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

## Pension Actuarial Valuation Report as of June 30, 2018

**Prepared by:**

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January 15, 2019

Ms. Stacy Jones  
FPDR Financial Manager  
Bureau of Fire & Police Disability & Retirement

Dear Stacy,

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, 2018. Our findings are set forth in this actuarial valuation report. This report reflects the benefit provisions in effect as of June 30, 2018.

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 FPDR Board has the final decision regarding the appropriateness of the assumptions and cost methods used in this report, and reviewed and accepted them in its May 2014 Board meeting related to the 2014 experience study. Updates since that study were reviewed and accepted at a subcommittee meeting in November 2018.



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Ms. Stacy Jones  
Bureau of Fire & Police Disability & Retirement  
January 15, 2019  
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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



Scott D. Preppernau, 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, 2018 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, 2018 valuation results.

## Summary of Principal Results

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

	June 30, 2016	June 30, 2018
Discount Rate	2.85%	3.87%
Actuarial Cost Method	Entry Age Normal	Entry Age Normal
Actuarial Accrued Liability (AAL)	\$ 3,689,965,110	\$ 3,323,733,057
Assets	17,425,353	17,790,776
Unfunded Actuarial Accrued Liability (UAAL)	3,672,539,757	3,305,942,281
Projected Base Pay for Next Year	137,979,123	152,231,134
Normal Cost	88,590,012	64,396,646

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 3.87% 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)**<sup>1</sup>, while the portion assigned to the current year is referred to as the **normal cost**.

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, 2019 and June 30, 2020 under **GASB 67** (which governs plan financial reporting) and **GASB 68** (which governs the City's reporting). Results calculated as of the June 30, 2018 **valuation date** in this report will be recalculated as of these later dates using standard actuarial roll-forward 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 2019 and 2020. However, the actual fiscal year-ending 2019 and 2020

<sup>1</sup> *Bolded terms from the Executive Summary are defined in the report glossary.*

results are not included in this report, as the measurements must be adjusted to reflect experience (including bond market information to identify the appropriate discount rate 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 2.85% for the previous valuation as of June 30, 2016 to 3.87% for the current valuation as of June 30, 2018, which had the effect of significantly decreasing the measured plan liabilities. The discount rate of 3.87% is the same rate used by FPDR in plan financial reporting as of June 30, 2018, and was selected to be consistent with the rate selection basis required under GASB 67. Because of the primarily unfunded nature of the FPDR plan, the discount rate under GASB 67 should be set equal to a municipal bond rate or index that represents 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 \$17,040,776 in trust for pension benefits as of June 30, 2018. 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 allowing 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. This percentage load was updated from 0.5% for the previous valuation to 0.65% for the current valuation based on observed experience over the prior 4 years and expectations regarding future experience.

## Plan Provisions

Since to the previous valuation, there have been no changes to the plan provisions that had a material effect on the valuation liabilities.

## Assumptions and Methods

Most demographic and economic assumptions used in this valuation are based on an experience study presented to the FPDR Board on May 27, 2014, which also formed the basis for the assumptions used in the June 30, 2014 and June 30, 2016 valuations.

The following assumptions were updated in the current valuation, in keeping with the procedures adopted by the FPDR Board with the 2014 experience study, and were reviewed by a FPDR Board subcommittee in November 2018:

- The discount rate used for the valuation is selected to be consistent with the discount rate used for GASB financial reporting at the valuation date. The GASB standards require the use of a municipal bond rate or index for a plan such as FPDR, which led to the current valuation's discount rate of 3.87%. This is an increase of 102 basis points from the prior valuation, and the discount rate change decreased the Actuarial Accrued Liability (AAL) as of the valuation date by \$554 million.

- Since the 2014 experience study, the mortality assumptions used for all members and beneficiaries have been selected to be consistent with the same assumptions used by the Oregon Public Employees Retirement System (OPERS) for police and fire members in the most recently 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 public safety personnel than would result from examining FPDR experience in isolation. Because the OPERS assumption for police and fire members has been updated since the previous FDPR valuation, a parallel change was made in the current FPDR valuation. Updating this assumption decreased AAL by \$35 million in the current valuation.
- The load for reimbursements for medical expenses associated with service-connected injuries and illness was increased from 0.5% to 0.65% to reflect recent and expected future experience. Updating this assumption increased AAL by \$5 million in the current valuation.

