## Milliman

## CITY OF PORTLAND FIRE \& POLICE DISABILITY \& RETIREMENT (FPDR) FUND

 Pension Actuarial Valuation Report as of June 30, 2014Prepared by:
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January 15, 2015

Ms. Nancy Hartline
FPDR Financial Manager
Bureau of Fire \& Police Disability \& Retirement

Dear Nancy,
As part of our engagement with the Bureau of Fire \& Police Disability \& Retirement and the City of Portland, we performed an actuarial valuation of the Fire \& Police Disability \& Retirement Fund ("FPDR" or "the System") sponsored by the City as of June 30, 2014. Our findings are set forth in this actuarial valuation report. This report reflects the benefit provisions in effect as of June 30, 2014, including changes related to Senate Bills 822 and 861, which became law during 2013.

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by City Charter, employee data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

This valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions or cost recognition. While the valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements; and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The assumptions used in this report were reviewed and accepted by the FPDR Board in its May 2014 meeting.

Ms. Nancy Hartline
Bureau of Fire \& Police Disability \& Retirement
January 15, 2015
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Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. No third party recipient of Milliman's work product should rely upon this report. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are pension actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Sincerely,


Matthew R. Larrabee, FSA, EA, MAAA Principal and Consulting Actuary


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## Section I - Summary of the Findings

## Summary of the Findings

Milliman has prepared this report for the City of Portland and its Fire \& Police Disability \& Retirement Fund ("FPDR" or "the Plan") to:

- Estimate the Plan's actuarial liabilities as of June 30, 2014 for FPDR and the City of Portland,
- Provide a multi-year estimate of projected benefit payments from the Plan, and
- Provide the basis for later financial reporting results and levy adequacy analysis requested by FPDR, which will build from these June 30, 2014 valuation results.


## Summary of Principal Results

The following table summarizes the primary results of the valuation which are discussed further below.

|  | June 30, 2012 | June 30, 2014 |
| :--- | ---: | ---: |
| Discount Rate | $3.50 \%$ | $4.29 \%$ |
| Actuarial Cost Method | Entry Age Normal | Entry Age Normal |
| Actuarial Accrued Liability (AAL) | $\$ 2,899,238,902$ | $\$ 2,488,261,858$ |
| Assets | $20,287,803$ | $20,532,924$ |
| Unfunded Actuarial Accrued Liability (UAAL) | $2,878,951,099$ | $2,467,728,934$ |
|  |  |  |
| Projected Base Pay for Next Year | $137,536,257$ | $138,327,897$ |
| Normal Cost | $82,791,813$ | $54,833,824$ |

FPDR is essentially funded on a pay-as-you-go basis via a property tax levy. The actuarial liabilities contained in this report are not used as a basis for pre-funding the plan, but do provide a measure of the present value of the financial obligation associated with the program. The actuarial liabilities are calculated from a projection of benefit payments. The projection reflects the current provisions, assumptions, and demographic information documented in this report. The stream of projected future benefit payments is converted to a net present value as of the valuation date based on the valuation discount rate, which is $4.29 \%$ for the current valuation. The total net present value is then assigned to past, present, and future service according to the actuarial cost method. The portion assigned to the past is called the actuarial accrued liability (AAL) ${ }^{1}$, while the portion assigned to the current year is referred to as the normal cost.

In the past, the biennial actuarial valuation was used to develop the annual financial reporting expense for the plan in accordance with the requirements of GASB 25 and GASB 27. However, GASB 25 and 27 have been replaced by GASB 67 (which governs plan financial reporting effective fiscal year-end June 30, 2014) and GASB 68 (which will govern the City's reporting for the Plan effective with fiscal year-end June 30, 2015). Due to timing and calculation requirements of the new standards, GASB results are now provided separately and are not included in this valuation report.

The results from this valuation will also be used to assist the City and FPDR in completing disclosures for financial reporting measurement dates as of June 30, 2015 and June 30, 2016. Results calculated as of the June 30, 2014 valuation date will be recalculated as of these later dates using standard actuarial roll-forward

[^0]techniques. GASB 67 and GASB 68 permit the use of a valuation date that is up to 24 months prior to the measurement date. Actuarial valuations are conducted each even-numbered year, and results from that valuation will be used to develop the fiscal year-end for measurement dates 12 and 24 months subsequent to the valuation date. Following this procedure and generally accepted financial reporting practices for governmental entities, the results from this report will be used to develop GASB 67 and 68 results for the fiscal years ending in 2015 and 2016. However, the actual fiscal year-ending 2015 and 2016 results are not included in this report, as the measurements must be adjusted to reflect experience (including bond market information and audited fund asset levels) through the relevant dates. These results will be provided separately according to the relevant financial reporting timeframe.

The discount rate used to determine a net present value changed from 3.50\% for the June 30, 2012 valuation to $4.29 \%$ for the current valuation, which had the effect of reducing the measured plan liabilities. The discount rate of $4.29 \%$ is the same rate used by FPDR in plan financial reporting as of June 30, 2014, and was selected to be consistent with the basis required under the new requirements of GASB 67. Because of the primarily unfunded nature of the FPDR plan, the final discount rate under GASB 67 should be set equal to a municipal bond rate or index that represents the yields for 20 -year tax-exempt general obligation municipal bonds.

In this valuation, there are two categories of plan assets considered for FPDR: a \$750,000 Reserve Fund established by the governing City Charter, and the FPDR Fund, which held $\$ 19,782,924$ in trust for pension benefits as of June 30, 2014. Assets are reported by FPDR and are measured on a fair market value basis. We understand these funds are invested in short-term fixed income securities, in a similar manner to the general assets of the City of Portland. The FPDR Fund is included as an asset in this valuation based upon consultation with FPDR, the City of Portland, and the City's external auditor.

The City of Portland also provides an "indirect subsidy" retiree healthcare benefit for FPDR members via providing access to the medical plans offered to active FPDR members. We understand the indirect (or implicit) subsidy for these benefits is valued in a separate actuarial valuation conducted by another actuary.

In addition to the indirect subsidy noted above, FPDR also provides a benefit that reimburses medical expenses associated with service-connected injuries and illness. In consultation with FPDR and the City's external auditor, it was decided that beginning with the June 30, 2012 valuation the liability for post-retirement disability-related expenses could be estimated by applying a fixed percentage load to the pension liabilities. For both that valuation and the current one, the percentage load was $0.5 \%$. This percentage is consistent with observed experience over the prior 4 years, where disability-related post-retirement benefits averaged approximately $0.5 \%$ of pension payments.

## Plan Provisions

Two legislative changes occurred since the previous valuation that affected the plan provisions reflected in this valuation. Senate Bill 822, signed into law in May 2013, eliminated the Oregon State Income Tax Adjustment ("tax offset benefits") for retirees and payees not subject to Oregon income tax because of residency. Senate Bill 861, signed into law in October 2013, limited the post-retirement COLA payable under the Oregon PERS system to no more than $1.25 \%$ beginning in 2014. Based on requirements of the City Charter and FPDR administrative practices, we understand this also means the COLA payable for FPDR Two retirees will not exceed $1.25 \%$ in the future. Reflecting these changes decreased the AAL by $\$ 293$ million in the current valuation.

## Assumptions and Methods

Most demographic and economic assumptions were reviewed and updated for this valuation, based on an experience study presented to the FPDR Board on May 27, 2014.

