

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

**Actuarial Valuation  
July 1, 2007**



1801 Century Park East, Suite 500  
Los Angeles, CA 90067

September 24, 2007

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

**Re: July 1, 2007 Actuarial Report**

Dear Members of the Board:

This report summarizes the results of the July 1, 2007 actuarial valuation for the Water and Power Employees' Retirement Plan of the City of Los Angeles.

In preparing our report, we relied, without audit, on information (some oral and some in writing) supplied by the Plan's staff. This information includes, but is not limited to, plan provisions, employee data, and financial information. The participant data used for the valuation were submitted by the Plan's staff on computer files. In our examination of these data, we found them to be reasonably consistent and comparable with data used in prior valuations. We greatly appreciate the support and timeliness of the Retirement Office in providing us with the information needed to complete this valuation.

The Board adopted changes to the valuation assumptions since the last actuarial valuation was performed, based on the recommendations of an experience study performed by the prior actuary. A summary of the current and prior assumptions is included as Appendix A.

The Retirement Plan change establishing the health benefit fund does not need to be reflected in this valuation. Furthermore, no other plan changes were made during the 2006/2007 plan year. A summary of the plan provisions is included as Appendix B.

In preparing this report, we have conformed to generally recognized and accepted actuarial principles and practices consistent with principles prescribed by the Actuarial Standards Board (ASB) and the Code of Professional Conduct and Qualification Standards for Public Statements of Actuarial Opinion of the American Academy of Actuaries. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate.

Respectfully submitted,



Kai Petersen, FSA, CFA, MAAA, EA  
Principal and Consulting Actuary  
Western Region Retirement Practice Leader

KP:jtm/sfd  
Enclosure

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## **Section 1**

# **Summary of the Findings**

This report has been prepared by Buck Consultants to present the valuation of The Water and Power Employees' Retirement Plan of the City of Los Angeles as of July 1, 2007. The valuation was performed to:

- Report on the funded status of the Plan
- Determine the recommended contribution for the Plan
- Provide financial reporting information in accordance with the requirements of the Government Accounting Standards Board (GASB).

The results of this valuation are based on:

- The benefit provisions of the Plan as of July 1, 2007 as administered by the Board
- Plan membership data of covered active members, retired members and their beneficiaries, and inactive vested members as of March 31, 2007
- Plan assets as of June 30, 2007 as reported by the Retirement Office
- Economic assumptions regarding investment earnings and future salary increases
- Demographic assumptions with respect to the incidence of retirement, termination of employment, disability, death, etc.

### **Key Findings**

- The Plan's funded ratio increased from 91.5% in 2006 to 91.9% in 2007.
- The 2007 recommended contribution is 21.59% of payroll as compared to 22.25% for 2006, which is a decrease of 0.66%. Payroll increased by 5.4% from \$635.7 million to \$670.3 million. In dollar terms, the 2007 recommended contribution increased to \$144.7 million from \$141.5 million for 2006, which is an increase of 2.3%. The 2007 recommended contribution exceeds the mandatory 110% matching of the employee contribution.
- The investment return on Retirement Plan assets was 16.6% for the plan year ended June 30, 2007.
- In order to lower the year-over-year volatility, recommended contributions are determined based on an actuarial value of assets that smoothes fluctuations in the market value by

## **Section 1**

### **Summary of the Findings (cont'd)**

recognizing them over five years. Accordingly, a gain for the plan year ending June 30, 2007 is included in the current determination of the actuarial value of assets. The return on the actuarial value of assets was 9.1%, which exceeds the assumed investment rate of return of 8%, resulting in an investment gain for the plan year. The actuarial investment gain decreased the recommended contribution by 0.35% of payroll.

- Other demographic actuarial gains, combined with the actuarial salary gain, decreased the recommended contribution by 0.55% of payroll.
- The valuation reflects changes in actuarial assumptions recommended by the prior actuary and adopted by the Board. The assumptions were changed in the following areas:
  - inflation assumption underlying salary growth
  - promotion and merit salary increases assumption
  - retirement age
  - valuation mortality (healthy and disabled)
  - termination of employment
  - the purchase of future government service

The assumption changes increased the recommended contribution by 0.24% of payroll.

- The Plan's normal cost, which is the cost attributed to benefits earned during the 2007/2008 plan year, is \$105.5 million compared to \$105.8 million in for the 2006/2007 plan year. The normal cost is one of the two components of the recommended contribution.
- The Plan's actuarial liability of \$7.47 billion exceeds the actuarial value of plan assets of \$6.86 billion so there is an unfunded actuarial accrued liability (UAAL) of \$0.61 billion which is comprised of actuarial losses, assumption changes and previously combined amortization bases. Under the funding policy adopted by the Board, these individual bases are amortized over 15 years. The amortization of the UAAL is the second component of the recommended contribution.
- This year the balance in the General Reserve and the Reserve for Investment Gains and Losses increased from \$2.08 billion to \$2.16 billion as of June 30, 2007. These two reserves track change in the book value of assets. We were instructed to include all but

## **Section 1**

### **Summary of the Findings (cont'd)**

\$74.0 million of the end of year General Reserve for Investment Gains and Losses as valuation assets. This is approximately 1% of the June 30, 2007 market value of assets.

- Governmental Accounting Standards Board (GASB) Statement Number 27 requires the calculation of a measure of plan cost called the Annual Required Contribution (ARC), which consists of the normal cost component and a UAAL amortization component of the recommended contribution. In 2004, in order to comply with the GASB requirement that the net amortization charge be sufficient to amortize any UAAL over no longer than 40 years, the Board chose to “fresh start” the Plan’s UAAL amortization, effective July 1, 2004, by combining the existing amortization bases into a single base and amortizing the combined base over 15 years. Consistent with the Board’s past policy, any new amortization bases after July 1, 2004 will be amortized over 15 years.
  
- GASB also requires the calculation of an Annual Pension Cost (APC), which consists of the ARC, an ARC adjustment, and interest on the Net Pension Obligation (NPO). The NPO is a balance sheet measure of the cumulative difference between the APC and actual employer contributions made to the Plan. Historically, the employer contributions to the Plan have exceeded the APC, so the Plan currently has a negative NPO, which is a balance sheet asset.

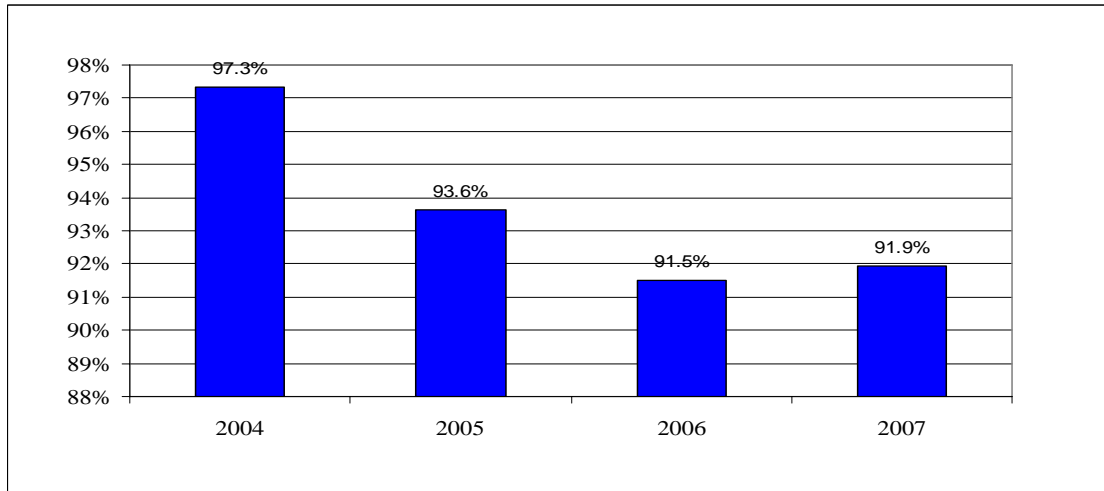
**Section 1  
Summary of the Findings (cont'd)**

<b>Summary of Key Valuation Results</b>	<b>2007</b>	<b>2006</b>
<b>Contributions for plan year beginning July 1:</b>		
Required under funding policy	\$ 144,743,767	\$ 141,464,198
Percentage of payroll	21.59%	22.25%
<b>Funding elements for plan year beginning July 1:</b>		
Total normal cost	\$ 105,450,550	\$ 105,840,848
Market value of assets	7,417,827,797	6,513,239,533
Actuarial value of assets	6,864,084,005	6,447,763,436
Actuarial accrued liability	7,467,285,349	7,046,571,241
Unfunded actuarial accrued liability	603,201,344	598,807,805
Funding ratio	91.9%	91.5%
<b>GASB 25/27 for plan year beginning July 1:</b>		
Annual pension cost	\$149,896,630	\$141,464,198
Actual employer contributions	--	129,154,539
Percentage contributed	--	91.3%
<b>Demographic data for plan year beginning July 1:</b>		
Number of retired participants and beneficiaries	8,746	8,817
Number of vested former members	1,535	1,481
Number of active members	7,993	7,926
Total compensation	\$670,372,663	\$ 635,728,131
Average compensation	\$ 83,870	\$ 80,208

