
# City of Los Angeles Department of Water and Power

## Funding Actuarial Valuation and Review of Other Postemployment Benefits (OPEB) as of June 30, 2019

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*November 7, 2019*

*Ms. Ann Santilli*
*Chief Financial Officer*
*City of Los Angeles Department of Water and Power*
*111 N. Hope Street, Room 450*
*Los Angeles, CA 90011*

*Dear Ann:*

*We are pleased to submit this Actuarial Valuation and Review of Other Postemployment Benefits (OPEB) as of June 30, 2019. The report summarizes the actuarial data used in the valuation, establishes the Actuarially Determined Contribution (ADC) for the coming year, and analyzes the preceding year's experience. This report was based on the census and financial data provided by the Department of Water and Power (DWP), with exceptions noted for data in Exhibit II, and the terms of the Plan as communicated to us by DWP. The actuarial calculations were completed under the supervision of Thomas Bergman, ASA, MAAA, EA and Andy Yeung, ASA, MAAA, FCA, EA. The health care trend and other related medical assumptions have been reviewed by Paul Sadro, ASA, MAAA.*

*This actuarial valuation has been completed in accordance with generally accepted actuarial principles and practices. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our opinion, the assumptions used in this valuation and described in Exhibit II are reasonably related to the experience of and the expectations for the Plan. The actuarial projections are based on these assumptions and the plan of benefits as summarized in Exhibit III.*

*Sincerely,*

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

*By:*

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

*Andy Yeung, ASA, MAAA, FCA, EA*
*Vice President and Actuary*

*JAC/bbf*

*cc: Kathy Fong*

## SECTION 1

### EXECUTIVE SUMMARY



## SECTION 2

### VALUATION RESULTS



## SECTION 3

### VALUATION DETAILS



## SECTION 4

### SUPPORTING INFORMATION

## PURPOSE

This report presents the results of our actuarial valuation of the City of Los Angeles Department of Water and Power (DWP) postretirement medical and dental benefits plan as of June 30, 2019 for funding purposes.

The membership data used in the June 30, 2019 valuation was based on the characteristics of covered active members, retired members and beneficiaries as of March 31, 2019.

## HIGHLIGHTS OF THE VALUATION

- **The Actuarially Determined Contribution (ADC)** increased from 7.53% of payroll for the 2018-2019 fiscal year to 8.35% of payroll for the 2019-2020 fiscal year. The increase in ADC was primarily due to: (a) the decrease in assumed investment return from 7.25% to 7.00% following the recently adopted actuarial assumptions from the experience study for the Retirement Plan and (b) the increase in trend assumption for the Medicare Part B subsidy from 4.00% to 4.50%.
- The return on market value of assets was 6.47% and the return on actuarial value of assets was 6.87% after reflecting the recognition of deferred gains from prior years.
- As of June 30, 2019, the ratio of assets, on an actuarial value basis, to the Actuarial Accrued Liability (AAL), i.e., the funded ratio, is 81.85% compared to 83.24% in the prior valuation. These ratios if measured on a Market Value basis have decreased to 82.75% from 84.46% during 2018-2019. There is an increase in the Unfunded Actuarial Accrued Liability (UAAL) measured on an actuarial value basis to $487.0 million from $413.9 million calculated in the prior valuation. A detailed reconciliation of the change in UAAL can be found in Chart 2.
- DWP is currently working with Segal to develop a formal written funding policy. Pending formal adoption of such policy, we will continue to use the current practice, including a single, declining amortization period as part of the following approach in developing the Actuarially Determined Contribution (ADC):

  Normal cost plus amortization of the UAAL using the following basis:

  - Declining 30-year amortization beginning June 30, 2005, with 16 years remaining as of June 30, 2019 and,
  - UAAL amortized as a level percent of payroll.
- The Governmental Accounting Standards (GAS) 74 report with a measurement date of June 30, 2019 for financial reporting purposes for the Plan was provided as a separate report.
- The GAS 75 report with a measurement date of June 30, 2019 for financial reporting purposes for the employer (with a reporting date of June 30, 2020) will be provided in the next few months.

*The key valuation results for the current and prior years are shown.*

## SUMMARY OF VALUATION RESULTS

| | June 30, 2019 | June 30, 2018 |
|---|---|---|
| **Actuarial Accrued Liability (AAL)** | $2,683,446,018 | $2,469,304,377 |
| **Actuarial Value of Assets (AVA)** | 2,196,487,396 | 2,055,373,577 |
| **Unfunded Actuarial Accrued Liability on AVA Basis** | 486,958,622 | 413,930,800 |
| **Funded Ratio on AVA Basis** | 81.85% | 83.24% |
| **Market Value of Assets (MVA)** | $2,220,545,145 | $2,085,697,159 |
| **Unfunded Actuarial Accrued Liability on MVA Basis** | 462,900,873 | 383,607,218 |
| **Funded Ratio on MVA Basis** | 82.75% | 84.46% |

| **Actuarially Determined Contribution (ADC) for Fiscal Year Ending:** | **June 30, 2020** | **June 30, 2019** |
|---|---|---|
| Normal cost (beginning of year) | $52,963,965 | $46,187,613 |
| Amortization of the unfunded actuarial accrued liability | 39,239,001 | 31,882,546 |
| Adjustment for timing | 3,172,523 | 2,780,528 |
| Total Actuarially Determined Contribution (payable throughout the year) | $95,375,489 | $80,850,687 |
| Projected total compensation | 1,141,875,615 | 1,073,554,608 |
| ADC as a percentage of pay | 8.35% | 7.53% |
| **Total Participants** | 18,615 | 18,299 |

## IMPORTANT INFORMATION ABOUT ACTUARIAL VALUATIONS

In order to prepare an actuarial valuation, Segal Consulting ("Segal") relies on a number of input items. These include:

- **Plan of benefits** Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan description in this report to confirm that Segal has correctly interpreted the plan of benefits.
- **Participant data** An actuarial valuation for a plan is based on data provided to the actuary by DWP with exceptions noted for Data in Exhibit II. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
- **Assets** This valuation is based on the market value of assets as of the valuation date, as provided by DWP.
- **Actuarial assumptions** In preparing an actuarial valuation, Segal projects the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each participant for each year. In addition, the benefits projected to be paid for each of those events in each future year reflect actuarial assumptions as to health care trends and member enrollment in retiree health benefits. The projected benefits are then discounted to a present value, based on the assumed rate of return that is expected to be achieved on the plan's assets. There is a reasonable range for each assumption used in the projection and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results, that does not mean that the previous assumptions were unreasonable.

