CITY of OAKLEY CALIFORNIA
A PLACE for FAMILIES in the HEART of the DELTA

Agenda Date: 08/11/2015
Agenda Item: 5.1

# STAFF REPORT

**Date:** August 11, 2015

**To:** City Council

**From:** Bryan Montgomery, City Manager

**SUBJECT:** **An Urgency Ordinance of the City Council of the City of Oakley authorizing an Amendment to Contract between the Board of Administration of the California Public Employees Retirement System (CalPERS) and the City of Oakley to include a new Police Category**

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## Background and Summary

At the April 14, 2015 City Council Meeting, the Council adopted a resolution to discontinue contracting with Contra Costa County for the sworn personnel of the Oakley Police Department. Effective May 6, 2016, the sworn personnel will all be City employees.

At the May 12, 2015 City Council Meeting the City Council voted to move forward with the California Public Employees Retirement System (PERS) retiree benefit for the new sworn police personnel. On July 14, 2015, the City Council adopted a formal resolution of intent to amend the contract with PERS to add the new police category. As required by law, an actuary was available at that Council Meeting to answer any questions and the Actuarial Valuation report was made public and has since been available for public review. (It is also attached again to this staff report).

For your consideration now is the actual ordinance required by CalPERS that includes as an exhibit the proposed contract amendment. You will note that the proposed change is the addition of a police category to the existing contract. The police category calls for the 2.7% at 57 full formula plan that includes a 3% cost-of-living allowance increase and the fourth level of 1959 Survivor Benefits. The existing benefit categories for non-safety personnel are also outlined in the contract amendment.

## Fiscal Impact

The employer rate for local safety members is currently 12.156% of salary. It is estimated that the total salary subject to PERS is approximately $4,000,000, making the total estimated annual cost to be just shy of $487,000. This annual cost will increase as salaries increase and as additional personnel come on board in future years. Also, any adjustments or changes in assumptions made by the CalPERS Board may affect the actuarial cost estimates and change any accrued liability.

It is important to note that the CalPERS defined benefit plan is estimated to be at least $380,000 less expensive per year than a "comparable" defined contribution plan and will be significantly less expensive than the retirement cost component found within the current contract with Contra Costa County.

**Recommendation**

Adopt the urgency ordinance to authorize an amendment to contract between the Board of Administration of the California Public Employees Retirement System (CalPERS) and the City of Oakley to include a new police category. (Adoption does require a $4/5^{th}$s vote).

**Attachments**

1. Ordinance, including exhibit which is the proposed contract amendment
2. New Category Actuarial Valuation dated May 2015

Attachment 1

# ORDINANCE NO. ______

## AN URGENCY ORDINANCE OF THE CITY COUNCIL OF THE CITY OF OAKLEY AUTHORIZING AN AMENDMENT TO THE CONTRACT BETWEEN THE CITY COUNCIL OF THE CITY OF OAKLEY AND THE BOARD OF ADMINISTRATION OF THE CALIFORNIA PUBLIC EMPLOYEES RETIREMENT SYSTEM

The City Council of the City of Oakley does ordain as follows:

**Section 1.**
That an amendment to the contract between the City Council of the City of Oakley and the Board of Administration, California Public Employees' Retirement System is hereby authorized, a copy of said amendment being attached hereto, marked Exhibit A, and by such reference made a part hereof as though herein set out in full.

**Section 2.**
The Mayor of the City of Oakley is hereby authorized, empowered, and directed to execute said amendment for and on behalf of said Agency.

**Section 3.**
This urgency ordinance shall take effect the day following the effective date of the ordinance, which would be August 12, 2015, upon its adoption by an affirmative vote of at least four-fifths ($4/5^{th}$s) of the members of the City Council. The City Clerk is directed to public a copy of this Ordinance in accordance with state law.

The foregoing ordinance was adopted with the reading waived at a regular meeting of the Oakley City Council on August 11, 2015 by the following vote:

AYES:

NOES:

ABSTENTIONS:

ABSENT:

APPROVED:

______________________________
Doug Hardcastle, Mayor

ATTEST:

______________________________
Libby Vreonis, City Clerk

______________________________
Date

Attachment 2

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

# New Category Actuarial Valuation

As of May, 2015

## For the Proposed SAFETY PLAN for the CITY OF OAKLEY, 2.7% at 57 SAFETY POLICE Full Formula with 3-year Final Average Compensation for any Safety Member Hired after January 1, 2013, 0% Prior Service

# Table of Contents

**May 31, 2015**

**PROPOSED SAFETY PLAN FOR CITY OF OAKLEY**
**2.7% @ 57 SAFETY RISK POOL**

Dear Employer,

Enclosed please find a copy of the actuarial valuation conducted to determine the contributions necessary should the CITY OF OAKLEY elect to participate in the California Public Employees' Retirement System (CalPERS) and adopt the proposed SAFETY PLAN. CalPERS staff actuaries are available to discuss the contents of this report with you.

Since your public agency has less than 100 active members, your proposed plan would be required to participate in a risk pool. The following valuation report provides specific information for your proposed plan, including the development of your pooled employer contribution rate, and an appendix with plan provisions and assumptions.

In the event your public agency elects to contract for CalPERS membership, your employees will be entitled to retirement benefits as provided by CalPERS per the Public Employees' Retirement Law. The contract for CalPERS membership will specify that, to the extent, if any, your employees may claim entitlement to additional benefits resulting from prior membership in a different retirement plan, such benefits will be the responsibility of your agency alone, and not of CalPERS.

**Actuarial Cost Estimates in General**

What will this pension plan cost? Unfortunately, there is no simple answer. There are two major reasons for the complexity of the answer. First, actuarial calculations, including the ones in this report, are based on a number of assumptions about the future. These assumptions can be divided into two categories.

- Demographic assumptions include the percentage of employees that will terminate, die, become disabled, and retire in each future year.
- Economic assumptions include future salary increases for each active employee, and the assumption with the greatest impact, future asset returns at CalPERS for each year into the future until the last dollar is paid to current members of your plan.

While CalPERS has set these assumptions to reflect our best estimate of the real future of your plan, it must be understood that these assumptions are very long-term predictors and will surely not be realized in any one year. For example, while the asset earnings at CalPERS have averaged more than the assumed return of 7.5 percent for the past twenty year period ending June 30, 2014, returns for each fiscal year ranged from negative -24 percent to +21.7 percent.

Second, the very nature of actuarial funding produces the answer to the question of plan cost as the sum of two separate pieces.

- The Normal Cost (i.e., the future annual premiums in the absence of surplus or unfunded liability) expressed as a percentage of total active payroll.
- The Past Service Cost or Accrued Liability (i.e., the current value of the benefit for all credited past service of current members) which is expressed as a lump sum dollar amount.

On January 1, 2013, the Public Employees' Pension Reform Act of 2013 (PEPRA) took effect. In addition to creating new retirement formulas for newly hired members, PEPRA also effectively closed all existing active risk pools to new employees. As such, it is no longer appropriate to assume that the payroll of the risk pools for the classic formulas will continue to grow at 3 percent annually. Funding the promised pension benefits as a percentage of payroll would lead to the underfunding of the plans. In addition the current allocation of the existing unfunded liabilities based on payroll would create equity issues for employers within the risk pools. Furthermore, the declining payroll of the classic formula risk pools will lead to unacceptable levels of employer rate volatility.

In order to address these issues the CalPERS Board of Administration approved at their May 21, 2014 meeting structural changes to the risk pools. All pooled plans will be combined into two active pools, one for all miscellaneous groups and one for all safety groups, effective with the 2013 valuations. By combining the pools this way the payroll of the risk pools and the employers within the pools can once again be expected to increase at the assumed 3 percent annual growth. This change will allow the continuation of current level percent of payroll amortization schedule. However, two important changes are being made which will affect employers.

1. Beginning with FY 2015-16, CalPERS will collect employer contributions toward any unfunded liability as dollar amounts instead of the prior method of a contribution rate. This change will address the funding issue

that would still arise from the declining population of classic formula members. Although employers will be invoiced at the beginning of the fiscal year for their unfunded liability and side fund payments, the plan's normal cost contribution will continue to be collected as a percentage of payroll.

2. The pool's unfunded liability will be allocated to each individual plan based on the plan's total liability rather than by the plan's individual payroll. This will allow employers to track their own unfunded liability and pay it down faster if they choose. The change in the allocation of unfunded liabilities will result in some employers paying more towards their unfunded liability and some paying less.

The impact of most of the PEPRA changes will first show up in the rates and the benefit provision listings of the June 30, 2013 valuation that sets the contribution rates for the 2015-16 fiscal year. For more detailed information on changes due to PEPRA, please refer to the CalPERS website.

On April 17, 2013, the CalPERS Board of Administration approved a recommendation to change the CalPERS amortization and rate smoothing policies. Beginning with the June 30, 2013 valuations that set the 2015-16 rates, CalPERS will employ an amortization and smoothing policy that will pay for all gains and losses over a fixed 30-year period with the increases or decreases in the rate spread directly over a 5-year period. The new amortization and smoothing policy is used in this valuation.

In 2014 CalPERS completed a 2-year asset liability management study incorporating actuarial assumptions and strategic asset allocation. On February 19 the CalPERS Board of Administration adopted relatively modest changes to the current asset allocation that will reduce the expected volatility of returns (see Appendix). The adopted asset allocation is expected to have a long- term blended return that continues to support a discount rate assumption of 7.5 percent. The Board also approved several changes to the demographic assumptions that more closely align with actual experience. The most significant of these is mortality improvement to acknowledge the greater life expectancies we are seeing in our membership and expected continued improvements. **The new actuarial assumptions will be used to set the FY 2016-17 contribution rates for public agency employers.** The increase in liability due to new actuarial assumptions will be calculated in the 2014 actuarial valuation and will be amortized over a 20-year period with a 5-year ramp-up/ramp-down in accordance with Board policy

**Contribution Rates**

The actuarially required contribution, both in dollars and as a rate of payroll are shown below.

| | | Required Contribution Amount FY 2014-15 | Required Contribution Rate FY 2014-15 |
|---|---|---|---|
| 1. | Risk Pool's Net Employer Normal Cost | $ 0 | 10.750% |
| 2. | Share of Pool's UAL | 0 | 0.000% |
| 3. | Surcharge for Class 1 Benefits | 0 | 1.600% |
| 4. | Amortization of Side Fund | 0 | 0.000% |
| 5. | Total Employer Share of Contribution | 0 | 12.350% |
| 6. | Total Member Share of Contributions | 0 | 12.250% |

| | | Required Contribution Amount FY 2015-16 | Required Contribution Rate FY 2015-16 |
|---|---|---|---|
| 1. | Risk Pool's Net Employer Normal Cost | $ 0 | 10.403% |
| 2. | Share of Pool's UAL | 0 | 0.000% |
| 3. | Surcharge for Class 1 Benefits | 0 | 1.753% |
| 4. | Amortization of Side Fund | 0 | 0.000% |
| 5. | Total Employer Share of Contribution | 0 | 12.156% |
| 6. | Total Member Share of Contributions | 0 | 12.250% |

These rates will be in effect for Fiscal Years 2014-15 and 2015-16 unless there are further benefits or funding changes. If the membership or asset information is significantly different at the actual contract date or if the actual contract effective date is delayed beyond the proposed effective date of May 31, 2015 by more than 90 days, the employer contribution rates shown above may have to be recalculated. The contribution rates shown above were based on the actuarial cost analysis of the California Public Employees' Retirement Act (PEPRA) performed in August 2012, which can be found at our website at: http://www.calpers.ca.gov/eip-docs/about/pubs/cost-analysis.pdf and the results of the June 30, 2013 valuations.

In accordance with PEPRA the member contribution rate shown above is set at 50% of the expected normal cost rate for the benefits that will apply to your safety plan. The first actuarial valuation of the PEPRA risk pools based on actual member data was the June 30, 2013 valuation which was completed the fall of 2014. This valuation established the employer and employee contributions for fiscal year 2015-16. Note that the member contribution rate may change over time if the total normal cost for PEPRA members fluctuates by more than one percent of payroll in future valuations.

In February 2014, the CalPERS Board adopted new demographic actuarial assumptions to be used to set the fiscal year 2016-17 contribution rates for public agency employers. The total normal cost for plans with the 2.7% @ 57 formula is estimated to increase by 0.4% of payroll. The increase in liability due to new actuarial assumptions will be amortized over 20 years and phased in over 5 years.

The total employer contribution rate shown above may not be representative of the expected long-term cost of the proposed pension plan. Over long periods of time, employer contribution rates are expected to fluctuate around the sum of items 1 and 3 above.

**Rate Volatility**

As is stated above, the actuarial calculations supplied in this communication are based on a number of assumptions about very long term demographic and economic behavior. Unless these assumptions (terminations, deaths, disabilities, retirements, salary growth, and investment return) are exactly realized each year, there will be differences on a year to year basis. The year to year differences between actual experience and the assumptions are called actuarial gains and losses and serve to raise or lower the employer's rates from year to year. So, the rates will fluctuate, especially due to the unpredictability of investment returns.

The actuarial methods and assumptions used in determining your rate can be found in Appendix A. A list of class 1 benefit provisions used in determining your rate is included in Section 1 of the report. A description of these provisions can be found in Appendix B.

If your agency would like to consider other benefit formulas or other combinations of benefit provisions, please contact us and we will be pleased to assist you.

Sincerely,

Fritzie Archuleta

FRITZIE ARCHULETA, ASA, MAAA
Senior Pension Actuary, CalPERS

# Actuarial Certification

This report was prepared by the Agency Actuary in order to:

- Provide the employer with information about the cost of benefits and the contributions required in order to assist in the decision as to whether or not to contract for the benefits.
- Certify that the actuarially required employer contribution rate of the proposed SAFETY PLAN for the CITY OF OAKLEY from the effective date of the contract through June 30, 2015 is 12.350% and for the fiscal year commencing July 1, 2015 is 12.156%.

Use of this report for other purposes is inappropriate.

This report is based on the member and financial data as of May 31, 2015 provided by the agency, and the proposed benefits under this contract with CalPERS.

It is my opinion that the valuation has been performed in accordance with generally accepted actuarial principles, in accordance with standards of practice prescribed by the Actuarial Standards Board, and that the assumptions and methods are internally consistent and reasonable for this plan, as prescribed by the CalPERS Board of Administration according to provisions set forth in the California Public Employees' Retirement Law.

