PERS: By The Numbers

May 2017

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</table>
1. System Demographics (as of December 31, 2015)

PERS employers: Approximately 925, including all state agencies, universities, and community colleges; all school districts; and almost all cities, counties, and other local government units.

Membership by category

<table>
<thead>
<tr>
<th></th>
<th>State Govt.</th>
<th>Local Govt.</th>
<th>School Districts</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier One</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active</td>
<td>8,577</td>
<td>9,986</td>
<td>11,732</td>
<td>30,295</td>
</tr>
<tr>
<td>Inactive</td>
<td>3,818</td>
<td>5,236</td>
<td>6,146</td>
<td>15,199</td>
</tr>
<tr>
<td>Tier Two</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active</td>
<td>10,433</td>
<td>13,311</td>
<td>16,382</td>
<td>40,126</td>
</tr>
<tr>
<td>Inactive</td>
<td>2,944</td>
<td>5,827</td>
<td>6,818</td>
<td>15,589</td>
</tr>
<tr>
<td>OPSRP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active</td>
<td>28,321</td>
<td>31,365</td>
<td>38,070</td>
<td>97,756</td>
</tr>
<tr>
<td>Inactive</td>
<td>3,228</td>
<td>4,393</td>
<td>4,440</td>
<td>12,061</td>
</tr>
<tr>
<td>Sub-total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active</td>
<td>47,331</td>
<td>54,662</td>
<td>66,184</td>
<td>168,177</td>
</tr>
<tr>
<td>Inactive</td>
<td>9,989</td>
<td>15,456</td>
<td>17,404</td>
<td>42,849</td>
</tr>
<tr>
<td>Retired*</td>
<td>31,767</td>
<td>38,905</td>
<td>65,626</td>
<td>136,298</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td></td>
<td>347,324</td>
</tr>
</tbody>
</table>

* Includes beneficiaries but not members who received total lump-sum retirement or account withdrawal payouts.

Members eligible to retire (as of December 31, 2016)

<table>
<thead>
<tr>
<th></th>
<th>SCHOOL DISTRICTS</th>
<th>STATE</th>
<th>LOCAL GOVT.</th>
<th>COMMUNITY COLLEGES</th>
<th>JUDGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTIVE MEMBERS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIER ONE (16,961)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIER TWO (13,579)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OPSRP (18,782)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INACTIVE MEMBERS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIER ONE (9,439)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIER TWO (6,654)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OPSRP (4,920)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

70,335 MEMBERS ELIGIBLE TO RETIRE BY AGE OR SERVICE

Retirements by year

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3,286</td>
<td>4,881</td>
<td>6,809</td>
<td>12,488</td>
<td>5,960</td>
<td>4,559</td>
<td>5,058</td>
<td>5,749</td>
<td>5,574</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5,933</td>
<td>5,561</td>
<td>8,202</td>
<td>6,590</td>
<td>9,546</td>
<td>7,621</td>
<td>7,529</td>
<td>6,704</td>
</tr>
</tbody>
</table>
# 2. System Benefits

## PERS benefit component comparisons

The primary components and differences among the PERS Tier One and Tier Two programs, the Oregon Public Service Retirement Plan (OPSRP) Pension Program, and the Individual Account Program (IAP) are shown below. Tier One covers members hired before January 1, 1996; Tier Two covers members hired between January 1, 1996 and August 28, 2003; and OPSRP covers members hired on or after August 29, 2003. The IAP contains all member contributions (6% of covered salary) made on and after January 1, 2004.

<table>
<thead>
<tr>
<th></th>
<th>Tier One</th>
<th>Tier Two</th>
<th>OPSRP Pension</th>
<th>IAP</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Normal retirement age</strong></td>
<td>58 (or 30 yrs)</td>
<td>60 (or 30 yrs)</td>
<td>65 (58 w/30 yrs)</td>
<td>Members retire from IAP when they retire from Tier One, Tier Two, or OPSRP</td>
</tr>
<tr>
<td></td>
<td>P&amp;F: age 55 or 50 w/25 yrs</td>
<td>P&amp;F: age 55 or 50 w/25 yrs</td>
<td>P&amp;F: age 60 or 53 w/25 yrs</td>
<td></td>
</tr>
<tr>
<td><strong>Early retirement</strong></td>
<td>55 (50 for P&amp;F)</td>
<td>55 (50 for P&amp;F)</td>
<td>55, if vested (50 w/ 5 years of continuous service in a P&amp;F position immediately preceding effective retirement date)</td>
<td>Members retire from IAP when they retire from Tier One, Tier Two, or OPSRP</td>
</tr>
<tr>
<td><strong>Regular account earnings</strong></td>
<td>Guaranteed assumed rate annually (currently 7.5%)</td>
<td>No guarantee; market returns</td>
<td>N/A; no member account</td>
<td>No guarantee; market returns</td>
</tr>
<tr>
<td><strong>Variable account earnings</strong></td>
<td>Market returns on 100% global equity portfolio</td>
<td>Market returns on 100% global equity portfolio</td>
<td>N/A; no member account</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Retirement calculation methods</strong></td>
<td>Money Match, Full Formula, or Formula + Annuity (if eligible)</td>
<td>Money Match or Full Formula</td>
<td>Formula</td>
<td>Various account pay-outs or rollover</td>
</tr>
<tr>
<td><strong>Full Formula benefit factor</strong></td>
<td>1.67% general; 2.00% P&amp;F</td>
<td>1.67% general; 2.00% P&amp;F</td>
<td>1.50% general; 1.80% P&amp;F</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Formula + Annuity benefit factor</strong></td>
<td>1.00% general; 1.35% P&amp;F</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Oregon state income tax remedy</strong></td>
<td>If eligible, higher of 9.89% on service time before Oct. 1, 1991 or 4% or less based on total service time. Not payable to benefit recipients that do not pay Oregon state income tax because they do not reside in Oregon</td>
<td>No tax remedy provided</td>
<td>No tax remedy provided</td>
<td>No tax remedy provided</td>
</tr>
<tr>
<td><strong>Lump-sum vacation payout</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes for Tier One and Tier Two; no for OPSRP</td>
</tr>
<tr>
<td><strong>Included in covered salary (6%)</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td><strong>Included in FAS</strong></td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Unused sick leave included in FAS</strong></td>
<td>Yes, if employer participates in the sick leave program</td>
<td>Yes, if employer participates in the sick leave program</td>
<td>No</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>6% contribution included in FAS</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Only for Service Employee International Union members</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Vesting</strong></td>
<td>Active member in each of 5 calendar years</td>
<td>Active member in each of 5 calendar years</td>
<td>5 calendar years w/ at least 600 hours qualifying service or normal retirement age</td>
<td>Immediate</td>
</tr>
<tr>
<td><strong>COLA (after retirement)</strong></td>
<td>Up to 2% annually for service on or before October 1, 2013 and a blended COLA for subsequent service</td>
<td></td>
<td>N/A; no COLA provided</td>
<td></td>
</tr>
</tbody>
</table>

P&F = police and firefighters; FAS = final average salary; COLA = cost-of-living adjustment; N/A = not applicable

Note: PERS uses three methods to calculate Tier One retirement benefits: Full Formula, Formula + Annuity (for members who made contributions before August 21, 1981), and Money Match. PERS uses two methods to calculate Tier Two retirement benefits: Full Formula and Money Match. PERS uses the method (for which a member is eligible) that produces the highest benefit amount. OPSRP Pension Program benefits are based only on a formula method.
2. **System Benefits (continued)**

Summary of findings from PERS’ Tier One/Tier Two Replacement Ratio Study (RRS) for 2015

The RRS population of 87,134 retirements was drawn from 143,180 retirements from January 1990 through December 2015, and covers retired members who selected comparable monthly benefit options. The techniques used in the 2015 PERS RRS are consistent with the techniques used in previous studies.

**Characteristics of the Retired Members in the RRS Population**

**Average age at retirement:** 62 years old

**Average years of service at retirement:** 24 years of service

**Average monthly retirement benefit**
- For all retirees from 1990-2015, the average monthly retirement benefit at time of retirement was $2,342 per month, or about $28,109 annually
- For those retirees in the most recent year (2015), the average monthly retirement benefit was $2,692 per month, or about $32,300 annually

**Average public employee salaries at retirement**
- For all retirees from 1990-2015, the final average salary at retirement was $50,608 annually
- For 2015 retirees, the final average salary at retirement was $72,133 annually

**Average salary replacement ratio (see chart on following page)**
- For all retirees from 1990-2015, the average annual retirement benefit equaled 54% of final average salary at the time of retirement
- For 2015 retirees, the average annual retirement benefit equaled 44% of final average salary
- For all retirees from 1990-2015, there were 6.6% who received annual benefits more than 100% of final average salary. The average years of service for this group was 31 years
- For 2015 retirees, there were 2.6% who received annual benefits more than 100% of final average salary. The average years of service for this group was 35 years

**For members who retire with 30 years of service (see chart on following page)**
- From 1990-2015, the average retirement benefit for 30-year members equaled 80% of final average salary and the average monthly benefit was $3,718 per month
- The average replacement ratio for 30-year members peaked at 100% of final average salary in 2000 and their average monthly benefit was $4,200 per month
- For 2015 only, the average retirement benefit for 30-year members equaled 57% of final average salary and the average monthly benefit was $3,771 per month
- 10.6% of retirees from 1990-2015 had 30 years of service
- 8.9% of retirees in 2015 had 30 years of service

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1The exclusions and other factors applied to this population are explained in Appendix A on page 26. Generally, these exclusions remove about 35% of members who retire in a given year.
### 2. System Benefits (continued)

Summary of findings from PERS’ Tier One/Tier Two RRS for 2015 (continued)

Average salary replacement ratio based on final average salary (FAS)