These changes are discussed more fully in 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, 2016	June 30, 2018
	Actuarial Cost Method	Entry Age Normal	Entry Age Normal
1	Discount Rate	2.85%	3.87%
2	Total Present Value of Benefits (includes future accruals)	4,624,510,192	3,903,474,297
3	Actuarial Accrued Liability		
a.	Retirees	2,010,042,320	1,929,387,585
b.	Pre-retirement disableds	63,447,477	55,021,387
c.	Surviving spouses and alternate payees	165,097,924	146,660,852
d.	Inactive participants with deferred benefits	57,238,628	39,466,710
e.	Active employees	1,394,138,761	1,153,196,523
f.	<b>Total</b>	<b>3,689,965,110</b>	<b>3,323,733,057</b>
4	Present value of future normal costs (2.-3.f.)	934,545,082	579,741,240
5	Projected next year's base pay	137,979,123	152,231,134
6	Normal cost	88,590,012	64,396,646
7	Assets	17,425,353	17,790,776
8	Unfunded Actuarial Accrued Liability (UAAL) (3.f. -7.)	3,672,539,757	3,305,942,281

## 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 2017-2018 fiscal year on this basis were approximately \$126 million.

Fiscal Year	Projected Benefit Payments
2018-2019	\$128,904,000
2019-2020	133,525,000
2020-2021	138,215,000
2021-2022	143,317,000
2022-2023	148,305,000
2023-2024	153,689,000
2024-2025	160,495,000
2025-2026	167,508,000
2026-2027	174,544,000
2027-2028	181,581,000
2028-2029	188,444,000
2029-2030	194,550,000
2030-2031	200,697,000
2031-2032	206,461,000
2032-2033	211,498,000
2033-2034	215,262,000
2034-2035	217,867,000
2035-2036	219,327,000
2036-2037	219,775,000
2037-2038	219,365,000
2038-2039	218,168,000
2039-2040	216,352,000
2040-2041	213,947,000
2041-2042	211,076,000
2042-2043	207,872,000
2043-2044	204,201,000
2044-2045	200,219,000
2045-2046	195,795,000
2046-2047	191,217,000
2047-2048	186,407,000

Actuarial Liabilities by Tier

June 30, 2018							
	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	-	-	1,013,758,678	692,924,355	14,718,209	11,536,521	<b>1,732,937,763</b>
Inactive	94,131,824	81,651,332	1,188,100,131	806,653,247	-	-	<b>2,170,536,534</b>
Total	94,131,824	81,651,332	2,201,858,809	1,499,577,602	14,718,209	11,536,521	<b>3,903,474,297</b>
Actuarial Accrued Liability							
Active	-	-	705,079,839	445,300,001	1,443,660	1,373,023	<b>1,153,196,523</b>
Inactive	94,131,824	81,651,332	1,188,100,131	806,653,247	-	-	<b>2,170,536,534</b>
Total	94,131,824	81,651,332	1,893,179,970	1,251,953,248	1,443,660	1,373,023	<b>3,323,733,057</b>
Normal Cost	-	-	38,372,968	24,838,986	651,163	533,529	<b>64,396,646</b>
Projected next year's base pay	-	-	58,720,407	40,349,754	29,795,996	23,364,977	<b>152,231,134</b>
Normal Cost as % of base pay	N/A	N/A	65.3%	61.6%	2.2%	2.3%	<b>42.3%</b>

## Analysis of Gains and Losses

The table below shows Actuarial Accrued Liability (AAL) as of the previous valuation date of July 1, 2016, 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 reflecting any changes to benefit provisions or assumptions. As detailed in the table, actual experience compared to assumption since the last valuation led to a \$69 million demographic experience loss, or increase in liability, compared to the expected liability. The main reasons for this loss were salary increases being higher than expected, FPDR One COLA increases being higher than expected, and participants living longer than assumed.