The user of Segal's actuarial valuation (or other actuarial calculations) should keep the following in mind:

- The valuation is prepared at the request of DWP. Segal is not responsible for the use or misuse of its report, particularly by any other party.
- An actuarial valuation is a measurement of the plan's assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.
- If DWP is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.

- Critical events for a plan include, but are not limited to, decisions about changes in benefits and contributions. The basis for such decisions needs to consider many factors such as the risk of changes in plan enrollment, emerging claims experience and health care trend, not just the current valuation results.
- Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. DWP should look to their other advisors for expertise in these areas.

As Segal has no discretionary authority with respect to the management or assets of DWP, it is not a fiduciary in its capacity as actuaries and consultants with respect to DWP.

November 7, 2019

**ACTUARIAL CERTIFICATION**

This is to certify that Segal Consulting, a Member of The Segal Group, Inc. has conducted an actuarial valuation of certain benefit obligations of City of Los Angeles Department of Water and Power's other postemployment benefits program as of June 30, 2019, in accordance with generally accepted actuarial principles and practices.

The actuarial valuation is based on the plan of benefits verified by the Employer and reliance on participant, premium, claims and expense data provided by the Employer or from vendors employed by the Employer with exceptions noted for Data in Exhibit II. Segal Consulting does not audit the data provided. The accuracy and comprehensiveness of the data is the responsibility of those supplying the data. Segal, however, does review the data for reasonableness and consistency.

The actuarial computations made are for purposes of funding the plan. Determinations for purposes other than funding may be significantly different from the results reported here. Accordingly, additional determinations may be needed for other purposes, such as judging benefit security at termination of the plan, or determining short-term cash flow requirements.

To the best of our knowledge, this report is complete and accurate and in our opinion presents the information necessary to fund the Plan with respect to the benefit obligations addressed. The signing actuaries are members of the Society of Actuaries, the American Academy of Actuaries, and other professional actuarial organizations and collectively meet their "General Qualification Standards for Statements of Actuarial Opinions" to render the actuarial opinion contained herein.

Thomas Bergman, ASA, MAAA, EA
Retiree Health Actuary

Andy Yeung, ASA, MAAA, FCA, EA
Vice President and Actuary

The actuarial present value of total projected benefits uses the actuarial assumptions disclosed in Section 4 to calculate the value today of all benefits expected to be paid to current actives and retired plan members. The actuarial balance sheet shows the expected breakdown of how these benefits will be financed.

**CHART 1**

**Actuarial Present Value of Total Projected Benefits (APB) and Actuarial Balance Sheet**

| | Actuarial Present Value of Total Projected Benefits (APB) | |
|---|---|---|
| | **June 30, 2019** | **June 30, 2018** |
| **Participant Category** | | |
| Current retirees, beneficiaries, and dependents | $1,513,238,096 | $1,382,806,558 |
| Current active members | 1,755,498,622 | 1,575,295,649 |
| Total | $3,268,736,718 | $2,958,102,207 |

| | | June 30, 2019 | June 30, 2018 |
|---|---|---|---|
| **Actuarial Balance Sheet** | | | |
| The actuarial balance sheet as of the valuation date is as follows: | | | |
| | **Assets** | | |
| 1. | Actuarial value of assets | $2,196,487,396 | $2,055,373,577 |
| 2. | Present value of future normal costs | 585,290,700 | 488,797,830 |
| 3. | Unfunded actuarial accrued liability | 486,958,622 | 413,930,800 |
| 4. | Present value of current and future assets | $3,268,736,718 | $2,958,102,207 |
| | **Liabilities** | | |
| 5. | Actuarial present value of total projected benefits | $3,268,736,718 | $2,958,102,207 |

The actuarial accrued liability shows that portion of the APB (Chart 1) allocated to periods prior to the valuation date by the actuarial cost method. The chart below shows the portion covered by accumulated plan assets, and reconciles the unfunded actuarial accrued liability from last year to this year.

**CHART 2**

**Actuarial Accrued Liability (AAL) and Unfunded AAL (UAAL)**

| | June 30, 2019 | June 30, 2018 |
|---|---|---|
| **Participant Category** | | |
| Current retirees, beneficiaries, and dependents | $1,513,238,096 | $1,382,806,558 |
| Current active members | 1,170,207,922 | 1,086,497,819 |
| Total actuarial accrued liability | $2,683,446,018 | $2,469,304,377 |
| Actuarial value of assets | 2,196,487,396 | 2,055,373,577 |
| Unfunded actuarial accrued liability | $486,958,622 | $413,930,800 |
| **Development of Unfunded Actuarial Accrued Liability** | | |
| 1. Unfunded actuarial accrued liability as of June 30, 2018 | | $413,930,800 |
| 2. Employer normal cost at beginning of year | | 46,187,613 |
| 3. Total employer contributions | | -102,631,460 |
| 4. Interest on 1, 2 and 3 | | 29,638,195 |
| 5. Expected unfunded actuarial accrued liability (sum of 1 – 4) | | $387,125,148 |
| 6. Change due to investment experience losses | | 8,060,104 |
| 7. Change due to non-investment experience losses | | 9,187,125 |
| 8. Change due to premiums on average, increasing less than expected | | -38,486,383 |
| 9. Change due to updating health trend assumptions | | 57,804,126 |
| 10. Change due to other health-related assumption and method changes | | -10,217,718 |
| 11. Decrease in investment return assumption from 7.25% to 7.00% | | 81,849,781 |
| 12. Change due to adoption of other assumptions recommended in the Retirement Plan's 2019 experience study | | -8,363,561 |
| 13. Subtotal of 6 – 12 | | $99,833,474 |
| 14. Unfunded actuarial accrued liability as of June 30, 2019 | | $486,958,622 |

DWP is currently working with Segal to develop a formal written funding policy. Pending formal adoption of such policy, we continue to use the current practice, including a single, declining amortization period, and the following approach in developing the Actuarially Determined Contribution (ADC):

Normal cost plus amortization of the UAAL using the following basis:

- Declining 30-year amortization beginning June 30, 2005, with 16 years remaining as of June 30, 2019 and
- UAAL amortized as a level percent of payroll.