Fritzie Archuleta

FRITZIE ARCHULETA, ASA, MAAA
Senior Pension Actuary, CalPERS

# Section 1

# Plan Specific Information for The Proposed SAFETY PLAN for CITY OF OAKLEY

# Funding Information

- REQUIRED EMPLOYER CONTRIBUTION
- EMPLOYER SIDE FUND
- SUMMARY OF PARTICIPANT DATA
- LIST OF CLASS 1 BENEFIT PROVISIONS

# Required Employer Contribution

As part of a risk pool, your employer contribution rate will be the sum of the parts shown below. Unless there are further benefit or funding changes, your required employer contribution rate will be 12.350% from the effective date of the contract through June 30, 2015 and 12.156% from July 1, 2015 through June 30, 2016.

| | | Required Contribution Amount FY 2014-15 | Required Contribution Rate FY 2014-15 |
|---|---|---|---|
| 1. | Plan's Employer Normal Cost | $ 0 | 10.750% |
| 2. | Plan's Payment on UAL Amortization Bases | 0 | 0.000% |
| 3. | Surcharge for Class 1 Benefits | 0 | 1.600% |
| 4. | Amortization of Side Fund | 0 | 0.000% |
| 5. | Phase out of Normal Cost Difference | 0 | 0.000% |
| 6. | Total Employer Share of Contribution | 0 | 12.350% |
| 7. | Total Member Share of Contributions | 0 | 12.250% |

| | | Required Contribution Amount FY 2015-16 | Required Contribution Rate FY 2015-16 |
|---|---|---|---|
| 1. | Plan's Employer Normal Cost | $ 0 | 10.403% |
| 2. | Plan's Payment on UAL Amortization Bases | 0 | 0.000% |
| 3. | Surcharge for Class 1 Benefits | 0 | 1.753% |
| 4. | Amortization of Side Fund | 0 | 0.000% |
| 5. | Phase out of Normal Cost Difference | 0 | 0.000% |
| 6. | Total Employer Share of Contribution | 0 | 12.156% |
| 7. | Total Member Share of Contributions | 0 | 12.250% |

[1] Appendix C of this report contains the list of class 1 benefits with their corresponding surcharges.

# Employer Side Fund

At the time of joining a risk pool, a side fund will be created to account for whether the assets that were brought into the pool were more or less than what was required to maintain the funded ratio of the pool. The side fund for your proposed SAFETY PLAN at the effective date of the contract was developed as follows:

| | | |
|---|---|---|
| 1. | Entry Age Normal Accrued Liabilities | 0 |
| 2. | Market Value of Assets | 0 |
| 3. | Employer Side Fund as of the effective date of the contract | 0 |
| 4. | Side Fund Amortization Period in years | N/A |

# Summary of Participant Data

Below is a table showing a summary of the participant data for your plan upon which this valuation is based

| | | |
|---|---|---|
| 1. | Number of Active Members | 0 |
| 2. | Total Payroll (Payroll is assumed to remain the same through FY 2015-16) | 0 |
| 3. | Average Salary | 0 |
| 4. | Number of Transferred Members | 0 |
| 5. | Number of Separated Members | 0 |
| 6. | Number of Retired Members and Beneficiaries | 0 |

# List of Class 1 Benefit Provisions

- 3% Annual Cost-of-Living Allowance Increase

If Section 21031 (Public Service Credit for Limited Prior Service) is included in the contract, there is a risk that employer contribution rates will increase in the future as a result of members electing to purchase prior service.

# Subsequent Events

**Actuarial Methods and Assumptions**

In 2014, CalPERS completed a 2-year asset liability management study incorporating actuarial assumptions and strategic asset allocation. On February 19 the CalPERS Board of Administration adopted relatively modest changes to the current asset allocation that will reduce the expected volatility of returns. The adopted asset allocation is expected to have a long- term blended return that continues to support a discount rate assumption of 7.5 percent.

The Board also approved several changes to the demographic assumptions that more closely align with actual experience. The most significant of these is mortality improvement to acknowledge the greater life expectancies we are seeing in our membership and expected continued improvements. The new actuarial assumptions will be used to set the FY 2016-17 contribution rates for public agency employers. The increase in liability due to new actuarial assumptions will be calculated in the 2014 actuarial valuation and will be amortized 20 years and phased in over 5 years, in accordance with Board policy. The estimated increase in employer normal cost projection of the most recent information we have available, including an estimated 18.0 percent investment return for fiscal 2013-14, the impact of the new smoothing methods adopted by the CalPERS Board in April 2013 that will impact employer rates for the first time in 2015-16 and new actuarial assumptions adopted by the CalPERS Board in February 2014 is 0.4%.

# Summary of Major Benefit Options

Shown below is a summary of the major optional benefits for which your agency has contracted. A description of principal standard and optional plan provisions is in Appendix B of this report.

| Benefit Provision | PEPRA Provisions |
|---|---|
| Benefit Formula | 2.7% @ 57 |
| Social Security Coverage | no |
| Full/Modified | full |
| Final Average Compensation Period | 3 year |
| Sick Leave Credit | yes |
| Non-Industrial Disability | standard |
| Industrial Disability | no |
| Pre-Retirement Death Benefits | |
| Optional Settlement 2W | yes |
| 1959 Survivor Benefit Level* | Indexed |
| Special | no |
| Alternate (firefighters) | no |
| Post-Retirement Death Benefits | |
| Lump Sum | $500 |
| Survivor Allowance (PRSA) | no |
| COLA | 3% |
| Employee Contributions | |
| Contractual employer paid | no |
| Contractual Employee Cost sharing | 0% |

*1959 Survivor Benefit is provided by a separate program and will be billed separately by the agency.

# APPENDIX A

# ACTUARIAL METHODS AND ASSUMPTIONS

- **ACTUARIAL DATA**
- **ACTUARIAL METHODS**
- **ACTUARIAL ASSUMPTIONS**
- **MISCELLANEOUS**

# Actuarial Data

As stated in the Actuarial Certification, the data, which serves as the basis of this valuation, has been obtained from the various CalPERS databases. We have reviewed the valuation data and believe that it is reasonable and appropriate in aggregate. We are unaware of any potential data issues that would have a material effect on the results of this valuation, except that data does not always contain the latest salary information for former members now in reciprocal systems and does not recognize the potential for unusually large salary deviation in certain cases such as elected officials. Therefore, salary information in these cases may not be accurate. These situations are relatively infrequent, however, and when they do occur, they generally do not have a material impact on the employer contribution rates.

# Actuarial Methods

**Funding Method**
The actuarial funding method used for the Retirement Program is the Entry Age Normal Cost Method. Under this method, projected benefits are determined for all members and the associated liabilities are spread in a manner that produces level annual cost as a percent of pay in each year from the age of hire (entry age) to the assumed retirement age. The cost allocated to the current fiscal year is called the normal cost.

The actuarial accrued liability for active members is then calculated as the portion of the total cost of the plan allocated to prior years. The actuarial accrued liability for members currently receiving benefits, for active members beyond the assumed retirement age, and for members entitled to deferred benefits, is equal to the present value of the benefits expected to be paid. No normal costs are applicable for these participants.

The excess of the total actuarial accrued liability over the actuarial value of plan assets is called the unfunded actuarial accrued liability. Funding requirements are determined by adding the normal cost and an amortization of the unfunded liability as a level percentage of assumed future payrolls. Commencing with the June 30, 2013 valuation all new gains or losses are tracked and amortized over a fixed 30-year period with a 5 year ramp up at the beginning and a 5 year ramp down at the end of the amortization period. All changes in liability due to plan amendments (other than golden handshakes), changes in actuarial assumptions, or changes in actuarial methodology are amortized separately over a 20-year period with a 5 year ramp up at the beginning and a 5 year ramp down at the end of the amortization period. Changes in unfunded accrued liability due to a Golden Handshake will be amortized over a period of 5 years. If a plan's accrued liability exceeds the market value of assets, the annual contribution with respect to the total unfunded liability may not be less than the amount produced by a 30-year amortization of the unfunded liability. An exception has been made for the change in asset value from actuarial to market value in this valuation. The CalPERS Board approved a 30-year amortization with a 5-year ramp-up/ramp-down for only this change in method.

Additional contributions will be required for any plan or pool if their cash flows hamper adequate funding progress by preventing the expected funded status on a market value of assets basis to either:

- Increase by at least 15 percent by June 30, 2043; or
- Reach a level of 75 percent funded by June 30, 2043

The necessary additional contribution will be obtained by changing the amortization period of the gains and losses, except for those occurring in the fiscal years 2008-2009, 2009-2010, and 2010-2011 to a period, which will result in the satisfaction of the above criteria. CalPERS actuaries will reassess the criteria above when performing each future valuation to determine whether or not additional contributions are necessary.

An exception to the funding rules above is used whenever the application of such rules results in inconsistencies. In these cases, a "fresh start" approach is used. This simply means that the current unfunded actuarial liability is projected and amortized over a set number of years. As mentioned above, if the annual contribution on the total unfunded liability was less than the amount produced by a 30-year amortization of the unfunded liability, the plan actuary would implement a 30-year fresh start. However, in the case of a 30-year fresh start, just the unfunded liability not already in the (gain)/loss base (which is already amortized over 30 years), will go into the new fresh start base. In addition, a fresh start is needed in the following situations:

1) When a positive payment would be required on a negative unfunded actuarial liability (or conversely a negative payment on a positive unfunded actuarial liability); or

2) When there are excess assets, rather than an unfunded liability. In this situation, a 30-year fresh start is used, unless a longer fresh start is needed to avoid a negative total rate.

It should be noted that the actuary may choose to use a fresh start under other circumstances. In all cases, the fresh start period is set by the actuary at what is deemed appropriate; however, the period will not be less than five years, nor greater than 30 years.

**Asset Valuation Method**

It is the policy of the CalPERS Board of Administration to use professionally accepted amortization methods to eliminate unfunded accrued liabilities or surpluses in a manner that maintains benefit security for the members of the System while minimizing substantial variations in employer contribution rates. On April 17, 2013, the CalPERS Board of Administration approved a recommendation to change the CalPERS amortization and rate smoothing policies. Beginning with the June 30, 2013 valuations that set the 2015-16 rates, CalPERS will employ an amortization and smoothing policy that will pay for all gains and losses over a fixed 30-year period with the increases or decreases in the rate spread directly over a 5-year period. CalPERS will no longer use an actuarial value of assets and will use the market value of assets. This direct rate smoothing method is equivalent to a method using a 5 year asset smoothing period with no actuarial value of asset corridor and a 25 year amortization period for gains and losses. The change in asset value will also be amortized over 30 years with a 5-year ramp-up/ramp-down.

# Actuarial Assumptions

In 2014 CalPERS completed a 2-year asset liability management study incorporating actuarial assumptions and strategic asset allocation. On February 19, 2014 the CalPERS Board of Administration adopted relatively modest changes to the current asset allocation that will reduce the expected volatility of returns. The adopted asset allocation is expected to have a long-term blended return that continues to support a discount rate assumption of 7.5 percent. The Board also approved several changes to the demographic assumptions that more closely align with actual experience. The most significant of these is mortality improvement to acknowledge the greater life expectancies we are seeing in our membership and expected continued improvements. The new actuarial assumptions will be used to set the FY 2016-17 contribution rates for public agency employers. The increase in liability due to new actuarial assumptions will be calculated in the 2014 actuarial valuation and will be amortized over a 20-year period with a 5-year ramp-up/ramp-down in accordance with Board policy. For more details, please refer to the experience study report that can be found at the following link: http://www.calpers.ca.gov/eip-docs/about/pubs/employer/2014-experience-study.pdf

## *Economic Assumptions*

**Discount Rate**

7.5 percent compounded annually (net of expenses). This assumption is used for all plans.

**Termination Liability Discount Rate**

The discount rate used for termination valuation is a weighted average of the 10 and 30-year US Treasury yields in effect on the valuation date that equal the duration of the pension liabilities. For purposes of this hypothetical termination liability estimate, the discount rate used, 3.72 percent, is the yield on the 30-year US Treasury Separate Trading of Registered Interest and Principal of Securities (STRIPS) as of June 30, 2013. Please note, as of June 30, 2014 the 30-year STRIPS yield was 3.55 percent.

**Salary Growth**

Annual increases vary by category, entry age, and duration of service. A sample of assumed increases are shown below.

**Public Agency Miscellaneous**

| Duration of Service | (Entry Age 20) | (Entry Age 30) | (Entry Age 40) |
|---|---|---|---|
| 0 | 0.1420 | 0.1240 | 0.0980 |
| 1 | 0.1190 | 0.1050 | 0.0850 |
| 2 | 0.1010 | 0.0910 | 0.0750 |
| 3 | 0.0880 | 0.0800 | 0.0670 |
| 4 | 0.0780 | 0.0710 | 0.0610 |
| 5 | 0.0700 | 0.0650 | 0.0560 |
| 10 | 0.0480 | 0.0460 | 0.0410 |
| 15 | 0.0430 | 0.0410 | 0.0360 |
| 20 | 0.0390 | 0.0370 | 0.0330 |
| 25 | 0.0360 | 0.0360 | 0.0330 |
| 30 | 0.0360 | 0.0360 | 0.0330 |

**Salary Growth** (continued)

**Public Agency Fire**

| Duration of Service | (Entry Age 20) | (Entry Age 30) | (Entry Age 40) |
|---|---|---|---|
| 0 | 0.1050 | 0.1050 | 0.1020 |
| 1 | 0.0950 | 0.0940 | 0.0850 |
| 2 | 0.0870 | 0.0830 | 0.0700 |
| 3 | 0.0800 | 0.0750 | 0.0600 |
| 4 | 0.0740 | 0.0680 | 0.0510 |
| 5 | 0.0690 | 0.0620 | 0.0450 |
| 10 | 0.0510 | 0.0460 | 0.0350 |
| 15 | 0.0410 | 0.0390 | 0.0340 |
| 20 | 0.0370 | 0.0360 | 0.0330 |
| 25 | 0.0350 | 0.0350 | 0.0330 |
| 30 | 0.0350 | 0.0350 | 0.0330 |

**Public Agency Police**

| Duration of Service | (Entry Age 20) | (Entry Age 30) | (Entry Age 40) |
|---|---|---|---|
| 0 | 0.1090 | 0.1090 | 0.1090 |
| 1 | 0.0930 | 0.0930 | 0.0930 |
| 2 | 0.0810 | 0.0810 | 0.0780 |
| 3 | 0.0720 | 0.0700 | 0.0640 |
| 4 | 0.0650 | 0.0610 | 0.0550 |
| 5 | 0.0590 | 0.0550 | 0.0480 |
| 10 | 0.0450 | 0.0420 | 0.0340 |
| 15 | 0.0410 | 0.0390 | 0.0330 |
| 20 | 0.0370 | 0.0360 | 0.0330 |
| 25 | 0.0350 | 0.0340 | 0.0330 |
| 30 | 0.0350 | 0.0340 | 0.0330 |

**Public Agency County Peace Officers**

| Duration of Service | (Entry Age 20) | (Entry Age 30) | (Entry Age 40) |
|---|---|---|---|
| 0 | 0.1290 | 0.1290 | 0.1290 |
| 1 | 0.1090 | 0.1060 | 0.1030 |
| 2 | 0.0940 | 0.0890 | 0.0840 |
| 3 | 0.0820 | 0.0770 | 0.0710 |
| 4 | 0.0730 | 0.0670 | 0.0610 |
| 5 | 0.0660 | 0.0600 | 0.0530 |
| 10 | 0.0460 | 0.0420 | 0.0380 |
| 15 | 0.0410 | 0.0380 | 0.0360 |
| 20 | 0.0370 | 0.0360 | 0.0340 |
| 25 | 0.0350 | 0.0340 | 0.0330 |
| 30 | 0.0350 | 0.0340 | 0.0330 |

**Schools**

| Duration of Service | (Entry Age 20) | (Entry Age 30) | (Entry Age 40) |
|---|---|---|---|
| 0 | 0.1080 | 0.0960 | 0.0820 |
| 1 | 0.0940 | 0.0850 | 0.0740 |
| 2 | 0.0840 | 0.0770 | 0.0670 |
| 3 | 0.0750 | 0.0700 | 0.0620 |
| 4 | 0.0690 | 0.0640 | 0.0570 |
| 5 | 0.0630 | 0.0600 | 0.0530 |
| 10 | 0.0450 | 0.0440 | 0.0410 |
| 15 | 0.0390 | 0.0380 | 0.0350 |
| 20 | 0.0360 | 0.0350 | 0.0320 |
| 25 | 0.0340 | 0.0340 | 0.0320 |
| 30 | 0.0340 | 0.0340 | 0.0320 |

- The Miscellaneous salary scale is used for Local Prosecutors.
- The Police salary scale is used for Other Safety, Local Sheriff, and School Police.

