to dry-year storage, seasonal storage is required to meet seasonal peak demands during the year and are defined as the difference between normal winter demands and normal summer demands. The dry-year supply and seasonal storage also provides sufficient reserves to permit approximately 5 percent downtime for rehabilitation, repair and maintenance of raw water transmission facilities. The storage provided in system reservoirs for dry-year supply and seasonal needs are shown below.

Surface Storage Utilization
(acre-feet)

	Average-Year Storage Projection				
	2005	2010	2015	2020	2025
Surface Storage in MWD Service Area	1,669,100	1,669,100	1,669,100	1,669,100	1,669,100
Emergency	508,400	401,000	433,600	493,300	540,500
Dry-Year/Seasonal	1,160,700	1,268,100	1,235,500	1,175,800	1,128,600

* Determined in accordance with Metropolitan Board policy objectives discussed in the Final Environmental Impact Report for the Eastside Reservoir (DVL) Project dated October 1991, and in Southern California's Integrated Resources Plan, dated March 1996

Historical Record: Metropolitan has a contract with the Department of Water Resources that allows use of DWR's terminal reservoirs, such as Lake Castaic on the West Branch and Lake Perris on the East Branch of the California Aqueduct. Metropolitan makes annual payments to the DWR based on the amount of water delivered, percentage of facilities actually used, power, operations, maintenance and other charges. In addition, Metropolitan owns and operates surface reservoirs such as Lake Skinner, Lake Mathews and Diamond Valley Lake to enhance its water supply reliability for its Member Agencies.

Written Contracts or Other Proof of Usage: The Surface Reservoirs used by Metropolitan are available either by contract (in the case of the DWR terminal reservoirs) or by construction of its own facilities. The following historical record is provided:

- November 1960 Contract between the State of California Department of Water Resources and the Metropolitan Water District of Southern California for a Water Supply. This Contract and its numerous amendments, describe Metropolitan's legal access to and obligations for the operation of the State Water Project for the benefit of its Contractors. Metropolitan has an entitlement to 2,050,000 acre-feet of water each year subject to availability. The terms of this Contract describe Metropolitan's rights to and obligations for the terminal surface reservoirs for water supply purposes.
- November 1974 Memorandum of Understanding and Agreement on Operation of Lake Skinner. This MOU, signed by Metropolitan and other affected parties, governs Metropolitan's operations of Lake Skinner in Riverside County. The DWR Division of Safety and Dams also reviews monitoring data on the safety of the dam annually.
- November 1999 Memorandum of Understanding on Operation of Diamond Valley Lake. This MOU, signed by Metropolitan and other affected parties, governs Metropolitan's operations of Lake Skinner in Riverside County. The DWR Division of Safety and Dams also reviews monitoring data on the safety of the dam annually.
- Elderberry Forebay Contract for Conditions for Use. Conditions for Use of storage are described in the Contract Between the Department of Water Resources, State of California, and the Department of Water and Power, City of Los Angeles, for Cooperative Development, West Branch, California Aqueduct; Amendment No. 1, July 3, 1969; and Amendment No. 4, June 27, 1985.
- June 2002 Division of Safety of Dams Certificate of Approval. The Department of Water Resources, Division of Safety of Dams issued the Certificate of Approval for operation of Diamond Valley Lake in early 2000, with three conditions. These conditions were: (1) Satisfactory operation of the butterfly valves and emergency gate in the inlet/outlet tower, (2) completion of the Tank Saddle Cutoff remediation and (3) completion of the Signal Spillway. Metropolitan completed these conditions in 2001 and the Diamond Valley Lake is currently operational in accordance with the Certificate of Approval.
- October 1991 Final Environmental Impact Report for the Eastside Reservoir Project (DVL). The EIR established criteria for integrating the operations of Metropolitan's reservoirs and DWR's southern reservoirs for emergency purposes. This criteria also provided that Metropolitan reservoirs could be expected to withdraw all drought storage water within a two-year period.

IN-BASIN STORAGE DELIVERIES

FLEXIBLE STORAGE USE OF CASTAIC LAKE AND LAKE PERRIS

SOURCE OF STORAGE

The flexible storage use of Castaic Lake and Lake Perris, SWP reservoirs, provides Metropolitan with dry-year supply. The State Water Project (SWP) contractors participating in repayment of the capital costs of Castaic Lake and Lake Perris have the contract right to withdraw SWP water from these reservoirs in addition to their allocated supply in any year on an as-needed basis. These contractors must replace the water that is withdrawn under this program within five years of the first withdrawal. This storage is referred to as “flexible storage”. It is available in Castaic Lake to Metropolitan, Ventura County Flood Control and Water Conservation District, and Castaic Lake Water Agency and available in Lake Perris to Metropolitan.

EXPECTED SUPPLY CAPABILITY

The dry year supply available to Metropolitan from the flexible storage use of Castaic Lake and Lake Perris totals up to 218, 940 acre-feet. This total supply is comprised of 153,940 acre-feet in Castaic Lake and 65,000 acre-feet in Lake Perris. The use of this available supply in accordance with Metropolitan’s operating criteria is planned as follows:

**Estimated Water Supplies Available for Metropolitan’s Use
Under the Flexible Storage Use of Castaic Lake and Lake Perris ***
(acre-feet per year)

Year	Multiple Dry- years (1990-1992)	Single Dry- year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	64,200	110,000	-	-
2010	64,200	110,000	-	-
2015	64,200	110,000	-	-
2020	64,200	110,000	-	-
2025	64,200	110,000	-	-

* --Represents expected supply capability for the resource program.

RATIONALE FOR EXPECTED SUPPLY

Implementation Status: Express provisions have been incorporated in Metropolitan’s SWP contract since 1995. It has been available for use since 1995 and will continue to be in effect indefinitely commensurate with the SWP contracts.

Historical Record: Metropolitan has exercised the flexible storage provision in 2000, 2001 and 2002.

Written Contracts or Other Proof: Metropolitan's dry-year supply from flexible storage is based on existing contract provisions.

- DWR Bulletin 132-94. The use of Castaic Lake and Lake Perris is determined in accordance with the proportionate use factors from Bulletin 132-94, Table B, upon which capital cost repayment obligations are based. Based on its capital repayment obligations, Metropolitan's proportionate use of Castaic Lake is 96.2% and of Lake Perris is 100%. Per its SWP contract, Metropolitan has express rights to utilize certain portions of the SWP southern reservoirs to supply water in amounts in addition to approved SWP deliveries. Independently Metropolitan has the ability to utilize these reservoirs for such purposes.
- Metropolitan's SWP Contract. Metropolitan's SWP contract was amended in 1995 to include Article 54, "Usage of Lakes Castaic and Perris." This article provides flexible storage to contractors participating in repayment of the capital costs of Castaic Lake and Lake Perris. Each contractor shall be permitted to withdraw up to a Maximum Allocation from Castaic Lake and Lake Perris. These contractors may withdraw a collective Maximum Allocation up to 160,000 acre-feet in Castaic Lake and 65,000 acre-feet in Lake Perris, which shall be apportioned among them pursuant to the respective proportionate use factors, as follows:

Flexible Storage Allocations

Participating Contractor	Proportionate Use Factor	Maximum Flexible Storage Allocation (acre-feet)
Castaic Lake		
Metropolitan	0.96212388	153,940
Ventura County Flood Control and Water Conservation District	0.00860328	1,376
Castaic Lake Water Agency	<u>0.02927284</u>	<u>4,684</u>
Total Castaic Lake	1.00000000	160,000
Lake Perris		
Metropolitan	1.00000000	65,000

Financing: The cost associated with the withdrawal and replacement of water in the flexible storage is included in Metropolitan's annual payments under the State Water Contract.

Federal, State, and Local Permits/Approvals: The flexible storage provision became effective in 1995. DWR has the approval authority to affect changes in the operations and usage of existing SWP facilities, including Castaic Lake and Lake Perris.

IN-BASIN STORAGE DELIVERIES METROPOLITAN SURFACE RESERVOIRS

SOURCE OF SUPPLY

Storage capacity in Metropolitan reservoirs, including Lake Skinner, Lake Mathews, Live Oak Reservoir, Garvey Reservoir, Palos Verdes Reservoir, Orange County Reservoir and Metropolitan's recently completed Diamond Valley Lake, is earmarked to meet emergency, dry-year/seasonal and system regulation needs. Dry-year/seasonal storage within Metropolitan's service area is required to meet the additional water demands that occur during single-year and extended droughts. This storage requirement is defined as the difference between normal year demand and above normal demand during dry years. Seasonal storage is required to meet seasonal peak demands during the year and are defined as the difference between normal winter demands and normal summer demands. The dry-year supply and seasonal storage also provides sufficient reserves to permit approximately 5 percent downtime for rehabilitation, repair and maintenance of raw water transmission facilities.

EXPECTED SUPPLY CAPABILITY

The total available storage capacity for Metropolitan for all surface reservoirs is 1,669,100. As discussed earlier, approximately 650,000 in 2005 rising to 800,000 acre-feet in 2025 has been set aside to meet the emergency and flexible storage requirements of the service area. After accounting for system operational storage, the surface storage available to meet dry-year/seasonal requirements ranges from approximately 1,020,000 acre-feet in 2005 to 866,000 acre-feet by 2025. The dry-year/seasonal water supply available to Metropolitan in accordance with Metropolitan's operating criteria is presented below:

**Estimated Water Supplies Available for Metropolitan's Use
Under the Metropolitan Surface Reservoirs ***
(acre-feet per year)

Year	Multiple Dry- years (1990-1992)	Single Dry- year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	274,400	470,400	-	-
2010	297,500	510,000	-	-
2015	296,200	507,800	-	-
2020	278,800	477,900	-	-
2020	265,000	454,300	-	-

* --Represents expected supply capability for the resource program.

RATIONALE FOR EXPECTED SUPPLY

Program Facilities

Major facilities for Lake Mathews include an earthen dam to impound water, and a recently completed new outlet tower. Major facilities for Lake Skinner include an earthen dam to impound water, an outlet tower, a inlet from the San Diego Canal to deliver water into the

reservoir, a water treatment filtration facility, and recreational facilities consisting of a marina, parks, swimming areas, golf course, and hiking trails. Major facilities at Diamond Valley Lake include three earth dams to impound water, an inlet/outlet tower, a secondary inlet from the Inland Feeder, a large pumping station to deliver water into the reservoir, and power generating facilities. Recreational facilities consisting of a marina, parks, swimming areas, golf course, hiking trails, equestrian trails and lodging are planned.

Historical Record: The Diamond Valley Lake is currently operational and is essentially full. Lake Mathews and Lake Skinner have been service for over 30 years and are currently available for full operations.

- November 1974 Memorandum of Understanding and Agreement on Operation of Lake Skinner. This MOU, signed by Metropolitan and other affected parties, governs Metropolitan's operations of Lake Skinner in Riverside County. The DWR Division of Safety and Dams also reviews monitoring data on the safety of the dam annually.
- October 1991 Final Environmental Impact Report for the Eastside Reservoir Project (DVL). The EIR established criteria for integrating the operations of Metropolitan's reservoirs and DWR's southern reservoirs for emergency purposes. This criteria also provided that Metropolitan reservoirs could be expected to withdraw all drought storage water within a two-year period.
- November 1999 Memorandum of Understanding on Operation of Diamond Valley Lake. This MOU, signed by Metropolitan and other affected parties, governs Metropolitan's operations of Lake Skinner in Riverside County. The DWR Division of Safety and Dams also reviews monitoring data on the safety of the dam annually.
- June 2002 Division of Safety of Dams Certificate of Approval. The Department of Water Resources, Division of Safety of Dams issued the Certificate of Approval for operation of Diamond Valley Lake in early 2000, with three conditions. These conditions were: (1) Satisfactory operation of the butterfly valves and emergency gate in the inlet/outlet tower, (2) completion of the Tank Saddle Cutoff remediation and (3) completion of the Signal Spillway. Metropolitan completed these conditions in 2001 and the Diamond Valley Lake is currently operational in accordance with the Certificate of Approval.

Financing. The capital cost of Diamond Valley Lake, Lake Mathews and Lake Skinner was financed by a combination of revenue bonds and operating revenues. Annual operating costs, including maintenance and pumping, are included in Metropolitan's annual O&M budget.

Federal, State, and Local Permits/Approvals. All necessary permits have been obtained. A permit to generate and sell power has been acquired from the Federal Energy Regulatory Commission. No further regulatory permits are required.

IN-BASIN STORAGE DELIVERIES GROUNDWATER CONJUNCTIVE USE PROGRAMS

SOURCE OF SUPPLY

The Integrated Resources Plan (IRP) approved by the Metropolitan Board established Metropolitan's strategy to store imported water that is most available during wet years in surface reservoirs or groundwater aquifers for later use during droughts and emergencies. In this way, Metropolitan can reduce its reliance on direct deliveries from the State Water Project (SWP) and the Colorado River during dry years when competing demands by other users and risks to the watershed ecosystems are greatest. During the development of the IRP, the Association of Groundwater Agencies (AGWA), in cooperation with Metropolitan, undertook a study to examine the potential for groundwater storage. AGWA, which is comprised of representation for six major basins in Southern California, was created in order to work collectively on groundwater issues, including conjunctive use of imported water. The findings of the AGWA study indicated that up to 1.5 million acre-feet of total storage capacity could be dedicated to regional storage of imported supplies. Utilization of current facilities, along with some facilities improvements, could result in up to 350,000 acre-feet of additional groundwater production as a result of storing imported water over the next 20 to 30 years. Based on the AGWA study, the 1996 IRP set a resource objective to develop about 275,000 acre-feet per year of dry-year supply from in-basin groundwater storage by 2010 and 300,000 acre-feet per year by 2020. Groundwater conjunctive use capabilities are being developed in accordance with the IRP through the following programs.

Long-term Seasonal Storage Program: Metropolitan currently administers the Long-term Seasonal Storage Program to encourage the replenishment of available water in groundwater basins and local reservoirs. This program is a pricing program that makes system supplies, which are in excess of that amount needed to meet consumptive municipal and industrial demands, available to the member agencies at a discounted water rate. The replenished water must be held in storage for over one year so that it can be used subsequently during dry years.

It is estimated that an average of 100,000 acre-feet per year of groundwater supply is produced as a result of Metropolitan's existing discount pricing for winter season deliveries. In order to meet the 1996 IRP resource objective, contractual groundwater conjunctive use programs should be developed to provide 200,000 acre-feet per year of dry-year supply by 2020.

North Las Posas Groundwater Storage Program. Metropolitan's first contractual conjunctive use program was developed in the North Las Posas groundwater basin. The agreement between Metropolitan and Calleguas Municipal Water District was signed in 1995 and amended in 1998. The term of the agreement extends to 2035. By December 2004, 47,000 acre-feet per year of withdrawal capacity will be available, with additional program facilities under construction. By 2010, the North Las Posas Program will be completed and provide maximum storage capacity of 210,000 acre-feet per year and an

ultimate dry-year yield of 70,000 acre-feet per year. The construction and performance of this Program are phased.

- **Annual Replenishment Capacity.** The total replenishment or “put” capacity for the program will be up to 50,000 acre-feet per year. This replenishment capacity will be provided through the construction of 30 aquifer storage and recovery wells in three phases.
 - Phase 1: 8,000 acre-feet per year
 - Phase 2: An additional 25,000 acre-feet per year
 - Phase 3: An additional 17,000 acre-feet per year
- **Annual Withdrawal Capacity.** The total withdrawal or “take” capacity for the program will be up to 70,000 acre-feet per year. This withdrawal capacity will be provided through the construction of 30 aquifer storage and recovery wells in three phases).
 - Phase 1: 12,000 acre-feet per year
 - Phase 2: An additional 35,000 acre-feet per year
 - Phase 3: An additional 23,000 acre-feet per year
- **Maximum Storage Capacity.** The maximum storage capacity is 210,000 acre-feet.

Based on the parameters and construction schedules for the program, the dry-year supply available from this program is as follows.

**Estimated Water Supplies Available for Metropolitan’s Use
Under the North Las Posas Program ***
(acre-feet per year)

Year	Multiple Dry-years (1990-1992)	Single Dry-year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	16,700	50,000	-	-
2010	70,000	70,000	-	-
2015	70,000	70,000	-	-
2020	70,000	70,000	-	-
2025	70,000	70,000	-	-

* --Represents expected supply capability for the resource program.

Groundwater Storage Programs Operational by 2010: Metropolitan is currently negotiating additional contractual conjunctive use agreement in Raymond Basin and several programs partially funded by Proposition 13. In January 2000, the Metropolitan Board authorized entering into agreements with the City of Pasadena and Foothill MWD to implement the groundwater storage program contingent upon satisfactory completion of all necessary environmental documentation. The Board also appropriated funds to conduct initial environmental, engineering, and planning studies. The Program is expected to yield 25,000 acre-feet in a dry year by 2010.

A total of \$45 million in Proposition 13 local assistance grant funds have been allocated to Metropolitan by the California Department of Water Resources to help finance groundwater conjunctive use programs within Metropolitan's service area. Metropolitan

Contractual Groundwater Storage Programs Operational by 2010

Programs	Total Storage Capacity (acre-feet)	Dry-Year Yield (acre-feet per year)
Project Name: Raymond Basin Groundwater Storage Program Submitted by: City of Pasadena, Foothill MWD	75,000	25,000
Project Name: Phase 1: Long Beach Conjunctive Use Storage Project Submitted by: Central Basin MWD, West Basin MWD, Long Beach, Compton, Torrance	13,000	4,333
Project Name: Foothill Area Groundwater Storage Project Submitted by: Foothill Municipal Water District	9,000	3,000
Project Name: Mission Basin Groundwater Storage and Recovery Submitted by: City of Oceanside Sponsored by: San Diego County Water Authority	5,700	1,900
Project Name: Orange County Groundwater Conjunctive Use Program Submitted by: Orange County Water District Sponsored by: Municipal Water District of Orange County	60,000	20,000
Project Name: San Dieguito Recharge and Extraction Project Submitted by: Olivenhain MWD Sponsored by: San Diego County Water Authority	2,250	750
Project Name: Live Oak Basin Conjunctive Use Project Submitted by: Three Valleys MWD	3,000	1,000
Project Name: Chino Basin Programs Submitted by: Chino Basin Watermaster Sponsored by: Inland Empire Utility Agency	100,000	33,000
Total	267,950	89,000

* --Represents expected supply capability for the resource program.

issued a Request-for-Proposal (RFP) to its member agencies in November 2000. In response to this RFP, 18 proposals were submitted by twelve member agencies. Nine of the proposals were shortlisted and an additional two were wait-listed. In April 2001, the Metropolitan Board of Directors authorized finalization of agreement terms with the member agencies submitting shortlisted proposals and required that implementation of the agreement include the initiation of construction by September 2003. The approved

Proposition 13 Programs are expected to yield 64,000 acre-feet in a dry year starting in 2005-2006 and continue to be operational over the 25-year agreement term. The dry-year yield from these groundwater conjunctive use programs, which are expected to be operational by 2010, are as follows:

Additional Groundwater Conjunctive Use Programs: Beyond 2010, it is anticipated that additional dry-year supply would be developed through the implementation of the wait-listed proposals, the potential expansions of the programs and issuance of a second Request for Proposals to solicit additional storage projects. These potential programs are described as follows:

Additional Groundwater Conjunctive Use Programs

Programs	Total Storage Capacity (acre-feet)	Dry-Year Yield (acre-feet per year)
Project Name: Elsinore Valley Groundwater Storage Program Submitted by: Elsinore Valley MWD Sponsored by: Western MWD	66,000	22,000
Project Name: San Gabriel Basin Conjunctive Use Project Submitted by: Three Valleys MWD	15,000	5,000
Expansion of 2010 Programs	TBD	TBD
New Groundwater Storage Programs	TBD	TBD
Total (Required Yield to Meet IRP Resource Objective in 2020)	302,700	111,000

* --Represents expected supply capability for the resource program.

RATIONALE FOR EXPECTED SUPPLY

Implementation Status: The status of implementation for the groundwater conjunctive use programs has been described under the “Source of Supply”.

Historical Record:

- Long-term Seasonal Storage Program. As a result of Metropolitan’s Long-term Seasonal Storage Program, local agencies are currently storing available imported water in order to increase groundwater production during the summer season and dry years. Based on the historical record for replenishment deliveries, it is estimated that an average of 100,000 acre-feet per year of groundwater supply is produced as a result of Metropolitan’s existing Long-term Seasonal Storage Program.
- North Las Posas Groundwater Storage Program. The first phase of the program’s ASR wells has been constructed, providing approximately 8,000 acre-feet per year of replenishment capacity and 12,000 acre-feet per year of withdrawal capacity. Metropolitan currently has about 30,000 acre-feet in storage..

Written Contracts or Other Proof: Metropolitan's dry-year supply from the groundwater conjunctive use programs is based on Metropolitan's Board actions and agreements.

- Approval of Long-term Seasonal Storage Program. Beginning in fiscal year 1989-90, Metropolitan implemented the Long-term Seasonal Storage Program. The continuation of this program was reaffirmed as part of the new rate structure that was approved by Metropolitan's Board in October 2001.
- Agreements for North Las Posas Groundwater Storage Program.
 - An Agreement between Metropolitan and Calleguas Municipal Water District (Calleguas) was executed in June 1995. The term of the Agreement extends to 2035. In this Agreement, a groundwater conjunctive use program would be implemented in the North Las Posas Groundwater Basin. Calleguas would build and operate a total of 30 Aquifer Storage and Recovery (ASR) wells and appurtenant facilities. Metropolitan would reimburse Calleguas for the cost of construction in exchange for use of the storage and pumping capacities. Metropolitan would have the capability to store 100,000 acre-feet of imported water and withdraw from storage 70,000 acre-feet per year.
 - An amendment to the Agreement between Metropolitan and Calleguas was executed in May 1998. The amendment allows Metropolitan to increase its storage capability from 100,000 acre-feet to 210,000 acre-feet and Metropolitan and Calleguas to improve the operation plans and financing structure for the program.
- Groundwater Conjunctive Use Programs Operational by 2010.
 - AGWA study dated month 1994, identifying the potential storage capacity and return capabilities from groundwater conjunctive use programs.
 - Principles for groundwater storage adopted by the Metropolitan Board in January 2000.
 - Resolution for Proposition 13 Funds adopted by the Metropolitan Board in October 2000.
 - Request-for-Proposal for groundwater conjunctive use projects issued in November 2000.
 - Information Letter to Metropolitan Board regarding the selection of groundwater conjunctive use projects in April 2001.
 - Term sheet for groundwater storage program between Metropolitan and Municipal Water District of Orange County executed in August 2001.
 - Term sheet for a groundwater storage program between Metropolitan and Inland Empire Utility Agency executed in August 2001 with an agreement to be executed by April 2003.
 - Agreement for a groundwater storage program between Metropolitan and Three Valleys MWD executed in October 2002.
 - Agreement for groundwater storage program between Metropolitan and Central-West Basin, and the cities of Torrance, Compton, & Long Beach executed in July 2002.
 - Agreement for groundwater storage program between Metropolitan and Foothill MWD executed in February 2003.
 - Term sheets for San Diego groundwater storage programs executed in April and May 2002.

Financing: Financing has been supplied from multiple sources as discussed below:

- Financing for Long-term Seasonal Storage Program. No capital or O&M costs are associated with the implementation of the Long-term Season Storage Program. Rather Metropolitan provides a discounted water rate to encourage member agencies to take delivery of surplus water for storage purposes.
- Financing for North Las Posas Groundwater Storage Program.
 - Metropolitan's Board appropriated \$6 million to construct wells and appurtenant facilities in Phase 1 of the program in June 1995.
 - Metropolitan's Board appropriated \$25 million to construct wells and appurtenant facilities Phase 2 of the program in January 1998.
- Financing for 2010 and Additional Groundwater Storage Programs
 - Metropolitan's Board appropriated \$210,000 to conduct initial environmental, engineering and planning studies for the Raymond Basin storage program in January 2000.
 - Proposition 13 funds (\$45 million) were allocated to Metropolitan by the state in May 2000 for the development of local groundwater storage projects.
 - Metropolitan's long-term capital program includes \$210 million to implement groundwater conjunctive use programs through 2020.

Federal, State, and Local Permits/Approvals.

- Final EIR for North Las Posas Groundwater Storage Program. Environmental Impact Report for the North Las Posas Groundwater Storage Program was certified by Calleguas Municipal Water District, lead agency, and by Metropolitan, responsible agency, in April 1995 and June 1995, respectively.
- Long Beach Conjunctive-use Storage Project. Environmental documentation for the Long Beach Conjunctive-use Storage Project was certified by the City of Long Beach in August 2001.
- Live Oak Basin Conjunctive-use Storage Project. Environmental documentation for the Live Oak Basin Conjunctive-use Storage Project was certified by Three Valleys MWD in January 2002.
- Foothill Area Groundwater Storage Project. Environmental documentation for the Foothill Area Groundwater Storage Project was certified by Foothill Municipal Water District in January 2003.
- Chino Basin Groundwater Storage Project. Environmental documentation for the Chino Basin Groundwater Storage Project was certified by Inland Empire Utility Agency in December 2002.
- Environmental Review for 2010 Programs. Environmental review of the 2010 Groundwater Conjunctive Use Programs will be completed prior to signing agreements.

Disclosure Document

**REPORT ON METROPOLITAN'S WATER SUPPLIES
DISCLOSURE STATEMENT**

With legislation authored by Senator Sheila Kuehl (SB221) and Senator Jim Costa (SB610) water retailers are required to demonstrate whether their water supplies are sufficient for certain proposed subdivisions and large development projects subject to the California Environmental Quality Act (CEQA). Although Metropolitan and other wholesalers do not have verification responsibilities under this legislation, information provided by Metropolitan may be useful to retailers in complying with these responsibilities.

This report identifies actual and projected demands for water from Metropolitan as well as the water supplies available to Metropolitan to meet those demands. The information used in developing demand projections in this report includes data provided by the Southern California Association of Governments (SCAG), the San Diego Association of Governments (SANDAG), Metropolitan's public member agencies and other sources. The information used in developing supply projections includes data provided by the California Department of Water Resources regarding State Water Project supplies, the United States Bureau of Reclamation regarding Colorado River supplies, and other sources. Other information regarding water demand and supply is available to readers in Metropolitan's Integrated Resource Plan (IRP) and Regional Urban Water Management Plan (RUWMP). While there is information in the report discussing dry year water availability and Metropolitan's Water Supply and Drought Management Plan (WSDM Plan), this report does not cover Metropolitan's policies regarding water shortage allocations. Metropolitan's policy for water shortage allocations is to provide deliveries consistent with California law and the WSDM Plan; more information on this matter is available elsewhere.

Although all information in this report is believed to be accurate as of the time of issuance, Metropolitan does not warrant as to the reliability of information contained in this report supplied by third parties. Readers should make their own judgements to the extent on which they rely on the information in this report. This report will be updated as new information and circumstances warrant.

Appendix G

Metropolitan Water District of Southern California

APPENDIX A

The Metropolitan Water District of Southern California



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INTRODUCTION

This Appendix A provides general information regarding the Metropolitan Water District of Southern California (“Metropolitan”), including information regarding Metropolitan’s operations and finances. Statements included or incorporated by reference in this Appendix A constitute “forward-looking statements.” Such statements are generally identifiable by the terminology used such as “plan,” “project,” “expect,” “estimate,” “budget” or other similar words. The achievement of results or other expectations contained in such forward-looking statements involve known and unknown risks, uncertainties and other factors which may cause actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements. Actual results may differ from Metropolitan’s forecasts. Metropolitan is not obligated to issue any updates or revisions to the forward-looking statements in any event. Metropolitan maintains a website that may include information on programs or projects described in this Appendix A; however, none of the information on Metropolitan’s website is incorporated by reference and none of such information is intended to assist investors in making an investment decision or to provide any additional information with respect to the information included in this Appendix A.

Formation and Purpose

Metropolitan is a metropolitan water district created in 1928 under authority of the Metropolitan Water District Act (California Statutes 1927, Chapter 429, as reenacted in 1969 as Chapter 209, as amended (herein referred to as the ~~–Act~~)). The Act authorizes Metropolitan to: levy property taxes within its service area; establish water rates; impose charges for water standby and service availability; incur general obligation bonded indebtedness and issue revenue bonds, notes and short-term revenue certificates; execute contracts; and exercise the power of eminent domain for the purpose of acquiring property. In addition, Metropolitan’s Board of Directors (the ~~–Board~~) is authorized to establish terms and conditions under which additional areas may be annexed to Metropolitan’s service area.

Metropolitan’s primary purpose is to provide a supplemental supply of water for domestic and municipal uses at wholesale rates to its member public agencies. If additional water is available, such water may be sold for other beneficial uses. Metropolitan serves its member agencies as a water wholesaler and has no retail customers.

The mission of Metropolitan, as promulgated by the Board, is to provide its service area with adequate and reliable supplies of high quality water to meet present and future needs in an environmentally and economically responsible way.

Metropolitan’s charges for water sales and availability are fixed by its Board, and are not subject to regulation or approval by the California Public Utilities Commission or any other state or federal agency. Metropolitan imports water from two principal sources: northern California via the Edmund G. Brown California Aqueduct (the ~~–California Aqueduct~~) of the State Water Project owned by the State of California (the ~~–State~~) and the Colorado River via the Colorado River Aqueduct owned by Metropolitan.

Member Agencies

Metropolitan is comprised of 26 member public agencies, including 14 cities, 11 municipal water districts, and one county water authority, which collectively serve the residents and businesses of more than 300 cities and numerous unincorporated communities. Member agencies request water from Metropolitan at various delivery points within Metropolitan’s system and pay for such water at uniform rates established by the Board for each class of service. Metropolitan’s water is a supplemental supply for its member agencies, most of whom have other sources of water. See ~~–METROPOLITAN REVENUES—Principal Customers~~” for a listing of the ten member agencies with the highest water purchases from Metropolitan during the fiscal year ended June 30, 2011. Metropolitan’s member agencies may, from time to time, develop additional sources of

water. No member is required to purchase water from Metropolitan, but all member agencies are required to pay readiness-to-serve charges whether or not they purchase water from Metropolitan. See ~~METROPOLITAN REVENUES—Rate Structure.~~

The following table lists the current 26 member agencies of Metropolitan.

<u>Municipal Water Districts</u>		<u>Cities</u>		<u>County Water Authority</u>
Calleguas	Las Virgenes	Anaheim	Los Angeles	San Diego
Central Basin	Orange County	Beverly Hills	Pasadena	
Eastern	Three Valleys	Burbank	San Fernando	
Foothill	West Basin	Compton	San Marino	
Inland Empire Utilities Agency		Fullerton	Santa Ana	
Upper San Gabriel Valley		Glendale	Santa Monica	
Western of Riverside County		Long Beach	Torrance	

Service Area

Metropolitan’s service area comprises approximately 5,200 square miles and includes portions of the six counties of Los Angeles, Orange, Riverside, San Bernardino, San Diego and Ventura. When Metropolitan began delivering water in 1941, its service area consisted of approximately 625 square miles. Its service area has increased by 4,575 square miles since that time. The expansion is primarily the result of annexation of the service areas of additional member agencies.

Almost 19 million people lived in Metropolitan’s service area in 2010 based on official estimates from the Southern California Association of Governments (~~—SCAG~~”), San Diego Association of Governments (~~—SANDAG~~”) and California Department of Finance. According to official forecasts adopted by SCAG in 2008 and SANDAG in 2006, by 2035 Metropolitan’s service area is projected to have a population increase of approximately 3.6 million people over 2010 population levels. Population projections prepared by SCAG and SANDAG in 2010 and 2011, as part of their planning process to update regional transportation and land use plans, show expected population growth of about 19 percent in Metropolitan’s service area between 2010 and 2035. These preliminary regional agency projections do not reflect a complete analysis of the 2010 Census population estimates and may be revised. The economy of Metropolitan’s service area is exceptionally diverse. As measured in 2009, the economy of Metropolitan’s service area has a gross domestic product larger than all but thirteen nations of the world. Metropolitan provides between 40 and 60 percent of the water used within its service area in any year. For additional economic and demographic information concerning Metropolitan’s service area, see Appendix E – ~~—SELECTED DEMOGRAPHIC AND ECONOMIC INFORMATION FOR METROPOLITAN’S SERVICE AREA.~~”

The climate in Metropolitan’s service area ranges from moderate temperatures throughout the year in the coastal areas to hot and dry summers in the inland areas. Annual rainfall in an average year is 13 to 15 inches along the coastal area, up to 20 inches in foothill areas and less than 10 inches inland.

METROPOLITAN’S WATER SUPPLY

Metropolitan faces a number of challenges in providing a reliable and high quality water supply for southern California. These include, among others: (1) population growth within the service area; (2) increased competition for low-cost water supplies; (3) variable weather conditions; and (4) increased environmental regulations. Metropolitan’s resources and strategies for meeting these long-term challenges are set forth in its Integrated Water Resources Plan, as updated from time to time. (See ~~—Integrated Water Resources Plan~~” below.)

Metropolitan's principal sources of water are the State Water Project and the Colorado River. Recent court decisions have restricted deliveries from the State Water Project as described below under —State Water Project—*Endangered Species Act Considerations*.” In addition, weather conditions have varied significantly over the past five years, affecting water supplies. Dry conditions persisted in the northern Sierra Nevada watershed for the State Water Project from 2007 through 2009, followed by above-normal precipitation from January 2010 through March 2011. By April 26, 2011, snowpack in the Sierra Nevada reached 185 percent of normal. On March 31, 2011, California Governor Jerry Brown proclaimed an end to the statewide drought emergency proclaimed on February 27, 2009, by then-Governor of California Arnold Schwarzenegger.

Supply conditions for the Colorado River have also been impacted by weather conditions. Precipitation in the Colorado River Basin from October 2010 through July 2011 was significantly above normal. Upper Colorado River Basin snowpack measured on May 1, 2011, was 150 percent of normal with accumulations at the highest level on record. The April through July 2011 runoff into Lake Powell measured 13 million acre-feet, which was 163 percent of average. This was the third largest spring runoff since Lake Powell initially filled in the 1960s. This very wet year follows prolonged drought in the Upper Colorado River Basin from 2000 through 2010 with average annual runoff of 69 percent of normal. In November 2010, Lake Mead's elevation had dropped to 1,081 feet above sea level, the lowest elevation since the initial filling of the reservoir in 1937. The above-normal precipitation triggered more than 4 million acre-feet of additional releases from Lake Powell to Lake Mead, the most since 1997. Lake Mead's elevation is projected to reach approximately 1,130 feet by December 2011, which is approximately 50 feet higher than observed in November 2010. Each ten-foot increase in Lake Mead's elevation represents approximately 1 million acre-feet of increased storage.

Integrated Water Resources Plan

Metropolitan, its member agencies, sub-agencies and groundwater basin managers developed their first Integrated Water Resources Plan (“IRP”), which was adopted by the Board in January 1996 and updated in 2004, as a long-term planning guideline for resources and capital investments. The purpose of the IRP was the development of a portfolio of preferred resources (see —METROPOLITAN'S WATER SUPPLY—The Integrated Resources Plan Strategy” in this Appendix A) to meet the water supply reliability and water quality needs for the region in a cost-effective and environmentally sound manner.

On October 12, 2010, Metropolitan's Board adopted an IRP update (the —2010 IRP Update”) as a strategy to set goals and a framework for water resources development. This strategy enables Metropolitan and its member agencies to manage future challenges and changes in California's water conditions and to balance investments with water reliability benefits. The 2010 IRP Update was formulated with input from member agencies, retail water agencies, and other stakeholders including water and wastewater managers, environmental and business interests and the community. The framework places an emphasis on regional collaboration.