The approach to setting the discount rate changed compared to the prior valuation due to the changes in financial reporting standards discussed above. Under the previous GASB requirements, the discount rate was to be selected as the estimated long-term investment return on the investments that are expected to be used to finance the payment of benefits. (For unfunded plans, the discount rate was determined with reference to the employer's general assets.) As of June 30, 2012, this approach led the City and FPDR to adopt an assumption of $3.50 \%$. The new GASB standards require the use of a municipal bond rate or index for a plan such as FPDR, which led to the current discount rate of $4.29 \%$. This is an increase of 79 basis points from the prior valuation, and reduced the AAL as of the valuation date by $\$ 274$ million.

The mortality assumptions used for all members and beneficiaries were also updated in the 2014 experience study. Consistent with the procedure used for several years, this was set be the same assumption as used by the Oregon Public Employees Retirement System (OPERS) for police and fire members in the most recent published OPERS valuation. The OPERS assumption is used because the much larger size of the OPERS system generates more statistically credible mortality experience for Oregon safety personnel than would result from examining FPDR experience in isolation. Because the OPERS assumption for police and fire members had changed since the FDPR valuation, a parallel change was made in the current valuation. Changing this assumption increased AAL by $\$ 55$ million in the current valuation.

Changes were also made since the prior report to assumptions regarding withdrawal, retirement, salary increases, rates of disability, and the elections made by members at the time of retirement. These changes are discussed more fully in the 2014 experience study and the appendices to this report, and their effects on measured liabilities are shown in Section II of this report.

All actuarial assumptions, methods, and plan provisions valued are summarized in the appendices of this report.

## Section II - Valuation Results

## Valuation Results

## Calculation of the Unfunded Actuarial Accrued Liability (UAAL)

The development of the Unfunded Actuarial Accrued Liability is shown in the table below.

| Benefit Obligations and UAAL | June 30, 2012 | June 30, 2014 |
| :---: | ---: | ---: |
|  |  |  |
| Actuarial Cost Method | Entry Age Normal | Entry Age Normal |
|  |  |  |
| 1 Discount Rate | $3.50 \%$ |  |
| 2 Total Present Value of Benefits (includes future accruals) | $3,864,944,401$ | $4.29 \%$ |
| 3 Actuarial Accrued Liability |  | $3,059,753,560$ |
| a. Retirees | $1,529,557,229$ | $1,356,896,382$ |
| b. Pre-retirement disableds | $81,710,702$ | $52,332,714$ |
| c. Surviving spouses and alternate payees | $144,729,140$ | $127,145,353$ |
| d. Inactive participants with deferred benefits | $26,807,518$ | $27,003,890$ |
| e. Active employees | $1,116,434,313$ | $924,883,520$ |
| f. Total | $\mathbf{2 , 8 9 9 , 2 3 8 , 9 0 2}$ | $\mathbf{2 , 4 8 8 , 2 6 1 , 8 5 8}$ |
| 4 Present value of future normal costs (2.-3.f.) | $965,705,499$ | $571,491,702$ |
| 5 Projected next year's base pay | $137,536,257$ | $138,327,897$ |
| 6 Normal cost | $82,791,813$ | $54,833,824$ |
| 7 Assets | $20,287,803$ | $20,532,924$ |
| 8 Unfunded Actuarial Accrued Liability (UAAL) (3.f. -7.$)$ | $2,878,951,099$ | $2,467,728,934$ |

## Projected Benefit Payments

The table below shows the projected benefit payments assuming no new entrants and all valuation assumptions are realized. The payment projections shown include the effect of assumed future service and salary increases for current actives, as well as the assumed load for disability-related medical expenses in retirement. The amounts shown do not include any projected benefit payments to members from the Oregon Public Employees Retirement System (OPERS) in which FPDR Three members also participate. The amounts shown also do not include either any employer contributions to OPERS for service by FPDR Three members or any projected benefit payments from OPERS to FPDR Three members and their survivor beneficiaries. For comparison, the actual benefit payments during the 2013-2014 fiscal year on this basis were approximately $\$ 104$ million.

| Fiscal Year | Projected Benefit <br> Payments |
| :---: | :---: |
| $2014-2015$ | $\$ 107,970,000$ |
| $2015-2016$ | $111,260,000$ |
| $2016-2017$ | $114,402,000$ |
| $2017-2018$ | $117,661,000$ |
| $2018-2019$ | $121,297,000$ |
| $2019-2020$ | $125,341,000$ |
| $2020-2021$ | $129,125,000$ |
| $2021-2022$ | $133,131,000$ |
| $2022-2023$ | $136,880,000$ |
| $2023-2024$ | $140,977,000$ |
| $2024-2025$ | $146,251,000$ |
| $2025-2026$ | $151,610,000$ |
| $2026-2027$ | $157,052,000$ |
| $2027-2028$ | $162,397,000$ |
| $2028-2029$ | $167,568,000$ |
| $2029-2030$ | $172,013,000$ |
| $2030-2031$ | $176,535,000$ |
| $2031-2032$ | $180,774,000$ |
| $2032-2033$ | $184,320,000$ |
| $2033-2034$ | $186,623,000$ |
| $2034-2035$ | $187,865,000$ |
| $2035-2036$ | $188,028,000$ |
| $2036-2037$ | $187,312,000$ |
| $2037-2038$ | $185,772,000$ |
| $2038-2039$ | $183,524,000$ |
| $2039-2040$ | $180,805,000$ |
| $2040-2041$ | $177,624,000$ |
| $2041-2042$ | $174,114,000$ |
| $2042-2043$ | $170,363,000$ |
| $2043-2044$ | $166,318,000$ |
|  |  |
|  |  |

## Actuarial Liabilities by Tier

|  | June 30, 2014 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | FPDR One Police | FPDR One Fire | FPDR Two Police | FPDR Two Fire | FPDR Three Police | FPDR Three Fire | Total |
| Total Present Value of Benefits |  |  |  |  |  |  |  |
| Active | - | - | 880,451,232 | 602,143,710 | 7,426,843 | 6,353,437 | 1,496,375,222 |
| Inactive | 111,580,863 | 106,104,547 | 778,701,992 | 566,990,936 | - | - | 1,563,378,338 |
| Total | 111,580,863 | 106,104,547 | 1,659,153,224 | 1,169,134,646 | 7,426,843 | 6,353,437 | 3,059,753,560 |
| Actuarial Accrued Liability |  |  |  |  |  |  |  |
| Active | - | - | 563,897,398 | 359,502,094 | 771,779 | 712,249 | 924,883,520 |
| Inactive | 111,580,863 | 106,104,547 | 778,701,992 | 566,990,936 | - | - | 1,563,378,338 |
| Total | 111,580,863 | 106,104,547 | 1,342,599,390 | 926,493,030 | 771,779 | 712,249 | 2,488,261,858 |
|  |  |  |  |  |  |  |  |
| Normal Cost | - | - | 32,830,907 | 21,378,747 | 337,886 | 286,284 | 54,833,824 |
| Projected next year's base pay | - | - | 64,730,869 | 43,063,303 | 16,850,268 | 13,683,457 | 138,327,897 |
| Normal Cost as \% of base pay | N/A | N/A | 50.7\% | 49.6\% | 2.0\% | 2.1\% | 39.6\% |

This work product was prepared solely for FPDR and the City of Portland for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

## Analysis of Gains and Losses

The table below shows Actuarial Accrued Liability (AAL) as of the previous valuation date of July 1, 2012, the expected AAL at the current valuation date if all assumptions were met with no changes to benefit provisions or assumptions, and the actual AAL calculated in this valuation before any changes were made to benefit provisions or assumptions. As detailed in the table, actual experience compared to assumption since the last valuation led to a $\$ 42$ million gain, or decrease in liability, compared to the expected liability. The main reason for this gain was due to our estimates of projected salary increases between valuation dates for continuing active members. Actual salary increases during the two year period were below those anticipated by the previous valuation's assumptions, leading to lower projected retirement benefits and a decrease in liability. There also was a gain because actual COLAs for FPDR One retirees during the prior two years were below the long-term annual COLA increase assumption of $3.75 \%$ for FPDR One members.