<table>
<thead>
<tr>
<th>Calendar Year</th>
<th># of Retirees in Study*</th>
<th>Average Replacement Ratio Based on FAS</th>
<th># of Retirees in Study*</th>
<th>Average Replacement Ratio Based on FAS</th>
<th>% of Retirees Receiving &gt;100% of FAS</th>
<th># of Retirees in Study*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>146</td>
<td>61%</td>
<td>1,866</td>
<td>44%</td>
<td>.0%</td>
<td>236</td>
</tr>
<tr>
<td>1991</td>
<td>217</td>
<td>61%</td>
<td>2,377</td>
<td>45%</td>
<td>.1%</td>
<td>261</td>
</tr>
<tr>
<td>1992</td>
<td>205</td>
<td>67%</td>
<td>2,432</td>
<td>48%</td>
<td>.5%</td>
<td>289</td>
</tr>
<tr>
<td>1993</td>
<td>289</td>
<td>66%</td>
<td>2,744</td>
<td>48%</td>
<td>.5%</td>
<td>319</td>
</tr>
<tr>
<td>1994</td>
<td>302</td>
<td>67%</td>
<td>3,298</td>
<td>49%</td>
<td>.3%</td>
<td>452</td>
</tr>
<tr>
<td>1995</td>
<td>304</td>
<td>66%</td>
<td>2,827</td>
<td>47%</td>
<td>1.0%</td>
<td>307</td>
</tr>
<tr>
<td>1996</td>
<td>281</td>
<td>70%</td>
<td>2,477</td>
<td>49%</td>
<td>1.4%</td>
<td>223</td>
</tr>
<tr>
<td>1997</td>
<td>295</td>
<td>83%</td>
<td>3,107</td>
<td>57%</td>
<td>7.5%</td>
<td>284</td>
</tr>
<tr>
<td>1998</td>
<td>465</td>
<td>89%</td>
<td>4,567</td>
<td>65%</td>
<td>12.0%</td>
<td>472</td>
</tr>
<tr>
<td>1999</td>
<td>548</td>
<td>93%</td>
<td>4,644</td>
<td>65%</td>
<td>14.0%</td>
<td>452</td>
</tr>
<tr>
<td>2000</td>
<td>273</td>
<td>100%</td>
<td>2,112</td>
<td>63%</td>
<td>15.8%</td>
<td>148</td>
</tr>
<tr>
<td>2001</td>
<td>391</td>
<td>99%</td>
<td>3,146</td>
<td>66%</td>
<td>16.5%</td>
<td>304</td>
</tr>
<tr>
<td>2002</td>
<td>670</td>
<td>96%</td>
<td>4,605</td>
<td>68%</td>
<td>17.4%</td>
<td>583</td>
</tr>
<tr>
<td>2003</td>
<td>942</td>
<td>93%</td>
<td>7,631</td>
<td>66%</td>
<td>14.4%</td>
<td>937</td>
</tr>
<tr>
<td>2004</td>
<td>471</td>
<td>84%</td>
<td>3,259</td>
<td>55%</td>
<td>5.5%</td>
<td>155</td>
</tr>
<tr>
<td>2005</td>
<td>393</td>
<td>84%</td>
<td>2,548</td>
<td>51%</td>
<td>4.4%</td>
<td>155</td>
</tr>
<tr>
<td>2006</td>
<td>347</td>
<td>83%</td>
<td>2,952</td>
<td>50%</td>
<td>4.3%</td>
<td>254</td>
</tr>
<tr>
<td>2007</td>
<td>372</td>
<td>84%</td>
<td>3,226</td>
<td>51%</td>
<td>4.9%</td>
<td>337</td>
</tr>
<tr>
<td>2008</td>
<td>417</td>
<td>80%</td>
<td>3,480</td>
<td>52%</td>
<td>5.0%</td>
<td>445</td>
</tr>
<tr>
<td>2009</td>
<td>432</td>
<td>77%</td>
<td>3,881</td>
<td>53%</td>
<td>6.2%</td>
<td>586</td>
</tr>
<tr>
<td>2010</td>
<td>414</td>
<td>75%</td>
<td>3,516</td>
<td>48%</td>
<td>4.3%</td>
<td>440</td>
</tr>
<tr>
<td>2011</td>
<td>464</td>
<td>74%</td>
<td>4,484</td>
<td>50%</td>
<td>5.3%</td>
<td>937</td>
</tr>
<tr>
<td>2012</td>
<td>272</td>
<td>70%</td>
<td>4,098</td>
<td>46%</td>
<td>4.3%</td>
<td>585</td>
</tr>
<tr>
<td>2013</td>
<td>389</td>
<td>69%</td>
<td>5,800</td>
<td>50%</td>
<td>5.6%</td>
<td>1,108</td>
</tr>
<tr>
<td>2014</td>
<td>262</td>
<td>66%</td>
<td>4,000</td>
<td>44%</td>
<td>2.8%</td>
<td>441</td>
</tr>
<tr>
<td>2015</td>
<td>430</td>
<td>57%</td>
<td>4,830</td>
<td>44%</td>
<td>2.6%</td>
<td>772</td>
</tr>
<tr>
<td><strong>Total/Avg</strong></td>
<td><strong>9,991</strong></td>
<td><strong>80%</strong></td>
<td><strong>93,907</strong></td>
<td><strong>54%</strong></td>
<td><strong>6.6%</strong></td>
<td><strong>11,482</strong></td>
</tr>
</tbody>
</table>

* Includes monthly benefit payments for members retiring from active service within the preceding 12 months. Benefits related to inactive, lump sum, judge and legislator retirements are excluded.

** Calculation method and average replacement ratio based on final salary at retirement for 2015 Tier One/Tier Two retirees with 30 years of service credit**

<table>
<thead>
<tr>
<th>Calculation Method</th>
<th>Number of Retirees</th>
<th>Average Replacement Ratio</th>
<th>% of Retirees with 30 Years of Service Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Formula</td>
<td>145</td>
<td>50%</td>
<td>34.0%</td>
</tr>
<tr>
<td>Formula Plus</td>
<td>19</td>
<td>54%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Money Match</td>
<td>266</td>
<td>61%</td>
<td>62.0%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>430</strong></td>
<td><strong>57%</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

** Includes Tier One/Tier Two retirees with between 30 years, 0 months and 30 years, 11 months of service credit who retired in 2015. Retirees who took a lump-sum option, retirees with greater than 365 days from their termination date to their retirement date, or retirees other than General Service or Police & Fire are not included.
2. System Benefits (continued)

Monthly benefit payment amounts as of January 1, 2017
Based on 138,290 monthly benefit payments totaling $349.9 million for the month (includes alternate payees and survivors; excludes lump sum and unit payments). Benefit payment amounts include compounded annual cost-of-living adjustments (COLAs) and other post-retirement benefit adjustments.

<table>
<thead>
<tr>
<th>Monthly Benefit ($)</th>
<th>Number of Retirees</th>
<th>Percent of Benefits Paid</th>
<th>Monthly Benefit ($)</th>
<th>Number of Retirees</th>
<th>Percent of Benefits Paid</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 500</td>
<td>17,694</td>
<td>1.45%</td>
<td>3,001 - 3,500</td>
<td>8,841</td>
<td>8.19%</td>
</tr>
<tr>
<td>501 - 1,000</td>
<td>20,066</td>
<td>4.26%</td>
<td>3,501 - 4,000</td>
<td>7,686</td>
<td>8.23%</td>
</tr>
<tr>
<td>1,001 - 1,500</td>
<td>16,991</td>
<td>6.04%</td>
<td>4,001 - 4,500</td>
<td>6,792</td>
<td>8.24%</td>
</tr>
<tr>
<td>1,501 - 2,000</td>
<td>14,248</td>
<td>7.10%</td>
<td>4,501 - 5,000</td>
<td>5,988</td>
<td>8.12%</td>
</tr>
<tr>
<td>2,001 - 2,500</td>
<td>12,281</td>
<td>7.88%</td>
<td>5,001 - 5,500</td>
<td>4,853</td>
<td>7.27%</td>
</tr>
<tr>
<td>2,501 - 3,000</td>
<td>10,315</td>
<td>8.08%</td>
<td>5,501 - 6,000</td>
<td>3,607</td>
<td>5.91%</td>
</tr>
<tr>
<td>Subtotal</td>
<td>91,595</td>
<td></td>
<td>Subtotal</td>
<td>37,767</td>
<td></td>
</tr>
<tr>
<td>% of total</td>
<td>66.23%</td>
<td>34.80%</td>
<td>% of total</td>
<td>27.31%</td>
<td>45.96%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Monthly Benefit ($)</th>
<th>Number of Retirees</th>
<th>Percent of Benefits Paid</th>
<th>Monthly Benefit ($)</th>
<th>Number of Retirees</th>
<th>Percent of Benefits Paid</th>
</tr>
</thead>
<tbody>
<tr>
<td>6,001 - 6,500</td>
<td>2,673</td>
<td>4.76%</td>
<td>9,001 - 10,000</td>
<td>489</td>
<td>1.32%</td>
</tr>
<tr>
<td>6,501 - 7,000</td>
<td>1,874</td>
<td>3.61%</td>
<td>10,001 - 11,000</td>
<td>282</td>
<td>0.84%</td>
</tr>
<tr>
<td>7,001 - 7,500</td>
<td>1,236</td>
<td>2.56%</td>
<td>11,001 - 12,000</td>
<td>148</td>
<td>0.49%</td>
</tr>
<tr>
<td>7,501 - 8,000</td>
<td>907</td>
<td>2.01%</td>
<td>12,001 - 13,000</td>
<td>77</td>
<td>0.27%</td>
</tr>
<tr>
<td>8,001 - 8,500</td>
<td>594</td>
<td>1.40%</td>
<td>13,001 - 14,000</td>
<td>44</td>
<td>0.17%</td>
</tr>
<tr>
<td>8,501 - 9,000</td>
<td>487</td>
<td>1.22%</td>
<td>14,001 and up</td>
<td>117</td>
<td>0.60%</td>
</tr>
<tr>
<td>Subtotal</td>
<td>7,771</td>
<td></td>
<td>Subtotal</td>
<td>1,157</td>
<td></td>
</tr>
<tr>
<td>% of total</td>
<td>5.62%</td>
<td>15.55%</td>
<td>% of total</td>
<td>0.84%</td>
<td>3.69%</td>
</tr>
</tbody>
</table>

- Average annual benefit: $30,363
- Median annual benefit: $24,062
2. System Benefits (continued)

Tier One/Tier Two replacement ratio trends (data from PERS’ Replacement Ratio Study)

![Graph showing average replacement ratio based on high three years salary from 1990 to 2016 for 30-year retirees and all retirees.]