The 2010 IRP Update seeks to provide regional flexibility through 2035 by stabilizing Metropolitan's traditional imported water supplies and continuing to develop additional local resources. It also advances long-term planning for potential future contingency resources, such as storm water capture and large-scale seawater desalination, in close coordination with Metropolitan's 26 member agencies and other utilities. Specific projects that may be developed by Metropolitan in connection with the implementation of the IRP will be subject to future Board consideration and approval, as well as environmental and regulatory documentation and compliance. The 2010 IRP Update is available on Metropolitan's web site at <http://www.mwdh2o.com/mwdh2o/pages/yourwater/irp/>. Specific projects that may be developed by Metropolitan in connection with the implementation of the IRP will be subject to future Board consideration and approval, as well as environmental and regulatory documentation and compliance. The information set forth on Metropolitan's web site is not incorporated by reference.

The Integrated Resources Plan Strategy

The IRP Strategy identifies a balance of local and imported water resources within Metropolitan's service area. Metropolitan expects that the core resource strategy, uncertainty buffers and foundational actions in the IRP Strategy will be continually reviewed and updated at least every five years to reflect changing demand and supply conditions.

The following paragraphs describe several elements of the IRP Strategy.

State Water Project. State Water Project supplies are important for maximizing local groundwater potential and the use of recycled water since State Water Project water has lower salinity content than Colorado River Aqueduct water and can be used to increase groundwater conjunctive use applications. See ~~–METROPOLITAN'S WATER SUPPLY—State Water Project~~ and ~~–REGIONAL WATER RESOURCES—Local Water Supplies~~ in this Appendix A.

Colorado River Aqueduct. The Colorado River Aqueduct delivers water from the Colorado River, Metropolitan's original source of supply. Metropolitan has helped to fund and implement farm and irrigation district conservation programs, improvements to river operation facilities, land management programs and water transfers and exchanges through agreements with agricultural water districts in southern California and entities in Arizona and Nevada that use Colorado River water. See ~~–METROPOLITAN'S WATER SUPPLY—Colorado River Aqueduct~~ in this Appendix A.

Water Conservation. Conservation and other water use efficiencies are integral components of Metropolitan's IRP. Metropolitan has invested in conservation programs since the 1980's. Historically, most of the investments have been in water efficient fixtures in the residential sector. Current efforts also focus on outdoor and commercial water use. See ~~–METROPOLITAN'S WATER SUPPLY—Water Conservation~~ in this Appendix A.

Recycled Water. Reclaimed or recycled municipal and industrial water is not potable, but can be used for landscape irrigation, agriculture, protecting groundwater basins from saltwater intrusion, industrial processes, and recharging local aquifers. Metropolitan offers financial incentives to member agencies for developing economically viable reclamation projects. See ~~–REGIONAL WATER RESOURCES—Local Water Supplies~~ in this Appendix A.

Conjunctive Use. Conjunctive use is the coordinated use of surface water supplies and water storage. It entails storing surplus imported water during the winter months or wet years in local surface reservoirs and recharging local groundwater basins, then using the stored supplies during dry months and droughts, thus increasing the supply reliability of the region. See ~~–REGIONAL WATER RESOURCES—Local Water Supplies~~ in this Appendix A.

Water Transfers and Exchanges. Under voluntary water transfer or exchange agreements, agricultural communities using irrigation water may periodically sell some of their water allotments to urban areas. The water may be delivered through existing State Water Project or Colorado River Aqueduct facilities, or may be exchanged for water that is delivered through such facilities. Metropolitan's policy toward potential transfers states that the transfers will be designed to protect and, where feasible, enhance environmental resources and avoid the mining of local groundwater supplies. See ~~–METROPOLITAN'S WATER SUPPLY—Water Transfer, Storage and Exchange Programs~~ in this Appendix A.

Groundwater Recovery. Natural groundwater reservoirs serve an important function as storage facilities for local and imported water. When groundwater storage becomes contaminated, water agencies have to rely more heavily on imported water supplies. Treatment for polluted groundwater is quite costly and poses environmental challenges. Metropolitan offers financial incentives to help fund member agency

groundwater recovery projects. See ~~“REGIONAL WATER RESOURCES—Local Water Supplies”~~ in this Appendix A.

Seawater Desalination. Seawater desalination is the process of removing salts from ocean water to produce potable supplies. It is a potential new local supply that would help increase supply reliability in Metropolitan’s service area. Metropolitan offers financial incentives to member agencies for seawater desalination projects through its Seawater Desalination Program. Currently, a number of seawater desalination projects are under development within Metropolitan’s service area. See ~~“REGIONAL WATER RESOURCES—Local Water Supplies”~~ and ~~“METROPOLITAN REVENUES—Rate Structure”~~ in this Appendix A.

State Water Project

General. One of Metropolitan’s two major sources of water is the State Water Project, which is owned by the State and operated by the California Department of Water Resources (~~“DWR”~~). This project transports Feather River water stored in and released from Oroville Dam and unregulated flows diverted directly from the San Francisco Bay/Sacramento-San Joaquin River Delta (~~“Bay-Delta”~~) south via the California Aqueduct to four delivery points near the northern and eastern boundaries of Metropolitan’s service area. The total length of the California Aqueduct is approximately 444 miles.

In 1960, Metropolitan signed a contract (as amended, the ~~“State Water Contract”~~) with DWR. Metropolitan is one of 29 agencies that have long-term contracts for water service from DWR, and is the largest agency in terms of the number of people it serves (almost 19 million), the share of State Water Project water that it has contracted to receive (approximately 46 percent), and the percentage of total annual payments made to DWR by agencies with State water contracts (approximately 58 percent projected for 2011). For information regarding Metropolitan’s obligations under the State Water Contract, see ~~“METROPOLITAN EXPENDITURES—State Water Contract Obligations”~~ in this Appendix A. Upon expiration of the State Water Contract term (currently in 2035), Metropolitan has the option to continue service under substantially the same terms and conditions. Metropolitan presently intends to exercise this option to continue service to at least 2052.

The State Water Contract, under a 100 percent allocation, provides Metropolitan 1,911,500 acre-feet of water. (An acre-foot is the amount of water that will cover one acre to a depth of one foot and equals approximately 326,000 gallons, which represents the needs of two average families in and around the home for one year.) Water received from the State Water Project by Metropolitan over the nine years from 2002 through 2010, including water from water transfer, groundwater banking and exchange programs delivered through the California Aqueduct, described below under ~~“METROPOLITAN’S WATER SUPPLY —Water Transfer, Storage and Exchange Programs”~~, varied from a low of 908,000 acre-feet in calendar year 2009 to a high of 1,800,000 acre-feet in 2004.

For calendar year 2010, DWR’s allocation to State Water Project contractors was 50 percent of contracted amounts, reflecting pumping restrictions due to biological opinions for Delta smelt and Chinook salmon (see ~~“—Endangered Species Act Considerations”~~ below), late spring storms, a return to normal precipitation and reservoir levels and above-normal Sierra snowpack. For Metropolitan, the 2010 allocation provided 955,750 acre-feet, or 50 percent of its 1,911,500-acre-foot contractual amount. In 2010, Metropolitan took delivery of 1,129,062 acre-feet to its service area plus approximately 175,000 acre-feet of net deliveries to storage in its Central Valley groundwater storage programs. This includes State Water Project supplies from water transfers and exchanges delivered through the California Aqueduct. (See ~~“—Water Transfer, Storage and Exchange Programs”~~ and ~~“—Storage Capacity and Water in Storage”~~ below.)

For calendar year 2011, DWR’s initial allocation estimate to State Water Project contractors was set at 25 percent of contracted amounts. The 2011 allocation was adjusted upwards, most recently on April 20, 2011 to 80 percent of contracted amounts, reflecting significantly above-normal precipitation over the entire

Sierra Nevada range and accumulating snowpack to levels of 185 percent of normal and greater. For Metropolitan, the revised allocation is 1,529,200 acre-feet, or 80 percent of its 1,911,500 acre-foot contractual amount. This revised 80 percent allocation for 2011 is the highest water supply allocation in five years. In addition, wet weather conditions enabled Metropolitan to take delivery of 181,594 acre-feet of interruptible water supplies in excess of its 2011 allocation.

Endangered Species Act Considerations

General. The listing of several fish species as threatened or endangered under the federal or California Endangered Species Acts (respectively, the “Federal ESA” and the “California ESA” and, collectively, the “ESA”) have adversely impacted State Water Project operations and limited the flexibility of the State Water Project. Currently, five species (the winter-run and spring-run Chinook salmon, Delta smelt, North American green sturgeon and Central Valley steelhead) are listed under the ESAs. In addition, on June 25, 2009, the California Fish and Game Commission declared the longfin smelt a threatened species under the California ESA.

The Federal ESA requires that before any federal agency authorizes funds or carries out an action it must consult with the appropriate federal fishery agency to determine whether the action would jeopardize the continued existence of any threatened or endangered species, or adversely modify habitat critical to the species’ needs. The result of the consultation is known as a “biological opinion.” In the biological opinion the federal fishery agency determines whether the action would cause jeopardy to a threatened or endangered species or adverse modification to critical habitat and recommends reasonable and prudent alternatives or measures that would allow the action to proceed without causing jeopardy or adverse modification. The biological opinion also includes an “incidental take statement.” The incidental take statement allows the action to go forward even though it will result in some level of “take,” including harming or killing some members of the species, incidental to the agency action, provided that the agency action does not jeopardize the continued existence of any threatened or endangered species and complies with reasonable mitigation and minimization measures recommended by the federal fishery agency.

In 2004 and 2005, the United States Fish and Wildlife Service (“USFWS”) and National Marine Fisheries Service issued biological opinions and incidental take statements governing the coordinated operations of the State Water Project and the federal Central Valley Project with respect to the Delta smelt, the winter-run and spring-run Chinook salmon and the Central Valley steelhead. In July 2006, the Bureau of Reclamation reinitiated consultation with the USFWS and National Marine Fisheries Service with respect to the 2004 and 2005 biological opinions (with the addition of the North American green sturgeon, which was listed in April 2006) following the filing of legal challenges to those biological opinions and incidental take statements described under “Federal ESA Litigation” below. Under the Federal ESA, critical habitat must also be designated for each listed species. Critical habitat has been designated for each of the currently listed species.

Federal ESA Litigation. Litigation filed by several environmental interest groups (*NRDC v. Kempthorne*; and *Pacific Coast Federation of Fishermen’s Associations v. Gutierrez*) in the United States District Court for the Eastern District of California alleged that the 2004 and 2005 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 in *NRDC v. Kempthorne*, finding the USFWS biological opinion for Delta smelt to be invalid. The USFWS released a new biological opinion on the impacts of the State Water Project and Central Valley Project on Delta smelt on December 15, 2008. Metropolitan, the San Luis & Delta Mendota Water Authority, Westlands Water District, Kern County Water Agency, Coalition for a Sustainable Delta and State Water Contractors, a California nonprofit corporation formed by agencies contracting with DWR for water from the State Water Project (the “State Water Contractors”), the Family Farm Alliance and the Pacific Legal Foundation on behalf

of several owners of small farms in California's Central Valley filed separate lawsuits in federal district court challenging the biological opinion, which the federal court consolidated under the caption *Delta Smelt Consolidated Cases*.

On December 14, 2010, Judge Wanger issued a decision on summary judgment finding that there were major scientific and legal flaws in the Delta smelt biological opinion and remanding the biological opinion to the USFWS for reconsideration. The court's decision invalidates some of the restrictions on project operations contained in the Delta smelt biological opinion. On May 4, 2011, Judge Wanger issued a decision directing the USFWS to complete a new draft biological opinion by October 1, 2011, and to complete a final biological opinion with environmental documentation by December 1, 2013. This decision has resulted in a period of uncertainty with respect to restrictions mandated by that biological opinion. The federal court has approved a settlement agreement modifying biological opinion restrictions that would have applied in spring 2011. State Water Project and Central Valley Project contractors filed a motion to enjoin the enforcement of requirements in the biological opinion that set salinity requirements in September and October and restrict project storage in November. A hearing on the water contractors' motion was held July 26-29, 2011. On August 31, 2011, Judge Wanger issued an injunction modifying the salinity related requirements in the biological opinion. The effect of the injunction will be to reduce water supply impacts from the biological opinion's salinity requirements. It is unknown at this time whether the injunction will be appealed.

On April 16, 2008, in *Pacific Coast Federation of Fishermen's Associations v. Gutierrez*, the court invalidated the 2004 National Marine Fisheries Service's biological opinion for the salmon and other fish species that spawn in rivers flowing into the Bay-Delta. Among other things, the court found that the no-jeopardy conclusions in the biological opinion were inconsistent with some of the factual findings in the biological opinion; that the biological opinion failed to adequately address the impacts of State Water Project and Central Valley Project operations on critical habitat and that there was a failure to consider how climate change and global warming might affect the impacts of the projects on salmonid species.

The National Marine Fisheries Service released its new biological opinion for salmonid species on June 4, 2009. The salmonid species biological opinion contains additional restrictions on State Water Project and Central Valley Project operations. The National Marine Fisheries Service calculated that these restrictions will reduce the amount of water the State Water Project and Central Valley Project combined will be able to export from the Bay-Delta by 5 to 7 percent. DWR had estimated a 10 percent average water loss, expected to begin in 2010, under this biological opinion. See —*State Water Project Operational Constraints*” below for the estimated impact to Metropolitan's water supply. Six lawsuits have been filed challenging the 2009 salmon biological opinion. These various lawsuits have been brought by the San Luis & Delta Mendota Water Authority, Westlands Water District, Stockton East Water District, Oakdale Irrigation District, Kern County Water Agency, the State Water Contractors and Metropolitan. The court has consolidated the cases under the caption *Consolidated Salmon Cases*.

On May 25, 2010, the court granted the plaintiffs' request for preliminary injunction in the *Consolidated Salmon Cases*, restraining enforcement of two requirements under the salmon biological opinion that limit exported water during the spring months based on San Joaquin River flows into the Bay-Delta and reverse flows on the Old and Middle Rivers. Hearings on motions for summary judgment in the *Consolidated Salmon Cases* were held on December 16, 2010. It is unknown when the court will issue a decision in the *Consolidated Salmon Cases*.

On November 13, 2009, the Center for Biological Diversity filed separate lawsuits challenging the USFWS' failure to respond to a petition to change the Delta smelt's federal status from threatened to endangered and the USFWS' denial of federal listing for the longfin smelt. On April 2, 2010, the USFWS issued a finding that uplisting the Delta smelt was warranted but precluded by the need to devote resources to higher-priority matters. This —warranted but precluded” finding did not change the regulatory restrictions

applicable to Delta smelt. An agreement settling the longfin smelt litigation was approved on February 2, 2011. Under the agreement, the USFWS agreed to complete a rangewide status review of the longfin smelt and consider whether the Bay-Delta longfin smelt population, or any other longfin smelt population from California to Alaska, qualifies as a "distinct population" that warrants federal protection. The USFWS agreed to make a new determination on federal listing for the longfin smelt by September 30, 2011.

California ESA Litigation. In addition to the litigation under the Federal ESA, other environmental groups sued DWR on October 4, 2006 in the Superior Court of the State of California for Alameda County alleging that DWR was ~~taking~~ listed species without authorization under the California ESA. This litigation (*Watershed Enforcers, a project of the California Sportfishing Protection Alliance v. California Department of Water Resources*) requested that DWR be mandated to either cease operation of the State Water Project pumps, which deliver water to the California Aqueduct, in a manner that results in such ~~taking~~ of listed species or obtain authorization for such ~~taking~~ under the California ESA. On April 18, 2007, the Alameda County Superior Court issued its Statement of Decision finding that DWR was illegally ~~taking~~ listed fish through operation of the State Water Project export facilities. The Superior Court ordered DWR to ~~cease~~ and desist from further operation of those facilities within 60 days unless it obtained take authorization from the California Department of Fish and Game.

DWR appealed the Alameda County Superior Court's order on May 7, 2007. This appeal stayed the order pending the outcome of the appeal. The Court of Appeal stayed processing of the appeal in 2009 to allow time for DWR to obtain incidental take authorization for the Delta smelt and salmon under the California ESA, based on the consistency of the federal biological opinions with California ESA requirements (~~Consistency~~ Consistency Determinations). After the California Department of Fish & Game issued the Consistency Determinations under the California ESA, authorizing the incidental take of both Delta smelt and salmon, appellants DWR and State Water Contractors dismissed their appeals of the *Watershed Enforcers* decision. The Court of Appeal subsequently issued a decision finding that DWR was a ~~person~~ person under the California ESA and subject to its take prohibitions, which was the only issue left in the case. The State Water Contractors and Kern County Water Agency have filed suit in state court challenging the Consistency Determinations under the California ESA that have been issued for both Delta smelt and salmon. Those lawsuits challenging the Consistency Determinations are pending. The parties are continuing discussions of adjustments to the incidental take authorizations in light of the summary judgment ruling in the *Delta Smelt Consolidated Cases* discussed under the heading "*Federal ESA Litigation*" above.

The California Fish and Game Commission listed the longfin smelt as a threatened species under the California ESA on June 25, 2009. On February 23, 2009, in anticipation of the listing action, the California Department of Fish and Game issued a California ESA section 2081 incidental take permit to DWR authorizing the incidental take of longfin smelt by the State Water Project. This permit authorizes continued operation of the State Water Project under the conditions specified in the section 2081 permit. The State Water Contractors filed suit against the California Department of Fish and Game on March 25, 2009, alleging that the export restrictions imposed by the section 2081 permit have no reasonable relationship to any harm to longfin smelt caused by State Water Project operations, are arbitrary and capricious and are not supported by the best available science. The lawsuit is pending and the administrative record for the cases has been completed.

State Water Project Operational Constraints. DWR has altered the operations of the State Water Project to accommodate species of fish listed under the ESAs. These changes in project operations have adversely affected State Water Project deliveries. The impact on total State Water Project deliveries attributable to the Delta smelt and salmonid species biological opinions combined is estimated to be one million acre-feet in an average year, reducing State Water Project deliveries from approximately 3.3 million acre-feet to approximately 2.3 million acre-feet for the year under average hydrology, and are estimated to range from 0.3 million acre-feet during critically dry years to 1.3 million acre-feet in above normal water years. Metropolitan received approximately 1,304,062 acre-feet of total water deliveries from the State Water

Project in 2010, including its basic allocation and supplies from water transfers and exchanges that were delivered through the California Aqueduct. On August 24, 2010, DWR reported that approximately 800,000 acre-feet of water was lost from the State Water Project for calendar year 2010 as a result of pumping restrictions, of which about 370,000 acre-feet would have been made available to Metropolitan. The initial allocation to State Water Project contractors for 2011 was 25 percent of their contracted amounts, based on low storage in State Water Project reservoirs and regulatory agency restrictions on water exports from the Bay-Delta to protect listed fish species. DWR revisited this allocation as conditions changed and, following significantly above-normal precipitation over the entire Sierra Nevada range, on April 20, 2011, DWR announced an allocation of 80 percent (1,529,200 acre-feet for Metropolitan). Despite operational restrictions in 2011, high flows from above-normal precipitation reaching the Bay-Delta have provided increased storage in State Water Project reservoirs and greater than anticipated exports since late December 2010.

Operational constraints likely will continue until long-term solutions to the problems in the Bay-Delta are identified and implemented. The Delta Vision process, established by Governor Schwarzenegger, was aimed at identifying long-term solutions to the conflicts in the Bay-Delta, including natural resource, infrastructure, land use and governance issues. In addition, State and federal resource agencies and various environmental and water user entities are currently engaged in the development of the Bay-Delta Conservation Plan, which is aimed at addressing ecosystem needs and securing long-term operating permits for the State Water Project, and includes the Delta Habitat Conservation and Conveyance Program (DHCCP) (together, the —BDCP”). The DHCCP’s current efforts consist of the preparation of the environmental documentation and preliminary engineering design for Bay-Delta water conveyance and related habitat conservation measures under the BDCP. The Delta Vision process and the BDCP are discussed further under —*Bay-Delta Regulatory and Planning Activities*” below.

Other issues, such as the decline of some fish populations in the Bay-Delta and surrounding regions and certain operational actions in the Bay-Delta, may significantly reduce Metropolitan’s water supply from the Bay-Delta. State Water Project operational requirements may be further modified under new biological opinions for listed species under the Federal ESA or by the California Department of Fish and Game’s issuance of incidental take authorizations under the California ESA. Biological opinions or incidental take authorizations under the Federal ESA and California ESA might further adversely affect State Water Project and Central Valley Project operations. Additionally, new litigation, listings of additional species or new regulatory requirements could further adversely affect State Water Project operations in the future by requiring additional export reductions, releases of additional water from storage or other operational changes impacting water supply operations. Metropolitan cannot predict the ultimate outcome of any of the litigation or regulatory processes described above but believes they could have a materially adverse impact on the operation of the State Water Project pumps, Metropolitan’s State Water Project supplies and Metropolitan’s water reserves.

“Area of Origin” Litigation. Four State Water Project contractors located north of the State Water Project’s Bay-Delta pumping plant filed litigation against DWR on July 17, 2008, asserting that since they are located in the —*area of origin*” of State Water Project water they are entitled to receive their entire contract amount before any water is delivered to contractors south of the Bay-Delta. If the plaintiffs are successful in this litigation, State Water Project water available to Metropolitan in a drought period could be reduced by approximately 25,000 acre-feet each year of a multi-year drought or by as much as 40,000 acre-feet in an exceedingly dry year. Metropolitan and twelve other State Water Project contractors located south of the Bay-Delta filed motions to intervene in this litigation, which were granted on February 25, 2009. The trial court denied cross-summary judgment motions on November 11, 2010. The parties are pursuing additional discovery and a full trial is expected later in 2011.

Bay-Delta Regulatory and Planning Activities. The State Water Resources Control Board (—SWRCB”) is the agency responsible for setting water quality standards and administering water rights throughout California. Decisions of the SWRCB can affect the availability of water to Metropolitan and other

users of State Water Project water. The SWRCB exercises its regulatory authority over the Bay-Delta by means of public proceedings leading to regulations and decisions. These include the Bay-Delta Water Quality Control Plan (—WQCP”), which establishes the water quality objectives and proposed flow regime of the estuary, and water rights decisions, which assign responsibility for implementing the objectives of the WQCP to users throughout the system by adjusting their respective water rights. The SWRCB is required by law to periodically review its WQCP to ensure that it meets the changing needs of this complex system.

Since 2000, SWRCB’s Water Rights Decision 1641 (—D1641”) has governed the State Water Project’s ability to export water from the Bay-Delta for delivery to Metropolitan and other agencies receiving water from the State Water Project. D-1641 allocated responsibility for meeting flow requirements and salinity and other water quality objectives established earlier by the WQCP. The SWRCB also identified additional issues to review, which could result in future changes in water quality objectives and flows that could affect exports of water from the State Water Project. Currently, the SWRCB is reviewing salinity objectives in the Bay-Delta intended to protect Bay-Delta farming and inflow requirements upstream of the Delta to protect aquatic species.

The CALFED Bay-Delta Program was a collaborative effort among 25 State and federal agencies to improve water supplies in California and the health of the Bay-Delta watershed. On August 28, 2000, the federal government and the State issued a Record of Decision (—ROD”) and related documents approving the final programmatic environmental documentation for the CALFED Bay-Delta Program. The Environmental Impact Report (EIR) under the California Environmental Quality Act (CEQA) was challenged in three separate cases, but ultimately upheld by the California Supreme Court in June 2008.

The CALFED Bay-Delta Program resulted in an investment of \$3 billion on a variety of projects and programs to begin addressing the Bay-Delta’s water supply, water quality, ecosystem, and levee stability problems. To guide future development of and governance for the CALFED Bay-Delta Program and identify a strategy for managing the Bay-Delta as a sustainable resource, in September 2006, then-Governor Schwarzenegger established by Executive Order a Delta Vision process. The Delta Vision process resulted in creation of a Delta Vision Blue Ribbon Task Force that issued its Delta Vision Strategic Plan (the —Strategic Plan”) on October 17, 2008, providing its recommendations for long-term sustainable management of the Bay-Delta. These recommendations included completing the BDCP and associated environmental assessments to permit ecosystem revitalization and water conveyance improvements, identifying and reducing stressors to the Bay-Delta ecosystem, strengthening levees, increasing emergency preparedness, continuing funding for the CALFED ecosystem restoration program, updating Bay-Delta regulatory flow and water quality standards to protect beneficial uses of water and working with the State Legislature on a comprehensive water bond package to fund Bay-Delta infrastructure projects.

On November 4, 2009, the State Legislature authorized an \$11.1 billion water bond measure that includes over \$2 billion for Bay-Delta ecosystem restoration as well as \$3 billion for new water storage and additional funds for water recycling, drought relief, conservation and watershed protection projects. The bond measure is subject to voter authorization and was scheduled to be included on the November 2010 ballot; however, in August 2010 the Legislature postponed the bond election to 2012. Related legislation created a new oversight council for the Bay-Delta, the Delta Stewardship Council, and directs that the Bay-Delta be managed with dual goals of water supply reliability and ecosystem protection, sets a statewide conservation target for urban per capita water use of 20 percent reductions by 2020 (with credits for existing conservation), provides funding for increased enforcement of illegal water diversions and establishes a statewide groundwater monitoring program. The Council, formed on February 3, 2010, is CALFED’s successor agency and was directed to adopt and oversee implementation of a comprehensive management plan for the Bay-Delta by January 1, 2012. Delaying the bond election did not impact other parts of the 2009 water legislation.

The working draft BDCP was completed in November 2010 and a full draft BDCP and the associated environmental impact statement and report are anticipated in fall 2011. On December 15, 2010, California

and federal agencies affirmed their support for the BDCP process to restore the Bay-Delta ecosystem and regain water supply reliability for Californians. Separate reports from the California Natural Resources Agency and from President Obama's Administration were concurrently released in support of the BDCP process and water conveyance improvements. Based on the Delta Habitat Conservation and Conveyance Program Memorandum of Agreement (MOA) to prepare the planning, environmental documentation and preliminary engineering design for the BDCP, the final planning and environmental documents are scheduled to be completed in December 2012. The parties to the MOA are DWR, the Bureau of Reclamation, the State and Federal Contractors Water Agency, Metropolitan, Kern County Water Agency, State Water Contractors, San Luis & Delta Mendota Water Authority, Westlands Water District and Santa Clara Valley Water District.

Metropolitan, along with other State and federal water contractors, has urged action to address water quality concerns with respect to both the aquatic health of the Bay-Delta and drinking water quality. On December 9, 2010, the Central Valley Regional Water Quality Control Board approved a National Pollutant Discharge Elimination System (—NPDES”) permit for the Sacramento Regional County Sanitation District (—Sanitation District”) setting water-quality based requirements for the Sanitation District's wastewater treatment plant that will require advanced treatment upgrades for the Sanitation District's wastewater facility. The Sanitation District's treatment plant is the largest wastewater discharger into the Sacramento-San Joaquin River Delta. The treatment plant provides only a secondary level of treatment and discharges nutrients, pathogens, and total organic carbon into the Bay-Delta water supply. The treatment plant's discharge of nitrogen, particularly ammonia, has been shown to be altering the food chain in the estuary to the detriment of Delta smelt and other native species. The NPDES permit calls for a significant reduction of the nitrogen and particularly ammonia discharge which will require full nitrification and denitrification treatment by 2020, as well as tertiary filtration treatment to meet pathogen removal requirements. The NPDES permit also includes additional permit limits and monitoring requirements for other water quality constituents, including toxic contaminants. On January 10, 2011, the Sanitation District petitioned the SWRCB for review of the NPDES permit. The SWRCB deemed the petition complete on March 28, 2011. Responses were filed by Metropolitan and other interested parties in May 2011.

Metropolitan, other urban State Water Contractor agencies, and the Contra Costa Water District earlier brought a successful CEQA challenge in response to significant, unmitigated water quality impacts that would occur from a planned expansion of the Sanitation District's treatment plant. The Sanitation District appealed the trial court ruling and the case remains pending in the Third District Court of Appeal awaiting oral argument.

California Water Impact Network Litigation. On September 3, 2010, the California Water Impact Network and two other non-profit organizations filed a petition for writ of mandate and for declaratory and injunctive relief in Sacramento Superior Court against the SWRCB and DWR. The petition alleges that by permitting and carrying out the export of large volumes of water from the Delta through the State Water Project, the SWRCB and DWR have failed to protect public trust fishery resources in the Delta; have been diverting water from the Bay-Delta wastefully and unreasonably in violation of the prohibition against waste and unreasonable use in the California Constitution; and have failed to enforce and comply with water quality and beneficial use standards in SWRCB Decision D-1641, the 1995 SWRCB Water Quality Control Plan, and the Porter-Cologne Act. Among the relief sought in the petition is an injunction against Bay-Delta exports by the State Water Project pending compliance with the various laws and administrative orders that are alleged to have been violated. The State Water Contractors filed a motion to intervene in this action, which was granted on March 25, 2011. No schedule has since been issued by the court.

Monterey Agreement Litigation. On September 15, 2000, the Third District Court of Appeal for the State of California issued its decision in *Planning and Conservation League; Citizens Planning Association of Santa Barbara County and Plumas County Flood Control District v. California Department of Water Resources and Central Coast Water Authority*. This case was an appeal of a challenge to the adequacy of the environmental documentation prepared with respect to certain amendments to the State Water Contract (the

—Monterey Agreement”) which reflects the settlement of certain disputes regarding the allocation of State Water Project water. The Court of Appeal held that the environmental documentation was defective in failing to analyze the environmental effects of the Monterey Agreement’s elimination of the permanent shortage provisions of the State Water Contract. The parties negotiated a settlement agreement in the fall of 2002, which allows continued operation of the State Water Project under the Monterey Agreement principles while a new EIR was prepared. DWR completed the final EIR and concluded the remedial CEQA review for the project on May 4, 2010. Following DWR’s completion of the EIR, three new lawsuits were filed challenging the project. Central Delta Water Agency, South Delta Water Agency, California Water Impact Network, California Sportfishing Protection Alliance, and the Center For Biological Diversity filed a lawsuit against DWR in Sacramento County Superior Court challenging the validity of the EIR under CEQA and the validity of underlying agreements under a reverse validation action (the *Central Delta I* case). These same plaintiffs filed a reverse validation lawsuit against the Kern County Water Agency in Kern County Superior Court (*Central Delta II*). This lawsuit targets a transfer of land from Kern County Water Agency to the Kern Water Bank, which was completed as part of the original Monterey Amendments. The third lawsuit is an EIR challenge brought by Rosedale-Rio Bravo Water Storage District and Buena Vista Water Storage District (*Rosedale-Rio Bravo*) against DWR in Kern County Superior Court. The two Kern County cases have been transferred to Sacramento Superior Court. Any adverse impact of this litigation on Metropolitan’s State Water Project supplies cannot be determined at this time.

Colorado River Aqueduct

General. The Colorado River was Metropolitan’s original source of water after Metropolitan’s establishment in 1928. Metropolitan has a legal entitlement to receive water from the Colorado River under a permanent service contract with the Secretary of the Interior. Water from the Colorado River and its tributaries is also available to other users in California, as well as users in the states of Arizona, Colorado, Nevada, New Mexico, Utah, and Wyoming (the *Colorado River Basin States*), resulting in both competition and the need for cooperation among these holders of Colorado River entitlements. In addition, under a 1944 treaty, Mexico has an allotment of 1.5 million acre-feet of Colorado River water annually except in the event of extraordinary drought, or serious accident to the delivery system in the United States, when the water allotted to Mexico would be curtailed. Mexico also can schedule delivery of an additional 200,000 acre-feet of Colorado River water per year if water is available in excess of the requirements in the United States and the 1.5 million acre-feet allotted to Mexico.

The Colorado River Aqueduct, which is owned and operated by Metropolitan, transports water from the Colorado River approximately 242 miles to its terminus at Lake Mathews in Riverside County. After deducting for conveyance losses and considering maintenance requirements, up to 1.25 million acre-feet of water a year may be conveyed through the Colorado River Aqueduct to Metropolitan’s member agencies, subject to availability of Colorado River water for delivery to Metropolitan as described below.

California is apportioned the use of 4.4 million acre-feet of water from the Colorado River each year plus one-half of any surplus that may be available for use collectively in Arizona, California and Nevada. In addition, California has historically been allowed to use Colorado River water apportioned to but not used by Arizona or Nevada when such supplies have been requested for use in California. Under the 1931 priority system that has formed the basis for the distribution of Colorado River water made available to California, Metropolitan holds the fourth priority right to 550,000 acre-feet per year. This is the last priority within California’s basic apportionment. In addition, Metropolitan holds the fifth priority right to 662,000 acre-feet of water, which is in excess of California’s basic apportionment. See the table *—PRIORITIES UNDER THE 1931 CALIFORNIA SEVEN-PARTY AGREEMENT* below. Until 2003, Metropolitan had been able to take full advantage of its fifth priority right as a result of the availability of surplus water and apportioned but unused water. However, Arizona and Nevada increased their use of water from the Colorado River, significantly reducing unused apportionment available for California since 2002. In addition, a severe drought in the Colorado River Basin reduced storage in system reservoirs, such that Metropolitan stopped taking surplus deliveries in 2003 in an effort to mitigate the effects of the drought. Prior to 2003,

Metropolitan could divert over 1.2 million acre-feet in any year, but since that time, Metropolitan's net diversions of Colorado River water have been limited to a low of nearly 633,000 acre-feet in 2006 and a high of approximately 1,105,232 acre-feet in 2009. Average annual net deliveries for 2003 through 2010 were approximately 849,500 acre-feet, with annual volumes dependent primarily on programs to augment supplies, including transfers of conserved water from agriculture. Metropolitan projects that its available Colorado River supply will be about 900,000 acre-feet in 2011, of which approximately 700,000 acre-feet will be delivered through the Colorado River Aqueduct and 200,000 acre-feet of intentionally-created surplus water will be stored in Lake Mead. See —*Quantification Settlement Agreement*” and —*Interim Surplus Guidelines*” below.

PRIORITIES UNDER THE 1931 CALIFORNIA SEVEN-PARTY AGREEMENT⁽¹⁾

Priority	Description	Acre-Feet Annually
1	Palo Verde Irrigation District gross area of 104,500 acres of land in the Palo Verde Valley	3,850,000
2	Yuma Project in California not exceeding a gross area of 25,000 acres in California	
3(a)	Imperial Irrigation District and other lands in Imperial and Coachella Valleys ⁽²⁾ to be served by All-American Canal	
3(b)	Palo Verde Irrigation District - 16,000 acres of land on the Lower Palo Verde Mesa	
4	Metropolitan Water District of Southern California for use on the coastal plain	550,000
	SUBTOTAL	4,400,000
5(a)	Metropolitan Water District of Southern California for use on the coastal plain	550,000
5(b)	Metropolitan Water District of Southern California for use on the coastal plain ⁽³⁾	112,000
6(a)	Imperial Irrigation District and other lands in Imperial and Coachella Valleys to be served by the All-American Canal	300,000
6(b)	Palo Verde Irrigation District - 16,000 acres of land on the Lower Palo Verde Mesa	
	TOTAL	5,362,000
7	Agricultural use in the Colorado River Basin in California	Remaining surplus

Source: Metropolitan.

(1) Agreement dated August 18, 1931, among Palo Verde Irrigation District, Imperial Irrigation District, Coachella Valley County Water District, Metropolitan, the City of Los Angeles, the City of San Diego and the County of San Diego. These priorities were memorialized in the agencies' respective water delivery contracts with the Secretary of the Interior.

(2) The Coachella Valley Water District serves Coachella Valley.

(3) In 1946, the City of San Diego, the San Diego County Water Authority, Metropolitan and the Secretary of the Interior entered into a contract that merged and added the City and County of San Diego's rights to storage and delivery of Colorado River water to the rights of Metropolitan.

Metropolitan has taken steps to augment its share of Colorado River water through agreements with other agencies that have rights to use such water. Under a 1988 water conservation agreement (the “1988 Conservation Agreement”) between Metropolitan and the Imperial Irrigation District (“IID”), Metropolitan provided funding for IID to construct and operate a number of conservation projects that are currently conserving 105,000 acre-feet of water per year that is provided to Metropolitan. Under the October 2003 Quantification Settlement Agreement and related agreements, Metropolitan, at the request of Coachella Valley Water District (“CVWD”), forgoes up to 20,000 acre-feet of this water each year for diversion by CVWD. (See “Quantification Settlement Agreement” below.) In 2008, 2009 and 2010 CVWD’s requests were for 16,000, 12,000 and 8,000 acre-feet respectively, leaving 89,000 acre-feet in 2008, 93,000 acre-feet in 2009 and 97,000 acre-feet in 2010 for Metropolitan.