| Actuarial Accrued Liability Gain/(Loss) Analysis |  |
| :--- | ---: |
|  | Actuarial Accrued <br> Liability |
|  | $2,899,238,902$ |
| June 30, 2012 AAL |  |
|  | $3,059,058,842$ |
| Expected June 30, 2014 AAL before changes | $3,017,122,835$ |
| Actual June 30, 2014 AAL before changes | $41,936,007$ |
| Gain/(Loss) | $1.4 \%$ |
| Gain/(Loss) as \% of expected AAL |  |
|  |  |
| Sources of Gain/(Loss) | $29,495,043$ |
| Salary experience | $3,498,503$ |
| FPDR One COLA experience | $(63,898)$ |
| New actives | $32,929,648$ |
| Total |  |
| Remaining Gain/(Loss) | $9,006,359$ |
| Remaining Gain/(Loss) as \% of expected AAL | $0.3 \%$ |

## Effect of Assumption, Method, and Plan Changes

The table below shows the changes in plan AAL and Normal Cost that occurred as a result of legislative changes to the FPDR plan provisions, along with the effects of assumption changes made with the 2014 experience study.

| Effect of Assumption, Method, and Plan Changes |  |  |
| :--- | ---: | ---: |
|  |  |  |
|  | Actuarial Accrued <br> Liability (AAL) | Normal Cost |$|$| June 30, 2012 Valuation | $2,899,238,902$ |  |
| :--- | ---: | ---: |
|  | $3,017,122,835$ | $80,703,605$ |
| June 30, 2014 before changes | $(293,426,169)$ | $(8,252,847)$ |
| Plan provision changes |  |  |
| Assumption/method changes | $(274,239,766)$ | $(13,597,508)$ |
| Discount rate assumption | $4,530,407$ | $(2,359,924)$ |
| Merit scale assumption | $(20,860,614$ | $(294,255)$ |
| Mortality assumption | $(528,860,977)$ | $(1,365,247)$ |
| Other assumption changes |  | $(25,869,781)$ |
| Total change | $2,488,261,858$ | $54,833,824$ |
|  |  |  |
| June 30, 2014 Final Valuation Results |  |  |

## Section III - Plan Assets

## Plan Assets

The FPDR Board of Trustees administers both the FPDR Fund and a Reserve Fund.
The FPDR Fund is invested primarily in cash and short-term investments. As of June 30, 2014, the Fund had a total of $\$ 19,782,924$ in net assets considered held in trust for pension benefits.

The Reserve Fund is authorized under provisions of Chapter 5 (Section 5-104) of the City of Portland's Charter; and its purpose is to provide a reserve from which advances can be made to the FPDR Fund in the event the Fund is depleted to the extent that it cannot meet its current obligations. Under provisions of the City Charter, the Reserve Fund maximum is established at \$750,000 and is fully funded as of June 30, 2014.

Based on input from FPDR, the City of Portland and its external auditor, we understand both the FPDR Fund held in trust for pension benefits and the Reserve Fund are considered to meet GASB requirements of plan assets for financial reporting, and thus are used for plan actuarial valuation purposes.

The amounts shown below for both the current and prior valuation date are provided to us by FPDR and the City of Portland and are reported on a fair market value basis.

|  | Asset Summary |  |  |
| :---: | :---: | :---: | :---: |
| Valuation <br> Date | FPDR Fund - Held in <br> Trust for Pension | Reserve <br> Fund | Total Pension <br> Assets |
| June 30, 2012 | $\$ 19,537,803$ | $\$ 750,000$ | $\$ 20,287,803$ |
| June 30, 2014 | $\$ 19,782,924$ | $\$ 750,000$ | $\$ 20,532,924$ |

## Appendix A

## Participant Data

| Statistics for FPDR Participants as of June 30, 2014 |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | FPDR One |  | FPDR Two |  | FPDR Three |  | Total |  | Grand |
|  | Police | Fire | Police | Fire | Police | Fire | Police | Fire | Total |
| Actives |  |  |  |  |  |  |  |  |  |
| Headcount | 0 | 0 | 704 | 469 | 216 | 172 | 920 | 641 | 1,561 |
| Average Age | N/A | N/A | 44.9 | 43.7 | 33.8 | 34.6 | 42.3 | 41.3 | 41.9 |
| Average Service | N/A | N/A | 16.9 | 16.1 | 4.7 | 5.1 | 14.0 | 13.1 | 13.7 |
| Average Salary* | N/A | N/A | \$92,140 | \$94,203 | \$78,010 | \$79,555 | \$88,823 | \$90,272 | \$89,418 |
| Current Retiree \& Beneficiaries** |  |  |  |  |  |  |  |  |  |
| Headcount | 279 | 283 | 723 | 502 | 0 | 0 | 1,002 | 785 | 1,787 |
| Average Age | 81.6 | 83.5 | 64.5 | 64.9 | N/A | N/A | 69.3 | 71.6 | 70.3 |
| Average Monthly Benefit | \$3,119 | \$3,339 | \$5,110 | \$5,698 | N/A | N/A | \$4,555 | \$4,847 | \$4,684 |
| Current Disabled Participants |  |  |  |  |  |  |  |  |  |
| Headcount | 7 | 5 | 26 | 5 | 0 | 0 | 33 | 10 | 43 |
| Average Age | 60.9 | 59.0 | 50.0 | 51.4 | N/A | N/A | 52.3 | 55.2 | 53.0 |
| Average Monthly Benefit | \$3,866 | \$4,303 | \$4,016 | \$3,853 | N/A | N/A | \$3,984 | \$4,078 | \$4,006 |
| Inactive Deferred Participants |  |  |  |  |  |  |  |  |  |
| Headcount | 0 | 0 | 70 | 6 | 0 | 0 | 70 | 6 | 76 |
| Average Age | N/A | N/A | 45.1 | 42.0 | N/A | N/A | 45.1 | 42.0 | 44.8 |
| Average Monthly Benefit | N/A | N/A | \$1,705 | \$1,968 | N/A | N/A | \$1,705 | \$1,968 | \$1,726 |

This work product was prepared solely for FPDR and the City of Portland for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