**CHART 3**

**Table of Amortization Bases**

| Type | Date Established | Initial Year | Initial Amount | Annual Payment* | Years Remaining | Outstanding Balance |
|---|---|---|---|---|---|---|
| Total Unfunded Actuarial Accrued Liability | 6/30/2019 | 16 | $486,958,622 | $39,239,001 | 16 | $486,958,622 |

* *Level percentage of pay*

As described on the previous page, the calculation of the ADC consists of adding the Normal Cost of the plan to an amortization payment. The resulting sum is then adjusted with interest assuming that the annual cost will be contributed throughout the fiscal year.

The primary reasons behind the increase in the ADC from the prior valuation were:

- Decrease in investment return assumption from 7.25% to 7.00%
- Increase in Medicare Part B subsidy trend from 4.00% to 4.50%

**CHART 4**

**Determination of Actuarially Determined Contribution (ADC) – Payable Throughout Fiscal Year**
**Total**

| Cost Element | Fiscal Year Beginning July 1, 2019 and Ending June 30, 2020 | | Fiscal Year Beginning July 1, 2018 and Ending June 30, 2019 | |
|---|---|---|---|---|
| | Amount | Percentage of Compensation | Amount | Percentage of Compensation |
| 1. Normal cost | $52,963,965 | 4.64% | $46,187,613 | 4.30% |
| 2. Amortization of the unfunded actuarial accrued liability (16 years as of June 30, 2019) | 39,239,001 | 3.44% | 31,882,546 | 2.97% |
| 3. Adjustment for timing | 3,172,523 | 0.27% | 2,780,528 | 0.26% |
| 4. Total Actuarially Determined Contribution (ADC) | $95,375,489 | 8.35% | $80,850,687 | 7.53% |
| 5. Total Compensation | $1,141,875,615 | | $1,073,554,608 | |

**CHART 4 (continued)**

**Determination of Actuarially Determined Contribution (ADC) – Payable Throughout Fiscal Year**
**Tier 1**

| Cost Element | Fiscal Year Beginning July 1, 2019 and Ending June 30, 2020 | | Fiscal Year Beginning July 1, 2018 and Ending June 30, 2019 | |
|---|---|---|---|---|
| | Amount | Percentage of Compensation | Amount | Percentage of Compensation |
| 1. Normal cost | $38,428,200 | 4.78% | $35,641,844 | 4.37% |
| 2. Amortization of the unfunded actuarial accrued liability (16 years as of June 30, 2019) | 27,628,539 | 3.44% | 24,214,092 | 2.97% |
| 3. Adjustment for timing | 2,272,883 | 0.27% | 2,131,815 | 0.26% |
| 4. Total Actuarially Determined Contribution (ADC) | $68,329,622 | 8.49% | $61,987,751 | 7.60% |
| 5. Total Compensation | $804,362,186 | | $815,357,490 | |

**CHART 4 (continued)**

**Determination of Actuarially Determined Contribution (ADC) – Payable Throughout Fiscal Year**
**Tier 2**

| Cost Element | Fiscal Year Beginning July 1, 2019 and Ending June 30, 2020 | | Fiscal Year Beginning July 1, 2018 and Ending June 30, 2019 | |
|---|---|---|---|---|
| | Amount | Percentage of Compensation | Amount | Percentage of Compensation |
| 1. Normal cost | $14,535,765 | 4.31% | $10,545,769 | 4.08% |
| 2. Amortization of the unfunded actuarial accrued liability (16 years as of June 30, 2019) | 11,610,462 | 3.44% | 7,668,454 | 2.97% |
| 3. Adjustment for timing | 899,640 | 0.26% | 648,713 | 0.26% |
| 4. Total Actuarially Determined Contribution (ADC) | $27,045,867 | 8.01% | $18,862,936 | 7.31% |
| 5. Total Compensation | $337,513,429 | | $258,197,118 | |

**CHART 5**

**Schedule of Employer Contributions**

| Fiscal Year Ended June 30 | Actuarially Determined Contributions [1] | Actual Contributions [1][2] | Percentage Contributed |
|---|---|---|---|
| 2015 | $70,748,429 | $79,160,430 | 111.89% |
| 2016 | 61,971,138 | 80,606,726 | 130.07% |
| 2017 | 93,920,143 | 91,023,926 | 96.92% |
| 2018 | 85,339,091 | 95,918,712 | 112.40% |
| 2019 | 80,850,687 | 102,631,460 | 126.94% |
| 2020 | 95,375,489 | Not Made Yet | N/A |

[1] *Payable throughout the year.*

[2] *Contributions were:*

| *Fiscal Year* | *Contribution towards insurance premiums (A)* | *Contributions towards administrative expenses (B)* | *Total Department contributions (A) + (B)* |
|---|---|---|---|
| *2014-2015* | *$78,496,618* | *$663,812* | *$79,160,430* |
| *2015-2016* | *79,895,671* | *711,055* | *80,606,726* |
| *2016-2017* | *90,310,419* | *713,507* | *91,023,926* |
| *2017-2018* | *95,233,622* | *685,090* | *95,918,712* |
| *2018-2019* | *101,594,970* | *1,036,490* | *102,631,460* |

This schedule of funding progress presents multi-year trend information about whether the actuarial value of plan assets is increasing or decreasing over time relative to the actuarial accrued liability for benefits.