Actuarial Accrued Liability Gain/(Loss) Analysis	
	Actuarial Accrued Liability
June 30, 2016 AAL	3,689,965,110
Expected June 30, 2018 AAL before changes	3,838,554,854
Actual June 30, 2018 AAL before changes	3,907,840,843
Gain/(Loss)	(69,285,989)
Gain/(Loss) as % of expected AAL	-1.8%
Sources of Gain/(Loss)	
Salary experience	(38,207,176)
FPDR One COLA experience	(4,572,919)
Retiree mortality experience	(15,646,377)
New actives	(308,889)
Total	(58,735,361)
Remaining Gain/(Loss) from other sources	(10,550,628)
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 updating the discount rate, mortality, and disability-related medical expense assumptions, as discussed in Appendix C of this report.

Effect of Assumption, Method, and Plan Changes		
	Actuarial Accrued Liability (AAL)	Normal Cost
June 30, 2016 Valuation	3,689,965,110	88,590,012
June 30, 2018 before changes	3,907,840,843	87,375,933
Plan provision changes	N/A	N/A
Assumption/method changes		
Discount rate assumption	(553,778,356)	(22,122,447)
Mortality assumption	(35,282,832)	(952,812)
Disability-related medical assumption	4,953,402	95,972
Total change	(584,107,786)	(22,979,287)
June 30, 2018 Final Valuation Results	3,323,733,057	64,396,646

## 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, 2018, the Fund had a total of \$17,040,776 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, 2018.

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.

Valuation Date	Asset Summary		
	FPDR Fund - Held in Trust for Pension	Reserve Fund	Total Pension Assets
June 30, 2016	\$16,675,353	\$750,000	\$17,425,353
June 30, 2018	\$17,040,776	\$750,000	\$17,790,776

# Appendix A

## Participant Data

**Statistics for FPDR Participants as of June 30, 2018**

	FPDR One		FPDR Two		FPDR Three		Total		Grand Total
	Police	Fire	Police	Fire	Police	Fire	Police	Fire	
<b>Actives</b>									
Headcount	0	0	535	397	333	267	868	664	1,532
Average Age	N/A	N/A	46.9	45.9	35.1	36.5	42.4	42.1	42.3
Average Service	N/A	N/A	19.4	18.1	5.7	6.6	14.1	13.5	13.8
Average Salary*	N/A	N/A	\$109,944	\$104,648	\$89,477	\$87,509	\$102,092	\$97,757	\$100,213
<b>Current Retiree &amp; Beneficiaries**</b>									
Headcount	209	205	879	566	0	0	1,088	771	1,859
Average Age	82.7	84.9	66.4	67.4	N/A	N/A	69.5	72.0	70.6
Average Monthly Benefit	\$3,502	\$3,549	\$5,632	\$6,439	N/A	N/A	\$5,223	\$5,671	\$5,409
<b>Current Disabled Participants</b>									
Headcount	3	3	25	3	0	0	28	6	34
Average Age	62.3	61.3	52.2	51.3	N/A	N/A	53.3	56.3	53.8
Average Monthly Benefit	\$4,926	\$4,742	\$4,106	\$2,413	N/A	N/A	\$4,194	\$3,577	\$4,085
<b>Inactive Deferred Participants</b>									
Headcount	0	0	70	9	0	0	70	9	79
Average Age	N/A	N/A	46.7	43.4	N/A	N/A	46.7	43.4	46.3
Average Monthly Benefit	N/A	N/A	\$2,055	\$1,868	N/A	N/A	\$2,055	\$1,868	\$2,034

\* Average Salary is projected 2018-2019 basic annualized earnings.

\*\* Headcount does not include 112 Alternate Payees receiving benefits via a Domestic Relations Order (DRO). The average monthly benefit for that group is \$1,595.