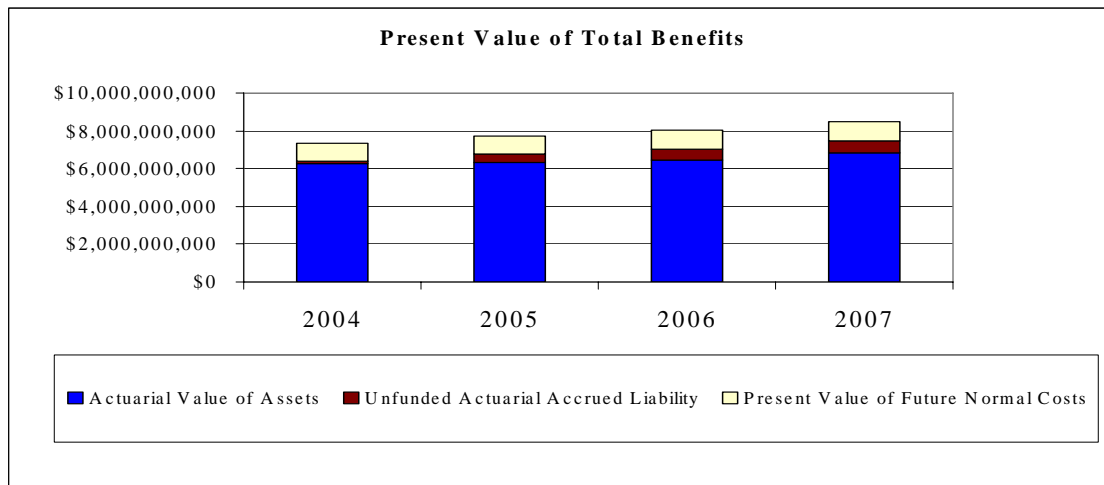


## Historical Asset & Liability Comparison and Historical Funding Ratios

**Graph 1 – Historical Funding Ratios**



**Graph 2 – Historical Asset and Liability Comparison**



Year	Present Value of Total Benefits (PVB) (A) = (B) + (C) + (E)	Actuarial Value of Assets (B)	Present Value of Future Normal Costs (PVFNC) (C)	Actuarial Accrued Liability (AAL) (D)	Unfunded Actuarial Accrued Liability (UAAL) (E) = (D) – (B)	Funding Ratio (F) = (B) / (D)
2004	\$7,339,817,832	\$6,251,421,125	\$918,003,910	\$6,421,813,922	\$170,392,797	97.3%
2005	7,718,190,658	6,331,047,528	955,110,819	6,763,079,839	432,032,311	93.6%
2006	8,025,787,639	6,447,763,436	979,216,398	7,046,571,241	598,807,805	91.5%
2007	8,454,756,798	6,864,084,005	987,471,449	7,467,285,349	603,201,344	91.9%

## **Section 2**

# **Scope of the Report**

This report presents the actuarial valuation of the Water and Power Employees' Retirement Plan of the City of Los Angeles as of July 1, 2007.

A summary of the findings resulting from this valuation is presented in the previous section.

Section 3 describes the assets of the Plan.

Section 4 shows the actuarial balance sheet of the Plan.

Section 5 develops the recommended employer contribution to the Plan.

Section 6 discloses actuarial information based on the requirements of Statements No. 25 and 27 of the Governmental Accounting Standards Board.

Section 7 shows the impact on plan costs of the assumption changes resulting from the 2007 experience study.

Section 8 shows supplemental information.

Appendix A is a summary of the actuarial procedures and assumptions used to compute the liabilities and contributions shown in this report.

Appendix B is a summary of the current benefit structure, as determined by the plan provisions on July 1, 2007.

Appendix C shows schedules of valuation data classifying the data used in the valuation by various categories of contributing members, members receiving retirement distributions, and beneficiaries receiving retirement distributions.

Appendix D provides a brief summary of the Plan's recent experience. Comparative statistics are presented on the Plan's membership.

Appendix E is a glossary of actuarial terms used in this report.

In preparing our report, we relied, without audit, on information (some oral and some in writing) supplied by the Plan's staff. This information includes, but is not limited to, plan

**Section 2**  
**Scope of the Report (cont'd)**

provisions, employee data, and financial information. The participant data used for the valuation were submitted by the Plan's staff on computer files. In our examination of these data, we found them to be reasonably consistent and comparable with data used in prior valuations.

The actuarial assumptions used in the valuation, as summarized in Appendix A, are the assumptions of the prior actuary, updated for the recommendations of the prior actuary and adopted by the Board pursuant to the 2007 experience study. In preparing this report, we have conformed to generally recognized and accepted actuarial principles and practices consistent with principles prescribed by the Actuarial Standards Board (ASB) and the Code of Professional Conduct and Qualification Standards for Public Statements of Actuarial Opinion of the American Academy of Actuaries.

## **Section 3**

### **Assets**

The actuarial valuation considers plan assets as well as liabilities. Assets are measured as of the actuarial valuation date, July 1, 2007.

Table 1 is the statement of net plan assets as provided by the Plan and shows the market value of assets at June 30, 2007 and June 30, 2006. This was provided by the Retirement Office, and incorporated directly into this report.

Table 2 shows the changes in plan net assets during the most recent plan year. This was provided directly from the Retirement Office, and incorporated directly into this report.

Table 3 shows the development of the actuarial value of plan assets.

Table 4 shows the breakdown of historical investment return on both the market and actuarial value of plan assets.

Table 5 shows reserves and designated balances.

Table 6 shows adjusted reserves.

**Water and Power Employees' Retirement Plan of the City of Los Angeles**  
**Actuarial Valuation – July 1, 2007**

**Table 1**

**Retirement Fund**  
**Statement of Plan Assets**  
**(unaudited)**

	2007		2006	
		% of Total		% of Total
<b>ASSETS</b>				
Cash	\$ 585,946	0.01%	\$ 821,517	0.01%
Receivables				
Accrued Investments Income	\$ 21,914,269	0.30%	\$ 22,462,930	0.34%
Department of Water & Power	14,794,118	0.20%	10,388,845	0.16%
Other	231,472,401	3.12%	266,979,176	4.10%
Total receivables	\$ 268,180,788	3.63%	\$ 299,830,951	4.60%
Investments, at fair value				
Fixed income (amortized cost \$2,392,470,714 in 2007 and \$2,398,334,123 in 2006)	\$2,369,799,589	31.95%	\$2,356,006,126	36.17%
Common stock (cost of \$3,465,863,229 in 2007 and \$3,537,472,139 in 2006)	4,785,563,423	64.51%	4,217,097,899	64.75%
Short-term investments (cost approximates market)	238,697,872	3.22%	240,965,010	3.70%
Alternative investments	87,558,131	1.18%	1,191,537	0.02%
Real Estate	54,704,256	0.74%	-	0.00%
Other Investments	26,532,537	0.35%	-	0.00%
Securities lending - short-term collateral investment pool	849,134,120	11.45%	552,826,601	8.49%
Total investment	\$8,411,989,929	113.40%	\$7,368,087,173	113.12%
<b>Total assets</b>	<b>\$8,680,756,663</b>	<b>117.03%</b>	<b>\$7,668,739,641</b>	<b>117.74%</b>

**Water and Power Employees' Retirement Plan of the City of Los Angeles  
Actuarial Valuation – July 1, 2007**

**Table 1**

**Retirement Fund  
Statement of Plan Assets (cont'd)  
(unaudited)**

	2007		2006	
		% of Total		% of Total
<b>LIABILITIES</b>				
Payables - Department of Water & Power	-		-	0.00%
Accounts payable	\$ 413,794,746	5.58%	\$ 602,673,507	9.25%
Securities lending	849,134,120	11.45%	552,826,601	8.49%
<b>Total liabilities</b>	<b>\$1,262,928,866</b>	<b>17.03%</b>	<b>\$1,155,500,108</b>	<b>17.74%</b>
<b>Net Assets</b>	<b>\$7,417,827,797</b>	<b>100.00%</b>	<b>\$6,513,239,533</b>	<b>100.00%</b>

**Table 2**

**Retirement Fund**  
**Statement of Changes in Plan Net Assets**  
**(unaudited)**

	2007	2006
<b>ADDITIONS</b>		
Members' Contributions	\$ 47,049,554	\$ 41,324,895
Installment payment from early retired employees	10,892	4,897
Department of Water & Power contributions towards:		
Benefit (net of reversions)	129,154,539	101,556,257
Administrative expenses	3,549,723	2,909,277
Total contributions	\$ 179,764,708	\$ 145,795,326
Investment Income		
Net appreciation (depreciation) in fair value of investments	\$ 890,825,634	\$ 371,692,751
Interest	134,892,788	118,403,796
Dividends	47,966,411	37,921,365
Other Income	10,784,251	47,464
Securities Lending	36,668,841	28,789,849
Total investment income	\$1,121,137,925	\$ 556,855,225
Less: securities lending expenses	(34,304,268)	(25,711,940)
Less: investment expense	(17,314,000)	(14,406,821)
Net investment income and market appreciation	\$1,069,519,657	\$ 516,736,464
<b>Total additions</b>	<b>\$1,249,284,365</b>	<b>\$ 662,531,790</b>

**Table 2**

**Retirement Fund  
Statement of Changes in Plan Net Assets (cont'd)  
(unaudited)**

	2007	2006
<b>DEDUCTIONS</b>		
Retirement benefits paid	\$ 338,340,501	\$ 325,873,101
Refund of members' contributions	3,546,079	3,424,377
Administrative expenses	2,809,521	2,209,669
<b>Total deductions</b>	<b>\$ 344,696,101</b>	<b>\$ 331,507,147</b>
Net increase/(decrease)	\$ 904,588,264	\$ 331,024,643
Net assets, beginning of the year	6,513,239,533	6,182,214,890
<b>Net assets, end of the year</b>	<b>\$7,417,827,797</b>	<b>\$6,513,239,533</b>



**Table 3**  
**Actuarial Value of Assets**

Determination of Actuarial Value of Assets as of June 30, 2007

In order to have less volatile and more predictable plan costs the Board approved an asset valuation method that smoothes fluctuations in market value by recognizing realized and unrealized gains in the market value of assets over five years (i.e. 20% per year) instead of in a single year. To derive the actuarial value, adjustments to market value to reflect unrecognized market value gains are negative, and adjustments to reflect unrecognized market value losses are positive. Since realized and unrealized gains are treated equally the method does not encourage the sale of assets in an attempt to affect the actuarial value of assets.

The actuarial value of assets as a percentage of market value of assets is 92.5% as of June 30, 2007 as compared to 99.0% as of June 30, 2006. The market value of assets returned 16.6% during the year ended June 30, 2007, however, under the asset smoothing method only 20% of the realized and unrealized gains that are reflected in the market value of assets as of June 30, 2007, are being reflected in the actuarial value as of the same date.

Note that as instructed by the Plan's staff, we have included all but \$74.0 million (approximately 1% of the end-of-year market value of assets) of the General Reserve and Reserve for Investment Gains and Losses in the valuation assets.

