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## **Projected Net Cash Outflow** Oregon Public Employees Retirement System

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# Agenda

- Overview
- Baseline Projections
- Variance in Expected Benefit Payments
- Descriptive Statistics

## Overview

### Purpose of Study

- Benefit payments from the System currently exceed contributions by a factor of 3 to 1.
- The negative cash flow requires PERS and the OIC to manage the liquidity of the fund to make sure there is always enough cash available to make benefit payments.
- A significant allocation to illiquid investments increases the importance of planning for fluctuations in cash requirements.
- This study is intended to provide PERS and the OIC a better understanding of expected benefit payment requirements and the variability likely in those requirements over the next several years.
- In addition, this study provides some background on the dynamics between the three primary benefit formulas in PERS: Full Formula, Money Match and Pension Plus Annuity.

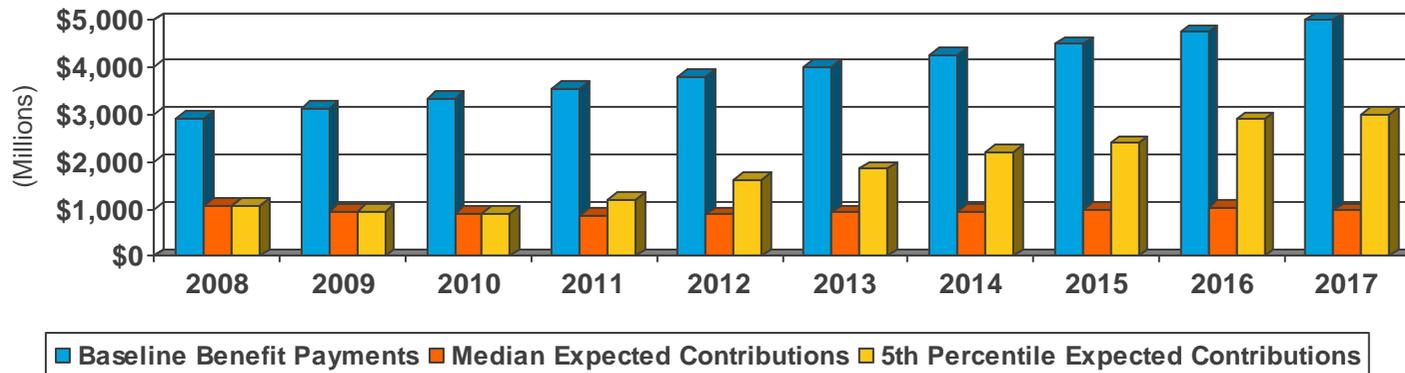
## Overview

### Summary of Key Findings

- Benefit payments are expected to increase from approximately \$2.9 billion in 2008 to approximately \$5.0 billion in 2017.
- The present value of net expected cash outflow over the next 10 years is equivalent to over 30% of December 31, 2007 assets requiring significant investment planning, particularly given current market conditions.
- Because most of the expected payments are due to current retirees and beneficiaries, future disabled retirees, and other factors not dependent on rates of retirement, the variability in these expected payments is relatively small.
- There are currently about 38,000 active members eligible to retire. If all of these members elected to retire immediately, it would increase benefit payments from approximately \$2.9 billion to approximately \$3.6 billion next year.

