

The Water and Power Employees' Retirement Plan of the City of Los Angeles

**Actuarial Valuation and Review as of
July 1, 2013**



This report has been prepared at the request of the Board of Administration to assist in administering the Plan. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Board of Administration and may only be provided to other parties in its entirety. The measurements shown in this actuarial valuation may not be applicable for other purposes.

Copyright © 2013 by The Segal Group, Inc. All rights reserved.



100 Montgomery Street, Suite 500 San Francisco, CA 94104
T 415.263.8200 F 415.263.8290 www.segalco.com

October 1, 2013

*Board of Administration
The Water and Power Employees' Retirement Plan of the City of Los Angeles
111 North Hope Street, Room 357
Los Angeles, California 90012*

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of July 1, 2013. It summarizes the actuarial data used in the valuation, establishes the funding requirements for fiscal 2013-2014 and analyzes the preceding year's experience.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist in administering the Retirement Plan. The census information and financial information on which our calculations were based was prepared by the Retirement Office. That assistance is gratefully acknowledged.

The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period); and changes in plan provisions or applicable law.

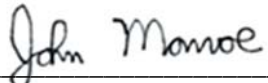
The actuarial calculations were completed under the supervision of John Monroe, ASA, MAAA, Enrolled Actuary. We are members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of our knowledge, the information supplied in the actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and the expectations for the Plan.

We look forward to reviewing this report at your next meeting and to answering any questions.

Sincerely,

Segal Consulting, a Member of The Segal Group, Inc.

By: 
*Paul Angelo, FSA, MAAA, EA, FCA
Senior Vice President and Actuary*


*John Monroe, ASA, MAAA, EA
Vice President and Associate Actuary*

EK/gxk

SECTION 1

VALUATION SUMMARY

Purpose	i
Significant Issues in Valuation Year.....	i
Summary of Key Valuation Results.....	iv

SECTION 2

VALUATION RESULTS

A. Member Data	1
B. Financial Information.....	4
C. Actuarial Experience.....	7
D. Required Contribution	12
E. Information Required by the GASB.....	14
F. Volatility Ratios	15

SECTION 3

SUPPLEMENTAL INFORMATION

EXHIBIT A Table of Plan Coverage.....	16
EXHIBIT B Members in Active Service as of June 30, 2013.....	17
EXHIBIT C Reconciliation of Member Data.....	18
EXHIBIT D Summary Statement of Income and Expenses on an Actuarial Value Basis	19
EXHIBIT E Summary Statement of Plan Assets.....	20
EXHIBIT F Development of the Fund Through June 30, 2013	21
EXHIBIT G Development of Unfunded Actuarial Accrued Liability for Year Ended June 30, 2013	22
EXHIBIT H Table of Amortization Bases...	23
EXHIBIT I Section 415 Limitations	24
EXHIBIT J Definitions of Pension Terms .	25
EXHIBIT K Actuarial Balance Sheet.....	27
EXHIBIT L Reserves and Designated Balances.....	28
EXHIBIT M Adjusted Reserves.....	29

SECTION 4

REPORTING INFORMATION

EXHIBIT I Summary of Actuarial Valuation Results.....	30
EXHIBIT II Supplementary Information Required by the GASB – Schedule of Employer Contributions	32
EXHIBIT III Supplementary Information Required by the GASB – Schedule of Funding Progress .	33
EXHIBIT IV Supplementary Information Required by the GASB	34
EXHIBIT V Development of the Net Pension Obligation (NPO) and the Annual Pension Cost Pursuant to GASB 27	35
EXHIBIT VI Actuarial Assumptions and Methods	36
EXHIBIT VII Summary of Plan Provisions ...	40

SECTION 1: Valuation Summary for The Water and Power Employees' Retirement Plan of the City of Los Angeles

Purpose

This report has been prepared by Segal Consulting to present a valuation of The Water and Power Employees' Retirement Plan of the City of Los Angeles as of July 1, 2013. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

- The benefit provisions of the Pension Plan, as administered by the Board;
- The characteristics of covered active members, inactive vested members, and retired members and beneficiaries as of March 31, 2013, provided by the Retirement Office;
- The assets of the Plan as of June 30, 2013, provided by the Retirement Office;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

Significant Issues in Valuation Year

The following key findings were the result of this actuarial valuation:

Ref: Pg. 22, 23

- The actuarial accrued liability exceeds the actuarial value of assets, resulting in an Unfunded Actuarial Accrued Liability (UAAL) of \$2.14 billion, which is an increase from \$2.12 billion in the previous valuation. The Board's funding policy determines the Department's required contribution as the normal cost increased or offset by a UAAL amortization charge or credit. Under this funding policy, the Plan's UAAL is amortized over various 15-year periods, each beginning with the year that each portion or base of the UAAL was first identified and amortized.

Ref: Pg. 12, 13

- The required contribution increased from 46.08% to 47.30% of pay for the 2013-2014 plan year, which is estimated to be \$425.8 million. This includes amortization of the components of the Plan's UAAL over 15-year fixed periods. Under the Plan's funding policy, the required contribution rate continues to be larger than the mandatory 110% matching of the employee contribution.

SECTION 1: Valuation Summary for The Water and Power Employees' Retirement Plan of the City of Los Angeles

Ref: Pg. 8

- The market value of assets earned a return of 12.5% for the July 1, 2012 to June 30, 2013 plan year. The actuarial value of assets earned a return of 5.1% for the July 1, 2012 to June 30, 2013 plan year due to the deferral of most of the current year investment gains and the recognition of prior investment gains and losses. This resulted in an actuarial loss of \$201.9 million when measured against the assumed rate of return of 7.75% per annum. This actuarial investment loss increased the Plan's required contribution by 2.49% of compensation.

Ref: Pg. 13

- The salaries for continuing actives increased by 3.1% from the amounts in effect on March 31, 2012 to the amounts in effect on March 31, 2013. Since this increase is less than the average assumed rate of approximately 5.5%, the plan experienced an actuarial gain from individual salary experience. This gain amounted to \$110.1 million for the current year, which decreased the Plan's required contribution by 1.36% of compensation.

Ref: Pg. 13

Ref: Pg. 5

- The total unrecognized return (i.e., the difference between the market value of assets and the "smoothed" actuarial value of assets) changed by \$528 million during the plan year from a \$259 million unrecognized loss in 2012 to a \$269 million unrecognized gain in 2013. This investment gain will be recognized in the determination of the actuarial value of assets over the next few years. This means that, if the Plan earns the assumed rate of investment return of 7.75% per year (net of expenses) on a **market value** basis, then the deferred gains will be recognized over the next few years as shown in the footnote in Chart 7.
- The unrecognized investment gains of \$269 million represent about 3.2% of the market value of assets. Unless offset by future investment losses or other unfavorable experience, the future recognition of the \$269 million in past market gains is expected to have an impact on the Plan's future funded ratio and required contributions. This potential impact may be illustrated as follows:
 - If the deferred gains were recognized immediately in the actuarial value assets, the funded percentage would increase from 78.8% to 81.5%.
 - If the deferred gains were recognized immediately in the actuarial value of assets, the required contribution would decrease from 47.30% of covered payroll to 43.98% of covered payroll.

Ref: Pg. 28

Ref: Pg. 5

- This year, the balance in the General Reserve and the Reserve for Investment Gains and Losses increased from \$1,802 million as of June 30, 2012 to \$1,843 million as of June 30, 2013. These two reserves track changes in the book value of assets. Consistent with prior valuations, this year we have been instructed to include all but \$83.1 million of the end of year General Reserve and Reserve for Investment Gains and Losses as valuation assets. The \$83.1 million amount is 1% of the end of year market value of assets.

SECTION 1: Valuation Summary for The Water and Power Employees' Retirement Plan of the City of Los Angeles

- The actuarial valuation report as of July 1, 2013 is based on financial information as of that date. Changes in the value of assets subsequent to that date, to the extent that they exist, are not reflected. Declines in asset values will increase the actuarial cost of the plan, while increases will decrease the actuarial cost of the plan.
- None of the recently negotiated benefit changes, including the new tier of benefits that affects new hires, are reflected in this valuation. The impact of the new tier will be addressed in a separate report.
- The results of this valuation do not reflect changes in the actuarial assumptions as recommended by Segal and documented in our Actuarial Experience Study for the period July 1, 2009 through June 30, 2012. These assumptions are under consideration by the Board, but they have not been officially adopted. We continue to recommend that the proposed assumptions be adopted and made effective in a future valuation. The adoption of all of the proposed assumptions would have increased the required contribution rate by about 8.5% of compensation in this valuation. The most significant of the proposed assumption changes is for the mortality assumption which alone would have increased the required contribution by 5.50% of compensation. Note that the current mortality table being used no longer includes a margin for future improvement in mortality.
- The Governmental Accounting Standards Board (GASB) approved two new Statements affecting the reporting of pension liabilities for accounting purposes. Statement 67 replaces Statement 25 and is for plan reporting. Statement 68 replaces Statement 27 and is for employer reporting. It is important to note that the new GASB rules only redefine pension expense for financial reporting purposes, and do not apply to contribution amounts for actual pension funding purposes. Employers and plans can still develop and adopt funding policies under current practices. Because these new Statements are not effective until the fiscal year ending June 30, 2014 for Plan reporting and the fiscal year ending June 30, 2015 for employer reporting, the financial reporting information in this report continues to be in accordance with Statements 25 and 27.