In 1992, Metropolitan entered into an agreement with the Central Arizona Water Conservation District (“CAWCD”) to demonstrate the feasibility of CAWCD storing Colorado River water in central Arizona for the benefit of an entity outside of the State of Arizona. Pursuant to this agreement, CAWCD created 80,909 acre-feet of long-term storage credits that may be recovered by CAWCD for Metropolitan. Metropolitan, the Arizona Water Banking Authority, and CAWCD executed an amended agreement for recovery of these storage credits in December 2007. All 80,909 acre-feet were recovered and delivered to Metropolitan between 2007 and 2010.

Metropolitan and the Palo Verde Irrigation District (“PVID”) signed the program agreement for a Land Management, Crop Rotation and Water Supply Program in August 2004. This program provides up to 133,000 acre-feet of water to be available to Metropolitan in certain years. The term of the program is 35 years. Fallowing of approximately 20,000 acres of land began on January 1, 2005. In March 2009, Metropolitan and PVID entered into a supplemental fallowing program within PVID that provided for the fallowing of additional acreage in 2009 and 2010. In calendar years 2009 and 2010, respectively, 24,100 acre-feet and 32,300 acre-feet of water were saved and made available to Metropolitan under the supplemental program. The following table shows annual volumes of water saved and made available to Metropolitan:

WATER AVAILABLE FROM PVID LAND MANAGEMENT, CROP ROTATION, AND WATER
SUPPLY PROGRAM

<u>Calendar Year</u>	<u>Volume (acre-feet)</u>
2005	108,700
2006	105,000
2007	72,300
2008	94,300
2009*	144,300
2010*	148,600

Source: Metropolitan.

* Includes water from the supplemental fallowing program that provided for fallowing of additional acreage in 2009 and 2010.

The fallowing program is projected to save approximately 125,300 acre-feet of water in 2011. However, this estimate may be revised in September 2011 due to landowner requests to reduce fallowing during the period September 1, 2011 to July 31, 2012.

In May 2008, Metropolitan provided \$28.7 million to join the CAWCD and the Southern Nevada Water Authority (“SNWA”) in funding the Bureau of Reclamation’s construction of an 8,000 acre-foot off-stream regulating reservoir near Drop 2 of the All-American Canal in Imperial County (officially renamed the Warren H. Brock Reservoir). Construction was completed in October 2010. The Warren H. Brock Reservoir is expected to conserve about 70,000 acre-feet of water per year by capturing and storing otherwise non-

storable water flow. The Bureau of Reclamation has refunded to Metropolitan \$1.6 million in unused contingency funds with up to an additional \$1.0 to \$2.0 million of unused contingency funds to be refunded following the first filling and withdrawal of water from the reservoir. In return for its funding, Metropolitan received 100,000 acre-feet of water that is stored in Lake Mead, with the ability to deliver up to 40,000 acre-feet of water in any one year. Besides the additional water supply, the new reservoir will add to the flexibility of Colorado River operations.

In September 2009, Metropolitan authorized participation with SNWA, the Colorado River Commission of Nevada, the CAWCD and the Bureau of Reclamation in the pilot operation of the Yuma Desalting Plant. The Bureau of Reclamation concluded the pilot operation of the Yuma Desalting Plant in March 2011. Metropolitan's funding participation commitment of \$11,040,000 was reduced by \$2,645,000 due to the under-budget completion of the pilot project. Metropolitan's yield from the pilot run of the project was about 24,000 acre-feet.

Quantification Settlement Agreement. The Quantification Settlement Agreement (–QSA”), executed by CVWD, IID and Metropolitan in October 2003, establishes Colorado River water use limits for IID and CVWD, provides for specific acquisitions of conserved water and water supply arrangements for up to 75 years, and restored the opportunity for Metropolitan to receive any –special surplus water” under the Interim Surplus Guidelines. (See –*Interim Surplus Guidelines*” below.) The QSA also allows Metropolitan to enter into other cooperative Colorado River supply programs. Related agreements modify existing conservation and cooperative water supply agreements consistent with the QSA, and set aside several disputes among California's Colorado River water agencies.

Specific programs under the QSA include lining portions of the All-American and Coachella Canals, which conserve approximately 96,000 acre-feet annually. As a result, about 80,000 acre-feet of conserved water is delivered to SDCWA by exchange with Metropolitan and 16,000 acre-feet is delivered for the benefit of the La Jolla, Pala, Pauma, Rincon and San Pasqual Bands of Mission Indians, the San Luis Rey River Indian Water Authority, the City of Escondido and the Vista Irrigation District, by exchange under a water rights settlement annually. An amendment to the 1988 Conservation Agreement between Metropolitan and IID and an associated 1989 Approval Agreement among Metropolitan, IID, CVWD and PVID, extended the term of the 1988 Conservation Agreement and limited the single year amount of water used by CVWD to 20,000 acre-feet. In 2021, the transfer of water conserved annually by IID to SDCWA is expected to reach 205,000 acre-feet (see description below under the caption –*Sale of Water by the Imperial Irrigation District to San Diego County Water Authority*”; see also –METROPOLITAN REVENUES—Principal Customers”). With full implementation of the programs identified in the QSA, at times when California is limited to its basic apportionment of 4.4 million acre-feet per year, Metropolitan expects to be able to annually divert to its service area approximately 850,000 acre-feet of Colorado River water plus water from other water augmentation programs it develops, including the PVID program, which provides up to approximately 130,000 acre-feet of water per year. (Amounts of Colorado River water received by Metropolitan in 2003 through 2010 are discussed under the heading –Colorado River Aqueduct—*General*” above.)

A complicating factor in completing the QSA was the fate of the Salton Sea, an important habitat for a wide variety of fish-eating birds as a stopover spot along the Pacific flyway. Some of these birds are listed as threatened or endangered species under the State and Federal ESAs. Located at the lowest elevations of an inland basin and fed primarily by agricultural drainage with no outflows other than evaporation, the Salton Sea is trending towards hyper-salinity, which has already impacted the Salton Sea's fishery. Without mitigation, the transfer of water from IID to SDCWA, one of the core programs implemented under the QSA, would reduce the volume of agricultural run-off from IID into the Salton Sea, which in turn would accelerate this natural trend of the Salton Sea to hyper-salinity. See –*Sale of Water by the Imperial Irrigation District to San Diego County Water Authority*” below. In passing legislation to implement the QSA, the State Legislature committed the State to undertake restoration of the Salton Sea ecosystem. Restoration of the

Salton Sea is subject to selection and approval of an alternative by the Legislature and funding of the associated capital improvements and operating costs. The Secretary for the California Natural Resources Agency submitted an \$8.9-billion preferred alternative for restoration of the Salton Sea to the Legislature in May 2007. While withholding authorization of the preferred alternative, the Legislature has appropriated funds from Proposition 84 to undertake demonstration projects and investigations called for in the Secretary's recommendation. On September 25, 2010, then-Governor Schwarzenegger signed Senate Bill 51, establishing the "Salton Sea Restoration Council" as a state agency in the Natural Resources Agency to oversee restoration of the Salton Sea. The council was directed to evaluate alternative Salton Sea restoration plans and to report to the Governor and the Legislature by June 30, 2013 with a recommended plan.

The QSA implementing legislation also established the Salton Sea Restoration Fund, to be funded in part by payments made by the parties to the QSA and fees on certain water transfers among the parties to the QSA. Under the QSA agreements Metropolitan agreed to pay \$20 per acre-foot into the Salton Sea Restoration Fund for any special surplus Colorado River water that Metropolitan elects to take under the Interim Surplus Guidelines, if available. Metropolitan also agreed to acquire up to 1.6 million acre-feet of water conserved by IID, excluding water transferred from IID to SDCWA (see —*Sale of Water by the Imperial Irrigation District to San Diego County Water Authority*" below), if such water can be transferred consistent with plans for Salton Sea restoration, at an acquisition price of \$250 per acre-foot (in 2003 dollars), with net proceeds to be deposited into the Salton Sea Restoration Fund. No conserved water has been made available to Metropolitan under this program. Metropolitan elected not to take delivery of special surplus water at times when it was available from October 2003 to 2007. No special surplus water has been available since 2007. Metropolitan may receive credit for the special surplus water payments against future contributions for the Lower Colorado River Multi-Species Conservation Program (see —*Environmental Considerations*" below). In consideration of these agreements, Metropolitan will not have or incur any liability for restoration of the Salton Sea. As part of an effort to mitigate the effects of the drought in the Colorado River Basin that began in 2000, Metropolitan elected not to take delivery of special surplus Colorado River water that was available from October 2003 through 2004 and from 2006 through 2007.

Sale of Water by the Imperial Irrigation District to San Diego County Water Authority. On April 29, 1998, SDCWA and IID executed an agreement (the "Transfer Agreement") for SDCWA's purchase from IID of Colorado River water delivered to IID. An amended Transfer Agreement, executed as one of the QSA agreements, set the maximum transfer amount at 205,000 acre-feet in 2021, with the transfer gradually ramping up to that amount over an approximately twenty-year period, stabilizing at 200,000 acre-feet per year beginning in 2023.

No facilities exist to deliver water directly from IID to SDCWA. Accordingly, Metropolitan and SDCWA entered into an exchange contract, pursuant to which SDCWA makes available to Metropolitan at its intake at Lake Havasu on the Colorado River the conserved Colorado River water acquired by SDCWA from IID and water allocated to SDCWA from lining the All-American and Coachella Canals. Metropolitan delivers an equal volume of water from its own sources of supply through portions of its delivery system to SDCWA. The deliveries to both Metropolitan and SDCWA are deemed to be made in equal monthly increments. Metropolitan makes no payment to SDCWA for the water made available by SDCWA, but SDCWA makes a payment to Metropolitan for the exchange water. The price payable by SDCWA is calculated using the charges set by Metropolitan's Board from time to time to be paid by its member agencies for the conveyance of water through Metropolitan's facilities. See —*METROPOLITAN REVENUES—Wheeling and Exchange Charges*" in this Appendix A. In 2009, 140,188 acre-feet were delivered by SDCWA for exchange, 60,000 acre-feet of IID conservation plus 25,759 acre-feet and 54,429 acre-feet of conserved water from the Coachella Canal and All-American Canal lining projects, respectively. In 2010, 151,507 acre-feet were delivered by SDCWA for exchange, 70,000 acre-feet of IID conservation plus 81,507 acre-feet of conserved water from the combined Coachella Canal and All-American Canal lining projects. Total 2011 exchange deliveries are projected to be approximately 160,000 acre-feet.

QSA Related Litigation. On November 5, 2003, IID filed a validation action in Imperial County Superior Court, seeking a judicial determination that thirteen agreements associated with the IID/SDCWA water transfer and the QSA are valid, legal and binding. Other lawsuits also were filed contemporaneously challenging the execution, approval and implementation of the QSA on various grounds. All of the QSA cases were coordinated in Sacramento Superior Court. Between early 2004 and late 2009, a number of pre-trial challenges and dispositive motions were filed by the parties and ruled on by the court, which reduced the number of active cases and narrowed the issues for trial, the first phase of which began on November 9, 2009 and concluded on December 2, 2009. One of the key issues in this first phase was the constitutionality of the QSA Joint Powers Agreement, pursuant to which IID, CVWD and SDCWA agreed to commit \$163 million toward certain mitigation and restoration costs associated with implementation of the QSA and related agreements, and the State agreed to be responsible for any costs exceeding this amount. A final judgment was issued on February 11, 2010, in which the court held that the State's commitment was unconditional in nature and, as such, violated the State's debt limitation under the California Constitution. The court also invalidated eleven other agreements, including the QSA, because they were inextricably interrelated with the QSA Joint Powers Agreement. Lastly, the court ruled that all other claims raised by the parties, including CEQA claims related to the QSA Programmatic EIR and the IID Transfer Project EIR, are moot. Metropolitan, IID, CVWD, SDCWA, the State and others have appealed various aspects of the court's ruling, which has been stayed pending outcome of the appeal. If the ruling stands, it could delay the implementation of programs authorized under the QSA or result in increased costs or other adverse impacts. The impact, if any, that the ruling might have on Metropolitan's water supplies cannot be adequately determined at this time.

On January 28, 2010, Metropolitan was served with a federal complaint filed by the County of Imperial and the Imperial County Air Pollution Control District alleging that execution and implementation of three QSA-related agreements violate the National Environmental Policy Act and federal Clean Air Act. The complaint names the Department of Interior, Secretary of Interior, Bureau of Reclamation and Commissioner of Reclamation as defendants, and Metropolitan, CVWD, IID and SDCWA as real parties in interest. On March 29, 2010, Metropolitan and the other defendants and real parties filed separate answers to the complaint. On August 23, 2010, Metropolitan and the other real parties intervened as additional defendants. On September 9, 2010, the administrative record was filed with the court. However, on March 14, 2011, the case was transferred to a new judge and all existing filing and hearing dates were subsequently vacated. No schedule has since been issued by the court. The impact, if any, that the litigation might have on Metropolitan's water supplies cannot be adequately determined at this time.

The Navajo Nation has filed litigation against the Department of the Interior, specifically the Bureau of Reclamation and the Bureau of Indian Affairs, alleging that the Bureau of Reclamation has failed to determine the extent and quantity of the water rights of the Navajo Nation in the Colorado River and that the Bureau of Indian Affairs has failed to otherwise protect the interests of the Navajo Nation. The complaint challenges the adequacy of the environmental review for the Interim Surplus Guidelines (as defined under — *Interim Surplus Guidelines*” below) and seeks to prohibit the Department of the Interior from allocating any —surplus” water until such time as a determination of the rights of the Navajo Nation is completed. Metropolitan has filed a motion to intervene in this action. In October 2004 the court granted the motions to intervene and stayed the litigation to allow negotiations among the Navajo Nation, federal defendants, CAWCD, State of Arizona and Arizona Department of Water Resources. The Navajo Nation approved the terms of a proposed settlement in 2010. Under its terms the Navajo would have specified rights to water from the Colorado River, the Little Colorado River and groundwater basins under the reservation. All Colorado River water would come from Arizona's apportionment. There would be no financial or water resource impact on Metropolitan. The proposed agreement requires approval of all the affected bodies and federal implementing legislation. The litigation stay has been extended until February 15, 2013, to permit the parties to finalize the settlement. If the settlement is not finalized, the impact on Metropolitan, if any, cannot be adequately determined at this time.

Interim Surplus Guidelines. In January 2001, the Secretary of the Interior adopted guidelines (the ~~Interim Surplus Guidelines~~) for use through 2016 in determining if there is surplus Colorado River water available for use in California, Arizona and Nevada. The purpose of the Interim Surplus Guidelines is to provide a greater degree of predictability with respect to the availability and quantity of surplus water through 2016. The Interim Surplus Guidelines were amended in 2007, with the new Guidelines extending through 2026 (See *Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead* below). The Interim Surplus Guidelines contain a series of benchmarks for reductions in agricultural use of Colorado River water within California by set dates.

Under the Interim Surplus Guidelines, Metropolitan initially expected to divert up to 1.25 million acre-feet of Colorado River water annually under foreseeable runoff and reservoir storage scenarios from 2004 through 2016. However, an extended drought in the Colorado River Basin reduced these initial expectations. From 2000 to 2004, snow pack and runoff in the Colorado River Basin were well below average. Although runoff was slightly above average in 2005 and 2008, average annual runoff from 2000 through 2010 was 69 percent of normal, representing the driest eleven-year period on record. In November 2010, Lake Mead's elevation had dropped below 1,081 feet above sea level, the lowest elevation since 1937. Precipitation over the Colorado River Basin from October 2010 through April 2011 was significantly above normal. Upper Colorado River Basin snowpack measured on May 1, 2011 was 150 percent of normal with accumulations at the highest level on record and the April-July runoff measuring 163 percent of normal. The above-normal precipitation triggered more than 4 million acre-feet of additional releases from Lake Powell to Lake Mead, the most since 1997. Lake Mead's elevation is projected to reach approximately 1,130 feet by December 2011, or approximately 50 feet higher than observed in November 2010. Each ten-foot increase in Lake Mead's elevation represents approximately 1 million acre-feet of increased storage. Metropolitan's estimated 2011 Colorado River supply is about 900,000 acre-feet. Metropolitan projects its ultimate 2011 diversions will be approximately 700,000 acre-feet, and expects to store up to 200,000 acre-feet of intentionally-created surplus water in Lake Mead.

SNWA and Metropolitan entered into an Agreement Relating to Implementation of Interim Colorado River Surplus Guidelines on May 16, 2002, in which SNWA and Metropolitan agreed to the allocation of unused apportionment as provided in the Interim Surplus Guidelines and on the priority of SNWA for interstate banking of water in Arizona. SNWA and Metropolitan entered into a storage and interstate release agreement on October 21, 2004. Under this program, Nevada can request that Metropolitan store unused Nevada apportionment in California. The amount of water stored through 2009 under this agreement was 70,000 acre-feet. In subsequent years, Nevada may request recovery of this stored water. As part of a recently executed amendment, it is expected that Nevada will not request return of this water before 2022. The stored water provides flexibility to Metropolitan for blending Colorado River water with State Water Project water and improves near-term water supply reliability.

Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead. In November 2007, the Bureau of Reclamation issued a Final Environmental Impact Statement (~~EIS~~) regarding new federal guidelines concerning the operation of the Colorado River system reservoirs. These new guidelines provide water release criteria from Lake Powell and water storage and water release criteria from Lake Mead during shortage and surplus conditions in the Lower Basin, provide a mechanism for the storage and delivery of conserved system and non-system water in Lake Mead and extend the Interim Surplus Guidelines through 2026. The Secretary of the Interior issued the final guidelines through a Record of Decision signed in December 2007. The Record of Decision and accompanying agreement among the Colorado River Basin States protect reservoir levels by reducing deliveries during drought periods, encourage agencies to develop conservation programs and allow the states to develop and store new water supplies. The Colorado River Basin Project Act of 1968 insulates California from shortages in all but the most extreme hydrologic conditions.

Intentionally-Created Surplus Program. Metropolitan and the Bureau of Reclamation executed an agreement on May 26, 2006 for a demonstration program that allowed Metropolitan to leave conserved water in Lake Mead that Metropolitan would otherwise have used in 2006 and 2007. Only ~~intentionally-created surplus~~ water (water that has been conserved through an extraordinary conservation measure, such as land fallowing) was eligible for storage in Lake Mead under this program. See the table ~~Metropolitan's Water Storage Capacity and Water in Storage~~ under the heading ~~Storage Capacity and Water in Storage~~ below. Metropolitan may store additional intentionally-created surplus water in Lake Mead under the federal guidelines for operation of the Colorado River system reservoirs described above under the heading ~~Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead~~. The Secretary of the Interior will deliver intentionally-created surplus water to Metropolitan in accordance with the terms of a December 13, 2007 Delivery Agreement between the United States and Metropolitan. As of January 2011, Metropolitan has approximately 257,000 acre-feet in its intentionally-created surplus accounts, made up of water conserved by fallowing in the Palo Verde Valley and from the yield allocated to Metropolitan from the Drop 2 Reservoir Project and the Yuma Desalter pilot run. Metropolitan estimates that it will store about 200,000 acre-feet of additional intentionally-created surplus water in 2011.

Environmental Considerations. Federal and state environmental laws protecting fish species and other wildlife species have the potential to affect Colorado River operations. A number of species that are on either ~~endangered~~ or ~~threatened~~ lists under the ESAs are present in the area of the Lower Colorado River, including among others, the bonytail chub, razorback sucker, southwestern willow flycatcher and Yuma clapper rail. To address this issue, a broad-based state/federal/tribal/private regional partnership that includes water, hydroelectric power and wildlife management agencies in Arizona, California and Nevada have developed a multi-species conservation program for the main stem of the Lower Colorado River (the Lower Colorado River Multi-Species Conservation Program or ~~MSCP~~). The MSCP allows Metropolitan to obtain federal and state permits for any incidental take of protected species resulting from current and future water and power operations of its Colorado River facilities and to minimize any uncertainty from additional listings of endangered species. The MSCP also covers operations of federal dams and power plants on the river that deliver water and hydroelectric power for use by Metropolitan and other agencies. The MSCP covers 27 species and habitat in the Lower Colorado River from Lake Mead to the Mexican border for a term of 50 years. The total cost of the MSCP to Metropolitan will be about \$88 million (in 2003 dollars), and will range between \$0.8 million and \$4.6 million annually.

The non-profit conservation organization Grand Canyon Trust filed litigation in December 2007 against the Bureau of Reclamation in the United States District Court for the District of Arizona, alleging that the Bureau of Reclamation's planning for, and operation of, the Glen Canyon Dam (which impounds Lake Powell) does not comply with requirements of the National Environmental Policy Act and the Federal ESA. Grand Canyon Trust later named the USFWS as a defendant. Metropolitan, IID and CAWCD have intervened in this case. On May 27, 2009, the court ordered the Bureau of Reclamation to reconsider how the dam flows may harm the endangered fish and develop a new operating plan. Grand Canyon Trust filed its third supplemental complaint challenging the Bureau of Reclamation's latest schedule of releases from Lake Powell on September 23, 2010. On March 29, 2011, the court issued a final ruling upholding the Bureau of Reclamations' prior decisions for Glen Canyon Dam operations.

Quagga Mussel Control Program. In January 2007 quagga mussels were discovered for the first time in Lake Mead. Quagga mussels can reproduce quickly and, if left unmanaged, can clog intakes and raw water conveyance systems, alter or destroy fish habitats and affect lakes and beaches. Quagga mussels were introduced in the Great Lakes in the late 1980s. These organisms infest much of the Great Lakes basin, the St. Lawrence Seaway, and much of the Mississippi River drainage system. The most likely source of the quagga mussel infestation is recreational boats from water bodies around the Great Lakes, which were transported over 1,000 miles west to Lake Mead. In response to the Lake Mead finding, the California Department of Fish and Game created a multi-agency task force with Metropolitan as one of its members. The initial survey of the Colorado River to ascertain the extent of the quagga mussel colonization detected

low densities in Lake Mead, Lake Mohave and Lake Havasu and in the intake of the Central Arizona Project. Quagga mussels were also detected at the Colorado River Aqueduct intake pumping plant, Gene Wash and Copper Basin reservoirs, in portions of the Colorado River Aqueduct and in Lake Skinner. A three-week shutdown of the Colorado River Aqueduct for rehabilitation and repairs in March 2007 also permitted inspection for quagga mussels. Desiccation of mussels from emptying the aqueduct during the shutdown, followed by a week of chlorination to kill or limit spread of any remaining mussels after the aqueduct was placed back in service, helped control mussels found there. Shutdowns of the Colorado River Aqueduct in July 2007, October 2007 and March 2008 permitted additional quagga mussel inspection and facilitated control measures.

Metropolitan is working to enhance its ability to detect the mussels, studying mussel transport and settling in Metropolitan conveyance systems, assessing additional, more cost-effective methods to control mussels and developing and implementing control strategies for mussels in Metropolitan's lakes and reservoirs. The California Department of Fish and Game has approved Metropolitan's recreational facilities and boating plan for Diamond Valley Lake and Lake Skinner, which requires inspection of boats and quarantine of those that are potential carriers of mussels, and Metropolitan's water releases management plan, which should minimize the potential for mussels to be introduced into new water bodies while allowing for water releases associated with dewatering of aqueducts and pipelines for maintenance, repair, or upgrades. In addition, the California Department of Fish and Game provided Metropolitan with a permit approving laboratory research on quagga mussels to advance the understanding of mussel biology in California and benefit future efforts to manage the invasive species. Future quagga mussel control efforts are expected to include infrastructure upgrades and recommendations on boating practices or additional facilities to control the spread of mussels in the Colorado River Aqueduct system and additional long-term measures. In September 2007, the Board appropriated \$5.91 million for design and construction of interim chlorination facilities at Copper Basin and Lake Mathews, design of permanent chlorination facilities at Copper Basin, Lake Mathews and Diamond Valley Lake and related quagga mussel control measures. In February 2008, the Board appropriated \$1.77 million for a new chlorine injection point at the Lake Skinner Outlet Conduit and for the procurement of liquid chlorine trailers and mobile chlorination units. In August 2008, the Board appropriated an additional \$1.87 million to complete the chlorination facilities at Copper Basin and Lake Mathews and in June 2009, the Board appropriated \$1.13 million for design and construction of a chlorination system to control quagga mussel growth at the Skinner oxidation retrofit facilities. Metropolitan estimates that its costs for controlling quagga mussels could exceed \$10 million per year.

Water Transfer, Storage and Exchange Programs

General. California's agricultural activities consume approximately 34 million acre-feet of water annually, which is approximately 80 percent of the total water used for agricultural and urban uses and 40 percent of the water used for all consumptive uses, including environmental demands. Voluntary water transfers and exchanges can make a portion of this agricultural water supply available to support the State's urban areas. Such existing and potential water transfers and exchanges are an important element for improving the water supply reliability within Metropolitan's service area and accomplishing the reliability goal set by Metropolitan's Board. Metropolitan is currently pursuing voluntary water transfer and exchange programs with State, federal, public and private water districts and individuals. The following are summary descriptions of some of these programs.

Arvin-Edison/Metropolitan Water Management Program. In December 1997, Metropolitan entered into an agreement with the Arvin-Edison Water Storage District ("Arvin-Edison"), an irrigation agency located southeast of Bakersfield, California. Under the program, Arvin-Edison stores water on behalf of Metropolitan. In January 2008, Metropolitan and Arvin-Edison amended the agreement to enhance the program's capabilities and to increase the delivery of water to the California Aqueduct. Up to 350,000 acre-feet of Metropolitan's water may be stored and Arvin-Edison is obligated to return up to 75,000 acre-feet of stored water in any year to Metropolitan, upon request. The agreement will terminate in 2035 unless extended. To facilitate the program, new wells, spreading basins and a return conveyance facility connecting

Arvin-Edison's existing facilities to the California Aqueduct have been constructed. The agreement also provides Metropolitan priority use of Arvin-Edison's facilities to convey high quality water available on the east side of the San Joaquin Valley to the California Aqueduct. Metropolitan's current storage account under the Arvin-Edison/Metropolitan Water Management Program is shown in the table ~~Metropolitan's Water Storage Capacity and Water in Storage~~ under the heading, ~~Storage Capacity and Water in Storage~~ below.

Semitropic/Metropolitan Groundwater Storage and Exchange Program. In 1994 Metropolitan entered into an agreement with the Semitropic Water Storage District (~~Semitropic~~), located adjacent to the California Aqueduct north of Bakersfield, to store water in the groundwater basin underlying land within Semitropic. The minimum annual yield available to Metropolitan from the program is 31,500 acre-feet of water and the maximum annual yield is 223,000 acre-feet of water depending on the available unused capacity and the State Water Project allocation. Metropolitan's current storage account under the Semitropic program is shown in the table ~~Metropolitan's Water Storage Capacity and Water in Storage~~ under the heading, ~~Storage Capacity and Water in Storage~~ below.

California Aqueduct Dry-Year Transfer Program. Metropolitan has entered into agreements with the Kern Delta Water District, the Mojave Water Agency (Demonstration Water Exchange Program) and the San Bernardino Valley Municipal Water District (~~SBVMWD~~) to insure against regulatory and operational uncertainties in the State Water Project system that could impact the reliability of existing supplies. The total potential yield for the three agreements is approximately 80,000 acre-feet of water per year when sufficient water is available.

Metropolitan entered into an agreement with SBVMWD in April 2001 to coordinate the use of facilities and State Water Project water supplies. The agreement allows Metropolitan a minimum purchase of 20,000 acre-feet on an annual basis with the option to purchase additional water when available. Also, the program includes 50,000 acre-feet of carryover storage. In addition to water being supplied using the State Water Project, the previously stored water can be returned using an interconnection between the San Bernardino Central Feeder and Metropolitan's Inland Feeder. Metropolitan took delivery of approximately 30,000 acre-feet from SBVMWD under the agreement in calendar year 2007 with no deliveries in 2008 and 2009. In March 2009, SBVMWD agreed to return \$7.5 million paid by Metropolitan for 50,000 acre-feet of previously stored water that could not be delivered. This program terminates on December 31, 2014. Metropolitan entered into an agreement with Kern Delta Water District on May 27, 2003, for a groundwater banking and exchange transfer program to allow Metropolitan to store up to 250,000 acre-feet of State Water Contract water in wet years and permit Metropolitan, at Metropolitan's option, a return of up to 50,000 acre-feet of water annually during hydrologic and regulatory droughts. Additionally, Metropolitan entered into a groundwater banking and exchange transfer agreement with Mojave Water Agency on October 29, 2003. The agreement allows for Metropolitan to store water in an exchange account for later return. Metropolitan's current storage account under these programs is shown in the table ~~Metropolitan's Water Storage Capacity and Water in Storage~~ under the heading, ~~Storage Capacity and Water in Storage~~ below.

Other Water Purchase, Storage and Exchange Programs in the San Joaquin and Sacramento Valleys. Metropolitan has been negotiating, and will continue to pursue, water purchase, storage and exchange programs with other agencies in the Sacramento and San Joaquin Valleys. These programs involve the storage of both State Water Project supplies and water purchased from other sources to enhance Metropolitan's dry-year supplies and the exchange of normal year supplies to enhance Metropolitan's water reliability and water quality, in view of dry conditions and potential impacts from the ESA cases discussed above under the heading ~~State Water Project—Endangered Species Act Considerations~~. In addition, in the fall of 2008 DWR convened the State Drought Water Bank (the ~~Drought Water Bank~~) as a one-year program to help mitigate water shortages in 2009. During 2009, Metropolitan purchased 36,900 acre-feet of Central Valley Water supplies through the Drought Water Bank, resulting in approximately 29,000 acre-feet of water deliveries after accounting for carriage and conveyance losses. In calendar year 2010, Metropolitan

participated with other State Water Contractors as a group to purchase 88,137 acre-feet of water, resulting in approximately 68,000 acre-feet of deliveries to Metropolitan after carriage and conveyance losses. Additionally during 2010, Metropolitan entered into two transactions with the Westlands Water District and the San Luis Water District, neither of which is subject to carriage losses. Under the first transaction, Metropolitan purchased 18,453 acre-feet of water. In the second, Metropolitan accepted delivery of 110,692 acre-feet of water stored in the San Luis Reservoir and will return up to two-thirds of that amount from Metropolitan's State Water Project supply in 2011 for a net yield of approximately 37,000 acre-feet.

Metropolitan entered into an agreement with DWR in December 2007 to purchase a portion of the water released by the Yuba County Water Agency (–YCWA"). YCWA was involved in a SWRCB proceeding in which it was required to increase Yuba River fishery flows. Within the framework of agreements known as the Yuba River Accord, DWR and the Bureau of Reclamation entered into agreements for the long-term purchase of water from YCWA. Metropolitan and other State Water Project contractors entered into separate agreements with DWR for purchase of portions of the water made available. Metropolitan's agreement allows Metropolitan to purchase at least 13,750 acre-feet to 35,000 acre-feet per year of water supplies in dry years through 2025. The agreement permits YCWA to transfer additional supplies at its discretion. For calendar years 2008, 2009 and 2010, Metropolitan purchased 26,430 acre-feet, 42,915 acre-feet and 67,068 acre-feet of water, respectively, from YCWA under this program.

Metropolitan/CVWD/Desert Water Agency Exchange and Advance Delivery Agreement. Metropolitan has agreements with the CVWD and the Desert Water Agency (–Desert") that require Metropolitan to exchange its Colorado River water for those agencies' State Water Project entitlement water on an annual basis. Because Desert and CVWD do not have a physical connection to the State Water Project, Metropolitan takes delivery of Desert's and CVWD's State Water Project supplies and delivers a like amount of Colorado River water to the agencies. In accordance with an advance delivery agreement executed by Metropolitan, CVWD and Desert, Metropolitan has delivered Colorado River water in advance to these agencies for storage in the Upper Coachella Valley groundwater basin. In years when it is necessary to augment available supplies to meet local demands, Metropolitan has the option to meet the exchange delivery obligation through drawdowns of the advance delivery account, rather than deliver its Colorado River supply. Metropolitan's current storage account under the CVWD/Desert program is shown in the table –Metropolitan's Water Storage Capacity and Water in Storage" under the heading, —Storage Capacity and Water in Storage" below. In addition to the CVWD/Desert exchange agreements, Metropolitan has entered into separate agreements with CVWD and Desert for delivery of non-State Water Project supplies acquired by CVWD or Desert. Similarly, Metropolitan takes delivery of these supplies from State Water Project facilities and incurs an exchange obligation to CVWD or Desert. Since 2008, Metropolitan has received a net additional supply of 28,058 acre-feet of water acquired by CVWD and Desert.

Other Agreements. Metropolitan is entitled to storage and access to stored water in connection with various storage programs and facilities. See –METROPOLITAN'S WATER SUPPLY—Colorado River Aqueduct" and –REGIONAL WATER RESOURCES—Local Water Supplies—Conjunctive Use" in this Appendix A, as well as the table –Metropolitan's Water Storage Capacity and Water in Storage" under the heading, —Storage Capacity and Water in Storage" below.

Storage Capacity and Water in Storage

Metropolitan's storage capacity, which includes reservoirs, conjunctive use and other groundwater storage programs within Metropolitan's service area and groundwater and surface storage accounts delivered through the State Water Project or Colorado River Aqueduct, is approximately 5.54 million acre-feet. In 2011, approximately 626,000 acre-feet of stored water is emergency storage that is reserved for use in the event of supply interruptions from earthquakes or similar emergencies (see –METROPOLITAN'S WATER DELIVERY SYSTEM—Seismic Considerations" in this Appendix A), as well as extended drought. Metropolitan's ability to replenish water storage, both in the local groundwater basins and in surface storage and banking programs, has been limited by Bay-Delta pumping restrictions under the Interim Remedial Order

in *NRDC v. Kempthorne* and the biological opinions issued for listed species. (See —State Water Project—*Endangered Species Act Considerations*” above.) Metropolitan replenishes its storage accounts when imported supplies exceed demands. Effective storage management is dependent on having sufficient years of excess supplies to store water so that it can be used during times of shortage. Historically, excess supplies have been available in about seven of every ten years. Metropolitan forecasts that, with anticipated supply reductions from the State Water Project due to pumping restrictions, it will need to draw down on storage in about seven of ten years and will be able to replenish storage in about three years out of ten. This reduction in available supplies extends the time required for storage to recover from drawdowns and could require Metropolitan to implement its Water Supply Allocation Plan during extended dry periods.

From 2007 to 2009 Metropolitan drew down approximately one million acre-feet of its stored water to meet regional demands. At its highest level in July 2006, Metropolitan’s storage was 2.74 million acre-feet including emergency storage. As of January 1, 2011, Metropolitan had approximately 2.29 million acre-feet of water in storage, including emergency storage, as shown in the following table.