Tier One/Tier Two retirement calculation method trends

![Graph showing percentage of retirees by calculation method from 1990 to 2016 for Money Match, Full Formula, and Formula + Annuity.]

Retired Tier One, Tier Two, and OPSRP members with hours reported working in a PERS-covered position in 2016 by employer group

<table>
<thead>
<tr>
<th>Hours</th>
<th>State</th>
<th>Local Govt</th>
<th>K-12</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 200</td>
<td>521</td>
<td>1,220</td>
<td>2,677</td>
<td>4,418</td>
</tr>
<tr>
<td>200 - 400</td>
<td>336</td>
<td>623</td>
<td>1,348</td>
<td>2,307</td>
</tr>
<tr>
<td>401 - 600</td>
<td>256</td>
<td>450</td>
<td>960</td>
<td>1,666</td>
</tr>
<tr>
<td>601 - 800</td>
<td>174</td>
<td>294</td>
<td>683</td>
<td>1,151</td>
</tr>
<tr>
<td>801 - 1039</td>
<td>293</td>
<td>399</td>
<td>757</td>
<td>1,449</td>
</tr>
<tr>
<td>&gt; 1039</td>
<td>147</td>
<td>266</td>
<td>264</td>
<td>677</td>
</tr>
<tr>
<td>Total</td>
<td>1,727</td>
<td>3,252</td>
<td>6,689</td>
<td>11,668</td>
</tr>
</tbody>
</table>
2. System Benefits (continued)

Tier One/Tier Two benefit payment options selected in calendar year 2016

<table>
<thead>
<tr>
<th>Option (definitions below)</th>
<th>Quantity</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1,457</td>
<td>26.34</td>
</tr>
<tr>
<td>Refund Annuity</td>
<td>358</td>
<td>6.47</td>
</tr>
<tr>
<td>15-Year Certain</td>
<td>239</td>
<td>4.32</td>
</tr>
<tr>
<td>2</td>
<td>1,128</td>
<td>20.39</td>
</tr>
<tr>
<td>2A</td>
<td>1,228</td>
<td>22.20</td>
</tr>
<tr>
<td>3</td>
<td>170</td>
<td>3.07</td>
</tr>
<tr>
<td>3A</td>
<td>314</td>
<td>5.68</td>
</tr>
<tr>
<td>Lump Sum 1</td>
<td>73</td>
<td>1.32</td>
</tr>
<tr>
<td>Lump Sum 2</td>
<td>32</td>
<td>0.58</td>
</tr>
<tr>
<td>Lump Sum 2A</td>
<td>39</td>
<td>0.71</td>
</tr>
<tr>
<td>Lump Sum 3</td>
<td>6</td>
<td>0.11</td>
</tr>
<tr>
<td>Lump Sum 3A</td>
<td>16</td>
<td>0.29</td>
</tr>
<tr>
<td>Total Lump Sum</td>
<td>387</td>
<td>7.00</td>
</tr>
<tr>
<td>AS refund</td>
<td>84</td>
<td>1.52</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5,531</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

**Option 1 (non-refund):** This option is paid for the member’s lifetime. No benefit of any kind is paid to anyone after the member dies.

**Refund Annuity Option:** This option is paid for the member’s lifetime. When the member dies, the designated beneficiary receives a lump-sum refund of any amount remaining in the member’s account, if any.

**15-Year Certain Option:** This option is paid for the member’s lifetime. If the member dies before receiving 180 monthly payments (15 years), the beneficiary is entitled to receive the remainder of the 180 monthly payments. Once the member has received at least 180 payments, no benefit is payable to the beneficiary.

**Survivorship Options (Option 2, Option 2A, Option 3, and Option 3A):** Under any of the survivorship options, the member may name only one beneficiary who must be a living person. The monthly benefit payment is paid to the member until his/her death, and then paid to the beneficiary if then living (under Options 2 and 2A, at the same base amount as the member; under Option 3 and 3A, at ½ the base amount of the member).

**Lump-Sum Options (Lump-Sum Option 1, Lump-Sum Option 2, Lump-Sum Option 2A, Lump-Sum Option 3, and Lump-Sum Option 3A):** These options provide a lump-sum payment of the member’s account balance plus a lifetime monthly pension from the employer’s contributions. The lifetime monthly pension options are the same as those for the non-refund and survivorship options described above.

**Total Lump-Sum:** The balance of the member’s account and a matching amount funded by employers’ contributions are paid out in total; there is no ongoing monthly benefit.

**AS refund:** a one-time payment based on an actuarial calculation if the Option 1 benefit is less than $200 per month.

Average IAP account balances and distributions to retired members, withdrawals, and deceased

<table>
<thead>
<tr>
<th>Year</th>
<th>Total IAP Account Balance After Earnings Crediting ($M)</th>
<th># of Members</th>
<th>Average IAP Account Balance ($)</th>
<th># of Distributions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>423.4</td>
<td>162,119</td>
<td>2,611</td>
<td>2</td>
</tr>
<tr>
<td>2005</td>
<td>928.9</td>
<td>181,055</td>
<td>5,130</td>
<td>4,131</td>
</tr>
<tr>
<td>2006</td>
<td>1,396.8</td>
<td>197,491</td>
<td>7,072</td>
<td>6,557</td>
</tr>
<tr>
<td>2007</td>
<td>2,120.5</td>
<td>210,133</td>
<td>10,091</td>
<td>6,705</td>
</tr>
<tr>
<td>2008</td>
<td>1,851.2</td>
<td>218,192</td>
<td>8,484</td>
<td>8,624</td>
</tr>
<tr>
<td>2009</td>
<td>2,742.8</td>
<td>231,256</td>
<td>11,847</td>
<td>7,727</td>
</tr>
<tr>
<td>2010</td>
<td>3,536.9</td>
<td>236,265</td>
<td>14,970</td>
<td>8,695</td>
</tr>
<tr>
<td>2011</td>
<td>3,939.7</td>
<td>238,062</td>
<td>16,549</td>
<td>11,479</td>
</tr>
<tr>
<td>2012</td>
<td>4,855.1</td>
<td>240,637</td>
<td>20,176</td>
<td>14,728</td>
</tr>
<tr>
<td>2013</td>
<td>5,127.3</td>
<td>242,516</td>
<td>21,142</td>
<td>14,994</td>
</tr>
<tr>
<td>2014</td>
<td>6,001.1</td>
<td>245,768</td>
<td>24,821</td>
<td>15,118</td>
</tr>
<tr>
<td>2015</td>
<td>6,906.1</td>
<td>255,896</td>
<td>26,988</td>
<td>15,644</td>
</tr>
<tr>
<td>2016</td>
<td>7,634.7</td>
<td>262,096</td>
<td>29,129</td>
<td>16,213</td>
</tr>
</tbody>
</table>
2. System Benefits (continued)