Ref: Pg. 32-35

SECTION 1: Valuation Summary for The Water and Power Employees' Retirement Plan of the City of Los Angeles

Summary of Key Valuation Results

	2013	2012
Contributions for plan year beginning July 1:		
Required under funding policy*	\$425,784,740	\$408,475,049
Percentage of payroll*	47.30%	46.08%
Funding elements for plan year beginning July 1:		
Total normal cost (beginning of year)	\$193,661,118	\$189,950,104
Market value of assets (MVA)	8,310,729,662	7,388,771,569
Actuarial value of assets (AVA)	7,958,487,587	7,573,885,754
Actuarial accrued liability (AAL)	10,094,867,871	9,692,602,852
Unfunded/(overfunded) actuarial accrued liability on AVA basis	2,136,380,284	2,118,717,098
Unfunded/(overfunded) actuarial accrued liability on MVA basis	1,784,138,209	2,303,831,283
Funded ratio on AVA basis (AVA/AAL)	78.84%	78.14%
Funded ratio on MVA basis (MVA/AAL)	82.33%	76.23%
GASB 25/27 for plan year beginning July 1:		
Annual pension cost	\$429,082,219	\$380,417,306
Actual contributions	--	368,426,348
Percentage contributed	--	96.85%
Covered payroll**	\$900,254,454	\$817,421,028
Demographic data for plan year beginning July 1:		
Number of retired members and beneficiaries	8,642	8,510
Number of vested former members***	1,555	1,648
Number of active members	8,913	8,962
Total compensation	\$900,254,454	\$886,539,366
Average compensation	\$101,005	\$98,922

* Required contributions are assumed to be paid at the middle of every year.

** For 2012, this represents the actual covered payroll for 2012-2013 as reported by the Retirement Office.

*** Includes terminated members due a refund of employee contributions and members receiving Permanent Total Disability (PTD) benefits.

SECTION 2: Valuation Results for The Water and Power Employees' Retirement Plan of the City of Los Angeles

A. MEMBER DATA

The Actuarial Valuation and Review considers the number and demographic characteristics of covered members, including active members, vested terminated members, retired members and beneficiaries.

This section presents a summary of significant statistical data on these member groups.

More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibits A, B, and C.

A historical perspective of how the member population has changed over the past ten valuations can be seen in this chart.

CHART 1
Member Population: 2004 – 2013

Year Ended June 30	Active Members	Vested Terminated Members*	Retired Members and Beneficiaries	Ratio of Non-Actives to Actives
2004	7,893	1,525	8,973	1.33
2005	7,967	1,397	8,868	1.29
2006	7,926	1,481	8,817	1.30
2007	7,993	1,535	8,746	1.29
2008	8,164	1,548	8,670	1.25
2009	8,868	1,742	8,505	1.16
2010	9,295	1,739	8,468	1.10
2011	9,203	1,694	8,496	1.11
2012	8,962	1,648	8,510	1.13
2013	8,913	1,555	8,642	1.14

**Includes terminated members due a refund of employee contributions and members receiving PTD benefits.*

SECTION 2: Valuation Results for The Water and Power Employees' Retirement Plan of the City of Los Angeles

Active Members

Plan costs are affected by the age, years of service and compensation of active members. In this year's valuation, there were 8,913 active members with an average age of 49.3, average years of service of 18.4 years and average compensation of \$101,005. The 8,962 active members in the prior valuation had an average age of 48.9, average service of 18.2 years and average compensation of \$98,922.

Inactive Members

In this year's valuation, there were 1,555 members with a vested right to a deferred or immediate vested benefit, or entitled to a return of their employee contributions, versus 1,648 in the prior valuation.

These graphs show a distribution of active members by age and by years of service.

CHART 2
Distribution of Active Members by Age as of June 30, 2013

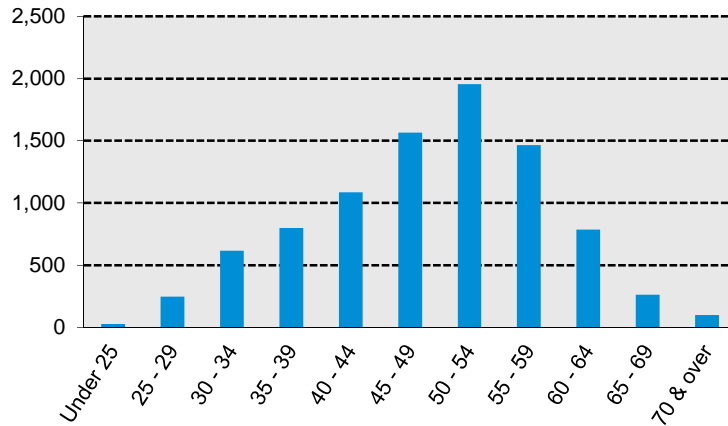
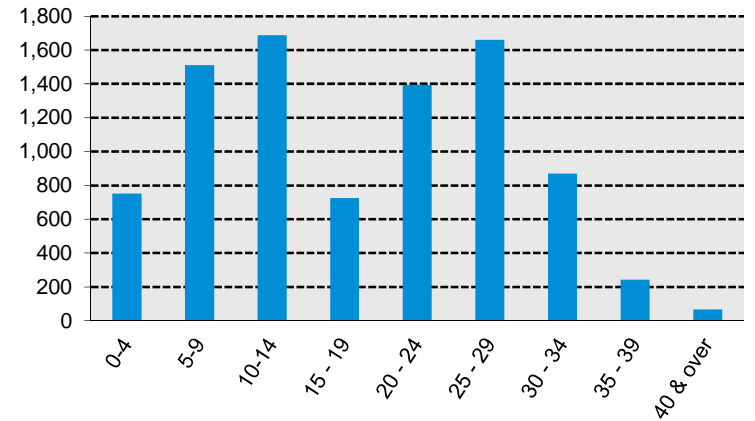


CHART 3
Distribution of Active Members by Years of Service as of June 30, 2013



SECTION 2: Valuation Results for The Water and Power Employees' Retirement Plan of the City of Los Angeles

Retired Members and Beneficiaries

As of June 30, 2013, 6,495 retired members and 2,147 beneficiaries were receiving total monthly benefits of \$37,501,928. For comparison, in the previous valuation, there were 6,458 retired members and 2,052 beneficiaries receiving monthly benefits of \$35,604,808.

These graphs show a distribution of the current retired members and beneficiaries based on their monthly amount and age.

CHART 4
Distribution of Retired Members and Beneficiaries by Type and by Monthly Amount as of June 30, 2013

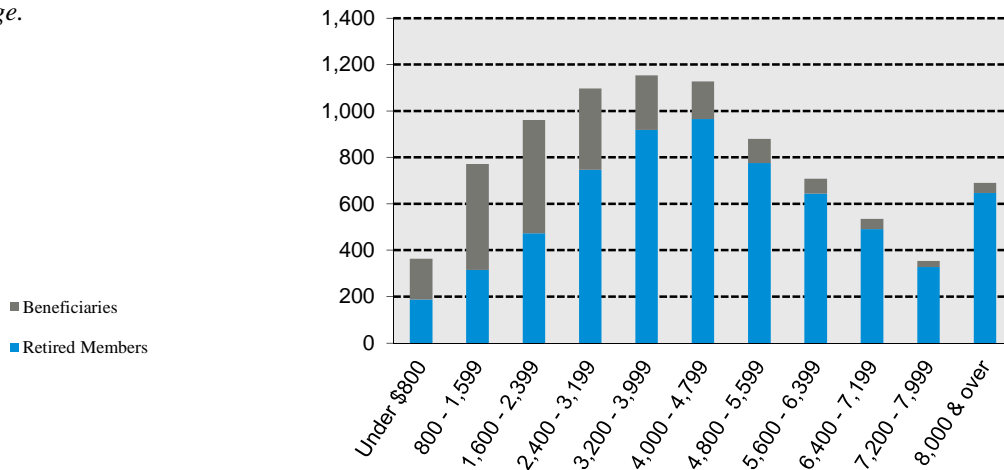
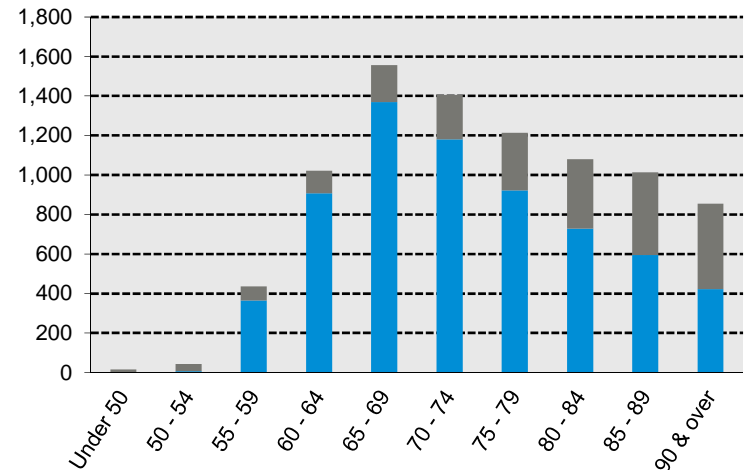


CHART 5
Distribution of Retired Members and Beneficiaries by Type and by Age as of June 30, 2013



SECTION 2: Valuation Results for The Water and Power Employees' Retirement Plan of the City of Los Angeles

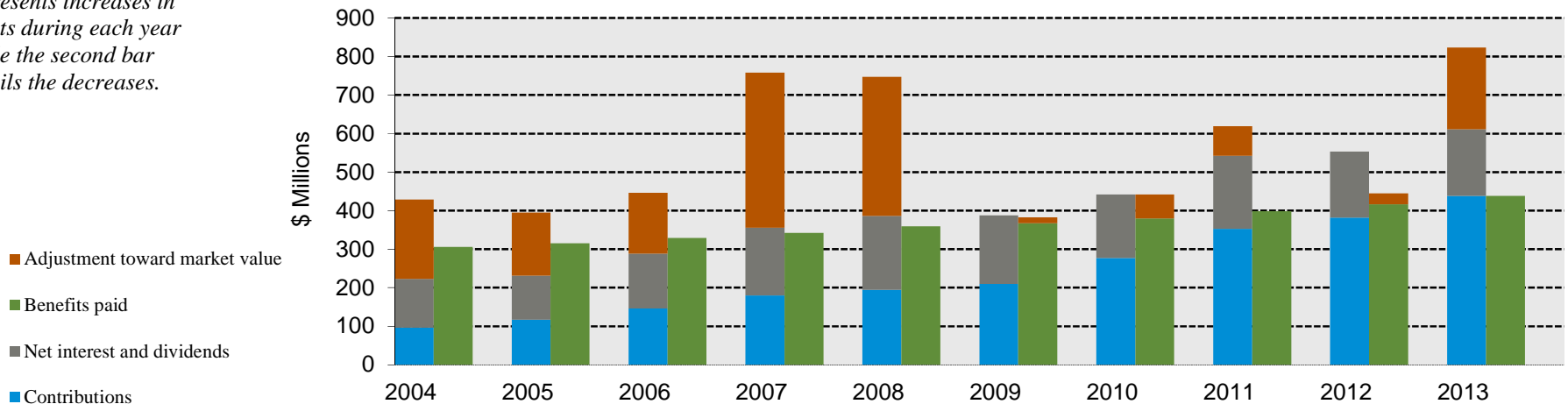
B. FINANCIAL INFORMATION

Retirement plan funding anticipates that, over the long term, both contributions and net investment earnings (less investment fees and administrative expenses) will be needed to cover benefit payments.