# Baseline Projections

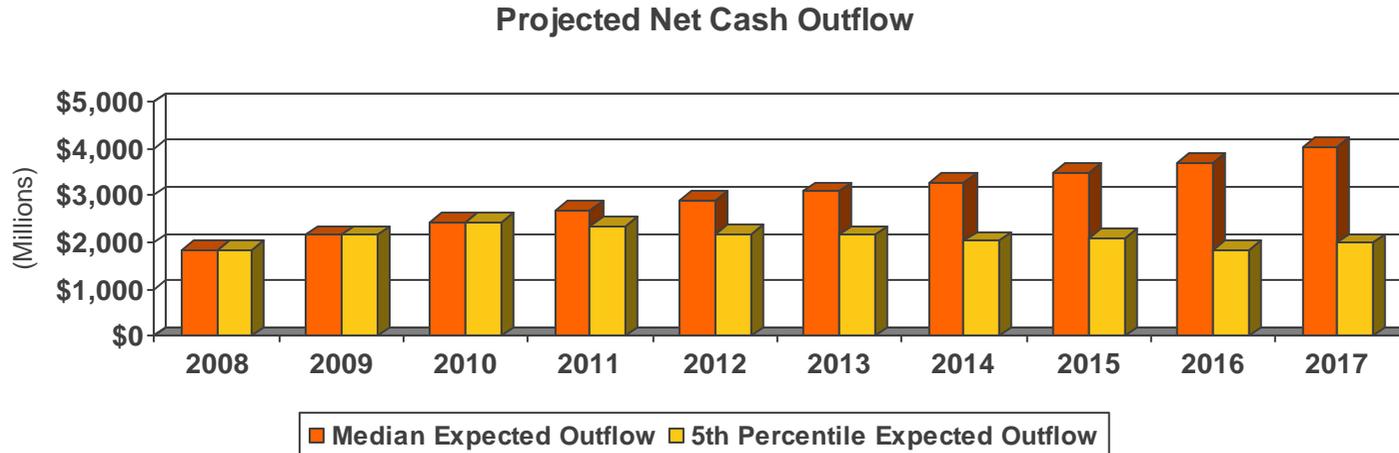
Projected Cash Flow



Contributions are the actual cash contributed by employers and members during the year to Tier 1/2, OPSRP and IAP. Transfers from side accounts are not considered contributions.

- Over the next 10 years, benefit payments (including IAP) are expected to increase over 70% from approximately \$2.9 billion in 2008 to approximately \$5.0 billion in 2017.
- As of 12/31/2007, contributions (including the IAP) were expected to remain relatively constant over this same period at about \$1.0 billion per year.
- Using the 5<sup>th</sup> percentile employer contribution rate results in each year of our financial modeling study, however, contributions would increase to \$3.0 billion by 2017 (28% of payroll). Because the 5<sup>th</sup> percentile in one year is not necessarily the same scenario as the 5<sup>th</sup> percentile in the next year, this level of contribution rate over the entire 10-year period is significantly less likely than the 5<sup>th</sup> percentile.
- In any scenario, contribution rates through July 1, 2011 will not change regardless of market performance, so actual changes in contributions will depend on changes in payroll.