## History of Key PERS Benefit Enhancements, Caps, and Reductions by Year

<table>
<thead>
<tr>
<th>Year</th>
<th>Category</th>
<th>Action</th>
<th>Affected Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>1945</td>
<td>Administrative</td>
<td>The Public Employees Retirement System is signed into law and begins business July 1, 1946, as a money match retirement plan</td>
<td>All</td>
</tr>
<tr>
<td>1947</td>
<td>Retirement Age/Vesting</td>
<td>Requirement for employees to serve a six-month waiting period before becoming PERS members begins</td>
<td>All</td>
</tr>
<tr>
<td>1953</td>
<td>Administrative</td>
<td>By law, the PERS plan is terminated and immediately reopened the next day, allowing public employers to provide Social Security coverage</td>
<td>All</td>
</tr>
<tr>
<td>1967</td>
<td>Investment Risk Allocation</td>
<td>Legislature passes a bill that allows PERS to invest up to 10% of the retirement fund in common stock, creates the Oregon Investment Council, and establishes a defined benefit formula for employer-funded retirement benefits (formula plus annuity)</td>
<td>All</td>
</tr>
<tr>
<td>1969</td>
<td>Investment Risk Allocation</td>
<td>Participation in variable account program begins</td>
<td>All</td>
</tr>
<tr>
<td>1972</td>
<td>Cost-of-Living Adjustment</td>
<td>Implemented ad hoc COLA increase (12% to 25% benefit increase)</td>
<td>Existing retirees</td>
</tr>
<tr>
<td>1972</td>
<td>Cost-of-Living Adjustment</td>
<td>Initiated an annual COLA with a 1.5% cap</td>
<td>All retirees</td>
</tr>
<tr>
<td>1973</td>
<td>Benefit Calculation/Formula</td>
<td>Increased Formula Plus Annuity pension factors (General Service: .67 to 1.00; Police &amp; Fire: .92 to 1.35)</td>
<td>Tier One</td>
</tr>
<tr>
<td>1973</td>
<td>Cost-of-Living Adjustment</td>
<td>Annual COLA cap raised from 1.5% to 2%</td>
<td>All retirees</td>
</tr>
<tr>
<td>1973</td>
<td>Cost-of-Living Adjustment</td>
<td>Capped COLA at actual inflation rate or 2%, whichever is less</td>
<td>All retirees</td>
</tr>
<tr>
<td>1973</td>
<td>Final Average Salary</td>
<td>Added accrued sick leave to retirement benefit calculation for participating employers</td>
<td>Tier One/Two</td>
</tr>
<tr>
<td>1974</td>
<td>Cost of Living Adjustment</td>
<td>Implemented ad hoc increase (0% to 25% benefit increase)</td>
<td>Existing retirees</td>
</tr>
<tr>
<td>1975</td>
<td>Investment Risk Allocation</td>
<td>Initiated member account assumed rate guarantee</td>
<td>Tier One</td>
</tr>
<tr>
<td>1975</td>
<td>Investment Risk Allocation</td>
<td>Increased assumed earnings rate from 5.5% to 7%</td>
<td>Tier One</td>
</tr>
<tr>
<td>1975</td>
<td>Investment Risk Allocation</td>
<td>Credited member regular accounts with more than the assumed earnings rate*</td>
<td>Tier One</td>
</tr>
<tr>
<td>1976</td>
<td>Investment Risk Allocation</td>
<td>Gain Loss Reserve established to &quot;self-funded&quot; assumed earnings rate crediting</td>
<td>Tier One</td>
</tr>
<tr>
<td>1979</td>
<td>Administrative</td>
<td>Employers allowed to &quot;pick up&quot; member 6% contribution</td>
<td>All</td>
</tr>
<tr>
<td>1979</td>
<td>Investment Risk Allocation</td>
<td>Increased assumed earnings rate from 7% to 7.5%</td>
<td>Tier One</td>
</tr>
<tr>
<td>1981</td>
<td>Benefit Calculation/Formula</td>
<td>Added Full Formula benefit calculation method</td>
<td>All</td>
</tr>
<tr>
<td>1981</td>
<td>Benefit Calculation/Formula</td>
<td>Consolidated member contributions from 1% to 7% salary based sliding scale to universal 6%</td>
<td>All</td>
</tr>
<tr>
<td>1981</td>
<td>Benefit Calculation/Formula</td>
<td>Eliminated Formula Plus Annuity benefit calculation method</td>
<td>Tier One</td>
</tr>
<tr>
<td>1981</td>
<td>Cost-of-Living Adjustment</td>
<td>Implemented ad hoc COLA increase (4% to 11.4% benefit increase)</td>
<td>Existing retirees</td>
</tr>
<tr>
<td>1985</td>
<td>Cost-of-Living Adjustment</td>
<td>Implemented ad hoc COLA increase (3% to 7.28% benefit increase)</td>
<td>Existing retirees</td>
</tr>
<tr>
<td>1985</td>
<td>Benefit Calculation/Formula</td>
<td>Added benefit option to allow lump-sum payment of member account</td>
<td>All</td>
</tr>
<tr>
<td>1987</td>
<td>Benefit Calculation/Formula</td>
<td>Members allowed to purchase six-month waiting period</td>
<td>All</td>
</tr>
<tr>
<td>1987</td>
<td>Benefit Calculation/Formula</td>
<td>New retirement benefit payout options added</td>
<td>All</td>
</tr>
<tr>
<td>1989</td>
<td>Cost-of-Living Adjustment</td>
<td>Implemented ad hoc COLA increase (0% to 25% benefit increase)</td>
<td>Existing retirees</td>
</tr>
<tr>
<td>1989</td>
<td>Investment Risk Allocation</td>
<td>Increased assumed earnings rate from 7.5% to 8%</td>
<td>Tier One</td>
</tr>
<tr>
<td>1989</td>
<td>Retiree Health Benefits</td>
<td>Established Medicare and state employee pre-Medicare insurance premium subsidies</td>
<td>Tier One/Two</td>
</tr>
<tr>
<td>1989</td>
<td>Retiree Health Benefits</td>
<td>Capped Medicare premium subsidy at $60 per month</td>
<td>Tier One/Two</td>
</tr>
<tr>
<td>1989</td>
<td>Retirement Age/Vesting</td>
<td>Added &quot;30 years of service&quot; retirement regardless of age</td>
<td>Tier One/Two</td>
</tr>
<tr>
<td>1991</td>
<td>Benefit Calculation/Formula</td>
<td>Imposed state income tax on PERS benefits</td>
<td>All</td>
</tr>
<tr>
<td>1991</td>
<td>Benefit Calculation/Formula</td>
<td>Established service time based state income tax offset benefit of between 1% to 4% (SB 656)</td>
<td>Tier One</td>
</tr>
<tr>
<td>1993</td>
<td>Administrative</td>
<td>Divorced spouses entitled to separate account from member’s</td>
<td>All</td>
</tr>
</tbody>
</table>

CONTINUED ON FOLLOWING PAGE


Key: Benefit enhancement | Benefit cap or reduction
## 2. System Benefits (continued)

### History of Key PERS Benefit Enhancements, Caps, and Reductions by Year (continued)

<table>
<thead>
<tr>
<th>Year</th>
<th>Category</th>
<th>Action</th>
<th>Affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>Benefit Calculation/Formula</td>
<td>Established state income tax offset benefit for pre-1991 service time</td>
<td>Tier One</td>
</tr>
<tr>
<td>1995</td>
<td>Benefit Calculation/Formula</td>
<td>Eliminated tax remedy for anyone hired after July 14, 1995</td>
<td>All new hires</td>
</tr>
<tr>
<td>1996</td>
<td>Final Average Salary</td>
<td>Excluded lump-sum vacation payouts from final average salary</td>
<td>Tier Two</td>
</tr>
<tr>
<td>1996</td>
<td>Investment Risk Allocation</td>
<td>Eliminated guaranteed return on regular accounts for new members</td>
<td>Tier Two</td>
</tr>
<tr>
<td>1996</td>
<td>Retirement Age/Vesting</td>
<td>Increased normal retirement age for new members from 58 to 60</td>
<td>Tier Two</td>
</tr>
<tr>
<td>1997</td>
<td>Administrative</td>
<td>Married members must provide proof of spousal consent for retirement</td>
<td>All</td>
</tr>
<tr>
<td>1997</td>
<td>Administrative</td>
<td>Reemployed retirees can work up to 1,040 hours for a PERS-covered</td>
<td>All</td>
</tr>
<tr>
<td>1999</td>
<td>Benefit Calculation/Formula</td>
<td>Locked in existing actuarial equivalency factor tables</td>
<td>Tier One</td>
</tr>
<tr>
<td>2000</td>
<td>Investment Risk Allocation</td>
<td>Eliminated 'Last Known Rate' member account crediting guarantee</td>
<td>Tier One</td>
</tr>
<tr>
<td>2003</td>
<td>Benefit Calculation/Formula</td>
<td>Decreased Full Formula benefit pension factor (General Service: 1.67 to</td>
<td>OPSRP</td>
</tr>
<tr>
<td>2003</td>
<td>Benefit Calculation/Formula</td>
<td>1.50; Police &amp; Fire 2.00 to 1.80)</td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>Benefit Calculation/Formula</td>
<td>Eliminated Money Match benefit calculation method</td>
<td>OPSRP</td>
</tr>
<tr>
<td>2003</td>
<td>Benefit Calculation/Formula</td>
<td>Redirected member contributions to freeze Money Match benefit levels</td>
<td>Prospective MM retirees</td>
</tr>
<tr>
<td>2003</td>
<td>Benefit Calculation/Formula</td>
<td>Required regularly updated mortality assumptions and actuarial factors</td>
<td>All</td>
</tr>
<tr>
<td>2003</td>
<td>Cost-of-Living Adjustment</td>
<td>Pro-rated first year COLA</td>
<td>OPSRP</td>
</tr>
<tr>
<td>2003</td>
<td>Cost-of-Living Adjustment</td>
<td>Eliminated COLA 'bank' carryover</td>
<td>OPSRP</td>
</tr>
<tr>
<td>2003</td>
<td>Final Average Salary</td>
<td>Eliminated lump-sum vacation payouts from subject salary</td>
<td>OPSRP</td>
</tr>
<tr>
<td>2003</td>
<td>Final Average Salary</td>
<td>Eliminated accumulated sick leave from final average salary</td>
<td>OPSRP</td>
</tr>
<tr>
<td>2003</td>
<td>Investment Risk Allocation</td>
<td>Required members to self-fund guaranteed return on member accounts</td>
<td>Tier One</td>
</tr>
<tr>
<td>2003</td>
<td>Investment Risk Allocation</td>
<td>Subjected all future member contributions made on or after January 1,</td>
<td>All</td>
</tr>
<tr>
<td>2003</td>
<td>Retiree Health Benefits</td>
<td>Eliminated post-retirement health insurance premium subsidies</td>
<td>OPSRP</td>
</tr>
<tr>
<td>2003</td>
<td>Retirement Age/Vesting</td>
<td>Increased normal retirement age from 60 to 65 (General Service) 55 to 60</td>
<td>OPSRP</td>
</tr>
<tr>
<td>2003</td>
<td>Retirement Age/Vesting</td>
<td>Increased vesting from 5 years or age 50 to 5 years or age 65</td>
<td>OPSRP</td>
</tr>
<tr>
<td>2005</td>
<td>Benefit Calculation/Formula</td>
<td>Adjusted member accounts and benefit payments to recapture 1999</td>
<td>Tier One</td>
</tr>
<tr>
<td>2009</td>
<td>Retiree Health Benefits</td>
<td>Allowed OPSRP members to participate in PERS retiree health insurance</td>
<td>OPSRP</td>
</tr>
<tr>
<td>2011</td>
<td>Benefit Calculation/Formula</td>
<td>Eliminated HB 3349 tax remedy for prospective retirees who move out of</td>
<td>Tier One</td>
</tr>
<tr>
<td>2013</td>
<td>Cost-of-Living Adjustment</td>
<td>1.5% in 2013; COLA in 2014 and beyond is 1.25% on the first $60,000 of</td>
<td>All</td>
</tr>
<tr>
<td>2013</td>
<td>Supplementary Payments</td>
<td>Annual supplementary payments of 0.25% to all benefit recipients (up to</td>
<td>Retirees</td>
</tr>
<tr>
<td>2013</td>
<td>Benefit Calculation/Formula</td>
<td>Eliminated any tax remedy for retirees who do not pay income taxes</td>
<td>Tier One</td>
</tr>
<tr>
<td>2014</td>
<td>Investment Risk Allocation</td>
<td>Decreased assumed earnings rate from 8.0% to 7.75%</td>
<td>Tier One</td>
</tr>
<tr>
<td>2015</td>
<td>Supplementary Payments</td>
<td>Annual COLA of up to 2% restored for service time accrued before</td>
<td>Tier One</td>
</tr>
<tr>
<td>2016</td>
<td>Investment Risk Allocation</td>
<td>Decreased assumed earnings rate from 7.75% to 7.50%</td>
<td>Tier One</td>
</tr>
</tbody>
</table>
2. System Benefits (continued)

PERS Retiree Health Insurance Program information

The Oregon PERS Health Insurance Program offers optional medical, dental, and long-term care insurance plans to eligible Tier One/Tier Two retirees, their spouses, and dependents. Upon retirement, these insurance options become a choice available to all PERS retirees. While primarily serving our Medicare-eligible (age 65 and over) population, the PERS Health Insurance Program also offers insurance coverage options for those not yet Medicare eligible.