Retirement plan assets change as a result of the net impact of these income and expense components. Additional financial information, including a summary of these transactions for the valuation year, is presented in Section 3, Exhibits D, E and F.

The chart depicts the components of changes in the actuarial value of assets over the last ten years. Note: The first bar represents increases in assets during each year while the second bar details the decreases.

CHART 6
Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended June 30, 2004 – 2013



SECTION 2: Valuation Results for The Water and Power Employees' Retirement Plan of the City of Los Angeles

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable.

The amount of the adjustment to recognize market value is treated as income, which may be positive or negative.

Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

Please note that as instructed by Plan staff, we have included all but \$83.1 million (1% of the end of year market value of assets) in the General Reserve and Reserve for Investments Gains and Losses as valuation assets.

The chart shows the determination of the actuarial value of assets as of the valuation date.

CHART 7

Determination of Actuarial Value of Assets as of June 30, 2013

1	Market value of assets, June 30, 2013		\$8,310,729,662
2	Calculation of Unrecognized Return	<u>Original Amount*</u>	<u>Unrecognized Return**</u>
	(a) Year ended June 30, 2013	\$349,845,145	\$279,876,116
	(b) Year ended June 30, 2012	-568,288,259	-340,972,955
	(c) Year ended June 30, 2011	713,766,818	285,506,727
	(d) Year ended June 30, 2010	223,624,452	44,724,890
	(e) Year ended June 30, 2009	-1,610,405,832	<u>0</u>
	(f) Total Unrecognized Return***		269,134,778
3	Gross actuarial value: (1) - (2f)		8,041,594,884
4	Portion of General Reserve and Reserve for Investment Gains and Losses not included as valuation asset		83,107,297
5	Net actuarial value as of June 30, 2013: (3) - (4)		<u>\$7,958,487,587</u>
6	Net actuarial value as a percentage of market value: (5) / (1)		95.8%

* Total return minus expected return on a market value basis

** Recognition at 20% per year over 5 years

*** Deferred return as of June 30, 2013 recognized in each of the next 4 years:

(a)	Amount Recognized during 2013/2014	\$143,789,631
(b)	Amount Recognized during 2014/2015	\$99,064,741
(c)	Amount Recognized during 2015/2016	-\$43,688,623
(d)	Amount Recognized during 2016/2017	<u>\$69,969,029</u>

Subtotal \$269,134,778

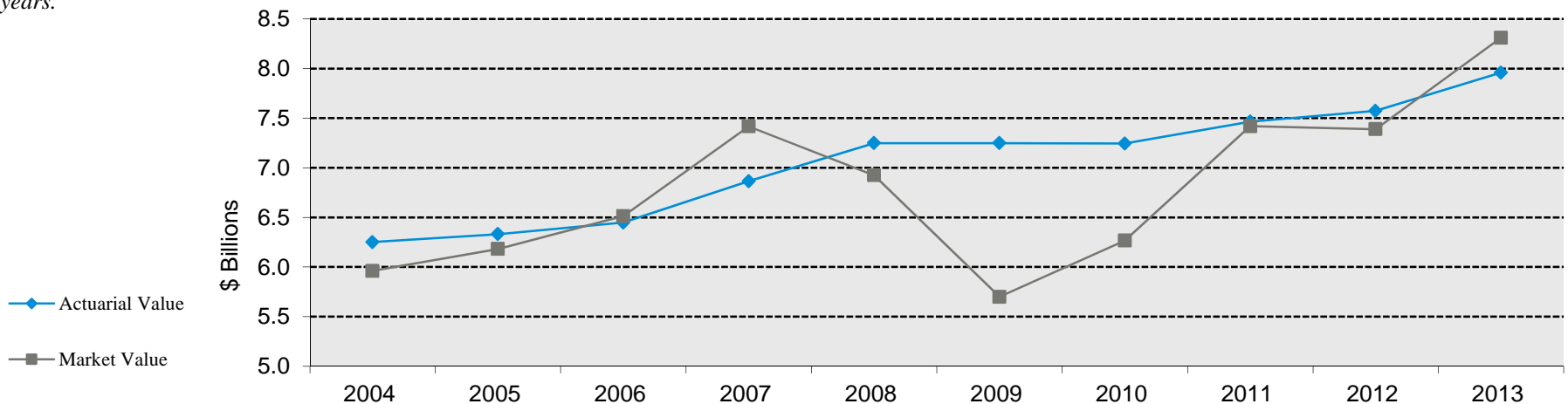
SECTION 2: Valuation Results for The Water and Power Employees' Retirement Plan of the City of Los Angeles

Both the actuarial value and market value of assets are representations of the LADWP's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets. The actuarial asset value is significant because the LADWP's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining the contribution requirement.

Note that in the chart below, actuarial value of assets are exclusive of a small portion of the General Reserve and Reserve for Investment Gains and Losses while that Reserve is included in the development of the Market Value of Assets.

This chart shows the change in the actuarial value of assets versus the market value over the past ten years.

CHART 8
Actuarial Value of Assets vs. Market Value of Assets as of June 30, 2004 – 2013



SECTION 2: Valuation Results for The Water and Power Employees' Retirement Plan of the City of Los Angeles

C. ACTUARIAL EXPERIENCE

To calculate the required contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), the contribution requirement will decrease from the previous year. On the other hand, the contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term

development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

The total loss is \$103,825,988, including \$201,857,464 from investment losses and \$98,031,476 in gains from all other sources. The net experience variation from individual sources other than investments was 1.0% of the actuarial accrued liability. A discussion of the major components of the actuarial experience is on the following pages.

This chart provides a summary of the actuarial experience during the past year.

CHART 9
Actuarial Experience for Year Ended June 30, 2013

1. Net loss from investments*	-\$201,857,464
2. Net gain from other experience**	<u>98,031,476</u>
3. Net experience loss: (1) + (2)	-\$103,825,988

* Details in Chart 10

** See Section 3, Exhibit G. Does not include the effect of Plan or assumption changes, if any.

SECTION 2: Valuation Results for The Water and Power Employees' Retirement Plan of the City of Los Angeles

Investment Rate of Return

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the LADWP's investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets is 7.75%. The actual rate of return on an actuarial basis for the 2012-2013 plan year was 5.08%.

Since the actual return for the year was less than the assumed return, the LADWP experienced an actuarial loss during the year ended June 30, 2013 with regard to its investments.

This chart shows the gain/(loss) due to investment experience.

CHART 10
Market and Actuarial Value Investment Experience for Year Ended June 30, 2013

	Market Value	Actuarial Value
1. Actual return	\$922,455,661	\$385,099,401
2. Average value of assets	7,388,522,785	7,573,636,970
3. Actual rate of return: (1) ÷ (2)	12.48%	5.08%
4. Assumed rate of return	7.75%	7.75%
5. Expected return: (2) x (4)	\$572,610,516	\$586,956,865
6. Actuarial gain/(loss): (1) – (5)	<u>\$349,845,145</u>	<u>-\$201,857,464</u>

SECTION 2: Valuation Results for The Water and Power Employees' Retirement Plan of the City of Los Angeles

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. The chart below shows the rate of return on an actuarial basis compared to the market value investment return for the last ten years, including five-year and ten-year averages.