METROPOLITAN'S WATER STORAGE CAPACITY AND WATER IN STORAGE⁽¹⁾
(in Acre-Feet)

<u>Water Storage Resource</u>	<u>Storage Capacity</u>	<u>Water in Storage January 1, 2011</u>	<u>Water in Storage January 1, 2010</u>	<u>Water in Storage January 1, 2009</u>
<u>Colorado River Aqueduct</u>				
Desert / CVWD Advance				
Delivery Account	800,000	178,000	45,000	57,000
Lake Mead ICS	1,500,000	256,000	146,000	94,000
CAWCD	n/a ⁽²⁾	-0-	8,000	36,000
Subtotal	2,300,000	434,000	199,000	187,000
<u>State Water Project</u>				
Arvin-Edison Storage Program	350,000	109,000	95,000	152,000
Semitropic Storage Program	350,000	111,000	44,000	109,000
Kern Delta Storage Program	250,000	82,000	10,000	23,000
San Bernardino Valley MWD				
Coordinated Operating Agreement	50,000	-0-	-0-	50,000
Mojave Storage Program	-0- ⁽⁵⁾	-0-	3,000	10,000
Castaic Lake and Lake Perris ⁽³⁾	219,000	219,000	175,000	140,000
Metropolitan Article 56 Carryover ⁽⁴⁾	200,000 ⁽⁶⁾	-0-	68,000	11,000
Other State Water Project Carryover	n/a ⁽⁷⁾	160,000	64,000	-0-
Emergency Storage	334,000 ⁽⁸⁾	334,000	334,000	351,000
Subtotal	1,753,000	1,015,000	793,000	846,000
<u>Within Metropolitan's Service Area⁽⁹⁾</u>				
Diamond Valley Lake	810,000	638,000	384,000	410,000
Lake Mathews	182,000	139,000	125,000	75,000
Lake Skinner	44,000	40,000	36,000	36,000
Subtotal	1,036,000	817,000	545,000	521,000
<u>Member Agency Storage Programs</u>				
Cyclic Storage, Conjunctive Use, and Supplemental Storage	452,000	25,000	80,000	188,000
Total	<u>5,541,000</u>	<u>2,291,000</u>	<u>1,617,000</u>	<u>1,742,000</u>

Source: Metropolitan.

- (1) Water storage capacity and water in storage are based on accounting estimates and are subject to change.
- (2) Metropolitan has recovered the remaining balance and the storage agreement with Central Arizona Water Conservation District has been closed.
- (3) Flexible storage allocated to Metropolitan under its State Water Contract. (Footnotes continued on next page)

- (4) Article 56 Carryover storage capacity is dependent on the annual State Water Project allocation, which varies from year to year. Article 56 water is unused water that is allocated to a state water contractor in a given year pursuant to the State Water Contract. Metropolitan's carryover water is stored in the San Luis Reservoir.
- (5) The Mojave Storage Program is currently shown as 0 acre-feet because Metropolitan can no longer put water in the program.
- (6) Metropolitan's State Water Project carryover capacity ranges from 100,000 to 200,000 acre-feet, on a sliding scale that depends on the final State Water Project allocation. At allocations of 50 percent or less, Metropolitan may store 100,000 acre-feet, and at allocations of 75 percent or greater, Metropolitan may store up to 200,000 acre-feet. For the purposes of this table, the highest possible carryover capacity is displayed.
- (7) At Metropolitan's request Desert Water Agency and the Coachella Valley Water District exercise their State Water Contract carryover rights. In 2009, Metropolitan, Desert and Coachella carried water over and Metropolitan stored non-State Water Project water in the San Luis Reservoir under terms of its State Water Contract. It is listed as ~~—n/a~~ due to the unpredictable nature of the actual storage capacity available.
- (8) In 2010, the portion of State Water Project reservoir storage classified as emergency storage was reduced from 351,000 acre-feet to 334,000 acre-feet.
- (9) Includes emergency storage in Metropolitan's reservoirs: 319,000 acre-feet in 2009 and 292,000 acre-feet in 2010 and 2011, respectively.

As a result of increased State Water Project supplies and reduced demands in 2010 and 2011, Metropolitan is rebuilding its storage after several years of withdrawals. During calendar year 2010, Metropolitan's net delivery of State Water Project supplies in Central Valley groundwater storage programs was over 174,000 acre-feet. In addition, storage in Diamond Valley Lake on January 1, 2011 was approximately 640,000 acre-feet, an increase of about 256,000 from Diamond Valley Lake's level at January 1, 2010, and was filled to 98 percent of capacity by late May 2011. Metropolitan increased aggregate storage by approximately 650,000 acre-feet in 2010. If current supply and demand trends continue, Metropolitan anticipates storing an additional 600,000 to 800,000 acre-feet in 2011. This could bring total storage in 2011 up to approximately 3.1 million acre-feet, which would be the highest end-of-year total reserves in Metropolitan's history.

Water Conservation

The central objective of Metropolitan's water conservation program is to help ensure adequate, reliable and affordable water supplies for Southern California by actively promoting efficient water use. The importance of conservation to the region has increased in recent years because of drought conditions in the State Water Project watershed and court-ordered restrictions on Bay-Delta pumping, as described under ~~—METROPOLITAN'S WATER SUPPLY—~~State Water Project" in this Appendix A. Water conservation is an integral component of Metropolitan's IRP Strategy, Water Surplus and Drought Management Plan and Water Supply Allocation Plan, each described in this Appendix A under ~~—METROPOLITAN'S WATER SUPPLY.~~"

Metropolitan's conservation program has largely been developed to assist its member agencies in meeting the ~~—best management practices~~" (~~—BMP~~) of the California Urban Water Conservation Council's Memorandum of Understanding Regarding Urban Water Conservation in California (~~—CUWCC MOU~~) and to meet the conservation goals of the 2010 IRP Update. See ~~—Integrated Water Resources Plan~~" above. Under the terms of the CUWCC MOU and Metropolitan's Conservation Credits Program, Metropolitan assists and co-funds member agency conservation programs designed to achieve greater water use efficiency in residential, commercial, industrial, institutional and landscape uses. Direct spending by Metropolitan on active conservation incentives, including rebates for water-saving plumbing fixtures, appliances and equipment, from fiscal year 1989-90 through fiscal year 2010-11 was \$309 million. The 2010 Integrated Water Resources Plan Update estimates that 1,032,000 acre-feet of water will be conserved annually in southern California by 2025. See ~~—METROPOLITAN'S WATER SUPPLY—~~Integrated Water Resources Plan."

The Water Surplus and Drought Management Plan (~~—WSDM Plan~~"), which was adopted by Metropolitan's Board in April 1999, evolved from Metropolitan's experiences during the droughts of 1976-77 and 1987-92. The WSDM Plan splits resource actions into two major categories: Surplus Actions and

Shortage Actions. The Surplus Actions store surplus water, first inside then outside the region. The Shortage Actions of the WSDM Plan are split into three sub-categories: Shortage, Severe Shortage, and Extreme Shortage. Each category has associated actions that could be taken as a part of the response to prevailing shortage conditions. Conservation and water efficiency programs are part of Metropolitan's resource management strategy through all categories.

Metropolitan's plan for allocation of water supplies in the event of shortage (the ~~Water Supply Allocation Plan~~"; see ~~Water Supply Allocation Plan~~" below) allocates Metropolitan's water supplies among its member agencies, based on the principles contained in the WSDM Plan, to reduce water use and drawdowns from water storage reserves. Metropolitan's member agencies and retail water suppliers in Metropolitan's service area also have the ability to implement water conservation and allocation programs, and some of the retail suppliers in Metropolitan's service area have initiated conservation measures. The success of conservation measures in conjunction with the Water Supply Allocation Plan is evidenced as a contributing factor in the lower than budgeted water sales during fiscal years 2009-10 and 2010-11.

Legislation approved in November 2009 sets a statewide conservation target for urban per capita water use of 20 percent reductions by 2020 (with credits for existing conservation) at the retail level, providing an additional catalyst for conservation by member agencies and retail suppliers. (See ~~State Water Project—Bay-Delta Regulatory and Planning Activities~~" above.) Metropolitan's water sales projections incorporate an accounting of conservation savings that will reduce retail demands. Current projections include an estimate of additional water use efficiency savings that would result from local agencies reducing their per capita water use in response to the 20 percent by 2020 conservation savings goals required by recent legislation as well as an estimate of additional conservation that would have to occur to reach Metropolitan's IRP goal of reducing overall regional per capita water use by 20 percent by 2020.

Water Supply Allocation Plan

The Water Supply Allocation Plan provides a formula for equitable distribution of available water supplies in case of extreme water shortages within Metropolitan's service area. Delivery within a member agency of more than its allocated amount of Metropolitan supplies will subject the member agency to a penalty of one to four times Metropolitan's full service rate for untreated Tier 2 water, depending on how much the member agency's water use for the twelve-month period beginning on July 1 exceeds its allocated amount. (See ~~METROPOLITAN REVENUES—Water Rates by Water Category~~" in this Appendix A.) Any penalties collected may be rebated to the member agency that paid them to fund water management projects.

The Water Supply Allocation Plan was approved by the Board in February 2008. On April 14, 2009, Metropolitan's Board adopted a resolution declaring a regional water shortage and implementing the Water Supply Allocation Plan, effective July 1, 2009. The Board set the ~~Regional Shortage Level~~" at Water Supply Allocation Plan Level 2, which required reduction of regional water use by approximately ten percent and resulted in a total allocation of about 2.09 million acre-feet of Metropolitan water in fiscal year 2009-10. On April 13, 2010, the Board adopted a resolution recognizing the continuing regional water shortage and again setting the Regional Shortage Level at Water Supply Allocation Plan Level 2, which sustained the regional water use reduction of approximately 10 percent. Due to improved hydrologic and storage conditions, on April 12, 2011, the Board terminated implementation of the 2010-11 Water Supply Allocation Plan, restoring imported water deliveries to member agencies without risk of allocation penalties. Although the Act gives each of Metropolitan's member agencies a preferential entitlement to purchase a portion of the water served by Metropolitan (see ~~METROPOLITAN REVENUES—Preferential Rights~~"), historically, these rights have not been used in allocating Metropolitan's water.

Metropolitan's member agencies and retail water suppliers in Metropolitan's service area also may implement water conservation and allocation programs within their respective service territories in times of shortage.

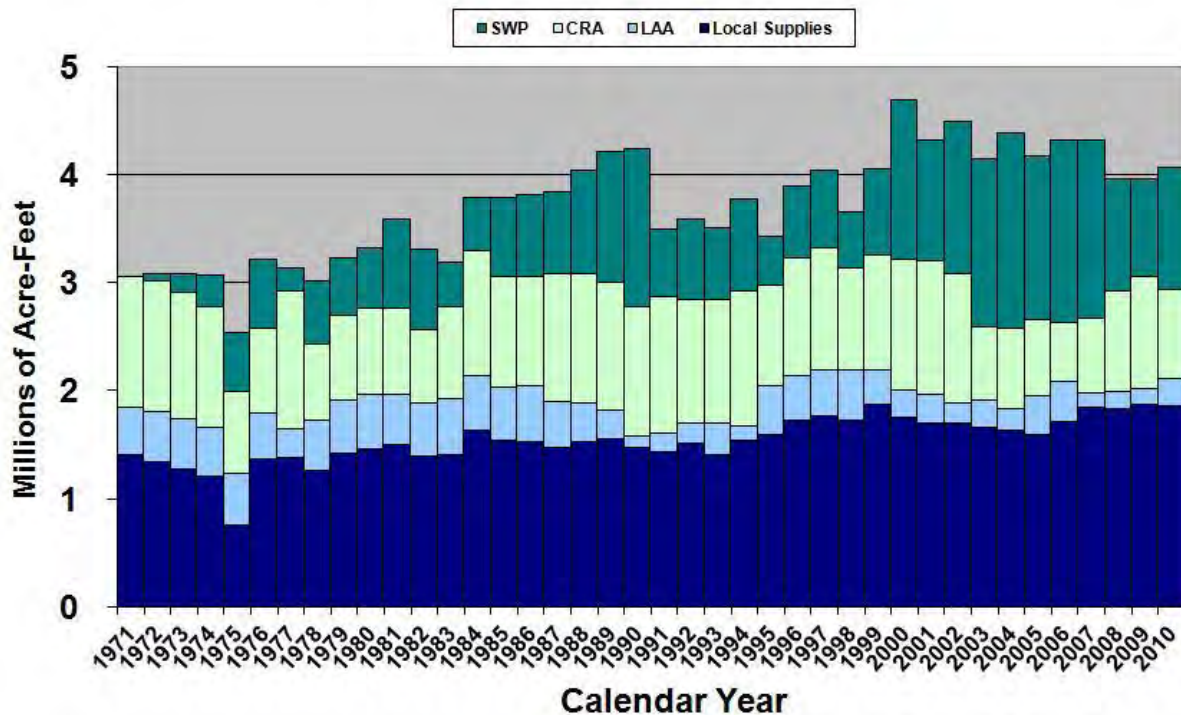
REGIONAL WATER RESOURCES

The water supply for Metropolitan's service area is provided in part by Metropolitan and in part by non-Metropolitan sources available to members. Approximately two-thirds of the water supply for Metropolitan's service area is imported water received by Metropolitan from its Colorado River Aqueduct and the State Water Project and by the City of Los Angeles (the "City") from the Los Angeles Aqueduct. While the City is one of the largest water customers of Metropolitan, it receives a substantial portion of its water from the Los Angeles Aqueduct and local groundwater supply. The balance of water within the region is produced locally, primarily from groundwater supplies and runoff.

Metropolitan's member agencies are not required to purchase or use any of the water available from Metropolitan. Some agencies depend on Metropolitan to supply 100 percent of their water needs, regardless of the weather. Other agencies, with local surface reservoirs or aqueducts that capture rain or snowfall, rely on Metropolitan more in dry years than in years with heavy rainfall, while others, with ample groundwater supplies, purchase Metropolitan water only to supplement local supplies or to recharge groundwater basins. The demand for supplemental supplies provided by Metropolitan is dependent on water use at the retail consumer level and the amount of locally supplied water. Consumer demand and locally supplied water vary from year to year, resulting in variability in water sales. In recent years, supplies and demands have been affected by drought, water use restrictions, economic conditions, weather conditions and environmental laws, regulations and judicial decisions, as described above under "METROPOLITAN'S WATER SUPPLY." For information on Metropolitan's water sales revenues, see "METROPOLITAN REVENUES" and "MANAGEMENT'S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENDITURES" in this Appendix A.

The following graph shows a summary of the regional sources of water supply for the years 1971 to 2010. Local supplies available within Metropolitan's service area are augmented by water imported by the City through the Los Angeles Aqueduct and Metropolitan supplies provided through the Colorado River Aqueduct and the State Water Project.

Sources of Water Supply in the Metropolitan Service Area (1971-2010)



Source: Metropolitan.

The major sources of water for Metropolitan's member agencies in addition to supplies provided by Metropolitan are described below.

Los Angeles Aqueduct

The City, through its Department of Water and Power, operates its Los Angeles Aqueduct system to import water from the Owens Valley and the Mono Basin on the eastern slopes of the Sierra Nevada in eastern California. Prior to the Mono Lake Basin Water Right Decision 1631 (Decision 1631) issued in September 1994, which revised the Department of Water and Power's water rights licenses in the Mono Basin, the City had imported an average of 460,000 acre-feet of water annually from the combined Owens Valley/Mono Basin system, of which about 85,000 acre-feet came from the Mono Basin. Under Decision 1631, the City has exported less than 16,000 acre-feet annually from the Mono Basin in recent years.

Pursuant to the City's turnout agreement with DWR, Antelope Valley-East Kern Water Agency (AVEK) and Metropolitan, the Department of Water and Power commenced construction in 2010 of the turnout facilities along the California Aqueduct within AVEK's service area. Upon completion, expected in May 2014, the turnout will enable AVEK to deliver water from the California Aqueduct to the Los Angeles Aqueduct. Conditions precedent to such delivery of water include obtaining agreements for the transfer of non-State Water Project water directly from farmers and water districts in Northern and Central California, available capacity in the California Aqueduct and compliance with State Water Project water quality requirements. The agreement limits use of the turnout to delivery of non-State Water Project water annually to the City in amounts not to exceed the supplies lost to the City as a result of its Eastern Sierra environmental obligations, including water for the Lower Owens River Project and Owens Lake Dust Mitigation Project,

which used about 98,000 acre-feet of Los Angeles Aqueduct water from April 2009 to March 2010. Historically, the Los Angeles Aqueduct and local groundwater supplies have been nearly sufficient to meet the City's water requirements during normal water supply years. As a result, as recently as the late 1980s only about 15 percent of the City's water needs (approximately 100,000 acre-feet) were supplied by Metropolitan. From fiscal year 2000-01 to fiscal year 2009-10, approximately 30 to 71 percent of the City's total water requirements were met by Metropolitan. For the five fiscal years ended June 30, 2010, the City's water deliveries from Metropolitan averaged approximately 326,000 acre-feet per year, which constituted approximately 52 percent of the City's total water supply. Deliveries from Metropolitan to the City during this period varied between approximately 209,000 acre-feet per year and approximately 439,000 acre-feet per year. See ~~—METROPOLITAN REVENUES—Principal Customers~~ in this Appendix A. According to the Los Angeles Department of Water and Power's Year 2010 Urban Water Management Plan, the City is planning to increase locally-developed supplies including recycled water, new conservation, stormwater recapture and groundwater cleanup from the average for the five-year period ending June 30, 2010 of 12 percent to 43 percent of its normal year supplies by fiscal year 2034-35. Accordingly, the City's reliance on Metropolitan supplies will decrease from the five year average ending June 30, 2010 of 52 percent to 24 percent of its normal year supplies by fiscal year 2034-35. However, the City may still purchase up to 511,000 acre-feet per year or 82 percent of its dry year supplies from Metropolitan over the next 25 years. This corresponds to an increase from normal to dry years of approximately 255,000 acre-feet in potential demand for supplies from Metropolitan. The level of water sales estimated in Metropolitan's projections for fiscal year 2011-12 water revenues and expenditures and provisionally approved budget and revenue requirements for fiscal year 2012-13 reflect local supplies from the Los Angeles Aqueduct system and other systems at higher than normal levels based on hydrologic conditions that occurred in 2010 and early 2011.

The Los Angeles Department of Water and Power has indicated that it is currently analyzing additional impacts to the Los Angeles Aqueduct's water supply deliveries of various environmental projects aimed at improving air quality and fish and riparian habitat in the Owens Valley. The City's future reliance on Metropolitan supplies will be dependent on these projects and the amount of water, if any, that may be derived from sources other than Metropolitan.

Local Water Supplies

Local water resources include groundwater production, recycled water production and diversion of surface flows. While local water resources are non-Metropolitan sources of water supply, Metropolitan has executed agreements for storage of Metropolitan supplies in local groundwater basins and provided incentives for local supply development as described below. Member agencies and other local agencies have also independently funded and developed additional local supplies, including groundwater storage and clean-up, recycled water and desalination of brackish or high salt content water.

Metropolitan's water sales projections are based in part on projections of locally-supplied water. Projections of future local supplies are based on estimated yields from sources and projects that are currently producing water or are under construction at the time a water sales projection is made. Additional reductions in Metropolitan's water sales projections are made to account for future local supply augmentation projects, based on the 2010 IRP Update goals. See ~~—MANAGEMENT'S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENDITURES—Water Sales Projections~~ and ~~—METROPOLITAN'S WATER SUPPLY—Integrated Resources Plan.~~

Groundwater. Demands for about 1.5 million acre-feet per year, about one-third of the annual water demands for almost 19 million residents of Metropolitan's service area, are met from groundwater production. Local groundwater supplies are supported by recycled water, which is blended with imported water and recharged into groundwater basins, and also used for creating seawater barriers that protect coastal aquifers from seawater intrusion.

Groundwater Storage Programs. Metropolitan has executed agreements with a number of agencies to develop groundwater storage projects in its service area. These projects are designed to help meet the water delivery reliability goals of storing surplus imported supplies when available so that local agencies can withdraw stored groundwater during droughts or other periods of water supply shortage. In 2000, Metropolitan was allocated \$45 million in State Proposition 13 bond proceeds to develop groundwater storage projects in Metropolitan's service area. The nine projects in this program, under agreements with Long Beach, Chino Basin, Orange County Basin, Three Valleys Municipal Water District/City of La Verne, Foothill Municipal Water District, Compton and Western Municipal Water District/Elsinore Valley Municipal Water District, provide over 210,000 acre-feet of groundwater storage. The groundwater storage program with Calleguas Municipal Water District ("Calleguas") in the North Las Posas Groundwater Basin in Ventura County, with a storage capacity of 210,000 acre-feet, was transferred to Calleguas in June 2011 under a termination agreement pursuant to which Calleguas purchased Metropolitan's stored water, approximately 34,500 acre-feet, and reimbursed Metropolitan's capital investment. The remaining nine programs have a combined extraction capacity of over 68,000 acre-feet per year. During fiscal year 2008-09, over 75,000 acre-feet of stored water was produced and sold from these storage accounts. Fiscal year 2009-10 sales from the ten accounts totaled nearly 59,000 acre-feet, leaving a balance of approximately 57,000 acre-feet in the storage accounts. As of August 1, 2011, the balance in the remaining nine accounts was approximately 30,000 acre-feet. See table "Metropolitan's Water Storage Capacity and Water in Storage" under "METROPOLITAN'S WATER SUPPLY—Storage Capacity and Water in Storage" in this Appendix A.

Recovered Groundwater. Contamination of groundwater supplies is a growing threat to local groundwater production. Metropolitan has been supporting increased groundwater production and improved regional supply reliability by offering financial incentives to agencies for production and treatment of degraded groundwater since 1991. Metropolitan has executed agreements with local agencies to provide financial incentives to 21 projects that recover contaminated groundwater with total contract yields of about 81,000 acre-feet per year. During fiscal year 2010-11 Metropolitan provided incentives for approximately 42,000 acre-feet of recovered water under these agreements. Total groundwater recovery use under executed agreements is expected to grow to 55,200 acre-feet by 2015.

Surface Runoff. Local agencies divert about 117,000 acre-feet per year of water from flows in local streams. Local surface water supplies are heavily influenced by year to year local weather conditions, varying from a high of 192,000 acre-feet in fiscal year 1998-99 to a low of 52,000 acre-feet in fiscal year 2003-04.

Conjunctive Use. Conjunctive use is accomplished when groundwater basins are used to store imported supplies during water abundant periods. The stored water is used during shortages and emergencies with a corresponding reduction in surface deliveries to the participating agencies. Regional benefits include enhancing Metropolitan's ability to capture excess surface flows during wet years from both the State Water Project and Colorado River. Groundwater storage is accomplished using spreading basins, injection wells, and in-lieu deliveries where imported water is substituted for groundwater, and the groundwater not pumped is considered stored water.

Metropolitan promotes conjunctive use at the local agency level under its Replenishment Service Program by discounting rates for imported water placed into groundwater or reservoir storage during wet months. The discounted rate and program rules encourage construction of additional groundwater production facilities allowing local agencies to be more self-sufficient during shortages. (See "*Groundwater Storage Programs*" above.) In calendar year 2006, Metropolitan delivered approximately 228,000 acre-feet of water as replenishment water. In calendar year 2007, Metropolitan delivered approximately 52,000 acre-feet of water as replenishment up to May 1, then discontinued storage deliveries. During fiscal year 2009-10, some member agencies began to request full service deliveries for groundwater recharge to support continued groundwater production. As of April 2011, full service deliveries for groundwater recharge totaled more than 162,000 acre-feet. On May 10, 2011, Metropolitan's Board authorized sale of up to 225,000 acre-feet of discounted replenishment service deliveries to member agencies for the remainder of calendar year 2011.

Discounted replenishment deliveries are offered with the expectation of increased sales revenue; however, depending on customer demand, these increased revenues may or may not be realized. See —MANAGEMENT’S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENDITURES—Water Sales Projections.” Metropolitan staff and the member agencies are currently engaged in a process to develop a revised Replenishment Program for consideration by Metropolitan’s Board by the end of 2011. See —METROPOLITAN REVENUES—Classes of Water Service—*Replenishment*” in this Appendix A.

Recycled Water. Metropolitan has supported recycled water use to offset potable water demands and improve regional supply reliability by offering financial incentives to agencies for production and sales of recycled water since 1982. Metropolitan has executed agreements with local agencies to provide financial incentives to 64 recycled water projects with total contract yields of about 323,000 acre-feet per year. During fiscal year 2010-11, Metropolitan provided incentives for approximately 159,000 acre-feet of reclaimed water under these agreements. Total recycled water use under executed agreements is expected to grow to about 209,000 acre-feet by 2015.

Seawater Desalination. Metropolitan’s IRP includes seawater desalination as a new local resource. To encourage local development, Metropolitan has signed Seawater Desalination Program (—SDP”) incentive agreements with three of its member agencies: Long Beach, Municipal Water District of Orange County and West Basin Municipal Water District. The SDP agreements provide incentives of up to \$250 for each acre-foot produced after the projects are operational. Each SDP incentive agreement is subject to final approval by Metropolitan’s Board after review of complete project description and environmental documentation. The three projects are in the planning stages and are collectively anticipated to produce up to 46,000 acre-feet annually.

On November 10, 2009, Metropolitan authorized a similar SDP incentive agreement with SDCWA and nine of its local retail agencies for a proposed desalination project in Carlsbad, anticipated to produce 56,000 acre-feet per year. The Carlsbad Seawater Desalination Project (the —Carlsbad Project”) is being developed by Poseidon Resources LLC. On August 25, 2011, the SDCWA board of directors approved an alternative two-party agreement under which SDCWA would purchase water directly from the Carlsbad Project. Neither SDCWA nor Metropolitan has executed the original multi-party incentive agreement authorized by Metropolitan, as a result of SDCWA’s negotiation of the alternative two-party agreement and litigation initiated by SDCWA challenging Metropolitan’s rate structure that, under the agreement’s terms, could have triggered proceedings for termination of the SDP incentive agreement. See —METROPOLITAN REVENUES—Rate Structure” in this Appendix A. The Carlsbad Project has obtained permits from the California Coastal Commission, State Lands Commission and San Diego Regional Water Quality Control Board for construction of the project. Litigation challenging some of these approvals was resolved in June 2011 through a San Diego Superior Court ruling which upheld recent project approval by the San Diego Regional Water Quality Control Board.

In addition to the projects in Metropolitan’s incentive program, three other seawater desalination projects are under consideration in Metropolitan’s service area. Poseidon Resources is developing the first of these projects, a 56,000 acre-feet per year project in Huntington Beach which is currently in the permitting phase. For the second project, SDCWA is studying the potential for a seawater desalination project in Camp Pendleton which would produce up to 168,000 acre-feet per year. In a third project, SDCWA is leading a feasibility study of a desalination project in Rosarito Beach, Mexico that could yield 28,000 to 56,000 acre-feet per year. If developed, SDCWA and potentially Metropolitan could receive a portion of the desalinated supplies either through delivery to SDCWA or through Colorado River supply exchanges with Mexico. Partners in the study include Metropolitan, the SNWA, CAWCD and water officials from Mexico. Otay Water District, located in San Diego County along the Mexico border, is separately considering the feasibility of purchasing water from an alternative seawater desalination project in Rosarito Beach. Approvals from a

number of U.S. and Mexican federal agencies, along with local approvals, would be needed for both cross-border projects to proceed.

METROPOLITAN'S WATER DELIVERY SYSTEM

Method of Delivery

Metropolitan's water delivery system is made up of three basic components: the Colorado River Aqueduct, the California Aqueduct of the State Water Project and Metropolitan's internal water distribution system. Metropolitan's delivery system is integrated and designed to meet the differing needs of its member agencies. Metropolitan seeks redundancy in its delivery system to assure reliability in the event of an outage. Current system expansion and other improvements will be designed to increase the flexibility of the system. Since local sources of water are generally used to their maximum each year, growth in the demand for water is partially met by Metropolitan. Accordingly, the operation of Metropolitan's water system is being made more reliable through the rehabilitation of key facilities as needed, improved preventive maintenance programs and the upgrading of Metropolitan's operational control systems. See "CAPITAL INVESTMENT PLAN" in this Appendix A.

Colorado River Aqueduct. Work on the Colorado River Aqueduct commenced in 1933 and water deliveries started in 1941. Additional facilities were completed by 1961 to meet additional requirements of Metropolitan's member agencies. The Colorado River Aqueduct is 242 miles long, starting at the Lake Havasu intake and ending at the Lake Mathews terminal reservoir. Metropolitan owns all of the components of the Colorado River Aqueduct, which include five pump plants, 64 miles of canal, 92 miles of tunnels, 55 miles of concrete conduits and 144 underground siphons totaling 29 miles in length. The pumping plants lift the water approximately 1,617 feet over several mountain ranges to Metropolitan's service area. See "METROPOLITAN'S WATER SUPPLY—Colorado River Aqueduct" in this Appendix A.

State Water Project. The initial portions of the State Water Project serving Metropolitan were completed in 1973. State Water Project facilities are owned and operated by DWR. Twenty-nine agencies have entered into contracts with DWR to receive water from the State Water Project. See "METROPOLITAN'S WATER SUPPLY—State Water Project" in this Appendix A.

Internal Distribution System. Metropolitan's internal water distribution system includes components that were built beginning in the 1930s and through the present. Metropolitan owns all of these components, including 14 dams and reservoirs, five regional treatment plants, over 800 miles of transmission pipelines, feeders and canals, and 16 hydroelectric plants with an aggregate capacity of 131 megawatts.

Diamond Valley Lake. Diamond Valley Lake, a man-made reservoir located southwest of the city of Hemet, California, covers approximately 4,410 acres and has capacity to hold approximately 810,000 acre-feet or 265 billion gallons of water. Diamond Valley Lake was constructed to serve approximately 90 percent of Metropolitan's service area by gravity flow. Associated hydraulic structures consist of an inlet-outlet tower, pumps and generating facilities, a pressure control facility, connecting tunnels and a forebay. Imported water is delivered to Diamond Valley Lake during surplus periods. The reservoir provides more reliable delivery of imported water from the State Water Project and the Colorado River Aqueduct during summer months, droughts and emergencies. In addition, Diamond Valley Lake is capable of providing more than one-third of Southern California's water needs from storage for approximately six months after a major earthquake (assuming that there has been no impairment of Metropolitan's internal distribution network). See the table "Metropolitan's Water Storage Capacity and Water in Storage" under "METROPOLITAN'S WATER SUPPLY—Storage Capacity and Water in Storage" in this Appendix A for the amount of water in storage at Diamond Valley Lake. Excavation at the project site began in May 1995. Diamond Valley Lake was completed in March 2000, at a total cost of \$2 billion, and was in full operation in December 2001.

Inland Feeder. The Inland Feeder is a 44-mile-long conveyance system that connects the State Water Project to Diamond Valley Lake and the Colorado River Aqueduct. The Inland Feeder provides greater flexibility in managing Metropolitan's major water supplies and allows greater amounts of State Water Project water to be accepted during wet seasons for storage in Diamond Valley Lake. In addition, the Inland Feeder increases the conveyance capacity from the East Branch of the State Water Project by 1,000 cubic-feet per second (cfs), allowing the East Branch to operate up to its full capacity. The Inland Feeder was completed in September 2009. Costs through fiscal year 2009-10 were \$1.14 billion.

Operations Control Center. Metropolitan's water conveyance and distribution system operations are coordinated from the Operations Control Center (OCC) located in the Eagle Rock area of Los Angeles. The OCC plans, balances and schedules daily water and power operations to meet member agencies' demands, taking into consideration the operational limits of the entire system.

Water Treatment

Metropolitan filters and disinfects water at five water treatment plants: the F.E. Weymouth Treatment Plant, the Joseph Jensen Treatment Plant, the Henry J. Mills Treatment Plant, the Robert B. Diemer Treatment Plant and the Robert A. Skinner Treatment Plant. The plants treat an average of between 1.7 billion and 2.0 billion gallons of water per day, and have a maximum capacity of approximately 2.6 billion gallons per day. Approximately 70 percent of Metropolitan's water deliveries are treated water.

Federal and state regulatory agencies continually monitor and establish new water quality standards. New water quality standards could affect availability of water and impose significant compliance costs on Metropolitan. The Safe Drinking Water Act (SDWA) was amended in 1986 and again in 1996. The SDWA establishes drinking water quality standards, monitoring, public notification and enforcement requirements for public water systems. To achieve these objectives, the U.S. Environmental Protection Agency (USEPA), as the lead regulatory authority, promulgates national drinking water regulations and develops the mechanism for individual states to assume primary enforcement responsibilities. The California Department of Public Health (CDPH), formerly known as the Department of Health Services, has lead authority over California water agencies. Metropolitan continually monitors new water quality laws and regulations and frequently comments on new legislative proposals and regulatory rules.

In October 2007, Metropolitan began adding fluoride to treated water at all five of its treatment plants for regional compliance with Assembly Bill 733, enacted in 1995, which requires fluoridation of any public water supply with over 10,000 service connections in order to prevent tooth decay, subject to availability of sufficient funding. Design and construction of the fluoridation facilities at Metropolitan's five treatment plants were funded primarily by a \$5.5 million grant from the California Dental Association Foundation, in conjunction with the California Fluoridation 2010 Work Group. On August 9, 2011, three individuals filed litigation (*Foli et al. v. Metropolitan Water District of Southern California et al.*) in federal district court alleging deprivation of civil rights, impairment of civil rights and unfair competition based on fluoridation of Metropolitan's treated water deliveries. Any impact of this litigation on Metropolitan cannot be determined at this time.

Disinfection By-products. As part of the requirements of the SDWA, USEPA is required to establish regulations to strengthen protection against microbial contaminants and reduce potential health risks from disinfection by-products. Disinfectants and disinfection by-products (D/DBPs) were addressed by the USEPA in two stages. In the Stage 1 Disinfectants and Disinfection Byproducts Rule (Stage 1 DBPR), the maximum contaminant level (MCL) for one of the classes of D/DBPs, total trihalomethanes (TTHM), was lowered from 100 parts per billion (ppb) to 80 ppb. MCLs were also set for haloacetic acids (HAA) and bromate (an ozone D/DBP). In addition, the Stage 1 DBPR includes a treatment requirement to remove disinfection by-product precursors. Compliance with these requirements started in January 2002. Metropolitan already satisfied these requirements for its Colorado River Water, which has lower levels of disinfection by-product precursors than State Water Project water. State Water Project water has a greater

amount of disinfection by-product precursors and modifications to the treatment process have been made to meet the requirements of the Stage 1 DBPR. Longer-term D/DBP control has been achieved by switching to ozone as the primary disinfectant at the Mills and Jensen treatment plants, which only receive water from the State Water Project. Ozone facilities at the Mills plant began operating in October 2003. Ozone facilities became operational at the Jensen plant on July 1, 2005. Ozone facilities at the Skinner plant became operational in 2010. Metropolitan's Board has also approved installing ozonation processes at the Weymouth and Diemer treatment plants, which receive a blend of water from the State Water Project and the Colorado River. (See ~~“CAPITAL INVESTMENT PLAN—Major Projects of Metropolitan's Capital Investment Plan—~~*Water Treatment Facilities*~~”~~ in this Appendix A.) Ozone will enable these plants to reliably treat water containing higher blends of State Project water and still meet the new microbial and D/DBP standards.

The second stage of the D/DBP Rule (~~“~~Stage 2 DBPR~~”~~) was finalized in January 2006. The Stage 2 DBPR requires water systems to meet the TTHM and HAA standards at individual monitoring locations in the distribution system as opposed to a distribution system-wide average under the Stage 1 DBPR. Metropolitan does not anticipate any further capital improvements in order to meet the Stage 2 DBPR requirements. See ~~“CAPITAL INVESTMENT PLAN—Major Projects of Metropolitan's Capital Investment Plan—~~*Water Treatment Facilities*~~”~~ in this Appendix A.

The Interim Enhanced Surface Water Treatment Rule and the Long Term 2 Enhanced Surface Water Treatment Rule (~~“~~LT2ESWTR~~”~~) have been implemented to simultaneously provide protection against microbial pathogens while the D/DBP rules provide reduced risk from disinfection by-products. Metropolitan does not anticipate any further capital improvements in order to meet the LT2ESWTR requirements.

Perchlorate. Perchlorate, used in solid rocket propellants, munitions and fireworks, has contaminated some drinking water wells and surface water sources throughout California. Perchlorate also has been detected in Metropolitan's Colorado River water supplies. A chemical manufacturing facility near Lake Mead in Nevada is a primary source of the contamination. Remediation efforts began in 1998 and have been successful at meeting the cleanup objectives, significantly reducing the levels of perchlorate entering into the Colorado River. CDPH has established a primary drinking water standard (i.e., a maximum contaminant level or MCL) of 6 ppb for perchlorate. Current perchlorate levels in Metropolitan's Colorado River supplies are below 2 ppb.