There are two statutory trust funds administered by PERS as part of the Health Insurance Program that provide premium subsidies for eligible Tier One and Tier Two retirees or surviving spouses. These trusts are known as the Retirement Health Insurance Account (RHIA), serving all qualifying PERS Medicare-eligible retirees, and the Retiree Health Insurance Premium Account (RHIPA), serving qualifying state government pre-Medicare retirees. Both trusts are funded from employer contributions on an actuarial basis.

Program Enrollment (as of December 2016)

<table>
<thead>
<tr>
<th>Medical Plans (four plans offered)</th>
<th>Totals</th>
<th>Medicare</th>
<th>Non-Medicare</th>
</tr>
</thead>
<tbody>
<tr>
<td>Covered lives</td>
<td>59,674</td>
<td>57,298</td>
<td>2,376</td>
</tr>
<tr>
<td>Retirees (or surviving spouses)</td>
<td>48,421</td>
<td>46,950</td>
<td>1,471</td>
</tr>
<tr>
<td>Spouses/Dependents</td>
<td></td>
<td>10,348</td>
<td>905</td>
</tr>
<tr>
<td>Average age of enrolled retirees</td>
<td></td>
<td>75</td>
<td>75</td>
</tr>
</tbody>
</table>

| Dental Plans (two plans offered)  | 37,444 |
| Long-Term Care Plan              | 2,091  |

<table>
<thead>
<tr>
<th>Statutory Health Insurance Premium Subsidies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retirees receiving RHIA (trust fund held by PERS*)</td>
</tr>
<tr>
<td>Retirees receiving RHIPA (trust fund held by PERS**)</td>
</tr>
<tr>
<td>RHIA monthly payment total</td>
</tr>
<tr>
<td>RHIPA monthly payment total</td>
</tr>
</tbody>
</table>

Employer rates (effective July 1, 2017):
- RHIA: 0.50%; RHIPA (state government only): 0.49%

Unfunded actuarial liabilities (as of December 31, 2015): $46 million (RHIA); $57 million (RHIPA)

* The RHIA subsidy is $60 per month for Medicare-eligible retirees.
** The RHIPA subsidy is for state government pre-Medicare retirees only and varies depending on the employee’s years of state service, from $163.47 (8 years) to $326.94 (30+ years) per month for Plan Year 2016.
3. **System Funding Level and Status**

**Funded status as of December 31, 2015**

The Oregon Public Employees Retirement Fund (OPERF) is invested under the oversight and direction of the Oregon Investment Council with staff support from the Investment Division of Oregon State Treasury.

As of December 31, 2015, PERS was 71% funded (not including employer side accounts). Side accounts hold deposits from PERS employers of pension obligation bond proceeds and other advance lump-sum payments that are amortized to offset that employer’s contribution.

As of December 31, 2015, the unfunded actuarial liability (UAL) (not including side accounts) was $21.8 billion. The UAL fluctuates based on various factors including investment returns, Board reserving policies, statutory plan design changes, and litigation outcomes.

**PERS fund value** (calendar years ending December 31)
3. System Funding Level and Status (continued)

Unfunded actuarial liability history and funded ratio

<table>
<thead>
<tr>
<th>Valuation Date</th>
<th>With Side Accounts (starting in 2002)</th>
<th>Without Side Accounts</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>UAL ($M)</td>
<td>Funded Ratio (%)</td>
</tr>
<tr>
<td>2000</td>
<td>1,545</td>
<td>96.4</td>
</tr>
<tr>
<td>2001</td>
<td>-2,031</td>
<td>105.4</td>
</tr>
<tr>
<td>2002</td>
<td>3,204</td>
<td>92.0</td>
</tr>
<tr>
<td>2003</td>
<td>1,751</td>
<td>96.1</td>
</tr>
<tr>
<td>2004</td>
<td>2,122</td>
<td>95.6</td>
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<td>2005</td>
<td>-1,751</td>
<td>104.0</td>
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<tr>
<td>2006</td>
<td>-5,019</td>
<td>109.7</td>
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<tr>
<td>2007</td>
<td>-6,120</td>
<td>111.5</td>
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<tr>
<td>2008</td>
<td>10,998</td>
<td>80.0</td>
</tr>
<tr>
<td>2009</td>
<td>8,108</td>
<td>86.0</td>
</tr>
<tr>
<td>2010(^4)</td>
<td>7,700</td>
<td>87.0</td>
</tr>
<tr>
<td>2011</td>
<td>11,030</td>
<td>82.0</td>
</tr>
<tr>
<td>2012(^5)</td>
<td>5,600</td>
<td>91.0</td>
</tr>
<tr>
<td>2013</td>
<td>2,600</td>
<td>96.0</td>
</tr>
<tr>
<td>2014(^6)</td>
<td>12,100</td>
<td>84.0</td>
</tr>
<tr>
<td>2015</td>
<td>16,200</td>
<td>79.0</td>
</tr>
</tbody>
</table>

1 Includes RHIA/RHIPA.
2 2000-2003 UALs were calculated using actuarial value of assets (AVA) based on year-to-year changes in asset values smoothed over four-year periods. All other UALs since 1997 were calculated using an AVA based on fair market value.
3 The official PERS valuation UAL and funded ratio are based on accepted actuarial standards and methodologies. These methodologies are subject to review and revision every two years. A negative UAL amount represents a surplus.
4 2010 and after includes the OPSRP Pension Program. 2000-2009 reflects only Tier One/Tier Two.
5 Includes liability reductions from Senate Bills 822 & 861 and new Board-adopted actuarial assumptions and methods from the 2012 Experience Study.
6 Includes the Moro decision and new Board-adopted actuarial assumptions and methods from the 2014 Experience Study.

Actuarial accrued liabilities (as of December 31, 2015)

Approximately 70% of PERS’ total accrued liability is for members who are no longer working in PERS-covered employment (retired and inactive members).
## 4. System Revenue

Member and employer contributions and investment income for calendar years

<table>
<thead>
<tr>
<th>Year</th>
<th>Member Contributions (SM)</th>
<th>Employer Contributions (SM)</th>
<th>Amortization of Employer Side Accounts (SM)*</th>
<th>Total Employer (SM)</th>
<th>Net Investment &amp; Other Income (SM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>287</td>
<td>427</td>
<td>N/A</td>
<td>427</td>
<td>4,110</td>
</tr>
<tr>
<td>1996</td>
<td>296</td>
<td>463</td>
<td>N/A</td>
<td>463</td>
<td>4,358</td>
</tr>
<tr>
<td>1997</td>
<td>291</td>
<td>473</td>
<td>N/A</td>
<td>473</td>
<td>4,582</td>
</tr>
<tr>
<td>1998</td>
<td>318</td>
<td>488</td>
<td>N/A</td>
<td>488</td>
<td>3,978</td>
</tr>
<tr>
<td>1999</td>
<td>347</td>
<td>577</td>
<td>N/A</td>
<td>577</td>
<td>7,463</td>
</tr>
<tr>
<td>2000</td>
<td>359</td>
<td>654</td>
<td>N/A</td>
<td>654</td>
<td>143</td>
</tr>
<tr>
<td>2001</td>
<td>385</td>
<td>689</td>
<td>N/A</td>
<td>689</td>
<td>-2,708</td>
</tr>
<tr>
<td>2002</td>
<td>398</td>
<td>725</td>
<td>8</td>
<td>733</td>
<td>-3,460</td>
</tr>
<tr>
<td>2003</td>
<td>405</td>
<td>582</td>
<td>97</td>
<td>679</td>
<td>8,866</td>
</tr>
<tr>
<td>2004</td>
<td>371**</td>
<td>408</td>
<td>278</td>
<td>686</td>
<td>5,933</td>
</tr>
<tr>
<td>2005</td>
<td>434</td>
<td>504</td>
<td>357</td>
<td>861</td>
<td>6,179</td>
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<tr>
<td>2006</td>
<td>456</td>
<td>637</td>
<td>474</td>
<td>1,111</td>
<td>8,163</td>
</tr>
<tr>
<td>2007</td>
<td>468</td>
<td>633</td>
<td>466</td>
<td>1,099</td>
<td>5,808</td>
</tr>
<tr>
<td>2008</td>
<td>484</td>
<td>669</td>
<td>541</td>
<td>1,210</td>
<td>-17,235</td>
</tr>
<tr>
<td>2009</td>
<td>515</td>
<td>561</td>
<td>540</td>
<td>1,101</td>
<td>8,053</td>
</tr>
<tr>
<td>2010</td>
<td>502</td>
<td>435</td>
<td>558</td>
<td>993</td>
<td>6,444</td>
</tr>
<tr>
<td>2011</td>
<td>510</td>
<td>627</td>
<td>509</td>
<td>1,136</td>
<td>1,935</td>
</tr>
<tr>
<td>2012</td>
<td>513</td>
<td>915</td>
<td>443</td>
<td>1,358</td>
<td>7,859</td>
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<tr>
<td>2013</td>
<td>561</td>
<td>942</td>
<td>448</td>
<td>1,390</td>
<td>9,458</td>
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<td>2014</td>
<td>524</td>
<td>994</td>
<td>472</td>
<td>1,466</td>
<td>4,819</td>
</tr>
<tr>
<td>2015</td>
<td>611</td>
<td>1,185</td>
<td>542</td>
<td>1,727</td>
<td>1,380</td>
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<tr>
<td>2016</td>
<td>610</td>
<td>1,021</td>
<td>628</td>
<td>1,649</td>
<td>4,840</td>
</tr>
</tbody>
</table>

* PERS’ methodology to track amortization of side accounts began in 2002. Side accounts hold deposits by employers of pension obligation bond proceeds and other lump-sum payments that are amortized to offset that employer’s PERS contributions.