A.	Market value of assets, June 30, 2007		\$7,417,827,797
B.	Calculation of Unrecognized Return	<b>Original Amount*</b>	<b>Unrecognized Return**</b>
	(i) Year ended June 30, 2007	555,827,560	444,662,048
	(ii) Year ended June 30, 2006	30,315,338	18,189,203
	(iii) Year ended June 30, 2005	-46,868,215	-18,747,286
	(iv) Year ended June 30, 2004	178,199,134	35,639,827
	(v) Total Unrecognized Return		479,743,792
C.	Gross actuarial value: (A) - (B(v))		\$6,938,084,005
D.	Portion of General Reserve and Reserve for Investment Gains and Losses not included as valuation asset		74,000,000
E.	Net actuarial value as of June 30, 2007: (C) - (D)		\$6,864,084,005
F.	Net actuarial value as a percentage of market value: (E) / (A)		92.5%

\* Total return minus expected return on a market value basis

\*\* Recognition at 20% per year over 5 years

**Water and Power Employees' Retirement Plan of the City of Los Angeles**  
**Actuarial Valuation – July 1, 2007**

**Table 4**  
**Investment Return on Assets**

The valuation assumed rate of investment return is 8.00%. The chart below shows the annual rate of return and the 5-year and 7-year average returns, on both an actuarial and market value basis.

**Investment Return - Actuarial Value vs. Market Value: 2001 - 2007**

Year Ended June 30	Net Interest and Dividend Income		Recognition of Capital Appreciation		Change in Asset Method		Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
2001	\$ 232,814,492	4.24%	\$ 217,489,958	3.96%			\$ 450,304,450	8.20%	\$ 492,327,362	8.52%
2002	206,326,546	3.61%	-14,327,506	-2.50%			191,999,040	3.36%	-251,053,638	-4.16%
2003	182,004,368	3.20%	-127,029,513	-2.24%	\$503,018,121	8.86%	557,992,976	9.82%	107,504,970	1.93%
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	<u>175,884,501</u>	2.76%	<u>402,557,940</u>	6.33%			<u>578,442,441</u>	9.09%	<u>1,066,710,135</u>	16.58%
Total	\$1,180,596,008		\$1,006,009,566		\$503,018,121		\$2,689,623,695		\$2,961,459,468	
							Five-year average return	6.73%		8.96%
							Seven-year average return	6.45%		6.92%

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

**Table 5**  
**Reserves and Designated Balances**

---

<b>Reserves and Designated Balances</b>		
	<b>June 30, 2007</b>	<b>June 30, 2006</b>
A. Reserve for retirement allowance for retired members	\$4,085,445,244	\$3,938,183,417
B. Contribution accounts:		
(i) members (excluding additional contributions)	792,275,686	724,446,624
(ii) Department of Water and Power	(943,792,536)	(866,865,319)
C. General Reserve and Reserve for Investment Gains and Losses*	<u>2,161,972,480</u>	<u>2,079,412,580</u>
D. Total	\$6,095,900,874	\$5,875,177,302

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\* Out of the total General Reserve and Reserve for Investment Gains and Losses, \$74,000,000 is not included as valuation assets as of June 30, 2007.

**Table 6**  
**Adjusted Reserves**

**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.

<b>Adjusted Reserves</b>	<b>June 30, 2007</b>	<b>June 30, 2006</b>
A. Retired reserve balance	\$4,085,445,244	\$3,938,183,417
B. Actuarially computed present value	3,948,241,152	3,818,191,932
C. Actuarial gain (loss): (A) - (B)	137,204,092	119,991,485
D. Transfer from (to) DWP contribution accounts from retired reserves:	-\$137,204,092	-\$119,991,485

## **Section 4**

# **Actuarial Balance Sheet**

An overview of plan assets and liabilities is summarized by the actuarial balance sheet shown on Table 7.

**Table 7**  
**Actuarial Balance Sheet**  
**Results for Contributing Members, Former Contributing Members,**  
**and Beneficiaries**

Plan liabilities consist of the present value of all future benefits that are expected to be paid from the Plan. To determine the present value liability we first determine the expected amount and timing of all future benefit payments that will be made by the Plan to current members. The future payments are then discounted to the valuation date using the assumed investment rate of return of 8%. A portion of the present value of benefits has already been earned and a portion is yet to be earned.

Plan assets consist of the current actuarial value of assets plus the present value of future member contributions and the present value of future employer contributions.

Since plan benefits will be paid from the current actuarial value of assets, future member and employer contributions, and investment earnings; the present value of the plan liabilities equals the present value of current plan assets and future contributions.

	July 1, 2007	July 1, 2006
<b>Assets</b>		
A. Total actuarial value of assets	\$6,864,084,005	\$6,447,763,436
B. Present value of future contributions by members	337,873,462	341,318,095
C. Present value of future Department contributions for:		
(i) normal cost	649,597,987	637,898,303
(ii) unfunded actuarial accrued liability	603,201,344	598,807,805
D. Total current and future assets	\$8,454,756,798	\$8,025,787,639
<b>Liabilities</b>		
E. Present value of benefits already granted	\$3,948,241,152	\$3,818,191,932
F. Present value of benefits to be granted	4,506,515,646	4,207,595,707
G. Total liabilities	\$8,454,756,798	\$8,025,787,639

## **Section 5**

# **Employer Contributions**

The recommended employer contribution is comprised of (A) + (B):

- (A) Normal cost. The portion of the present value of benefits that is attributable to service during the 2007/2008 plan year.
- (B) Amortization of the unfunded actuarial accrued liability (UAAL). The actuarial accrued liability (AAL) is the portion of the present value of benefits that is attributable to past service. Plan assets are subtracted from the AAL to determine the UAAL. Each year the UAAL is updated from the prior year to reflect the amortization payment, plan experience, plan provision change, assumption changes and any actuarial method changes. This update results in a new layer of UAAL for which an amortization base is established. Each new amortization base is amortized over 15 years as a level dollar amount.

Table 8 shows the unfunded actuarial accrued liability.

Table 9 shows the development of the expected unfunded actuarial accrued liability that is the basis for the gain/loss analysis.

Table 10 shows the detailed amortization bases that comprise the unfunded actuarial accrued liability.

Table 11 shows the development of the recommended required contribution.

Table 12 shows the breakdown by component of the experience gain/loss.

Table 13 shows the reconciliation of required contribution as a percentage of payroll.

The actuarial cost method utilized to develop the Normal Cost and the AAL is the Entry Age Normal Actuarial Cost Method (EAN).

Most actuarial cost methods utilize a cost method with these two components. The vast majority of public pension plans utilize the entry age normal actuarial cost method, as does this Plan.

The normal cost under the EAN method is developed so that benefits are funded as a level percentage of future pay for each member from the member's hire date to the member's

## **Section 5 Employer Contributions (cont'd)**

expected separation from service. One key feature of this method is that costs tend to be stable from year-to-year because most members' entry age cost percentages do not change materially from year-to-year, as long as the population demographics do not change considerably from year-to-year.

When the present value of future normal costs is subtracted from the present value of future benefits, the result is the actuarial accrued liability (AAL). This can also be thought of as the present value of past normal costs, or the amount which would be in the fund if all prior assumptions had been exactly met. To the extent that this actuarial accrued liability exceeds plan assets, an UAAL exists.

For GASB reporting purposes, the total Actuarial Required Contribution (ARC) is equal to the normal cost plus an amortization of the UAAL. GASB will be discussed further in Section 6.



**Table 8**  
**Unfunded Actuarial Accrued Liability**

The Plan has a UAAL as of July 1, 2007 because the actuarial accrued liability exceeds the actuarial value of assets. The funded ratio is 91.9% as of July 1, 2007 as compared to 91.5% as of July 1, 2006.

The 2007 UAAL amortization payment of \$70.4 million shown below is summarized in detail in Table 10.

	July 1, 2007	July 1, 2006
A. Actuarial present value of all future benefits for present and former members and their survivors (Table 2)	\$8,454,756,798	\$8,025,787,639
B. Actuarial present value of total future normal cost for present members	987,471,449	979,216,398
C. Actuarial accrued liability (A) – (B)	\$7,467,285,349	\$7,046,571,241
D. Actuarial value of assets available for benefits (Table 1)	6,864,084,005	6,447,763,436
E. Unfunded actuarial accrued liability (Funding excess, if negative) (C) – (D)	\$ 603,201,344	\$ 598,807,805
F. Funding ratio (D) ÷ (C)	91.9%	91.5%
G. Amortization of UAAL	\$ 70,407,554	\$ 67,255,742

**Table 9**  
**Development of Unfunded Actuarial Accrued Liability**

Each year we calculate an expected unfunded actuarial accrued liability by taking the prior year's UAAL, adding the increase in actuarial accrued liability due to normal cost, subtracting actual contributions, and crediting interest at the valuation interest rate. We then calculate the actual UAAL as of the valuation date. The difference between the expected and actual UAAL consists of actuarial gain/loss and assumption changes adopted by the Board since the prior valuation.

The change in UAAL due to actuarial gains and losses and assumption changes is established as a new amortization base that is amortized over 15 years in a level dollar amount.

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A. Unfunded actuarial accrued liability as of July 1, 2006		\$598,807,805
B. Normal cost as of July 1, 2006		105,840,848
C. Total actual contribution		\$179,764,708
D. Interest		
(i) for a whole year on (A) + (B)	\$56,371,892	
(ii) for a half year on (C)	-7,190,588	
(iii) Total interest		\$ 49,181,304
E. Expected unfunded actuarial accrued liability as of July 1, 2007: (A) +(B) - (C) + (Diii)		\$574,065,249
F. Change due to loss		47,238,833
G. Change due to assumption changes		-18,102,738
H. Actual unfunded actuarial accrued liability as of July 1, 2007: (E) + (F) + (G)		\$603,201,344

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**Table 10  
Amortization Bases**

<b>Type</b>	<b>Date Established</b>	<b>Initial Years</b>	<b>Initial Amount</b>	<b>Annual Payment</b>	<b>Remaining Years</b>	<b>Outstanding Balance</b>
Combined Base	July 1, 2004	15	\$170,392,797	\$18,432,327	12	\$150,020,051
Actuarial Loss	July 1, 2005	15	267,915,003	28,981,841	13	247,391,256
Actuarial Loss	July 1, 2006	15	183,420,211	19,841,574	14	176,664,929
Assumption Changes	July 1, 2007	15	-18,102,738	-1,958,273	15	-18,102,738
Actuarial Loss	July 1, 2007	15	47,238,833	5,110,085	15	47,238,833
<b>Total</b>				<b>\$70,407,554</b>		<b>\$603,212,331</b>

**Water and Power Employees' Retirement Plan of the City of Los Angeles  
Actuarial Valuation – July 1, 2007**

**Table 11  
Recommended Contribution**

The recommended contribution is shown below for both 2007 and 2006 as a dollar amount and as a percentage of payroll.

