Candidate Portfolio C Adopted by the Board

<table>
<thead>
<tr>
<th>Asset Class Component</th>
<th>Allocation 9/30/17</th>
<th>Interim Policy 9/30/18</th>
<th>ALM Policy 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Equity</td>
<td>34%</td>
<td>46%</td>
<td>47%</td>
</tr>
<tr>
<td>Private Equity</td>
<td>8%</td>
<td>8%</td>
<td>12%</td>
</tr>
<tr>
<td>Fixed Income</td>
<td>44%</td>
<td>19%</td>
<td>19%</td>
</tr>
<tr>
<td>Real Assets</td>
<td>13%</td>
<td>13%</td>
<td>-</td>
</tr>
<tr>
<td>Real Estate</td>
<td>-</td>
<td>-</td>
<td>9%</td>
</tr>
<tr>
<td>Infrastructure/Forestland</td>
<td>-</td>
<td>-</td>
<td>11%</td>
</tr>
<tr>
<td>Inflation Assets</td>
<td>0%</td>
<td>9%</td>
<td>6%</td>
</tr>
<tr>
<td>Liquidity</td>
<td>1%</td>
<td>1%</td>
<td>4%</td>
</tr>
<tr>
<td>Expected Compound Return (1-10 yrs.)</td>
<td>5.6%</td>
<td>5.8%</td>
<td>6.1%</td>
</tr>
<tr>
<td>Long Term Expected Return (11-60 yrs.)</td>
<td>7.8%</td>
<td>8.0%</td>
<td>8.3%</td>
</tr>
<tr>
<td>Blended Return (1-60 yrs.)</td>
<td>6.50%</td>
<td>6.75%</td>
<td>7.00%</td>
</tr>
<tr>
<td>Expected Volatility</td>
<td>9.1%</td>
<td>10.2%</td>
<td>11.4%</td>
</tr>
<tr>
<td>Cash Yield</td>
<td>3.1%</td>
<td>3.0%</td>
<td>2.9%</td>
</tr>
</tbody>
</table>

- With the 2013 Capital Market Assumptions, the ALM Policy Portfolio had an expected compound return of 7.15% for years 1 through 10, expected compound return of 8.39% for the long term (i.e., years greater than 10), blended return of 7.56%, and expected volatility of 11.76%.
- Blended Return is the weighted expected compound rate of return of years 1 through 10 and the long term, minus 15 bps for admin fees.
Employer

Employees

CalPERS

Pension

Sound Investing
Reducing Complexity & Costs
Stakeholder Engagement
Managing Risks
Best Practice Leader
Pension Prefunding
Safeguarding Defined Benefit Plans
Technical Expert and Partner
## Financial Highlights

**Current Value** $350 billion*

<table>
<thead>
<tr>
<th>Return Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016/17 Portfolio Return</td>
<td>11.20%</td>
</tr>
<tr>
<td>5-yr Annualized Return</td>
<td>8.83%</td>
</tr>
<tr>
<td>10-yr Annualized Return</td>
<td>4.39%</td>
</tr>
<tr>
<td>20-yr Annualized Return</td>
<td>6.60%</td>
</tr>
<tr>
<td>Annualized Return Since 1988</td>
<td>8.40%</td>
</tr>
</tbody>
</table>

* As of 12/31/2017
2013 Vs. Today – Drivers of Lower Funded Ratio

<table>
<thead>
<tr>
<th>Year</th>
<th>Discount Rate</th>
<th>FY 2012-13</th>
<th>FY 2017-18</th>
<th>FY 2018-19</th>
<th>FY 2019-20</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013 ALM</td>
<td>76%</td>
<td>7.50%</td>
<td>7.375%</td>
<td>7.25%</td>
<td>7.00%</td>
</tr>
<tr>
<td>2017 ALM</td>
<td>76%</td>
<td>7.50%</td>
<td>7.375%</td>
<td>7.25%</td>
<td>7.00%</td>
</tr>
</tbody>
</table>

1. 6.64% Compound Return for the Total Fund over the last 3 fiscal years.