**Overall Payroll Growth**

3.00 percent compounded annually (used in projecting the payroll over which the unfunded liability is amortized). This assumption is used for all plans.

**Inflation**

2.75 percent compounded annually. This assumption is used for all plans.

**Non-valued Potential Additional Liabilities**

The potential liability loss for a cost-of-living increase exceeding the 2.75 percent inflation assumption, and any potential liability loss from future member service purchases are not reflected in the valuation.

***Miscellaneous Loading Factors***

**Credit for Unused Sick Leave**

Total years of service is increased by 1 percent for those plans that have accepted the provision providing Credit for Unused Sick Leave.

**Conversion of Employer Paid Member Contributions (EPMC)**

Total years of service is increased by the Employee Contribution Rate for those plans with the provision providing for the Conversion of Employer Paid Member Contributions (EPMC) during the final compensation period.

**Norris Decision (Best Factors)**

Employees hired prior to July 1, 1982 have projected benefit amounts increased in order to reflect the use of "Best Factors" in the calculation of optional benefit forms. This is due to a 1983 Supreme Court decision, known as the Norris decision, which required males and females to be treated equally in the determination of benefit amounts. Consequently, anyone already employed at that time is given the best possible conversion factor when optional benefits are determined. No loading is necessary for employees hired after July 1, 1982.

**Termination Liability**

The termination liabilities include a 7 percent contingency load. This load is for unforeseen improvements in mortality.

***Demographic Assumptions***

**Pre-Retirement Mortality**

Non-Industrial Death Rates vary by age and gender. Industrial Death rates vary by age. See sample rates in table below. The non-industrial death rates are used for all plans. The industrial death rates are used for Safety Plans (except for Local Prosecutor safety members where the corresponding Miscellaneous Plan does not have the Industrial Death Benefit).

| | Non-Industrial Death (Not Job-Related) | | Industrial Death (Job-Related) |
|---|---|---|---|
| Age | Male | Female | Male and Female |
| 20 | 0.00047 | 0.00016 | 0.00003 |
| 25 | 0.00050 | 0.00026 | 0.00007 |
| 30 | 0.00053 | 0.00036 | 0.00010 |
| 35 | 0.00067 | 0.00046 | 0.00012 |
| 40 | 0.00087 | 0.00065 | 0.00013 |
| 45 | 0.00120 | 0.00093 | 0.00014 |
| 50 | 0.00176 | 0.00126 | 0.00015 |
| 55 | 0.00260 | 0.00176 | 0.00016 |
| 60 | 0.00395 | 0.00266 | 0.00017 |
| 65 | 0.00608 | 0.00419 | 0.00018 |
| 70 | 0.00914 | 0.00649 | 0.00019 |
| 75 | 0.01220 | 0.00878 | 0.00020 |
| 80 | 0.01527 | 0.01108 | 0.00021 |

Miscellaneous Plans usually have Industrial Death rates set to zero unless the agency has specifically contracted for Industrial Death benefits. If so, each Non-Industrial Death rate shown above will be split into two components; 99 percent will become the Non-Industrial Death rate and 1 percent will become the Industrial Death rate.

**Post-Retirement Mortality**

Rates vary by age, type of retirement and gender. See sample rates in table below. These rates are used for all plans.

| | Healthy Recipients | | Non-Industrially Disabled (Not Job-Related) | | Industrially Disabled (Job-Related) | |
|---|---|---|---|---|---|---|
| Age | Male | Female | Male | Female | Male | Female |
| 50 | 0.00239 | 0.00125 | 0.01632 | 0.01245 | 0.00443 | 0.00356 |
| 55 | 0.00474 | 0.00243 | 0.01936 | 0.01580 | 0.00563 | 0.00546 |
| 60 | 0.00720 | 0.00431 | 0.02293 | 0.01628 | 0.00777 | 0.00798 |
| 65 | 0.01069 | 0.00775 | 0.03174 | 0.01969 | 0.01388 | 0.01184 |
| 70 | 0.01675 | 0.01244 | 0.03870 | 0.03019 | 0.02236 | 0.01716 |
| 75 | 0.03080 | 0.02071 | 0.06001 | 0.03915 | 0.03585 | 0.02665 |
| 80 | 0.05270 | 0.03749 | 0.08388 | 0.05555 | 0.06926 | 0.04528 |
| 85 | 0.09775 | 0.07005 | 0.14035 | 0.09577 | 0.11799 | 0.08017 |
| 90 | 0.16747 | 0.12404 | 0.21554 | 0.14949 | 0.16575 | 0.13775 |
| 95 | 0.25659 | 0.21556 | 0.31025 | 0.23055 | 0.26108 | 0.23331 |
| 100 | 0.34551 | 0.31876 | 0.45905 | 0.37662 | 0.40918 | 0.35165 |
| 105 | 0.58527 | 0.56093 | 0.67923 | 0.61523 | 0.64127 | 0.60135 |
| 110 | 1.00000 | 1.00000 | 1.00000 | 1.00000 | 1.00000 | 1.00000 |

The mortality assumptions are based on mortality rates resulting from the most recent CalPERS Experience Study adopted by the CalPERS Board, first used in the June 30, 2009 valuation. For purposes of the post-retirement mortality rates, those revised rates include 5 years of projected on-going mortality improvement using Scale AA published by the Society of Actuaries until June 30, 2010. There is no margin for future mortality improvement beyond the valuation date.

On February 19, 2014 the CalPERS Board adopted new recommended demographic assumption based on the most recent CalPERS Experience Study. These new actuarial assumptions will be implemented for the first time in the June 30, 2014 valuation. For purposes of the post-retirement mortality rates, the revised rates include 20 years of projected on-going mortality improvement using Scale BB published by the Society of Actuaries.

**Marital Status**

For active members, a percentage who are married upon retirement is assumed according to member category as shown in the following table.

| Member Category | Percent Married |
|---|---|
| Miscellaneous Member | 85% |
| Local Police | 90% |
| Local Fire | 90% |
| Other Local Safety | 90% |
| School Police | 90% |

**Age of Spouse**

It is assumed that female spouses are 3 years younger than male spouses. This assumption is used for all plans.

**Terminated Members**

It is assumed that terminated members refund immediately if non-vested. Terminated members who are vested are assumed to follow the same service retirement pattern as active members but with a load to reflect the expected higher rates of retirement, especially at lower ages. The following table shows the load factors that are applied to the service retirement assumption for active members to obtain the service retirement pattern for separated vested members:

| Age | Load Factor |
|---|---|
| 50 | 450% |
| 51 | 250% |
| 52 through 56 | 200% |
| 57 through 60 | 150% |
| 61 through 64 | 125% |
| 65 and above | 100% (no change) |

**Termination with Refund**

Rates vary by entry age and service for Miscellaneous Plans. Rates vary by service for Safety Plans. See sample rates in tables below.

**Public Agency Miscellaneous**

| Duration of Service | Entry Age 20 | Entry Age 25 | Entry Age 30 | Entry Age 35 | Entry Age 40 | Entry Age 45 |
|---|---|---|---|---|---|---|
| 0 | 0.1742 | 0.1674 | 0.1606 | 0.1537 | 0.1468 | 0.1400 |
| 1 | 0.1545 | 0.1477 | 0.1409 | 0.1339 | 0.1271 | 0.1203 |
| 2 | 0.1348 | 0.1280 | 0.1212 | 0.1142 | 0.1074 | 0.1006 |
| 3 | 0.1151 | 0.1083 | 0.1015 | 0.0945 | 0.0877 | 0.0809 |
| 4 | 0.0954 | 0.0886 | 0.0818 | 0.0748 | 0.0680 | 0.0612 |
| 5 | 0.0212 | 0.0193 | 0.0174 | 0.0155 | 0.0136 | 0.0116 |
| 10 | 0.0138 | 0.0121 | 0.0104 | 0.0088 | 0.0071 | 0.0055 |
| 15 | 0.0060 | 0.0051 | 0.0042 | 0.0032 | 0.0023 | 0.0014 |
| 20 | 0.0037 | 0.0029 | 0.0021 | 0.0013 | 0.0005 | 0.0001 |
| 25 | 0.0017 | 0.0011 | 0.0005 | 0.0001 | 0.0001 | 0.0001 |
| 30 | 0.0005 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 |
| 35 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 |

**Public Agency Safety**

| Duration of Service | Fire | Police | County Peace Officer |
|---|---|---|---|
| 0 | 0.0710 | 0.1013 | 0.0997 |
| 1 | 0.0554 | 0.0636 | 0.0782 |
| 2 | 0.0398 | 0.0271 | 0.0566 |
| 3 | 0.0242 | 0.0258 | 0.0437 |
| 4 | 0.0218 | 0.0245 | 0.0414 |
| 5 | 0.0029 | 0.0086 | 0.0145 |
| 10 | 0.0009 | 0.0053 | 0.0089 |
| 15 | 0.0006 | 0.0027 | 0.0045 |
| 20 | 0.0005 | 0.0017 | 0.0020 |
| 25 | 0.0003 | 0.0012 | 0.0009 |
| 30 | 0.0003 | 0.0009 | 0.0006 |
| 35 | 0.0003 | 0.0009 | 0.0006 |

The Police Termination and Refund rates are also used for Public Agency Local Prosecutors, Other Safety, Local Sheriff and School Police.

**Schools**

| Duration of Service | Entry Age 20 | Entry Age 25 | Entry Age 30 | Entry Age 35 | Entry Age 40 | Entry Age 45 |
|---|---|---|---|---|---|---|
| 0 | 0.1730 | 0.1627 | 0.1525 | 0.1422 | 0.1319 | 0.1217 |
| 1 | 0.1585 | 0.1482 | 0.1379 | 0.1277 | 0.1174 | 0.1071 |
| 2 | 0.1440 | 0.1336 | 0.1234 | 0.1131 | 0.1028 | 0.0926 |
| 3 | 0.1295 | 0.1192 | 0.1089 | 0.0987 | 0.0884 | 0.0781 |
| 4 | 0.1149 | 0.1046 | 0.0944 | 0.0841 | 0.0738 | 0.0636 |
| 5 | 0.0278 | 0.0249 | 0.0221 | 0.0192 | 0.0164 | 0.0135 |
| 10 | 0.0172 | 0.0147 | 0.0122 | 0.0098 | 0.0074 | 0.0049 |
| 15 | 0.0115 | 0.0094 | 0.0074 | 0.0053 | 0.0032 | 0.0011 |
| 20 | 0.0073 | 0.0055 | 0.0038 | 0.0020 | 0.0002 | 0.0002 |
| 25 | 0.0037 | 0.0023 | 0.0010 | 0.0002 | 0.0002 | 0.0002 |
| 30 | 0.0015 | 0.0003 | 0.0002 | 0.0002 | 0.0002 | 0.0002 |
| 35 | 0.0002 | 0.0002 | 0.0002 | 0.0002 | 0.0002 | 0.0002 |

**Termination with Vested Benefits**

Rates vary by entry age and service for Miscellaneous Plans. Rates vary by service for Safety Plans. See sample rates in tables below.

**Public Agency Miscellaneous**

| Duration of Service | Entry Age 20 | Entry Age 25 | Entry Age 30 | Entry Age 35 | Entry Age 40 |
|---|---|---|---|---|---|
| 5 | 0.0656 | 0.0597 | 0.0537 | 0.0477 | 0.0418 |
| 10 | 0.0530 | 0.0466 | 0.0403 | 0.0339 | 0.0000 |
| 15 | 0.0443 | 0.0373 | 0.0305 | 0.0000 | 0.0000 |
| 20 | 0.0333 | 0.0261 | 0.0000 | 0.0000 | 0.0000 |
| 25 | 0.0212 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 30 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 35 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

**Public Agency Safety**

| Duration of Service | Fire | Police | County Peace Officer |
|---|---|---|---|
| 5 | 0.0162 | 0.0163 | 0.0265 |
| 10 | 0.0061 | 0.0126 | 0.0204 |
| 15 | 0.0058 | 0.0082 | 0.0130 |
| 20 | 0.0053 | 0.0065 | 0.0074 |
| 25 | 0.0047 | 0.0058 | 0.0043 |
| 30 | 0.0045 | 0.0056 | 0.0030 |
| 35 | 0.0000 | 0.0000 | 0.0000 |

- When a member is eligible to retire, the termination with vested benefits probability is set to zero.
- After termination with vested benefits, a miscellaneous member is assumed to retire at age 59 and a safety member at age 54.
- The Police Termination with vested benefits rates are also used for Public Agency Local Prosecutors, Other Safety, Local Sheriff and School Police.