| Distribution of FPDR Two Active Participants as of June 30, 2014 |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| FPDR Two Police |  |  |  |  |  |  |  |  |  |
| Years of Service |  |  |  |  |  |  |  |  |  |
| Age | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35+ | Total |
| 0-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 25-29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 30-34 | 0 | 20 | 17 | 0 | 0 | 0 | 0 | 0 | 37 |
| 35-39 | 0 | 27 | 82 | 14 | 0 | 0 | 0 | 0 | 123 |
| 40-44 | 0 | 16 | 54 | 105 | 16 | 0 | 0 | 0 | 191 |
| 45-49 | 0 | 11 | 28 | 56 | 87 | 3 | 0 | 0 | 185 |
| 50-54 | 0 | 3 | 10 | 16 | 70 | 12 | 0 | 0 | 111 |
| 55-59 | 0 | 1 | 4 | 5 | 25 | 12 | 0 | 0 | 47 |
| 60-64 | 0 | 0 | 1 | 1 | 5 | 1 | 1 | 0 | 9 |
| 65-69 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| 70-74 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 75+ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | - | 78 | 196 | 197 | 204 | 28 | 1 | - | 704 |
| FPDR Two Fire |  |  |  |  |  |  |  |  |  |
| Years of Service |  |  |  |  |  |  |  |  |  |
| Age | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35+ | Total |
| 0-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 25-29 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 30-34 | 0 | 31 | 13 | 0 | 0 | 0 | 0 | 0 | 44 |
| 35-39 | 0 | 37 | 63 | 12 | 0 | 0 | 0 | 0 | 112 |
| 40-44 | 0 | 18 | 53 | 39 | 1 | 0 | 0 | 0 | 111 |
| 45-49 | 0 | 9 | 22 | 39 | 8 | 7 | 0 | 0 | 85 |
| 50-54 | 0 | 0 | 4 | 18 | 16 | 28 | 5 | 0 | 71 |
| 55-59 | 0 | 0 | 2 | 1 | 2 | 20 | 9 | 0 | 34 |
| 60-64 | 0 | 0 | 0 | 1 | 1 | 4 | 3 | 0 | 9 |
| 65-69 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 70-74 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 75+ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | - | 96 | 157 | 110 | 28 | 59 | 19 | - | 469 |
| FPDR Two Total |  |  |  |  |  |  |  |  |  |
|  |  |  |  | ears of | vice |  |  |  |  |
| Age | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35+ | Total |
| 0-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 25-29 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 30-34 | 0 | 51 | 30 | 0 | 0 | 0 | 0 | 0 | 81 |
| 35-39 | 0 | 64 | 145 | 26 | 0 | 0 | 0 | 0 | 235 |
| 40-44 | 0 | 34 | 107 | 144 | 17 | 0 | 0 | 0 | 302 |
| 45-49 | 0 | 20 | 50 | 95 | 95 | 10 | 0 | 0 | 270 |
| 50-54 | 0 | 3 | 14 | 34 | 86 | 40 | 5 | 0 | 182 |
| 55-59 | 0 | 1 | 6 | 6 | 27 | 32 | 9 | 0 | 81 |
| 60-64 | 0 | 0 | 1 | 2 | 6 | 5 | 4 | 0 | 18 |
| 65-69 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 |
| 70-74 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 75+ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | - | 174 | 353 | 307 | 232 | 87 | 20 | - | 1,173 |


| Distribution of FPDR Three Active Participants as of June 30, 2014 |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| FPDR Three Police |  |  |  |  |  |  |  |  |  |
| Years of Service |  |  |  |  |  |  |  |  |  |
| Age | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35+ | Total |
| 0-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20-24 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 25-29 | 49 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 65 |
| 30-34 | 29 | 35 | 0 | 0 | 0 | 0 | 0 | 0 | 64 |
| 35-39 | 18 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 42 |
| 40-44 | 11 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| 45-49 | 3 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 50-54 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 55-59 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 60-64 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 65-69 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 70-74 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 75+ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 114 | 102 | - | - | - | - | - | - | 216 |
| FPDR Three Fire |  |  |  |  |  |  |  |  |  |
| Years of Service |  |  |  |  |  |  |  |  |  |
| Age | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35+ | Total |
| 0-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 25-29 | 21 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| 30-34 | 26 | 39 | 0 | 0 | 0 | 0 | 0 | 0 | 65 |
| 35-39 | 24 | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 56 |
| 40-44 | 9 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 45-49 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 50-54 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 55-59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 60-64 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 65-69 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 70-74 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 75+ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 83 | 89 | - | - | - | - | - | - | 172 |
| FPDR Three Total |  |  |  |  |  |  |  |  |  |
| Years of Service |  |  |  |  |  |  |  |  |  |
| Age | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35+ | Total |
| 0-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20-24 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 25-29 | 70 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 90 |
| 30-34 | 55 | 74 | 0 | 0 | 0 | 0 | 0 | 0 | 129 |
| 35-39 | 42 | 56 | 0 | 0 | 0 | 0 | 0 | 0 | 98 |
| 40-44 | 20 | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 52 |
| 45-49 | 5 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 50-54 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 55-59 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 60-64 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 65-69 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 70-74 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 75+ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 197 | 191 | - | - | - | - | - | - | 388 |


| Distribution of All Active Participants as of June 30, 2014 |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Police Total |  |  |  |  |  |  |  |  |  |
| Years of Service |  |  |  |  |  |  |  |  |  |
| Age | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35+ | Total |
| 0-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20-24 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 25-29 | 49 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 65 |
| 30-34 | 29 | 55 | 17 | 0 | 0 | 0 | 0 | 0 | 101 |
| 35-39 | 18 | 51 | 82 | 14 | 0 | 0 | 0 | 0 | 165 |
| 40-44 | 11 | 36 | 54 | 105 | 16 | 0 | 0 | 0 | 222 |
| 45-49 | 3 | 16 | 28 | 56 | 87 | 3 | 0 | 0 | 193 |
| 50-54 | 1 | 4 | 10 | 16 | 70 | 12 | 0 | 0 | 113 |
| 55-59 | 1 | 2 | 4 | 5 | 25 | 12 | 0 | 0 | 49 |
| 60-64 | 0 | 0 | 1 | 1 | 5 | 1 | 1 | 0 | 9 |
| 65-69 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| 70-74 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 75+ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 114 | 180 | 196 | 197 | 204 | 28 | 1 | - | 920 |
| Fire Total |  |  |  |  |  |  |  |  |  |
| Years of Service |  |  |  |  |  |  |  |  |  |
| Age | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35+ | Total |
| 0-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 25-29 | 21 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| 30-34 | 26 | 70 | 13 | 0 | 0 | 0 | 0 | 0 | 109 |
| 35-39 | 24 | 69 | 63 | 12 | 0 | 0 | 0 | 0 | 168 |
| 40-44 | 9 | 30 | 53 | 39 | 1 | 0 | 0 | 0 | 132 |
| 45-49 | 2 | 11 | 22 | 39 | 8 | 7 | 0 | 0 | 89 |
| 50-54 | 1 | 0 | 4 | 18 | 16 | 28 | 5 | 0 | 72 |
| 55-59 | 0 | 0 | 2 | 1 | 2 | 20 | 9 | 0 | 34 |
| 60-64 | 0 | 0 | 0 | 1 | 1 | 4 | 3 | 0 | 9 |
| 65-69 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 70-74 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 75+ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 83 | 185 | 157 | 110 | 28 | 59 | 19 | - | 641 |
| Grand Total |  |  |  |  |  |  |  |  |  |
| Years of Service |  |  |  |  |  |  |  |  |  |
| Age | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35+ | Total |
| 0-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20-24 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 25-29 | 70 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 91 |
| 30-34 | 55 | 125 | 30 | 0 | 0 | 0 | 0 | 0 | 210 |
| 35-39 | 42 | 120 | 145 | 26 | 0 | 0 | 0 | 0 | 333 |
| 40-44 | 20 | 66 | 107 | 144 | 17 | 0 | 0 | 0 | 354 |
| 45-49 | 5 | 27 | 50 | 95 | 95 | 10 | 0 | 0 | 282 |
| 50-54 | 2 | 4 | 14 | 34 | 86 | 40 | 5 | 0 | 185 |
| 55-59 | 1 | 2 | 6 | 6 | 27 | 32 | 9 | 0 | 83 |
| 60-64 | 0 | 0 | 1 | 2 | 6 | 5 | 4 | 0 | 18 |
| 65-69 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 |
| 70-74 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 75+ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 197 | 365 | 353 | 307 | 232 | 87 | 20 | - | 1,561 |