**CHART 6**

**Schedule of Funding Progress**

| Actuarial Valuation Date | Actuarial Value of Assets (a) | Actuarial Accrued Liability (AAL) (b) | Unfunded AAL (UAAL) (b) – (a) | Funded Ratio (a) / (b) | Covered Payroll (c) | UAAL as a Percentage of Covered Payroll [(b) – (a) / (c)] |
|---|---|---|---|---|---|---|
| 06/30/2014 | $1,485,139,934 | $1,947,912,233 | $462,772,299 | 76.24% | $900,126,274 | 51.41% |
| 06/30/2015 | 1,637,578,438 | 1,956,230,463 | 318,652,025 | 83.71% | 920,781,074 | 34.61% |
| 06/30/2016 | 1,752,195,162 | 2,334,042,813 | 581,847,651 | 75.07% | 928,888,680 | 62.64% |
| 06/30/2017 | 1,898,136,791 | 2,347,483,631 | 449,346,840 | 80.86% | 991,814,994 | 45.31% |
| 06/30/2018 | 2,055,373,577 | 2,469,304,377 | 413,930,800 | 83.24% | 1,073,554,608 | 38.56% |
| 06/30/2019 | 2,196,487,396 | 2,683,446,018 | 486,958,622 | 81.85% | 1,141,875,615 | 42.65% |

*This exhibit summarizes the participant data used for the current and prior valuations.*

## EXHIBIT A

### Summary of Participant Data - Total

| | June 30, 2019 | June 30, 2018 |
|---|---|---|
| **Retirees** | | |
| Number* | 6,871 | 6,752 |
| Average age of retirees | 72.8 | 72.8 |
| Number of spouses | 3,649 | 3,546 |
| Average age of spouses** | 62.5 | 67.2 |
| **Surviving Spouses** | | |
| Number* | 1,382 | 1,433 |
| Average age | 81.0 | 80.6 |
| **Active Participants** | | |
| Number | 10,362 | 10,114 |
| Average age | 47.2 | 47.5 |
| Average years of qualifying service*** | 15.7 | 16.2 |
| Average expected retirement age | 63.1 | 63.1 |

* *A retiree or surviving spouse is only counted if receiving a medical and/or dental benefit.*

** *The average spouse ages shown are based on records provided with actual spouse date of birth. For retirees with spouse coverage, 60% and 52% of records did not have a reported spouse dates of birth in the June 30, 2019 and June 30, 2018 valuations, respectively. For those records without reported spouse dates of birth, we have applied the assumptions described in Exhibit II. After applying the assumptions, the average spouse ages were 69.0 and 68.9 in the June 30, 2019 and June 30, 2018 valuations, respectively.*

****Differs from the service type shown (Service Credit) in the Retirement Plan valuation.*

**EXHIBIT A (continued)**

**Summary of Participant Data – Tier 1**

| | June 30, 2019 | June 30, 2018 |
|---|---|---|
| **Retirees** | | |
| Number* | 6,871 | 6,752 |
| Average age of retirees | 72.8 | 72.8 |
| Number of spouses | 3,649 | 3,546 |
| Average age of spouses** | 62.5 | 67.2 |
| **Surviving Spouses** | | |
| Number* | 1,382 | 1,433 |
| Average age | 81.0 | 80.6 |
| **Active Participants** | | |
| Number | 6,801 | 7,196 |
| Average age | 51.7 | 51.2 |
| Average years of qualifying service*** | 21.5 | 21.0 |
| Average expected retirement age | 62.6 | 62.7 |

* *A retiree or surviving spouse is only counted if receiving a medical and/or dental benefit.*

** *The average spouse ages shown are based on records provided with actual spouse date of birth. For retirees with spouse coverage, 60% and 52% of records did not have a reported spouse dates of birth in the June 30, 2019 and June 30, 2018 valuations, respectively. For those records without reported spouse dates of birth, we have applied the assumptions described in Exhibit II. After applying the assumptions, the average spouse ages were 69.0 and 68.9 in the June 30, 2019 and June 30, 2018 valuations, respectively.*

****Differs from the service type shown (Service Credit) in the Retirement Plan valuation.*

**EXHIBIT A (continued)**

**Summary of Participant Data – Tier 2**

| | June 30, 2019 | June 30, 2018 |
|---|---|---|
| **Retirees** | | |
| Number* | 0 | 0 |
| Average age of retirees | N/A | N/A |
| Number of spouses | N/A | N/A |
| Average age of spouses | N/A | N/A |
| **Surviving Spouses** | | |
| Number* | 0 | 0 |
| Average age | N/A | N/A |
| **Active Participants** | | |
| Number | 3,561 | 2,918 |
| Average age | 38.7 | 38.6 |
| Average years of qualifying service** | 4.6 | 4.4 |
| Average expected retirement age | 64.1 | 64.0 |

* *A retiree or surviving spouse is only counted if receiving a medical and/or dental benefit.*

***Differs from the service type shown (Service Credit) in the Retirement Plan valuation.*

## EXHIBIT B

## Cash Flow Projections

Initially, the ADC generally exceeds the current pay-as-you-go ("paygo") cost of an OPEB plan. Over time the paygo cost will tend to grow and becomes close to and may exceed the ADC, which is expected in a well-funded and more mature plan such as this one. The following table projects the paygo cost over the next ten years.

| Year Ending June 30 | Projected Number of Retirees* | | | Projected Benefit Payments | | |
|---|---|---|---|---|---|---|
| | Current | Future | Total | Current | Future | Total |
| 2020 | 11,902 | 658 | 12,560 | $110,273,424 | $6,803,643 | $117,077,067 |
| 2021 | 11,508 | 1,299 | 12,807 | 114,152,747 | 14,474,294 | 128,627,041 |
| 2022 | 11,116 | 1,917 | 13,033 | 116,581,863 | 22,604,400 | 139,186,263 |
| 2023 | 10,725 | 2,489 | 13,214 | 119,784,309 | 32,518,830 | 152,303,139 |
| 2024 | 10,337 | 3,036 | 13,373 | 120,810,775 | 41,375,962 | 162,186,737 |
| 2025 | 9,951 | 3,543 | 13,494 | 121,537,576 | 49,714,913 | 171,252,489 |
| 2026 | 9,571 | 4,018 | 13,589 | 121,306,595 | 58,011,208 | 179,317,803 |
| 2027 | 9,191 | 4,464 | 13,655 | 121,235,776 | 65,951,478 | 187,187,254 |
| 2028 | 8,813 | 4,874 | 13,687 | 120,977,938 | 73,177,103 | 194,155,041 |
| 2029 | 8,438 | 5,270 | 13,708 | 120,590,083 | 80,174,522 | 200,764,605 |

* *Includes spouses of retirees.*

## EXHIBIT C

## Actuarial Value of Assets

To minimize volatility in the calculation of the Actuarially Determined Contribution, the Employer may choose to smooth out short-term changes in the market value of plan assets by use of an actuarial value of assets method. City of Los Angeles Department of Water and Power adopted the following method that smooths such changes over a five-year period.