**Schools**

| Duration of Service | Entry Age 20 | Entry Age 25 | Entry Age 30 | Entry Age 35 | Entry Age 40 |
|---|---|---|---|---|---|
| 5 | 0.0816 | 0.0733 | 0.0649 | 0.0566 | 0.0482 |
| 10 | 0.0629 | 0.0540 | 0.0450 | 0.0359 | 0.0000 |
| 15 | 0.0537 | 0.0440 | 0.0344 | 0.0000 | 0.0000 |
| 20 | 0.0420 | 0.0317 | 0.0000 | 0.0000 | 0.0000 |
| 25 | 0.0291 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 30 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 35 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

**Non-Industrial (Not Job-Related) Disability**

Rates vary by age and gender for Miscellaneous Plans. Rates vary by age and category for Safety Plans.

| | Miscellaneous | | Fire | Police | County Peace Officer | Schools | |
|---|---|---|---|---|---|---|---|
| Age | Male | Female | Male and Female | Male and Female | Male and Female | Male | Female |
| 20 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 |
| 25 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 |
| 30 | 0.0002 | 0.0002 | 0.0001 | 0.0002 | 0.0001 | 0.0002 | 0.0001 |
| 35 | 0.0006 | 0.0009 | 0.0001 | 0.0003 | 0.0004 | 0.0006 | 0.0004 |
| 40 | 0.0015 | 0.0016 | 0.0001 | 0.0004 | 0.0007 | 0.0014 | 0.0009 |
| 45 | 0.0025 | 0.0024 | 0.0002 | 0.0005 | 0.0013 | 0.0028 | 0.0017 |
| 50 | 0.0033 | 0.0031 | 0.0005 | 0.0008 | 0.0018 | 0.0044 | 0.0030 |
| 55 | 0.0037 | 0.0031 | 0.0010 | 0.0013 | 0.0010 | 0.0049 | 0.0034 |
| 60 | 0.0038 | 0.0025 | 0.0015 | 0.0020 | 0.0006 | 0.0043 | 0.0024 |

- The Miscellaneous Non-Industrial Disability rates are used for Local Prosecutors.
- The Police Non-Industrial Disability rates are also used for Other Safety, Local Sheriff and School Police.

**Industrial (Job-Related) Disability**

Rates vary by age and category.

| Age | Fire | Police | County Peace Officer |
|---|---|---|---|
| 20 | 0.0002 | 0.0007 | 0.0003 |
| 25 | 0.0012 | 0.0032 | 0.0015 |
| 30 | 0.0025 | 0.0064 | 0.0031 |
| 35 | 0.0037 | 0.0097 | 0.0046 |
| 40 | 0.0049 | 0.0129 | 0.0063 |
| 45 | 0.0061 | 0.0161 | 0.0078 |
| 50 | 0.0074 | 0.0192 | 0.0101 |
| 55 | 0.0721 | 0.0668 | 0.0173 |
| 60 | 0.0721 | 0.0668 | 0.0173 |

- The Police Industrial Disability rates are also used for Local Sheriff and Other Safety.
- Fifty Percent of the Police Industrial Disability rates are used for School Police.
- One Percent of the Police Industrial Disability rates are used for Local Prosecutors.
- Normally, rates are zero for Miscellaneous Plans unless the agency has specifically contracted for Industrial Disability benefits. If so, each miscellaneous non-industrial disability rate will be split into two components: 50 percent will become the Non-Industrial Disability rate and 50 percent will become the Industrial Disability rate.

**Service Retirement**

Retirement rates vary by age, service, and formula, except for the safety ½ @ 55 and 2% @ 55 formulas, where retirement rates vary by age only.

**Service Retirement**

**Public Agency Miscellaneous 1.5% @ 65**

| | Duration of Service | | | | | |
|---|---|---|---|---|---|---|
| Age | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.008 | 0.011 | 0.013 | 0.015 | 0.017 | 0.019 |
| 51 | 0.007 | 0.010 | 0.012 | 0.013 | 0.015 | 0.017 |
| 52 | 0.010 | 0.014 | 0.017 | 0.019 | 0.021 | 0.024 |
| 53 | 0.008 | 0.012 | 0.015 | 0.017 | 0.019 | 0.022 |
| 54 | 0.012 | 0.016 | 0.019 | 0.022 | 0.025 | 0.028 |
| 55 | 0.018 | 0.025 | 0.031 | 0.035 | 0.038 | 0.043 |
| 56 | 0.015 | 0.021 | 0.025 | 0.029 | 0.032 | 0.036 |
| 57 | 0.020 | 0.028 | 0.033 | 0.038 | 0.043 | 0.048 |
| 58 | 0.024 | 0.033 | 0.040 | 0.046 | 0.052 | 0.058 |
| 59 | 0.028 | 0.039 | 0.048 | 0.054 | 0.060 | 0.067 |
| 60 | 0.049 | 0.069 | 0.083 | 0.094 | 0.105 | 0.118 |
| 61 | 0.062 | 0.087 | 0.106 | 0.120 | 0.133 | 0.150 |
| 62 | 0.104 | 0.146 | 0.177 | 0.200 | 0.223 | 0.251 |
| 63 | 0.099 | 0.139 | 0.169 | 0.191 | 0.213 | 0.239 |
| 64 | 0.097 | 0.136 | 0.165 | 0.186 | 0.209 | 0.233 |
| 65 | 0.140 | 0.197 | 0.240 | 0.271 | 0.302 | 0.339 |
| 66 | 0.092 | 0.130 | 0.157 | 0.177 | 0.198 | 0.222 |
| 67 | 0.129 | 0.181 | 0.220 | 0.249 | 0.277 | 0.311 |
| 68 | 0.092 | 0.129 | 0.156 | 0.177 | 0.197 | 0.221 |
| 69 | 0.092 | 0.130 | 0.158 | 0.178 | 0.199 | 0.224 |
| 70 | 0.103 | 0.144 | 0.175 | 0.198 | 0.221 | 0.248 |

**Public Agency Miscellaneous 2% @ 60**

| | Duration of Service | | | | | |
|---|---|---|---|---|---|---|
| Age | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.011 | 0.015 | 0.018 | 0.021 | 0.023 | 0.026 |
| 51 | 0.009 | 0.013 | 0.016 | 0.018 | 0.020 | 0.023 |
| 52 | 0.013 | 0.018 | 0.022 | 0.025 | 0.028 | 0.031 |
| 53 | 0.011 | 0.016 | 0.019 | 0.022 | 0.025 | 0.028 |
| 54 | 0.015 | 0.021 | 0.025 | 0.028 | 0.032 | 0.036 |
| 55 | 0.023 | 0.032 | 0.039 | 0.044 | 0.049 | 0.055 |
| 56 | 0.019 | 0.027 | 0.032 | 0.037 | 0.041 | 0.046 |
| 57 | 0.025 | 0.035 | 0.042 | 0.048 | 0.054 | 0.060 |
| 58 | 0.030 | 0.042 | 0.051 | 0.058 | 0.065 | 0.073 |
| 59 | 0.035 | 0.049 | 0.060 | 0.068 | 0.076 | 0.085 |
| 60 | 0.062 | 0.087 | 0.105 | 0.119 | 0.133 | 0.149 |
| 61 | 0.079 | 0.110 | 0.134 | 0.152 | 0.169 | 0.190 |
| 62 | 0.132 | 0.186 | 0.225 | 0.255 | 0.284 | 0.319 |
| 63 | 0.126 | 0.178 | 0.216 | 0.244 | 0.272 | 0.305 |
| 64 | 0.122 | 0.171 | 0.207 | 0.234 | 0.262 | 0.293 |
| 65 | 0.173 | 0.243 | 0.296 | 0.334 | 0.373 | 0.418 |
| 66 | 0.114 | 0.160 | 0.194 | 0.219 | 0.245 | 0.274 |
| 67 | 0.159 | 0.223 | 0.271 | 0.307 | 0.342 | 0.384 |
| 68 | 0.113 | 0.159 | 0.193 | 0.218 | 0.243 | 0.273 |
| 69 | 0.114 | 0.161 | 0.195 | 0.220 | 0.246 | 0.276 |
| 70 | 0.127 | 0.178 | 0.216 | 0.244 | 0.273 | 0.306 |

**Service Retirement**

**Public Agency Miscellaneous 2% @ 55**

| | Duration of Service | | | | | |
|---|---|---|---|---|---|---|
| Age | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.015 | 0.020 | 0.024 | 0.029 | 0.033 | 0.039 |
| 51 | 0.013 | 0.016 | 0.020 | 0.024 | 0.027 | 0.033 |
| 52 | 0.014 | 0.018 | 0.022 | 0.027 | 0.030 | 0.036 |
| 53 | 0.017 | 0.022 | 0.027 | 0.032 | 0.037 | 0.043 |
| 54 | 0.027 | 0.034 | 0.041 | 0.049 | 0.056 | 0.067 |
| 55 | 0.050 | 0.064 | 0.078 | 0.094 | 0.107 | 0.127 |
| 56 | 0.045 | 0.057 | 0.069 | 0.083 | 0.095 | 0.113 |
| 57 | 0.048 | 0.061 | 0.074 | 0.090 | 0.102 | 0.122 |
| 58 | 0.052 | 0.066 | 0.080 | 0.097 | 0.110 | 0.131 |
| 59 | 0.060 | 0.076 | 0.092 | 0.111 | 0.127 | 0.151 |
| 60 | 0.072 | 0.092 | 0.112 | 0.134 | 0.153 | 0.182 |
| 61 | 0.089 | 0.113 | 0.137 | 0.165 | 0.188 | 0.224 |
| 62 | 0.128 | 0.162 | 0.197 | 0.237 | 0.270 | 0.322 |
| 63 | 0.129 | 0.164 | 0.199 | 0.239 | 0.273 | 0.325 |
| 64 | 0.116 | 0.148 | 0.180 | 0.216 | 0.247 | 0.294 |
| 65 | 0.174 | 0.221 | 0.269 | 0.323 | 0.369 | 0.439 |
| 66 | 0.135 | 0.171 | 0.208 | 0.250 | 0.285 | 0.340 |
| 67 | 0.133 | 0.169 | 0.206 | 0.247 | 0.282 | 0.336 |
| 68 | 0.118 | 0.150 | 0.182 | 0.219 | 0.250 | 0.297 |
| 69 | 0.116 | 0.147 | 0.179 | 0.215 | 0.246 | 0.293 |
| 70 | 0.138 | 0.176 | 0.214 | 0.257 | 0.293 | 0.349 |

**Public Agency Miscellaneous 2.5% @ 55**

| | Duration of Service | | | | | |
|---|---|---|---|---|---|---|
| Age | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.026 | 0.033 | 0.040 | 0.048 | 0.055 | 0.062 |
| 51 | 0.021 | 0.026 | 0.032 | 0.038 | 0.043 | 0.049 |
| 52 | 0.021 | 0.026 | 0.032 | 0.038 | 0.043 | 0.049 |
| 53 | 0.026 | 0.033 | 0.040 | 0.048 | 0.055 | 0.062 |
| 54 | 0.043 | 0.054 | 0.066 | 0.078 | 0.089 | 0.101 |
| 55 | 0.088 | 0.112 | 0.136 | 0.160 | 0.184 | 0.208 |
| 56 | 0.055 | 0.070 | 0.085 | 0.100 | 0.115 | 0.130 |
| 57 | 0.061 | 0.077 | 0.094 | 0.110 | 0.127 | 0.143 |
| 58 | 0.072 | 0.091 | 0.111 | 0.130 | 0.150 | 0.169 |
| 59 | 0.083 | 0.105 | 0.128 | 0.150 | 0.173 | 0.195 |
| 60 | 0.088 | 0.112 | 0.136 | 0.160 | 0.184 | 0.208 |
| 61 | 0.083 | 0.105 | 0.128 | 0.150 | 0.173 | 0.195 |
| 62 | 0.121 | 0.154 | 0.187 | 0.220 | 0.253 | 0.286 |
| 63 | 0.105 | 0.133 | 0.162 | 0.190 | 0.219 | 0.247 |
| 64 | 0.105 | 0.133 | 0.162 | 0.190 | 0.219 | 0.247 |
| 65 | 0.143 | 0.182 | 0.221 | 0.260 | 0.299 | 0.338 |
| 66 | 0.105 | 0.133 | 0.162 | 0.190 | 0.219 | 0.247 |
| 67 | 0.105 | 0.133 | 0.162 | 0.190 | 0.219 | 0.247 |
| 68 | 0.105 | 0.133 | 0.162 | 0.190 | 0.219 | 0.247 |
| 69 | 0.105 | 0.133 | 0.162 | 0.190 | 0.219 | 0.247 |
| 70 | 0.125 | 0.160 | 0.194 | 0.228 | 0.262 | 0.296 |

**Service Retirement**

**Public Agency Miscellaneous 2.7% @ 55**

| | Duration of Service | | | | | |
|---|---|---|---|---|---|---|
| Age | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.028 | 0.035 | 0.043 | 0.050 | 0.058 | 0.065 |
| 51 | 0.022 | 0.028 | 0.034 | 0.040 | 0.046 | 0.052 |
| 52 | 0.022 | 0.028 | 0.034 | 0.040 | 0.046 | 0.052 |
| 53 | 0.028 | 0.035 | 0.043 | 0.050 | 0.058 | 0.065 |
| 54 | 0.044 | 0.056 | 0.068 | 0.080 | 0.092 | 0.104 |
| 55 | 0.091 | 0.116 | 0.140 | 0.165 | 0.190 | 0.215 |
| 56 | 0.061 | 0.077 | 0.094 | 0.110 | 0.127 | 0.143 |
| 57 | 0.063 | 0.081 | 0.098 | 0.115 | 0.132 | 0.150 |
| 58 | 0.074 | 0.095 | 0.115 | 0.135 | 0.155 | 0.176 |
| 59 | 0.083 | 0.105 | 0.128 | 0.150 | 0.173 | 0.195 |
| 60 | 0.088 | 0.112 | 0.136 | 0.160 | 0.184 | 0.208 |
| 61 | 0.085 | 0.109 | 0.132 | 0.155 | 0.178 | 0.202 |
| 62 | 0.124 | 0.158 | 0.191 | 0.225 | 0.259 | 0.293 |
| 63 | 0.107 | 0.137 | 0.166 | 0.195 | 0.224 | 0.254 |
| 64 | 0.107 | 0.137 | 0.166 | 0.195 | 0.224 | 0.254 |
| 65 | 0.146 | 0.186 | 0.225 | 0.265 | 0.305 | 0.345 |
| 66 | 0.107 | 0.137 | 0.166 | 0.195 | 0.224 | 0.254 |
| 67 | 0.107 | 0.137 | 0.166 | 0.195 | 0.224 | 0.254 |
| 68 | 0.107 | 0.137 | 0.166 | 0.195 | 0.224 | 0.254 |
| 69 | 0.107 | 0.137 | 0.166 | 0.195 | 0.224 | 0.254 |
| 70 | 0.129 | 0.164 | 0.199 | 0.234 | 0.269 | 0.304 |