	July 1, 2007		July 1, 2006	
	Dollars	% of Payroll	Dollars	% of Payroll
A. Total normal cost	\$ 105,450,550	15.73%	\$ 105,840,848	16.65%
B. Expected employee contributions	<u>36,681,405</u>	5.47%	<u>37,073,323</u>	5.83%
C. Employer normal cost: (A) – (B)	\$68,769,145	10.26%	\$68,767,525	10.82%
D. Actuarial accrued liability	7,467,285,349		7,046,571,241	
E. Actuarial value of assets	<u>6,864,084,005</u>		<u>6,447,763,436</u>	
F. Unfunded/(overfunded) actuarial accrued liability: (D) - (E)	\$ 603,201,344		\$ 598,807,805	
G. Amortization of unfunded / (overfunded) actuarial accrued liability	70,407,554	10.50%	67,255,742	10.58%
H. Total required employer contribution: (C) + (G), adjusted for timing	\$144,743,767	21.59%	\$141,464,198	22.25%
I. Employer match (110% of (B), adjusted for timing)	40,349,546	6.26%	42,411,882	6.67%
J. Recommended contribution: greater of employer match (I) or total required contribution (H), adjusted for timing	144,743,767	21.59%	141,464,198	22.25%
K. Projected compensation	\$ 670,372,663		\$ 635,728,131	

**Table 12**  
**Actuarial Experience for the Year Ended June 30, 2007**

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A. Net gain from investments	\$ 69,106,241
B. Net gain from salaries	3,130,608
C. Net loss from other experience	<u>-119,475,682</u>
D. Net experience loss: (A) + (B) + (C)	<u>\$ -47,238,833</u>

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**Table 13**  
**Reconciliation of Required Contribution from July 1, 2006 to July 1, 2007**

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Required Contribution as of July 1, 2006	<b>22.25%</b>
Effect of investment gains and losses	-0.35%
Effect of salary gains and losses	-0.02%
Effect of other gains and losses and increase in payroll	-0.53%
Effect of assumption changes	<u>0.24%</u>
Total Change	<u>-0.66%</u>
Required Contribution as of July 1, 2007	<b>21.59%</b>

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## **Section 6**

# **Actuarial Information for Accounting Purposes**

The Governmental Accounting Standards Board (GASB) has issued standards under Statements No. 25 and 27. Statement 25 is required reporting by the Plan (the Plan) and Statement 27 is reporting by the sponsoring state or local government (the City).

Under GASB, each year an Annual Required Contribution (ARC) is determined that is equal to (A) + (B).

- (A) Normal cost. The portion of the present value of benefits that is attributable to service during the 2007/2008 plan year.
- (B) Amortization of the unfunded actuarial accrued liability (UAAL). The actuarial accrued liability (AAL) is the portion of the present value of benefits that is attributable to past service. Plan assets are subtracted from the AAL to determine the UAAL. Each year the UAAL is updated from the prior year to reflect the amortization payment, plan experience, plan provision change, assumption changes and any actuarial method changes. This update results in a new layer of UAAL for which an amortization base is established. Each new amortization base is amortized over 15 years as a level dollar amount.

Once the ARC is determined, an Annual Pension Cost (APC) is developed that is equal to (A) + (B) - (C).

- (A) ARC
- (B) Interest on the Net Pension Obligation (NPO). The NPO is a balance sheet obligation that is the cumulative difference over time of between employer contributions and the APC.
- (C) ARC adjustment for the amortization of the prior-year NPO.

Statement 25 requires certain supplementary information:

1. A schedule of funding progress, and
2. A schedule of employer contributions.

Table 14 develops the Annual Required Contribution, the Annual Pension Cost and the Net Pension Obligation for the current and prior year.

**Section VI**  
**Actuarial Information for Accounting Purposes (cont'd)**

Table 15 shows the schedule of funding progress which compares assets and liabilities for the current and 10 prior years. In particular, it shows the funding ratio and Unfunded Actuarial Accrued Liability (UAAL).

Table 16 is the schedule of employer contributions, which compares the employer contribution to the Annual Required Contribution and the Annual Pension Cost.

Table 17 shows the three-year trend information.

Table 18 shows the historical development of the Annual Pension Cost and Net Pension Obligation.



**Actuary's Certification Letter**

September 24, 2007

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

**Re: Actuarial Certification of the Water and Power Employees' Retirement Plan of the City of Los Angeles**

Members of the Board:

Buck Consultants, LLC is the Consulting Actuary for the Water and Power Employees' Retirement Plan of the City of Los Angeles. Actuarial valuations are completed annually as of June 30 of each year. The date of the most recent actuarial valuation was June 30, 2007. In each actuarial study, we conduct an examination of all participant data for reasonableness.

Actuarial funding is based on the Entry Age Normal Cost Method. Under this method, the employer contribution rate provides for current cost (normal cost) plus a level dollar amortization of the unfunded actuarial accrued liability (UAAL).

For actuarial valuation purposes, plan assets are valued at Actuarial Value. Under this method, the assets used to determine employer contribution rates take into account market value by spreading all gains and losses (returns above or below expected returns) over five years. The Plan's financial statements are audited by an outside auditor.

Our firm has prepared all of the schedules presented in the actuarial report. The actuarial assumptions shown in the schedules were selected in January 2007 by the prior actuary as being appropriate for the valuation and adopted by the Board. An analysis of the Plan's noneconomic experience was performed as of June 30, 2006 to establish the validity of these assumptions. Based on the recommendation of the prior actuary in the last experience study, the assumptions used in the most recent valuation produce results which, in the aggregate, reasonably approximate the anticipated future experience of the Plan. The next experience analysis is due to be performed as of June 30, 2009.

We certify that the valuation was performed in accordance with generally accepted actuarial principles and practices. In particular, the assumptions and methods used for funding purposes meet the parameters of the Governmental Accounting Standards Board Statement Nos. 25 and 27.

Respectfully submitted,



Kai Petersen, FSA, CFA, EA  
Principal and Consulting Actuary  
Western Region Retirement Practice Leader



Paul Obedencio, EA  
Senior Consultant

**Table 14  
GASB Statement No. 27  
Annual Pension Cost and Net Pension Obligation  
For Fiscal Year Ending June 30, 2008  
Based on July 1, 2007 Valuation**

The Net Pension Obligation is the accumulated value of Annual Pension Cost in excess of employer contributions. Because contributions have exceeded the Annual Pension Cost in prior years, a negative NPO has built up, so the Plan has a Net Pension Asset. This might be used in future years if employer contributions do not keep up with the APC.

	FYE 2008		FYE 2007	
	Dollars	% of Payroll	Dollars	% of Payroll
A. Total Normal Cost	\$105,450,550	15.73%	\$105,840,848	16.65%
B. Employee Contribution	36,681,405	5.47%	37,073,323	5.83%
C. Employer Normal Cost (A) – (B)	\$68,769,145	10.26%	\$68,767,525	10.82%
D. Unfunded Actuarial Accrued Liability	603,201,344		598,807,805	
E. Amortization of UAL	70,407,554	10.50%	67,255,742	10.58%
F. Total Annual Required Contribution (ARC): (C) + (E) adjusted for timing	\$144,743,767	21.59%	\$141,464,198	22.25%
G. Interest on Net Pension Obligation (NPO)*	-10,513,947	-1.57%	-11,883,013	-1.87%
H. ARC Adjustment**	-15,666,810	-2.34%	-17,706,897	-2.79%
I. Annual Pension Cost (APC): (F) + (G) – (H)	\$149,896,630	22.36%	\$147,288,082	23.17%
J. Employer Contribution	144,743,767 ***	21.59%	\$129,154,539	20.32%
K. Change in NPO: (I) – (J)	\$5,152,863		\$18,133,542	
L. NPO at Beginning of Year	-139,257,570		-157,391,112	
M. NPO at End of Year: (K) + (L)	-134,104,707		-139,257,570	
N. Covered Employee Payroll	\$670,372,663		\$635,728,131	

\* See Table 17, Column B.

\*\* See Table 18, Column C.

\*\*\* Assumed equal to Annual Required Contribution.

**Table 15**  
**Schedule of Funding Progress**

Actuarial Valuation Date July 1	Actuarial Value of Assets	Actuarial Accrued Liabilities (AAL) <sup>(1)</sup>	Unfunded Actuarial Accrued Liabilities (UAAL) <sup>(2)</sup>	Funding Ratio	Covered Payroll	UAAL as a Percentage of Covered Payroll
1997	\$3,850,530,272	\$3,811,880,519	-\$38,649,753	101.01%	\$430,000,000	0.00%
1998	4,513,684,692	4,339,885,313	-173,799,379	104.00%	431,000,000	0.00%
1999	5,254,093,071	4,911,443,303	-342,649,768	106.98%	355,000,000	0.00%
2000	5,605,856,078	5,082,960,078	-522,896,000	110.29%	368,000,000	0.00%
2001	5,833,274,582	5,306,262,736	-527,011,846	109.93%	403,265,472	0.00%
2002	5,790,262,948	5,714,524,649	-75,738,299	101.33%	430,397,884	0.00%
2003	6,128,375,723	6,042,086,785	-86,288,938	101.43%	527,787,469	0.00%
2004	6,251,421,125	6,421,813,922	170,392,797	97.35%	581,038,783	29.33%
2005	6,331,047,528	6,763,079,839	432,032,311	93.61%	616,270,095	70.10%
2006	6,447,763,436	7,046,571,241	598,807,805	91.50%	635,728,131	94.19%
2007	6,864,084,006	7,467,285,349	603,201,343	91.92%	670,372,663	89.98%

(1) Actuarial present value of benefits less actuarial present value of future normal costs based on Entry Age Normal Actuarial Cost Method.

(2) Actuarial accrued liabilities less actuarial value of assets, Funding Excess if negative.

**Table 16**  
**Schedule of Employer Contributions**

This table shows that the employer has consistently made contributions at of least 90% of the ARC and at least 70% of the APC and in a number of years the employer contribution was well in excess of 100%.