### Determination of Actuarial Value of Assets as of June 30, 2019

| | | Original Amount | Percent Unrecognized | Unrecognized Amount | |
|---|---|---|---|---|---|
| 1. | Market value of assets | | | | $2,220,545,145 |
| 2. | Calculation of unrecognized return* | | | | |
| | (a) Year ended June 30, 2019 | -$16,517,875 | 80% | -$13,214,300 | |
| | (b) Year ended June 30, 2018 | 35,065,044 | 60% | 21,039,026 | |
| | (c) Year ended June 30, 2017 | 96,241,076 | 40% | 38,496,430 | |
| | (d) Year ended June 30, 2016 | -111,317,036 | 20% | -22,263,407 | |
| | (e) Year ended June 30, 2015 | -54,731,423 | 0% | 0 | |
| 3. | Total unrecognized return** | | | | $24,057,749 |
| 4. | Actuarial value: (1) - (3) | | | | $2,196,487,396 |
| 5. | Actuarial value as a percentage of market value: (4) ÷ (1) | | | | 98.92% |

* Total return minus expected return on a market value basis

** Deferred return as of June 30, 2019 recognized in each of the next 4 years:

| | |
|---|---|
| (a) Amount recognized during 2019-2020: | $694,242 |
| (b) Amount recognized during 2020-2021: | 22,957,649 |
| (c) Amount recognized during 2021-2022: | 3,709,433 |
| (d) Amount recognized during 2022-2023: | -3,303,575 |
| (e) Total | $24,057,749 |

## EXHIBIT I

### Summary of Supplementary Information

| | |
|---|---|
| **Valuation date** | June 30, 2019 |
| **Actuarial cost method** | Entry age, level percent of pay |
| **Amortization method** | 30-year amortization closed, level percent of pay |
| **Remaining amortization period** | 16 years as of June 30, 2019 |
| **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 | 7.00% |
| Inflation rate | 2.75% |
| Projected salary increases | 3.25%, plus merit and promotional increases, shown in Exhibit II. |
| Non-Medicare cost trend rate* | 6.75%, graded down to an ultimate rate of 4.50% over 9 years |
| Medicare cost trend rate* | 6.25%, graded down to an ultimate rate of 4.50% over 7 years |
| Dental subsidy costs trend rate | 4.00% |
| Medicare Part B subsidy costs trend rate | 4.50% |

| **Plan membership:** | June 30, 2019 | June 30, 2018 |
|---|---|---|
| Current retirees** and beneficiaries receiving dental and/or medical subsidy | 8,253 | 8,185 |
| Current active participants | 10,362 | 10,114 |
| Total | 18,615 | 18,299 |

* *In addition, we have adjusted the first-year trend rates to reflect the estimated impact of the Health Insurance Tax (HIT). The weighted average increase was 0.85% for non-Medicare and 1.95% for Medicare health plans.*

** *Excludes 3,649 and 3,546 spouses from the June 30, 2019 and 2018 valuations, respectively.*

**EXHIBIT II**

**Actuarial Assumptions and Actuarial Cost Method**

| | |
|---|---|
| **Data**: | Detailed census data and financial data for postemployment benefits were provided by DWP. Consistent with valuation for the Retirement Plan, the provided service has been increased by three months to account for the difference between the date the active census data was captured (March 31) and the valuation date (June 30). Where known, actual subsidies (updated from March 31 to July 1) were valued. |
| **Actuarial Cost Method**: | Entry age, level percent of pay. |
| **Rationale for Assumptions:** | The information and analysis used in selecting each assumption that has a significant effect on this actuarial valuation is shown in the July 1, 2015 through June 30, 2018 Actuarial Experience Study dated June 12, 2019. Following the most recent experience study, the Retirement Board adopted benefit-weighted tables for the Retirement Plan. For the OPEB Plan, we will continue to use headcount-weighted mortality tables, as benefit do not vary by salary as in the Retirement Plan. The information and analysis used in selecting health-related assumptions is shown in our assumptions letter dated October 2, 2019. Unless otherwise noted, all actuarial assumptions and methods shown below apply to both Tier 1 and Tier 2 employees. |
| **Mortality Rates:** | |
| *Pre-retirement:* | Pub-2010 General Employee Headcount-Weighted Above-Median Mortality Table (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2018. |
| *Service Retirement and Disability Retirement:* | Pub-2010 General Healthy Retiree Headcount-Weighted Above-Median Mortality Table (separate tables for males and females) times 105% for males and 100% for females, projected generationally with the two-dimensional mortality improvement scale MP-2018. |

| | |
|---|---|
| *Beneficiaries:* | Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2018. |

The Pub-2010 mortality tables and adjustments as shown above reasonably reflect the mortality experience as of the measurement date. These mortality tables were adjusted to future years using the generational projection to reflect future mortality improvement between the measurement date and those years.

**EXHIBIT II**

**Actuarial Assumptions and Actuarial Cost Method (continued)**

**Termination Rates Before Retirement:**

| | Rate (%) | |
|---|---|---|
| Age | Male Mortality* | Disability |
| 25 | 0.027 | 0.006 |
| 30 | 0.035 | 0.012 |
| 35 | 0.046 | 0.012 |
| 40 | 0.063 | 0.018 |
| 45 | 0.091 | 0.030 |
| 50 | 0.137 | 0.054 |
| 55 | 0.203 | 0.126 |
| 60 | 0.292 | 0.240 |
| 65 | 0.421 | 0.000 |

| Age | Female Mortality* | Disability |
|---|---|---|
| 25 | 0.011 | 0.000 |
| 30 | 0.016 | 0.006 |
| 35 | 0.024 | 0.036 |
| 40 | 0.036 | 0.072 |
| 45 | 0.054 | 0.102 |
| 50 | 0.082 | 0.138 |
| 55 | 0.120 | 0.168 |
| 60 | 0.177 | 0.000 |
| 65 | 0.275 | 0.000 |

* *Note that generational projections beyond the base year (2010) are not reflected in the above mortality rates.*

**EXHIBIT II**

**Actuarial Assumptions and Actuarial Cost Method (continued)**

**Withdrawal Rates:**

| Years of Service | Total Withdrawal* |
|---|---|
| Less than 1 | 10.00% |
| 1 | 5.25% |
| 2 | 3.75% |
| 3 | 3.50% |
| 4 | 2.50% |
| 5 | 2.00% |
| 6 | 1.50% |
| 7 | 1.50% |
| 8 | 1.50% |
| 9 | 1.00% |
| 10 – 20 | 0.75% |
| 20 & over | 0.50% |