**Public Agency Miscellaneous 3% @ 60**

| | Duration of Service | | | | | |
|---|---|---|---|---|---|---|
| Age | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.026 | 0.033 | 0.040 | 0.048 | 0.055 | 0.062 |
| 51 | 0.021 | 0.026 | 0.032 | 0.038 | 0.043 | 0.049 |
| 52 | 0.019 | 0.025 | 0.030 | 0.035 | 0.040 | 0.046 |
| 53 | 0.025 | 0.032 | 0.038 | 0.045 | 0.052 | 0.059 |
| 54 | 0.039 | 0.049 | 0.060 | 0.070 | 0.081 | 0.091 |
| 55 | 0.083 | 0.105 | 0.128 | 0.150 | 0.173 | 0.195 |
| 56 | 0.055 | 0.070 | 0.085 | 0.100 | 0.115 | 0.130 |
| 57 | 0.061 | 0.077 | 0.094 | 0.110 | 0.127 | 0.143 |
| 58 | 0.072 | 0.091 | 0.111 | 0.130 | 0.150 | 0.169 |
| 59 | 0.080 | 0.102 | 0.123 | 0.145 | 0.167 | 0.189 |
| 60 | 0.094 | 0.119 | 0.145 | 0.170 | 0.196 | 0.221 |
| 61 | 0.088 | 0.112 | 0.136 | 0.160 | 0.184 | 0.208 |
| 62 | 0.127 | 0.161 | 0.196 | 0.230 | 0.265 | 0.299 |
| 63 | 0.110 | 0.140 | 0.170 | 0.200 | 0.230 | 0.260 |
| 64 | 0.110 | 0.140 | 0.170 | 0.200 | 0.230 | 0.260 |
| 65 | 0.149 | 0.189 | 0.230 | 0.270 | 0.311 | 0.351 |
| 66 | 0.110 | 0.140 | 0.170 | 0.200 | 0.230 | 0.260 |
| 67 | 0.110 | 0.140 | 0.170 | 0.200 | 0.230 | 0.260 |
| 68 | 0.110 | 0.140 | 0.170 | 0.200 | 0.230 | 0.260 |
| 69 | 0.110 | 0.140 | 0.170 | 0.200 | 0.230 | 0.260 |
| 70 | 0.132 | 0.168 | 0.204 | 0.240 | 0.276 | 0.312 |

**Service Retirement**

**Public Agency Miscellaneous 2% @ 62**

| | Duration of Service | | | | | |
|---|---|---|---|---|---|---|
| Age | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 51 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 52 | 0.0103 | 0.0132 | 0.0160 | 0.0188 | 0.0216 | 0.0244 |
| 53 | 0.0131 | 0.0167 | 0.0202 | 0.0238 | 0.0273 | 0.0309 |
| 54 | 0.0213 | 0.0272 | 0.0330 | 0.0388 | 0.0446 | 0.0504 |
| 55 | 0.0440 | 0.0560 | 0.0680 | 0.0800 | 0.0920 | 0.1040 |
| 56 | 0.0303 | 0.0385 | 0.0468 | 0.0550 | 0.0633 | 0.0715 |
| 57 | 0.0363 | 0.0462 | 0.0561 | 0.0660 | 0.0759 | 0.0858 |
| 58 | 0.00465 | 0.0592 | 0.0718 | 0.0845 | 0.0972 | 0.1099 |
| 59 | 0.0578 | 0.0735 | 0.0893 | 0.1050 | 0.1208 | 0.1365 |
| 60 | 0.0616 | 0.0784 | 0.0952 | 0.1120 | 0.1288 | 0.1456 |
| 61 | 0.0888 | 0.0788 | 0.0956 | 0.1125 | 0.1294 | 0.1463 |
| 62 | 0.0941 | 0.1232 | 0.1496 | 0.1760 | 0.2024 | 0.2288 |
| 63 | 0.1287 | 0.1131 | 0.1373 | 0.1615 | 0.1857 | 0.2100 |
| 64 | 0.1045 | 0.1197 | 0.1454 | 0.1710 | 0.1967 | 0.2223 |
| 65 | 0.1045 | 0.1638 | 0.1989 | 0.2340 | 0.2691 | 0.3042 |
| 66 | 0.1045 | 0.1330 | 0.1615 | 0.1900 | 0.2185 | 0.2470 |
| 67 | 0.1045 | 0.1330 | 0.1615 | 0.1900 | 0.2185 | 0.2470 |
| 68 | 0.1045 | 0.1330 | 0.1615 | 0.1900 | 0.2185 | 0.2470 |
| 69 | 0.1045 | 0.1330 | 0.1615 | 0.1900 | 0.2185 | 0.2470 |
| 70 | 0.1254 | 0.1596 | 0.1938 | 0.2280 | 0.2622 | 0.9640 |

**Service Retirement**

**Public Agency Fire ½ @ 55 and 2% @ 55**

| Age | Rate | Age | Rate |
|---|---|---|---|
| 50 | 0.01588 | 56 | 0.11079 |
| 51 | 0.00000 | 57 | 0.00000 |
| 52 | 0.03442 | 58 | 0.09499 |
| 53 | 0.01990 | 59 | 0.04409 |
| 54 | 0.04132 | 60 | 1.00000 |
| 55 | 0.07513 | | |

**Public Agency Police ½ @ 55 and 2% @ 55**

| Age | Rate | Age | Rate |
|---|---|---|---|
| 50 | 0.02552 | 56 | 0.06921 |
| 51 | 0.00000 | 57 | 0.05113 |
| 52 | 0.01637 | 58 | 0.07241 |
| 53 | 0.02717 | 59 | 0.07043 |
| 54 | 0.00949 | 60 | 1.00000 |
| 55 | 0.16674 | | |

**Service Retirement**

**Public Agency Police 2% @ 50**

| | Duration of Service | | | | | |
|---|---|---|---|---|---|---|
| Age | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.014 | 0.014 | 0.014 | 0.014 | 0.025 | 0.045 |
| 51 | 0.012 | 0.012 | 0.012 | 0.012 | 0.023 | 0.040 |
| 52 | 0.026 | 0.026 | 0.026 | 0.026 | 0.048 | 0.086 |
| 53 | 0.052 | 0.052 | 0.052 | 0.052 | 0.096 | 0.171 |
| 54 | 0.070 | 0.070 | 0.070 | 0.070 | 0.128 | 0.227 |
| 55 | 0.090 | 0.090 | 0.090 | 0.090 | 0.165 | 0.293 |
| 56 | 0.064 | 0.064 | 0.064 | 0.064 | 0.117 | 0.208 |
| 57 | 0.071 | 0.071 | 0.071 | 0.071 | 0.130 | 0.232 |
| 58 | 0.063 | 0.063 | 0.063 | 0.063 | 0.115 | 0.205 |
| 59 | 0.140 | 0.140 | 0.140 | 0.140 | 0.174 | 0.254 |
| 60 | 0.140 | 0.140 | 0.140 | 0.140 | 0.172 | 0.251 |
| 61 | 0.140 | 0.140 | 0.140 | 0.140 | 0.172 | 0.251 |
| 62 | 0.140 | 0.140 | 0.140 | 0.140 | 0.172 | 0.251 |
| 63 | 0.140 | 0.140 | 0.140 | 0.140 | 0.172 | 0.251 |
| 64 | 0.140 | 0.140 | 0.140 | 0.140 | 0.172 | 0.251 |
| 65 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

- These rates also apply to Local Prosecutors, Local Sheriff, School Police and Other Safety.

**Service Retirement**

**Public Agency Fire 2% @ 50**

| | Duration of Service | | | | | |
|---|---|---|---|---|---|---|
| Age | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.007 | 0.007 | 0.007 | 0.007 | 0.010 | 0.015 |
| 51 | 0.008 | 0.008 | 0.008 | 0.008 | 0.013 | 0.019 |
| 52 | 0.017 | 0.017 | 0.017 | 0.017 | 0.027 | 0.040 |
| 53 | 0.047 | 0.047 | 0.047 | 0.047 | 0.072 | 0.107 |
| 54 | 0.064 | 0.064 | 0.064 | 0.064 | 0.098 | 0.147 |
| 55 | 0.087 | 0.087 | 0.087 | 0.087 | 0.134 | 0.200 |
| 56 | 0.078 | 0.078 | 0.078 | 0.078 | 0.120 | 0.180 |
| 57 | 0.090 | 0.090 | 0.090 | 0.090 | 0.139 | 0.208 |
| 58 | 0.079 | 0.079 | 0.079 | 0.079 | 0.122 | 0.182 |
| 59 | 0.073 | 0.073 | 0.073 | 0.073 | 0.112 | 0.168 |
| 60 | 0.114 | 0.114 | 0.114 | 0.114 | 0.175 | 0.262 |
| 61 | 0.114 | 0.114 | 0.114 | 0.114 | 0.175 | 0.262 |
| 62 | 0.114 | 0.114 | 0.114 | 0.114 | 0.175 | 0.262 |
| 63 | 0.114 | 0.114 | 0.114 | 0.114 | 0.175 | 0.262 |
| 64 | 0.114 | 0.114 | 0.114 | 0.114 | 0.175 | 0.262 |
| 65 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

**Service Retirement**

**Public Agency Police 3% @ 55**

| | Duration of Service | | | | | |
|---|---|---|---|---|---|---|
| Age | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.019 | 0.019 | 0.019 | 0.019 | 0.040 | 0.060 |
| 51 | 0.024 | 0.024 | 0.024 | 0.024 | 0.049 | 0.074 |
| 52 | 0.024 | 0.024 | 0.024 | 0.024 | 0.051 | 0.077 |
| 53 | 0.059 | 0.059 | 0.059 | 0.059 | 0.121 | 0.183 |
| 54 | 0.069 | 0.069 | 0.069 | 0.069 | 0.142 | 0.215 |
| 55 | 0.116 | 0.116 | 0.116 | 0.116 | 0.240 | 0.363 |
| 56 | 0.076 | 0.076 | 0.076 | 0.076 | 0.156 | 0.236 |
| 57 | 0.058 | 0.058 | 0.058 | 0.058 | 0.120 | 0.181 |
| 58 | 0.076 | 0.076 | 0.076 | 0.076 | 0.157 | 0.237 |
| 59 | 0.094 | 0.094 | 0.094 | 0.094 | 0.193 | 0.292 |
| 60 | 0.141 | 0.141 | 0.141 | 0.141 | 0.290 | 0.438 |
| 61 | 0.094 | 0.094 | 0.094 | 0.094 | 0.193 | 0.292 |
| 62 | 0.118 | 0.118 | 0.118 | 0.118 | 0.241 | 0.365 |
| 63 | 0.094 | 0.094 | 0.094 | 0.094 | 0.193 | 0.292 |
| 64 | 0.094 | 0.094 | 0.094 | 0.094 | 0.193 | 0.292 |
| 65 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

- These rates also apply to Local Prosecutors, Local Sheriff, School Police and Other Safety.

**Service Retirement**

**Public Agency Fire 3% @ 55**

| | Duration of Service | | | | | |
|---|---|---|---|---|---|---|
| Age | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.012 | 0.012 | 0.012 | 0.018 | 0.028 | 0.033 |
| 51 | 0.008 | 0.008 | 0.008 | 0.012 | 0.019 | 0.022 |
| 52 | 0.018 | 0.018 | 0.018 | 0.027 | 0.042 | 0.050 |
| 53 | 0.043 | 0.043 | 0.043 | 0.062 | 0.098 | 0.114 |
| 54 | 0.057 | 0.057 | 0.057 | 0.083 | 0.131 | 0.152 |
| 55 | 0.092 | 0.092 | 0.092 | 0.134 | 0.211 | 0.246 |
| 56 | 0.081 | 0.081 | 0.081 | 0.118 | 0.187 | 0.218 |
| 57 | 0.100 | 0.100 | 0.100 | 0.146 | 0.230 | 0.268 |
| 58 | 0.081 | 0.081 | 0.081 | 0.119 | 0.187 | 0.219 |
| 59 | 0.078 | 0.078 | 0.078 | 0.113 | 0.178 | 0.208 |
| 60 | 0.117 | 0.117 | 0.117 | 0.170 | 0.267 | 0.312 |
| 61 | 0.078 | 0.078 | 0.078 | 0.113 | 0.178 | 0.208 |
| 62 | 0.098 | 0.098 | 0.098 | 0.141 | 0.223 | 0.260 |
| 63 | 0.078 | 0.078 | 0.078 | 0.113 | 0.178 | 0.208 |
| 64 | 0.078 | 0.078 | 0.078 | 0.113 | 0.178 | 0.208 |
| 65 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

**Service Retirement**

**Public Agency Police 2% @ 57**

| | Duration of Service | | | | | |
|---|---|---|---|---|---|---|
| Age | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.0110 | 0.0110 | 0.0110 | 0.0110 | 0.0202 | 0.0361 |
| 51 | 0.0086 | 0.0086 | 0.0086 | 0.0086 | 0.0158 | 0.0281 |
| 52 | 0.0183 | 0.0183 | 0.0183 | 0.0183 | 0.0336 | 0.0599 |
| 53 | 0.0366 | 0.0366 | 0.0366 | 0.0366 | 0.0670 | 0.1194 |
| 54 | 0.0488 | 0.0488 | 0.0488 | 0.0488 | 0.0893 | 0.1592 |
| 55 | 0.0629 | 0.0629 | 0.0629 | 0.0629 | 0.1152 | 0.2052 |
| 56 | 0.0447 | 0.0447 | 0.0447 | 0.0447 | 0.0816 | 0.1455 |
| 57 | 0.0640 | 0.0640 | 0.0640 | 0.0640 | 0.1170 | 0.2086 |
| 58 | 0.0471 | 0.0471 | 0.0471 | 0.0471 | 0.0862 | 0.1537 |
| 59 | 0.1047 | 0.1047 | 0.1047 | 0.1047 | 0.1301 | 0.1908 |
| 60 | 0.1047 | 0.1047 | 0.1047 | 0.1047 | 0.1289 | 0.1880 |
| 61 | 0.1047 | 0.1047 | 0.1047 | 0.1047 | 0.1289 | 0.1880 |
| 62 | 0.1047 | 0.1047 | 0.1047 | 0.1047 | 0.1289 | 0.1880 |
| 63 | 0.1047 | 0.1047 | 0.1047 | 0.1047 | 0.1289 | 0.1880 |
| 64 | 0.1047 | 0.1047 | 0.1047 | 0.1047 | 0.1289 | 0.1880 |
| 65 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.000 |

- These rates also apply to Local Prosecutors, Local Sheriff, School Police and Other Safety.