** Since January 1, 2004, member contributions have been placed in the Individual Account Program (IAP), instead of the legacy Tier One/Tier Two member accounts.

- Member contributions equal 6% of covered salary and now go to the IAP. 65% of all PERS-covered employers currently assume and pay or “pick up” the member contribution for more than 50% of their employees. These employers cover approximately 72% of all PERS employees.

- PERS Reform legislation led to a reduction in employer rates beginning in 2003. Also, starting in 2002, employers were given the option to deposit lump-sum payments into side accounts, reducing subsequent “new dollar” annual contributions for the employers that make such deposits.

- Employer contribution amounts are from the calendar year-end records. Data for calendar year 2004 and beyond includes employer contributions for OPSRP Pension Program, Tier One/Tier Two, and post- retirement health care (RHIA, RHIPA).
**4. System Revenue (continued)**

PERS Fund investment earnings available for crediting and actual distributions to Tier One and Tier Two member regular, variable, and Individual Account Program (IAP) accounts

<table>
<thead>
<tr>
<th>Year</th>
<th>Earnings (%)</th>
<th>Tier One</th>
<th>Tier Two</th>
<th>Variable Account</th>
<th>IAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>5.09</td>
<td>5.09</td>
<td></td>
<td>7.47</td>
<td></td>
</tr>
<tr>
<td>1971</td>
<td>6.27</td>
<td>6.27</td>
<td></td>
<td>9.47</td>
<td></td>
</tr>
<tr>
<td>1972</td>
<td>7.46</td>
<td>7.46</td>
<td></td>
<td>13.87</td>
<td></td>
</tr>
<tr>
<td>1973</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
<td>-16.39</td>
<td></td>
</tr>
<tr>
<td>1974</td>
<td>0.00</td>
<td>5.50</td>
<td></td>
<td>-18.16</td>
<td></td>
</tr>
<tr>
<td>1975</td>
<td>9.19</td>
<td>7.50</td>
<td></td>
<td>18.94</td>
<td></td>
</tr>
<tr>
<td>1976</td>
<td>10.38</td>
<td>7.75</td>
<td></td>
<td>18.58</td>
<td></td>
</tr>
<tr>
<td>1977</td>
<td>4.79</td>
<td>7.00</td>
<td></td>
<td>-2.62</td>
<td></td>
</tr>
<tr>
<td>1978</td>
<td>7.37</td>
<td>7.00</td>
<td></td>
<td>7.03</td>
<td></td>
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<tr>
<td>1979</td>
<td>12.32</td>
<td>11.09</td>
<td></td>
<td>20.40</td>
<td></td>
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<td>1980</td>
<td>16.92</td>
<td>13.00</td>
<td></td>
<td>29.94</td>
<td></td>
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<tr>
<td>1981</td>
<td>4.37</td>
<td>7.50</td>
<td></td>
<td>-2.25</td>
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<td>1982</td>
<td>15.31</td>
<td>11.50</td>
<td></td>
<td>22.39</td>
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<tr>
<td>1983</td>
<td>18.37</td>
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<td></td>
<td>23.12</td>
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<tr>
<td>1984</td>
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<td>7.50</td>
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<td>1986</td>
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<td>1987</td>
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<td>1989</td>
<td>19.74</td>
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<td>26.84</td>
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<td>-1.53</td>
<td>8.00</td>
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<tr>
<td>1991</td>
<td>22.45</td>
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<td>35.05</td>
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<td>1992</td>
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<tr>
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<td>2.16</td>
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<td>-1.76</td>
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<tr>
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<td></td>
<td>29.92</td>
<td></td>
</tr>
<tr>
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<td>24.42</td>
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<tr>
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<td>20.42</td>
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<tr>
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<td>14.10</td>
<td>13.63</td>
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<tr>
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<td>21.97</td>
<td>28.83</td>
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</tr>
<tr>
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</tr>
<tr>
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<td>-7.17</td>
<td>8.00</td>
<td>-6.66</td>
<td>-11.19</td>
<td></td>
</tr>
<tr>
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<td>-8.93</td>
<td>8.00</td>
<td>-8.93</td>
<td>-21.51</td>
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<tr>
<td>2003</td>
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<td>22.00</td>
<td>34.68</td>
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</tr>
<tr>
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<td>13.80</td>
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<td>13.27</td>
<td>13.00</td>
<td>12.77</td>
</tr>
<tr>
<td>2005</td>
<td>13.04</td>
<td>8.00</td>
<td>18.31*</td>
<td>8.29</td>
<td>12.80</td>
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<tr>
<td>2006</td>
<td>15.57</td>
<td>8.00</td>
<td>15.45</td>
<td>15.61</td>
<td>14.98</td>
</tr>
<tr>
<td>2007</td>
<td>10.22</td>
<td>7.97***</td>
<td>9.47</td>
<td>1.75</td>
<td>9.46</td>
</tr>
<tr>
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<td>-27.18</td>
<td>-43.71</td>
<td>-26.75</td>
</tr>
<tr>
<td>2009</td>
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<td>19.12</td>
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<td>18.47</td>
</tr>
<tr>
<td>2010</td>
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<tr>
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<td>8.00</td>
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<td>2.15</td>
</tr>
<tr>
<td>2012</td>
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<td>8.00</td>
<td>14.68</td>
<td>18.43</td>
<td>14.09</td>
</tr>
<tr>
<td>2013</td>
<td>15.76</td>
<td>8.00</td>
<td>15.62</td>
<td>25.74</td>
<td>15.59</td>
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<td>7.24</td>
<td>4.29</td>
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<tr>
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<td>2.21</td>
<td>7.75</td>
<td>1.87</td>
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<td>1.85</td>
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<tr>
<td>2016</td>
<td>6.9</td>
<td>7.50</td>
<td>7.15</td>
<td>8.76</td>
<td>7.13</td>
</tr>
</tbody>
</table>

* The PERS Board originally credited these accounts at 20%. That allocation was later reduced to 11.33% to comply with subsequent court decisions and legislative findings.

** Tier Two regular account crediting, based solely on earnings, was 13.74%. However, the PERS Board deployed $9 million from the Capital Preservation Reserve and $17 million from the Contingency Reserve that was added to Tier Two earnings. As a result, Tier Two was credited with a total of 18.31%. The dollars allocated from the reserves were originally withheld from Tier Two regular account earnings.

*** After crediting Tier One accounts with the assumed rate of 8%, member attorney fees in the *Strunk* case were deducted by order of the Oregon Supreme Court resulting in an effective crediting rate of 7.97%.

- In determining plan funding, the actuary must project future earnings of the PERS Fund. This is called the “assumed earnings rate.” Historical assumed earnings rates are:
  - 5.0% for 1971 - 1974
  - 7.0% for 1975 - 1978
  - 7.5% for 1979 - 1988
  - 8.0% for 1989 - 2013
  - 7.75% for 2014-2015
  - 7.5% beginning January 1, 2016.

- Average earnings credited to IAP accounts from 2004 - 2016: 7.8%
- Average earnings credited to Tier Two accounts from 1996 – 2016: 9.4%

47-year averages (1970-2016)

- Regular account earnings available for crediting: 10.2%.
- Earnings credited to Tier One regular accounts: 9.6%.
- Earnings credited to variable accounts: 10.7%. 
4. **System Revenue (continued)**

Regular account earnings available for crediting and actual distributions to Tier One member regular accounts based on 2016 earnings

![Graph showing investment returns andTier One earnings](image1)

Actual distributions to Tier Two member regular accounts and to Tier One/Tier Two member variable accounts (invested in an equity-only portfolio) based on 2016 earnings

![Graph showing tier two and variable account earnings](image2)
4. System Revenue (continued)

2016 earnings crediting ($ millions)

<table>
<thead>
<tr>
<th>Reserve/Account</th>
<th>Balance Before Crediting</th>
<th>2016 Crediting</th>
<th>Reserves After Crediting</th>
<th>Crediting Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contingency Reserve</td>
<td>$583.7</td>
<td>-</td>
<td>$583.7</td>
<td>N/A</td>
</tr>
<tr>
<td>Tier One Member Regular Accts</td>
<td>4,547.0</td>
<td>341.0</td>
<td>4,888.0</td>
<td>7.50%</td>
</tr>
<tr>
<td>Tier One Rate Guarantee Reserve</td>
<td>183.2</td>
<td>(2.4)</td>
<td>180.8</td>
<td>N/A</td>
</tr>
<tr>
<td>Benefits-In-Force (BIF) Reserve</td>
<td>20,550.4</td>
<td>1,461.3</td>
<td>22,011.7</td>
<td>7.15%</td>
</tr>
<tr>
<td>Tier Two Member Regular Accts</td>
<td>816.8</td>
<td>58.4</td>
<td>875.2</td>
<td>7.15%</td>
</tr>
<tr>
<td>Employer Reserves</td>
<td>23,235.6</td>
<td>1,663.0</td>
<td>24,898.6</td>
<td>7.15%</td>
</tr>
<tr>
<td>OPSRP Pension Program</td>
<td>2,807.8</td>
<td>198.8</td>
<td>3,006.6</td>
<td>7.08%</td>
</tr>
<tr>
<td>UAL Lump-Sum Payment Side Accts*</td>
<td>5,005.8</td>
<td>383.2</td>
<td>5,389.0</td>
<td>Various</td>
</tr>
<tr>
<td>IAP Accounts**</td>
<td>6,858.5</td>
<td>489.3</td>
<td>7,347.8</td>
<td>7.13%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$64,588.8</strong></td>
<td><strong>$4,592.6</strong></td>
<td><strong>$69,181.4</strong></td>
<td></td>
</tr>
</tbody>
</table>

* Side account earnings rates for lump sums on deposit vary depending on when the deposit was made within the calendar year and are not affected by Board reserving or crediting decisions.