Distribution of Current Retirees and Beneficiaries as of June 30, 2014

| Age | FPDR One |  |  |  | FPDR Two |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Police |  | Fire |  | Police |  | Fire |  |
|  | Total Monthly <br> Count <br> Benefit |  | Count | Total Monthly Benefit | Count | tal Monthly Benefit | Count | Total Monthly Benefit |
| <40 | 0 | - | 0 | - | 7 | 17,315 | 1 | 813 |
| 40-44 | 0 | - | 0 | - | 1 | 4,058 | 0 | - |
| 45-49 | 1 | 1,530 | 0 | - | 1 | 4,804 | 0 | - |
| 50-54 | 0 | - | 1 | 1,291 | 27 | 169,766 | 16 | 99,984 |
| 55-59 | 2 | 3,903 | 0 | - | 124 | 720,656 | 105 | 677,948 |
| 60-64 | 4 | 7,568 | 7 | 20,676 | 186 | 961,204 | 150 | 885,143 |
| 65-69 | 26 | 88,019 | 11 | 36,855 | 214 | 1,043,439 | 91 | 499,264 |
| 70-74 | 32 | 98,817 | 18 | 63,054 | 115 | 547,613 | 78 | 402,425 |
| 75-79 | 29 | 76,406 | 40 | 127,434 | 34 | 157,284 | 42 | 199,967 |
| 80-84 | 68 | 223,598 | 52 | 165,714 | 11 | 54,161 | 19 | 94,636 |
| 85-89 | 67 | 208,576 | 93 | 327,519 | 3 | 14,018 | 0 | - |
| 90-94 | 40 | 129,245 | 47 | 162,115 | 0 | - | 0 | - |
| 95+ | 10 | 32,474 | 14 | 40,409 | 0 | - | 0 | - |
| Total | 279 | \$870,137 | 283 | \$945,068 | 723 | \$3,694,317 | 502 | \$2,860,179 |

*Headcount does not include 92 Alternate Payees receiving benefits via a Domestic Relations Order (DRO).
Total monthly benefits for that group was $\$ 135,344$
Distribution of Disabled Participants as of June 30, 2014

| Age | FPDR One |  |  |  | FPDR Two |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Police |  | Fire |  | Police |  | Fire |  |
|  | Total Monthly Count Benefit |  | Count | Total <br> Monthly <br> Benefit | CountTotal Monthly <br> Benefit |  | Count | Total <br> Monthly <br> Benefit |
| <40 | 0 | 0 - | 0 | - | 1 | 2,527 | 1 | 2,988 |
| 40-44 | 0 | 0 - | 0 | - | 4 | 15,644 | 0 | - |
| 45-49 | 0 | 0 - | 0 | - | 8 | 31,574 | 0 | - |
| 50-54 | 0 | 0 - | 0 | - | 7 | 26,985 | 3 | 8,923 |
| 55-59 | 2 | 8,502 | 2 | 8,606 | 2 | 11,425 | 0 | - |
| 60-64 | 5 | 18,560 | 3 | 12,909 | 4 | 16,269 | 1 | 7,357 |
| 65-69 | 0 | 0 | 0 | - | 0 | - | 0 | - |
| 70-74 | 0 | 0 | 0 | - | 0 | - | 0 | - |
| 75-79 | 0 | 0 - | 0 | - | 0 | - | 0 | - |
| 80-84 | 0 | 0 | 0 | - | 0 | - | 0 | - |
| 85-89 | 0 | 0 - | 0 | - | 0 | - | 0 | - |
| 90-94 | 0 | 0 - | 0 | - | 0 | - | 0 | - |
| 95+ | 0 | 0 - | 0 | - | 0 | - | 0 | - |
| Total | 7 | \$27,061 | 5 | \$21,515 | 26 | \$104,425 | 5 | \$19,267 |


| Distribution of Inactive Deferred Participants as of June 30, 2014 |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | FPDR One |  |  |  | FPDR Two |  |  |  |
|  |  | Police | Fire |  | Police |  | Fire |  |
|  |  Total Monthly <br> Benefit <br> Count  |  | Count | Total Monthly Benefit | Count | Total Monthly Benefit | Count | Total <br> Monthly <br> Benefit |
| <40 |  | 0 | 0 | - | 10 | 14,999 | 2 | 2,017 |
| 40-44 |  | 0 | 0 | - | 20 | 30,312 | 2 | 1,415 |
| 45-49 |  | 0 | 0 | - | 25 | 43,603 | 2 | 8,378 |
| 50-54 |  | 0 | 0 | - | 13 | 28,308 | 0 | - |
| 55-59 |  | 0 | 0 | - | 2 | 2,150 | 0 | - |
| 60-64 |  | 0 | 0 | - | 0 | - | 0 | - |
| 65-69 |  | 0 | 0 | - | 0 | - | 0 | - |
| 70-74 |  | 0 | 0 | - | 0 | - | 0 | - |
| 75-79 |  | 0 | 0 | - | 0 | - | 0 | - |
| 80-84 |  | 0 | 0 | - | 0 | - | 0 | - |
| 85-89 |  | 0 | 0 | - | 0 | - | 0 | - |
| 90-94 |  | 0 | 0 | - | 0 | - | 0 | - |
| 95+ |  | 0 | 0 | - | 0 | - | 0 | - |
| Total |  | 0 | - | - | 70 | 119,373 | 6 | 11,810 |

## Appendix B

## Actuarial Cost Method and Policies

## Actuarial Cost Method and Policies

Actuarial cost method: Liabilities shown in this report are computed using the Individual Entry Age Normal cost method allocated as a level percent of projected pay from the date of entry to projected exit age. Under this method, the total Actuarial Present Value of Benefits allocated over the service for each active member from their date of entry into the Plan until their assumed date of exit from the Plan, as a level percent of projected pay. This level amount is referred to as the Normal Cost, and is calculated for each active member. It is calculated by dividing the total Actuarial Present Value of Projected Benefits at entry age by the Actuarial Present Value of Projected Service at entry age. The Normal Cost equals $\$ 0$ for non-active members. The sum of the individual Normal Costs is the Normal Cost for the Plan.

Actuarial Value of Assets: Assets are provided by FPDR and the City of Portland and are reported on a fair market value basis. The considered assets have two components: the FPDR Fund and the Reserve Fund.

Census data: To prepare this report Milliman has used and relied on participant data supplied by FPDR and summarized in the valuation report in Appendix A. FPDR is responsible for ensuring that such participant data provides an accurate description of all persons who are participants under the terms of the plan or otherwise entitled to benefits as of June 30, 2014, that is sufficiently comprehensive and accurate for the purposes of this report. Although we have reviewed the data in accordance with Actuarial Standards of Practice No. 23, we have not verified or audited any of the data or information provided. Assumptions and estimates were made for any incomplete or missing data in consultation with FPDR.

Funding policy: Currently, the plan's benefits are effectively funded on a pay-as-you-go basis. FPDR funds on a cash basis as benefits are paid. The only assets that have been segregated and restricted to provide plan benefits are the amounts noted in the assets section of this report.

The valuation is based on the premise that the plan is ongoing and that the pay-as-you-go funding mechanism specified in City Charter continues.

## Appendix C

## Actuarial Assumptions

## Actuarial Assumptions

The following assumptions were used in valuing the liabilities and benefits under the plan. Note that for any given individual Member, the anticipated pay increase in a given year is the combined effect of inflation, real wage growth and salary merit increase.

## Discount Rate

4.29\% per annum. This rate was selected by the City of Portland via a reference to a high-quality municipal bond rate or index as of June 30, 2014, as described in GASB No. 67. The results of this valuation will also be used to develop liabilities at June 30, 2015 using standard roll-forward techniques. The discount rate used for that purpose will be determined based upon municipal bond rate information at the June 30, 2015 measurement date.