Chromium 6. Hexavalent chromium or chromium 6 is the relatively more harmful form of chromium. The public health standard for ~~“total”~~ chromium, which includes chromium 6, is a MCL of 50 ppb. There is currently no specific MCL for chromium 6. Chromium 6 in Metropolitan's source waters has ranged from non-detect (less than 0.03 ppb) to under 0.5 ppb. On July 27, 2011 the California Office of Environmental Health Hazard Assessment (~~“OEHHA”~~) released a public health goal (~~“PHG”~~) of 0.02 ppb for chromium 6. Following public comment periods and workshops, the CDPH can proceed with final development of a MCL for chromium 6 and must set the state MCL as close to the PHG as is technologically and economically feasible. It is expected that the adoption of a chromium 6 regulation will not materially affect the water supply to Metropolitan or result in significant compliance costs.

Arsenic. The federal and state MCL for arsenic in drinking water is 10 ppb. Arsenic levels in Metropolitan's treated water supplies ranged from not detected (less than 2 ppb) to 3.9 ppb in 2009.

Seismic Considerations

General. Although the magnitude of damages resulting from a significant seismic event are impossible to predict, Metropolitan's water conveyance and distribution facilities are designed to either withstand a maximum probable seismic event or to minimize the potential repair time in the event of damage. The five pumping plants on the Colorado River Aqueduct have been buttressed to better withstand seismic events. Other components of the Colorado River Aqueduct are monitored for any necessary rehabilitation and repair. Metropolitan personnel and independent consultants periodically reevaluate the internal water

distribution system's vulnerability to earthquakes. As facilities are evaluated and identified for seismic retrofitting, they are prioritized, with those facilities necessary for delivering or treating water scheduled for upgrade before non-critical facilities. Supplies are dispersed throughout Metropolitan's service area, and a six-month reserve supply of water normally held in local storage (including emergency storage in Diamond Valley Lake) provides reasonable assurance of continuing water supplies during such events. However, major portions of the California Aqueduct, the Colorado River Aqueduct and Metropolitan's internal distribution system are located near major earthquake faults, including the San Andreas Fault. A significant earthquake could damage structures and interrupt the supply of water, adversely affecting Metropolitan's revenues and its ability to pay its obligations.

Metropolitan has an ongoing surveillance program that monitors the safety and structural performance of its 14 dams and reservoirs. Operating personnel perform regular inspections that include monitoring and analyzing seepage flows and pressures. Engineers responsible for dam safety review the inspection data and monitor the horizontal and vertical movements for each dam. Major on-site inspections are performed at least twice each year. Instruments to transmit seismic acceleration time histories for analysis any time a dam is subjected to strong motion during an earthquake are located at a number of selected sites.

In addition, Metropolitan has developed an emergency plan that calls for specific levels of response appropriate to an earthquake's magnitude and location. Included in this plan are various communication tools as well as a structured plan of management that varies with the severity of the event. Pre-designated personnel follow detailed steps for field facility inspection and distribution system patrol. Approximately 40 employees are designated to respond immediately under certain identifiable seismic events. An emergency operations center is maintained at the OCC. The OCC, which is specifically designed to be earthquake resistant, contains communication equipment, including a radio transmitter, microwave capability and a response line linking Metropolitan with its member agencies, DWR, other utilities and the State's Office of Emergency Services. Metropolitan also maintains machine, fabrication and coating shops at its facility in La Verne, California. Materials to fabricate pipe and other appurtenant fittings are kept in inventory at the La Verne site. In the event of earthquake damage, Metropolitan has taken measures to secure the capacity and stockpiled materials to fabricate pipe and related fittings. Metropolitan is also staffed to perform emergency repairs and has pre-qualified contractors for emergency repair needs at various locations throughout Metropolitan's service area.

State Water Project Facilities. The California Aqueduct crosses all major faults either by canal at ground level or by pipeline at very shallow depths to ease repair in case of damage from movement along a fault. State Water Project facilities are designed to withstand major earthquakes along a local fault or magnitude 8.1 earthquakes along the San Andreas Fault without major damage. Dams, for example, are designed to accommodate movement along their foundations and to resist earthquake forces on their embankments. Earthquake loads have been taken into consideration in the design of project structures such as pumping and power plants. The location of check structures on the canal allows for hydraulic isolation of the fault-crossing repair.

While the dams, canals, pump stations and other constructed State Water Project facilities have been designed to withstand earthquake forces, the critical supply of water from Northern California must traverse the Bay-Delta through hundreds of miles of varying levels of engineered levees that are susceptible to major failures due to flood and seismic risk. In the event of a failure of the Bay-Delta levees, the quality of the Bay-Delta's water could be severely compromised as salt water comes in from the San Francisco Bay. Metropolitan's supply of State Water Project water would be adversely impacted if pumps that move Bay-Delta water southward to the Central Valley and Southern California are shut down to contain the salt water intrusion. Metropolitan estimates that stored water supplies, Colorado River Aqueduct supplies and local water resources that would be available in case of a levee breach or other interruption in State Water Project supplies would meet demands in Metropolitan's service area for approximately twelve months. (See ~~METROPOLITAN'S WATER SUPPLY~~—Storage Capacity and Water in Storage" in this Appendix A).

Since the State and Federal governments control the Bay-Delta levees, repair of any levee failures would be the responsibility of and controlled by the State and Federal governments.

Metropolitan, in cooperation with the State Water Contractors, developed recommendations to DWR for emergency preparedness measures to maintain continuity in export water supplies and water quality during emergency events. These measures include improvements to emergency construction materials stockpiles in the Bay-Delta, improved emergency contracting capabilities, strategic levee improvements and other structural measures of importance to Bay-Delta water export interests. DWR utilized \$12 million in fiscal year 2007-08 for initial stockpiling of rock for emergency levee repairs and development of Bay-Delta land and marine loading facilities.

Perris Dam. DWR reported in July 2005 that seismic studies indicate that DWR's Perris Dam facility could sustain damage from moderate earthquakes along the San Jacinto or San Andreas faults due to potential weaknesses in the dam's foundation. The studies used technology not available when the dam was completed in 1974. Perris Dam forms Lake Perris, the terminal reservoir for the State Water Project in Riverside County, with maximum capacity of approximately 130,000 acre-feet of water. In late 2005, DWR lowered the water level in the reservoir by about 25 feet and reduced the amount of water stored in the reservoir to about 75,000 acre-feet as DWR evaluates alternatives for repair of the dam. The lower lake level elevation was intended to prevent over-topping of the dam crest in the event of a major earthquake and to prevent uncontrolled releases. In December 2006, DWR completed a study identifying various repair options, began additional geologic exploration along the base of Perris Dam and started preliminary design. DWR's preferred alternative is to repair the dam to restore the reservoir to its historical level. DWR estimates that such repairs will cost between \$340 million and \$460 million and take four to eight years to complete, once commenced. Water stored in Lake Perris is used primarily by Metropolitan. Accordingly, Metropolitan likely would be a major contributor toward the cost of repair or replacement of Perris Dam under its State Water Contract. DWR released its draft EIR in January 2010 which it plans to finalize in fall 2011. (See ~~METROPOLITAN EXPENDITURES~~–State Water Contract Obligations” in this Appendix A.)

Security Measures

Metropolitan conducts ground and air patrols of the Colorado River Aqueduct and monitoring and testing at all treatment plants and along the Colorado River Aqueduct. Similarly, DWR has in place security measures to protect critical facilities of the State Water Project, including both ground and air patrols of the State Water Project.

Although Metropolitan has constructed redundant systems and other safeguards to ensure its ability to continually deliver water to its customers, and DWR has made similar efforts, a terrorist attack or other security breach against water facilities could materially impair Metropolitan's ability to deliver water to its customers, its operations and revenues and its ability to pay its obligations.

CAPITAL INVESTMENT PLAN

General Description

Metropolitan's current Capital Investment Plan (the ~~Capital Investment Plan~~” or ~~CIP~~”) involves expansion and rehabilitation of existing facilities and construction of new facilities to provide for resource development, meet future water demands, ensure system reliability as well as enhance operational efficiency, and comply with water quality regulations. Metropolitan's CIP is regularly reviewed and updated. Implementation and construction of specific elements of the program are subject to Board approval, and the amount and timing of borrowings will depend upon, among other factors, status of construction activity and water demands within Metropolitan's service area. From time to time projects that have been undertaken are delayed, redesigned or deferred by Metropolitan for various reasons and no assurance can be given that a project in the CIP will be completed in accordance with its original schedule or that any project will be

completed as currently planned. For fiscal year 2011-12, several growth-related projects have been deferred or re-scoped as a result of reduced demand projections over the next few years. This adjustment to the CIP has resulted in a reduction in projected capital spending over the next five years of over \$150 million.

Projection of Capital Investment Plan Expenditures

The table below sets forth projected CIP expenditures, including replacement and refurbishment expenditures, by project type for the fiscal years ending June 30, 2013 through 2017. The requirements of the CIP from fiscal year 2012-13 through fiscal year 2016-17 are estimated to be approximately \$1.55 billion in escalated dollars. This estimate is updated annually as a result of the periodic review and revision of the CIP. See ~~“HISTORICAL AND PROJECTED REVENUES AND EXPENDITURES”~~ in this Appendix A.

CAPITAL INVESTMENT PLAN PROJECTION OF EXPENDITURES⁽¹⁾ (Fiscal Years Ended June 30 - Dollars in Thousands)

	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>Total</u>
<u>Cost of Service</u>						
Source of Supply	\$ 280	\$ -0-	\$ -0-	\$ -0-	\$ -0-	\$ 280
Conveyance & Aqueduct	65,980	34,160	3,420	1,130	-0-	104,690
Storage	12,810	12,830	2,560	-0-	-0-	28,200
Distribution	39,600	69,900	83,650	91,090	96,610	380,850
Treatment	192,040	223,030	248,450	195,170	93,100	951,790
Administrative & General	23,480	23,520	13,050	2,640	-0-	62,690
Hydroelectric	<u>12,650</u>	<u>6,390</u>	<u>450</u>	<u>60</u>	<u>-0-</u>	<u>19,550</u>
Total⁽²⁾	\$346,840	\$369,830	\$351,580	\$290,090	\$189,710	\$1,548,050

Source: Metropolitan.

(1) Current estimate for fiscal year 2011-12 is \$236 million. Fiscal year 2012-13 through 2016-17 based on the budget for fiscal year 2011-12 and the provisionally approved budget for fiscal year 2012-13. Totals are rounded.

(2) Annual totals include replacement and refurbishment expenditures for 2013 through 2017 of \$172 million, \$183 million, \$172 million, \$178 million, and \$149 million, respectively, for a total of \$854 million for 2013 through 2017.

The above projections do not include amounts for contingencies, but include escalation at 2.77 percent per year for projects for which formal construction contracts have not been awarded. Additional capital costs may arise in the future as a result of, among other things, federal and State water quality regulations, project changes and mitigation measures necessary to satisfy environmental and regulatory requirements, and for additional facilities to, among other things, replenish groundwater basins and operate groundwater basins conjunctively with surface supplies. See ~~“METROPOLITAN’S WATER DELIVERY SYSTEM—Water Treatment”~~ above.

Capital Investment Plan Financing

The CIP will require significant funding from debt financing (see ~~“HISTORICAL AND PROJECTED REVENUES AND EXPENDITURES”~~ in this APPENDIX A) as well as from pay-as-you-go funding. The Board has adopted an internal funding objective to fund all capital program expenditures required for replacements and refurbishments of Metropolitan facilities from current revenues. However, in order to reduce drawdowns of reserve balances and to mitigate financial risks that could occur in upcoming years, actual and projected pay-as-you-go funding has been and is anticipated to be less than budgeted amounts during fiscal years 2007-08 through 2012-13. During this period, pay-as-you-go funding is now expected to be \$264 million, rather than the \$620 million originally budgeted. As in prior years, these amounts may be reduced or increased by the Board during the fiscal year. To limit the accumulation of cash

and investments in the Replacement and Refurbishment Fund, the maximum balance in this fund at the end of each fiscal year will be \$95 million. Amounts above the \$95 million limit will be transferred to the Revenue Remainder Fund and may be used for any lawful purpose. The remainder of capital program expenditures will be funded through the issuance from time to time of water revenue bonds, which are payable from Net Operating Revenues. Metropolitan expects to issue additional water revenue bonds to fund the CIP in the amount of \$250 million in fiscal year 2011-12, \$100 million in fiscal year 2012-13, \$250 million in fiscal year 2013-14, \$230 million in fiscal year 2014-15, \$175 million in fiscal year 2015-16 and \$220 million in fiscal year 2016-17. See ~~METROPOLITAN EXPENDITURES~~—Revenue Bond Indebtedness” in this Appendix A.

Major Projects of Metropolitan’s Capital Investment Plan

Oxidation Retrofit Facilities. The oxidation retrofit facilities program includes the design and construction of oxidation facilities and appurtenances at all of Metropolitan’s treatment plants. This program is intended to allow Metropolitan to meet drinking water standards for disinfection by-products and reduce taste and odor incidents. The first phase of the oxidation retrofit program, at Metropolitan’s Henry J. Mills Treatment Plant in Riverside County, was completed in 2003. Oxidation retrofit at the Joseph Jensen Treatment Plant was completed July 1, 2005. The cost for these two projects was approximately \$235.4 million. Oxidation retrofit at the Robert A. Skinner plant was completed in December 2009. Several associated projects are still under way, including improvements to roadways and chemical systems. Expenditures at the Skinner plant through fiscal year 2010-11 were \$240.4 million, with \$3.8 million budgeted for fiscal year 2011-12. Total oxidation program costs at the Skinner plant are estimated to be \$252.6 million. The oxidation retrofit programs at the Robert B. Diemer and F.E. Weymouth plants are estimated to cost \$373.5 million and \$335.3 million respectively. Expenditures at the Diemer plant through the end of fiscal year 2010-11 were \$ 296.4 million with \$41.6 million budgeted for fiscal year 2011-12. Construction completion is expected in fiscal year 2011-12. Expenditures at the Weymouth plant through fiscal year 2010-11 were \$62.4 million, with \$39.3 million budgeted for fiscal year 2011-12. Construction completion is expected in fiscal year 2015-16.

Weymouth Water Treatment Plant Improvements. The Weymouth Water Treatment Plant was built in 1938 and subsequently expanded several times over the following 35 years. It is Metropolitan’s oldest water treatment facility. Metropolitan plans major upgrades and refurbishment/replacement projects to maintain its reliability and improve its efficiency. These include upgrading the incoming electrical service from a single 12-kV power line to a new underground 66-kV service line, upgrading and/or replacing the plant’s power centers and distribution system and upgrading the emergency power back-up generators and grounding system. An overall master plan of treatment facilities improvements will also be developed, to be constructed after completion of the new ozone facilities. The current cost estimate for all projected improvements at the Weymouth plant, not including the ozone facilities, is approximately \$397 million, with \$164.3 million spent through fiscal year 2010-11. Budgeted capital expenditures for improvements at the Weymouth plant for fiscal year 2011-12 are \$25.3 million.

Colorado River Aqueduct Facilities. The Colorado River Aqueduct was originally completed in 1941. Through annual inspections and maintenance activities, the performance and reliability of the various components of the Colorado River Aqueduct are regularly evaluated. A major overhaul of the pump units at the five pumping plants was completed in 1988. Refurbishment or replacement of many of the electrical system components, including the transformers, circuit breakers and motor control centers, is currently under way. Additionally, many of the mechanical components at the pumping plants as well as the Copper Basin and Gene Wash Reservoirs will be replaced over the next few years. The cost estimate for these refurbishment or replacement projects is currently \$239 million. Costs through fiscal year 2010-11 were \$116.9 million, with \$22.4 million budgeted for fiscal year 2011-12.

GOVERNANCE AND MANAGEMENT

Board of Directors

Metropolitan is governed by a 37-member Board of Directors. Each member public agency is entitled to have at least one representative on the Board, plus an additional representative for each full five percent of the total assessed valuation of property in Metropolitan's service area that is within the member public agency. Changes in relative assessed valuation do not terminate any director's term. Accordingly, the Board may, from time to time, have more than 37 directors.

The Board includes business, professional and civic leaders. Directors serve on the Board without compensation from Metropolitan. Voting is based on assessed valuation, with each member agency being entitled to cast one vote for each \$10 million or major fractional part of \$10 million of assessed valuation of property within the member agency, as shown by the assessment records of the county in which the member agency is located. The Board administers its policies through the Metropolitan Water District Administrative Code (the "Administrative Code"), which was adopted by the Board in 1977. The Administrative Code is periodically amended to reflect new policies or changes in existing policies that occur from time to time.

Management

Metropolitan's day-to-day management is under the direction of its General Manager, who serves at the pleasure of the Board, as do Metropolitan's General Counsel, General Auditor and Ethics Officer. Following is a biographical summary of Metropolitan's principal executive officers.

Jeffrey Kightlinger, General Manager – Mr. Kightlinger was appointed as General Manager in February 2006, leaving the position of General Counsel, which he had held since February 2002. Before becoming General Counsel, Mr. Kightlinger was a Deputy General Counsel and then Assistant General Counsel, representing Metropolitan primarily on Colorado River matters, environmental issues, water rights and a number of Metropolitan's water transfer and storage programs. Prior to joining Metropolitan in 1995, Mr. Kightlinger worked in private practice representing numerous public agencies including municipalities, redevelopment agencies and special districts. Mr. Kightlinger earned his bachelor's degree in history from the University of California, Berkeley, and his law degree from Santa Clara University.

Marcia Scully, Interim General Counsel – Ms. Scully was appointed as Interim General Counsel in March 2011. Ms. Scully joined Metropolitan in 1995, after a decade of private law practice, providing legal representation to Metropolitan on construction, employment, Colorado River and significant litigation matters. From 1981 to 1985 she was assistant city attorney for the City of Inglewood. Ms. Scully served as president of University of Michigan's Alumnae Club of Los Angeles and is a recipient of the 1996 State Bar of California, District 7 President's Pro Bono Service Award and the Southern California Association of Non-Profit Housing Advocate of the Year Award. She is also a member of the League of Women Voters for Whittier and was appointed for two terms on the City of Whittier's Planning Commission, three years of which were served as chair. Ms. Scully earned a bachelor's degree in liberal arts from the University of Michigan, a master's degree in urban planning from Wayne State University and law degree from Loyola Law School.

Gerald C. Riss, General Auditor – Mr. Riss was appointed as Metropolitan's General Auditor in July 2002 and is responsible for the independent evaluation of the policies, procedures and systems of control throughout Metropolitan. Mr. Riss is a certified fraud examiner, certified financial services auditor and certified risk professional with more than 25 years of experience in accounting, audit and risk management. Prior to joining Metropolitan, Mr. Riss was Vice President and Assistant Division Head of Risk Management Administration at United California Bank/Bank of the West. He also served as Senior Vice President, director of Risk Management and General Auditor of Tokai Bank of California from 1988 until its

reorganization as United California Bank in 2001. He earned a bachelor's degree in accounting and master's degree in business administration from Wayne State University in Detroit, Michigan.

Deni Elliott, Ethics Officer – Ms. Elliott was appointed as Ethics Officer on June 8, 2004. She served as Metropolitan's interim Ethics Officer beginning in September 2003. Ms. Elliott holds the Poynter Jamison Chair in Media Ethics and Press Policy at the University of South Florida, St. Petersburg, where she is a tenured full professor in the Department of Journalism. She has taught ethics for more than 24 years, including at the University of Montana, Dartmouth College, Utah State University and Wayne State University. Ms. Elliott also was founding director of the Dartmouth College Ethics Institute and the Practical Ethics Center at the University of Montana, as well as founding director of the nation's first graduate degree program in teaching ethics. She was awarded an interdisciplinary doctoral degree from Harvard University in the philosophy of education, and earned a master's degree in philosophy from Wayne State University and bachelor's degree in communications from the University of Maryland.

Thomas E. DeBacker, Interim Chief Financial Officer – Mr. DeBacker was appointed as Interim Chief Financial Officer in January 2011. Mr. DeBacker joined Metropolitan in 1995 as Assistant Controller. In 2000 he moved to the audit department as Assistant General Auditor and then as Interim General Auditor. In 2001 he returned to the CFO's department and in 2005 was appointed Controller. Prior to joining Metropolitan, Mr. DeBacker spent 17 years with the Southern California Gas Company, with responsibilities including accounting, finance, rates and budgets. Mr. DeBacker is a Certified Public Accountant and a member of the California Society of CPAs and the American Institute of CPAs, and earned a bachelor's degree in business administration from California Polytechnic State University at San Luis Obispo.

Debra Man, Assistant General Manager/Chief Operating Officer – Ms. Man was appointed to this position on December 15, 2003. Ms. Man has worked at Metropolitan since 1986, beginning as an engineer and advancing to Chief of the Planning and Resources Division. As Chief of Planning and Resources she was responsible for major initiatives adopted by Metropolitan's Board, such as the Integrated Water Resources Plan, rate structure, and facility plans for expansion of Metropolitan's distribution system. In 1999, she was appointed as Vice President of Water Transfers and Exchanges, responsible for securing water supplies through agreements and partnerships with other water and agricultural interests in San Joaquin Valley and Southern California and demonstrating Metropolitan's water supply reliability in compliance with current laws. Ms. Man is a registered professional civil engineer in California and Hawaii. She has a master's degree in civil/environmental engineering from Stanford University and a bachelor's degree in civil engineering from the University of Hawaii.

Roger Patterson, Assistant General Manager/Strategic Initiatives – Mr. Patterson was appointed Assistant General Manager in March 2006. He is responsible for overseeing water supply and planning issues, including the Colorado River and State Water Project. He previously served as a consultant to Metropolitan on Colorado River issues. Mr. Patterson was the director of the Nebraska Department of Natural Resources from 1999 to 2005, where he was responsible for water administration, water planning, flood-plain delineation, dam safety and the state databank. Prior to his work in Nebraska, Mr. Patterson spent 25 years with the Bureau of Reclamation, retiring from the Bureau as the Regional Director for the Mid-Pacific Region. He is a registered professional engineer in Nebraska and Colorado, and earned bachelor's and master's degrees in engineering from the University of Nebraska.

Gilbert F. Ivey, Assistant General Manager/Chief Administrative Officer – Mr. Ivey is the Chief Administrative Officer and is responsible for human resources, real property management, strategic land development and Metropolitan's small business program. Mr. Ivey also administers the Office of the Board of Directors. Mr. Ivey has been with Metropolitan for 35 years, starting as a summer trainee in the Engineering Division. He has held various positions in Finance, Right-of-Way and Land, Operation, Human Resources and Executive Offices. He earned a bachelor's degree in business administration from California

State University, Dominguez Hills and holds various professional designations and certifications in management from Pepperdine University and the University of Southern California.

Linda Waade, Deputy General Manager/External Affairs – Ms. Waade is responsible for Metropolitan's communications, outreach, education and legislative matters. Prior to joining Metropolitan in August 2006, she coordinated government and community affairs for the Los Angeles office of CH2M Hill, Inc., where she provided counsel on policy development and outreach strategies for environmental and public works projects. She also maintained her own consulting firm, Waade Partners Consulting. Ms. Waade was deputy chief of staff and policy director for then Los Angeles City Councilmember Antonio R. Villaraigosa from July 2003 to January 2004. She served as transportation policy advisor for Los Angeles Mayor Tom Bradley from 1991-93, as chief of staff for U.S. Congressman Mel Levine in his Los Angeles district office from 1988-89 and as the congressman's special assistant for environmental affairs from 1987-88, and was executive director of the Coalition for Clean Air, a statewide advocacy organization dedicated to air quality issues, from 1994-98. Ms. Waade earned a bachelor's degree in political science from California State University at Los Angeles. She is a past recipient of the "Environmental Leadership Award" from the California League of Conservation Voters.

Employee Relations

The total number of regular full-time Metropolitan employees on August 24, 2011 was 1,797, of whom 1,251 were represented by AFSCME Local 1902, 100 by the Supervisors Association, 290 by the Management and Professional Employees Association and 108 by the Association of Confidential Employees. The remaining 48 employees are unrepresented. The four bargaining units represent 97 percent of Metropolitan's employees. The Memorandum of Understanding ("MOU") with the Association of Confidential Employees covers the period January 1, 2011 through December 31, 2015. MOUs with AFSCME Local 1902, the Management and Professional Employees Association and the Supervisors Association have expired. MOUs with AFSCME Local 1902 and the Management and Professional Employees Association covered the period July 1, 2005 to June 30, 2009 and in May 2010 were extended to cover the period from July 1, 2009 through December 31, 2010. The MOU with the Supervisors Association covered the period January 1, 2006 to December 31, 2009. When an MOU expires before a new agreement has been executed, the affected employees continue working under the terms of the expired MOU until it is replaced.

Risk Management

Metropolitan is exposed to various risks of loss related to the design, construction, treatment and delivery of water. With assistance of third party claims administrators, Metropolitan is self-insured for liability, property and workers' compensation. Metropolitan self-insures the first \$25 million per liability occurrence, with commercial liability coverage of \$75 million in excess of the self-insured retention. The \$25 million self-insured retention is maintained as a separate restricted reserve. Metropolitan is also self-insured for loss or damage to its property, with the \$25 million self-insured retention also being accessible for emergency repairs and Metropolitan property losses. In addition, Metropolitan obtains other excess and specialty insurance coverages such as directors' and officers' liability, fiduciary liability and aircraft hull and liability coverage.

Metropolitan self-insures the first \$5 million for workers' compensation with excess coverage of \$50 million. Metropolitan separately funds remaining workers' compensation claims and general liability claims arising from the Diamond Valley Lake and early portions of the Inland Feeder construction projects, which were insured through Owner Controlled Insurance Programs ("OCIPs"). The OCIPs for those projects have been concluded. The costs to settle and close the remaining claims for the Diamond Valley Lake and Inland Feeder construction projects are estimated to be \$1 million and \$300,000, respectively.

The self-insurance retentions and reserve levels currently maintained by Metropolitan may be modified by Metropolitan's Board at its sole discretion.

METROPOLITAN REVENUES

General

Until water deliveries began in 1941, Metropolitan's activities were, by necessity, supported entirely through the collection of *ad valorem* property taxes. Since the mid-1980s, water sales revenues have provided approximately 75 to 80 percent of total revenues and *ad valorem* property taxes have accounted for about 10 percent of revenues, while the remaining revenues have been derived principally from the sale of hydroelectric power, interest on investments and additional revenue sources (water standby charges and availability of service charges) beginning in 1993. *Ad valorem* taxes do not constitute a part of Operating Revenues and are not available to make payments with respect to the water revenue bonds issued by Metropolitan. *Ad valorem* taxes are applied solely to the payment of principal and interest on Metropolitan's outstanding general obligation bonds and a portion of State Water Contract payments.

The basic rate for untreated water for domestic and municipal uses increased from \$8 per acre-foot in fiscal year 1941-42 to the rate of \$527 per acre-foot for Tier 1 water, effective January 1, 2011. The *ad valorem* tax rate for Metropolitan purposes has gradually been reduced from a peak equivalent rate of 0.1250 percent of full assessed valuation in fiscal year 1945-46 to 0.0037 percent of full assessed valuation for fiscal year 2011-12. See —Rate Structure” below. The rates charged by Metropolitan represent the wholesale cost of Metropolitan water to its member agencies, and not the cost of water to the ultimate consumer. Metropolitan does not exercise control over the rates charged by its member agencies or their subagencies to their customers.

Summary of Receipts by Source

The following table sets forth Metropolitan's sources of receipts for the five fiscal years ended June 30, 2011. The table provides cash basis information, which is unaudited. Audited financial statements for the fiscal years ended June 30, 2010 and June 30, 2009 are provided in Appendix B - —THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA INDEPENDENT AUDITOR'S REPORT AND FINANCIAL STATEMENTS AS OF FISCAL YEARS ENDED JUNE 30, 2010 AND JUNE 30, 2009 AND BALANCE SHEETS AND STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET ASSETS FOR THE TWELVE MONTHS ENDED JUNE 30, 2011 AND JUNE 30, 2010 (UNAUDITED).”

SUMMARY OF RECEIPTS BY SOURCE⁽¹⁾
Fiscal Years Ended June 30
(Dollars in Millions)

	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>
Water Sales ⁽²⁾	\$ 891.5	\$ 967.8	\$988.1	\$1,011.1	\$ 995.6
Net Tax Collections ⁽³⁾	101.1	100.4	105.2	97.3	88.0
Additional Revenue Sources ⁽⁴⁾	113.1	114.0	119.7	135.3	153.5
Interest on Investments	41.2	60.3	33.7	26.7	18.9
Hydroelectric Power Sales	44.9	41.1	22.5	18.8	22.1
Other Collections & Trust Funds	<u>8.8</u>	<u>8.1</u>	<u>3.1</u>	<u>9.1</u>	<u>61.0⁽⁵⁾</u>
Total Receipts	\$1,200.6	\$1,291.7	\$1,272.3	\$1,298.3	\$1,339.1

Source: Metropolitan.

- (1) Does not include any proceeds from the sale of bonded indebtedness.
- (2) Gross receipts in each year are for sales in the twelve months ended April 30 of such year. Water sales revenues include revenues from water wheeling and exchanges. See ~~METROPOLITAN REVENUES—Wheeling and Exchange Charges~~.
- (3) *Ad valorem* taxes levied by Metropolitan are applied solely to the payment of outstanding general obligation bonds of Metropolitan and a portion of State Water Contract payments.
- (4) Includes receipts derived from water standby charges, readiness-to-serve, and connection maintenance or capacity charges. See ~~—Rate Structure~~ and ~~—Additional Revenue Components~~ below.
- (5) Includes \$10.8 million reimbursement from State Proposition 13 bond funds and \$28.3 million from the termination of the Las Posas water storage program.

Revenue Allocation Policy and Tax Revenues

The Board determines the water revenue requirement for each fiscal year after first projecting the *ad valorem* tax levy for that year. The tax levy for any year is subject to limits imposed by the Act and Board policy. Currently the tax levy is set to not exceed the amount needed to pay debt service on Metropolitan's general obligation bonds and a portion of Metropolitan's share of the debt service on the general obligation bonds issued by the State to finance the State Water Project. Any deficiency between tax levy receipts and Metropolitan's share of debt service obligations on general obligation bonded debt issued by the State is expected to be paid from Operating Revenues, as defined in the Master Resolution. See ~~HISTORICAL AND PROJECTED REVENUES AND EXPENDITURES~~. The State Water Contract requires that in the event that Metropolitan fails or is unable to raise sufficient funds by other means, Metropolitan must levy upon all property within its boundaries not exempt from taxation a tax or assessment sufficient to provide for all payments under the State Water Contract.

Water Sales Revenues

Authority. Water rates are established by the Board and are not subject to regulation or approval by the Public Utilities Commission of California or by any other local, State or federal agency. In accordance with the Act, water rates must be uniform for like classes of service. Metropolitan has three classes of water service: (1) full service; (2) replenishment (formerly seasonal storage); and (3) interim agricultural. See ~~Classes of Water Service~~.

No member agency of Metropolitan is obligated to purchase water from Metropolitan. However, twenty-four of Metropolitan's 26 member agencies have entered into voluntary 10-year water supply purchase orders for water purchases through December 31, 2012. See ~~Member Agency Purchase Orders~~ below. Consumer demand and locally supplied water vary from year to year, resulting in variability in water sales revenues. Metropolitan uses its financial reserves and budgetary tools to manage the financial impact of the

variability in revenues due to fluctuations in annual water sales. See —MANAGEMENT’S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENDITURES.”

Payment Procedure. Water is delivered to the member agencies on demand and is metered at the point of delivery. Member agencies are billed monthly and a late charge of one percent of the delinquent payment is assessed for delinquent payments not exceeding five business days. A late charge of two percent of the amount of the delinquent payment is charged for a payment that is delinquent for more than five business days for each month or portion of a month that the payment remains delinquent. Metropolitan has the authority to suspend service to any agency delinquent for more than 30 days. Delinquencies have been rare; in such instances late charges have been collected. No service has been suspended because of delinquencies.

Water Sales. The following table sets forth the acre-feet of water sold and water sales receipts (including receipts from water wheeling and exchanges) for the five fiscal years ended June 30, 2011. The table provides cash basis information. Water sales revenues of Metropolitan for the two fiscal years ended June 30, 2010 and June 30, 2009, respectively, on an accrual basis, are shown in Appendix B - —THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA INDEPENDENT AUDITOR’S REPORT AND FINANCIAL STATEMENTS AS OF FISCAL YEARS ENDED JUNE 30, 2010 AND JUNE 30, 2009 AND BALANCE SHEETS AND STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET ASSETS FOR THE TWELVE MONTHS ENDED JUNE 30, 2011 AND JUNE 30, 2010 (UNAUDITED) ” attached to this Official Statement.

SUMMARY OF WATER SOLD AND WATER SALES RECEIPTS
Fiscal Years Ended June 30

<u>Year</u>	<u>Acre Feet⁽¹⁾</u> <u>Sold</u>	<u>Gross Receipts⁽³⁾</u> <u>(in millions)</u>	<u>Average Receipts</u> <u>Per Acre Foot⁽⁴⁾</u>	<u>Average Rate</u> <u>Per 1000</u> <u>Gallons</u>
2007	2,247,214	\$ 891.5	\$397	\$1.22
2008	2,305,364	967.8	420	1.29
2009	2,166,936	988.1	456	1.40
2010	1,857,564	1,011.1	544	1.67
2011 ⁽²⁾	1,632,277	995.6	610	1.87

Source: Metropolitan.

- (1) Year ended April 30.
- (2) Includes the sale of 34,519 acre-feet and the receipt of \$25.7 million from the Calleguas Municipal Water District related to termination of the Las Posas water storage program.
- (3) Gross receipts in each year are for sales in the twelve months ended April 30 of such year, with rates and charges invoiced in May and payable by the last business day of June of each year. Includes revenues from water wheeling and exchanges. See —METROPOLITAN REVENUES—Wheeling and Exchange Charges”.
- (4) Gross receipts divided by acre-feet sold. An acre-foot is approximately 326,000 gallons. See table entitled —SUMMARY OF WATER RATES” in this Appendix A for a description of water rates and classes of service.

Rate Structure

The following rates and charges are elements of Metropolitan’s rate structure for full service water deliveries:

Tier 1 and Tier 2 Water Supply Rates. The Tier 1 and Tier 2 Water Supply Rates are designed to recover Metropolitan’s water supply costs. The Tier 2 Supply Rate is designed to reflect Metropolitan’s costs of acquiring new supplies. Member agencies are charged the Tier 1 or Tier 2 Water Supply Rate for water purchases, as described under —Member Agency Purchase Orders” below.

System Access Rate. The System Access Rate is intended to recover a portion of the costs associated with the conveyance and distribution system, including capital, operating and maintenance costs. All users (including member agencies and third-party entities wheeling or exchanging water; see —Wheeling and Exchange Charges” below) of the Metropolitan system pay the System Access Rate.

Water Stewardship Rate. The Water Stewardship Rate is charged on a dollar per acre-foot basis to collect revenues to support Metropolitan’s financial commitment to conservation, water recycling, groundwater recovery and other water management programs approved by the Board. The Water Stewardship Rate is charged for every acre-foot of water conveyed by Metropolitan.

System Power Rate. The System Power Rate is charged on a dollar per acre-foot basis to recover the cost of power necessary to pump water from the State Water Project and Colorado River through the conveyance and distribution system for Metropolitan’s member agencies. The System Power Rate is charged for all Metropolitan supplies. Entities wheeling non-Metropolitan water supplies will pay the actual cost of power to convey water on the State Water Project, the Colorado River Aqueduct or the Metropolitan distribution system, whichever is applicable.

Treatment Surcharge. Metropolitan charges a treatment surcharge on a dollar per acre-foot basis for treated deliveries. The treatment surcharge is set to recover the cost of providing treated water service, including capital and operating cost.

Water Supply Surcharge. Effective January 1, 2009, Metropolitan adopted a Water Supply Surcharge of \$25 per acre-foot, applicable to Full Service Tier 1 untreated and treated water rates and to the Interim Agricultural Water Program untreated and treated water rates. The Water Supply Surcharge was intended to recover the costs of additional water transfers purchased to augment supplies from the State Water Project. These costs were anticipated to be about \$50 million in fiscal year 2008-09. However, on April 14, 2009 Metropolitan's Board adopted a Delta Supply Surcharge, which, effective September 1, 2009, eliminated and replaced the Water Supply Surcharge. See —*Delta Supply Surcharge*” below.