Financial Highlights

CalPERS Investment Returns

<table>
<thead>
<tr>
<th>Year</th>
<th>Fiscal Year</th>
<th>Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY2012-13</td>
<td>FY2013-14</td>
<td>18.4%</td>
</tr>
<tr>
<td>FY2014-15</td>
<td>FY2015-16</td>
<td>8.83%</td>
</tr>
<tr>
<td>FY2016-17</td>
<td></td>
<td>11.2%</td>
</tr>
</tbody>
</table>

Average 5 Year Return
Proposed Amortization Policy Change

- Future gains and losses would be amortized over 20 years instead of 30.
- 25 year option now being considered as well.
- The “ramp-down” on gains and losses would be eliminated.
- Use a level dollar amount for calculating employer contributions, instead of using a level percentage of payroll.
- Save employers money by reducing total amount of unfunded liability.
  - Ex: 15 year mortgage vs 30 year mortgage.
- Aligns with best industry standards.
- Addresses ‘intergenerational equity’ issue.

Difference in Short and Long Term CMAs
Current low real yield is primary driver of difference.

Wilshire 60/40 Portfolio Forecast

Wilshire Forecasts through Time

Return prospects have been declining for decades, following the downward trend in interest rates.

Interest Rates vs CalPERS Investment Mix & Returns

Fiscal Year Ending 1961 through 2017
Distinguishing between Divestments and ESG Strategy

**CalPERS Approach**

**Investment Belief 3**

Divestment Policy
Engagement works - Our vote is our voice

Divestments
- Increases Risk
- We lose our voice

**Investment Belief 4**

ESG Strategy
Strong governance and effective management of human / environmental factors improves long term performance.

ESG
- Additional risk lens
- Used to assess risks & opportunities (add alpha)

**CalPERS Investment decisions may reflect wider stakeholder views, provided they are consistent with it’s fiduciary duty to members and beneficiaries.**

**CalPERS Approach**

**Investment Belief 3**

Divestment Policy
Engagement works - Our vote is our voice

Divestments
- Increases Risk
- We lose our voice

**Investment Belief 4**

“Long term value creation required effective management of three forms of Capital, Financial, Physical, and human”

**CalPERS**

**Historical Factors Impact Funded Status (1993-2017)**

- **1993-2000** Strong economy
- **2000-2001** Dot-com crash
- **2001-2002** Enron
- **2007-2009** Great Recession
- **2010-2014** Increased % unemploy.
- **2014-2017** Additional $14Bn from State

- **1993-2017** Funded ratio (%)
- **1993-2017** Actual liabilities ($)
Scenario Analysis (Global Financial Crisis & Recovery)

<table>
<thead>
<tr>
<th>Candidate</th>
<th>Initial Funded Status</th>
<th>Cumulative Returns</th>
<th>Annualized Returns</th>
<th>Funded Status</th>
<th>Δ Funded Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>64%</td>
<td>63%</td>
<td>5.0%</td>
<td>49%</td>
<td>-15%</td>
</tr>
<tr>
<td>B</td>
<td>66%</td>
<td>60%</td>
<td>4.9%</td>
<td>48%</td>
<td>-18%</td>
</tr>
<tr>
<td>C</td>
<td>68%</td>
<td>58%</td>
<td>4.7%</td>
<td>48%</td>
<td>-20%</td>
</tr>
<tr>
<td>D</td>
<td>70%</td>
<td>56%</td>
<td>4.6%</td>
<td>47%</td>
<td>-23%</td>
</tr>
<tr>
<td>Equity</td>
<td>75%</td>
<td>53%</td>
<td>4.4%</td>
<td>46%</td>
<td>-29%</td>
</tr>
</tbody>
</table>

- Analysis assumes no rebalancing.
- The Funded Status calculation assumes a liability growth rate of 7.9%.

Contribution, Benefit Payments and Investment Income 2013 and Today

- Data Source: 2013 and 2017 Contribution and Benefit Payments are from ACTO.
- Investment Income assumes implementation of "Candidate Portfolio C." Investment income only includes income from Global Equity (dividends), Global Fixed Income (coupons), and Real Assets (rent).
Stability of Investment Income

Investment Income and Total Return

Investment Income (LHS) vs. Fund Total Return (RHS)

- Investment Income defined as cash income from: Global Equity (dividends), Global Fixed Income (coupons), Real Assets (rent)

FY13/14 FY14/15 FY15/16 FY16/17
Investment Income: $6.3, $6.5, $7.3, $7.1
Fund Total Return (%): 18%, 2%, 1%, 11%

($ Billions) Realized Investment Income and Total Return

CalPERS