# Baseline Projections

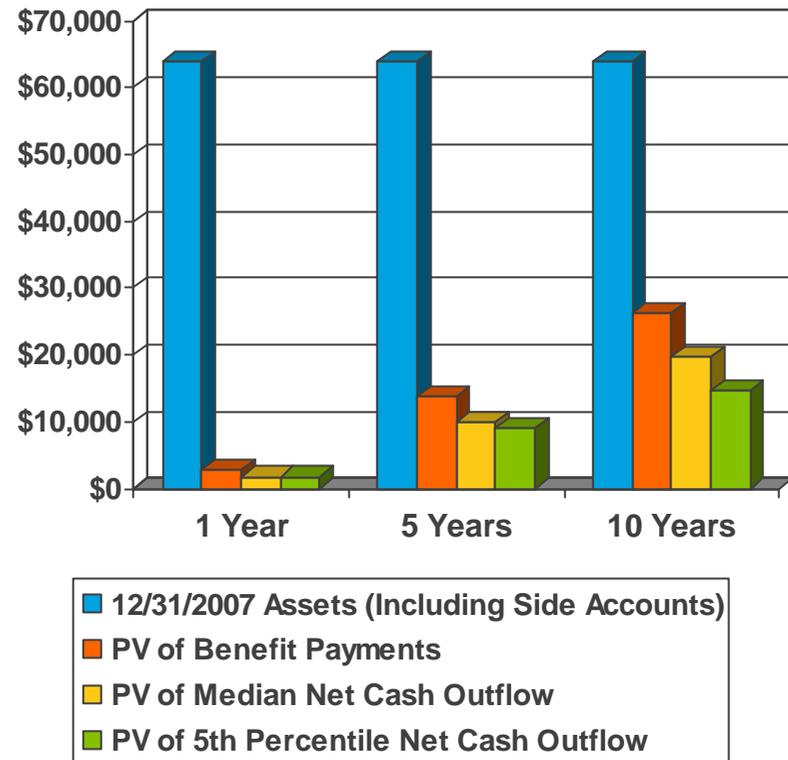


- As of 12/31/2007, the net cash outflow over the next 10 years was expected to more than double from approximately \$1.8 billion in 2008 to approximately \$4.0 billion in 2017.
- As of 12/31/2007, using the 5<sup>th</sup> percentile results in each year of our financial modeling study, the net cash outflow is expected to increase from \$1.8 billion in 2008 to \$2.4 billion in 2010 before declining to \$2.0 billion in 2017.
- While the 5<sup>th</sup> percentile outflow shown above does not reflect the current significant market downturn, it reflects poor long-term investment experience. If the markets rebound or even return to expected levels of investment return, the net cash outflow will be greater than shown in the 5<sup>th</sup> percentile results.

## Baseline Projections

- The present value of median expected net cash outflow over the next 5 years represents about 15% of December 31, 2007 assets and over the next 10 years represents over 30% of December 31, 2007 assets.
- The recent market downturn increases the percentage of current assets projected as short-term net cash outflow. For example, if current assets are 30% lower, expected net cash outflow over the next 5 years represents approximately 20% to 22% of current assets (33% to 44% over 10 years).
- The ongoing net cash outflow may impact the portfolio's asset allocation, particularly at a time when even corporate bonds aren't very liquid.