**No withdrawal is assumed after a member is first eligible to retire*

**EXHIBIT II**

**Actuarial Assumptions and Actuarial Cost Method (continued)**

**Retirement Rates:**

| | Rate (%) | | | |
|---|---|---|---|---|
| | Tier 1 | | Tier 2 | |
| Age | Under 30 Years of Service | 30 or More Years of Service | Under 30 Years of Service | 30 or More Years of Service |
| 50 | 0.00% | 1.00% | 0.00% | 0.00% |
| 51 | 0.00 | 0.00 | 0.00 | 0.00 |
| 52 | 0.00 | 0.00 | 0.00 | 0.00 |
| 53 | 0.00 | 0.00 | 0.00 | 0.00 |
| 54 | 0.00 | 0.00 | 0.00 | 0.00 |
| 55 | 4.25 | 27.00 | 0.00 | 25.00 |
| 56 | 2.00 | 20.00 | 0.00 | 14.00 |
| 57 | 2.50 | 17.50 | 0.00 | 13.00 |
| 58 | 3.50 | 17.50 | 0.00 | 13.00 |
| 59 | 3.50 | 17.50 | 0.00 | 13.00 |
| 60 | 5.50 | 22.00 | 5.50 | 17.50 |
| 61 | 6.50 | 22.00 | 3.50 | 10.00 |
| 62 | 7.00 | 22.00 | 2.50 | 10.00 |
| 63 | 8.00 | 25.00 | 20.00 | 25.00 |
| 64 | 8.50 | 27.00 | 12.00 | 25.00 |
| 65 | 11.50 | 30.00 | 11.00 | 28.00 |
| 66 | 12.00 | 30.00 | 11.00 | 28.00 |
| 67 | 12.50 | 30.00 | 12.00 | 28.00 |
| 68 | 13.00 | 30.00 | 12.50 | 28.00 |
| 69 | 17.00 | 30.00 | 15.00 | 28.00 |
| 70 | 22.00 | 25.00 | 50.00 | 50.00 |
| 71 | 22.00 | 25.00 | 50.00 | 50.00 |
| 72 | 22.00 | 25.00 | 50.00 | 50.00 |
| 73 | 22.00 | 25.00 | 50.00 | 50.00 |
| 74 | 22.00 | 25.00 | 50.00 | 50.00 |
| 75 & Over | 100.00 | 100.00 | 100.00 | 100.00 |

**EXHIBIT II**

**Actuarial Assumptions and Actuarial Cost Method (continued)**

**Measurement Date**: June 30, 2019

**Discount Rate**: 7.00%, net of investment expenses.

**Salary Increases:**

Annual Rate of Compensation Increase

Inflation: 2.75% per year, plus "across the board" salary increases of 0.50% per year, plus the following merit and promotional increases.

| Years of Service | Increase |
|---|---|
| Less than 1 | 7.00% |
| 1 | 7.00% |
| 2 | 6.50% |
| 3 | 5.25% |
| 4 | 3.75% |
| 5 | 2.75% |
| 6 | 2.25% |
| 7 | 2.00% |
| 8 | 1.70% |
| 9 | 1.60% |
| 10 | 1.50% |
| 11 | 1.45% |
| 12 | 1.40% |
| 13 | 1.35% |
| 14 | 1.30% |
| 15 & over | 1.25% |

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

**EXHIBIT II**

**Actuarial Assumptions and Actuarial Cost Method (continued)**

**Per Capita Cost Development:**

The assumed per capita claims cost by age (and other demographic factors such as sex and family status) is the future per capita cost of providing postretirement health care benefits at each age. The factors on page 29 are applied to the premiums shown on pages 27 and 28 to calculate the age-based costs.

*Dental and Medical Annual Subsidy*

Where known, actual subsidies provided in the data were used. For periods where subsidy is unknown, the average monthly retiree subsidies effective July 1, 2019 were assumed as shown below:

**Dental Premium Subsidy (For Single and Multi-Party, Tiers 1 and 2)**

| | | Premium |
|---|---|---|
| **Carrier** | **Election Percent** | **Single Party** |
| United Concordia DHMO | 15% | $18.24 |
| United Concordia PPO | 65% | $35.79 |
| IBEW Local 18 | 20% | $121.55 |

The maximum monthly dental subsidy is $35.79, except for Local 18 with a maximum of $121.55.

Eligible spouses and survivors are not eligible for DWP dental subsidy.

**EXHIBIT II**

**Actuarial Assumptions and Actuarial Cost Method (continued)**

For retirees in pay status, we use the relevant premiums provided on participant records. In cases where the carrier elections are unknown, we will assume the participant elects a carrier in the same proportion as current retirees in that group. The table below shows the assumed distribution of medical insurance carriers for retirees and the monthly premiums as of July 1, 2019.

| | Under Age 65 | | |
|---|---|---|---|
| Carrier | Assumed Election Percent | Single Party Premium | Participant +1 Both Under 65 |
| Kaiser | 55.0 | $981.26 | $1,962.52 |
| United Health Care Option A | 10.0 | 1,412.74 | 2,825.55 |
| Blue Cross HMO | 20.0 | 1,568.47 | 1,836.03 |
| United Health Care HMO | 5.0 | 1,575.41 | 3,251.10 |
| Blue Cross PPO | 5.0 | 1,757.38 | 2,206.15 |
| United Health Care Option C | 5.0 | 954.29 | 1,908.61 |

**EXHIBIT II**

**Actuarial Assumptions and Actuarial Cost Method (continued)**

| | Age 65 and Older | | |
|---|---|---|---|
| Carrier | Assumed Election Percent | Single Party Premium | Participant +1 Both Age 65+ |
| Kaiser Senior Advantage | 55.0 | $350.16 | $700.32 |
| United Health Care Option A | 25.0 | 567.20 | 1,134.40 |
| United Health Care Medicare Advantage | 10.0 | 476.80 | 953.60 |
| Senior Dimensions | 2.5 | 289.52 | 579.04 |
| United Health Care Option B | 2.5 | 418.79 | 837.58 |
| Blue Cross HMO | 5.0 | 1,034.80 | 1,605.44 |
| Medicare Part B | 100 | $138.55 | $277.10 |