Distribution of FPDR Two Active Participants as of June 30, 2018									
<b>FPDR Two Police</b>									
		Years of Service							
Age	0-4	5-9	10-14	15-19	20-24	25-29	30	Total	
0-20	0	0	0	0	0	0	0	0	
20-24	0	0	0	0	0	0	0	0	
25-29	0	0	0	0	0	0	0	0	
30-34	0	0	1	0	0	0	0	1	
35-39	0	0	38	7	0	0	0	45	
40-44	0	0	29	94	9	0	0	132	
45-49	0	0	21	78	88	14	0	201	
50-54	0	0	7	36	44	24	0	111	
55-59	0	0	3	5	17	13	0	38	
60-64	0	0	0	2	1	3	0	6	
65-69	0	0	0	0	1	0	0	1	
70-74	0	0	0	0	0	0	0	0	
75+	0	0	0	0	0	0	0	0	
<b>Total</b>	<b>0</b>	<b>0</b>	<b>99</b>	<b>222</b>	<b>160</b>	<b>54</b>	<b>0</b>	<b>535</b>	
<b>FPDR Two Fire</b>									
		Years of Service							
Age	0-4	5-9	10-14	15-19	20-24	25-29	30	Total	
0-20	0	0	0	0	0	0	0	0	
20-24	0	0	0	0	0	0	0	0	
25-29	0	0	0	0	0	0	0	0	
30-34	0	0	6	0	0	0	0	6	
35-39	1	0	34	22	0	0	0	57	
40-44	0	0	48	70	9	0	0	127	
45-49	0	0	21	48	25	2	0	96	
50-54	0	0	13	23	24	8	2	70	
55-59	0	0	0	5	10	7	9	31	
60-64	0	0	0	1	0	3	4	8	
65-69	0	0	0	0	0	1	1	2	
70-74	0	0	0	0	0	0	0	0	
75+	0	0	0	0	0	0	0	0	
<b>Total</b>	<b>1</b>	<b>0</b>	<b>122</b>	<b>169</b>	<b>68</b>	<b>21</b>	<b>16</b>	<b>397</b>	
<b>FPDR Two Total</b>									
		Years of Service							
Age	0-4	5-9	10-14	15-19	20-24	25-29	30	Total	
0-20	0	0	0	0	0	0	0	0	
20-24	0	0	0	0	0	0	0	0	
25-29	0	0	0	0	0	0	0	0	
30-34	0	0	7	0	0	0	0	7	
35-39	1	0	72	29	0	0	0	102	
40-44	0	0	77	164	18	0	0	259	
45-49	0	0	42	126	113	16	0	297	
50-54	0	0	20	59	68	32	2	181	
55-59	0	0	3	10	27	20	9	69	
60-64	0	0	0	3	1	6	4	14	
65-69	0	0	0	0	1	1	1	3	
70-74	0	0	0	0	0	0	0	0	
75+	0	0	0	0	0	0	0	0	
<b>Total</b>	<b>1</b>	<b>0</b>	<b>221</b>	<b>391</b>	<b>228</b>	<b>75</b>	<b>16</b>	<b>932</b>	