CHART 11

Investment Return – Actuarial Value vs. Market Value: 2004 - 2013

Year Ended June 30	Net Interest and Dividend Income		Recognition of Capital Appreciation		Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
2004	\$126,468,819	2.10%	\$205,922,559	3.42%	\$332,391,378	5.52%	\$611,980,245	11.22%
2005	114,263,238	1.86	164,012,112	2.66	278,275,350	4.52	419,463,599	7.16
2006	142,834,044	2.29	157,384,016	2.52	300,218,060	4.81	514,526,795	8.45
2007	175,884,502	2.76	402,557,938	6.33	578,442,440	9.09	1,066,710,135	16.58
2008	191,456,313	2.82	361,168,481	5.33	552,624,794	8.15	-324,830,786	-4.43
2009	178,210,091	2.49	-15,044,818	-0.21	163,165,273	2.28	-1,062,966,407	-15.53
2010	165,427,697	2.30	-61,931,590	-0.86	103,496,107	1.44	675,223,168	11.96
2011	189,663,213	2.63	76,943,548	1.06	266,606,761	3.69	1,197,629,301	19.18
2012	171,625,847	2.30	-28,332,250	-0.38	143,293,597	1.92	5,273,279	0.07
2013	<u>173,531,364</u>	2.29	<u>211,568,037</u>	2.79	<u>385,099,401</u>	5.08	<u>922,455,661</u>	12.48
Total	\$1,629,365,128		\$1,474,248,033		\$3,103,613,161		\$4,025,464,990	
					Five-year average return	2.90%		5.16%
					Ten-year average return	4.55%		6.21%

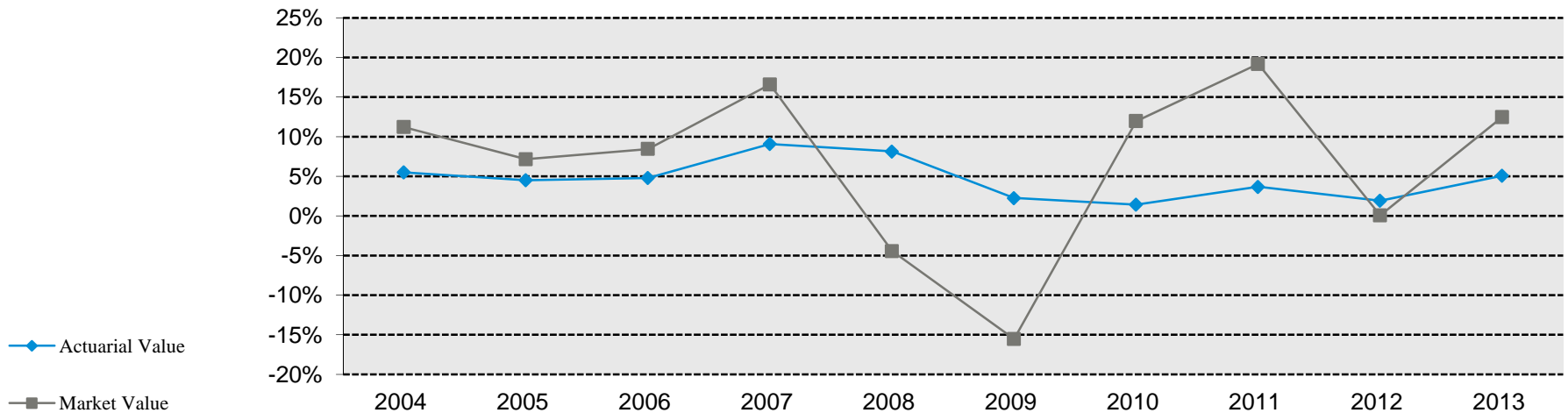
Note: Each year's yield is weighted by the average asset value in that year.

SECTION 2: Valuation Results for The Water and Power Employees' Retirement Plan of the City of Los Angeles

Subsection B described the actuarial asset valuation method that gradually takes into account fluctuations in the market value rate of return. The effect of this is to stabilize the actuarial rate of return, which contributes to leveling pension plan costs.

This chart illustrates how this leveling effect has actually worked over the years 2004 - 2013.

CHART 12
Market and Actuarial Rates of Return for Years Ended June 30, 2004 - 2013



SECTION 2: Valuation Results for The Water and Power Employees' Retirement Plan of the City of Los Angeles

Other Experience

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- the extent of turnover among the participants,
- retirement experience (earlier or later than expected),
- mortality (more or fewer deaths than expected), and
- salary increases different than assumed.

The net gain from this other experience for the year ended June 30, 2013 amounted to \$98,031,476, which is 1.0% of the actuarial accrued liability.

This gain is mainly the result of lower individual salary increases than expected. See Section 3, Exhibit G for a detailed development of the Unfunded Actuarial Accrued Liability.

SECTION 2: Valuation Results for The Water and Power Employees' Retirement Plan of the City of Los Angeles

D. REQUIRED CONTRIBUTION

The required Department contribution is made up of (a) the normal cost and (b) the amortization of the unfunded or overfunded actuarial accrued liability. For this year, an amortization base is created for the actuarial loss during the plan year ending June 30, 2013. This produces a net total amortization charge of \$274,005,748.

Under the current funding policy, the Department's required contribution rate increased as a percentage of pay. This was primarily the result of the "smoothed" investment return being less than assumed.

The chart compares this valuation's recommended contribution with the prior valuation.

CHART 13

Required Contribution

Year Beginning July 1:	2013		2012	
	Amount	% of Payroll	Amount	% of Payroll
1. Total normal cost	\$193,661,118	21.51%	\$189,950,104	21.43%
2. Expected employee contributions	<u>-57,765,793</u>	<u>-6.41%</u>	<u>-56,478,914</u>	<u>-6.37%</u>
3. Employer normal cost: (1) + (2)	\$135,895,325	15.10%	\$133,471,190	15.06%
4. Actuarial accrued liability	10,094,867,871		9,692,602,852	
5. Actuarial value of assets	<u>7,958,487,587</u>		<u>7,573,885,754</u>	
6. Unfunded actuarial accrued liability: (4) - (5)	\$2,136,380,284		\$2,118,717,098	
7. Amortization of unfunded actuarial accrued liability	274,005,748	30.44%	259,765,921	29.30%
8. Total required contribution: (3) + (7), adjusted for timing*	<u>425,784,740</u>	<u>47.30%</u>	<u>408,475,049</u>	<u>46.08%</u>
9. Employer match (110% of (2)), adjusted for timing*	66,004,639	7.33%	64,534,219	7.28%
10. Greater of employer match (9) or total required contribution (8)	<u>\$425,784,740</u>	<u>47.30%</u>	<u>\$408,475,049</u>	<u>46.08%</u>
11. Projected compensation	\$900,254,454		\$886,539,366	

* Required contributions are assumed to be paid at the middle of every year.

SECTION 2: Valuation Results for The Water and Power Employees' Retirement Plan of the City of Los Angeles

The contribution requirements as of July 1, 2013 are based on all of the data described in the previous sections, the actuarial assumptions described in Section 4, and the Plan provisions adopted at the time of preparation of the Actuarial Valuation. They include all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions.

Reconciliation of Required Contribution

The chart below details the changes in the required contribution rate from the prior valuation to the current year's valuation.

The chart reconciles the required contribution rate from the prior valuation to the amount determined in this valuation.

CHART 14

Reconciliation of Required Contribution Rate from July 1, 2012 to July 1, 2013

Required Contribution Rate as of July 1, 2012	46.08%
Effect of investment loss	2.49%
Effect of actual contributions less than expected contributions	0.36%
Effect of gains on individual salary experience	-1.36%
Effect of increase in total payroll on UAAL amortization rate	-0.46%
Effect of gains on 2012 COLA experience	-0.21%
Effect of other experience*	<u>0.40%</u>
Total change	<u>1.22%</u>
Required Contribution Rate as of July 1, 2013	47.30%

* Includes effect of differences in actual versus expected experience including mortality, disability, withdrawal and retirement experience.

SECTION 2: Valuation Results for The Water and Power Employees' Retirement Plan of the City of Los Angeles

E. INFORMATION REQUIRED BY THE GASB

Governmental Accounting Standards Board (GASB) reporting information provides standardized information for comparative purposes of governmental pension plans. This information allows a reader of the financial statements to compare the funding status of one governmental plan to another on relatively equal terms.

Critical information to the GASB is the historical comparison of the GASB required contribution to the actual contributions. This comparison demonstrates whether a plan is being funded within the range of the GASB reporting requirements. Chart 15 below presents a graphical representation of this information for the Plan.

The other critical piece of information regarding the Plan's financial status is the funded ratio. This ratio compares the actuarial value of assets to the actuarial accrued liabilities of the Plan as calculated under the GASB Standards. High ratios indicate a well-funded plan with assets sufficient to cover the plan's actuarial accrued liabilities. Lower ratios may indicate recent changes to benefit structures, funding of the plan below actuarial requirements, poor asset performance, or a variety of other factors. This information is shown in Chart 16.

The details regarding the calculations of these values and other GASB numbers may be found in Section 4, Exhibits II, III, and IV.

These graphs show key GASB factors.

CHART 15
Required Versus Actual Contributions

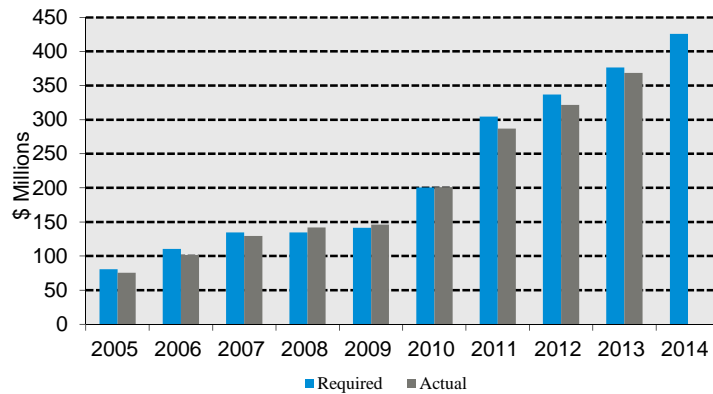
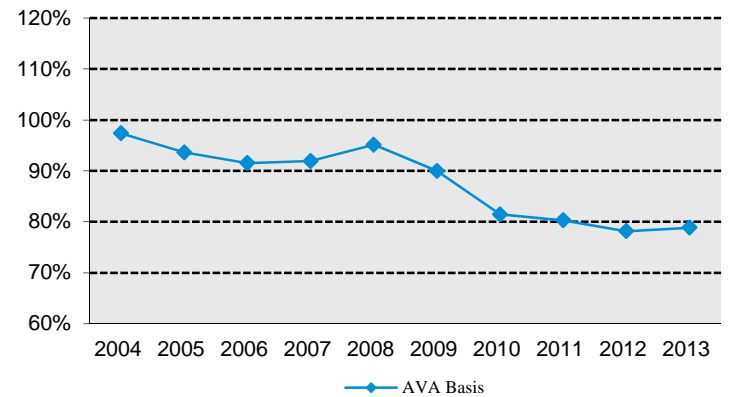


CHART 16
Funded Ratio



SECTION 2: Valuation Results for The Water and Power Employees' Retirement Plan of the City of Los Angeles

F. VOLATILITY RATIOS

Retirement plans are subject to volatility in the level of required contributions. This volatility tends to increase as retirement plans become more mature.