## Inflation

2.75\% per annum

## Real Wage Growth

1.00\% per annum

## Payroll Growth

$3.75 \%$ per annum (combination of above two factors)

## Salary Merit Increase

| Years of Service | Police and Fire |
| :---: | :---: |
| 0 | $20.00 \%$ |
| 1 | $8.50 \%$ |
| 2 | $5.50 \%$ |
| 3 | $4.80 \%$ |
| 4 | $4.50 \%$ |
| 5 | $2.50 \%$ |
| $6+$ | $0.00 \%$ |

## Mortality, Healthy Lives

Mortality rates for healthy lives are based on the rates for Police \& Fire members in the December 31, 2013 valuation of Oregon PERS. Future improvement in life expectancies is assumed via a generational projection of mortality improvement as described. For active members, $50 \%$ of deaths are assumed to be service related, and $50 \%$ are assumed to be non-service related.

| Male Retiree | RP-2000 Male, Generational per Scale AA, Combined Active/Healthy Retired, Blended 25\% Blue Collar, $75 \%$ White Collar, set back 12 months |
| :---: | :---: |
| Female Retiree | RP-2000 Female, Generational per Scale AA, Combined Active/Healthy Retired, White Collar |
| Male Beneficiary | RP-2000 Male, Generational per Scale AA, Combined Active/Healthy Retired, Blended 25\% Blue Collar, 75\% White Collar, set back 12 months |
| Female Beneficiary | RP-2000 Female, Generational per Scale AA, Combined Active/Healthy Retired, White Collar |
| Male Active | 95\% of rates for Male Retiree |
| Female Active | 55\% of rates for Female Retiree |

## Disabled Mortality

Disabled Male Retiree<br>Disabled Female Retire<br>65\% of RP-2000 Disabled Male, Static, No Collar<br>90\% of RP-2000 Disabled Female, Static, No Collar

## Withdrawal

Rates of withdrawal from causes other than death, disability, and retirement are shown in the following select and ultimate table:

|  | Service |  |  |
| :---: | :---: | :---: | :---: |
| Attained Age | $\mathbf{0}$ Years | $\mathbf{1}$ Year | 2+ Years |
| Any | $15.00 \%$ | $5.00 \%$ | $0.50 \%$ |

## Disability Incidence

Rates of disability are assumed to follow the 1985 Disability Study Class 1 rates. 90 percent of disabilities are assumed to be service related, while the other 10 percent are assumed to be non-service related. Sample rates are shown below:

| Age | Rate Per Year |
| :---: | :---: |
| 30 | $0.064 \%$ |
| 40 | $0.158 \%$ |
| 50 | $0.448 \%$ |

## Retirement

Active members are assumed to retire at the rates shown below. Vested terminated members are assumed to retire at the earliest age they would have been eligible to retire had they remained in active employment., i.e., the earlier of a) age 55 or b) age 50 with 25 years of service from date of hire.

| Age | Fire | Police |
| :---: | :---: | :---: |
| 50 | $25 \%$ | $50 \%$ |
| 51 | 20 | 40 |
| 52 | 20 | 40 |
| 53 | 20 | 40 |
| 54 | 20 | 40 |
| 55 | 25 | 30 |
| 56 | 25 | 30 |
| 57 | 25 | 20 |
| 58 | 33 | 20 |
| 59 | 50 | 20 |
| 60 | 100 | 20 |
| 61 | 100 | 20 |
| 62 | 100 | 45 |
| 63 | 100 | 45 |
| 64 | 100 | 45 |
| $65+$ | 100 | 100 |

## Percentage Married

Males: 80\%
Females: 80\%
When available, actual marital status is used for retirees.

## Age Difference of Spouses

Females are assumed to be 3 years younger than males. When available, actual spouse ages are used for retirees.

## Form of Payment for Future Retirees from Active Status

| Benefit Formula <br> Elected | Percent <br> Electing |
| :---: | :---: |
| $2.8 \%$ | $80 \%$ |
| $2.6 \%$ | $20 \%$ |

## Form of Payment for Future Retirees from Vested Terminated Status

| Benefit Formula <br> Elected | Percent <br> Electing |
| :---: | :---: |
| $2.8 \%$ | $80 \%$ |
| $2.6 \%$ | $20 \%$ |

## Form of Payment for Future Retirees from Disability Status

FPDR One: Marital status at Disability Retirement Age is assumed to be the same as currently reported. Married participants are valued including a survivor benefit percentage as specified in City Charter based on the age difference between a Member and spouse.

FPDR Two: Currently disabled members reported as non-married are assumed to elect the $2.8 \%$ benefit formula. Those reported as married are assumed to have an $80 \%$ likelihood of selecting the $2.8 \%$ benefit formula and a $20 \%$ likelihood of selecting the $2.6 \%$ benefit formula.

## Future Cost of Living Increases for Retiree Benefits

FPDR One: $3.75 \%$ per annum, representing the assumed annual increase in pay for a First Class Officer or Firefighter

FPDR Two: 1.25\% per annum

## Employment of Disabled Members

Disabled members are assumed not to return to active service. One-third of those disabled are assumed to become gainfully employed with earnings equal to $9 \%$ of their base pay prior to disability.

## Oregon Residency Post-Retirement

For purposes of determining eligibility for tax offset benefits, $80 \%$ of active members are assumed to reside in Oregon for retirement. For current retirees, the current tax offset benefit status is expected to continue.

## Disability Retirement Age

FPDR One: Age 64
FPDR Two: Age 55
FPDR Three: Age 60
FPDR One and Two members currently receiving disability benefits prior to their Disability Retirement Age are assumed to be credited with 30 years of service for the calculation of their benefit at Disability Retirement Age.

## Offset for OPSRP Benefits

Benefits payable to FPDR Three members upon disability or pre-retirement death are offset by benefits paid from the OPSRP program. For valuation purposes, we have assumed OPSRP benefits offset FPDR benefits as follows:

FPDR Three Disability Benefits: For purposes of the valuation OPSRP pre-retirement disability benefits are assumed to replace $0 \%$ of final salary. This assumption was employed at FPDR's request in recognition that eligibility for disability benefits under OPSRP is more limited than under FPDR. This assumption will be reviewed as experience emerges. After age 60, the OPSRP benefit is assumed to exceed the benefit provided by the FPDR program.

FPDR Three Death Benefits: OPSRP benefits are assumed to begin at age 50. At that time, they are assumed to be equal to $50 \%$ of the benefit calculated using a $1.8 \%$ multiplier, times Years of Service, times Final Salary, times an OPSRP early retirement reduction factor of 0.35 . OPSRP benefits are assumed to increase at $1.25 \%$ per year.

## Liability Load for Disability-Related Medical Expense Reimbursements

To estimate the projected future costs attributable to disability-related medical reimbursement payments occurring after retirement, projected pension payments are increased by $0.5 \%$.

## Changes Since Prior Valuation

The discount rate was updated from $3.50 \%$ to $4.29 \%$.
Healthy and disabled mortality assumptions were updated for male retirees and for all active members.
Assumptions regarding merit salary increases, withdrawal, disability incidence, retirement, and marital characteristics were all updated as part of the 2014 experience study.

The assumed offset to pre-retirement disability benefits for benefits provided by OPSRP was eliminated.
The COLA assumed payable to FPDR Two members was reduced from $2 \%$ to $1.25 \%$, reflecting recent legislative changes to Oregon PERS.

A new assumption was added to estimate the proportion of FPDR retirees residing outside of Oregon in order to reflect the projected financial effects of recent legislative changes.

## Appendix D

## Plan Provisions

## Plan Provisions

## Disability and Retirement Fund

## Plan Eligibility

Prior to January 1, 2013, a sworn employee of the Bureau of Fire or Bureau of Police became a Member of the Fund at the time of permanent appointment. Effective January 1, 2013, a new sworn employee will become a Member of the Fund after completing six months of service.