**EXHIBIT II**

**Actuarial Assumptions and Actuarial Cost Method (continued)**

The per capita costs were then adjusted for age and gender using the below factors:

| Applied to Per Capita Costs for under age 65 | | | | |
|---|---|---|---|---|
| | Retiree | | Spouse | |
| Age | Male | Female | Male | Female |
| 55 | 0.9045 | 0.9339 | 0.7119 | 0.8063 |
| 60 | 1.0742 | 1.0066 | 0.9530 | 0.9351 |
| 64 | 1.2324 | 1.0678 | 1.2030 | 1.0525 |

| Applied to Per Capita Costs for age 65 and older | | | | |
|---|---|---|---|---|
| | Retiree | | Spouse | |
| Age | Male | Female | Male | Female |
| 65 | 0.9113 | 0.7746 | 0.9113 | 0.7746 |
| 70 | 1.0562 | 0.8347 | 1.0562 | 0.8347 |
| 75 | 1.1382 | 0.8985 | 1.1382 | 0.8985 |
| 80+ | 1.2257 | 0.9687 | 1.2257 | 0.9687 |

**EXHIBIT II**

**Actuarial Assumptions and Actuarial Cost Method (continued)**

**Health Care Cost Subsidy Trend Rates:**

Health care trend measures the anticipated overall rate at which health plan costs are expected to increase in future years. Trend rates are used to increase the premiums and the stated subsidies into the future. For example, the expected maximum monthly medical subsidy for a Tier 1 retiree with 30 years of service in the year July 1, 2020 through June 30, 2021 (set equal to the two-party, under-65 Kaiser premium) would be determined with the following formula:

[$1,963 x (1 + 6.75% + 0.85%)] = $2,112

| | Medical | | | |
|---|---|---|---|---|
| Year Ending June 30 | Non-Medicare | Medicare | Medicare Part B | Dental |
| 2020 | 6.75%* | 6.25%* | 4.50% | 4.00% |
| 2021 | 6.50 | 6.00 | 4.50 | 4.00 |
| 2022 | 6.25 | 5.75 | 4.50 | 4.00 |
| 2023 | 6.00 | 5.50 | 4.50 | 4.00 |
| 2024 | 5.75 | 5.25 | 4.50 | 4.00 |
| 2025 | 5.50 | 5.00 | 4.50 | 4.00 |
| 2026 | 5.25 | 4.75 | 4.50 | 4.00 |
| 2027 | 5.00 | 4.50 | 4.50 | 4.00 |
| 2028 | 4.75 | 4.50 | 4.50 | 4.00 |
| 2029 & Later | 4.50 | 4.50 | 4.50 | 4.00 |

**Before reflecting additional estimated increases of 0.85% (non-Medicare) and 1.95% (Medicare) from the impact of the Health Insurance Tax (HIT).*

**EXHIBIT II**

**Actuarial Assumptions and Actuarial Cost Method (continued)**

| | |
|---|---|
| **Marital Status:** | Actives at the time of retirement: 75% of male employees and 40% of female employees assumed to be married with coverage for spouse.<br>Retirees at the time of retirement: Actual data included in census. |
| **Spouse Age Difference:** | Husbands are assumed to be 1 year older than female members. Wives are assumed to be 3 years younger than male members. |
| **Future Benefit Accruals:** | 1.0 year of service per year. |
| **Other Government Service:** | Tier 1 members are assumed to purchase an additional 0.07 years of service per year. Tier 2 members are assumed to purchase an additional 0.02 years of service per year. These service purchases exclude those priced at full actuarial cost. |
| **Participation:** | 95% of the current actives are assumed to enroll in medical coverage at retirement. 95% of the current actives are assumed to enroll in dental coverage at retirement. |
| **Asset Valuation Method:** | Any actual investment gains and losses that are above or below the annual return assumed in the valuation are recognized over 5-year periods. |
| **Plan Design**: | Development of plan liabilities was based on the substantive plan of benefits in effect as described in Exhibit III. |
| **Administrative Expenses**: | No administrative expenses were valued separately from the claim costs. |
| **Implicit Subsidy:** | None. Premiums paid by the retirees reflect rates underwritten for retirees only. |

**EXHIBIT II**

**Actuarial Assumptions and Actuarial Cost Method (continued)**

**Impact of Affordable Care Act:**

As directed by DWP, we have continued to reflect in the current valuation the impact of potential excise tax imposed by the Affordable Care Act (ACA), and related statutes.

In particular, it is our understanding that beginning in 2022 (deferred from 2018 when thresholds begin), the legislation will impose a 40 percent excise tax on the cost of health plans above a certain threshold. It is our further understanding that the thresholds in 2018 for non-Medicare retirees aged 55 through 64 are $11,850 for single coverage and $30,950 for family coverage as specified in the Health Care Reform. For all other retirees the thresholds in 2018 are $10,200 for single coverage and $27,500 for family coverage. ACA allows the higher thresholds also to be used for any member "who participates in a plan sponsored by an employer the majority of whose employees covered by the plan are engaged in a high-risk profession or employed to repair or install electrical or telecommunication lines." We did not have the data available to identify such members in the current valuation, and so have not applied these higher thresholds except for members aged 55 through 64 (to whom the higher thresholds apply regardless of risk-type profession classification). If such data is provided by DWP, we can reflect this higher threshold in the excise tax calculation in our future valuations.

The thresholds in 2019 are indexed and for the purpose of this valuation, they are assumed to increase by 3.75% (i.e., 1.00% over the assumed 2.75% CPI assumption used in the retirement valuation) over those in 2018. After 2019, the thresholds are assumed to increase by 2.75% (assumed CPI inflation) per year. In this valuation, we have allocated the excise tax between the Plan and the retiree, based on the proportion of the health care cost expected to be paid by each party.

**Assumption Changes Since Prior Valuation:**

The following assumptions were changed since the prior valuation:

- Updated per capita costs.
- Increased Medicare Part B subsidy trend from 4.00% to 4.50%.
- Decreased medical enrollment assumption from 97% to 95%.
- Updated turnover and retirement decrement rates following the July 1, 2015 through June 30, 2018 Actuarial Experience Study dated June 12, 2019.
- Updated mortality. Following the most recent experience study, the Retirement Board adopted benefit-weighted tables for the Retirement Plan. For the OPEB Plan, we will continue to use headcount-weighted mortality tables, as benefits do not vary by salary as in Retirement Plan.
- Updated salary scale rates.
- Decreased discount rate from 7.25% to 7.00%.