Fiscal Year Ending June 30	Annual Required Contribution (A)	Annual Pension Cost (B)	Actual Employer Contributions (C)	Actual Employer Contribution as a % of ARC (D) = (C) / (A)	Actual Employer Contributions as a % of APC (E) = (C) / (B)
1998	\$31,514,506	\$35,516,124	\$124,470,502	395.0%	350.5%
1999	0	20,198,833	57,458,271		284.5%
2000	0	34,578,361	24,426,465		70.6%
2001	0	5,378,281	25,763,218		479.0%
2002	0	6,132,578	27,241,801		444.2%
2003	40,910,299	47,823,973	40,560,882	99.1%	84.8%
2004	44,128,205	50,773,126	55,804,924	126.5%	109.9%
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	141,464,198	147,288,082	129,154,539	91.3%	87.7%
2008	144,743,767	149,896,630	--	--	--

**Table 17**  
**GASB Statement No. 27**  
**Three-Year Trend Information**

<b>Fiscal Year Ending June 30</b>	<b>Annual Pension Cost (APC)</b>	<b>Total Employer Contributions</b>	<b>Contribution as a % of APC</b>
2005	\$ 87,615,788	\$ 75,490,143	86.2%
2006	116,651,020	101,556,257	87.1%
2007	147,288,082	129,154,539	87.7%

**Table 18**  
**GASB Statement No. 27 Annual Development of Pension Cost**

Since employer contributions have in the aggregate, exceeded the Annual Pension Cost, the Plan has a Net Pension Asset.

<b>Fiscal Year Ending June 30</b>	<b>ARC at EOY (A)</b>	<b>Interest on NPO* (B)</b>	<b>ARC Adjustment (C) = (H)* / (G)</b>	<b>Annual Pension Cost (APC) (D) = (A) + (B) - (C)</b>	<b>Total Employer Contributions (E)</b>	<b>Change in NPO (F) = (E) - (D)</b>	<b>Amort. Factor (G)</b>	<b>Ending NPO Balance (H) = NPO* + (F)</b>
1998	\$31,514,506	-\$2,098,917	-\$6,100,535	\$35,516,124	\$124,470,502	-\$88,954,378	4.8007	-\$118,241,111
1999	0	-8,318,592	-28,517,425	20,198,833	57,458,271	-37,259,438	4.1463	-155,500,549
2000	0	-10,631,644	-45,210,005	34,578,361	24,426,465	10,151,896	3.4395	-145,348,653
2001	0	-10,973,809	-16,352,090	5,378,281	25,763,218	-20,384,937	8.8887	-165,733,590
2002	0	-12,512,869	-18,645,447	6,132,578	27,241,801	-21,109,223	8.8887	-186,842,813
2003	40,910,299	-14,106,614	-21,020,288	47,823,973	40,560,882	7,263,091	8.8887	-179,579,722
2004	44,128,205	-13,558,251	-20,203,172	50,773,126	55,804,924	-5,031,798	8.8887	-184,611,520
2005	80,784,677	-13,938,151	-20,769,262	87,615,788	75,490,143	12,125,645	8.8887	-172,485,874
2006	110,268,590	-13,022,666	-19,405,096	116,651,020	101,556,257	15,094,763	8.8887	-157,391,111
2007	141,464,198	-11,883,013	-17,706,897	147,288,082	129,154,539	18,133,543	8.8887	-139,257,570
2008	144,743,767	-10,513,947	-15,666,810	149,896,630	144,743,767**	5,152,863	8.8887	-134,104,707

\*Prior year NPO

\*\* Assumed to be equal to the ARC. Will be updated to equal the actual employer contribution after June 30, 2008.

## Section 7

### Impact of Assumption Changes

**Table 19**  
**Impact of Experience Study Assumption Changes**

	Prior Assumptions		Current Assumptions	
	Dollars	% of Payroll	Dollars	% of Payroll
Actuarial accrued liability				
Active Members	\$3,382,197,907		\$3,413,519,969	
Terminated Vested Members	114,808,578		105,524,228	
Retired Members	<u>3,988,381,602</u>		<u>3,948,241,152</u>	
<b>Total</b>	<b>\$7,485,388,087</b>		<b>\$7,467,285,349</b>	
	Prior Assumptions		Current Assumptions	
	Dollars	% of Payroll	Dollars	% of Payroll
A. Total Normal Cost	\$103,864,456	15.49%	\$105,450,550	15.73%
B. Expected employee contributions	<u>38,609,879</u>	5.76%	<u>36,681,405</u>	5.47%
C. Employer normal cost: (A) - (B)	\$65,254,577	9.73%	\$68,769,145	10.26%
D. Actuarial accrued liability	7,485,388,087		7,467,285,349	
E. Actuarial value of assets	<u>6,864,084,005</u>		<u>6,864,084,005</u>	
F. Unfunded/(overfunded) actuarial accrued liability: (D) - (E)	\$621,304,082		\$603,201,314	
G. Amortization of Unfunded/(overfunded) actuarial accrued liability	72,365,827	10.79%	70,407,554	10.50%
H. Total required contribution: (C) + (G), adjusted for timing	143,125,220	21.35%	144,734,767	21.59%
I. Employer match (110% of (B)), adjusted for timing	<u>42,470,867</u>	6.34%	<u>41,963,527</u>	6.26%
J. Recommended contribution: greater of employer match (I) or total required contribution (H), adjusted for timing	\$143,125,220	21.35%	\$144,734,767	21.59%
K. Projected compensation	\$670,372,663		\$670,372,663	

## **Section 8**

# **Supplemental Information**



## **Appendix A**

# **Actuarial Procedures and Assumptions**

This section of the report describes the actuarial procedures and assumptions used in this valuation. The assumptions used in this valuation have changed from those used in the July 1, 2006 valuation based on the experience study performed by the prior actuary in 2007.

The actuarial assumptions used in the valuation are intended to estimate the future experience of the members of the Plan and of the Plan itself in areas that affect the projected benefit flow and anticipated investment earnings. Any variations in future experience from that expected from these assumptions will result in corresponding changes in the estimated costs of the Plan's benefits. Table A-1 summarizes the actuarial assumptions.

Table A-2 presents expected annual salary increases for various years of service. Tables A-3 through A-6 give rates of decrement for service retirement, disablement, mortality, and other terminations of employment. Table A-7 shows probabilities of vesting upon termination.

**Appendix A**  
**Actuarial Procedures and Assumptions (cont'd)**

<b>Actuarial Cost Method</b>	The actuarial valuation was prepared using the entry age normal actuarial cost method. Under this method, the actuarial present value of the projected benefits of each individual included in the valuation is allocated as a level percentage of the individual's projected compensation between entry age and assumed exit. The portion of this actuarial present value allocated to a valuation year is called the normal cost. The portion of this actuarial present value not provided for at a valuation date by the sum of (a) the actuarial value of the assets, and (b) the actuarial present value of future normal costs is called the unfunded actuarial accrued liability or UAAL. The UAAL is amortized as a level percentage of the projected salaries of present and future members of the Plan.
<b>Records and Data</b>	The data used in the valuation consist of financial information; records of age, service, salary, and contribution rates and account balances of contributing members; and records of age, and amount of benefit for retired members and beneficiaries. All of the data were supplied by Plan's staff and are accepted for valuation purposes without audit.
<b>Valuation of Assets</b>	All assets are valued at market as of the valuation date, July 1, 2007.
<b>Investment Earnings</b>	The annual rate of investment earnings of the assets of the Plan is assumed to be 8.0%. This rate is compounded annually and is net of investment expenses.
<b>Future Salaries</b>	Table A-2 illustrates the rates of future salary increases assumed for the purpose of the valuation. In addition to increases in salary due to promotions and longevity, this scale includes an assumed 4.25% per annum rate of increase in the general wage level of the membership.
<b>Retirement</b>	Table A-3 shows the annual assumed rates of retirement. Separate rates are also used for members with 30 or more years of service.
<b>Disability</b>	The rates of disability used in this valuation are illustrated in Table A-4.

**Appendix A**  
**Actuarial Procedures and Assumptions (cont'd)**

<b>Mortality</b>	The mortality rates used in this valuation are illustrated in Table A-5. A written description of each table used is included in Table A-1.
<b>Other Terminations of Employment</b>	<p>The rates of assumed future withdrawal from active service for reasons other than death, disability or retirement are shown for representative ages in Table A-6.</p> <p>Terminating members may forfeit a vested right to a deferred benefit if they withdraw their accumulated contributions. Table A-6 gives the assumed probability, at selected ages, that a terminating member will elect to receive the deferred benefit instead of withdrawing his accumulated contributions.</p>
<b>Interest on Member Contributions</b>	Interest on member contributions is assumed to accrue at a rate of 8.00% per annum, compounded annually.
<b>Percent Married</b>	We assumed 90% of males and 75% of females are married.
<b>Commencement for Terminated Vested Members</b>	Vested members who terminate but elect to leave their contributions in the Plan are assumed to commence receiving benefits at age 60.

**Table A-1**  
**Summary of Valuation Assumptions**

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I. Economic assumptions	
A. Inflation	3.75%
B. Real across the board increase	0.50%
C. Investment return	8.00%
D. Interest on member accounts	8.00%
II. Demographic assumptions	
A. Salary increases due to promotion and longevity	Table A-2
B. Retirement	Table A-3
C. Disablement	Table A-4
D. Mortality after service retirement	Table A-5
Men	1994 Group Annuity Mortality (GAM) Table for Males
Women	1994 GAM Table for Females
E. Mortality pre-retirement	Table A-5
Men	1994 GAM Table for Males
Women	1994 GAM Table for Females
F. Mortality after disability retirement	Table A-5
Men	1994 GAM Table for Males
Women	1994 GAM Table for Females
G. Other terminations of employment	Table A-6

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**Table A-2  
Future Salaries**

Current Assumptions		Prior Assumptions
Years of Service	Promotional and Merit Increases*	
0	5.00%	5.50% (increases of 4.00% for inflation, 0.50% for across the board, and 1.00% for promotional and merit)
1	4.00%	
2	3.00%	
3	2.00%	
4	1.50%	
5+	1.00%	

\* Before including a 3.75% inflation increase and a 0.50% across the board increase.