The Asset Volatility Ratio (AVR), which is equal to the market value of assets divided by total payroll, provides an indication of the potential contribution volatility for any given level of investment volatility. A higher AVR indicates that the plan is subject to a greater level of contribution volatility. This is a current measure since it is based on the current level of assets.

For LADWP, the current AVR is about 9.2. This means that a 1% asset gain/(loss) (relative to the assumed investment return) translates to about 9.2% of one-year's payroll. Since LADWP amortizes actuarial gains and losses over a period of 15 years, there would be a 1.0% of payroll decrease/(increase) in the required contribution for each 1% asset gain/(loss).

The Liability Volatility Ratio (LVR), which is equal to the Actuarial Accrued Liability divided by payroll, provides an indication of the longer-term potential for contribution volatility for any given level of investment volatility. This is because, over an extended period of time, the plan's assets should track the plan's liabilities. For example, if a plan is 50% funded on a market value basis, the liability volatility ratio would be double the asset volatility ratio and the plan sponsor should expect contribution volatility to increase over time as the plan becomes better funded.

The LVR also indicates how volatile contributions will be in response to changes in the Actuarial Accrued Liability due to actual experience or to changes in actuarial assumptions.

For LADWP, the current LVR is about 11.2. This is about 22% higher than the AVR. Therefore, we would expect that contribution volatility will increase over the long-term.

This chart shows how the asset and liability volatility ratios have varied over time.

CHART 17
Volatility Ratios for Years Ended June 30, 2008 – 2013

Year Ended June 30	Asset Volatility Ratio	Liability Volatility Ratio
2008	9.8	10.8
2009	7.1	10.0
2010	7.3	10.4
2011	8.5	10.7
2012	8.3	10.9
2013	9.2	11.2

SECTION 3: Supplemental Information for The Water and Power Employees' Retirement Plan of the City of Los Angeles

EXHIBIT A

Table of Plan Coverage

Category	Year Ended June 30		Change From Prior Year
	2013	2012	
Active members in valuation:			
Number	8,913	8,962	-0.5%
Average age	49.3	48.9	N/A
Average years of service	18.4	18.2	N/A
Projected total compensation	\$900,254,454	\$886,539,366	1.5%
Projected average compensation	101,005	98,922	2.1%
Account balances	1,195,199,080	1,119,766,468	6.7%
Vested terminated members:*			
Number	1,555	1,648	-5.6%
Average age	53.8	52.1	N/A
Average account balances	\$54,372	\$50,530	7.6%
Retired members:			
Number in pay status	6,495	6,458	0.6%
Average age	73.3	73.3	N/A
Average monthly benefit	\$4,844	\$4,654	4.1%
Beneficiaries:			
Number in pay status	2,147	2,052	4.6%
Average age	79.6	80.4	N/A
Average monthly benefit	\$2,813	\$2,705	4.0%

* Includes terminated members due a refund of contributions and members receiving PTD benefits.

SECTION 3: Supplemental Information for The Water and Power Employees' Retirement Plan of the City of Los Angeles

EXHIBIT B

**Members in Active Service as of June 30, 2013
By Age, Years of Service, and Average Compensation**

Age	Years of Service									
	Total	0-4	5-9	10-14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 & over
Under 25	29	29	--	--	--	--	--	--	--	--
	\$88,614	\$88,614	--	--	--	--	--	--	--	--
25 - 29	249	144	104	1	--	--	--	--	--	--
	95,512	94,824	\$96,247	\$118,078	--	--	--	--	--	--
30 - 34	616	171	311	128	6	--	--	--	--	--
	97,887	92,640	98,716	102,979	\$95,840	--	--	--	--	--
35 - 39	799	117	302	322	58	--	--	--	--	--
	94,219	88,122	92,685	98,379	91,413	--	--	--	--	--
40 - 44	1,087	83	289	401	178	132	4	--	--	--
	95,026	91,266	90,072	92,774	98,205	\$110,971	\$89,226	--	--	--
45 - 49	1,565	78	199	306	178	479	320	5	--	--
	102,669	90,733	89,147	93,198	101,457	112,939	108,321	\$104,117	--	--
50 - 54	1,954	60	158	248	142	374	631	325	16	--
	104,499	91,641	87,582	92,660	93,851	103,577	111,151	116,562	\$111,957	--
55 - 59	1,464	42	96	163	88	229	405	339	101	1
	106,383	97,621	90,562	89,706	95,022	106,494	108,061	119,355	111,554	\$86,690
60 - 64	786	23	38	79	53	124	206	139	94	30
	100,323	83,083	85,557	87,606	98,120	97,991	102,751	104,963	109,789	111,426
65 - 69	264	3	10	33	16	42	68	49	25	18
	100,004	62,674	83,497	90,508	94,103	93,374	104,916	106,037	103,608	113,538
70 & over	100	2	4	7	7	15	27	13	7	18
	91,621	55,463	51,611	78,289	97,771	98,264	87,209	96,914	95,267	103,166
Total	8,913	752	1,511	1,688	726	1,395	1,661	870	243	67
	\$101,005	\$91,538	\$92,189	\$94,049	\$97,102	\$107,109	\$108,113	\$114,839	\$109,611	\$109,405

SECTION 3: Supplemental Information for The Water and Power Employees' Retirement Plan of the City of Los Angeles

EXHIBIT C

Reconciliation of Member Data

	Active Members	Vested Former Members*	Retired Members	Beneficiaries	Total
Number as of July 1, 2012	8,962	1,648	6,458	2,052	19,120
New members	260	N/A	N/A	N/A	260
Terminations – with vested rights	-15	15	N/A	N/A	0
Retirements	-265	-26	291	N/A	0
Died with beneficiary	-3	-1	-98	102	0
Died without beneficiary	-18	-2	-153	-146	-319
Rehire	11	-11	0	N/A	0
Data adjustments	0	0	-3	139**	136
Contribution refunds	<u>-19</u>	<u>-68</u>	<u>N/A</u>	<u>N/A</u>	<u>-87</u>
Number as of July 1, 2013	8,913	1,555	6,495	2,147	19,110

* Includes terminated members due a refund of member contributions and members receiving PTD benefits.

** Includes 120 assignee records for Options B and C. Last year the benefit for these assignees was combined with the benefit for the corresponding retired members.

SECTION 3: Supplemental Information for The Water and Power Employees' Retirement Plan of the City of Los Angeles

EXHIBIT D

Summary Statement of Income and Expenses on an Actuarial Value Basis

	Year Ended June 30, 2013	Year Ended June 30, 2012
Net assets at actuarial value at the beginning of the year	\$7,573,885,754	\$7,465,183,643
Contribution income:		
Employer contributions	\$368,426,348	\$321,688,919
Employee contributions	69,633,449	60,105,653
Administrative expense contributions*	<u>4,392,846</u>	<u>5,428,297</u>
Net contribution income	\$442,452,643	\$387,222,869
Investment income:		
Interest, dividends and other income	\$189,623,649	\$186,808,735
Adjustment toward market value	211,568,037	-28,332,250
Less investment and administrative fees	<u>-20,485,131</u>	<u>-20,611,185</u>
Net investment income	<u>380,706,555</u>	<u>137,865,300</u>
Total income available for benefits	\$823,159,198	\$525,088,169
Less benefit payments:		
Retirement benefits paid	-\$432,738,112	-\$410,859,162
Refund of members' contributions	<u>-5,819,253</u>	<u>-5,526,896</u>
Net benefit payments	-\$438,557,365	-\$416,386,058
Change in reserve for future benefits	\$384,601,833	\$108,702,111
Net assets at actuarial value at the end of the year	\$7,958,487,587	\$7,573,885,754

* Included as investment income in other parts of this report (excluding Exhibit F).

SECTION 3: Supplemental Information for The Water and Power Employees' Retirement Plan of the City of Los Angeles

EXHIBIT E

Summary Statement of Plan Assets

	Year Ended June 30, 2013	Year Ended June 30, 2012
Cash equivalents	\$9,499,976	\$12,177,668
Accounts receivable:		
Accrued investment income	\$19,076,213	\$21,919,418
Open investment trades and others	287,853,048	145,055,542
Securities lending - collateral	313,092,487	490,027,647
Department of Water and Power	<u>51,374,267</u>	<u>44,262,520</u>
Total accounts receivable	671,396,015	701,265,127
Investments:		
Fixed income	\$2,015,837,548	\$2,030,007,946
Equities	5,189,194,044	4,444,125,783
Other assets	<u>1,119,613,544</u>	<u>921,362,911</u>
Total investments at market value	<u>8,324,645,136</u>	<u>7,395,496,640</u>
Total assets	\$9,005,541,127	\$8,108,939,435
Less accounts payable:		
Written options	\$0	-\$10,398,060
Accounts payable	-381,718,978	-219,742,159
Security lending - collateral	<u>-313,092,487</u>	<u>-490,027,647</u>
Total accounts payable	-\$694,811,465	-\$720,167,866
Net assets at market value	<u>\$8,310,729,662</u>	<u>\$7,388,771,569*</u>
Net assets at actuarial value	<u>\$7,958,487,587</u>	<u>\$7,573,885,754</u>

* Based on draft financial statements. Subsequent to June 30, 2012 valuation, the market value of assets was changed to \$7,384,143,876.