Delta Supply Surcharge. On April 13, 2010, Metropolitan's Board adopted a Delta Supply Surcharge of \$51 and \$58 per acre-foot, effective January 1, 2011 and January 1, 2012, respectively, and applicable to all Tier 1, Interim Agricultural Water Program and Replenishment water rates. The Delta Supply Surcharge is designed to recover the additional supply costs Metropolitan faces as a result of pumping restrictions associated with the USFWS biological opinion on Delta smelt and other actions to protect endangered fish species. The Delta Surcharge is intended to remain in effect until a long-term solution for the Bay-Delta is achieved. Metropolitan anticipates that the Delta Supply Surcharge will be reduced as interim Delta improvements ease pumping restrictions, resulting in lower costs for additional supplies.

The amount of each of these rates since January 1, 2007, is shown in the table entitled —**SUMMARY OF WATER RATES**” under —**Water Rates by Water Category**” below.

SDCWA filed *San Diego County Water Authority v. Metropolitan Water District of Southern California; et al.* on June 11, 2010. The complaint alleges that the rates adopted by the Board on April 13, 2010, which became effective January 1, 2011, misallocate State Water Contract costs to the System Access Rate and the System Power Rate, and thus to charges for transportation of water, and that this results in an overcharge to SDCWA by at least \$24.5 million per year. The complaint alleges that all State Water Project costs should be allocated instead to Metropolitan's Supply Rate, even though under the State Water Contract Metropolitan is billed separately for transportation, power and supply costs. It states additionally that Metropolitan will overcharge SDCWA by another \$5.4 million per year by including the Water Stewardship Rate in transportation charges.

The complaint requests a court order invalidating the rates and charges adopted April 13, 2010, and that Metropolitan be mandated to allocate costs associated with State Water Project supplies and the Water Stewardship Rate to water supply charges. Rates in effect in prior years are not challenged in this lawsuit. Metropolitan contends that its rates are reasonable, equitably apportioned among its member agencies and lawful. Nevertheless, to the extent that a court invalidates Metropolitan's adopted rates and charges, Metropolitan will be obligated to adopt rates and charges that comply with any mandates imposed by the court, and Metropolitan expects that such rates and charges would still recover Metropolitan's cost of service. As such, revenues would not be affected.

SDCWA has notified Metropolitan, the other parties and the court of its intent to add additional claims to this litigation, including breach of contract and breach of fiduciary duty, as well as unrelated claims. SDCWA may attempt to amend its complaint or file separate complaints to assert these claims. While believing that these claims lack merit, Metropolitan is unable to assess at this time the likelihood that SDCWA will assert these claims in this or additional litigation, the likelihood of success or the potential impact on Metropolitan's revenues or operations.

Member Agency Purchase Orders

The current rate structure provides for a member agency's agreement to purchase water from Metropolitan by means of a voluntary purchase order. In consideration of executing its purchase order, the member agency is entitled to purchase a greater amount of water at the lower Tier 1 Water Supply Rate, as described in the following paragraph. Under each purchase order, a member agency agrees to purchase, over the ten-year term of the contract, an amount of water equal to at least 60 percent of its highest firm demand

for Metropolitan water in any fiscal year from 1989-90 through 2001-02 multiplied by ten. Member agencies are allowed to vary their purchases from year to year, but a member agency will be obligated to pay for the full amount committed under the purchase order, even if it does not take its full purchase order commitment by the end of the ten-year period.

Each member agency that executed a purchase order will be allowed to purchase up to 90 percent of its base amount at the Tier 1 Water Supply Rate in any fiscal year during the term of the purchase order, and its base amount will be the greater of (1) its highest firm demand for Metropolitan water in any fiscal year from 1989-90 through 2001-02 or (2) its ten-year rolling average of firm demand for Metropolitan water. Amounts purchased by such agencies over the applicable base amount will be priced at the Tier 2 Water Supply Rate. Member agencies that did not enter into purchase orders will be permitted in any fiscal year to purchase 60 percent of their base amount (equal to the member agency's highest fiscal year demand between 1989-90 and 2001-02) at the Tier 1 Water Supply Rate. Twenty-four of Metropolitan's 26 member agencies executed purchase orders for an aggregate of 12.5 million acre-feet of water over the ten years ending December 31, 2012. As of December 31, 2010, 21 of the 24 member agencies with purchase orders had met their purchase order commitments and two other member agencies were expected to meet their commitments within the ten-year purchase order period. One agency is not on track to meet its commitment. Metropolitan and its member agencies have begun discussing terms for potential renewals or replacements of purchase orders after the existing purchase orders expire on December 31, 2012. Any renewals or replacements would be subject to approval by Metropolitan and the governing bodies of the respective member agencies.

Classes of Water Service

Full Service Water. Full service water service, formerly known as non-interruptible water service, includes water sold for domestic and municipal uses. Full service treated water rates are the sum of the applicable supply rate, system access rate, water stewardship rate, system power rate and treatment surcharge. Full service untreated water rates are the sum of the applicable supply rate, system access rate, water stewardship rate and system power rate. Full service water sales are the major component of Metropolitan water sales.

Interim Agricultural Water Program. This program provides a discounted rate for agricultural water users that, pursuant to the Act, are permitted to receive only surplus water not needed for domestic or municipal purposes. Metropolitan delivered approximately 34,000 acre-feet of agricultural water under this program in fiscal year 2009-10. The terms of the program provide that, should a water shortage occur, Metropolitan may reduce deliveries of agricultural water under the program by 24 percent in 2010 and 18 percent in 2011 before imposing conservation measures on Full Service deliveries. However, an allocation of Full Service deliveries in response to a water supply shortage could result in additional reductions of agricultural water deliveries. Metropolitan imposed a 30 percent reduction in agricultural water deliveries beginning January 1, 2008, to make this water (approximately 45,000 acre-feet) available to meet other demands.

On October 14, 2008, the Board approved annual reductions of the Interim Agricultural Water Program discount beginning January 1, 2010 and discontinuance of the program when the discount reaches zero on January 1, 2013. Customers participating in the program may irrevocably opt out of the program at the beginning of each calendar year during the phase-out period and may purchase water at Metropolitan's full service rates.

Replenishment. Replenishment water is sold at a discounted rate to member agencies that store water and subsequently use the water to offset demands on Metropolitan in times of shortage. Replenishment deliveries are subject to availability. Metropolitan ceased deliveries under the Replenishment Service Program on May 1, 2007. On May 10, 2011, Metropolitan's Board authorized sale of up to 225,000 acre-feet of discounted Replenishment Service Program deliveries to member agencies between May 10, 2011 and December 31, 2011. Metropolitan staff and the member agencies are currently engaged in a process to review

and refine the Replenishment Program. Changes to the Replenishment Program are anticipated to be available for consideration by Metropolitan's Board by the end of 2011.

Replenishment supplies sold at a discount in a given year may offset full service water sales. Metropolitan's water sales projections estimate the level of future production from groundwater, supported by an assumption of replenishment sales. (See —MANAGEMENT'S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENDITURES—Water Sales Projections.") To the extent that replenishment supplies are not available, estimated levels of future production from groundwater could be lower than estimated, resulting in a higher demand for Metropolitan supplies at full service water rates in the future.

Water Rates by Water Category

The following table sets forth Metropolitan's water rates by category beginning January 1, 2007. See also —MANAGEMENT'S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENDITURES—Water Sales Receipts" in this Appendix A. In addition to the base rates for untreated water sold in the different classes of service, the columns labeled —Treated" include the surcharge that Metropolitan charges for water treated at its water treatment plants. See —Rate Structure" and —Classes of Water Service" above for a description of current rates.

**SUMMARY OF WATER RATES
(Dollars per Acre-Foot)**

	<u>SUPPLY RATE</u>		<u>SYSTEM ACCESS RATE</u>	<u>WATER STEWARDSHIP RATE</u>	<u>SYSTEM POWER RATE</u>	<u>TREATMENT SURCHARGE</u>
	<u>Tier 1</u>	<u>Tier 2</u>				
January 1, 2007	\$ 73	\$169	\$143	\$25	\$ 90	\$147
January 1, 2008	\$ 73	\$171	\$143	\$25	\$110	\$157
January 1, 2009	\$134†	\$250	\$143	\$25	\$110	\$167
September 1, 2009	\$170††	\$250	\$154	\$41	\$119	\$217
January 1, 2010	\$170††	\$280	\$154	\$41	\$119	\$217
January 1, 2011*	\$155†††	\$280	\$204	\$41	\$127	\$217
January 1, 2012*	\$164†††	\$290	\$217	\$43	\$136	\$234

	<u>FULL SERVICE TREATED⁽¹⁾</u>		<u>FULL SERVICE UNTREATED⁽²⁾</u>		<u>INTERIM AGRICULTURAL PROGRAM</u>		<u>REPLENISHMENT RATE</u>	
	<u>Tier 1</u>	<u>Tier 2</u>	<u>Tier 1</u>	<u>Tier 2</u>	<u>Treated</u>	<u>Untreated</u>	<u>Treated</u>	<u>Untreated</u>
January 1, 2007	\$478	\$574	\$331	\$427	\$364	\$241	\$360	\$238
January 1, 2008	\$508	\$606	\$351	\$449	\$394	\$261	\$390	\$258
January 1, 2009	\$579	\$695	\$412	\$528	\$465†	\$322†	\$436	\$294
September 1, 2009	\$701	\$781	\$484	\$564	\$587	\$394	\$558	\$366
January 1, 2010	\$701	\$811	\$484	\$594	\$615	\$416	\$558	\$366
January 1, 2011*	\$744	\$869	\$527	\$652	\$687	\$482	\$601	\$409
January 1, 2012*	\$794	\$920	\$560	\$686	\$765	\$537	\$651	\$442

Source: Metropolitan.

* Rates effective January 1, 2011 and January 1, 2012 were adopted by Metropolitan's Board on April 13, 2010.

† Includes \$25 per acre-foot Water Supply Surcharge.

†† Includes \$69 per acre-foot Delta Supply Surcharge, which replaced Water Supply Surcharge.

††† Includes \$51 and \$58 per acre-foot Delta Supply Surcharge for January 1, 2011 and January 1, 2012, respectively.

(1) Full service treated water rates are the sum of the applicable Supply Rate, System Access Rate, Water Stewardship Rate, System Power Rate and Treatment Surcharge.

(2) Full service untreated water rates are the sum of the applicable Supply Rate, System Access Rate, Water Stewardship Rate and System Power Rate.

Additional Revenue Components

Additional charges for the availability of Metropolitan's water are:

Readiness-to-Serve Charge. This charge is designed to recover a portion of the principal and interest payments on water revenue bonds issued to fund capital improvements necessary to meet continuing reliability and water quality needs. The Readiness-to-Serve Charge (–RTS”) is allocated to each member agency in proportion to the rolling ten-year share of deliveries through Metropolitan's system. The RTS generated \$87 million in fiscal year 2008-09, \$101.9 million in fiscal year 2009-10 and \$119.2 million in fiscal year 2010-11.

Water Standby Charges. The Board is authorized to impose water standby or availability of service charges. In May 1993, the Board imposed a water standby charge for fiscal year 1993-94 ranging from \$6.94 to \$15 for each acre or parcel less than an acre within Metropolitan's service area, subject to specified exempt categories. Water standby charges have been imposed at the same rate in each year since 1993-94. Standby charges are assessments under the terms of Proposition 218, a State constitutional ballot initiative approved by the voters on November 5, 1996. See —California Ballot Initiatives" below.

Member agencies have the option to utilize Metropolitan's existing standby charge authority as a means to collect all or a portion of their RTS charge. Standby charge collections are credited against the member agencies' RTS charges. See —*Readiness-to-Serve Charge*" above. Twenty-two member agencies collect their RTS charges through standby charges. For fiscal years 2008-09, 2009-10 and 2010-11, RTS charges collected by means of such standby charges were \$43.5 million, \$42.8 million and \$43.2 million, respectively.

Capacity Charge. The Capacity Charge is a fixed charge levied on the maximum summer day demand placed on Metropolitan's system between May 1 and December 30 for the three-calendar-year period ended December 31, 2008 and December 31, 2009 for charges effective 2010 and 2011 respectively. The Capacity Charge is intended to recover the cost of providing peak capacity within the distribution system. Effective January 1, 2010, the Capacity Charge was \$7,200 per cfs of maximum daily flow, which will remain at \$7,200 per cfs during 2011 and increase to \$7,400 per cfs effective January 1, 2012.

Financial Reserve Policy

Metropolitan's reserve policy currently provides for a minimum unrestricted reserve balance at June 30 of each year that is based on probability studies of the wet periods that affect Metropolitan's water sales. The policy establishes a minimum targeted unrestricted reserve level based on an 18-month revenue shortfall estimate and a maximum level based on an additional two years revenue shortfall estimate. The Water Rate Stabilization and Revenue Remainder funds increased by \$35.7 million in fiscal year 2008-09 and decreased by \$29 million in fiscal year 2009-10 and \$61 million during fiscal year 2010-11, which includes \$13 million held in reserve pursuant to the exchange contract between Metropolitan and SDCWA (see METROPOLITAN's WATER SUPPLY—Colorado River Aqueduct — *Sale of Water by the Imperial Irrigation District to San Diego County Water Authority*") due to the SDCWA litigation challenging Metropolitan's rate structure (see METROPOLITAN REVENUES—Rate Structure"). Additional transfers related to the SDCWA litigation will be made during FY 2011-12, such that this reserve is projected to increase to \$50 million by the end of fiscal year 2011-12. As of June 30, 2011, the minimum reserve requirement was \$191 million. The maximum reserve limit at June 30, 2011 was \$483 million. Funds representing the minimum reserve level are held in the Water Revenue Remainder Fund, and any funds in excess of the minimum reserve level (up to the maximum reserve level) are held in the Water Rate Stabilization Fund. Reserves at June 30, 2011 totaled \$248 million, consisting of Water Rate Stabilization Fund and Water Revenue Remainder Fund balances and the \$13 million held in reserve pursuant to the exchange contract between Metropolitan and SDCWA. (See —METROPOLITAN REVENUES—Rate Structure" and —MANAGEMENT'S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENDITURES—Water Sales Receipts" in this Appendix A and —THE MASTER RESOLUTION—Water Revenue Fund—*Revenue Remainder Fund*" in APPENDIX C—SUMMARY OF CERTAIN PROVISIONS OF THE RESOLUTIONS.) Unrestricted reserves in excess of the maximum reserve level may be used for any lawful purpose of Metropolitan, as directed by the Board. Consistent with State legislation, Metropolitan will ensure that any funds in excess of maximum reserve levels that are distributed to member agencies will be distributed in proportion to water sales revenues received from each member agency. Since actual reserve balances were less than the maximum reserve limit at June 30, 2011, no action was taken by the Board. In addition, Metropolitan maintains various restricted reserves, including reserves for risk retention, operations and maintenance expenses, State Water Contract payments, and other obligations and purposes.

Wheeling and Exchange Charges

The process for the delivery of water not owned or controlled by Metropolitan is referred to as “wheeling.” Under the current rate structure, wheeling parties pay the System Access Rate and Water Stewardship Rate, Treatment Surcharge (if applicable) and power costs for wheeling transactions. (See —Rate Structure” above.) These payments are included in Net Operating Revenues. Wheeling and exchange revenues totaled \$26.8 million during fiscal year 2008-09, \$53.7 million during fiscal year 2009-10, and \$51.8 million during fiscal year 2010-11. See —METROPOLITAN REVENUES—Rate Structure” above for a description of litigation filed by the San Diego County Water Authority challenging Metropolitan’s System Access Rate and Water Stewardship Rate.

Hydroelectric Power Recovery Revenues

Metropolitan has constructed 16 small hydroelectric plants on its distribution system. The plants are located in Los Angeles, Orange, Riverside and San Diego Counties at existing pressure control structures and other locations. The combined generating capacity of these plants is approximately 122 megawatts. The total capital cost of these 16 facilities is approximately \$176.1 million. Since 2000, annual energy generation sales revenues have ranged between \$16 million and \$27 million. Energy generation sales revenues were \$18.9 million for fiscal year 2009-10 and \$22.1 million for fiscal year 2010-11.

Power from five of the plants is sold to DWR under an existing contract at a price based on a contractual unit rate methodology to supply power to the State Water Project. This price is renegotiated every six years. For 2007 through 2012, the unit rate is determined by fixed and variable components. One variable component represents an incremental fuel price based on a five-year rolling average gas price.

Power from nine of the plants was sold to the Southern California Edison Company, a subsidiary of Edison International (“Edison”) through October 31, 2008. Three new contracts effective November 1, 2008, split power sales from the nine plants among Edison, Los Angeles Department of Water and Power and the Southern California Public Power Authority. All three contracts are for the sale of renewable power and are based on a fixed energy rate for the term of the contracts. The minimum contract term is five years and maximum term is fifteen years.

Energy generation from a fifteenth plant, the Etiwanda Power Plant, is sold to the Pacific Gas and Electric Company (“PG&E”) under a contract that was amended in November 2004 to accommodate terminating transmission and scheduling arrangements. The contract energy price is based on a formula that includes a monthly gas rate, a capital related cost and a performance factor. The contract is subject to renegotiation upon the occurrence of specified events and can be terminated by either party under various conditions and circumstances, beginning in 2014.

The sixteenth plant, the Diamond Valley Lake Hydroelectric Power Plant, began generating on May 23, 2001, and its current maximum dependable output is 21 megawatts. Actual generation is determined by water delivery requirements and is sold at market rates to various buyers.

Principal Customers

All of Metropolitan’s regular customers are member agencies. Total water sales to the member agencies accrued for the fiscal year ended June 30, 2011 were 1.62 million acre-feet, generating \$1.00 billion in water sales revenues for such period. Metropolitan’s ten largest water customers in the year ended June 30, 2011 are shown in the following table. On June 11, 2010, the San Diego County Water Authority filed litigation challenging Metropolitan’s rates. See —METROPOLITAN REVENUES—Rate Structure” above.

TEN LARGEST WATER CUSTOMERS
Year Ended June 30, 2011
Accrual Basis (Unaudited)

<u>Agency</u>	<u>Water Sales Revenues</u>	<u>Percent of Total</u>	<u>Water Sales in Acre-Feet</u>	<u>Percent of Total</u>
San Diego County Water Authority	\$200,721,749	20.1%	407,372	25.1%
MWD of Orange County	145,657,762	14.6	208,023	12.8
City of Los Angeles	99,222,561	9.9	166,352	10.2
Calleguas MWD	94,624,298	9.5	130,281	8.0
West Basin MWD	83,804,847	8.4	116,245	7.2
Eastern MWD	56,508,518	5.6	84,877	5.2
Western MWD of Riverside	47,095,262	4.7	72,408	4.5
Central Basin MWD	39,330,461	3.9	62,614	3.9
Three Valleys MWD	39,181,062	3.9	63,493	3.9
Inland Empire Utilities Agency	<u>32,853,032</u>	<u>3.3</u>	<u>67,591</u>	<u>4.2</u>
Total	\$838,999,552	83.8%	1,379,256	85.0%
Total Water Sales Revenues	\$ 1,001,045,635	Total Acre-Feet	1,623,575	

Source: Metropolitan.

Preferential Rights

Section 135 of the Act gives each of Metropolitan's member agencies a preferential entitlement to purchase a portion of the water served by Metropolitan, based upon a ratio of all payments on tax assessments and otherwise, except purchases of water, made to Metropolitan by the member agency compared to total payments made by all member agencies on tax assessments and otherwise since Metropolitan was formed, except purchases of water. Historically, these rights have not been used in allocating Metropolitan's water. The California Court of Appeal has upheld Metropolitan's methodology for calculation of the respective member agencies' preferential rights under Section 135 of the Act.

California Ballot Initiatives

Proposition 218, a State ballot initiative known as the "Right to Vote on Taxes Act," was approved by the voters on November 5, 1996 adding Articles XIII C and XIII D to the California Constitution. Article XIII D provides substantive and procedural requirements on the imposition, extension or increase of any "fee" or "charge" levied by a local government upon a parcel of real property or upon a person as an incident of property ownership. As a wholesaler, Metropolitan serves water to its member agencies, not to persons or properties as an incident of property ownership. Thus, water rates charged by Metropolitan to its member agencies are not property related fees and charges and therefore are exempt from the requirements of Article XIII D. Fees for water service by Metropolitan's member agencies or their agencies providing retail water service are subject to the requirements of Article XIII D.

Article XIII D also imposes certain procedures with respect to assessments. Under Article XIII D, "standby charges" are considered "assessments" and must follow the procedures required for "assessments." Metropolitan has imposed water standby charges since 1992. Any change to Metropolitan's current standby charges could require notice to property owners and approval by a majority of such owners returning mail-in ballots approving or rejecting any imposition or increase of such standby charge. Twenty-two member agencies have elected to collect all or a portion of their readiness-to-serve charges through standby charges. (See METROPOLITAN REVENUES—Additional Revenue Components—"Readiness-to-Serve Charge" and

—*Water Standby Charges.*”) Even if Article XIID is construed to limit the ability of Metropolitan and its member agencies to impose or collect standby charges, the member agencies will continue to be obligated to pay the readiness-to-serve charges.

Article XIIC extends the people’s initiative power to reduce or repeal previously authorized local taxes, assessments fees and charges. This extension of the initiative power is not limited by the terms of Article XIIC to fees imposed after November 6, 1996 or to property-related fees and charges and absent other authority could result in retroactive reduction in existing taxes, assessments or fees and charges.

Proposition 26, a State ballot initiative aimed at restricting regulatory fees and charges, was approved by the California voters on November 2, 2010. Proposition 26 broadens the definition of “tax” in Article XIIC of the California Constitution to include levies, charges and exactions imposed by local governments, except for charges imposed for benefits or privileges or for services or products granted to the payor (and not provided to those not charged) that do not exceed their reasonable cost; regulatory fees that do not exceed the cost of regulation; fees for the use of local governmental property; fines and penalties imposed for violations of law; real property development fees; and assessments and property-related fees imposed under Article XIID of the California Constitution. California local taxes are subject to approval by two-thirds of the voters voting on the ballot measure for authorization. Proposition 26 applies to charges imposed or increased by local governments after the date of its approval. Metropolitan believes its water rates and charges are not taxes under Proposition 26. Nevertheless, Metropolitan is assessing whether Proposition 26 may affect future water rates and charges.

Proposition 218 and 26 were adopted as measures that qualified for the ballot pursuant to the State’s initiative process. From time to time, other initiative measures could be adopted or legislative measures could be approved by the Legislature, which may place limitations on the ability of Metropolitan or its member agencies to increase revenues or to increase appropriations. Such measures may further affect Metropolitan’s ability to collect taxes, assessments or fees and charges, which could have an effect on Metropolitan’s revenues.

Investment of Moneys in Funds and Accounts

All moneys in any of the funds and accounts established pursuant to Metropolitan’s water revenue or general obligation revenue bond resolutions are invested by the Treasurer in accordance with Metropolitan’s Statement of Investment Policy. All Metropolitan funds available for investment are currently invested in United States Treasury and agency securities, commercial paper, negotiable certificates of deposit, banker’s acceptances, corporate notes, municipal bonds, asset-backed securities, and the California Local Agency Investment Fund (“LAIF”). The LAIF is a voluntary program created by statute as an investment alternative for California’s local governments and special districts. LAIF permits such local agencies to participate in an investment portfolio, which invests billions of dollars, using the investment expertise of the State Treasurer’s Office.

The Statement of Investment Policy provides that in managing Metropolitan’s investments, the primary objective shall be to safeguard the principal of the invested funds. The secondary objective shall be to meet all liquidity requirements and the third objective shall be to achieve a return on the invested funds. Although the Statement of Investment Policy permits investments in some asset-backed securities, the portfolio does not include any of the special investment vehicles related to sub-prime mortgages. Revisions to the Statement of Investment Policy were adopted by Metropolitan’s Board on June 7, 2011 which allow Metropolitan to exceed the portfolio and single issuer limits for purchases of California local agency securities when purchasing Metropolitan tendered bonds in conjunction with its self-liquidity program. (See “METROPOLITAN EXPENDITURES—Variable Rate and Swap Obligations” in this Appendix A.) Metropolitan’s current investments comply with the Statement of Investment Policy.

As of July 31, 2011, the total market value of all Metropolitan funds was \$1.002 billion. In fiscal year 2010-11, Metropolitan's earnings on investments, including adjustments for gains and losses and premiums and discounts, on a cash basis (unaudited) were \$20.0 million. In fiscal year 2009-10, Metropolitan's earnings on investments, including adjustments for gains and losses and premiums and discounts, on a cash basis (unaudited), including construction account and trust fund earnings, were \$29.5 million. In fiscal year 2008-09, Metropolitan's earnings on investments, including adjustments for gains and losses and premiums and discounts, on a cash basis (unaudited) were \$36.4 million, including construction account and trust fund earnings. (See Footnote 3 to Metropolitan's audited financial statements in Appendix B for additional information on the investment portfolio.)

Metropolitan currently holds corporate notes or bonds issued by Lehman Brothers Holdings, Inc. (Lehman), which filed bankruptcy on September 15, 2008. Metropolitan filed its claim for the payment of the corporate notes or bonds issued by Lehman with the United States Bankruptcy Court for the Southern District of New York on October 27, 2008. This claim was consolidated with the claim filed on behalf of holders of Lehman bonds and notes by Wilmington Trust, as indenture trustee. The amount of Metropolitan's claim, representing principal and interest on the notes, is \$5,380,267. The aggregate market value of the downgraded corporate bonds is approximately \$1.407 million as of July 31, 2011. The market price for these bonds continues to be under pressure, and Metropolitan is closely monitoring market developments. The decrease in the market value for these bonds has not materially impacted the financial operations of Metropolitan.

Metropolitan's regulations require that (1) the Treasurer provide an annual Statement of Investment Policy for approval by Metropolitan's Board, (2) the Treasurer provide a monthly investment report to the Board and the General Manager showing by fund the description, maturity date, yield, par, cost and current market value of each security, and (3) the General Counsel review as to eligibility the securities invested in by the Treasurer for that month and report his or her determinations to the Board. The Board approved the Statement of Investment Policy for fiscal year 2011-12 on June 7, 2011.

Subject to the provisions of Metropolitan's water revenue or general obligation bond resolutions, obligations purchased by the investment of bond proceeds in the various funds and accounts established pursuant to a bond resolution are deemed at all times to be a part of such funds and accounts and any income realized from investment of amounts on deposit in any fund or account therein will be credited to such fund or account. The Treasurer is required to sell or present for redemption any investments whenever it may be necessary to do so in order to provide moneys to meet required payments or transfers from such funds and accounts. For the purpose of determining at any given time the balance in any such funds, any such investments constituting a part of such funds and accounts will be valued at the then estimated or appraised market value of such investments.

All investments, including those authorized by law from time to time for investments by public agencies, contain certain risks. Such risks include, but are not limited to, a lower rate of return than expected and loss or delayed receipt of principal. The occurrence of these events with respect to amounts held under Metropolitan's water revenue or general obligation revenue bond resolutions, or other amounts held by Metropolitan, could have a material adverse effect on Metropolitan's finances. These risks may be mitigated, but are not eliminated, by limitations imposed on the portfolio management process by Metropolitan's Statement of Investment Policy.

The Statement of Investment Policy requires that investments have a minimum credit rating of A1/P1/F1 for short-term securities and A for longer-term securities at the time of purchase. If immediate liquidation of a security downgraded below these levels is not in the best interests of Metropolitan, the Treasurer or investment manager, in consultation with an ad hoc committee made up of the Chairman of the Board, the Chairman of the Finance and Insurance Committee and the General Manager, and with the concurrence of the General Counsel, may dispose of the security in an orderly and prudent manner

considering the circumstances, under terms and conditions approved by a majority of the members of such ad hoc committee. The Treasurer is required to include a description of any securities that have been downgraded below investment grade and the status of their disposition in the Treasurer's monthly report.

The Statement of Investment Policy also limits the amount of securities that can be purchased by category, as well as by issuer, and prohibits investments that can result in zero interest income. Metropolitan's securities are settled on a delivery versus payment basis and are held by an independent third-party custodian. See Appendix B - ~~THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA INDEPENDENT AUDITOR'S REPORT AND FINANCIAL STATEMENTS AS OF FISCAL YEARS ENDED JUNE 30, 2010 AND JUNE 30, 2009 AND BALANCE SHEETS AND STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET ASSETS FOR THE TWELVE MONTHS ENDED JUNE 30, 2011 AND JUNE 30, 2010 (UNAUDITED)~~" for a description of Metropolitan's investments at June 30, 2010.

Metropolitan retains two outside investment firms to manage the long-term portion of Metropolitan's portfolio. The outside managers are required to adhere to Metropolitan's Statement of Investment Policy. As of July 31, 2011 such managers are managing approximately \$312.6 million in investments on behalf of Metropolitan. Metropolitan's Statement of Investment Policy may be changed at any time by the Board (subject to State law provisions relating to authorized investments). There can be no assurance that the State law and/or the Statement of Investment Policy will not be amended in the future to allow for investments that are currently not permitted under State law or the Statement of Investment Policy, or that the objectives of Metropolitan with respect to investments or its investment holdings at any point in time will not change.

METROPOLITAN EXPENDITURES

General

The following table sets forth a summary of Metropolitan's expenditures, by major function, for the five years ended June 30, 2011. The table provides cash basis information, which is unaudited. Expenses of Metropolitan for the fiscal years ended June 30, 2010 and June 30, 2009, on an accrual basis, are shown in Appendix B - ~~THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA INDEPENDENT AUDITOR'S REPORT AND FINANCIAL STATEMENTS AS OF FISCAL YEARS ENDED JUNE 30, 2010 AND JUNE 30, 2009 AND BALANCE SHEETS AND STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET ASSETS FOR THE TWELVE MONTHS ENDED JUNE 30, 2011 AND JUNE 30, 2010 (UNAUDITED)~~."

SUMMARY OF EXPENDITURES
Fiscal Years Ended June 30
(Dollars in Millions)

	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>
Operation and Maintenance Costs ⁽¹⁾	\$ 367.2	\$ 416.9	\$455.6	\$ 441.6	\$ 430.8
Total State Water Project and Water Transfers ⁽²⁾	408.5	564.9	478.8	560.1	593.4
Total Debt Service	249.9	268.5	281.6	287.0	306.7
Construction Disbursements from Revenues ⁽³⁾	129.7	45.4	30.6	35.1	45.0
Other ⁽⁴⁾	<u>6.1</u>	<u>6.4</u>	<u>8.3</u>	<u>5.3</u>	<u>2.4</u>
Total Disbursements (net of reimbursements) ⁽⁵⁾	<u>\$1,161.4</u>	<u>\$1,302.1</u>	<u>\$1,254.9</u>	<u>\$1,329.1</u>	<u>\$1,378.3</u>

Source: Metropolitan.

- (1) Includes inventories, undistributed payroll, local resource programs, conservation programs and Colorado River Aqueduct (CRA) power. See the table headed "Summary of Receipts by Source" under "METROPOLITAN REVENUES" in this Appendix A.
- (2) Includes both operating and capital expense portions. See "METROPOLITAN'S WATER SUPPLY—Water Transfer, Storage and Exchange Programs" and "POWER SOURCES AND COSTS" in this Appendix A.
- (3) At the discretion of the Board, in any given year, Metropolitan may increase or decrease funding available for construction disbursements to be paid from revenues. Disbursements paid from revenues decreased in fiscal years 2007-08 and 2008-09, primarily due to the Board's policy to maintain adequate reserve levels in the rate stabilization funds to mitigate future increases in water rates and charges. See "METROPOLITAN REVENUES—Financial Reserve Policy" in this Appendix A. Does not include expenditures of bond proceeds.
- (4) Includes operating equipment and arbitrage rebate.
- (5) Disbursements exceeded revenues in the fiscal years ended June 30, 2008, 2010 and 2011. See "METROPOLITAN REVENUES—Financial Reserve Policy" in this Appendix A.

Revenue Bond Indebtedness

Metropolitan has issued the following water revenue bonds, which as of September 1, 2011, were outstanding in the amounts set forth below:

<u>Name of Issue</u>	<u>Original Amount Issued</u>	<u>Principal Outstanding</u>
Water Revenue Bonds, Issue of 1991	\$ 300,000,000	\$ -0-
Water Revenue Bonds, Issue of 1992	550,000,000	-0-
Water Revenue Refunding Bonds, 1993 Series A	168,759,889	105,185,000
Water Revenue Refunding Bonds, 1993 Series B	89,595,000	-0-
Water Revenue Bonds, 1995 Series A	175,000,000	-0-
Water Revenue Refunding Bonds, 1996 Series A	108,375,000	-0-
Water Revenue Refunding Bonds, 1996 Series B	258,875,000	-0-
Water Revenue Bonds, 1996 Series C	377,500,000	-0-
Water Revenue Bonds, 1997 Authorization, Series A	650,000,000	-0-
Water Revenue Bonds, 1997 Authorization, Series B and Series C ⁽¹⁾	100,000,000	100,000,000
Water Revenue Refunding Bonds, 1998 Series A	148,705,000	-0-
Water Revenue Bonds, 1999 Authorization, Series A	100,000,000	-0-
Water Revenue Bonds, 1999 Authorization, Series B and Series C ⁽¹⁾	100,000,000	100,000,000
Water Revenue Bonds, 2000 Series B1-B4 ⁽¹⁾	355,200,000	266,400,000
Water Revenue Refunding Bonds, 2001 Series A	195,670,000	-0-
Water Revenue Refunding Bonds, 2001 Series B1 and B-2	224,800,000	-0-
Water Revenue Bonds, 2001 Series C-1 and C-2	200,000,000	-0-
Water Revenue Refunding Bonds, 2002 Series A	96,640,000	-0-
Water Revenue Refunding Bonds, 2002 Series B	35,600,000	-0-
Water Revenue Refunding Bonds, 2003 Series A	36,215,000	27,110,000
Water Revenue Bonds, 2003 Authorization, Series B-1 and B-2*	200,000,000	200,000,000
Water Revenue Refunding Bonds, 2003 Series C-1, C-2 and C-3	338,230,000	-0-
Water Revenue Refunding Bonds, 2004 Series A-1 and A-2 ⁽¹⁾⁽²⁾	162,455,000	155,930,000
Water Revenue Refunding Bonds, 2004 Series B	274,415,000	157,315,000
Water Revenue Bonds, 2003 Authorization, Series B-3* and B-4	300,000,000	259,105,000
Water Revenue Refunding Bonds, 2004 Series C ⁽¹⁾	136,090,000	-0-
Water Revenue Bonds, 2005 Authorization, Series A	100,000,000	85,890,000
Water Revenue Bonds, 2005 Authorization, Series B-1 and B-2 ⁽¹⁾	100,000,000	-0-
Water Revenue Refunding Bonds, 2006 Series A-1 and A-2 ⁽¹⁾⁽²⁾	74,140,000	73,825,000
Water Revenue Bonds, 2005 Authorization, Series C	200,000,000	175,000,000
Water Revenue Bonds, 2005 Authorization, Series D-1 and D-2 ⁽³⁾	100,000,000	-0-
Water Revenue Refunding Bonds, 2006 Series B	45,875,000	24,055,000
Water Revenue Bonds, 2006 Authorization, Series A	400,000,000	395,970,000
Water Revenue Bonds, 2006 Authorization, Series B ⁽³⁾	100,000,000	-0-
Water Revenue Refunding Bonds, 2007 Series A-1 and A-2 ⁽³⁾	218,425,000	-0-
Water Revenue Refunding Bonds, 2007 Series B ⁽³⁾	81,900,000	-0-
Water Revenue Refunding Bonds, 2008 Series A-1 ⁽¹⁾	250,940,000	195,960,000
Water Revenue Refunding Bonds, 2008 Series A-2 ⁽¹⁾	250,635,000	202,540,000
Water Revenue Refunding Bonds, 2008 Series B	133,430,000	127,885,000
Water Revenue Refunding Bonds, 2008 Series C	79,045,000	61,395,000
Water Revenue Bonds, 2008 Authorization, Series A	200,000,000	200,000,000
Water Revenue Refunding Bonds, 2009 Series A-1 and A-2 ⁽¹⁾	208,365,000	208,365,000
Water Revenue Refunding Bonds, 2009 Series B	106,690,000	106,690,000
Water Revenue Refunding Bonds, 2009 Series C	91,165,000	91,165,000
Water Revenue Bonds, 2008 Authorization, Series B	21,615,000	21,615,000
Water Revenue Bonds, 2008 Authorization, Series C ⁽⁴⁾	78,385,000	78,385,000
Water Revenue Bonds, 2008 Authorization, Series D ⁽⁴⁾	250,000,000	250,000,000
Water Revenue Refunding Bonds, 2009 Series D	81,065,000	81,065,000
Water Revenue Refunding Bonds, 2009 Series E	26,050,000	26,050,000
Water Revenue Refunding Bonds, Special Variable Rate, 2010 Series A ⁽¹⁾	128,005,000	127,770,000
Water Revenue Refunding Bonds, 2010 Series B	88,845,000	88,845,000
Water Revenue Bonds, 2010 Authorization, Series A ⁽⁴⁾	250,000,000	250,000,000
Water Revenue Refunding Bonds, 2011 Series A1-A4	228,875,000	228,875,000
Water Revenue Refunding Bonds, 2011 Series B	167,885,000	167,855,000
Total	\$9,743,459,889	\$4,640,245,000

Source: Metropolitan. (Footnotes on next page)

- (1) Variable rate obligation.
- (2) Metropolitan maintains interest rate swap agreements that correspond to these variable rate obligations. See —Variable Rate and Swap Obligations” below.
- (3) Auction rate securities (ARS). No ARS were integrated with any interest rate swap agreements. No ARS remain outstanding.
- (4) Designated as —Build America Bonds” pursuant to the American Recovery and Reinvestment Act of 2009.
- * Metropolitan expects to issue its Water Revenue Refunding Bonds, 2011 Series C, in September 2011 to redeem a portion of these bonds.