**Table A-3**  
**Retirement**

Age	Current Assumptions		Prior Assumptions	
	Under 30 Years of Service	Over 30 Years of Service	Under 30 Years of Service	Over 30 Years of Service
50	0.00%	30.00%	0.00%	60.00%
51	0.00%	12.50%	0.00%	15.00%
52	0.00%	12.50%	0.00%	20.00%
53	0.00%	5.00%	0.00%	5.00%
54	0.00%	5.00%	0.00%	5.00%
55	5.00%	25.00%	5.00%	25.00%
56	3.00%	12.50%	4.00%	10.00%
57	3.00%	12.50%	1.00%	10.00%
58	3.00%	12.50%	1.00%	10.00%
59	4.00%	12.50%	2.00%	10.00%
60	4.00%	15.00%	2.00%	10.00%
61	4.00%	10.00%	3.00%	5.00%
62	4.00%	10.00%	3.00%	5.00%
63	5.00%	20.00%	3.00%	20.00%
64	5.00%	20.00%	3.00%	10.00%
65	100.00%	100.00%	100.00%	100.00%

**Water and Power Employees' Retirement Plan of the City of Los Angeles**  
**Actuarial Valuation – July 1, 2007**

**Table A-4**  
**Disability**

Age	Current Assumptions		Prior Assumptions	
	Male	Female	Male	Female
20	0.00000	0.00000	0.00000	0.00000
21	0.00000	0.00000	0.00000	0.00000
22	0.00000	0.00000	0.00000	0.00000
23	0.00000	0.00000	0.00000	0.00000
24	0.00000	0.00000	0.00000	0.00000
25	0.00006	0.00000	0.00006	0.00000
26	0.00006	0.00000	0.00006	0.00000
27	0.00006	0.00000	0.00006	0.00000
28	0.00006	0.00000	0.00006	0.00000
29	0.00006	0.00000	0.00006	0.00000
30	0.00012	0.00006	0.00012	0.00006
31	0.00012	0.00012	0.00012	0.00012
32	0.00012	0.00018	0.00012	0.00018
33	0.00012	0.00018	0.00012	0.00018
34	0.00012	0.00030	0.00012	0.00030
35	0.00012	0.00036	0.00012	0.00036
36	0.00012	0.00042	0.00012	0.00042
37	0.00012	0.00048	0.00012	0.00048
38	0.00012	0.00054	0.00012	0.00054
39	0.00012	0.00060	0.00012	0.00060
40	0.00018	0.00072	0.00018	0.00072
41	0.00018	0.00072	0.00018	0.00072
42	0.00024	0.00084	0.00024	0.00084
43	0.00024	0.00090	0.00024	0.00090
44	0.00024	0.00096	0.00024	0.00096
45	0.00030	0.00102	0.00030	0.00102
46	0.00030	0.00108	0.00030	0.00108
47	0.00036	0.00114	0.00036	0.00114
48	0.00042	0.00126	0.00042	0.00126
49	0.00048	0.00126	0.00048	0.00126

**Water and Power Employees' Retirement Plan of the City of Los Angeles**  
**Actuarial Valuation – July 1, 2007**

**Table A-4**  
**Disability (cont'd)**

Age	Current Assumptions		Prior Assumptions	
	Male	Female	Male	Female
50	0.00054	0.00138	0.00054	0.00138
51	0.00066	0.00144	0.00066	0.00144
52	0.00084	0.00150	0.00084	0.00150
53	0.00090	0.00156	0.00090	0.00156
54	0.00108	0.00162	0.00108	0.00162
55	0.00126	0.00168	0.00126	0.00168
56	0.00144	0.00180	0.00144	0.00180
57	0.00162	0.00180	0.00162	0.00180
58	0.00186	0.00192	0.00186	0.00192
59	0.00210	0.00198	0.00210	0.00198
60	0.00240	0.00000	0.00240	0.00000
61	0.00264	0.00000	0.00264	0.00000
62	0.00300	0.00000	0.00300	0.00000
63	0.00336	0.00000	0.00336	0.00000
64	0.00348	0.00000	0.00348	0.00000
65	0.00000	0.00000	0.00000	0.00000
66	0.00000	0.00000	0.00000	0.00000
67	0.00000	0.00000	0.00000	0.00000
68	0.00000	0.00000	0.00000	0.00000
69	0.00000	0.00000	0.00000	0.00000
70	0.00000	0.00000	0.00000	0.00000



**Water and Power Employees' Retirement Plan of the City of Los Angeles  
Actuarial Valuation – July 1, 2007**

**Table A-5  
Mortality**

Age	Current Assumptions		Prior Assumptions	
	Male	Female	Male	Female
20	0.000507	0.000284	0.000365	0.000179
21	0.000530	0.000286	0.000377	0.000189
22	0.000556	0.000289	0.000392	0.000201
23	0.000589	0.000292	0.000408	0.000212
24	0.000624	0.000291	0.000424	0.000225
25	0.000661	0.000291	0.000444	0.000238
26	0.000696	0.000294	0.000464	0.000253
27	0.000727	0.000302	0.000488	0.000268
28	0.000754	0.000314	0.000513	0.000283
29	0.000779	0.000331	0.000542	0.000301
30	0.000801	0.000351	0.000572	0.000320
31	0.000821	0.000373	0.000607	0.000342
32	0.000839	0.000397	0.000645	0.000364
33	0.000848	0.000422	0.000687	0.000388
34	0.000849	0.000449	0.000734	0.000414
35	0.000851	0.000478	0.000785	0.000443
36	0.000862	0.000512	0.000860	0.000476
37	0.000891	0.000551	0.000907	0.000502
38	0.000939	0.000598	0.000966	0.000535
39	0.000999	0.000652	0.001039	0.000573
40	0.001072	0.000709	0.001128	0.000617
41	0.001156	0.000768	0.001238	0.000665
42	0.001252	0.000825	0.001370	0.000716
43	0.001352	0.000877	0.001527	0.000775
44	0.001458	0.000923	0.001715	0.000841
45	0.001578	0.000973	0.001932	0.000919
46	0.001722	0.001033	0.002183	0.001010
47	0.001899	0.001112	0.002471	0.001117
48	0.002102	0.001206	0.002790	0.001237
49	0.002326	0.001310	0.003138	0.001366
50	0.002579	0.001428	0.003513	0.001505
51	0.002872	0.001568	0.003909	0.001647
52	0.003213	0.001734	0.004324	0.001793
53	0.003584	0.001907	0.004755	0.001948
54	0.003979	0.002084	0.005200	0.002119

**Water and Power Employees' Retirement Plan of the City of Los Angeles**  
**Actuarial Valuation – July 1, 2007**

**Table A-5**  
**Mortality (cont'd)**

Age	Current Assumptions		Prior Assumptions	
	Male	Female	Male	Female
55	0.004425	0.002294	0.005660	0.002315
56	0.004949	0.002563	0.006131	0.002541
57	0.005581	0.002919	0.006618	0.002803
58	0.006300	0.003359	0.007139	0.003103
59	0.007090	0.003863	0.007719	0.003442
60	0.007976	0.004439	0.008384	0.003821
61	0.008986	0.005093	0.009158	0.004241
62	0.010147	0.005832	0.010064	0.004702
63	0.011471	0.006677	0.011133	0.005210
64	0.012940	0.007621	0.012391	0.005769
65	0.014535	0.008636	0.013868	0.006385
66	0.016239	0.009694	0.015592	0.007064
67	0.018034	0.010764	0.017579	0.007817
68	0.019859	0.011763	0.019804	0.008681
69	0.021729	0.012709	0.022229	0.009702
70	0.023730	0.013730	0.024817	0.010921
71	0.025951	0.014953	0.027530	0.012385
72	0.028481	0.016506	0.030354	0.014128
73	0.031201	0.018344	0.033370	0.016159
74	0.034051	0.020381	0.036680	0.018481
75	0.037211	0.022686	0.040388	0.021091
76	0.040858	0.025325	0.044597	0.023992
77	0.045171	0.028366	0.049388	0.027184
78	0.050211	0.031727	0.054758	0.030672
79	0.055861	0.035362	0.060678	0.034459
80	0.062027	0.039396	0.067125	0.038549
81	0.068615	0.043952	0.074070	0.042945
82	0.075532	0.049153	0.081484	0.047655
83	0.082510	0.054857	0.089320	0.052691
84	0.089613	0.060979	0.097525	0.058071
85	0.097240	0.067738	0.106047	0.063807
86	0.105792	0.075347	0.114836	0.069918
87	0.115671	0.084023	0.124170	0.076570
88	0.126980	0.093820	0.133870	0.083870
89	0.139452	0.104594	0.144073	0.091935
90	0.152931	0.116265	0.154859	0.101354
91	0.167260	0.128751	0.166307	0.111750
92	0.182281	0.141973	0.178214	0.123076

**Water and Power Employees' Retirement Plan of the City of Los Angeles**  
**Actuarial Valuation – July 1, 2007**

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**Table A-5**  
**Mortality (cont'd)**

Age	Current Assumptions		Prior Assumptions	
	Male	Female	Male	Female
93	0.198392	0.155931	0.190460	0.135630
94	0.215700	0.170677	0.203007	0.149577
95	0.233606	0.186213	0.217904	0.165103
96	0.251510	0.202538	0.234086	0.182419
97	0.268815	0.219655	0.248436	0.201757
98	0.285277	0.237713	0.263954	0.222043
99	0.301298	0.256712	0.280803	0.243899
100	0.317238	0.276427	0.299154	0.268185
101	0.333461	0.296629	0.319185	0.295187
102	0.350330	0.317093	0.341086	0.325225
103	0.368542	0.338505	0.365052	0.358897
104	0.387855	0.361016	0.393102	0.395842
105	0.407224	0.383597	0.427255	0.438360
106	0.425599	0.405217	0.469531	0.487816
107	0.441935	0.424846	0.521945	0.545886
108	0.457553	0.444368	0.586518	0.614309
109	0.473150	0.464469	0.665268	0.694884
110	0.486745	0.482325	0.760215	0.789474