Distribution of FPDR Three Active Participants as of June 30, 2018								
FPDR Three Police								
Age	Years of Service							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30	
0-20	0	0	0	0	0	0	0	0
20-24	6	0	0	0	0	0	0	6
25-29	58	5	0	0	0	0	0	63
30-34	40	55	8	0	0	0	0	103
35-39	24	40	23	0	0	0	0	87
40-44	10	17	12	0	0	0	0	39
45-49	2	13	9	0	0	0	0	24
50-54	1	6	2	0	0	0	0	9
55-59	1	0	0	0	0	0	0	1
60-64	0	1	0	0	0	0	0	1
65-69	0	0	0	0	0	0	0	0
70-74	0	0	0	0	0	0	0	0
75+	0	0	0	0	0	0	0	0
<b>Total</b>	<b>142</b>	<b>137</b>	<b>54</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>333</b>
FPDR Three Fire								
Age	Years of Service							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30	
0-20	0	0	0	0	0	0	0	0
20-24	6	0	0	0	0	0	0	6
25-29	23	3	0	0	0	0	0	26
30-34	32	24	8	0	0	0	0	64
35-39	22	38	28	0	0	0	0	88
40-44	14	28	19	0	0	0	0	61
45-49	1	7	10	0	0	0	0	18
50-54	0	2	2	0	0	0	0	4
55-59	0	0	0	0	0	0	0	0
60-64	0	0	0	0	0	0	0	0
65-69	0	0	0	0	0	0	0	0
70-74	0	0	0	0	0	0	0	0
75+	0	0	0	0	0	0	0	0
<b>Total</b>	<b>98</b>	<b>102</b>	<b>67</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>267</b>
FPDR Three Total								
Age	Years of Service							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30	
0-20	0	0	0	0	0	0	0	0
20-24	12	0	0	0	0	0	0	12
25-29	81	8	0	0	0	0	0	89
30-34	72	79	16	0	0	0	0	167
35-39	46	78	51	0	0	0	0	175
40-44	24	45	31	0	0	0	0	100
45-49	3	20	19	0	0	0	0	42
50-54	1	8	4	0	0	0	0	13
55-59	1	0	0	0	0	0	0	1
60-64	0	1	0	0	0	0	0	1
65-69	0	0	0	0	0	0	0	0
70-74	0	0	0	0	0	0	0	0
75+	0	0	0	0	0	0	0	0
<b>Total</b>	<b>240</b>	<b>239</b>	<b>121</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>600</b>

Distribution of All Active Participants as of June 30, 2018								
Police Total								
Age	Years of Service							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30	
0-20	0	0	0	0	0	0	0	0
20-24	6	0	0	0	0	0	0	6
25-29	58	5	0	0	0	0	0	63
30-34	40	55	9	0	0	0	0	104
35-39	24	40	61	7	0	0	0	132
40-44	10	17	41	94	9	0	0	171
45-49	2	13	30	78	88	14	0	225
50-54	1	6	9	36	44	24	0	120
55-59	1	0	3	5	17	13	0	39
60-64	0	1	0	2	1	3	0	7
65-69	0	0	0	0	1	0	0	1
70-74	0	0	0	0	0	0	0	0
75+	0	0	0	0	0	0	0	0
<b>Total</b>	<b>142</b>	<b>137</b>	<b>153</b>	<b>222</b>	<b>160</b>	<b>54</b>	<b>0</b>	<b>868</b>
Fire Total								
Age	Years of Service							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30	
0-20	0	0	0	0	0	0	0	0
20-24	6	0	0	0	0	0	0	6
25-29	23	3	0	0	0	0	0	26
30-34	32	24	14	0	0	0	0	70
35-39	23	38	62	22	0	0	0	145
40-44	14	28	67	70	9	0	0	188
45-49	1	7	31	48	25	2	0	114
50-54	0	2	15	23	24	8	2	74
55-59	0	0	0	5	10	7	9	31
60-64	0	0	0	1	0	3	4	8
65-69	0	0	0	0	0	1	1	2
70-74	0	0	0	0	0	0	0	0
75+	0	0	0	0	0	0	0	0
<b>Total</b>	<b>99</b>	<b>102</b>	<b>189</b>	<b>169</b>	<b>68</b>	<b>21</b>	<b>16</b>	<b>664</b>
Grand Total								
Age	Years of Service							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30	
0-20	0	0	0	0	0	0	0	0
20-24	12	0	0	0	0	0	0	12
25-29	81	8	0	0	0	0	0	89
30-34	72	79	23	0	0	0	0	174
35-39	47	78	123	29	0	0	0	277
40-44	24	45	108	164	18	0	0	359
45-49	3	20	61	126	113	16	0	339
50-54	1	8	24	59	68	32	2	194
55-59	1	0	3	10	27	20	9	70
60-64	0	1	0	3	1	6	4	15
65-69	0	0	0	0	1	1	1	3
70-74	0	0	0	0	0	0	0	0
75+	0	0	0	0	0	0	0	0
<b>Total</b>	<b>241</b>	<b>239</b>	<b>342</b>	<b>391</b>	<b>228</b>	<b>75</b>	<b>16</b>	<b>1,532</b>