** Informational only; not affected by Board reserving or crediting decisions.

Contingency Reserve: This reserve can be used for any purpose the Board determines is appropriate so long as the use of the funds furthers the trust’s purpose. It is funded in years that investment income exceeds the assumed rate (currently 7.5 percent).

Tier One Rate Guarantee Reserve: This reserve is used to credit the assumed rate on Tier One member regular accounts in years when the fund earns below the assumed rate, and to hold excess earnings from the years when the fund earns more than the assumed rate (currently 7.5% percent).

Benefits-In-Force Reserve: This reserve is used to pay retired member’s benefits and annuities. It is funded by earnings and fund transfers from member accounts and employer reserves associated with retirements processed during a calendar year.

System-wide average employer contribution rates excluding retiree health insurance (RHIA/RHIPA)

<table>
<thead>
<tr>
<th>Valuation Year</th>
<th>Rate Effective Dates</th>
<th>Average Rate With Side Accounts (%)</th>
<th>Average Rate Without Side Accounts (%)</th>
<th>Annualized Salary ($M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1975</td>
<td>Various</td>
<td>11.21</td>
<td>11.21</td>
<td>1,014.5</td>
</tr>
<tr>
<td>1977</td>
<td>Various</td>
<td>11.87</td>
<td>11.87</td>
<td>1,226.8</td>
</tr>
<tr>
<td>1979</td>
<td>Various</td>
<td>10.97</td>
<td>10.97</td>
<td>1,488.0</td>
</tr>
<tr>
<td>1982</td>
<td>Various</td>
<td>10.13</td>
<td>10.13</td>
<td>2,062.1</td>
</tr>
<tr>
<td>1985</td>
<td>Various</td>
<td>10.87</td>
<td>10.87</td>
<td>2,428.3</td>
</tr>
<tr>
<td>1987</td>
<td>Various</td>
<td>11.30</td>
<td>11.30</td>
<td>2,764.7</td>
</tr>
<tr>
<td>1989</td>
<td>Various</td>
<td>9.74</td>
<td>9.74</td>
<td>3,199.4</td>
</tr>
<tr>
<td>1993</td>
<td>Various</td>
<td>9.15</td>
<td>9.15</td>
<td>4,466.8</td>
</tr>
<tr>
<td>1995</td>
<td>Various</td>
<td>9.42</td>
<td>9.42</td>
<td>4,848.1</td>
</tr>
<tr>
<td>1997</td>
<td>Various</td>
<td>11.40</td>
<td>11.40</td>
<td>5,161.6</td>
</tr>
<tr>
<td>1999</td>
<td>7/1/01 – 6/30/03</td>
<td>10.74</td>
<td>10.74</td>
<td>5,676.6</td>
</tr>
<tr>
<td>2001</td>
<td>7/1/03 – 6/30/05</td>
<td>10.64</td>
<td>10.64</td>
<td>6,256.5</td>
</tr>
<tr>
<td>2003*</td>
<td>7/1/05 – 6/30/07</td>
<td>14.47*</td>
<td>18.89*</td>
<td>6,248.5</td>
</tr>
<tr>
<td>2005**</td>
<td>7/1/07 – 6/30/09</td>
<td>8.22</td>
<td>15.01</td>
<td>6,792.0</td>
</tr>
<tr>
<td>2007</td>
<td>7/1/09 – 6/30/11</td>
<td>4.73</td>
<td>12.42</td>
<td>7,721.8</td>
</tr>
<tr>
<td>2009</td>
<td>7/1/11 – 6/30/13</td>
<td>10.8</td>
<td>16.3</td>
<td>8,512.0</td>
</tr>
<tr>
<td>2011***</td>
<td>7/1/13 – 6/30/15</td>
<td>10.8</td>
<td>16.5</td>
<td>8,600.0</td>
</tr>
<tr>
<td>2013</td>
<td>7/1/15 – 6/30/17</td>
<td>10.6</td>
<td>17.5</td>
<td>8,699.0</td>
</tr>
<tr>
<td>2015</td>
<td>7/1/17 – 6/30/19</td>
<td>14.23</td>
<td>20.85</td>
<td>10,100.0</td>
</tr>
</tbody>
</table>

* December 31, 2003 rates were phased-in. Actual rate paid averaged 10.58% with employer side accounts and 15.10% without employer side accounts.

** Includes weighted average rate for Tier One/Tier Two and OPSRP beginning in 2005.

*** Includes liability reduction and rate deferral from Senate Bill 822 (2013).
4. System Revenue (continued)

System-wide average employer contribution rates as a percent of covered salary (net rates include side account offsets).

- **BASE RATES**
- **NET RATES (INCLUDE SIDE ACCOUNT OFFSETS)**

2017-19 employer contribution rate increase projections

<table>
<thead>
<tr>
<th>($ millions)</th>
<th>Projected 2015-17 Payroll*</th>
<th>(A) Projected 2015-17 Contribution</th>
<th>Projected 2017-19 Payroll*</th>
<th>(B) Projected 2017-19 Contribution**</th>
<th>(B) - (A) Projected Contribution Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Agencies</td>
<td>$5,620</td>
<td>$575</td>
<td>$6,020</td>
<td>$835</td>
<td>$225</td>
</tr>
<tr>
<td>School Districts</td>
<td>$6,120</td>
<td>$560</td>
<td>$6,560</td>
<td>$910</td>
<td>$335</td>
</tr>
<tr>
<td>All Others</td>
<td>$7,350</td>
<td>$875</td>
<td>$7,880</td>
<td>$1,165</td>
<td>$290</td>
</tr>
<tr>
<td>Total</td>
<td>$19,090</td>
<td>$2,025</td>
<td>$20,460</td>
<td>$2,910</td>
<td>$885</td>
</tr>
</tbody>
</table>

* Assumes payroll growth at 3.5% annually based on 12/31/2015 active member census, reflecting proportional payroll composition (Tier One/Tier Two vs. OPSRP) as of 12/31/2015.

** Collared net rates are used to project 2017-19 employer contributions.
4. System Revenue (continued)

Employer side accounts
When an employer makes a lump-sum payment to prepay part or all of its unfunded actuarial liability (UAL), the money is placed in a special account called a “side account.” This account is attributed solely to the employer making the payment and is held separate from other employer reserves.

Most employers with side accounts issued pension obligation bonds (POBs) and provided the bond proceeds to PERS as a UAL lump-sum deposit to fund their side account. A few employers funded their side accounts with lump-sum payments from other sources, such as savings from internal operations.

Administrative costs for side accounts are limited by statute. PERS assesses $2,500 per side account in the first year and $1,000 annually thereafter, regardless of the size of the side account.

As of December 31, 2015, 146 employers have established side accounts. Of these, 35 employers have multiple side accounts: one city, one special district, two community colleges, and 31 school districts.

<table>
<thead>
<tr>
<th>Employer Type</th>
<th># W/Side Accounts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent Locals (not a member of a pool)</td>
<td>5</td>
</tr>
<tr>
<td>State Agencies (all, including OUS)</td>
<td>1</td>
</tr>
<tr>
<td>Pooled Counties</td>
<td>8</td>
</tr>
<tr>
<td>Pooled Cities</td>
<td>9</td>
</tr>
<tr>
<td>Pooled Special Districts</td>
<td>8</td>
</tr>
<tr>
<td>Community Colleges</td>
<td>17</td>
</tr>
<tr>
<td>School Districts</td>
<td>98</td>
</tr>
</tbody>
</table>

As of December 31, 2015, side account assets totaled $5.6 billion.

<table>
<thead>
<tr>
<th>Side Accounts by Employer Type as of December 31, 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employer Type</td>
</tr>
<tr>
<td>-----------------------------------------------------</td>
</tr>
<tr>
<td>Independent</td>
</tr>
<tr>
<td>State Agencies</td>
</tr>
<tr>
<td>Pooled Counties</td>
</tr>
<tr>
<td>Pooled Cities</td>
</tr>
<tr>
<td>Pooled Special Districts</td>
</tr>
<tr>
<td>Community Colleges</td>
</tr>
<tr>
<td>School Districts</td>
</tr>
</tbody>
</table>

Side accounts are generally amortized over the same time period as the employer’s associated UAL, providing the employer with an offset of its employer rate. The goal is for the side account to provide rate relief to the employer until the associated UAL is paid off. Side accounts are re-amortized every two years, taking into consideration how much of the side account has been used and what earnings have been credited. The rate offset is then adjusted based on the re-amortization over the original period.
4. System Revenue (continued)

Employer side accounts (continued)

<p>| Average Side Account Rate Offset 2005 -2019 |</p>
<table>
<thead>
<tr>
<th>Rate Period</th>
<th>Average Rate Offset (% of Payroll)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005 - 2007</td>
<td>-4.54%</td>
</tr>
<tr>
<td>2007 - 2009</td>
<td>-6.71%</td>
</tr>
<tr>
<td>2009 - 2011</td>
<td>-7.20%</td>
</tr>
<tr>
<td>2011 – 2013</td>
<td>-5.11%</td>
</tr>
<tr>
<td>2013 – 2015</td>
<td>-5.26%</td>
</tr>
<tr>
<td>2015 – 2017</td>
<td>-6.38%</td>
</tr>
<tr>
<td>2017 – 2019</td>
<td>TBD</td>
</tr>
</tbody>
</table>

The State of Oregon issued $2.1 billion in POBs in 2003 to fund a side account. As of December 31, 2015, the State’s side account balance was $1.9 billion and the principal balance on the State’s POBs was $1.8 billion.