SECTION 3: Supplemental Information for The Water and Power Employees' Retirement Plan of the City of Los Angeles

EXHIBIT F

Development of the Fund Through June 30, 2013

Year Ended June 30	Employer Contributions	Employee Contributions*	Other Contributions	Net Investment Return**	Benefit Payments	Actuarial Value of Assets at End of Year
2004	\$55,804,924	\$38,045,999	\$2,452,293	\$332,391,378	\$305,649,192	\$6,251,421,125
2005	75,490,143	38,855,089	2,534,097	278,275,350	315,528,276	6,331,047,528
2006	101,556,257	41,324,895	2,914,174	300,218,060	329,297,478	6,447,763,436
2007	129,154,539	47,060,446	3,549,724	578,442,440	341,886,580	6,864,084,005
2008	141,862,126	48,694,047	4,195,096	548,429,698	359,411,739	7,247,853,233
2009	145,941,275	59,405,012	4,088,598	159,076,675	367,643,541	7,248,721,252
2010	201,034,807	71,246,053	4,463,141	99,032,966	380,068,530	7,244,429,689
2011	286,699,384	65,965,607	5,672,227	260,934,534	398,517,798	7,465,183,643
2012	321,688,919	60,105,653	5,428,297	137,856,300	416,386,058	7,573,885,754
2013	368,426,348	69,633,449	4,392,846	380,706,555	438,557,365	7,958,487,587

* Includes member normal contributions, Additional Annuity program contributions and contributions due to open contracts for purchased service.

** Net of investment fees and administrative expenses.

SECTION 3: Supplemental Information for The Water and Power Employees' Retirement Plan of the City of Los Angeles

EXHIBIT G

Development of Unfunded Actuarial Accrued Liability for Year Ended June 30, 2013

1. Unfunded actuarial accrued liability at beginning of year		\$2,118,717,098
2. Normal cost at beginning of year		189,950,104
3. Total actual contributions (employer and employee)		-438,059,797
4. Interest		
(a) For whole year on (1) + (2)	\$178,921,708	
(b) For half year on (3)	<u>-16,974,817</u>	
(c) Total interest		<u>161,946,891</u>
5. Expected unfunded actuarial accrued liability		\$2,032,554,296
6. Changes due to:*		
(a) Investment loss	\$201,857,464	
(b) Gains on individual salary experience	-110,100,505	
(c) Gains on 2012 COLA experience	-17,143,854	
(d) Other losses	<u>29,212,883</u>	
(e) Total changes		<u>103,825,988</u>
7. Unfunded actuarial accrued liability at end of year		<u>\$2,136,380,284</u>

Note: The "Net gain from other experience" of \$98,031,476 shown in Section 2, Chart 9 is equal to the sum of items 6(b), 6(c) and 6(d).

** Does not include a contribution loss of \$29,534,403 during the year from actual contributions less than expected.*

SECTION 3: Supplemental Information for The Water and Power Employees' Retirement Plan of the City of Los Angeles

EXHIBIT H

Table of Amortization Bases

Type*	Date Established	Initial Years	Initial Amount	Annual Payment**	Years Remaining	Outstanding Balance
Combined Base	07/01/2004	15	\$170,392,797	\$18,283,483	6.00	\$91,767,674
Actuarial Loss	07/01/2005	15	267,915,003	28,722,367	7.00	162,515,479
Actuarial Loss	07/01/2006	15	183,420,211	19,647,075	8.00	122,817,474
Actuarial Loss	07/01/2007	15	47,238,833	5,055,793	9.00	34,387,290
Assumption Changes	07/01/2007	15	-18,102,738	-1,937,467	9.00	-13,177,803
Actuarial Gain	07/01/2008	15	-204,179,457	-21,835,001	10.00	-159,665,284
Actuarial Loss	07/01/2009	15	457,336,004	48,869,647	11.00	380,519,038
Plan Amendments	07/01/2009	15	2,239,982	239,358	11.00	1,863,742
Actuarial Loss	07/01/2010	15	626,174,290	66,861,029	12.00	550,023,240
Assumption Changes	07/01/2010	15	255,885,598	27,322,703	12.00	224,766,537
Actuarial Loss	07/01/2011	15	268,017,929	28,618,158	13.00	247,108,566
Plan Amendments	07/01/2011	15	-6,948,892	-741,982	13.00	-6,406,774
Actuarial Loss	07/01/2012	15	380,800,633	40,660,759	14.00	366,500,714
Actuarial Loss	07/01/2013	15	133,360,391	<u>14,239,826</u>	15.00	<u>133,360,391</u>
Total				\$274,005,748		\$2,136,380,284

* The outstanding July 1, 2004 amortization bases were combined into a single amortization base and amortized over 15 years.

** Level dollar amount.

SECTION 3: Supplemental Information for The Water and Power Employees' Retirement Plan of the City of Los Angeles

EXHIBIT I

Section 415 Limitations

Section 415 of the Internal Revenue Code (IRC) specifies the maximum benefits that may be paid to an individual from a defined benefit plan and the maximum amounts that may be allocated each year to an individual's account in a defined contribution plan.

A qualified pension plan may not pay benefits in excess of the Section 415 limits. The ultimate penalty for non-compliance is disqualification: active participants could be taxed on their vested benefits and the IRS may seek to tax the income earned on the plan's assets.

In particular, Section 415(b) of the IRC limits the maximum annual benefit payable at the Normal Retirement Age to a dollar limit of \$160,000 indexed for inflation. That limit is \$205,000 for 2013. Normal Retirement Age for these purposes is age 62. These are the limits in simplified terms. They must be adjusted based on each participant's circumstances, for such things as age at retirement, form of benefits chosen and after tax contributions.

Benefits in excess of the limits may be paid through a qualified governmental excess plan that meets the requirements of Section 415(m).

Legal Counsel's review and interpretation of the law and regulations should be sought on any questions in this regard.

Contribution rates determined in this valuation have not been reduced for the Section 415 limitation. Actual limitations will result in gains when they occur.

SECTION 3: Supplemental Information for The Water and Power Employees' Retirement Plan of the City of Los Angeles

EXHIBIT J

Definitions of Pension Terms

The following list defines certain technical terms for the convenience of the reader:

Assumptions or Actuarial

Assumptions:

The estimates on which the cost of the Plan is calculated including:

- (a) Investment return — the rate of investment yield that the Plan will earn over the long-term future;
- (b) Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates;
- (c) Retirement rates — the rate or probability of retirement at a given age;
- (d) Turnover rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.

Normal Cost:

The amount of contributions required to fund the benefit allocated to the current year of service.

Actuarial Accrued Liability

For Actives:

The value of all projected benefit payments for current members less the portion that will be paid by future normal costs.

Actuarial Accrued Liability

For Pensioners:

The single-sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and the interest that the sum is expected to earn before it is entirely paid out in benefits.

Unfunded Actuarial Accrued

Liability:

The extent to which the actuarial accrued liability of the Plan exceeds the assets of the Plan.

SECTION 3: Supplemental Information for The Water and Power Employees' Retirement Plan of the City of Los Angeles

Amortization of the Unfunded Actuarial Accrued Liability:

Payments made over a period of years equal in value to the Plan's unfunded actuarial accrued liability.

Investment Return:

The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.

SECTION 3: Supplemental Information for The Water and Power Employees' Retirement Plan of the City of Los Angeles

EXHIBIT K

Actuarial Balance Sheet

An overview of the Plan's funding is given by an Actuarial Balance Sheet. In this approach, we first determine the amount and timing of all future payments that will be made by the Plan for current participants. We then discount these payments at the valuation interest rate to the date of the valuation, thereby determining their present value. We refer to this present value as the "liability" of the Plan.

Second, we determine how this liability will be met. These actuarial "assets" include the net amount of assets already accumulated by the Plan, the present value of future member contributions, the present value of future Department normal cost contributions, and the present value of future Department amortization payments or credits.

Actuarial Balance Sheet

Assets

	June 30, 2013	June 30, 2012
1. Total actuarial value of assets	\$7,958,487,587	\$7,573,885,754
2. Present value of future contribution by members	525,926,011	521,560,577
3. Present value of future Department contributions for:		
(a) entry age normal cost	1,233,246,275	1,232,323,441
(b) unfunded actuarial accrued liability	2,136,380,284	2,118,717,098
4. Total current and future assets	\$11,854,040,157	\$11,446,486,870

Liabilities

	June 30, 2013	June 30, 2012
5. Present value of benefits for retirees and beneficiaries:	\$5,061,555,947	\$4,808,390,309
6. Present value of benefits for terminated vested members:	178,376,190	177,116,212
7. Present value of benefits for active members:	6,614,108,020	6,460,980,349
8. Total liabilities	\$11,854,040,157	\$11,446,486,870

SECTION 3: Supplemental Information for The Water and Power Employees' Retirement Plan of the City of Los Angeles

EXHIBIT L

Reserves and Designated Balances

	<u>June 30, 2013</u>	<u>June 30, 2012</u>
1. Reserve for retirement allowance for retired members	\$5,374,550,442	\$5,064,057,787
2. Contribution accounts:		
(a) Members (excluding additional contributions)	1,344,895,376	1,258,944,364
(b) Department of Water and Power	(1,194,768,340)	(1,193,305,313)
3. General Reserve and Reserve for Investment Gains and Losses*	<u>1,842,530,465</u>	<u>1,801,641,765</u>
4. Total	\$7,367,207,943	\$6,931,338,603

* *Out of the total General Reserve and Reserve for Investment Gains and Losses, \$83,107,297 and \$73,887,716 are not included as valuation assets as of June 30, 2013 and June 30, 2012, respectively.*

SECTION 3: Supplemental Information for The Water and Power Employees' Retirement Plan of the City of Los Angeles

EXHIBIT M
Adjusted Reserves

Each year the Retirement Board adjusts its retired reserves to agree with the value calculated during the valuation. The following table presents the required transfers.