FPDR One: Retired on or before January 1, 1990. Includes benefits provided by the Supplementary Retirement Program. (At the current valuation date, 11 surviving FPDR members continue to receive Supplementary benefits.)

FPDR Two: Not FPDR One, and permanently appointed as sworn employees of the Bureau of Fire or Bureau of Police prior to January 1, 2007.

FPDR Three: All other employees of the Bureau of Fire and Bureau of Police first sworn on or after January 1, 2007. FPDR Three members are also enrolled in the Oregon Public Service Retirement Plan (OPSRP), and OPSRP benefits are not payable from this Fund.

## Member Contributions

No Member contributions are required after July 1, 1990. Prior to that date, Member contributions of $7 \%$ of First Class Pay were required; accumulated Member contributions prior to July 1, 1990 remain in the Fund.

## Normal Retirement - FPDR Two and FPDR Three

Eligibility - A Member is eligible for retirement upon attaining the age of 50 and earning 25 or more Years of Service, or upon reaching age 55 with no service requirement.

Benefit - FPDR Two - The annual retirement benefit is a percentage of the Member's Final Pay for each Year of Service up to 30 years. The percentage is based on the Member's choice of a survivor benefit when the Member applies for a retirement benefit, according to the table below:

| Percentage of Benefit Continuing to <br> Surviving Spouse or Minor Children | Percentage of Final Pay Per <br> Year of Service |
| :---: | :---: |
| $100 \%$ | $2.2 \%$ |
| $75 \%$ | $2.4 \%$ |
| $50 \%$ | $2.6 \%$ |
| $25 \%$ or no survivors | $2.8 \%$ |

## Benefit - FPDR Three - None.

Benefit Form - The benefit begins at retirement and continues for the Member's life, with the selected percentage continuing to the Member's surviving spouse or minor children after the Member's death.

## Cost of Living Increases - FPDR One

Benefits for FPDR One retirees will increase annually in line with increases with the Base Pay of a First Class Officer or Firefighter as appropriate. The increase is not subject to the 1.25 percent cap currently in place for FPDR Two cost of living increases. Benefits provided by the Supplementary Retirement Program do not receive cost of living increases.

## Future Cost of Living Increases - FPDR Two and FPDR Three

Future benefits will be increased at the discretion of the Board of Trustees up to the current Oregon PERS statutory maximum of 1.25 percent per year.

## Service-Connected or Occupational Disability Benefit

Eligibility - A Member is eligible for a service disability benefit upon sustaining an injury or illness in the performance of duty that prevents the Member from engaging in the duties of a firefighter or police officer.

A Member is eligible for an occupational disability benefit if the Member is unable to perform the duties of a firefighter or police officer due to certain illnesses or injuries as specified in City Charter.

Benefit - FPDR One - The benefit payable prior to Disability Retirement Date for a FPDR One member is $60 \%$ of the Base Pay of a First Class Officer or Firefighter, as appropriate. Upon reaching Disability Retirement Age, the member will receive his or her maximum earned pension.

Benefit - FPDR Two - During the first year of disability, the benefit is $75 \%$ of the Member's Base Pay, reduced by $50 \%$ of any wages earned in other employment while disabled.

If the Member is capable of Substantial Gainful Employment, then after one year of disability and after the Member becomes Medically Stationary, but before four years of disability have elapsed, the Member's benefit will change to $50 \%$ of Base Pay minus $25 \%$ of wages earned in other employment.

Under any circumstances, a minimum benefit of $25 \%$ of Base Pay for member's position at disability will continue as long as the disability continues.

At Disability Retirement Age the above benefits stop; the Member is then entitled to a retirement benefit computed using his Base Pay and Years of Service at his Disability Retirement Age.

Benefit - FPDR Three - The same as the benefit for FPDR Two, but offset by any disability benefits received from OPSRP.

Benefit Form - The disability benefit begins at disability and continues until the Member's recovery, death, or Disability Retirement Age, whichever occurs first. Disability benefits will be increased in step with the Base Pay of the position held by the Member at disability.

The retirement benefit begins at Disability Retirement Age and continues for the Member's life, with the selected percentage (or for FPDR One, determined percentage) continuing to the Member's surviving spouse or minor children after the Member's death.

Retirement benefits payable after Disability Retirement Age will be increased in the same manner as Normal Retirement Benefits.

## Nonservice-Connected Disability Benefit

Eligibility - A Member is eligible for a nonservice disability benefit if the Member has ten Years of Service and sustains an injury or illness other than in the performance of duty that prevents the Member from engaging in duties as a firefighter or police officer.

Benefit - FPDR One - The benefit payable prior to Disability Retirement Date for a FPDR One member is the maximum earned pension, but not less than 20\% of the salary of a First Class Officer or Firefighter, as appropriate. Upon reaching Disability Retirement Age, the member will receive his or her maximum earned pension.

Benefit - FPDR Two - The benefit is $50 \%$ of the Member's Base Pay, reduced by $50 \%$ of any wages earned in other employment while disabled, less any non-service disability benefits paid.

At Disability Retirement Age the above benefits stop; the Member is then entitled to a retirement benefit computed using his Base Pay and Years of Service at his Disability Retirement Age.

Benefit - FPDR Three - The same as the benefit for FPDR Two, but offset by any disability benefits received from OPSRP.

Benefit Form - The disability benefit begins at disability and continues until the Member's recovery, death, or Disability Retirement Age, whichever occurs first. Disability benefits will be increased in step with the Base Pay of the position held by the Member at disability.

The retirement benefit begins at Disability Retirement Age and continues for the Member's life, with the selected percentage continuing to the Member's surviving spouse or minor children after the Member's death.

Retirement benefits payable after Disability Retirement Age will be increased in the same manner as Normal Retirement benefits.

## Preretirement Service-Connected or Occupational Death Benefit

Eligibility - A Member's surviving spouse or dependent minor children are eligible for a service death benefit if the Member dies as a result of an injury or illness sustained in the performance of duty.

A Member's surviving spouse or dependent minor children are eligible for an occupational death benefit if the Member dies as a result of certain illnesses or injuries as specified in City Charter.

Benefit - FPDR Two - Prior to the date the Member would have reached the earliest retirement age, the surviving spouse or dependent minor children will receive an annual benefit equal to $75 \%$ of the Member's Base Pay.

After the date the Member would have reached the Member's earliest retirement age, the surviving spouse or dependent minor children will receive an annual benefit equal to $50 \%$ of the Member's Final Pay.

Benefit - FPDR Three - The same as the benefit for FPDR Two, but offset by any death benefits received from OPSRP.

Benefit Form - The death benefit begins when the Member dies and continues until the Member's beneficiaries cease to be eligible, which occurs at death for benefits paid to a surviving spouse and at age 18 for benefits paid to minor children.

Death benefits will be increased in the same manner as Normal Retirement benefits.

## Preretirement Nonservice Death Benefit

Eligibility - A Member's surviving spouse or dependent minor children are eligible for a nonservice death benefit if a Member has earned one or more Years of Service and dies as a result of an injury or illness not sustained in the performance of duty.

Benefit - FPDR Two - If the Member has earned fewer than five Years of Service, the Member's beneficiaries will receive a refund of the Member's contributions accumulated to July 1, 1990.

If the Member has earned five or more Years of Service, the surviving spouse or dependent minor children will receive a benefit equal to $50 \%$ of the Member's retirement pension earned to the date of death, assuming an accrual rate of $2.6 \%$ of Final Pay for each Year of Service.

Benefit - FPDR Three - The same as the benefit for FPDR Two, but offset by any death benefits received from OPSRP.

Benefit Form - If the Member had five or more Years of Service, the death benefit to the surviving spouse begins when the spouse reaches age 55 and continues until the death of the surviving spouse.