**Service Retirement**

**Public Agency Fire 2% @ 57**

| | Duration of Service | | | | | |
|---|---|---|---|---|---|---|
| Age | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.0052 | 0.0052 | 0.0052 | 0.0052 | 0.0081 | 0.0121 |
| 51 | 0.0057 | 0.0057 | 0.0057 | 0.0057 | 0.0088 | 0.0131 |
| 52 | 0.0121 | 0.0121 | 0.0121 | 0.0121 | 0.0187 | 0.0280 |
| 53 | 0.0326 | 0.0326 | 0.0326 | 0.0326 | 0.0501 | 0.0750 |
| 54 | 0.0447 | 0.0447 | 0.0447 | 0.0447 | 0.0688 | 0.1030 |
| 55 | 0.0608 | 0.0608 | 0.0608 | 0.0608 | 0.0935 | 01400 |
| 56 | 0.0545 | 0.0545 | 0.0545 | 0.0545 | 0.0840 | 0.1257 |
| 57 | 0.0811 | 0.0811 | 0.0811 | 0.0811 | 0.01248 | 0.1869 |
| 58 | 0.0593 | 0.0593 | 0.0593 | 0.0593 | 0.0913 | 0.1366 |
| 59 | 0.0547 | 0.0547 | 0.0547 | 0.0547 | 0.0842 | 0.1261 |
| 60 | 0.0851 | 0.0851 | 0.0851 | 0.0851 | 0.1310 | 0.1961 |
| 61 | 0.0852 | 0.0852 | 0.0852 | 0.0852 | 0.1312 | 0.1964 |
| 62 | 0.0852 | 0.0852 | 0.0852 | 0.0852 | 0.1312 | 0.1964 |
| 63 | 0.0852 | 0.0852 | 0.0852 | 0.0852 | 0.1312 | 0.1964 |
| 64 | 0.0852 | 0.0852 | 0.0852 | 0.0852 | 0.1312 | 0.1964 |
| 65 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |

**Service Retirement**

**Public Agency Police 2.5% @ 57**

| | Duration of Service | | | | | |
|---|---|---|---|---|---|---|
| Age | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.0138 | 0.0138 | 0.0138 | 0.0138 | 0.0253 | 0.0451 |
| 51 | 0.0117 | 0.0117 | 0.0117 | 0.0117 | 0.0215 | 0.0382 |
| 52 | 0.0249 | 0.0249 | 0.0249 | 0.0249 | 0.0456 | 0.0812 |
| 53 | 0.0471 | 0.0471 | 0.0471 | 0.0471 | 0.0861 | 0.1535 |
| 54 | 0.0627 | 0.0627 | 0.0627 | 0.0627 | 0.1148 | 0.2047 |
| 55 | 0.0764 | 0.0764 | 0.0764 | 0.0764 | 0.1398 | 0.2492 |
| 56 | 0.0542 | 0.0542 | 0.0542 | 0.0542 | 0.0991 | 0.1767 |
| 57 | 0.0711 | 0.0711 | 0.0711 | 0.0711 | 0.1300 | 0.2318 |
| 58 | 0.0565 | 0.0565 | 0.0565 | 0.0565 | 0.1034 | 0.1844 |
| 59 | 0.1256 | 0.1256 | 0.1256 | 0.1256 | 0.1562 | 0.2290 |
| 60 | 0.1256 | 0.1256 | 0.1256 | 0.1256 | 0.1547 | 0.2255 |
| 61 | 0.1256 | 0.1256 | 0.1256 | 0.1256 | 0.1547 | 0.2255 |
| 62 | 0.1256 | 0.1256 | 0.1256 | 0.1256 | 0.1547 | 0.2255 |
| 63 | 0.1256 | 0.1256 | 0.1256 | 0.1256 | 0.1547 | 0.2255 |
| 64 | 0.1256 | 0.1256 | 0.1256 | 0.1256 | 0.1547 | 0.2255 |
| 65 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.000 |

- These rates also apply to Local Prosecutors, Local Sheriff, School Police and Other Safety.

**Service Retirement**

**Public Agency Fire 2.5% @ 57**

| | Duration of Service | | | | | |
|---|---|---|---|---|---|---|
| Age | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.0065 | 0.0065 | 0.0065 | 0.0065 | 0.0101 | 0.0151 |
| 51 | 0.0077 | 0.0077 | 0.0077 | 0.0077 | 0.0119 | 0.0178 |
| 52 | 0.0164 | 0.0164 | 0.0164 | 0.0164 | 0.0254 | 0.0380 |
| 53 | 0.0419 | 0.0419 | 0.0419 | 0.0419 | 0.0644 | 0.0965 |
| 54 | 0.0574 | 0.0574 | 0.0574 | 0.0574 | 0.0885 | 0.1324 |
| 55 | 0.0738 | 0.0738 | 0.0738 | 0.0738 | 0.1136 | 01700 |
| 56 | 0.0662 | 0.0662 | 0.0662 | 0.0662 | 0.1020 | 0.2077 |
| 57 | 0.0901 | 0.0901 | 0.0901 | 0.0901 | 0.1387 | 0.1639 |
| 58 | 0.0711 | 0.0711 | 0.0711 | 0.0711 | 0.1095 | 0.1513 |
| 59 | 0.0656 | 0.0656 | 0.0656 | 0.0656 | 0.1011 | 0.2354 |
| 60 | 0.1022 | 0.1022 | 0.1022 | 0.1022 | 0.1572 | 0.2356 |
| 61 | 0.1022 | 0.1022 | 0.1022 | 0.1022 | 0.1574 | 0.2356 |
| 62 | 0.1022 | 0.1022 | 0.1022 | 0.1022 | 0.1574 | 0.2356 |
| 63 | 0.1022 | 0.1022 | 0.1022 | 0.1022 | 0.1574 | 0.2356 |
| 64 | 0.1022 | 0.1022 | 0.1022 | 0.1022 | 0.1574 | 0.2356 |
| 65 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |

**Service Retirement**

**Public Agency Police 2.7% @ 57**

| | Duration of Service | | | | | |
|---|---|---|---|---|---|---|
| Age | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.0138 | 0.0138 | 0.0138 | 0.0138 | 0.0253 | 0.0451 |
| 51 | 0.0123 | 0.0123 | 0.0123 | 0.0123 | 0.0226 | 0.0402 |
| 52 | 0.0249 | 0.0249 | 0.0249 | 0.0249 | 0.0456 | 0.0812 |
| 53 | 0.0497 | 0.0497 | 0.0497 | 0.0497 | 0.0909 | 0.1621 |
| 54 | 0.0662 | 0.0662 | 0.0662 | 0.0662 | 0.1211 | 0.2160 |
| 55 | 0.0854 | 0.0854 | 0.0854 | 0.0854 | 0.1563 | 0.2785 |
| 56 | 0.0606 | 0.0606 | 0.0606 | 0.0606 | 0.1108 | 0.1975 |
| 57 | 0.0711 | 0.0711 | 0.0711 | 0.0711 | 0.1300 | 0.2318 |
| 58 | 0.0628 | 0.0628 | 0.0628 | 0.0628 | 0.1149 | 0.2049 |
| 59 | 0.1396 | 0.1396 | 0.1396 | 0.1396 | 0.1735 | 0.2544 |
| 60 | 0.1396 | 0.1396 | 0.1396 | 0.1396 | 0.1719 | 0.2506 |
| 61 | 0.1396 | 0.1396 | 0.1396 | 0.1396 | 0.1719 | 0.2506 |
| 62 | 0.1396 | 0.1396 | 0.1396 | 0.1396 | 0.1719 | 0.2506 |
| 63 | 0.1396 | 0.1396 | 0.1396 | 0.1396 | 0.1719 | 0.2506 |
| 64 | 0.1396 | 0.1396 | 0.1396 | 0.1396 | 0.1719 | 0.2506 |
| 65 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |

- These rates also apply to Local Prosecutors, Local Sheriff, School Police and Other Safety.

**Service Retirement**

**Public Agency Fire 2.7% @ 57**

| | Duration of Service | | | | | |
|---|---|---|---|---|---|---|
| Age | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.0065 | 0.0065 | 0.0065 | 0.0065 | 0.0101 | 0.0151 |
| 51 | 0.0081 | 0.0081 | 0.0081 | 0.0081 | 0.0125 | 0.0187 |
| 52 | 0.0164 | 0.0164 | 0.0164 | 0.0164 | 0.0254 | 0.0380 |
| 53 | 0.0442 | 0.0442 | 0.0442 | 0.0442 | 0.0680 | 0.1018 |
| 54 | 0.0606 | 0.0606 | 0.0606 | 0.0606 | 0.0934 | 0.1397 |
| 55 | 0.0825 | 0.0825 | 0.0825 | 0.0825 | 0.1269 | 01900 |
| 56 | 0.0740 | 0.0740 | 0.0740 | 0.0740 | 0.1140 | 0.1706 |
| 57 | 0.0901 | 0.0901 | 0.0901 | 0.0901 | 0.1387 | 0.2077 |
| 58 | 0.0790 | 0.0790 | 0.0790 | 0.0790 | 0.1217 | 0.1821 |
| 59 | 0.0729 | 0.0729 | 0.0729 | 0.0729 | 0.1123 | 0.1681 |
| 60 | 0.1135 | 0.1135 | 0.1135 | 0.1135 | 0.1747 | 0.2615 |
| 61 | 0.1136 | 0.1136 | 0.1136 | 0.1136 | 0.1749 | 0.2618 |
| 62 | 0.1136 | 0.1136 | 0.1136 | 0.1136 | 0.1749 | 0.2618 |
| 63 | 0.1136 | 0.1136 | 0.1136 | 0.1136 | 0.1749 | 0.2618 |
| 64 | 0.1136 | 0.1136 | 0.1136 | 0.1136 | 0.1749 | 0.2618 |
| 65 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |

**Service Retirement**

**Schools 2% @ 55**

| | Duration of Service | | | | | |
|---|---|---|---|---|---|---|
| Age | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.005 | 0.009 | 0.013 | 0.015 | 0.016 | 0.018 |
| 51 | 0.005 | 0.010 | 0.014 | 0.017 | 0.019 | 0.021 |
| 52 | 0.006 | 0.012 | 0.017 | 0.020 | 0.022 | 0.025 |
| 53 | 0.007 | 0.014 | 0.019 | 0.023 | 0.026 | 0.029 |
| 54 | 0.012 | 0.024 | 0.033 | 0.039 | 0.044 | 0.049 |
| 55 | 0.024 | 0.048 | 0.067 | 0.079 | 0.088 | 0.099 |
| 56 | 0.020 | 0.039 | 0.055 | 0.065 | 0.072 | 0.081 |
| 57 | 0.021 | 0.042 | 0.059 | 0.070 | 0.078 | 0.087 |
| 58 | 0.025 | 0.050 | 0.070 | 0.083 | 0.092 | 0.103 |
| 59 | 0.029 | 0.057 | 0.080 | 0.095 | 0.105 | 0.118 |
| 60 | 0.037 | 0.073 | 0.102 | 0.121 | 0.134 | 0.150 |
| 61 | 0.046 | 0.090 | 0.126 | 0.149 | 0.166 | 0.186 |
| 62 | 0.076 | 0.151 | 0.212 | 0.250 | 0.278 | 0.311 |
| 63 | 0.069 | 0.136 | 0.191 | 0.225 | 0.251 | 0.281 |
| 64 | 0.067 | 0.133 | 0.185 | 0.219 | 0.244 | 0.273 |
| 65 | 0.091 | 0.180 | 0.251 | 0.297 | 0.331 | 0.370 |
| 66 | 0.072 | 0.143 | 0.200 | 0.237 | 0.264 | 0.295 |
| 67 | 0.067 | 0.132 | 0.185 | 0.218 | 0.243 | 0.272 |
| 68 | 0.060 | 0.118 | 0.165 | 0.195 | 0.217 | 0.243 |
| 69 | 0.067 | 0.133 | 0.187 | 0.220 | 0.246 | 0.275 |
| 70 | 0.066 | 0.131 | 0.183 | 0.216 | 0.241 | 0.270 |

# Miscellaneous

**Superfunded Status**

Prior to enactment of the Public Employees' Pension Reform Act (PEPRA) that became effective January 1, 2013, a plan in superfunded status (actuarial value of assets exceeding present value of benefits) would normally pay a zero employer contribution rate while also being permitted to use its superfunded assets to pay its employees' normal member contributions.

However, Section 7522.52(a) of PEPRA states, "In any fiscal year a public employer's contribution to a defined benefit plan, in combination with employee contributions to that defined benefit plan, shall not be less than the total normal cost rate..." This means that not only must employers pay their employer normal cost regardless of plan surplus, but also, employers may no longer use superfunded assets to pay employee normal member contributions.

**Internal Revenue Code Section 415**

The limitations on benefits imposed by Internal Revenue Code Section 415 are taken into account in this valuation. Each year the impact of any changes in this limitation since the prior valuation is included and amortized as part of the actuarial gain or loss base. This results in lower contributions for those employers contributing to the Replacement Benefit Fund and protects CalPERS from prefunding expected benefits in excess of limits imposed by federal tax law.

**Internal Revenue Code Section 401(a)(17)**

The limitations on compensation imposed by Internal Revenue Code Section 401(a)(17) are taken into account in this valuation. Each year, the impact of any changes in the compensation limitation since the prior valuation is included and amortized as part of the actuarial gain or loss base.

**PEPRA Assumptions**

The Public Employees' Pension Reform Act of 2013 (PEPRA) mandated new benefit formulas and new member contributions for new members (as defined by PEPRA) hired after January 1, 2013. For non-pooled plans, these new members will first be reflected in the June 30, 2013 non-pooled plan valuations. New members in pooled plans will first be reflected in the new Miscellaneous and Safety risk pools created by the CalPERS Board in November 2012 in response to the passage of PEPRA, also beginning with the June 30, 2013 valuation. Different assumptions for these new PEPRA members are disclosed above.