<p>| Historical Side Account and POB Balances 2004 - 2015 |</p>
<table>
<thead>
<tr>
<th>Calendar Year</th>
<th>Side Accts ($ millions)</th>
<th>Outstanding POBs ($ millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>$5,556</td>
<td>$5,516</td>
</tr>
<tr>
<td>2005</td>
<td>$6,667</td>
<td>$6,202</td>
</tr>
<tr>
<td>2006</td>
<td>$7,248</td>
<td>$6,164</td>
</tr>
<tr>
<td>2007</td>
<td>$7,658</td>
<td>$6,249</td>
</tr>
<tr>
<td>2008</td>
<td>$5,135</td>
<td>$6,187</td>
</tr>
<tr>
<td>2009</td>
<td>$5,490</td>
<td>$6,109</td>
</tr>
<tr>
<td>2010</td>
<td>$5,579</td>
<td>$5,999</td>
</tr>
<tr>
<td>2011</td>
<td>$5,225</td>
<td>$5,896</td>
</tr>
<tr>
<td>2012</td>
<td>$5,518</td>
<td>$5,814</td>
</tr>
<tr>
<td>2013</td>
<td>$5,924</td>
<td>$5,520</td>
</tr>
<tr>
<td>2014</td>
<td>$5,877</td>
<td>$5,519</td>
</tr>
<tr>
<td>2015</td>
<td>$5,634</td>
<td>$5,535</td>
</tr>
</tbody>
</table>

Side account earnings

Side accounts are invested in the PERS Fund and receive the Fund’s actual earnings or losses. These earnings or losses are posted to side accounts at the end of each year.

<p>| Average Side Account Earnings 2006 to 2015 |</p>
<table>
<thead>
<tr>
<th>Calendar Year</th>
<th>Average Earnings/Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>14.98%</td>
</tr>
<tr>
<td>2007</td>
<td>9.46%</td>
</tr>
<tr>
<td>2008</td>
<td>-26.75%</td>
</tr>
<tr>
<td>2009</td>
<td>18.47%</td>
</tr>
<tr>
<td>2010</td>
<td>12.13%</td>
</tr>
<tr>
<td>2011</td>
<td>2.15%</td>
</tr>
<tr>
<td>2012</td>
<td>14.09%</td>
</tr>
<tr>
<td>2013</td>
<td>15.59%</td>
</tr>
<tr>
<td>2014</td>
<td>7.39%</td>
</tr>
<tr>
<td>2015</td>
<td>1.82%</td>
</tr>
</tbody>
</table>
5. Economic Impact of PERS Monthly Benefit Payments in 2015

Oregon PERS monthly benefits contribute to Oregon’s economy

Oregon PERS paid approximately $3.9 billion in total monthly benefits in 2015, with $3.5 billion to PERS benefit recipients living in Oregon. Funding of these benefits came primarily from investment earnings on contributions previously paid by members and public employers. These benefit recipients spent a significant portion of this money on goods and services in Oregon, which helped support local businesses. These businesses then purchased goods, in part, from other local vendors, further supporting Oregon’s workforce and economy.

Annual PERS monthly benefits generate $3.9 billion in total economic value to Oregon

The $3.5 billion in annual benefit payments multiply to $3.9 billion in total economic value to Oregon when the full financial impact of these dollars spent in local communities is considered (based upon economic multipliers provided by the U.S. Department of Commerce’s Bureau of Economic Analysis).

The economic activity generated by PERS monthly benefit payments sustain an estimated 36,427 Oregon jobs, and add approximately $1.17 billion in wages to Oregon’s economy.

Additionally, the State of Oregon collected an estimated $184 million in income taxes on PERS retiree monthly benefits (based on 2013 income tax estimates).

Investment income provided 73.4% of total PERS’ revenues from 1970-2015, with member contributions providing 5.5% and employer contributions providing 21.1%.

Money for PERS benefit payments comes from three sources (1970-2015)

INVESTMENT EARNINGS
EMPLOYERS
MEMBERS
5. Economic Impact of PERS Benefit Payments in 2015 (continued)

Oregon PERS benefit payments by county (2015 calendar year)
Total Oregon PERS Benefit Payments by State
(1099-R data for the 2015 tax year)
**Pension System Terms**

**Accrued liability:** The net present value of projected future benefits allocated to service already completed 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 a smoothing 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. Actual experience will vary from assumption, and at times the variance will be substantial.

**Actuarial cost method:** A technique used by actuaries to allocate the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial liability (UAL). Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

**Base employer contribution rates:** Consists of the normal cost rate plus the UAL rate. This is paid by a combination of employer contributions and side account transfers. Base rates do not reflect the effects of side account rate offsets.

**Combined valuation payroll:** Projected payroll for the calendar year following the valuation date for Tier One, Tier Two, and OPSRP active members. This payroll is used to calculate UAL rates.

**Funded ratio or funded status:** The actuarial value of assets expressed as a percentage of the accrued liability.

**Individual Account Program (IAP):** A defined contribution-like program that contains all member contributions (6% of covered payroll) made on or after January 1, 2004.

**Net employer contribution rates:** The rate funded by employer contributions, consisting of the base employer contribution rate minus the effect of side account rate offsets.

**Normal cost:** The annual cost assigned to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

**Oregon Public Service Retirement Plan (OPSRP) Pension Program:** The program covering members hired on or after August 29, 2003.

**Rate collar:** A methodology that limits the maximum allowable period-to-period change in employer contribution rates. The width of the rate collar is determined by the current contribution rate and funded status.

**Side accounts:** Side accounts are established for employers who make supplemental payments (a lump-sum payment in excess of the required employer contribution). For State and Local Government Rate Pool (SLGRP) employers, this supplemental payment is first applied toward the employer’s transition liability, if any, with the remainder going into a side account. Side accounts are treated as pre-paid contributions. Employer contribution rates are first determined excluding side accounts (base employer contribution rate). Then, an amortized portion of the side account is used to offset the contribution otherwise required for each individual employer that has a side account (net employer contribution rate). While side accounts are excluded from valuation assets in determining contribution rates for pools and non-pooled employers, side accounts are included in valuation assets for financial reporting purposes such as the reporting of funded status.

**Total liability:** The net present value of all projected future benefits attributable to all anticipated service (past and future) for current active and inactive members.

**Tier One:** The pension program covering members hired before January 1, 1996.

**Tier Two:** The pension program covering members hired from January 1, 1996 through August 28, 2003.

**Unfunded actuarial liability (UAL):** The excess of the actuarial accrued liability over the actuarial value of assets. The UAL is amortized over a fixed period of time to determine the UAL rate component of employer contribution rates.
Resources

Customer Service (Monday-Friday, 8:30 a.m. to 5 p.m.): 888-320-7377
PERS website: www.Oregon.gov/pers
Online Member Services (secure site for benefit estimates and more): https://orion.pers.state.or.us/SelfService/viewPage?component=/mhome.jsp/dialog_id=DState_44&mode=MBR
Actuarial/Financial information: http://www.oregon.gov/pers/Pages/Financials/Actuarial-Financial-Information.aspx
PERS Board: http://www.oregon.gov/pers/Pages/Board/PERS-Board-Information.aspx

Tier One/Tier Two
I want to retire: http://www.oregon.gov/pers/MEM/Pages/TierOne-TierTwo-Steps-to-Retire.aspx
A-Z Quick Answers: https://apps.pers.state.or.us/pers238/A-Z-Project-Chapter-238.htm
Education sessions: http://www.oregon.gov/pers/MEM/Pages/Tier-One-Tier-Two-Presentations-Index.aspx

OPSRP
A-Z Quick Answers: https://apps.pers.state.or.us/opsrp/A-Z-Project-Chapter-238a.htm
Education sessions: http://www.oregon.gov/pers/MEM/Pages/Presentations/All-About-the-OPSRP/OPSRP-Presentations-Index.aspx

Retired members
Online Member Services (secure site to change your address, see benefit payment information, and view/request 1099Rs):
https://orion.pers.state.or.us/SelfService/viewPage?component=/mhome.jsp/dialog_id=DState_44&mode=MBR
A-Z Quick Answers (Tier One/Tier Two retirees): https://apps.pers.state.or.us/238retirees/A-Z-Project-Chapter-238-Retirees.htm
A-Z Quick Answers (OPSRP retirees): https://apps.pers.state.or.us/opsrpretirees/A-Z-Project-Chapter-238a-Retirees.htm
Working after retirement for a PERS-covered employer (Tier One/Tier Two retirees):
http://www.oregon.gov/pers/RET/Pages/Work-After-Retirement.aspx
Working after retirement for a PERS-covered employer (OPSRP retirees):
http://www.oregon.gov/pers/RET/Pages/OPSRP-Work-After-Retirement.aspx
PERS Health Insurance Program: http://www.oregon.gov/pers/RET/Pages/PHIP.aspx
EXCLUSIONS

Job Class Exclusions
The study is limited to retirees in the General Service and Police & Fire job classes from January 1990 through December 2014. Beneficiaries and alternate payees were also excluded, as the inclusion of these populations would skew the results due to the wide range of payout scenarios related to death and divorce benefits.

Retirement Option Exclusions
All lump sum benefit types were excluded due to the distorting effect of significant payouts at one time on replacement ratio results.

Other Exclusions
- Any record that fell outside the January 1990 - December 2015 range.
- Any record that had a greater than one-year gap between termination date and retirement date.

ASSUMPTIONS

The following assumptions were used in this study:
- Any account with a variable balance at the date of retirement was considered a variable account member.
- For final average salary (FAS), the average salary of the three high calendar years of a member’s career was used. This definition of FAS may not match the definition on which the member’s actual benefit was calculated.
- Monthly gross benefit includes HB3349 benefits for qualifying retirees.

SPECIAL NOTES

The averages and percentages displayed on the Replacement Ratio sheets are based upon the respective actual source data. The calculations on each Replacement Ratio sheet are not directly derived from one another. For instance, if the Average Monthly Gross benefit column is divided by the Average Monthly Salary column, it will not equal the Average Replacement Ratio column because the Average Replacement Ratio is derived from the average of replacement ratios in the source data. This method avoids distortions resulting from averaging averages. This is also the case with all of the median calculations. This method of analyzing the data provides a more accurate picture of the actual dataset being used.

Records of members who retired in previous years and then returned to work only to retire again later will be counted in the year of original retirement and again in the year of the second retirement. Adjusting the historical record would distort the year to year results.

Records for members who have retired with both Class 1 (General Service) and Class 2 (Police and Fire) job segments had the General Service job segment removed. Removing these records avoids double counting salaries and members.