If the Member had five or more Years of Service, a death benefit is payable to the dependent minor children if there is no surviving spouse or if the spouse is under age 55; the benefit to the dependent minor children begins when the Member dies and continues until the majority of the minor children.

Death benefits will be increased in the same manner as Normal Retirement benefits.

## Vested Termination Benefit

Eligibility - A Member is eligible for a vested termination benefit after earning five years of service.
Benefit - FPDR Two - If the Member terminates after earning five or more Years of Service, the termination benefit is the Member's retirement pension earned to the date of termination payable at the age the Member would have been eligible for retirement had he or she continued employment.

Benefit - FPDR Three - None.
Benefit Form - If the Member had earned five or more Years of Service at termination, the benefit begins when the Member would first have been eligible for retirement and continues for the Member's life, with the selected percentage continuing to the Member's surviving spouse or minor children after the Member's death.

Benefits will be subject to cost of living increases in the same manner as Normal Retirement benefits.

## Oregon State Income Tax Adjustment

For Members hired prior to July 14, 1995, benefits will be eligible for an adjustment to compensate the Member for state income taxes paid. Senate Bill 822, enacted in 2013, limits eligibility for these adjustments to individuals residing in Oregon for tax purposes. There are two adjustment formulas and the Member or beneficiary will receive the greater of the two adjustments if eligible for both formulas.

SB 656 Increase: The amount of the adjustment is determined by the Member's Years of Service at termination, in accordance with the table below.

| Years of Service | Adjustment |
| :---: | :---: |
| $10-19$ | $1.0 \%$ |
| $20-24$ | $2.5 \%$ |
| 25 and over | $4.0 \%$ |

HB 3349 Increase $\left(\frac{1}{1-\text { maximum Oregon personal }}-1\right) \times \frac{\begin{array}{l}\text { Service prior to } \\ \text { October 1,1991 }\end{array}}{\text { All Service }}$

Supplemental Retirement Benefits - A specified group of FPDR One retirees receive additional monthly supplemental benefits provided by special ordinance. These benefits do not receive a COLA.

## Disability-Related Medical Expenses

FPDR reimburses reasonable medical and hospital expenses arising from a service-connected or occupational injury or illness. The Fund Administrator may limit reimbursement to particular medical and hospital service providers with which it has made fee arrangements and may join in the purchase of services and administration of claims for other employees of the City of Portland.

For Members retired on or before January 1, 2007:
For FPDR One/Two Members, reimbursement is for expenses incurred:
a) While serving as an active Member,
b) While disability benefits continue, and
c) While the retirement benefits are paid, assuming the member receives disability benefits through Disability Retirement Age
For Members retiring after January 1, 2007:
Reimbursement for expenses incurred at any time, regardless of whether the Member continued to receive disability benefits through Disability Retirement Age (FPDR One or FPDR Two) or Oregon PERS Normal Retirement Age (FPDR Three) or retired with a retirement benefit under Section 5-304 (FPDR Two) or under Oregon PERS (FPDR Three).

## Changes Since Prior Valuation

Senate Bill 822, signed into law in May 2013, eliminated the Oregon State Income Tax Adjustment for members and beneficiaries not subject to Oregon income tax because of residency.

Senate Bill 861, signed into law in October 2013, limited the post-retirement COLA payable under Oregon PERS to no more than $1.25 \%$ for years beyond 2013. Because the COLA paid to FPDR Two and Three members cannot exceed the adjustment paid to police \& fire employees under Oregon PERS, this also affects the projected benefits in the FPDR valuation.

## Definitions

## Base Pay

A Member's Base Pay is the base pay in the Member's position, including premium pay, but excluding overtime and excluding any payments for unused vacation or sick leave, limited by Internal Revenue Code 401(a)(17).

## Disability Retirement Age

FPDR One: Age 64
FPDR Two: A Member's Disability Retirement Age is the earlier of Social Security normal retirement age and the age at which the Member has earned 30 Years of Service.

FPDR Three: Normal Retirement Age under Oregon PERS.

## Final Pay

A Member's Final Pay is the Member's highest Base Pay during any one of the three consecutive one-year periods preceding the month in which the Member retires, dies, becomes disabled, or terminates employment. For this purpose, a one-year period is defined to include 365 days of pay ( 366 in a leap year).

If the Member's benefit is deferred due to disability or employment covered by the Oregon Public Employees' Retirement System (OPERS), the Member's Final Pay will be increased during the deferral period with increases in the Base Pay of the Member's position at termination if the termination occurred prior to 2013.

## Medically Stationary

A disabled Member is judged to be Medically Stationary when the Member's prognosis is clear and the Member's medical condition has stabilized and is unlikely to change.

## Spouse

A Member's spouse must have been designated by marriage or by a registered same-sex domestic partnership for at least twelve months.

## Substantial Gainful Activity

A disabled Member is capable of Substantial Gainful Activity if the FPDR Director determines that the Member is capable of being employed with earnings of at least one-third of the Member's Base Pay.

## Year of Service

A Member will be credited with one twelfth of a Year of Service for each completed month of active employment as a City firefighter or police officer. (Maximum of 30 years)

In addition, a FPDR Two disabled Member will earn a portion of a Year of Service for each year during which the Member receives disability benefits. The portion of a Year of Service earned will equal the Member's disability pension during the year divided by $75 \%$ of current base pay for position held at disablement (the maximum disability benefit).

## Excluded Benefits

The benefits described below were excluded from the valuation. We do not believe valuing these benefits would materially change the results of this valuation.

## Preretirement Nonservice Death Benefit

A lump sum funeral benefit equal to $50 \%$ of one month of First Class Pay will be paid to the beneficiaries of Members who die while active, disabled, or retired.

## Minimum Total Payments for Normal Retirement, Disability, Death, and Termination Benefits

The total of all payments to the Member and the Member's survivors will at least equal the Member's contributions accumulated to July 1, 1990.

## Funeral Benefits

Upon the death of an active or retired FPDR One Member, the Board shall pay a sum not to exceed $\$ 200$ to be used for funeral expenses. A lump sum funeral benefit equal to $50 \%$ of one month of First Class Pay will be paid to the beneficiaries of FPDR Two and FPDR Three Members who die while active, disabled, or retired.

## Appendix E

## Glossary

## Glossary

Actuarial Accrued Liability. The portion of the present value of prospective benefits allocated to service before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value. The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions. Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method. Sometimes called "funding method," a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual actuarial cost of the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss). 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.

Funded Ratio. The actuarial value of assets expressed as a percentage of the actuarial accrued liability.
Measurement Date. The date as of which the Actuarial Accrued Liability (called the Total Pension Liability) is determined under GASB 67 and 68. Under GASB 67, the Measurement Date is required to be the plan's fiscal year-end, but the liability can be recalculated based on a Valuation Date up to 24 months earlier.

Normal Cost. The annual cost assigned to the current year, under the actuarial cost method in use.
Present Value. Sometimes called "actuarial present value," the current worth (on the valuation date) of an amount or series of amounts payable or receivable in the future. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Statement No. 25 of the Governmental Accounting Standards Board (GASB 25). The accounting standard that previously set financial reporting standards for defined benefit pension plans. The standard has been replaced by GASB Statement 67 (GASB 67) for plan fiscal years beginning after June 15, 2013.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27). The accounting standard that previously governed a state or local governmental employer's pension accounting. The standard has been replaced by GASB Statement 68 (GASB 68) for employer fiscal years beginning after June 15, 2014.

Unfunded Actuarial Accrued Liability. The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets.

Valuation Date. The date as of which the actuarial valuation is performed.


[^0]:    ${ }^{1}$ Bolded terms from the Executive Summary are defined in the report glossary.