**Table A-6**  
**Other Terminations of Employment**  
**Among Members Not Eligible to Retire**

Age	Current Assumptions		Prior Assumptions			
	Male	Female	Male		Female	
			Vested	Ordinary	Vested	Ordinary
20	0.085500	0.105000	0.011243	0.077287	0.010082	0.069302
21	0.081500	0.102500	0.010768	0.072702	0.010190	0.068799
22	0.077500	0.100000	0.010261	0.068069	0.010295	0.068292
23	0.073500	0.097500	0.009756	0.064154	0.010318	0.067851
24	0.069500	0.095000	0.009386	0.061189	0.010337	0.067386
25	0.065500	0.092500	0.008865	0.057290	0.010350	0.066892
26	0.061500	0.090000	0.008349	0.054426	0.010201	0.066499
27	0.057500	0.087500	0.008385	0.051510	0.010628	0.065284
28	0.054000	0.083500	0.007986	0.048654	0.010559	0.064331
29	0.050500	0.079500	0.007510	0.045750	0.010385	0.063269
30	0.047000	0.075500	0.006994	0.042966	0.010111	0.062108
31	0.043500	0.071500	0.007015	0.040065	0.010520	0.060083
32	0.040000	0.067500	0.006479	0.037301	0.010187	0.058642
33	0.037500	0.064500	0.006107	0.034338	0.010104	0.056812
34	0.035000	0.061500	0.006125	0.032640	0.010252	0.054636
35	0.032500	0.058500	0.005642	0.029183	0.010168	0.052596
36	0.030000	0.055500	0.005615	0.028010	0.010116	0.050456
37	0.027500	0.052500	0.005111	0.024094	0.010208	0.048124
38	0.026000	0.050500	0.005111	0.022974	0.010204	0.045862
39	0.024500	0.048500	0.004623	0.021202	0.009628	0.044158
40	0.023000	0.046500	0.004630	0.019996	0.009683	0.041821
41	0.021500	0.044500	0.004248	0.017762	0.009497	0.039709
42	0.020000	0.042500	0.003752	0.016638	0.008626	0.038255
43	0.019000	0.039700	0.003759	0.014311	0.009263	0.035270
44	0.018000	0.036900	0.003248	0.012002	0.008980	0.033179
45	0.017000	0.034100	0.003246	0.011444	0.008785	0.030968
46	0.016000	0.031300	0.002745	0.010325	0.007827	0.029443
47	0.015000	0.028500	0.002745	0.008645	0.008351	0.026299
48	0.014400	0.027800	0.002376	0.007999	0.007294	0.024556
49	0.013800	0.027100	0.002379	0.006876	0.007412	0.021429
50	0.013200	0.026400	0.001876	0.006389	0.005817	0.019810
51	0.012600	0.025700	0.001877	0.005848	0.005409	0.016851
52	0.012000	0.025000	0.001373	0.005132	0.003975	0.014862
53	0.011400	0.024000	0.001375	0.004500	0.003620	0.011852

**Table A-6**  
**Other Terminations of Employment**  
**Among Members Not Eligible to Retire (cont'd)**

Age	Current Assumptions		Prior Assumptions			
	Male	Female	Male		Female	
			Vested	Ordinary	Vested	Ordinary
54	0.010800	0.023000	0.001374	0.003871	0.003219	0.009069
55	0.010200	0.022000	0.000877	0.003598	0.001841	0.007553
56	0.009600	0.021000	0.000876	0.002899	0.001589	0.005258
57	0.009000	0.020000	0.000500	0.002201	0.000872	0.003841
58	0.008400	0.017000	0.000500	0.001400	0.000795	0.002229
59	0.007800	0.014000	0.000500	0.000700	0.000737	0.001030
60	0.007200	0.011000	0.000500	0.000700	0.000376	0.000525
61	0.006600	0.008000	0.000000	0.000700	0.000000	0.000367
62	0.006000	0.005000	0.000000	0.000700	0.000000	0.000094
63	0.004000	0.003330	0.000000	0.000700	0.000000	0.000000
64	0.002000	0.001670	0.000000	0.000700	0.000000	0.000000
65	0.000000	0.000000	0.000000	0.000700	0.000000	0.000000

\* Withdrawal rates are zero for members expected to retire. Ordinary withdrawal members are assumed to receive their account balance at termination. Vested withdrawal members are assumed to receive a deferred retirement benefit from the Plan. 65% of male terminations and 60% of female terminations are assumed to be ordinary withdrawals, with the remaining being vested withdrawals.

## Appendix B Plan Provisions

### Summary of Plan Provisions

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

<b>Plan Year:</b>	July 1 through June 30
<b>Census Date:</b>	March 31
<b>Formula Retirement Benefit:</b>	
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 year 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.
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.
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.
<b>Death After Retirement</b>	50% of retiree's unmodified allowance continued to eligible spouse or domestic partner (reduced if difference in ages is greater than five years).

**Appendix B**  
**Plan Provisions (cont'd)**

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**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.

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**Sample 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.

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**Appendix B**  
**Plan Provisions (cont'd)**

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**Member Normal Contributions:** If an employee became a plan member after June 1, 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:

<u>Entry Age</u>	<u>Rate</u>
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%

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**Department Current Service Contributions:** The Department of Water and Power makes actuarially based contributions that are a minimum of 110% of employee contributions.

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**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.

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**Deferred Withdrawal Retirement Benefit (Vested):**

Age & Service Requirement      Age 60 with one-year 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

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**Appendix B**  
**Plan Provisions (cont'd)**

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<b>Death Before Retirement:</b>	Refund of employee contributions with interest. On the death of a member who is eligible for service retirement but who has not yet retired or who has 25 years of service, the member's spouse may elect a monthly allowance payable during the spouse's lifetime in lieu of return of the member's total accumulated contributions. The monthly allowance payable to the surviving spouse is the amount the spouse would have received had the member retired on the day before the member's death and elected a full joint and survivor allowance.
<b>Withdrawal of Contributions Benefit (Ordinary Withdrawal):</b>	Refund of employee contributions with interest.
<b>Money Purchase Annuity:</b>	A monthly lifetime benefit equal in value to the employee normal contribution account plus Department matching contribution (current service contribution) account at retirement date.
<b>Changes in Plan Provisions:</b>	None

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## **Appendix C Valuation Data**

This valuation is based upon the membership of the Plan as of March 31, 2007. Membership data were supplied by the Plan's staff and accepted for valuation purposes without audit. However, extensive tests were performed to ensure that the data are reasonable and consistent for valuation purposes.

The data for all contributing members, former contributing members, and their survivors are summarized in Table C-1.

Tables C-2 through C-3 present distributions by age group of members receiving retirement benefits, and survivors receiving benefits. Shown in the tables are the numbers of persons receiving benefits, the total annual benefits received, and the average annual benefit per recipient.

Table C-4 contains summaries of the data by age and service for active members. Values shown in the tables are the numbers of members, their total and average annual salaries, and their total and average employee contributions.

The valuation data also includes members who have terminated employment but have neither retired nor withdrawn their contributions. There are 1,535 such members.

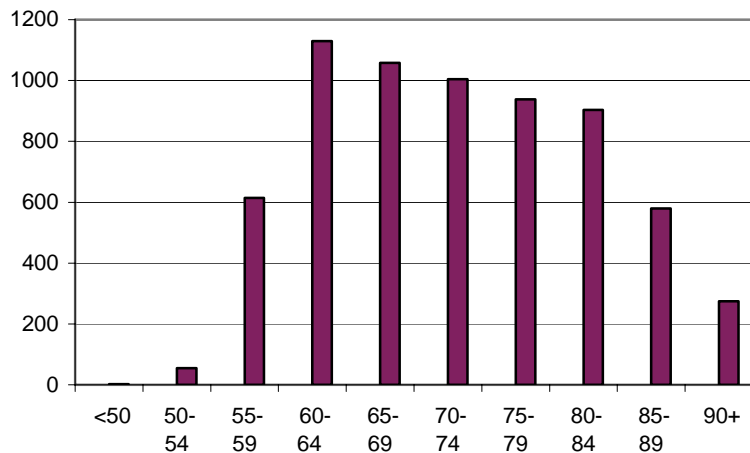
**Table C-1  
Summary of Membership Data**

	Contributing Members			Annuitants		
	Number	Annual Salaries (rounded to 000's)	Average Annual Salaries	Number	Annual Benefits (rounded to 000's)	Average Annual Benefits
July 1, 2007	7,993	\$670,373,000	\$83,870	8,746	\$337,989,000	\$38,645
July 1, 2006	7,926	635,728,000	80,208	8,817	335,353,000	38,035

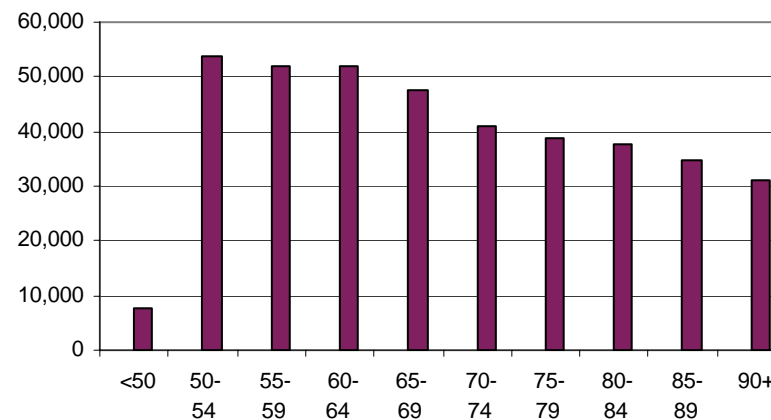
**Table C-2**  
**Members Receiving Retirement Benefits as of July 1, 2007**

	<50	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90+	Totals
<b>Number of Members</b>	2	55	614	1,130	1,058	1,004	938	903	579	274	6,557
<b>Annual Benefits in (000's)</b>	\$15	\$2,957	\$32,009	\$58,761	\$50,163	\$41,055	\$36,472	\$33,958	\$20,153	\$8,523	\$284,066
<b>Average Annual Benefits</b>	\$7,590	\$53,767	\$52,132	\$52,001	\$47,413	\$40,891	\$38,883	\$37,606	\$34,807	\$31,106	\$43,323