Limitations on Additional Revenue Bonds

Resolution 8329, adopted by Metropolitan's Board on July 9, 1991, as amended and supplemented (collectively with all such supplemental resolutions, the —Revenue Bond Resolutions”) provide for the issuance of Metropolitan's water revenue bonds. The Revenue Bond Resolutions establish limitations on the issuance of additional obligations payable from Net Operating Revenues. Under the Revenue Bond Resolutions, no additional bonds, notes or other evidences of indebtedness payable out of Operating Revenues may be issued having any priority in payment of principal, redemption premium, if any, or interest over any water revenue bonds or Parity Obligations. No additional Parity Bonds or Parity Obligations may be issued or incurred unless the conditions of the Revenue Bond Resolutions have been satisfied.

The laws governing Metropolitan's ability to issue water revenue bonds currently provide two additional limitations on indebtedness that may be incurred by Metropolitan. The Act provides for a limit on general obligation bonds, water revenue bonds and other evidences of indebtedness at 15 percent of the assessed value of all taxable property within Metropolitan’s service area. As of September 1, 2011, outstanding general obligation bonds, water revenue bonds and other evidences of indebtedness in the amount of \$4.88 billion represented approximately 0.24 percent of the fiscal year 2011-12 taxable assessed valuation of \$2,067.5 billion. The second limitation under the Act specifies that no revenue bonds may be issued, except for the purpose of refunding, unless the amount of net assets of Metropolitan as shown on its balance sheet as of the end of the last fiscal year prior to the issuance of such bonds, equals at least 100 percent of the aggregate amount of revenue bonds outstanding following the issuance of such bonds. The net assets of Metropolitan at June 30, 2011 were \$6.28 billion. The aggregate amount of revenue bonds outstanding as of September 1, 2011 was \$4.64 billion. The limitation does not apply to other forms of financing available to Metropolitan. Audited financial statements including the net assets of Metropolitan as of June 30, 2010 and June 30, 2009, respectively, are shown in Appendix B – —THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA INDEPENDENT AUDITOR’S REPORT AND FINANCIAL STATEMENTS AS OF FISCAL YEARS ENDED JUNE 30, 2010 AND JUNE 30, 2009 AND BALANCE SHEETS AND STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET ASSETS FOR THE TWELVE MONTHS ENDED JUNE 30, 2011 AND JUNE 30, 2010 (UNAUDITED).” Metropolitan provides no assurance that the Act’s limitations on indebtedness will not be revised or removed by future legislation. Limitations under the Revenue Bond Resolutions respecting the issuance of additional obligations payable from Net Operating Revenues on a parity with water revenue bonds of Metropolitan will remain in effect so long as any water revenue bonds authorized pursuant to the Revenue Bond Resolutions are outstanding, provided however, that the Revenue Bond Resolutions are subject to amendment and supplement in accordance with their terms.

Variable Rate and Swap Obligations

As of September 1, 2011, Metropolitan had outstanding \$1.66 billion of variable rate obligations, including \$437.2 million of bonds bearing interest in the Index Mode (the —Index Tender Bonds”) and \$127.8 million of special variable rate bonds initially designated as self-liquidity bonds (the —Self-Liquidity Bonds”). The Index Tender Bonds bear interest at a rate that fluctuates weekly based on the SIFMA Municipal Swap Index published weekly by Municipal Market Data; however, if the purchase price of a series of Index Tender Bonds is not paid from proceeds of a remarketing or other funds following a scheduled mandatory tender, such Index Tender Bonds will bear interest at a default rate of up to twelve percent per annum until purchased by Metropolitan or redeemed. The Self-Liquidity Bonds are variable rate demand bonds that bear interest at a weekly rate determined by the remarketing agent for the Self-Liquidity Bonds. The Self-Liquidity Bonds are subject to optional tender upon seven days notice by the owners thereof and mandatory tender upon specified

events. Metropolitan is irrevocably committed to purchase all Self-Liquidity Bonds tendered pursuant to any optional or mandatory tender to the extent that remarketing proceeds are insufficient therefor. Metropolitan's obligation to pay the purchase price of any tendered Self-Liquidity Bonds is an unsecured, special limited obligation of Metropolitan payable from Net Operating Revenues and other available funds. Metropolitan has not secured any liquidity facility or letter of credit to pay the purchase price of any tendered Self-Liquidity Bonds. (See "Other Revenue Obligations" below.)

The interest rates for Metropolitan's other variable rate obligations are reset on a daily or weekly basis. Such variable rate demand obligations are supported by Standby Bond Purchase Agreements between Metropolitan and various liquidity providers. As of September 1, 2011, the following table sets forth a listing of the liquidity providers, the expiration date of each facility and the principal amount of outstanding bonds covered under each facility.

<u>Liquidity Provider</u>	<u>Bond Issue</u>	<u>Principal Outstanding</u>	<u>Facility Expiration</u>
Barclays Bank PLC	2008 Series A-2	<u>\$202,540,000</u>	September 2013
	Total	\$202,540,000	
Bank of America, N.A.	1999 Series B	\$ 50,000,000	May 2012
	2008 Series A-1	<u>195,960,000</u>	September 2014
	Total	\$245,960,000	
JP Morgan Chase Bank	1999 Series C	\$ 50,000,000	May 2012
	2004 Series A-1	77,965,000	September 2012
	2004 Series A-2	<u>77,965,000</u>	September 2012
	Total	\$205,930,000	
Wells Fargo Bank, N.A.	2000 Series B-3	\$ 88,800,000	February 2013
	2000 Series B-4	<u>88,800,000</u>	February 2013
	Total	\$177,600,000	
Banco Bilbao Vizcaya Argentaria, S.A. (BBVA)	2000 Series B-2	\$ 88,800,000	July 2013
	2006 Series A-1	36,910,000	May 2013
	2006 Series A-2	<u>36,915,000</u>	May 2013
	Total	\$162,625,000	
Landesbank Hessen-Thüringen Girozentrale (Helaba)	1997 Series B	\$ 50,000,000	December 2015 ⁽¹⁾
	1997 Series C	<u>50,000,000</u>	December 2015 ⁽¹⁾
	Total	\$100,000,000	
Total		<u>\$1,094,655,000</u>	

Source: Metropolitan.

- (1) Subject to earlier termination on September 6, 2012 and each September 6 thereafter until the expiration date, upon 120 days prior notice from the liquidity provider.

Included in Metropolitan's \$1.66 billion of variable rate obligations are \$1.15 billion of variable rate demand obligations which, by virtue of interest rate swap agreements, are treated by Metropolitan as fixed rate debt for the purpose of calculating debt service requirements, although the variable payments that Metropolitan receives from swap counterparties do not usually equal the payments that Metropolitan makes on associated variable rate debt. The remaining \$514 million of variable rate obligations represent approximately 11 percent of total outstanding water revenue bonds.

Metropolitan's variable rate exposure policy requires that variable rate debt be managed to limit net interest cost increases within a fiscal year as a result of interest rate changes to no more than \$5 million. In addition, the maximum amount of variable interest rate exposure (excluding variable rate bonds associated with interest rate swap agreements) is limited to 40 percent of total outstanding water revenue bond debt. Variable rate debt capacity will be reevaluated as interest rates change and managed within these parameters.

By resolution adopted on September 11, 2001, Metropolitan's Board authorized the execution of interest rate swap transactions and related agreements in accordance with a master swap policy, which was subsequently amended by resolutions adopted on July 14, 2009 and May 11, 2010. Metropolitan may execute interest rate swaps if the transaction can be expected to reduce exposure to changes in interest rates on a particular financial transaction or in the management of interest rate risk derived from Metropolitan's overall asset/liability balance, result in a lower net cost of borrowing or achieve a higher net rate of return on investments made in connection with or incidental to the issuance, incurring or carrying of Metropolitan's obligations or investments, or manage variable interest rate exposure consistent with prudent debt practices and Board-approved guidelines. The Chief Financial Officer reports to the Finance and Insurance Committee of Metropolitan's Board each month on outstanding swap transactions, including notional amounts outstanding, counterparty exposures and termination values based on then-existing market conditions.

Metropolitan currently has two types of interest rate swaps. Under the first type, Metropolitan receives payments that are calculated by reference to a floating interest rate and makes payments that are calculated by reference to a fixed interest rate. These swaps are referred to in the table below as "Fixed Payor Swaps." Under the second type, referred to in the table below as "Basis Swaps," Metropolitan receives payments calculated by reference to a percentage of the taxable index, LIBOR. In return, Metropolitan makes payments that are calculated based on either SIFMA or the taxable short-term index, one-month LIBOR.

Net payments under the terms of the interest rate swap agreements are payable on a parity with the Parity Obligations. Termination payments under the 2001, 2002 A and 2002 B interest rate swap agreements would be payable on a parity with the Parity Obligations. All other termination payments related to interest rate swap agreements would be subordinate to the Parity Obligations.

The following swap transactions were outstanding as of September 1, 2011:

FIXED PAYOR SWAPS:

<u>Designation</u>	<u>Notional Amount Outstanding</u>	<u>Swap Counterparty</u>	<u>Fixed Payor Rate</u>	<u>MWD Receives</u>	<u>Maturity Date</u>
2001 ⁽¹⁾	\$107,500,000	JPMorgan Chase Bank	4.219%	SIFMA-35 bps	7/1/2020
2001 ⁽¹⁾⁽²⁾	107,500,000	Deutsche Bank AG	4.219	SIFMA-35 bps	7/1/2020
2002 A	89,069,300	Morgan Stanley Capital Services, Inc.	3.300	57.74% of one-month LIBOR	7/1/2025
2002 B	33,320,700	JPMorgan Chase Bank	3.300	57.74% of one-month LIBOR	7/1/2025
2003 ⁽²⁾	164,637,500	Deutsche Bank AG	3.257	61.20% of one-month LIBOR	7/1/2030
2003	164,637,500	JPMorgan Chase Bank	3.257	61.20% of one-month LIBOR	7/1/2030
2004 A	155,930,000	Morgan Stanley Capital Services, Inc.	2.917	61.20% of one-month LIB OR	7/1/2023
2004 C	72,630,250	Morgan Stanley Capital Services, Inc.	2.980	61.55% of one-month LIBOR	10/1/2029
2004 C	59,424,750	Citigroup Financial Products, Inc.	2.980	61.55% of one-month LIBOR	10/1/2029
2005 ⁽¹⁾	58,547,500	JPMorgan Chase Bank	3.360	70% of 3-month LIBOR	7/1/2030
2005 ⁽¹⁾	58,547,500	Citigroup Financial Products, Inc.	3.360	70% of 3-month LIBOR	7/1/2030
2006 ⁽¹⁾⁽²⁾	30,990,000	Deutsche Bank AG	3.210	63% of 3-month LIBOR	7/1/2021
2006 ⁽¹⁾	30,990,000	JPMorgan Chase Bank	3.210	63% of 3-month LIBOR	7/1/2021
2006 ⁽¹⁾⁽²⁾	6,027,500	Deutsche Bank AG	2.911	63% of 3-month LIBOR	7/1/2012
2006 ⁽¹⁾	<u>6,027,500</u>	JPMorgan Chase Bank	2.911	63% of 3-month LIBOR	7/1/2012
Total	\$1,145,780,000				

Source: Metropolitan.

(1) Interest rate swap agreement not identified with specific variable rate demand obligations.

(2) The obligations under these interest rate swap agreements were assigned by UBS AG to Deutsche Bank AG, New York Branch, pursuant to novation transactions dated July 22, 2010.

BASIS SWAPS:

<u>Swap</u>	<u>Notional Amount Outstanding</u>	<u>Swap Counterparty</u>	<u>Met Receives</u>	<u>Met Pays</u>	<u>Maturity Date</u>
2004	\$125,000,000	JPMorgan Chase Bank	70% of one-month LIBOR + 31.5 bp	SIFMA	7/1/2014
2004	<u>125,000,000</u>	JPMorgan Chase Bank	70% of one-month LIBOR + 31.5 bp	SIFMA	7/1/2014
Total	\$250,000,000				

Source: Metropolitan.

These interest rate swap agreements entail risk to Metropolitan. The counterparty may fail or be unable to perform, interest rates may vary from assumptions, Metropolitan may be required to post collateral in favor of its counterparties and Metropolitan may be required to make significant payments in the event of an early termination of an interest rate swap. Metropolitan believes that if such an event were to occur, it would not have a material adverse impact on its financial position. Metropolitan seeks to manage counterparty risk by diversifying its swap counterparties, limiting exposure to any one counterparty, requiring collateralization or other credit enhancement to secure swap payment obligations, and by requiring minimum credit rating levels. Initially swap counterparties must be rated at least “Aa3” or “AA-”, or equivalent by any two of the nationally recognized credit rating agencies; or use a “AAA” subsidiary as rated by at least one nationally recognized credit rating agency. Should the credit rating of an existing swap counterparty drop below the required levels, Metropolitan may enter into additional swaps if those swaps are “offsetting” and risk-reducing swaps. Each counterparty is initially required to have minimum capitalization of at least \$150 million. See Note 5(f) in Appendix B - “THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA INDEPENDENT AUDITOR’S REPORT AND FINANCIAL STATEMENTS AS OF FISCAL YEARS ENDED JUNE 30, 2010 AND JUNE 30, 2009 AND BALANCE SHEETS AND STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET ASSETS FOR THE TWELVE MONTHS ENDED JUNE 30, 2011 AND JUNE 30, 2010 (UNAUDITED).”

Early termination of an interest rate swap agreement could occur due to a default by either party or the occurrence of a termination event. As of July 31, 2011, Metropolitan would have been required to pay to its counterparties termination payments if some of its swaps were terminated on that date and would have been entitled to receive from its counterparties termination payments if other swaps were terminated on that date. Metropolitan estimated its net exposure to its counterparties for all such termination payments at July 31, 2011, to be approximately \$150.9 million. Metropolitan does not presently anticipate early termination of any of its interest rate swap agreements.

Metropolitan is required to post collateral in favor of a counterparty to the extent that Metropolitan’s total exposure for termination payments to that counterparty exceeds the threshold specified in the applicable swap agreement. Conversely, the counterparties are required to release collateral to Metropolitan or post collateral for the benefit of Metropolitan as market conditions become favorable to Metropolitan. As of July 31, 2011, Metropolitan had \$11.0 million of collateral posted with one counterparty. The highest amount of collateral Metropolitan has been required to post on any date was approximately \$33.3 million, as of December 22, 2008. The amount of required collateral varies from time to time due primarily to interest rate movements and can change significantly over a short period of time. In the future, Metropolitan may be required to post additional collateral, or may be entitled to a reduction or return of the required collateral amount. Collateral deposited by Metropolitan is held by the counterparties; a bankruptcy of any counterparty holding collateral posted by Metropolitan could adversely affect the return of the collateral to Metropolitan. Moreover, posting collateral limits Metropolitan’s liquidity. If collateral requirements increase significantly, Metropolitan’s liquidity may be materially adversely affected.

Other Revenue Obligations

Metropolitan's \$437.2 million of Index Tender Bonds are subject to mandatory tender under certain circumstances. Metropolitan anticipates that it will pay the purchase price of tendered Index Tender Bonds from proceeds of remarketing such Index Tender Bonds or from other available funds. Metropolitan's obligation to pay the purchase price of such Index Tender Bonds is an unsecured obligation of Metropolitan that it would pay from Net Operating Revenues only after it has made payments and deposits with respect to its Operating Revenues, the Parity Bonds and Parity Obligations and other obligations secured by Net Operating Revenues. Metropolitan has not secured any liquidity facility or letter of credit to support the payment of the purchase price of tendered Index Tender Bonds of any series. If the purchase price of the Index Tender Bonds of any series is not paid, such Index Tender Bonds will be subject to special mandatory redemption, in part, 18, 36 and 54 months following the purchase default. Any such special mandatory redemption payment will constitute a Bond Obligation payable on a parity with the Parity Bonds and Parity Obligations.

Metropolitan's \$127.8 million of Self-Liquidity Bonds are subject to mandatory tender under certain circumstances and, while interest thereon is reset on a weekly basis, to optional tender. Metropolitan is irrevocably committed to purchase all tendered Self-Liquidity Bonds to the extent that remarketing proceeds are insufficient therefor and no standby bond purchase agreement or other liquidity facility with a liquidity provider is in effect. Metropolitan's obligation to purchase tendered Self-Liquidity Bonds is an unsecured, special limited obligation of Metropolitan payable from Net Operating Revenues. In addition, Metropolitan's investment policy permits it to purchase tendered Self-Liquidity Bonds as an investment of its investment portfolio (other than amounts in its investment portfolio consisting of bond reserve funds). Thus, while Metropolitan is only obligated to purchase tendered Self-Liquidity Bonds from Net Operating Revenues, Metropolitan may use the cash and investments in its investment portfolio (other than amounts in its investment portfolio consisting of bond reserve funds) to purchase tendered Self-Liquidity Bonds. See ~~METROPOLITAN REVENUES—Investment of Moneys in Funds and Accounts~~ in this Appendix A.

Subordinate Revenue Obligations

Metropolitan currently is authorized to issue subordinate debt of up to \$400,000,000 of Commercial Paper Notes payable from Net Operating Revenues on a basis subordinate to the Parity Bonds and the Parity Obligations. Although no Commercial Paper Notes are currently outstanding, the authorization remains in full force and effect and Metropolitan may issue Commercial Paper Notes from time to time. In addition, Metropolitan obtained a \$20 million California Safe Drinking Water Revolving Fund Loan in 2003 at an interest rate of 2.39 percent per annum to reimburse construction costs for oxidation retrofit facilities at the Henry J. Mills Treatment Plant in Riverside County. The loan will be repaid over 20 years, with semiannual payments of \$632,000 through January 1, 2024. The loan payment obligation is subordinate to the Parity Bonds and Parity Obligations. As of September 1, 2011, the principal balance outstanding was \$14.1 million.

General Obligation Bonds

As of September 1, 2011, \$225,335,000 aggregate principal amount of general obligation bonds payable from ad valorem property taxes were outstanding. *Ad valorem* taxes levied by Metropolitan must be applied solely to the payment of general obligation bonds and other voter-approved indebtedness. Metropolitan's revenue bonds are not payable from the levy of *ad valorem* property taxes.

<u>General Obligation Bonds</u>	<u>Amount Issued⁽¹⁾</u>	<u>Principal Outstanding</u>
Waterworks General Obligation Refunding Bonds, 2002 Series A	\$ 55,185,000	\$ 3,895,000
Waterworks General Obligation Refunding Bonds, 2003 Series A	123,865,000	13,355,000
Waterworks General Obligation Refunding Bonds, 2004 Series A	68,345,000	60,480,000
Waterworks General Obligation Refunding Bonds, 2005 Series A	64,705,000	64,335,000
Waterworks General Obligation Refunding Bonds, 2009 Series A	45,515,000	43,785,000
Waterworks General Obligation Refunding Bonds, 2010 Series A	<u>39,485,000</u>	<u>39,485,000</u>
Total	<u>\$397,100,000</u>	<u>\$225,335,000</u>

Source: Metropolitan.

- (1) Voters authorized Metropolitan to issue \$850,000,000 of Waterworks General Obligation Bonds, Election 1966, in multiple series, in a special election held on June 7, 1966. This authorization has been fully utilized. This table lists bonds that refunded such Waterworks General Obligation Bonds, Election 1966.

State Water Contract Obligations

General. On November 4, 1960, Metropolitan entered into its State Water Contract with DWR, under which Metropolitan receives an entitlement to water service from the State Water Project. Subsequently, other public agencies also entered into water supply contracts with DWR, all of which were patterned after Metropolitan's State Water Contract. Metropolitan's State Water Contract accounts for nearly one-half of the total entitlement for State Water Project water contracted for by all contractors.

The State Water Contract will remain in effect until 2035 or until all DWR bonds issued to finance construction of project facilities are repaid, whichever is longer. At the expiration of the State Water Contract, Metropolitan has the option to continue service under substantially the same terms and conditions. Metropolitan presently intends to exercise this option to continue service to at least 2052. As of September 1, 2011, the latest maturity of outstanding DWR bonds issued for such purpose was December 1, 2035.

Under the State Water Contract, Metropolitan is obligated to pay allocable portions of the cost of construction of the system and ongoing operating and maintenance costs through at least 2035, regardless of quantities of water available from the project. Other payments are based on deliveries requested and actual deliveries received, costs of power required for actual deliveries of water, and offsets for credits received. Metropolitan's payment obligation for the State Water Project for the fiscal year ended June 30, 2011 was \$491.9 million, which amount reflects prior year's credits of \$46.1 million. For the fiscal year ended June 30, 2011, Metropolitan's payment obligations under the State Water Contract were approximately 37 percent of Metropolitan's total annual expenditures. A portion of Metropolitan's annual property tax levy is for payment of State Water Contract capital charges. See Note 9(a) to Metropolitan's audited financial statements in Appendix B for an estimate of Metropolitan's payment obligations under the State Water Contract. Also see ~~POWER SOURCES AND COSTS~~ in this Appendix A for a description of current and future costs for electric power required to operate State Water Project pumping systems and a description of litigation involving the federal relicensing of the Hyatt-Thermalito hydroelectric generating facilities at Lake Oroville.

On April 25, 2005, a group of fourteen State Water Project contractors filed suit against DWR challenging the manner in which it allocates certain energy costs and revenues related to operation of the State Water Project. Among other things, these contractors alleged that DWR has been and is administering certain provisions of State Water Contract incorrectly, depriving them of ~~all~~ benefits" derived from the sale or other disposal of electrical energy generated at the Hyatt-Thermalito power facility. The plaintiffs did not allege specific amounts for damages; however, success by plaintiffs could have resulted in shifting tens of millions of dollars in annual costs from State Water Project contractors located north of the Tehachapi Mountains to State Water Project contractors located south of the Tehachapi Mountains and on the Central Coast, including

Metropolitan. Metropolitan and twelve other State Water Project contractors intervened in the litigation. After a trial limited to contract interpretation issues, on September 14, 2009, the court rejected all of the plaintiffs' assertions and on April 19, 2010, the court dismissed all remaining claims without leave to amend. The court entered its final statement of decision and final judgment in favor of defendants on May 3, 2010. On May 25, 2010, Plaintiffs filed a motion for a new trial, which was denied. Plaintiffs filed a notice of appeal on July 1, 2010. Briefings in this appeal will be completed in September 2011.

The State Water Contract requires that in the event that Metropolitan fails or is unable to raise sufficient funds by other means, Metropolitan must levy upon all property within its boundaries not exempt from taxation a tax or assessment sufficient to provide for all payments under the State Water Contract. Currently a portion of the capital costs under the State Water Contract are paid from ad valorem taxes levied by Metropolitan. In the opinion of Metropolitan's General Counsel, a tax increase to provide for additional payments under the State Water Contract would be within the exemption permitted under Article XIII A of the State Constitution as a tax to pay pre-1978 voter approved indebtedness.

Metropolitan capitalizes its share of system construction costs as participation rights in State Water Project facilities as such costs are billed by DWR. Unamortized participation rights essentially represent a prepayment for future water deliveries through the State Water Project system. Metropolitan's share of system operating and maintenance costs are annually expensed.

Metropolitan has entered into amendments to the State Water Contract that represent additional long-term obligations, as described below.

Devil Canyon-Castaic Contract. On June 23, 1972, Metropolitan and five other southern California public agencies entered into a contract (the "Devil Canyon-Castaic Contract") with DWR for the financing and construction of the Devil Canyon and Castaic power recovery facilities, located on the aqueduct system of the State Water Project. Under this contract, DWR agreed to build the Devil Canyon and Castaic facilities, using the proceeds of revenue bonds issued by DWR under the State Central Valley Project Act. DWR also agreed to use and apply the power made available by the construction and operation of such facilities to deliver water to Metropolitan and the other contracting agencies. Metropolitan, in turn, agreed to pay to DWR 88.1 percent of the debt service on the revenue bonds issued by DWR. For calendar year 2010, this represents a payment of \$7.6 million. In addition, Metropolitan agreed to pay 78.5 percent of the operation and maintenance expenses of the Devil Canyon facilities and 96 percent of the operation and maintenance expenses of the Castaic facilities. Metropolitan's obligations under the Devil Canyon-Castaic Contract continue until the bonds are fully retired in 2022 even if DWR is unable to operate the facilities or deliver power from these facilities.

Off-Aqueduct Power Facilities. In addition to system "on-aqueduct" power facilities costs, DWR has, either on its own or by joint venture, financed certain off-aqueduct power facilities. The power generated is utilized by the system for water transportation and other State Water Project purposes. Power generated in excess of system needs is marketed to various utilities and the California power exchange market. Metropolitan is entitled to a proportionate share of the revenues resulting from sales of excess power. By virtue of a 1982 amendment to the State Water Contract and the other water supply contracts, Metropolitan and the other water contractors are responsible for paying the capital and operating costs of the off-aqueduct power facilities regardless of the amount of power generated. Other costs of Metropolitan in relation to the State Water Project and the State Water Contract may increase as a result of restructuring of California's electric utility industry and new Federal Energy Regulatory Commission regulations.

East Branch Enlargement Amendment. In 1986, Metropolitan's State Water Contract and the water supply contracts of certain other State Water Project contractors were amended for the purpose, among others, of financing the enlargement of the East Branch of the California Aqueduct. Under the amendment, enlargement of the East Branch can be initiated either at Metropolitan's request or by DWR finding that

enlargement is needed to meet demands. Metropolitan, the other State Water Contractors on the East Branch, and DWR are currently in discussions on the timetable and plan for future East Branch enlargement actions.

The amendment establishes a separate subcategory of the Transportation Charge under the State Water Contract for the East Branch Enlargement and provides for the payment of costs associated with financing and operating the East Branch Enlargement. Under the amendment, the annual financing costs for such facilities financed by bonds issued by DWR are allocated among the participating contractors based upon the delivery capacity increase allocable to each participating contractor. Such costs include, but are not limited to, debt service, including coverage requirements, deposits to reserves, and certain operation and maintenance expenses, less any credits, interest earnings or other moneys received by DWR in connection with this facility.

If any participating contractor defaults on payment of its allocable charges under the amendment, among other things, the non-defaulting participating contractors may assume responsibility for such charges and receive delivery capability that would otherwise be available to the defaulting participating contractor in proportion to the non-defaulting contractor's participation in the East Branch Enlargement. If participating contractors fail to cure the default, Metropolitan will, in exchange for the delivery capability that would otherwise be available to the defaulting participating contractor, assume responsibility for the capital charges of the defaulting participating contractor.

Water System Revenue Bond Amendment. In 1987, the State Water Contract and other water supply contracts were amended for the purpose of financing State Water Project facilities through revenue bonds. This amendment establishes a separate subcategory of the Delta Water Charge and the Transportation Charge for projects financed with DWR water system revenue bonds. This subcategory of charge provides the revenues required to pay the annual financing costs of the bonds and consists of two elements. The first element is an annual charge for repayment of capital costs of certain revenue bond financed water system facilities under the existing water supply contract procedures. The second element is a water system revenue bond surcharge to pay the difference between the total annual charges under the first element and the annual financing costs, including coverage and reserves, of DWR's water system revenue bonds.

If any contractor defaults on payment of its allocable charges under this amendment, DWR is required to allocate a portion of the default to each of the nondefaulting contractors, subject to certain limitations, including a provision that no nondefaulting contractor may be charged more than 125 percent of the amount of its annual payment in the absence of any such default. Under certain circumstances, the nondefaulting contractors would be entitled to receive an allocation of the water supply of the defaulting contractor.

The following table sets forth Metropolitan's projected costs of State Water Project water, based upon DWR's Annual Billing to Metropolitan for calendar year 2011 and projections based on Metropolitan's adopted budget for fiscal year 2011-12 and its provisionally approved budget for 2012-13. The projections include projected costs to complete the planning phase of the BDCP. If a Bay-Delta improvement alternative is identified and funding is approved, construction may commence in 2016. See —METROPOLITAN'S WATER SUPPLY—State Water Project—*Bay-Delta Regulatory and Planning Activities*.”

**PROJECTED COSTS OF METROPOLITAN
FOR STATE WATER PROJECT WATER⁽¹⁾
(Dollars in Millions)**

Year Ending June 30	Capital Costs	Minimum OMP&R⁽²⁾	Power Costs⁽³⁾	Refunds & Credits	Total⁽⁴⁾
2012	\$185.7	\$171.3	\$253.7	\$(53.2)	\$557.5
2013	204.0	189.9	211.9	(53.2)	552.6
2014	215.3	196.1	185.3	(53.2)	543.6
2015	238.3	206.6	204.7	(44.3)	605.3
2016	265.3	222.3	206.1	(36.3)	657.4

Source: Metropolitan.

- (1) Projections are based upon DWR's Annual Billing to Metropolitan for 2011 and attachments, dated July 1, 2010, and Metropolitan water purchase estimates. All costs are adjusted from calendar year to fiscal year periods ending June 30. The total charges shown above differ from those shown in Note 9 of Metropolitan's audited financial statements (for the fiscal years ended June 30, 2010 and June 30, 2009) in Appendix B due to the inclusion above of allowances for inflation and anticipated construction of additional State facilities. The projections above also include State Water Project refunds and credits. See *—POWER SOURCES AND COSTS—State Water Project.*
- (2) Minimum Operations, Maintenance, Power and Replacement (*—OMP&R*) represents costs which are fixed and do not vary with the amount of water delivered.
- (3) Assumptions for water deliveries through the California Aqueduct (not including SBVMWD and Desert Water/Coachella Valley transfers and exchanges) into Metropolitan's service area and to storage programs are as follows: 1.08 million acre-feet for 2012, 0.90 million acre-feet for 2013, 0.93 million acre-feet for 2014, 0.94 million acre-feet for 2015 and 1.00 million acre-feet for 2016. Availability of State Water Project supplies vary and deliveries may include transfers and storage. All deliveries are within maximum contract amount and are based upon availability, as determined by hydrology, water quality and wildlife conditions. See *—METROPOLITAN'S WATER SUPPLY—State Water Project—Endangered Species Act Considerations* in this Appendix A.
- (4) Annual totals include BDCP related costs for the fiscal years ended June 30, 2012 through June 30, 2016 of \$22.9 million, \$18.2 million, \$19.6 million, \$31.6 million and \$49.2 million, respectively. BDCP related costs are included in Capital Costs and Minimum OMP&R costs.

Other Long-Term Commitments

Metropolitan also has various ongoing fixed annual obligations under its contract with the United States for power from the Hoover Power Plant. Under the terms of the Hoover Power Plant contract, Metropolitan purchases energy to pump water through the Colorado River Aqueduct. In fiscal year 2010-11 Metropolitan paid approximately \$18.4 million under this contract. Payments made under the Hoover Power Plant contract are treated as Operation and Maintenance Expenditures. See *—POWER SOURCES AND COSTS—Colorado River Aqueduct* in this Appendix A.

Defined Benefit Pension Plan

Metropolitan is a member of the California Public Employees' Retirement System (*—PERS*), a multiple-employer pension system that provides a contributory defined-benefit pension for substantially all Metropolitan employees. PERS provides retirement and disability benefits, annual cost-of-living adjustments and death benefits to plan members and beneficiaries. PERS acts as a common investment and administrative agent for participating public entities within the State. PERS is a contributory plan deriving funds from employee contributions as well as from employer contributions and earnings from investments. A menu of benefit provisions is established by State statutes within the Public Employees' Retirement Law. Metropolitan selects optional benefit provisions from the benefit menu by contract with PERS.

Metropolitan makes biweekly contributions to PERS based on actuarially determined employer contribution rates. The actuarial methods and assumptions used are those adopted by the PERS Board of Administration. Employees are required to contribute seven percent of their earnings (excluding overtime

pay) to PERS. Pursuant to current memoranda of understanding, Metropolitan contributes the requisite seven percent contribution for all employees represented by the Management and Professional Employees Association, the Association of Confidential Employees, Supervisors and Professional Personnel Association and AFSCME Local 1902. Metropolitan also contributes the entire seven percent on behalf of the unrepresented employees. In addition, Metropolitan is required to contribute the actuarially determined remaining amounts necessary to fund the benefits for its members.

The contribution requirements of the plan members are established by State statute and the employer contribution rate is established and may be amended by PERS. For fiscal year 2009-10, Metropolitan contributed 11.71 percent of annual covered payroll. In addition, since July 1, 2001, Metropolitan has paid the 7 percent employees' share of the PERS contribution. The fiscal year 2009-10 annual pension cost was \$36.8 million, of which \$13.8 million was for Metropolitan's pick-up of the employees' 7 percent share. For fiscal year 2010-11, Metropolitan was required to contribute 11.88 percent of annual covered payroll, in addition to member contributions paid by Metropolitan, and for fiscal year 2011-12, Metropolitan is required to contribute 14.5 percent of annual covered payroll, in addition to member contributions paid by Metropolitan. The fiscal year 2009-10 and 2010-11 contribution requirements are based on the June 30, 2007 and June 30, 2008 valuation reports, respectively, and the fiscal year 2011-12 contribution requirement is based on the June 30, 2009 valuation report. The June 30, 2009 actuarial valuation report includes a projected employer contribution rate for fiscal year 2012-13 of 15.7 percent of annual covered payroll, based on PERS' projected investment return for fiscal year 2009-10 of 11.0 percent, and a projected employer contribution rate for fiscal year 2013-14 of 19.1 percent of annual covered payroll, based on PERS' projected investment return for fiscal year 2010-11 of 7.75 percent. Metropolitan's employer contribution rate will be adjusted in future years to provide PERS benefits to eligible claimants in settlement of a class action lawsuit described under —GOVERNANCE AND MANAGEMENT—Employee Relations” in this Appendix A.