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# APPENDIX B

# PRINCIPAL PLAN PROVISIONS

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The following is a description of the principal plan provisions used in calculating costs and liabilities. We have indicated whether a plan provision is standard or optional. Standard benefits are applicable to all members while optional benefits vary among employers. Optional benefits that apply to a single period of time, such as Golden Handshakes, have not been included. Many of the statements in this summary are general in nature, and are intended to provide an easily understood summary of the complex Public Employees' Retirement Law. The law itself governs in all situations.

# PEPRA Benefit Changes

The Public Employees' Pension Reform Act of 2013 (PEPRA) requires new benefits and member contributions for new members as defined by PEPRA, that are hired after January 1, 2013. These PEPRA members are reflected in your June 30, 2013 actuarial valuation. Members in pooled plans are reflected in the new Miscellaneous and Safety risk pools created by the CalPERS Board in November 2012 in response to the passage of PEPRA, beginning with the June 30, 2013 valuation.

# Service Retirement

**Eligibility**
A classic CalPERS member or PEPRA Safety member becomes eligible for Service Retirement upon attainment of age 50 with at least 5 years of credited service (total service across all CalPERS employers, and with certain other Retirement Systems with which CalPERS has reciprocity agreements). For employees hired into a plan with the 1.5% at 65 formula, eligibility for service retirement is age 55 with at least 5 years of service. PEPRA miscellaneous members become eligible for Service Retirement upon attainment of age 52 with at least 5 years of service.

**Benefit**
The Service Retirement benefit is a monthly allowance equal to the product of the *benefit factor, years of service,* and *final compensation.*

- The *benefit factor* depends on the benefit formula specified in your agency's contract. The table below shows the factors for each of the available formulas. Factors vary by the member's age at retirement. Listed are the factors for retirement at whole year ages:

**Miscellaneous Plan Formulas**

| Retirement Age | 1.5% at 65 | 2% at 60 | 2% at 55 | 2.5% at 55 | 2.7% at 55 | 3% at 60 | PEPRA 2% at 62 |
|---|---|---|---|---|---|---|---|
| 50 | 0.5000% | 1.092% | 1.426% | 2.000% | 2.000% | 2.000% | N/A |
| 51 | 0.5667% | 1.156% | 1.522% | 2.100% | 2.140% | 2.100% | N/A |
| 52 | 0.6334% | 1.224% | 1.628% | 2.200% | 2.280% | 2.200% | 1.000% |
| 53 | 0.7000% | 1.296% | 1.742% | 2.300% | 2.420% | 2.300% | 1.100% |
| 54 | 0.7667% | 1.376% | 1.866% | 2.400% | 2.560% | 2.400% | 1.200% |
| 55 | 0.8334% | 1.460% | 2.000% | 2.500% | 2.700% | 2.500% | 1.300% |
| 56 | 0.9000% | 1.552% | 2.052% | 2.500% | 2.700% | 2.600% | 1.400% |
| 57 | 0.9667% | 1.650% | 2.104% | 2.500% | 2.700% | 2.700% | 1.500% |
| 58 | 1.0334% | 1.758% | 2.156% | 2.500% | 2.700% | 2.800% | 1.600% |
| 59 | 1.1000% | 1.874% | 2.210% | 2.500% | 2.700% | 2.900% | 1.700% |
| 60 | 1.1667% | 2.000% | 2.262% | 2.500% | 2.700% | 3.000% | 1.800% |
| 61 | 1.2334% | 2.134% | 2.314% | 2.500% | 2.700% | 3.000% | 1.900% |
| 62 | 1.3000% | 2.272% | 2.366% | 2.500% | 2.700% | 3.000% | 2.000% |
| 63 | 1.3667% | 2.418% | 2.418% | 2.500% | 2.700% | 3.000% | 2.100% |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 64 | 1.4334% | 2.418% | 2.418% | 2.500% | 2.700% | 3.000% | 2.200% |
| 65 | 1.5000% | 2.418% | 2.418% | 2.500% | 2.700% | 3.000% | 2.300% |
| 66 | 1.5000% | 2.418% | 2.418% | 2.500% | 2.700% | 3.000% | 2.400% |
| 67 & up | 1.5000% | 2.418% | 2.418% | 2.500% | 2.700% | 3.000% | 2.500% |

**Safety Plan Formulas**

| Retirement Age | ½ at 55 * | 2% at 55 | 2% at 50 | 3% at 55 | 3% at 50 |
|---|---|---|---|---|---|
| 50 | 1.783% | 1.426% | 2.000% | 2.400% | 3.000% |
| 51 | 1.903% | 1.522% | 2.140% | 2.520% | 3.000% |
| 52 | 2.035% | 1.628% | 2.280% | 2.640% | 3.000% |
| 53 | 2.178% | 1.742% | 2.420% | 2.760% | 3.000% |
| 54 | 2.333% | 1.866% | 2.560% | 2.880% | 3.000% |
| 55 & Up | 2.500% | 2.000% | 2.700% | 3.000% | 3.000% |

* For this formula, the benefit factor also varies by entry age. The factors shown are for members with an entry age of 35 or greater. If entry age is less than 35, then the age 55 benefit factor is 50 percent divided by the difference between age 55 and entry age. The benefit factor for ages prior to age 55 is the same proportion of the age 55 benefit factor as in the above table.

**PEPRA Safety Plan Formulas**

| Retirement Age | 2% at 57 | 2.5% at 57 | 2.7% at 57 |
|---|---|---|---|
| 50 | 1.426% | 2.000% | 2.000% |
| 51 | 1.508% | 2.071% | 2.100% |
| 52 | 1.590% | 2.143% | 2.200% |
| 53 | 1.672% | 2.214% | 2.300% |
| 54 | 1.754% | 2.286% | 2.400% |
| 55 | 1.836% | 2.357% | 2.500% |
| 56 | 1.918% | 2.429% | 2.600% |
| 57 & Up | 2.000% | 2.500% | 2.700% |

- The *years of service* is the amount credited by CalPERS to a member while he or she is employed in this group (or for other periods that are recognized under the employer's contract with CalPERS). For a member who has earned service with multiple CalPERS employers, the benefit from each employer is calculated separately according to each employer's contract, and then added together for the total allowance. An agency may contract for an optional benefit where any unused sick leave accumulated at the time of retirement will be converted to credited service at a rate of 0.004 years of service for each day of sick leave.

- The *final compensation* is the monthly average of the member's highest 36 or 12 consecutive months' full-time equivalent monthly pay (no matter which CalPERS employer paid this compensation). The standard benefit is 36 months. Employers have the option of providing a final compensation equal to the highest 12 consecutive months. Final compensation must be defined by the highest 36 consecutive months' pay under the 1.5% at 65 formula. PEPRA members have a cap on the annual salary that can be used to calculate final compensation for all new members based on the Social Security Contribution and Benefit Base. For employees that participate in Social Security this cap is $113,700 for 2013 and for those employees that do not participate in social security the cap for 2013 is $136,440, the equivalent of 120 percent of the 2013 Contribution and Benefit Base. Adjustments to the caps are permitted annually based on changes to the CPI for All Urban Consumers.

- Employees must be covered by Social Security with the 1.5% at 65 formula. Social Security is optional for all other benefit formulas. For employees covered by Social Security, the Modified formula is the standard benefit. Under this type of formula, the final compensation is offset by $133.33 (or by one third if the final compensation is less than $400). Employers may contract for the Full benefit with Social Security that will eliminate the offset applicable to the final compensation. For employees not covered by Social Security, the Full benefit is paid with no offsets. Auxiliary organizations of the CSUC system may elect reduced contribution rates, in which case the offset is $317 if members are not covered by Social Security or $513 if members are covered by Social Security.

- The Miscellaneous Service Retirement benefit is not capped. The Safety Service Retirement benefit is capped at 90 percent of final compensation.

# Vested Deferred Retirement

**Eligibility for Deferred Status**
A CalPERS member becomes eligible for a deferred vested retirement benefit when he or she leaves employment, keeps his or her contribution account balance on deposit with CalPERS, **and** has earned at least 5 years of credited service (total service across all CalPERS employers, and with certain other Retirement Systems with which CalPERS has reciprocity agreements).

**Eligibility to Start Receiving Benefits**
The CalPERS classic members and Safety PEPRA members become eligible to receive the deferred retirement benefit upon satisfying the eligibility requirements for Deferred Status and upon attainment of age 50 (55 for employees hired into a 1.5% @ 65 plan). PEPRA Miscellaneous members become eligible to receive the deferred retirement benefit upon satisfying the eligibility requirements for Deferred Status and upon attainment of age 52.

**Benefit**
The vested deferred retirement benefit is the same as the Service Retirement benefit, where the benefit factor is based on the member's age at allowance commencement. For members who have earned service with multiple CalPERS employers, the benefit from each employer is calculated separately according to each employer's contract, and then added together for the total allowance.

# Non-Industrial (Non-Job Related) Disability Retirement

**Eligibility**
A CalPERS member is eligible for Non-Industrial Disability Retirement if he or she becomes *disabled* and has at least 5 years of credited service (total service across all CalPERS employers, and with certain other Retirement Systems with which CalPERS has reciprocity agreements). There is no special age requirement. *Disabled* means the member is unable to perform his or her job because of an illness or injury, which is expected to be permanent or to last indefinitely. The illness or injury does not have to be job related. A CalPERS member must be actively employed by any CalPERS employer at the time of disability in order to be eligible for this benefit.

**Standard Benefit**
The standard Non-Industrial Disability Retirement benefit is a monthly allowance equal to 1.8 percent of final compensation, multiplied by *service*, which is determined as follows:

- *Service* is CalPERS credited service, for members with less than 10 years of service or greater than 18.518 years of service; or

- *Service* is CalPERS credited service plus the additional number of years that the member would have worked until age 60, for members with at least 10 years but not more than 18.518 years of service. The maximum benefit in this case is 33 1/3 percent of Final Compensation.

**Improved Benefit**

Employers have the option of providing the improved Non-Industrial Disability Retirement benefit. This benefit provides a monthly allowance equal to 30 percent of final compensation for the first 5 years of service, plus 1 percent for each additional year of service to a maximum of 50 percent of final compensation.

Members who are eligible for a larger service retirement benefit may choose to receive that benefit in lieu of a disability benefit. Members eligible to retire, and who have attained the normal retirement age determined by their service retirement benefit formula, will receive the same dollar amount for disability retirement as that payable for service retirement. For members who have earned service with multiple CalPERS employers, the benefit attributed to each employer is the total disability allowance multiplied by the ratio of service with a particular employer to the total CalPERS service.

## Industrial (Job Related) Disability Retirement

All safety members have this benefit. For miscellaneous members, employers have the option of providing this benefit. An employer may choose to provide the Increased benefit option or the Improved benefit option.

**Eligibility**
An employee is eligible for Industrial Disability Retirement if he or she becomes disabled while working, where disabled means the member is unable to perform the duties of the job because of a work-related illness or injury, which is, expected to be permanent or to last indefinitely. A CalPERS member who has left active employment within this group is not eligible for this benefit, except to the extent described below.

**Standard Benefit**
The standard Industrial Disability Retirement benefit is a monthly allowance equal to 50 percent of final compensation.

**Increased Benefit (75 percent of Final Compensation)**
The increased Industrial Disability Retirement benefit is a monthly allowance equal to 75 percent final compensation for total disability.

**Improved Benefit (50 percent to 90 percent of Final Compensation)**
The improved Industrial Disability Retirement benefit is a monthly allowance equal to the Workman's Compensation Appeals Board permanent disability rate percentage (if 50 percent or greater, with a maximum of 90 percent) times the final compensation.

For a CalPERS member not actively employed in this group who became disabled while employed by some other CalPERS employer, the benefit is a return of accumulated member contributions with respect to employment in this group. With the standard or increased benefit, a member may also choose to receive the annuitization of the accumulated member contributions.

If a member is eligible for Service Retirement and if the Service Retirement benefit is more than the Industrial Disability Retirement benefit, the member may choose to receive the larger benefit.

## Post-Retirement Death Benefit

**Standard Lump Sum Payment**
Upon the death of a retiree, a one-time lump sum payment of $500 will be made to the retiree's designated survivor(s), or to the retiree's estate.

**Improved Lump Sum Payment**
Employers have the option of providing an improved lump sum death benefit of $600, $2,000, $3,000, $4,000 or $5,000.

## Form of Payment for Retirement Allowance

**Standard Form of Payment**
Generally, the retirement allowance is paid to the retiree in the form of an annuity for as long as he or she is alive. The retiree may choose to provide for a portion of his or her allowance to be paid to any designated beneficiary after the retiree's death. CalPERS provides for a variety of such benefit options, which the retiree pays for by taking a reduction in his or her retirement allowance. Such reduction takes into account the amount to be provided to the beneficiary and the probable duration of payments (based on the ages of the member and beneficiary) made subsequent to the member's death.

**Improved Form of Payment (Post Retirement Survivor Allowance)**
Employers have the option to contract for the post retirement survivor allowance.

For retirement allowances with respect to service subject to the modified formula, 25 percent of the retirement allowance will automatically be continued to certain statutory beneficiaries upon the death of the retiree, without a reduction in the retiree's allowance. For retirement allowances with respect to service subject to the full or supplemental formula, 50 percent of the retirement allowance will automatically be continued to certain statutory beneficiaries upon the death of the retiree, without a reduction in the retiree's allowance. This additional benefit is often referred to as post retirement survivor allowance (PRSA) or simply as survivor continuance.

In other words, 25 percent or 50 percent of the allowance, the continuance portion, is paid to the retiree for as long as he or she is alive, and that same amount is continued to the retiree's spouse (or if no eligible spouse, to unmarried children until they attain age 18; or, if no eligible children, to a qualifying dependent parent) for the rest of his or her lifetime. This benefit will not be discontinued in the event the spouse remarries.

The remaining 75 percent or 50 percent of the retirement allowance, which may be referred to as the option portion of the benefit, is paid to the retiree as an annuity for as long as he or she is alive. Or, the retiree may choose to provide for some of this option portion to be paid to any designated beneficiary after the retiree's death. Benefit options applicable to the option portion are the same as those offered with the standard form. The reduction is calculated in the same manner but is applied only to the option portion.

# Pre-Retirement Death Benefits

# Basic Death Benefit

This is a standard benefit.

**Eligibility**
An employee's beneficiary (or estate) may receive the Basic Death benefit if the member dies while actively employed. A CalPERS member must be actively employed with the CalPERS employer providing this benefit to be eligible for this benefit. A member's survivor who is eligible for any other pre-retirement death benefit may choose to receive that death benefit instead of this Basic Death benefit.