**Number of Members**



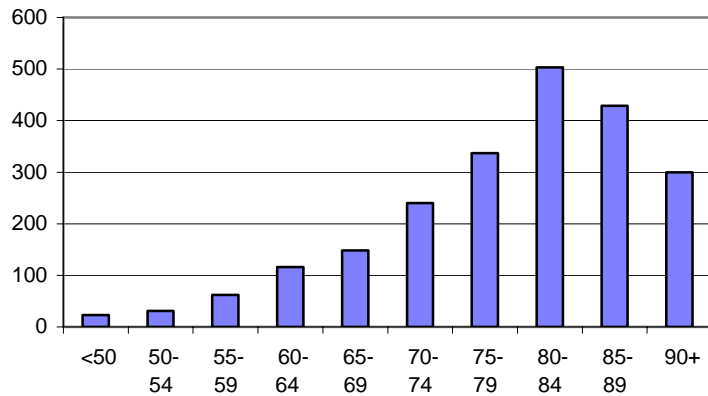
**Average Annual Benefits**



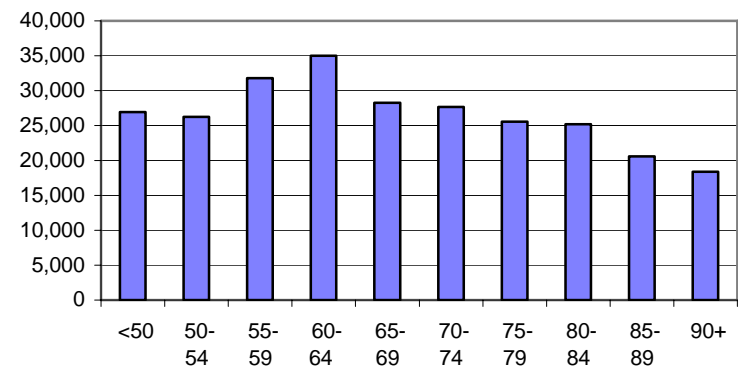
**Table C-3**  
**Survivors Receiving Retirement Benefits as of July 1, 2007**

	<50	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90+	Totals
<b>Number of Survivors</b>	23	31	62	116	148	240	337	503	429	300	2,189
<b>Annual Benefits in (000's)</b>	\$620	\$814	\$1,970	\$4,062	\$4,187	\$6,641	\$8,623	\$12,667	\$8,828	\$5,515	\$53,927
<b>Average Annual Benefits</b>	\$26,937	\$26,263	\$31,780	\$35,016	\$28,288	\$27,670	\$25,589	\$25,183	\$20,578	\$18,384	\$24,635

**Number of Survivors**



**Average Annual Benefits**



**Water and Power Employees' Retirement Plan of the City of Los Angeles**  
**Actuarial Valuation – July 1, 2007**

**Table C-4**  
**Distribution of Members and Salaries as of July 1, 2007**

Number of Employees – By Age Group													
Nearest Year of Service	<20	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70+	Totals
0	2	23	54	43	38	28	24	20	8	3	0	0	243
1	0	8	46	34	30	31	27	11	6	3	1	0	197
2	0	3	25	30	24	13	13	9	4	2	0	0	123
3-4	0	6	66	91	89	96	55	37	22	9	2	2	475
5-9	0	2	67	250	275	229	189	133	72	43	4	3	1,267
10-14	0	0	3	21	145	166	118	71	43	21	9	2	599
15-19	0	0	0	2	147	494	370	240	136	60	23	9	1,481
20-24	0	0	0	0	9	299	562	402	234	98	30	17	1,651
25-29	0	0	0	0	0	12	338	486	232	113	25	11	1,217
30-34	0	0	0	0	0	0	6	201	234	76	18	3	538
35-39	0	0	0	0	0	1	0	15	85	59	13	3	176
40+	0	0	0	0	0	0	0	0	1	13	7	5	26
Totals	2	42	261	471	757	1,369	1,702	1,625	1,077	500	132	55	7,993

Annual Salaries – By Age Group													
Nearest Year of Service	<20	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70+	Totals
0	89,050	1,212,859	3,285,792	2,513,092	2,570,244	1,942,108	1,550,544	1,322,540	595,344	183,993	0	0	15,265,566
1	0	514,752	2,962,768	2,090,966	1,846,920	1,986,790	1,551,123	639,122	364,212	161,469	70,959	0	12,189,081
2	0	194,703	1,848,400	2,264,670	1,661,976	839,670	932,984	634,419	328,056	140,816	0	0	8,845,694
3-4	0	401,634	5,102,724	6,598,319	6,534,113	6,971,904	3,997,345	2,721,535	1,685,618	800,100	175,016	135,254	35,123,562
5-9	0	152,822	4,955,253	18,328,500	20,017,800	17,022,028	14,236,236	10,302,845	5,514,984	3,596,821	464,440	177,357	94,769,086
10-14	0	0	212,133	1,615,425	12,167,820	14,127,264	9,700,544	5,966,911	3,792,256	1,830,444	772,839	135,722	50,321,358
15-19	0	0	0	184,378	12,385,338	44,017,376	30,669,300	20,248,560	10,893,464	4,611,480	1,742,089	653,445	125,405,430
20-24	0	0	0	0	724,680	26,825,383	52,051,878	34,974,000	19,629,792	8,226,022	2,191,020	1,219,495	145,842,270
25-29	0	0	0	0	0	1,127,364	31,345,444	45,802,098	20,779,544	9,662,969	2,029,925	973,104	111,720,448
30-34	0	0	0	0	0	0	618,006	19,590,666	21,638,448	7,592,780	1,535,598	290,499	51,265,997
35-39	0	0	0	0	0	64,901	0	1,597,110	8,194,510	5,805,541	1,151,202	271,968	17,085,232
40+	0	0	0	0	0	0	0	0	86,930	1,239,459	682,465	530,085	2,538,939
Totals	89,050	2,476,770	18,367,070	33,595,350	57,908,891	114,924,788	146,653,404	143,799,806	93,503,158	43,851,894	10,815,553	4,386,929	670,372,663

**Water and Power Employees' Retirement Plan of the City of Los Angeles**  
**Actuarial Valuation – July 1, 2007**

**Table C-4**  
**Distribution of Members and Salaries as of July 1, 2007 (cont'd)**

Average Monthly Salaries – By Age Group													
Nearest Year of Service	<20	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70+	Totals
0	\$44,525	\$52,733	\$60,848	\$58,444	\$67,638	\$69,361	\$64,606	\$66,127	\$74,418	\$61,331	\$0	\$0	\$62,821
1	0	64,344	64,408	61,499	61,564	64,090	57,449	58,102	60,702	53,823	70,959	0	61,874
2	0	64,901	73,936	75,489	69,249	64,590	71,768	70,491	82,014	70,408	0	0	71,916
3-4	0	66,939	77,314	72,509	73,417	72,624	72,679	73,555	76,619	88,900	87,508	67,627	73,944
5-9	0	76,411	73,959	73,314	72,792	74,332	75,324	77,465	76,597	83,647	116,110	59,119	74,798
10-14	0	0	70,711	76,925	83,916	85,104	82,208	84,041	88,192	87,164	85,871	67,861	84,009
15-19	0	0	0	92,189	84,254	89,104	82,890	84,369	80,099	76,858	75,743	72,605	84,676
20-24	0	0	0	0	80,520	89,717	92,619	87,000	83,888	83,939	73,034	71,735	88,336
25-29	0	0	0	0	0	93,947	92,738	94,243	89,567	85,513	81,197	88,464	91,800
30-34	0	0	0	0	0	0	103,001	97,466	92,472	99,905	85,311	96,833	95,290
35-39	0	0	0	0	0	64,901	0	106,474	96,406	98,399	88,554	90,656	97,075
40+	0	0	0	0	0	0	0	0	86,930	0	97,495	0	97,652
Totals	\$44,525	\$58,971	\$70,372	\$71,328	\$76,498	\$83,948	\$86,165	\$88,492	\$86,818	\$87,704	\$81,936	\$79,762	\$83,870

## **Appendix D**

# **Comparative Schedules**

Table D-1 shows the number of active and vested terminated members and annuitants covered as of the last 10 valuation dates.



**Table D-1  
Membership Data**

<b>Year Ended June 30</b>	<b>Active Members</b>	<b>Vested Terminated Members *</b>	<b>Retired Participants and Beneficiaries</b>	<b>Ratio of Non- Actives to Actives</b>
1998	8,345	1,184	8,213	1.13
1999	6,518	1,450	9,967	1.75
2000	6,807	1,387	9,749	1.64
2001	7,250	1,415	9,576	1.52
2002	7,403	1,426	9,353	1.46
2003	7,731	1,445	9,161	1.37
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

\* Excludes terminated members due a refund of employee contributions

## Appendix E Glossary

The following definitions are largely excerpts from a list adopted in 1981 by the major actuarial organizations in the United States. In some cases the definitions have been modified for specific applicability to the Water and Power Employees' Retirement Plan of the City of Los Angeles. Defined terms are capitalized throughout this Appendix.

<b>Actuarial Assumptions</b>	Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement, and retirement; changes in compensation, rates of investment earnings, and asset appreciation or depreciation; procedures used to determine the Actuarial Value of Assets; and other relevant items.
<b>Actuarial Cost Method</b>	A procedure for determining the Actuarial Present Value of pension plan benefits and expenses and for developing an actuarially equivalent allocation of such value to time periods, usually in the form of a Normal Cost and an Actuarial Accrued Liability.
<b>Actuarial Gain (Loss)</b>	A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions during the period between two Actuarial Valuation dates, as determined in accordance with a particular Actuarial Cost Method.
<b>Actuarial Present Value</b>	The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions.
<b>Actuarial Valuation</b>	The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a pension plan.
<b>Actuarial Value of Assets</b>	The value of cash, investments and other property belonging to a pension plan, as used by the actuary for the purpose of an Actuarial Valuation.
<b>Actuarially Equivalent</b>	Of equal Actuarial Present Value, determined as of a given date with each value based on the same set of Actuarial Assumptions.

**Appendix E  
Glossary (cont'd)**

<b>Amortization Payment</b>	That portion of the pension plan contribution that is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability or (UAAL).
<b>Entry Age Normal Actuarial Cost Method</b>	A method under which the Actuarial Present Value of the Projected Benefits of each individual included in an Actuarial Valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit ages. The portion of this Actuarial Present Value allocated to a valuation year is called the Normal Cost. The portion of this Actuarial Present Value not provided for at a valuation date by the Actuarial Present Value of future Normal Costs is called the Actuarial Accrued Liability.
<b>Normal Cost</b>	That portion of the Actuarial Present Value of pension plan benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method.
<b>Actuarial Accrued Liability</b>	That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of pension plan benefits and expenses which is not provided for by future Normal Costs.
<b>Unfunded Actuarial Accrued Liability</b>	The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets.
<b>Accrued Benefit</b>	The amount of an individual's benefit (whether or not vested) as of a specific date determined in accordance with the terms of a pension plan and based on compensation and service to that date.
<b>Projected Benefits</b>	Those pension plan benefit amounts which are expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age and past and anticipated future compensation and service credits.
<b>Unaccrued Benefit</b>	The excess of an individual's Projected Benefits over the Accrued Benefits as of a specified date.