As of June 30, 2009, the date of the most recent actuarial valuation report available from PERS, the actuarial and market values of assets in Metropolitan's pension plan were approximately \$1.287 billion and \$940 million, respectively. The plan had an unfunded liability of approximately \$191 million (87.1 percent funded, based on actuarial value of assets), reflecting the impact of financial market conditions as of that date, which resulted in decreased valuation of PERS assets. This compares to the plan's unfunded liability of \$102 million as of the June 30, 2008 actuarial valuation (92.3 percent funded based on actuarial value and 94.1 percent funded based on market value), \$95 million as of the June 30, 2007 actuarial valuation (92.4 percent funded based on actuarial value and 107 percent funded based on market value), unfunded liability of \$78 million as of the June 30, 2006 actuarial valuation (93.2 percent funded based on actuarial value and 98.7 percent funded based on market value) and unfunded liability of \$76 million as of the June 30, 2005 actuarial valuation (92.9 percent funded based on actuarial value and 95.4 percent funded based on market value). The pension plan had excess assets of \$95 million as of the June 30, 2002 actuarial valuation. The increase in unfunded liability is due to the draw-down of excess assets relating to the employer pick-up of the employees' 7 percent share and prior asset losses in PERS investments, and the recognition of gains and losses on an actuarial basis over a ~~—smoothing~~” period. The actuarial value of PERS assets since fiscal year 2003-04 is based on a policy to smooth the market value of investments over a fifteen-year period to reduce the volatility of employers' future contributions and stabilize pension costs. However, in June 2009, the PERS Board adopted changes to the asset smoothing method in order to phase in over a three year period the impact of the 24 percent investment loss experienced in fiscal year 2008-09. The three year phase-in provides short-term relief to local government employers and is designed to strengthen the long-term financial health of the pension funds. For more information on the plan, see Appendix B - ~~—THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA INDEPENDENT AUDITOR'S REPORT AND FINANCIAL STATEMENTS AS OF FISCAL YEARS ENDED JUNE 30, 2010 AND JUNE 30, 2009 AND BALANCE SHEETS AND STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET ASSETS FOR THE TWELVE MONTHS ENDED JUNE 30, 2011 AND JUNE 30, 2010 (UNAUDITED).~~”

Metropolitan provides post-employment medical insurance to retirees. Metropolitan currently pays the post-employment medical insurance premiums to PERS. Metropolitan funds such benefits on a pay-as-

you-go basis. Payments for this benefit were \$11 million in fiscal year 2010-11 and are estimated to be \$12.8 million in fiscal year 2011-12. Under Governmental Accounting Standards Board Statement No. 45, Accounting and Financial Reporting by Employers of Post-employment Benefits Other Than Pensions (~~–OPEB~~”), Metropolitan was required to account for and report the outstanding obligations and commitments related to such post-employment benefits on an accrual basis for the fiscal year ended June 30, 2008. Metropolitan began accounting for and reporting its OPEB obligations beginning with its financial statements for the fiscal year ended June 30, 2006.

Metropolitan’s annual actuarially required OPEB contributions were \$37.2 million in fiscal year 2010-11 and are projected to be \$40.4 million in fiscal year 2011-12. Pay-as- you-go contributions were \$11.0 million in fiscal year 2010-11 and are projected to be \$12.8 million in fiscal year 2011-12, which represent 29.6 percent and 34.4 percent respectively of the annual required contributions. The required contributions were based on a January 1, 2009 actuarial valuation using the entry-age normal actuarial cost method with contributions determined as a level percent of pay. The actuarial assumptions included (a) a 5.0 percent investment rate of return, (b) a general inflation component of 3.0 percent and (c) increases to basic medical premiums of 8.4 percent for Kaiser, 9.4 percent for Blue Shield and 10.0 percent for Preferred Provider Organization plans per year for 2011 grading down to 4.5 percent for 2017 thereafter. As of January 1, 2009, the date of the actuarial report, the unfunded OPEB liability was estimated to be \$404 million. The June 30, 2007 unfunded actuarial accrued liability is amortized over a fixed 30-year period starting with fiscal year 2007-08. Assumption changes are amortized over a fixed 20-year period starting with fiscal year 2009-10. Actuarial gains and losses are amortized over a rolling 15-year period. Metropolitan intends to continue funding on a pay-as-you-go-basis while it reviews various funding options.

HISTORICAL AND PROJECTED REVENUES AND EXPENDITURES

The following table provides a summary of revenues and expenditures of Metropolitan prepared to conform to the Revenue Bond Resolutions provisions regarding rates and additional Bonds (as defined in the Master Resolution) and Parity Obligations (as defined in the Master Resolution). See ~~–METROPOLITAN EXPENDITURES—Limitations on Additional Revenue Bonds.~~” The table is presented on a cash basis, and does not reflect the accrual basis used to prepare Metropolitan’s annual audited financial statements.

The projections are based on assumptions concerning future events and circumstances that may impact revenues and expenditures and represent management’s best estimates of results at this time. See footnotes to the table below entitled ~~–HISTORICAL AND PROJECTED REVENUES AND EXPENSES”~~ and ~~–MANAGEMENT’S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENDITURES”~~ for relevant assumptions, including projected water sales and average annual increase in the effective water rate, and ~~–MANAGEMENT’S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENDITURES”~~ for a discussion of potential impacts. Some assumptions inevitably will not materialize and unanticipated events and circumstances may occur. Therefore, the actual results achieved during the projection period will vary from the projections and the variations may be material.

In addition to the Parity Bonds currently outstanding and the Bonds described in the Official Statement, Metropolitan anticipates issuing approximately \$1.2 billion aggregate principal amount of Parity Bonds through fiscal year 2016-17 to finance the CIP. In September 2004 Metropolitan adopted a goal to maintain a minimum fixed charge coverage ratio, measuring total coverage of all fixed obligations (which includes all revenue bond debt service obligations, State Water Contract capital payments paid from current year operations and subordinate obligations) after payment of operating expenditures, of 1.2 times. This goal is subject to change by future action of Metropolitan’s Board.

Estimated revenues and expenditures are based on assumptions and estimates used in developing the adopted budget for 2011-12 and the provisionally approved budget and revenue requirements for fiscal year 2012-13, with the revised projections for fiscal year 2011-12 water revenues and expenditures. In addition, the forecasted revenues and expenditures for fiscal year 2011-12 through fiscal year 2014-15 reflect the

issuance of additional bond sales projected over this period. See ~~MANAGEMENT’S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENDITURES~~—Water Sales Receipts.”

The projections in the table below assume that water sales will be 1.85 million acre-feet in fiscal year 2011-12 (including 50,000 acre-feet of replenishment sales), 1.8 million acre-feet in fiscal year 2012-13, 2.0 million acre-feet for fiscal year 2013-14, 2.0 million acre-feet in fiscal year 2014-15 and 1.95 million acre-feet in fiscal year 2015-16 and that water rates and charges will increase by 7.5 percent, effective January 1, 2012. Thereafter, rates and charges are projected to meet costs and to rise annually at rates between one and two percent above the annual rate of inflation (projected at 3.5 percent per year). Actual rates and charges to be effective in 2013 and thereafter are subject to adoption by Metropolitan’s Board. The projections were prepared by Metropolitan and have not been reviewed by independent certified public accountants or any entity other than Metropolitan. Dollar amounts are rounded.

HISTORICAL AND PROJECTED REVENUES AND EXPENDITURES
(Dollars in Millions)
(Unaudited Cash Basis)

	Actual				Projected				
	2008	2009	2010	2011	2012	2013	2014	2015	2016
Receipts from Water Sales ^(a)	\$968	\$988	\$1,011	\$996	\$1,191	\$1,232	\$1,441	\$1,506	\$1,563
Additional Revenue Sources ^(b)	<u>114</u>	<u>120</u>	<u>135</u>	<u>153</u>	<u>170</u>	<u>186</u>	<u>194</u>	<u>203</u>	<u>216</u>
Total Operating Revenues	<u>1,082</u>	<u>1,108</u>	<u>1,146</u>	<u>1,149</u>	<u>1,361</u>	<u>1,418</u>	<u>1,635</u>	<u>1,709</u>	<u>1,779</u>
O&M, CRA Power and Water Transfer Costs ^(c)	(470)	(532)	(551)	(531)	(510)	(521)	(615)	(675)	(694)
Total SWC OMP&R and Power Costs ^(d)	<u>(321)</u>	<u>(251)</u>	<u>(274)</u>	<u>(322)</u>	<u>(371)</u>	<u>(356)</u>	<u>(352)</u>	<u>(392)</u>	<u>(421)</u>
Total Operation and Maintenance	<u>(792)</u>	<u>(782)</u>	<u>(825)</u>	<u>(853)</u>	<u>(881)</u>	<u>(877)</u>	<u>(967)</u>	<u>(1,067)</u>	<u>(1,115)</u>
Net Operating Revenues	\$ 290	\$ 326	\$ 321	\$ 296	\$ 480	\$ 541	\$668	\$642	\$ 664
Miscellaneous Revenue ^(e)	7	20	33	74	24	31	31	31	32
Sales of Hydroelectric Power ^(f)	41	23	19	22	22	21	22	23	23
Interest on Investments ^(g)	<u>46</u>	<u>32</u>	<u>19</u>	<u>17</u>	<u>15</u>	<u>17</u>	<u>22</u>	<u>27</u>	<u>28</u>
Adjusted Net Operating Revenues ^(h)	385	401	392	409	541	610	743	723	747
Bonds and Additional Bonds Debt Service ⁽ⁱ⁾	(219)	(223)	(244)	(277)	(296)	(317)	(332)	(353)	(362)
Subordinate Revenue Obligations ⁽ⁱ⁾	<u>(1)</u>	<u>(1)</u>	<u>(1)</u>	<u>(1)</u>	<u>(1)</u>	<u>(1)</u>	<u>(1)</u>	<u>(1)</u>	<u>(1)</u>
Funds Available from Operations	\$ 165	\$ 177	\$ 147	\$ 131	\$ 244	\$ 292	\$ 410	\$ 369	\$ 384
Bonds and Additional Bonds Debt Service Coverage ^(k)	1.76	1.80	1.61	1.48	1.83	1.92	2.24	2.05	2.06
Debt Service Coverage on all Obligations ^(l)	1.75	1.79	1.60	1.47	1.82	1.92	2.23	2.04	2.06
Funds Available from Operations	\$ 165	\$ 177	\$ 147	\$ 131	\$ 244	\$ 292	\$410	\$ 369	\$ 384
Other Receipts (Expenditures)	(19)	(8)	(5)	(2)	(8)	(9)	(11)	(8)	(8)
Pay-As-You Go Construction	(45)	(31)	(35)	(45)	(48)	(60)	(125)	(125)	(125)
Water Transfer Capital Costs	(48)	(8)	(12)	-0-	-0-	-0-	-0-	-0-	-0-
Total SWC Capital Costs Paid from Current Year Operations	<u>(90)</u>	<u>(86)</u>	<u>(115)</u>	<u>(119)</u>	<u>(144)</u>	<u>(155)</u>	<u>(151)</u>	<u>(176)</u>	<u>(203)</u>
Remaining Funds Available from Operations	(37)	44	(20)	(35)	44	68	123	60	48
Fixed Charge Coverage ^(m)	1.24	1.30	1.09	1.03	1.23	1.29	1.54	1.36	1.31
Tax Receipts	101	105	97	88	82	83	82	62	56
General Obligation Bonds Debt Service	(49)	(49)	(48)	(39)	(39)	(40)	(40)	(23)	(23)
SWC Capital Costs Paid from Taxes	<u>(52)</u>	<u>(56)</u>	<u>(49)</u>	<u>(49)</u>	<u>(43)</u>	<u>(43)</u>	<u>(42)</u>	<u>(39)</u>	<u>(33)</u>
Net Funds Available from Current Year	\$ (37)	\$ 44	\$ (20)	\$ (35)	\$44	\$68	\$123	\$ 60	\$48

Source: Metropolitan.

- (a) During the four fiscal years ended, June 30, 2008 through June 30, 2011, annual water sales (in acre-feet) were 2.31 million, 2.17 million, 1.86 million, and 1.63 million, respectively. See table entitled "SUMMARY OF WATER SOLD AND WATER SALES RECEIPTS" above. The water receipts projections are based upon estimated annual water sales (in acre-feet) of 1.85 million for 2011-12 (including 50,000 acre-feet of replenishment sales), 1.80 million for 2012-13, 2.0 million for 2013-14, 2.0 million for 2014-15, and 1.95 million for 2015-16. Projections reflect Board adopted rate and charge increases of 7.5 percent, effective January 1, 2011 and 7.5 percent, effective January 1, 2012. Thereafter, rates and charges are projected to recover costs and are estimated to require increases of approximately 5 percent per year, subject to adoption by Metropolitan's Board. See "MANAGEMENT'S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENDITURES" below.

(Footnotes continued on next page)

- (b) Includes receipts from water standby, readiness-to-serve and capacity charges. The term Operating Revenues excludes ad valorem taxes. See ~~METROPOLITAN REVENUES~~ — Additional Revenue Components.”
- (c) Water Transfer Costs are included in Operation and Maintenance Expenditures for purposes of calculating the debt service coverage on all Obligations. Increase in 2009 reflects increased purchases of water transfer supplies.
- (d) Includes on and off aqueduct power and operation, maintenance, power and replacement costs payable under the State Water Contract. See ~~METROPOLITAN EXPENDITURES~~—State Water Contract Obligations.”
- (e) Includes lease and rental net proceeds, net proceeds from sale of surplus property and federal interest subsidy payments for Build America Bonds of \$6.6 million in fiscal year 2009-10, \$3.6 million in fiscal year 2010-11, \$6.6 million in fiscal year 2011-12 and \$13 million in fiscal year 2012-13 through fiscal year 2015-16. Also includes in fiscal year 2010-11, \$8 million from surplus property sales and a \$28.2 million capital reimbursement received from the Calleguas Municipal Water District in fiscal year 2010-11 related to termination of the Las Posas water storage program. See ~~REGIONAL WATER RESOURCES~~—Local Water Supplies—*Groundwater Storage Programs*.”
- (f) Includes Colorado River Aqueduct power sales.
- (g) Does not include interest applicable to Bond Construction Funds, the Excess Earnings Funds, other trust funds and the Deferred Compensation Trust Fund.
- (h) Adjusted Net Operating Revenues is the sum of all available revenues that the revenue bond resolutions specify may be considered by Metropolitan in setting rates and issuing additional Bonds and Parity Obligations.
- (i) Includes debt service on outstanding Bonds, the parity lien State Revolving Fund Loan which was repaid on July 1, 2011 and additional Bonds (projected). Assumes the issuance of additional Bonds as follows: \$250 million in 2011-12, \$100 million in 2012-13, \$250 million in 2013-14, \$230 million in 2014-15 and \$175 million in 2015-16. See ~~OPERATING REVENUES AND DEBT SERVICE~~—Anticipated Financings” in the Official Statement.
- (j) Consisting of subordinate lien California Safe Drinking Water Revolving Fund Loan debt service. See ~~METROPOLITAN EXPENDITURES~~—Subordinate Revenue Obligations” above.
- (k) Adjusted Net Operating Revenues divided by the sum of debt service on outstanding Bonds, the parity lien State Revolving Fund Loan which was repaid on July 1, 2011 and additional Bonds (projected).
- (l) Adjusted Net Operating Revenues, divided by the sum of debt service on outstanding Bonds, the parity lien State Revolving Fund Loan which was repaid on July 1, 2011, the subordinate lien California Safe Drinking Water Revolving Fund Loan and additional Bonds (projected). See ~~Subordinate Revenue Obligations~~” above.
- (m) Adjusted Net Operating Revenues, divided by the sum of State Water Contract capital costs paid from current year operations and debt service on outstanding Bonds, the parity lien State Revolving Fund Loan which was repaid on July 1, 2011, the subordinate lien California Safe Drinking Water Revolving Fund Loan, and additional Bonds (projected).

MANAGEMENT’S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENDITURES

Water Sales Receipts

Metropolitan relies on receipts from water sales for about 75 to 80 percent of its total revenues. Metropolitan’s Board has adopted annual increases in water rates each year beginning with the rates effective January 1, 2004. See ~~METROPOLITAN REVENUES~~—Rate Structure” and —Classes of Water Service” in this Appendix A. Effective January 1, 2009, base water rates and charges increased by 9.8 percent plus a \$25 per acre-foot water supply surcharge. The combined impact was an increase of approximately 14.3 percent. Water rates and charges increased an average of 19.7 percent effective September 1, 2009, and the water supply surcharge was replaced by a \$69 per acre-foot Delta Supply Surcharge intended to recover the costs of additional water transfer purchases to augment State Water Project supplies and to be reduced as interim Delta improvements ease pumping restrictions, resulting in lower costs for additional supplies. See ~~METROPOLITAN’S WATER SUPPLY~~—State Water Project” and —Water Transfer, Storage and Exchange Programs” in this Appendix A. On April 14, 2009, Metropolitan’s Board directed staff to evaluate historical cost-of-service methodology with the intent to ensure that all rates and charges recover the full cost of service effective January 1, 2011. On April 13, 2010, Metropolitan’s Board adopted a Delta Supply Surcharge of \$51 and \$58 per acre-foot, effective January 1, 2011 and January 1, 2012, respectively, with corresponding base water rate increases of 7.5 percent. Increases in rates and charges reflect increasing operations and maintenance costs, including higher treatment costs, financing requirements of the approximately \$1.55 billion five-year CIP (covering the years 2013 to 2017), increasing State Water Project costs (including BDCP costs of approximately \$142 million over the five fiscal years ended June 30, 2012 through June 30, 2016 and excluding costs of a potential Bay-Delta conveyance project), rising demand management costs and water supply purchases, as well as reduced water sales.

Metropolitan’s financial projections in the above table assume that water sales will be 1.85 million acre-feet in fiscal year 2011-12, which includes 50,000 acre-feet of replenishment sales (see ~~METROPOLITAN REVENUES~~—Classes of Water Service—*Replenishment*”). This assumption is 150,000

acre-feet lower than the water sales included in the fiscal year 2011-12 budget. The lower sales reflect the impact of a number of factors, including an unusually cool summer, greater supplies from the Los Angeles Aqueduct system, the impacts of a sluggish economy, higher retail water rates and the results of Metropolitan's effective water conservation outreach associated with the imposition of Metropolitan's Water Supply Allocation Plan. Allocation of supplies under the Water Supply Allocation Plan was terminated effective April 13, 2011, removing potential penalties for member agency purchases of water in excess of their respective allocations. Predicted water sales for the fiscal year are updated monthly with actual sales for the year to date and compared to budget projections, for consideration in management of reserves and expenditures. Sales forecasts beyond fiscal year 2011-12 are: 1.8 million acre-feet in fiscal year 2012-13, 2.0 million acre-feet in fiscal year 2013-14, 2.0 million acre-feet in fiscal year 2014-15 and 1.95 million acre-feet in fiscal year 2015-16, assuming a return to more normal weather conditions, a recovering economy and population growth, notwithstanding impacts of conservation and projected increases in water rates. For purposes of comparison, Metropolitan's water sales were approximately 2.17 million acre-feet as recently as fiscal year 2008-09, before Metropolitan implemented its Water Supply Allocation Plan on July 1, 2009.

These financial projections reflect the Board's actions to increase water rates and charges by 7.5 percent, effective January 1, 2011 and 7.5 percent, effective January 1, 2012. Thereafter, rates and charges are projected to increase to recover costs. Actual rates and charges to be effective in 2013 and thereafter are subject to adoption by Metropolitan's Board and are estimated to require increases of approximately 5 percent per year, based on annual sales forecasts in the 1.8 to 2.0 million acre-feet range. If water sales are budgeted lower than the levels currently forecasted for fiscal years 2013-14 through 2015-16, then estimated rate increases may exceed 5 percent per year. See —Water Sales Projections" below. Metropolitan is required to fix rates and charges estimated to provide operating revenues which, together with other available revenues, are sufficient to pay Metropolitan's operating expenses and provide for payment of the interest and principal of its bonds and other costs. See —SECURITY AND SOURCES OF PAYMENT FOR THE SERIES 2011C BONDS – Rate Covenant" in the Official Statement.

Metropolitan has funded a Water Rate Stabilization Fund and a Water Treatment Surcharge Stabilization Fund with a portion of the water revenues collected. The Board's stated policy is to use moneys in these funds to mitigate the need to increase water rates as a result of annual variability in water sales. The Water Rate Stabilization and Revenue Remainder funds increased by \$35.7 million in fiscal year 2008-09 and decreased by \$29.0 million in fiscal year 2009-10. Given the lower than budgeted sales volumes, \$61 million was drawn from these funds during fiscal year 2010-11, which include \$13 million held in reserve in Metropolitan's General Fund pursuant to the exchange contract between Metropolitan and SDCWA (see METROPOLITAN's WATER SUPPLY—Colorado River Aqueduct — *Sale of Water by the Imperial Irrigation District to San Diego County Water Authority*"). This reserve is projected to increase by \$37 million to \$50 million by the end of fiscal year 2011-12. Metropolitan is currently projecting that, other than the \$37 million set aside for the SDCWA litigation, it will not draw down amounts in the Water Rate Stabilization Fund or the Water Revenue Remainder Fund during fiscal year 2011-12, primarily as a result of increases in its water rates and charges by 7.5 percent effective January 1, 2011 and by 7.5 percent effective January 1, 2012, projected increases in water sales and other cost containment efforts. However, if fiscal year 2011-12 water sales receipts fall below projections, then withdrawals from the Water Rate Stabilization Fund may be required to cover a revenue shortfall as described above.

The Long-Range Finance Plan adopted by the Board on March 9, 1999 provides for a minimum/maximum reserve policy based on Metropolitan's water sales during wet periods. Funds representing the minimum reserve level are held in the Water Revenue Remainder Fund, and any funds in excess of the minimum reserve level (up to the maximum reserve level) are held in the Water Rate Stabilization Fund. The maximum reserve level on June 30, 2011 was calculated to be \$483 million and the minimum reserve requirement as of June 30, 2011, was \$191 million. Actual reserves on June 30, 2011 totaled \$248 million (consisting of balances in the Water Rate Stabilization Fund and the Water Revenue Remainder Fund and \$13 million relating to the SDCWA litigation challenging Metropolitan's rate structure (see —METROPOLITAN REVENUES—Rate Structure")). The maximum reserve level on June 30, 2012 is projected to be \$491 million and the minimum reserve requirement as of June 30, 2012, is projected to be

\$198 million. The fund balances in the Water Rate Stabilization Fund and the Water Revenue Remainder Fund at that date are projected to total \$254 million, which includes \$50 million to be set aside for the SDCWA rate structure litigation. See —~~METROPOLITAN REVENUES~~—Financial Reserve Policy” and —~~CAPITAL INVESTMENT PLAN~~—Capital Investment Plan Financing” in this Appendix A.

Water Sales Projections

Metropolitan’s water sales projections are the result of a comprehensive retail demand, conservation, and local supply estimation process, including supply projections from member agencies and other water providers within Metropolitan’s service area. Retail demands for water are estimated with a model driven by projections of relevant demographics provided by SCAG and SANDAG. Retail demands are adjusted downward for conservation savings and local supplies, with the remainder being the estimated demand for Metropolitan supplies. Conservation savings estimates include all conservation programs in place to date as well as estimates of future conservation program goals that will result from regional 20 percent reductions by 2020 conservation savings. See —~~METROPOLITAN’S WATER SUPPLY~~—Water Conservation.” Local supplies include water produced by local agencies from various sources including but not limited to groundwater, surface water, locally-owned imported supplies, and recycled water (see —~~REGIONAL WATER RESOURCES~~”).

The water sales projections are used to determine water rates and charges. In adopting the budget and rates and charges for each fiscal year, Metropolitan’s board reviews the anticipated revenue requirements and projected water sales to determine the rates necessary to produce substantially the revenues to be derived from water sales during the fiscal year. Metropolitan sets rates and charges estimated to provide operating revenues sufficient, with other sources of funds, to provide for payment of its expenditures. See —Water Sales Receipts” above and —SECURITY AND SOURCES OF PAYMENT FOR THE SERIES 2011C BONDS – Rate Covenant” in the Official Statement.

Actual water sales are likely to vary from projections. Over the ten-year period from fiscal-year 2001-02 through 2010-11, actual water sales exceeded budgeted sales for the fiscal year in six fiscal years, with the greatest positive variance in fiscal year 2001-02 when actual sales of 2,267,500 acre-feet were 117 percent of budgeted sales (1,940,982 acre-feet). Actual sales were less than budgeted sales in four fiscal years, with the greatest negative variance in fiscal year 2010-11 when actual sales of 1,632,277 acre-feet were 85 percent of budgeted sales (1,927,875 acre-feet). Over the ten fiscal years from 2001-02 through 2010-11, average actual sales exceeded average budgeted sales by 2.2 percent. If actual sales exceed projections, the revenues from water sales during the fiscal year will exceed budget, resulting in an increase in financial reserves. (See —~~METROPOLITAN REVENUES~~—Financial Reserve Policy.”) If actual sales are less than projections, Metropolitan uses various tools to manage reductions in revenues, such as reducing expenditures below budgeted levels and drawing on reserves. Metropolitan considers actual sales, revenues and expenditures, and financial reserve balances in setting rates for future fiscal years.

Operation and Maintenance Expenditures

Operation and Maintenance Expenditures in fiscal year 2010-11 were \$852 million, which represented approximately 64 percent of total costs. These expenditures include the costs of labor, electrical power, materials and supplies of both Metropolitan and its contractual share of the State Water Project. The cost of power for pumping water through the aqueducts is a major component of this category of expenditures.

The 2011-12 estimated operation and maintenance expenditures are \$881 million. Metropolitan’s Board adopted a budget benchmark in September 2004 to limit the annual increase in departmental operations and maintenance budgets to no more than the five-year rolling average change in the Los Angeles/Orange/Riverside Counties consumer price index. The fiscal year 2011-12 projected departmental expenditures of \$333 million is approximately 5 percent higher than expenditures in fiscal years ending in 2010 and 2011.

POWER SOURCES AND COSTS

General

Current and future costs for electric power required for operating the pumping systems of the Colorado River Aqueduct and the State Water Project are a substantial part of Metropolitan's overall expenses. Expenditures for electric power for the Colorado River Aqueduct (not including credits from power sales and related revenues) for the fiscal years ended June 30, 2009, June 30, 2010, and June 30, 2011 were approximately \$37.4 million, \$42.4 million and \$46.9 million, respectively.

Expenditures for electric power and transmission service for the State Water Project were \$80.2 million (not including credits for prior period adjustments) for the fiscal year ended June 30, 2000, but increased to \$105.2 million for the fiscal year ended June 30, 2001 and \$187 million for the fiscal year ended June 30, 2002. As the market prices for energy declined from the crisis levels in 2000 and 2001, State Water Project power costs decreased to \$136.3 million for the fiscal year ended June 30, 2003. Expenditures for the fiscal years ended June 30, 2004, June 30, 2005 and June 30, 2006 were approximately \$182.3 million, \$176.8 million and \$201.4 million, respectively, showing the effect of more State Water Project deliveries. Expenditures for the fiscal years ended June 30, 2009, June 30, 2010 and June 30, 2011 were approximately \$154.5 million, \$156.1 million and \$189.8 million respectively.

Given the continuing uncertainty surrounding the electricity markets in California and in the electric industry in general, Metropolitan is unable to give any assurance with respect to the magnitude of its power costs.

Colorado River Aqueduct

Generally 55 to 70 percent of the power requirements for pumping at full capacity (1.25 million acre-feet of Colorado River water) in Metropolitan's Colorado River Aqueduct are secured through long-term contracts with the United States for energy generated from facilities located on the Colorado River (Hoover Power Plant and Parker Power Plant) and Edison. These contracts provide Metropolitan with reliable and economical power resources to pump Colorado River water to Metropolitan's service area until 2017, when only the Parker Power Plant contract will remain in effect. However, prior to 2017, the Western Area Power Administration will engage in a public process to determine the remarketing of Hoover Power after 2017. Based on other recent Western remarketing processes, long-term preference power contractors typically receive new long-term contracts with a slightly reduced share of power.

Approximately 30 to 45 percent of pumping power requirements for full utilization of the Colorado River Aqueduct is obtained through energy purchase agreements with municipal and investor-owned utilities or from power marketers. Gross diversions of water from Lake Havasu for the fiscal years ended June 30, 2009, June 30, 2010 and June 30, 2011 were approximately 1,028,000 acre-feet, 1,027,000 acre-feet and 1,005,397 acre-feet, respectively, including Metropolitan's basic apportionment of Colorado River water and supplies from water transfer and groundwater storage programs.

The Metropolitan-Edison 1987 Service and Interchange Agreement includes provisions for the sharing of energy savings realized by the integrated operation of Edison's and Metropolitan's electric systems. Under this agreement, with a previously normal maximum pumping operation of eight pumps, Edison provides Metropolitan additional energy (benefit energy) sufficient to pump approximately 100,000 acre-feet annually. As the amount of pumping is reduced, the amount of benefit energy provided by Edison increases.

Under maximum pumping conditions, Metropolitan can require up to one million megawatt-hours per year in excess of the base resources available to Metropolitan from the Hoover Power Plant, the Parker Power Plant, and Edison benefit energy. Metropolitan is a member of the Western Systems Power Pool ("WSPP"), and utilizes its industry standard form contract to make wholesale power purchases at market cost.

Metropolitan acquires the majority of its supplemental power from WSPP members. In calendar years 2009 and 2010, Metropolitan purchased 675,000 megawatt-hours and 755,000 megawatt-hours, respectively, of energy above its base power resources. In 2011, Metropolitan expects to pump approximately 700,000 acre-feet of Colorado River water and additional supplies from other Colorado River sources. At this pumping level, Metropolitan does not anticipate acquiring additional energy supplies above its base power resources.

State Water Project

The State Water Project's power requirements are met from a diverse mix of resources, including State-owned hydroelectric generating facilities. DWR has long-term contracts with Nevada Energy (coal-fired energy), Morgan Stanley (unspecified energy sources), Metropolitan (hydropower), Kern River Conservation District (hydropower) and the Northern California Power Agency (natural gas generation). The remainder of its power needs are met by short-term purchases. Metropolitan pays approximately 70 percent of State Water Project power costs.

DWR is seeking renewal of the license issued by the Federal Energy Regulatory Commission (FERC) for the State Water Project's Hyatt-Thermalito hydroelectric generating facilities at Lake Oroville. A Settlement Agreement containing recommended conditions for the new license was submitted to FERC in March 2006. That agreement was signed by over 50 stakeholders, including Metropolitan and other State Water Project contractors. With only a few minor modifications, FERC staff recommended that the Settlement Agreement be adopted as the condition for the new license. DWR issued a Final EIR for the relicensing project on July 22, 2008. On August 21, 2008, Butte County and Plumas County filed separate lawsuits against DWR challenging the adequacy of the Final EIR. This lawsuit also named all of the signatories to the Settlement Agreement as "real parties in interest," since they could be adversely affected by this litigation. Metropolitan and other State Water Project contractors are working closely with DWR and the California Attorney General in defending this lawsuit. Regulatory permits and authorizations are required before the new license can take effect, chief among these is a biological opinion from the National Marine Fisheries Service setting forth the terms and conditions under which the relicensing project must operate in order to avoid adverse impacts to threatened and endangered species. DWR has filed an application requesting this biological opinion. FERC has issued one-year renewals of the existing license since its initial expiration date on January 31, 2007, and is expected to issue successive one-year renewals until a new license is obtained.

DWR receives transmission service from investor-owned utilities under existing contracts and from the California Independent System Operator, a nonprofit public benefit corporation formed in 1996 pursuant to legislation that restructured and deregulated the electric utility industry in California. The transmission service provider may seek increased transmission rates, subject to the approval of FERC. DWR has the right to contest any such proposed increase. DWR may be subject to increases in the cost of transmission service as new electric grid facilities are constructed.

Energy Management Program

Metropolitan initiated its Energy Management Program in fall 2006 to help Metropolitan design and operate its facilities in the most energy-efficient and cost-effective manner. This program includes: setting design standards for energy-efficient facilities; taking advantage of available rebates for energy efficiency and energy-saving projects; operating Metropolitan's facilities in the most energy-efficient manner; and continuing to investigate alternative energy sources, such as solar and wind power. Metropolitan has completed energy efficiency assessments at all five of its water treatment plants and is evaluating recommendations for proposed changes. Metropolitan has completed construction of a one-megawatt solar generation facility at the Robert A. Skinner Treatment Plant and is investigating an additional nine megawatts of solar power generation at other treatment plants and facilities. Metropolitan has begun integrating fuel-efficient hybrid vehicles into its fleet and assessing the use of alternative fuels (biodiesel) for its off-road vehicles and construction equipment. Finally, Metropolitan is assessing the feasibility of expanding its hydroelectric generation capabilities.

In February 2007, the Board authorized Metropolitan's membership in the California Climate Action Registry, a nonprofit voluntary registry for greenhouse gas emissions that was established by the California Legislature in 2000. Metropolitan has completed and certified its baseline greenhouse gas inventory, or carbon footprint, for calendar years 2005 through 2009. In calendar year 2010, Metropolitan's emissions reporting transitioned from the California Climate Action Registry to the Climate Registry, a nonprofit North American emission registry that is a sister organization to California's registry. Metropolitan began reporting emissions to the Climate Registry with its calendar year 2009 report. Metropolitan also reported required emissions data for 2008 and 2009 to the California Air Resources Board (CARB) under mandatory reporting regulations adopted pursuant to AB 32, California's Global Warming Solutions Act. On December 16, 2010, CARB adopted a regulation for a California cap on greenhouse gas emissions under AB 32, to be implemented in 2012. The adopted "cap and trade" regulation will be further refined through additional workshops and public comment and may be returned to CARB's Board for further consideration before action is taken to finalize the regulation. In 2010, citizen groups filed suit in San Francisco Superior Court challenging CARB's underlying scoping plan for the regulation. On March 18, 2011, the Superior Court held that CARB failed to comply with CEQA and enjoined implementation of measures contained within the scoping plan until CEQA has been complied with. CARB is attempting to comply with the court's mandates in a manner that will avoid regulatory delay. If implemented, potential direct costs to Metropolitan for the cap and trade regulation could range from \$5 to \$10 million in the first year. Metropolitan staff completed a comprehensive Energy Management and Reliability Study in late 2009 and Metropolitan's Board adopted energy management policies in August 2010 that provide objectives for future energy-related projects to contain costs and reduce Metropolitan's exposure to energy price volatility, increase operational reliability through renewable energy projects, provide a revenue stream to offset energy costs and move Metropolitan toward energy independence.

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Appendix H

Water Supply Assessment Checklist

Water Supply Assessment Checklist

Water Code Section	Water Supply Assessment Content	Page # in WSA
10910(c)(2)	Incorporate data from UWMP.	1-26
10910(d)(1)	Identification of existing water supply entitlements, water rights, or water service contracts relevant to identified water supply for proposed project, and description of quantity of water received in prior years.	18-26
10910(d)(2)(A)	Written contracts or other proof of entitlement to an identified water supply.	18-26
10910(d)(2)(B)	Capital outlay program for financing the delivery of a water supply that has been adopted.	26
10910(d)(2)(C)	Federal, state, and local permits for construction of necessary infrastructure associated with delivering the water supply.	18-26
10910(d)(2)(D)	Any necessary regulatory approval to deliver/convey the water supply.	18-26
10910(f)(1)	Review of any information contained in the UWMP relevant to the identified water supply for the proposed project.	1-26
10910(f)(2)	Description of any groundwater basin(s) from which proposed project will be supplied. For basins with adjudicated groundwater pumping rights, include a copy of the order/decreed adopted by the court or the board and a description of quantity of groundwater public water system has the legal right to pump under the order/decreed.	20-21, Appendix E
10910(f)(3)	Description and analysis of amount and location of groundwater pumped for the past 5 years from any groundwater basin from which the proposed project will be supplied.	20-21
10910(f)(4)	Description and analysis of amount and location of groundwater that is projected to be pumped from any basin to provided water to the proposed project.	20-21
10910(f)(5)	Analysis of sufficiency of groundwater from the basins from which the proposed project will be supplied to meet projected water demand of the proposed project.	20-21