**Distribution of Current Retirees and Beneficiaries as of June 30, 2018**

Age	FPDR One				FPDR Two			
	Police		Fire		Police		Fire	
	Count	Total Monthly Benefit						
<40	0	-	0	-	1	3,249	1	836
40-44	0	-	0	-	1	6,012	0	-
45-49	0	-	0	-	2	6,226	0	-
50-54	1	1,773	0	-	56	356,624	16	133,547
55-59	0	-	1	1,423	118	712,521	51	390,407
60-64	2	4,522	1	1,688	164	1,033,349	156	1,113,357
65-69	14	44,420	11	42,792	218	1,186,744	139	873,050
70-74	25	96,179	16	55,058	190	1,004,416	92	544,358
75-79	30	102,094	18	62,128	92	462,369	72	381,664
80-84	37	111,890	42	141,672	26	120,183	30	160,647
85-89	45	177,328	44	155,064	9	47,322	9	46,605
90-94	39	130,700	49	182,730	2	11,553	0	-
95+	16	63,038	23	84,987	0	-	0	-
<b>Total</b>	<b>209</b>	<b>\$731,945</b>	<b>205</b>	<b>\$727,542</b>	<b>879</b>	<b>\$4,950,567</b>	<b>566</b>	<b>\$3,644,471</b>

\*Headcount does not include 112 Alternate Payees receiving benefits via a Domestic Relations Order (DRO).

Total monthly benefits for that group was \$178,665

**Distribution of Disabled Participants as of June 30, 2018**

Age	FPDR One				FPDR Two			
	Police		Fire		Police		Fire	
	Count	Total Monthly Benefit	Count	Total Monthly Benefit	Count	Total Monthly Benefit	Count	Total Monthly Benefit
<40	0	-	0	-	0	-	0	-
40-44	0	-	0	-	1	2,745	1	1,850
45-49	0	-	0	-	9	29,788	0	-
50-54	0	-	0	-	8	38,514	0	-
55-59	0	-	0	-	3	12,156	2	5,390
60-64	3	14,778	3	14,225	3	16,420	0	-
65-69	0	-	0	-	1	3,031	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	-
<b>Total</b>	<b>3</b>	<b>\$14,778</b>	<b>3</b>	<b>\$14,225</b>	<b>25</b>	<b>\$102,656</b>	<b>3</b>	<b>\$7,240</b>

Distribution of Inactive Deferred Participants as of June 30, 2018								
Age	FPDR One				FPDR Two			
	Police		Fire		Police		Fire	
	Count	Total Monthly Benefit	Count	Total Monthly Benefit	Count	Total Monthly Benefit	Count	Total Monthly Benefit
<40	0	-	0	-	7	12,273	2	3,612
40-44	0	-	0	-	19	36,890	3	5,718
45-49	0	-	0	-	24	40,589	3	3,841
50-54	0	-	0	-	16	41,987	1	3,643
55-59	0	-	0	-	4	12,129	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	-
<b>Total</b>	<b>0</b>	<b>-</b>	<b>0</b>	<b>-</b>	<b>70</b>	<b>\$143,868</b>	<b>9</b>	<b>\$16,814</b>

# 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, 2018, 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. The underlying basis for each assumption was reviewed and adopted in conjunction with an experience study presented to the FPDR Board in May 2014. The assumption selection process and rationale is described in detail in that study.

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

3.87% per annum. This rate was selected by the City of Portland via a reference to a bond rate or index as of June 30, 2018 for high-quality tax-exempt 20-year general obligation municipal bonds, as described in GASB No. 67. The results of this valuation will also be used to develop liabilities at June 30, 2019 and June 30, 2020 using standard roll-forward techniques. The discount rates used for that purpose will be determined based upon relevant municipal bond rate information at the applicable 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	Non-PPA Police and Fire	PPA Officers*	PPA Sergeants, Detectives, and Criminalists*
0	20.00%	20.00%	20.00%
1	8.50%	8.50%	8.50%
2	5.50%	5.50%	5.50%
3	4.80%	4.80%	4.80%
4	4.50%	4.50%	6.50%
5	2.50%	4.50%	4.50%
6	0.00%	2.00%	2.00%
7	0.00%	2.00%	0.00%
8+	0.00%	0.00%	0.00%

\*Participants who are members of the Portland Police Association are assumed to have an additional 2.00% per annum salary merit increase in each of the 3 years following June 30, 2016 if they had 6 or more Years of Service at that date.