**EXHIBIT III**

**Summary of Plan**

This exhibit summarizes the major benefit provisions as included in the valuation. To the best of our knowledge, the summary represents the substantive plans as of the measurement date. It is not intended to be, nor should it be interpreted as, a complete statement of all benefit provisions.

| | |
|---|---|
| **Eligibility**: | A retiree who was an employee of DWP immediately prior to retirement and is receiving a monthly allowance under DWP's retirement plan is eligible for the subsidy. |
| *Tier 1* | All members hired before January 1, 2014. |
| *Tier 2* | All members hired on or after January 1, 2014. |
| **Age & Service Requirement:** | Eligible for minimum pension from the Retirement Plan as follows: |
| *Tier 1* | Age 60 with 5 years of Department service; or<br>Age 55 with 10 years of Department service in the last 12 years; or<br>Any age with 30 years of Department service; or<br>Receiving permanent total disability benefits from the Plan.<br>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. |
| *Tier 2* | Age 60 with 5 years of continuous Department Service with the Plan immediately prior to reaching eligibility; or<br>Age 60 with 10 years of Qualifying service; or<br>Any age with 30 years of Qualifying service; or<br>Receiving permanent total disability benefits from the Plan. |

**Benefit Types**:

The DWP subsidy is computed by a formula related to years of qualifying service and attained age at retirement. The actual years of qualifying service are rounded either up or down to the nearest integer value.

The subsidy limit is applied to the combined medical carrier and Medicare Part B premium, but not the dental premium.

*Tier 1*

| | Years of Service | | | | |
|---|---|---|---|---|---|
| Age at Retirement | 10 | 15 | 20 | 25 | 30 |
| 55 | $393 | $785 | $1,178 | $1,570 | $1,963 |
| 56 | 400 | 799 | 1,199 | 1,599 | 1,963 |
| 57 | 407 | 814 | 1,220 | 1,627 | 1,963 |
| 58 | 414 | 828 | 1,242 | 1,656 | 1,963 |
| 59 | 421 | 842 | 1,263 | 1,684 | 1,963 |
| 60 | 428 | 856 | 1,284 | 1,713 | 1,963 |
| 61 | 435 | 871 | 1,306 | 1,741 | 1,963 |
| 62 | 443 | 885 | 1,327 | 1,770 | 1,963 |
| 63 | 450 | 899 | 1,349 | 1,798 | 1,963 |
| 64 | 457 | 913 | 1,370 | 1,827 | 1,963 |
| 65 | 464 | 928 | 1,392 | 1,855 | 1,963 |

*Tier 2*

| | Years of Service | | | | |
|---|---|---|---|---|---|
| Age at Retirement | 10 | 15 | 20 | 25 | 30 |
| 55 | $196 | $393 | $589 | $785 | $981 |
| 56 | 200 | 400 | 599 | 799 | 981 |
| 57 | 203 | 407 | 610 | 814 | 981 |
| 58 | 207 | 414 | 621 | 828 | 981 |
| 59 | 210 | 421 | 632 | 842 | 981 |
| 60 | 214 | 428 | 642 | 856 | 981 |
| 61 | 218 | 435 | 653 | 871 | 981 |
| 62 | 221 | 442 | 664 | 885 | 981 |
| 63 | 225 | 450 | 674 | 899 | 981 |
| 64 | 228 | 457 | 685 | 913 | 981 |
| 65 | 232 | 464 | 696 | 928 | 981 |

As shown, the maximum possible subsidy is $1,963 and $981 for Tier 1 and 2, respectively. Subsidies may increase until age at retirement reaches 69.

| | |
|---|---|
| **Dependent Coverage**: | Dependent spouses are eligible for the DWP medical subsidy coverage. Surviving spouses are eligible to receive the DWP medical subsidy that would have been given to the deceased employee or retiree if still living, and only if the surviving spouse was enrolled in the deceased members' plan at the time of the members' death. Surviving spouses and dependent spouses are not eligible for the dental subsidy. |
| **Retiree Contributions**: | To the extent the DWP subsidies are less than the medical or dental premiums, the retiree contributes the cost difference. |
| **Changes in Plan Provisions:** | None. |

## EXHIBIT IV
## Definitions of 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.

**Actuarial Present Value of Total Projected Benefits (APB):** Present value of all future benefit payments for current retirees and active employees taking into account assumptions about demographics, turnover, mortality, disability, retirement, health care trends, and other actuarial assumptions.

**Normal Cost:** The amount of contributions required to fund the benefit allocated to the current year of service.

**Actuarial Accrued Liability For Actives:** The equivalent of the accumulated normal costs allocated to the years before the valuation date.

**Actuarial Accrued Liability For Retirees:** The single sum value of lifetime benefits to existing retirees. This sum takes account of life expectancies appropriate to the ages of the retirees and of the interest which the sum is expected to earn before it is entirely paid out in benefits.

| | |
|---|---|
| **Actuarial Value of Assets (AVA):** | The value of assets used by the actuary in the valuation. These may be at market value or some other method used to smooth variations in market value from one valuation to the next. |
| **Funded Ratio:** | The ratio AVA/AAL. |
| **Unfunded Actuarial Accrued Liability (UAAL):** | The extent to which the actuarial accrued liability of the Plan exceeds the assets of the Plan. There is a wide range of approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time. |
| **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 (discount rate):** | 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. If the plan is funded on a pay-as-you-go basis, the discount rate is tied to the expected rate of return on day-to-day employer funds. |
| **Covered Payroll:** | Annual reported salaries for all active participants on the valuation date. |
| **ADC as a Percentage of Covered Payroll:** | The ratio of the Actuarially Determined contribution to covered payroll. |
| **Health Care Cost Trend Rates:** | The annual rate of increase in net claims costs per individual benefiting from the Plan. |
| **Actuarially Determined Contribution (ADC):** | The ADC is equal to the sum of the normal cost and the amortization of the unfunded actuarial accrued liability. |