<u>Adjusted Reserves</u>	<u>June 30, 2013</u>	<u>June 30, 2012</u>
1. Retired reserve balance	\$5,374,550,442	\$5,064,057,787
2. Actuarially computed present value	5,061,555,947	4,808,390,309
3. Actuarial gain (loss): (1) – (2)	312,994,495	255,667,478
4. Transfer from (to) DWP contribution accounts from retired reserves:	(312,994,495)	(255,667,478)

SECTION 4: Reporting Information for The Water and Power Employees' Retirement Plan of the City of Los Angeles

EXHIBIT I

Summary of Actuarial Valuation Results

The valuation was made with respect to the following data supplied to us:

1. Retired members as of the valuation date (including 2,147 beneficiaries in pay status)	8,642
2. Members inactive during year ended June 30, 2013 with vested rights*	1,555
3. Members active during the year ended June 30, 2013	8,913

The actuarial factors as of the valuation date are as follows:

1. Normal cost	\$193,661,118
2. Present value of future benefits	11,854,040,157
3. Present value of future normal costs	1,759,172,286
4. Actuarial accrued liability	10,094,867,871
Retired members and beneficiaries	\$5,061,555,947
Inactive members with vested rights*	178,376,190
Active members	4,854,935,734
5. Actuarial value of assets (\$8,310,729,662 at market value as reported by Retirement Office)	7,958,487,587
6. Unfunded actuarial accrued liability	\$2,136,380,284

* Includes terminated members due a refund of member contributions and members receiving PTD benefits.

SECTION 4: Reporting Information for The Water and Power Employees' Retirement Plan of the City of Los Angeles

EXHIBIT I (continued)

Summary of Actuarial Valuation Results

The determination of the required contribution is as follows:

	Dollar Amount	% of Payroll
1. Total normal cost	\$193,661,118	21.51%
2. Expected employee contributions	<u>-57,765,793</u>	<u>-6.41%</u>
3. Employer normal cost: (1) + (2)	\$135,895,325	15.10%
4. Amortization of unfunded actuarial accrued liability	<u>274,005,748</u>	<u>30.44%</u>
5. Total required contribution: (3) + (4), adjusted for timing*	\$425,784,740	47.30%
6. Employer match (110% of (2)), adjusted for timing*	66,004,639	7.33%
7. Greater of (6) employer match or (5) total required contribution	\$425,784,740	47.30%
8. Projected payroll	\$900,254,454	

* Required contribution is assumed to be paid at the middle of every year.

SECTION 4: Reporting Information for The Water and Power Employees' Retirement Plan of the City of Los Angeles

EXHIBIT II

Supplementary Information Required by the GASB – Schedule of Employer Contributions

Plan Year Ended June 30	Annual Required Contributions	Annual Pension Cost	Actual Contributions	Actual Contributions/ Annual Required Contributions	Actual Contributions/ Annual Pension Cost
2005	\$80,784,677	\$87,615,788	\$75,490,143	93.4%	86.2%
2006	110,268,590	116,651,020	101,556,257	92.1%	87.1%
2007	134,504,482	140,328,366	129,154,539	96.0%	92.0%
2008	134,651,427	140,061,851	141,862,126	105.4%	101.3%
2009	141,291,588	146,768,605	145,941,275	103.3%	99.4%
2010	200,578,728	206,025,133	201,034,807	100.2%	97.6%
2011	304,431,910	309,794,712	286,699,384	94.2%	92.5%
2012	336,874,865	341,366,670	321,688,919	95.5%	94.2%
2013	376,667,610	380,417,306	368,426,348	97.8%	96.8%
2014	425,784,740	429,082,219	--	--	--

The amounts indicated for June 30, 2014 will be adjusted at the end of the year based on actual covered payroll.

SECTION 4: Reporting Information for The Water and Power Employees' Retirement Plan of the City of Los Angeles

EXHIBIT III

Supplementary Information Required by the GASB – Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b) - (a)] / (c)
07/01/2004	\$6,251,421,125	\$6,421,813,922	\$170,392,797	97.35%	\$581,038,783	29.33%
07/01/2005	6,331,047,528	6,763,079,839	432,032,311	93.61%	616,270,095	70.10%
07/01/2006	6,447,763,436	7,046,571,241	598,807,805	91.50%	635,728,131	94.19%
07/01/2007	6,864,084,006	7,467,285,349	603,201,343	91.92%	670,372,663	89.98%
07/01/2008	7,247,853,233	7,619,102,935	371,249,702	95.13%	708,731,840	52.38%
07/01/2009	7,248,721,252	8,057,060,950	808,339,698	89.97%	805,137,795	100.40%
07/01/2010	7,244,429,689	8,893,618,433	1,649,188,744	81.46%	856,089,559	192.64%
07/01/2011	7,465,183,643	9,297,204,318	1,832,020,675	80.29%	870,203,423	210.53%
07/01/2012	7,573,885,754	9,692,602,852	2,118,717,098	78.14%	886,539,366	238.99%
07/01/2013	7,958,487,587	10,094,867,871	2,136,380,284	78.84%	900,254,454	237.31%

SECTION 4: Reporting Information for The Water and Power Employees' Retirement Plan of the City of Los Angeles

EXHIBIT IV

Supplementary Information Required by the GASB

Valuation date	July 1, 2013
Actuarial cost method	Entry Age Normal Cost Method
Amortization method	Level dollar amortization
Remaining amortization period	The July 1, 2004 Unfunded Actuarial Accrued Liability is amortized over a 15-year period commencing July 1, 2004. Any subsequent changes in Unfunded Actuarial Accrued Liability are amortized over separate 15-year periods effective with that valuation.
Asset valuation method	The market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market returns and the expected returns on a market value basis, and is recognized over a five-year period.
Actuarial assumptions:	
Investment rate of return	7.75%
Inflation rate	3.50%
Projected salary increases	5.35% to 10.50%*
Cost of living adjustments	3.00% (actual increases are contingent upon CPI increases with a 3.00% maximum)
Plan membership:	
Retired members and beneficiaries receiving benefits	8,642
Terminated members entitled to, but not yet receiving benefits	1,555
Active members	<u>8,913</u>
Total	19,110

* Includes inflation at 3.50%, "across the board" increases of 0.75%, plus merit and promotional increases. See Exhibit VI for these increases.

SECTION 4: Reporting Information for The Water and Power Employees' Retirement Plan of the City of Los Angeles

EXHIBIT V

Development of the Net Pension Obligation (NPO) and the Annual Pension Cost Pursuant to GASB 27

Plan Year Ended June 30	Employer Annual Required Contribution (a)	Employer Amount Contributed* (b)	Interest on NPO (c)	ARC Adjustment (h) / (e) (d)	Amortization Factor (e)	Pension Cost (a) + (c) - (d) (f)	Change in NPO (f) - (b) (g)	NPO Balance NPO + (g) (h)
2005	\$80,784,677	\$75,490,143	-\$13,938,151	-\$20,769,262	8.8887	\$87,615,788	\$12,125,645	-\$172,485,874
2006	110,268,590	101,556,257	-13,022,666	-19,405,096	8.8887	116,651,020	15,094,763	-157,391,112
2007	134,504,482	129,154,539	-11,883,013	-17,706,897	8.8887	140,328,366	11,173,827	-146,217,285
2008	134,651,427	141,862,126	-11,039,390	-16,449,814	8.8887	140,061,851	-1,800,275	-148,017,560
2009	141,291,588	145,941,275	-11,175,312	-16,652,329	8.8887	146,768,605	827,330	-147,190,230
2010	200,578,728	201,034,807	-11,112,848	-16,559,253	8.8887	206,025,133	4,990,326	-142,199,904
2011	304,431,910	286,699,384	-10,409,323	-15,772,125	9.0159	309,794,712	23,095,328	-119,104,576
2012	336,874,865	321,688,919	-8,718,698	-13,210,503	9.0159	341,366,670	19,677,751	-99,426,825
2013	376,667,610	368,426,348	-7,278,246	-11,027,942	9.0159	380,417,306	11,990,958	-87,435,867
2014	425,784,740	425,784,740	-6,400,484	-9,697,963	9.0159	429,082,219	3,297,479	-84,138,388

* The amount indicated for June 30, 2014 assumes the actual employer contribution for the year is equal to the employer annual required contribution.

SECTION 4: Reporting Information for The Water and Power Employees' Retirement Plan of the City of Los Angeles

EXHIBIT VI

Actuarial Assumptions and Methods

Demographic Assumptions:

Mortality Rates:

*After Service Retirement
and Pre-retirement:*

RP-2000 Combined Healthy Mortality Table with ages set back two years for males and one year for females.

After Disability Retirement

RP-2000 Combined Healthy Mortality Table with ages set back two years for males and one year for females.

The tables shown above were determined to reasonably reflect mortality experience through the measurement date; however, they do not provide any margin for future mortality improvement.*

Termination Rates before Retirement:

Age	Rate (%)					
	Mortality**		Disability		Total Withdrawal***	
	Male	Female	Male	Female	Male	Female
25	0.037	0.020	0.006	0.000	6.550	9.200
30	0.039	0.025	0.012	0.006	4.350	7.250
35	0.063	0.044	0.012	0.036	3.060	5.550
40	0.096	0.065	0.018	0.072	2.180	4.150
45	0.130	0.103	0.030	0.102	1.660	3.150
50	0.186	0.155	0.054	0.138	1.260	2.450
55	0.292	0.242	0.126	0.168	0.980	2.100
60	0.527	0.444	0.240	0.000	0.720	1.100
65	1.001	0.862	0.000	0.000	0.420	0.350

* The recommended mortality table from the 2012 Actuarial Experience Study is the RP-2000 Combined Healthy Mortality Table with ages set back one year, projected to 2030 with Scale AA. That table would include a margin for future mortality improvement.

** 5% of pre-retirement deaths are assumed to be duty related, with the remaining being non-duty related.

*** No withdrawal is assumed after a member is first eligible to retire. Ordinary withdrawal members are assumed to receive their account balance at termination. Vested termination members are assumed to receive a deferred retirement benefit. 45% of terminations are assumed to be ordinary withdrawals, with the remaining being vested terminations.