**Benefit**
The Basic Death Benefit is a lump sum in the amount of the member's accumulated contributions, where interest is currently credited at 7.5 percent per year, plus a lump sum in the amount of one month's salary for each completed year of current service, up to a maximum of six months' salary. For purposes of this benefit, one month's salary is defined as the member's average monthly full-time rate of compensation during the 12 months preceding death.

# 1957 Survivor Benefit

This is a standard benefit.
**Eligibility**
An employee's *eligible survivor(s)* may receive the 1957 Survivor benefit if the member dies while actively employed, has attained at least age 50 for Classic and Safety PEPRA members and age 52 for Miscellaneous PEPRA members, and has at least 5 years of credited service (total service across all CalPERS employers and with certain other

Retirement Systems with which CalPERS has reciprocity agreements). A CalPERS member must be actively employed with the CalPERS employer providing this benefit to be eligible for this benefit. An eligible survivor means the surviving spouse to whom the member was married at least one year before death or, if there is no eligible spouse, to the member's unmarried children under age 18. A member's survivor who is eligible for any other pre-retirement death benefit may choose to receive that death benefit instead of this 1957 Survivor benefit.

**Benefit**
The 1957 Survivor benefit is a monthly allowance equal to one-half of the unmodified Service Retirement benefit that the member would have been entitled to receive if the member had retired on the date of his or her death. If the benefit is payable to the spouse, the benefit is discontinued upon the death of the spouse. If the benefit is payable to a dependent child, the benefit will be discontinued upon death or attainment of age 18, unless the child is disabled. The total amount paid will be at least equal to the Basic Death benefit.

## Optional Settlement 2W Death Benefit

This is an optional benefit.

**Eligibility**
An employee's *eligible survivor* may receive the Optional Settlement 2W Death benefit if the member dies while actively employed, has attained at least age 50 for Classic and Safety PEPRA members and age 52 for Miscellaneous PEPRA members, and has at least 5 years of credited service (total service across all CalPERS employers and with certain other Retirement Systems with which CalPERS has reciprocity agreements). A CalPERS member who is no longer actively employed with **any** CalPERS employer is not eligible for this benefit. An *eligible survivor* means the surviving spouse to whom the member was married at least one year before death. A member's survivor who is eligible for any other pre-retirement death benefit may choose to receive that death benefit instead of this Optional Settlement 2W Death benefit.

**Benefit**
The Optional Settlement 2W Death benefit is a monthly allowance equal to the Service Retirement benefit that the member would have received had the member retired on the date of his or her death and elected Optional Settlement 2W. (A retiree who elects Optional Settlement 2W receives an allowance that has been reduced so that it will continue to be paid after his or her death to a surviving beneficiary.) The allowance is payable as long as the surviving spouse lives, at which time it is continued to any unmarried children under age 18, if applicable. The total amount paid will be at least equal to the Basic Death Benefit.

## Special Death Benefit

This is a standard benefit for safety members. An employer may elect to provide this benefit for miscellaneous members.

**Eligibility**
An employee's *eligible survivor(s)* may receive the Special Death benefit if the member dies while actively employed and the death is job-related. A CalPERS member who is no longer actively employed with **any** CalPERS employer is not eligible for this benefit. An *eligible survivor* means the surviving spouse to whom the member was married prior to the onset of the injury or illness that resulted in death. If there is no eligible spouse, an eligible survivor means the member's unmarried children under age 22. An eligible survivor who chooses to receive this benefit will not receive any other death benefit.

**Benefit**
The Special Death benefit is a monthly allowance equal to 50 percent of final compensation, and will be increased whenever the compensation paid to active employees is increased but ceasing to increase when the member would have attained age 50. The allowance is payable to the surviving spouse until death at which time the allowance is continued to any unmarried children under age 22. There is a guarantee that the total amount paid will at least equal the Basic Death Benefit.

If the member's death is the result of an accident or injury caused by external violence or physical force incurred in the performance of the member's duty, and there are *eligible* surviving children (*eligible* means unmarried children under age 22) in addition to an eligible spouse, then an **additional monthly allowance** is paid equal to the following:

| | | |
|---|---|---|
| 1. | if 1 eligible child: | 12.5 percent of final compensation |
| 2. | if 2 eligible children: | 20.0 percent of final compensation |
| 3. | if 3 or more eligible children: | 25.0 percent of final compensation |

# Alternate Death Benefit for Local Fire Members

This is an optional benefit available only to local fire members.

**Eligibility**
An employee's *eligible survivor(s)* may receive the Alternate Death benefit in lieu of the Basic Death Benefit or the 1957 Survivor Benefit if the member dies while actively employed and has at least 20 years of total CalPERS service. A CalPERS member who is no longer actively employed with **any** CalPERS employer is not eligible for this benefit. An *eligible survivor* means the surviving spouse to whom the member was married prior to the onset of the injury or illness that resulted in death. If there is no eligible spouse, an eligible survivor means the member's unmarried children under age 18.

**Benefit**
The Alternate Death benefit is a monthly allowance equal to the Service Retirement benefit that the member would have received had the member retired on the date of his or her death and elected Optional Settlement 2W. (A retiree who elects Optional Settlement 2W receives an allowance that has been reduced so that it will continue to be paid after his or her death to a surviving beneficiary.) If the member has not yet attained age 50, the benefit is equal to that which would be payable if the member had retired at age 50, based on service credited at the time of death. The allowance is payable as long as the surviving spouse lives, at which time it is continued to any unmarried children under age 18, if applicable. The total amount paid will be at least equal to the Basic Death Benefit.

# Cost-of-Living Adjustments (COLA)

**Standard Benefit**
Beginning the second calendar year after the year of retirement, retirement and survivor allowances will be annually adjusted on a compound basis by 2 percent.

**Improved Benefit**
Employers have the option of providing any of these improved cost-of-living adjustments by contracting for any one of these Class 1 optional benefits. An improved COLA is not available in conjunction with the 1.5% at 65 formula.

Beginning the second calendar year after the year of retirement, retirement and survivor allowances will be annually adjusted on a compound basis by either 3 percent, 4 percent or 5 percent. However, the cumulative adjustment may not be greater than the cumulative change in the Consumer Price Index since the date of retirement.

# Purchasing Power Protection Allowance (PPPA)

Retirement and survivor allowances are protected against inflation by PPPA. PPPA benefits are cost-of-living adjustments that are intended to maintain an individual's allowance at 80 percent of the initial allowance at retirement adjusted for inflation since retirement. The PPPA benefit will be coordinated with other cost-of-living adjustments provided under the plan.

# Employee Contributions

Each employee contributes toward his or her retirement based upon the retirement formula. The standard employee contribution is as described below.

The percent contributed below the monthly compensation breakpoint is 0 percent.
The monthly compensation breakpoint is $0 for full and supplemental formula members and $133.33 for employees covered by the modified formula.
The percent contributed above the monthly compensation breakpoint depends upon the benefit formula, as shown in the table below.

| Benefit Formula | Percent Contributed above the Breakpoint |
|---|---|
| Miscellaneous, 1.5% at 65 | 2% |
| Miscellaneous, 2% at 60 | 7% |
| Miscellaneous, 2% at 55 | 7% |
| Miscellaneous, 2.5% at 55 | 8% |
| Miscellaneous, 2.7% at 55 | 8% |
| Miscellaneous, 3% at 60 | 8% |
| Miscellaneous, 2% at 62 | 50% of the Total Normal Cost |
| Safety, 1/2 at 55 | Varies by entry age |
| Safety, 2% at 55 | 7% |
| Safety, 2% at 50 | 9% |
| Safety, 3% at 55 | 9% |
| Safety, 3% at 50 | 9% |
| Safety, 2% at 57 | 50% of the Total Normal Cost |
| Safety, 2.5% at 57 | 50% of the Total Normal Cost |
| Safety, 2.7% at 57 | 50% of the Total Normal Cost |

The employer may choose to "pick-up" these contributions for the employees (Employer Paid Member Contributions or EPMC). EPMC is prohibited for new PEPRA members.

An employer may also include Employee Cost Sharing in the contract, where employees agree to share the cost of the employer contribution with or without a change in benefit. These contributions are paid in addition to the member contribution.

Auxiliary organizations of the CSUC system may elect reduced contribution rates, in which case the offset is $317 and the contribution rate is 6 percent if members are not covered by Social Security. If members are covered by Social Security, the offset is $513 and the contribution rate is 5 percent.

# Refund of Employee Contributions

If the member's service with the employer ends, and if the member does not satisfy the eligibility conditions for any of the retirement benefits above, the member may elect to receive a refund of his or her employee contributions, which are credited annually with 6 percent interest.

# 1959 Survivor Benefit

This is a pre-retirement death benefit available only to members not covered by Social Security. Any agency joining CalPERS subsequent to 1993 was required to provide this benefit if the members were not covered by Social Security. The benefit is optional for agencies joining CalPERS prior to 1994. Levels 1, 2 and 3 are now closed. Any new agency or any agency wishing to add this benefit or increase the current level must choose the 4$^{th}$ or Indexed Level.

This benefit is not included in the results presented in this valuation. More information on this benefit is available on the CalPERS website at www.calpers.ca.gov.

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# APPENDIX C

# PLAN OPTIONS AND VARIABLES

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# Classification of Optional Benefits

Below is the list of the available optional benefit provisions and their initial classification upon establishment of risk pools. When new benefits become available as a result of legislation, the Chief Actuary will determine their classification in accordance with the criteria established in the Board policy.

## Class 0

Class 0 benefit surcharge is the increase in normal cost for a given benefit formula above the baseline PEPRA 2% at 57 benefit formula.

## Class 1

Class 1 benefits have been identified to be additional benefits which have a significant, ongoing effect on the total plan cost. In some cases, a Class 1 benefit may be an alternate benefit formula. These benefits vary by employer across the risk pool. Agencies contracting for a Class 1 benefit will be responsible for the past service liability associated with such benefit and will be required to pay a surcharge established by the actuary to cover the ongoing cost (normal cost) of the Class 1 benefit.

The table below shows the list of Class 0 and Class 1 benefits and their applicable surcharge for each benefit formula in the Miscellaneous Risk Pool.

| **Optional Benefit** | **2% at 57** | **2.5% at 57** | **2.7% at 57** | **2% at 55** | **2% at 50** | **3% at 55** | **3% at 50** |
|---|---|---|---|---|---|---|---|
| Class 0 Benefit | 0.000% | 1.541% | 1.943% | 2.534% | 4.817% | 6.631% | 8.561% |
| One Year Final Compensation | 0.668% | 0.775% | 0.806% | 0.682% | 0.831% | 0.896% | 0.967% |
| EPMC by contract, 7% | N/A | N/A | N/A | 1.289% | 1.578% | 1.703% | 1.842% |
| EPMC by contract, 8% | N/A | N/A | N/A | 1.473% | 1.803% | 1.946% | 2.105% |
| EPMC by contract, 9% | N/A | N/A | N/A | 1.657% | 2.028% | 2.189% | 2.368% |
| 25% PRSA | 1.256% | 1.461% | 1.520% | 1.283% | 1.560% | 1.668% | 1.706% |
| 50% PRSA | 1.256% | 1.461% | 1.520% | 1.283% | 1.560% | 1.668% | 1.706% |
| 3% Annual COLA | 1.444% | 1.683% | 1.753% | 1.464% | 1.804% | 1.957% | 2.152% |
| 4% Annual COLA | 1.444% | 1.683% | 1.753% | 1.464% | 1.804% | 1.957% | 2.152% |
| 5% Annual COLA | 1.444% | 1.683% | 1.753% | 1.464% | 1.804% | 1.957% | 2.152% |
| IDR For Local Miscellaneous Members | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Increased IDR Allowance to 75% of Compensation | 4.781% | 4.240% | 4.115% | 4.678% | 4.028% | 3.779% | 3.651% |
| Improved IDR Allowance for Local Safety Members | 4.781% | 4.240% | 4.115% | 4.678% | 4.028% | 3.779% | 3.651% |
| Employee Cost Sharing | varies | varies | varies | varies | varies | varies | varies |
| Employee Contribution Rate for CSUC Auxiliary Organizations Reduced to State Member Level - Covered by Social Security | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Employee Contribution Rate for CSUC Auxiliary Organizations Reduced to State Member Level - Not Covered by Social Security | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

For employers contracting for more than one Class 1 benefit, the surcharges listed in this table will be added together

**Employee cost sharing had been eliminated as a surcharge from some of the June 30, 2010 valuations and from all of the June 30, 2011 and later valuations. It is now shown on my | CalPERS as a rate adjustment.**

## Class 2

Class 2 benefits have been identified to be the ancillary benefits providing one-time increases in benefits. These benefits vary by employer across the risk pool. Agencies contracting for a Class 2 benefit will be responsible for the past service liability associated with such benefit.

The following benefits shall be classified as Class 2:

- One-time 1% to 6% Ad Hoc COLA Increases for members who retired or died prior to January 1, 1998 (Section 21328)
- "Golden Handshakes" – Section 20903 Two Years Additional Service Credit
- Credit for Prior Service Paid for by the Employer
- Military Service Credit (Section 20996)
- Credit for Local Retirement System Service for Employees of Agencies Contracted on a Prospective basis (Section 20530.1)
- Prior Service Credit for Employees of an Assumed Agency Function (Section 20936)
- Limit Prior Service to Members Employed on Contract Date (Section 20938)
- Public Service Credit for Limited Prior Service (Section 21031)
- Public Service Credit for Employees of an Assumed Agency or Function (Section 21025)

## Class 3

Class 3 benefits have been identified to be additional benefits which have a minimal effect on the total plan cost. Class 3 benefits may vary by rate plan within each risk pool. However, the employer contribution rate will not vary within the risk pool due to the Class 3 benefits.

The following benefits shall be classified as Class 3:

- Full formula plus social security
- Post Retirement Lump Sum Death Benefit
- $600 lump sum retired death benefit (Section 21622)
- $2,000 lump sum retired death benefit (Section 21623.5)
- $3,000 lump sum retired death benefit (Section 21623.5)
- $4,000 lump sum retired death benefit (Section 21623.5)
- $5,000 lump sum retired death benefit (Section 21623.5)
- Improved non-industrial disability allowance (Section 21427)
- Special death benefit for local miscellaneous members (Section 21540.5)
- Service Credit Purchased by Member
- Partial Service Retirement (Section 21118)
- Optional Membership for Part Time Employees (Section 20325)
- Extension of Reciprocity Rights for Elective Officers (Section 20356)
- Removal of Contract Exclusions Prospectively Only (Section 20503)
- Alternate Death Benefit for Local Fire Members credited with 20 or more years of service (Section 21547.7)