### Mortality, Healthy Lives

Mortality rates for healthy lives are based on the rates for Police & Fire members in the December 31, 2017 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-2014 Healthy Annuitant Male, Generational projection with Unisex Social Security Data Scale, Blended 50% Blue Collar, 50% White Collar, set back 12 months
Female Retiree	RP-2014 Healthy Annuitant Female, Generational projection with Unisex Social Security Data Scale, Blended 50% Blue Collar, 50% White Collar, no set back
Male Beneficiary	RP-2014 Healthy Annuitant Male, Generational projection with Unisex Social Security Data Scale, Blended 50% Blue Collar, 50% White Collar, set back 12 months
Female Beneficiary	RP-2014 Healthy Annuitant Female, Generational projection with Unisex Social Security Data Scale, Blended 50% Blue Collar, 50% White Collar, no set back
Male Active	RP-2014 Employee Male, Generational projection with Unisex Social Security Data Scale, Blended 50% Blue Collar, 50% White Collar, set back 12 months
Female Active	RP-2014 Employee Female, Generational projection with Unisex Social Security Data Scale, Blended 50% Blue Collar, 50% White Collar, no set back

### Disabled Mortality

Disabled Male Retiree	RP-2014 Disabled Annuitant Male, Generational projection with Unisex Social Security Data Scale, no collar adjustment, no set back
Disabled Female Retiree	RP-2014 Disabled Annuitant Female, Generational projection with Unisex Social Security Data Scale, no collar adjustment, no set back

### Withdrawal

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

Attained Age	Service		
	0 Years	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.

## Load to Final Pay for 27 Pay Periods

The valuation includes a load of 2.5% in the calculation of Final Pay for retirement benefits. This is an estimate of the average increase that may occur for the overall population from certain members retiring on dates that include 27 pay periods in the averaging period.

## Form of Payment for Future Retirees from Active Status

Benefit Formula Elected	Percent Electing
2.8%	80%
2.6%	20%

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

Benefit Formula Elected	Percent 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:** Blended average using 2.00% per annum for service before October 8, 2013 and 1.25% per annum for service after that date.

### 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 0.65%.

### Changes since Prior Valuation

The discount rate was updated from 2.85% to 3.87%.

Healthy and disabled mortality assumptions were updated for male retirees and for all active members based on the rates for Police & Fire members in the December 31, 2017 valuation of Oregon PERS.

The load for reimbursements for medical expenses associated with service-connected injuries and illness was increased from 0.5% to 0.65% to reflect recent and anticipated future experience.

# Appendix D

## Plan Provisions

## Plan Provisions

### 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, 10 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 Surviving Spouse or Minor Children	Percentage of Final Pay Per 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 2.00 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.

## 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 2.00 percent per year. In 2016, the FPDR Board chose to pay a blended COLA for FPDR Two retirees. The blended COLA paid was calculated as 2.00% for benefits related to service through October 8, 2013 and 1.25% for benefits related to service after that date.

## 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.

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 child is no longer a minor.

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%

$$\text{HB 3349 Increase} \left( \frac{1}{1 - \text{maximum Oregon personal income tax rate (limited to 9\%)}} - 1 \right) \times \frac{\text{Service prior to October 1, 1991}}{\text{All Service}}$$

### 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

None that had a material effect on liabilities.

## 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 certified by June 26, 2013, 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. 67 of the Governmental Accounting Standards Board (GASB 67).** The accounting standard that sets financial reporting standards for defined benefit pension plans.

**Statement No. 68 of the Governmental Accounting Standards Board (GASB 68).** The accounting standard that governs a state or local governmental employer's pension accounting.

**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.