SECTION 4: Reporting Information for The Water and Power Employees' Retirement Plan of the City of Los Angeles

Retirement Rates:	Age	Under 30 Years of Service	Over 30 Years of Service
	50	0.00%	0.00%
	51	0.00	0.00
	52	0.00	0.00
	53	0.00	0.00
	54	0.00	0.00
	55	4.00	25.00
	56	3.00	15.00
	57	3.00	12.50
	58	3.00	12.50
	59	4.00	12.50
	60	5.00	20.00
	61	5.00	10.00
	62	5.00	10.00
	63	5.00	25.00
	64	5.00	20.00
	65	15.00	25.00
	66	15.00	25.00
	67	15.00	25.00
	68	15.00	25.00
	69	15.00	25.00
	70	100.00	100.00

Benefit for Inactive Vested Members:

Inactive vested members are assumed to retire at age 60 with a Money Purchase Annuity. Members receiving Permanent Total Disability benefits are assumed to retire at the earlier of age 60 or age 55 with 30 years of service.

Definition of Active Members:

First day of biweekly payroll following employment for new department employees or immediately following transfer from other city department.

Unknown Data for Members:

Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.

SECTION 4: Reporting Information for The Water and Power Employees' Retirement Plan of the City of Los Angeles

Data Adjustments: Data as of March 31 has been adjusted to June 30 by adding three months of age and, for active employees, three months of service. Contribution account balances were also increased by three months of interest. For members in pay status, we have increased their benefits by the assumed July 1 COLA.

Percent Married/Domestic Partner: 85% of male members and 60% of female members are assumed to be married at pre-retirement death or retirement. Current retirees who retired before April 1, 2012, with Options A, B, C, or F are missing this data and are all assumed to have a spouse. Spousal gender is assumed to be opposite that of the member.

Age of Spouse: Females are 3 years younger than their spouses.

Future Benefit Accruals: 1.0 year of service per year.

Other Government Service: Members are assumed to purchase an additional 0.15 years of service per year.

Economic Assumptions:

Consumer Price Index: Increase of 3.50% per year; benefit increases due to CPI subject to 3.00% maximum.

Employee Contribution, Additional Annuity and Matching Account Crediting Rate: 7.75%, based on Plan provisions.

Net Investment Return: 7.75%, net of administration and investment expenses.

Salary Increases: Annual Rate of Compensation Increase
 Inflation: 3.50% per year, plus “across the board” salary increases of 0.75% per year, plus the following merit and promotional increases.

<u>Years of Service</u>	<u>Increase</u>
0	6.25%
1	5.25%
2	4.75%
3	3.50%
4	2.00%
5 & Over	1.10%

The merit and promotional increases are added to the sum of the inflationary and “across the board” salary increases.

SECTION 4: Reporting Information for The Water and Power Employees' Retirement Plan of the City of Los Angeles

Actuarial Methods:

Actuarial Value of Assets:

The market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual and expected returns on a market value basis and is recognized over a five-year period. As directed by the Retirement Office, the actuarial value of assets may be reduced by an amount classified as a non-valuation reserve.

Actuarial Cost Method:

Entry Age Normal Actuarial Cost Method. Entry Age equals attained age less years of service. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are based on costs allocated as a level percent of salary, with Normal Cost determined as if the current benefit accrual rate had always been in effect ("replacement life").

Amortization Policy:

The July 1, 2004 Unfunded Actuarial Liability is amortized over a fifteen-year period commencing July 1, 2004. Any subsequent change in Surplus or Unfunded Actuarial Accrued Liability are amortized over separate fifteen-year periods. All amortization amounts are determined in equal dollar amounts over the amortization period. The Board may, by resolution, adopt a separate period of not more than thirty years to amortize the change in Surplus or Unfunded Actuarial Accrued Liability resulting from an unusual event, plan amendment or change in assumptions or methods.

Changes in Actuarial Assumptions:

There have been no changes in actuarial assumptions since the prior valuation.

SECTION 4: Reporting Information for The Water and Power Employees' Retirement Plan of the City of Los Angeles

EXHIBIT VII

Summary of Plan Provisions

This exhibit summarizes the major provisions of the Retirement Plan included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

Plan Year: July 1 through June 30

Census Date: March 31

Formula Retirement Benefit:

Age & Service Requirement

Age 60 with 5 years of service

Age 55 with 10 years of service in the last 12 years

Any age with 30 years of service; or

Receiving permanent total disability benefits from the Plan.

Note: To be eligible, the employee must have worked or been paid disability four of the last five years immediately preceding eligibility to retire, or while eligible to retire.

Monthly Amount

The greater of 2.1% of the Monthly Salary Base or \$9.50 per year of service. For those age 55 or older with 30 or more years of service the factor is 2.3% of the Monthly Salary Base. Benefits are limited to 100% of Monthly Salary Base.

Monthly Salary Base

Equivalent of monthly average salary of highest continuous 26 biweekly payroll periods (one year).

Cost of Living benefit

Based on changes to Los Angeles area consumer price index to a maximum of 3% per year.

Money Purchase Annuity:

A monthly lifetime benefit equal in value to the employee normal contribution account plus Department matching contribution (current service contribution) account at retirement date. Does not include cost-of-living adjustments and death after retirement continuance features.

SECTION 4: Reporting Information for The Water and Power Employees' Retirement Plan of the City of Los Angeles

Minimum Benefit:

If the money purchase annuity amount exceeds the monthly amount of the formula retirement benefit and the retiree meets the eligibility requirements for the formula retirement benefit, the amount of the money purchase annuity is paid and the cost-of-living and death after retirement continuance features of the formula retirement benefit are also paid.

Early Retirement Reduction Factors: The early retirement factor is determined by the attained age on the effective date of retirement. Every three months of attained age will affect the factor.

Attained Age at Actual Retirement	Exact Age	+3 Months	+6 Months	+9 Months
48	.7150	.7225	.7300	.7375
49	.7450	.7525	.7600	.7675
50	.7750	.7825	.7900	.7975
51	.8050	.8125	.8200	.8275
52	.8350	.8425	.8500	.8575
53	.8650	.8725	.8800	.8875
54	.8950	.9025	.9100	.9175
55	.9250	.92875	.9325	.93625
56	.9400	.94375	.9475	.95125
57	.9550	.95875	.9625	.96625
58	.9700	.97375	.9775	.98125
59	.9850	.98875	.9925	.99625
60 & Over	1.0000			

The factor is 1.0000 for those retiring at age 55 or later with at least 30 years of service.

SECTION 4: Reporting Information for The Water and Power Employees' Retirement Plan of the City of Los Angeles

Member Normal Contributions:

If an employee became a plan member after May 31, 1984, the member normal contribution rate is 6% of pay.

If an employee became a plan member before June 1, 1984 or transferred from CERS with an entry age contribution rate, sample rates by entry age are as follows:

Entry Age	Rate
20	2.601%
25	3.102%
30	3.611%
35	4.161%
40	4.742%
45	5.381%
50	6.042%
55	6.762%
59	7.332%

Department Current Service Contributions:

The Department of Water and Power makes actuarially based contributions that are a minimum of 110% of employee contributions.

Disability:

Disability benefits are paid from the Disability Fund. However, if a member is receiving permanent and total disability benefits, the member may elect to retire. Other than a nominal amount, no service credit during disability is earned for the 2.1% formula; however, credit is earned during disability toward the \$9.50 minimum formula.

Deferred Withdrawal Retirement Benefit (Vested):

Age & Service Requirement

Age 60 with one year of contributing membership; or
 Age 55 with 10 years of contributing membership in the 12 years prior to separation from service.

Amount

Value of employee normal contribution account plus Department matching contribution (called current service contribution) account at retirement date.

SECTION 4: Reporting Information for The Water and Power Employees' Retirement Plan of the City of Los Angeles

Death Before Retirement:

<i>Age and Service Requirement</i>	None
<i>Amount</i>	Refund of member contributions with interest.
<i>Age, Service and Type of Death Requirement</i>	Any death of a member who is eligible for service retirement, but who has not yet retired or attained 25 years of service
<i>Amount</i>	In lieu of the refund of member contributions with interest, the member's spouse may elect an immediate lifetime monthly allowance. The monthly allowance payable to the surviving spouse is the amount the spouse would have received had the member elected a full joint and survivor allowance.
<i>Age, Service and Type of Death Requirement</i>	Duty death with 10 years of service, but prior to service retirement eligibility or attainment of 25 years of service
<i>Amount</i>	In lieu of the refund of member contributions with interest, the member's spouse may elect either: <ul style="list-style-type: none">(a) A deferred lifetime monthly allowance commencing when the member would have been eligible for a service retirement or attained 25 years of service; or(b) An immediate lifetime monthly allowance calculated with up to five years added to the member's age or service. This option is only available if the member has attained age 50 or attained 20 years of service. The monthly allowance payable to the surviving spouse is the amount the spouse would have received had the member elected a full joint and survivor allowance.

Death After Retirement: 50% of retiree's unmodified allowance continued to eligible spouse or domestic partner (reduced if difference in ages is greater than five years).

Withdrawal of Contributions Benefit (Ordinary Withdrawal): Refund of employee contributions with interest.

SECTION 4: Reporting Information for The Water and Power Employees' Retirement Plan of the City of Los Angeles

Post-retirement Cost-of-Living Benefits:	Future changes based on the Consumer Price Index to a maximum of 3% per year, excess "banked".
---	--

Changes in Plan Provisions:	There have been no changes in plan provisions recognized since the prior valuation.
------------------------------------	---

NOTE: *The summary of major Plan provisions is designed to outline principle Plan benefits as interpreted for purposes of the actuarial valuation. If the Retirement Office should find the Plan summary not in accordance with the actual provisions, the Retirement Office should alert the actuary so they can both be sure the proper provisions are valued.*

5271723v1/04175.012