### Comparison of Assets to Present Value of Net Cash Outflow



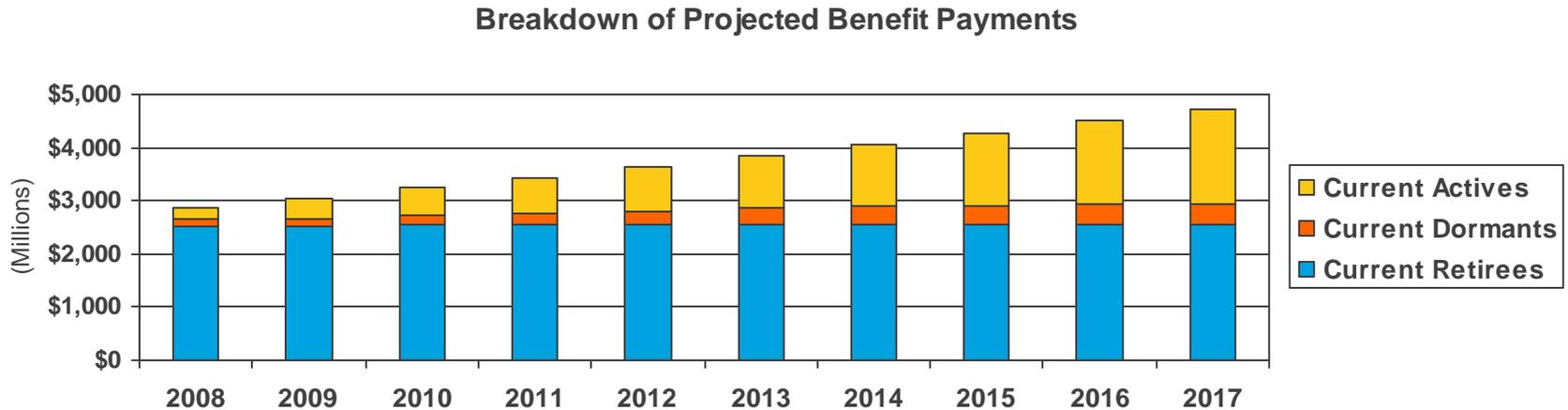
# Baseline Projections

## Potential Implications

- Current coupon payments and dividends from investments amount to approximately \$1.8 billion, matching the current net cash outflow.
- As of September 30, approximately 30% of the portfolio was invested in private equity and real estate, much of which may be illiquid.
- Because it is difficult to re-balance illiquid assets, an even greater portion of the portfolio may now be invested in illiquid assets (unless their market value has declined as much as the rest of the portfolio).
  - There may be further capital commitments to private equity that will be called over the next few years, exceeding returns realized over that period, which would further increase the portfolio weighting to private equity.
- With significant net cash outflow from liquid assets, it will be even more difficult to maintain the target portfolio balance.
- Given the market turmoil and illiquidity for many asset classes, Mercer Investment Consulting has been recommending greater cash allocations than normal to meet liquidity needs. Such a policy for PERS would result in relatively significant allocations of cash compared to historic norms and possibly further distorting the target investment policy.

# Variance in Expected Benefit Payments

## Breakdown of Baseline Projections

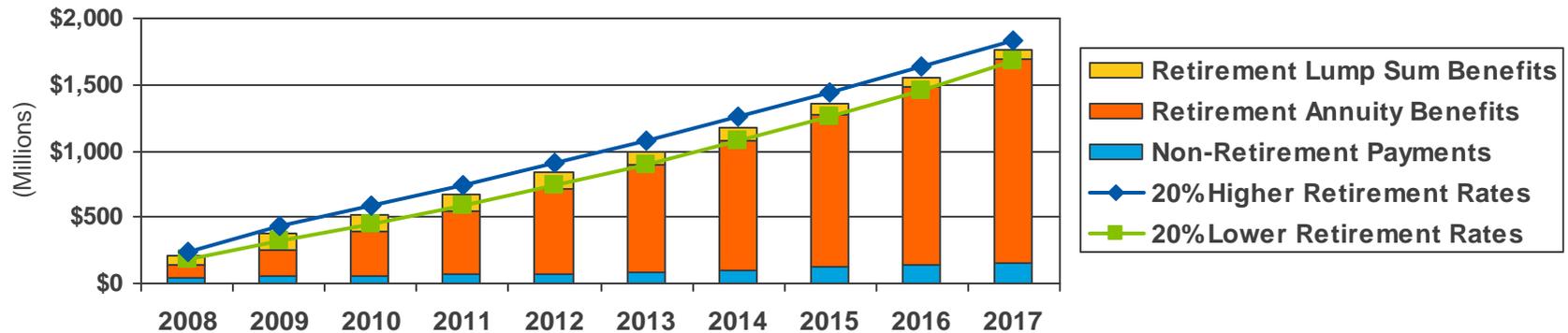


- Projected benefit payments are dominated in the near term by expected payments to current retirees and beneficiaries.
- Although there are approximately 38,000 active members currently eligible to retire, we expect 4,000 to 6,000 to retire each year compared to approximately 105,000 current retirees and beneficiaries.
- In the first year, we expect a little less than \$350 million in annual benefit payments to new retirees. Historically, the first year estimate has been high due to assumptions that dormants will commence their benefits when economically most valuable and that everyone over age 70 will retire immediately.

# Variance in Expected Benefit Payments

## 20% Change in Retirement Rates

Breakdown of Projected New Benefit Payments



- Varying retirement rates by 20% can have an impact early in the projection period, but over longer time frames has very little impact as most of those eligible to retire will retire sometime in the 10-year period regardless of the assumption.
- Because of the size of the base of current retirees, a 20% variance in any single year does not have a significant impact on total benefit payments.

# Variance in Expected Benefit Payments

## Other Possible Scenarios

- If every active member eligible to retire did so immediately, it would add approximately \$730 million to annual benefit payments (about a 25% increase).
- As shown in the table on the top, if everyone who had a replacement ratio greater than 60% retired immediately, it would add about \$325 million to annual benefit payments.
- As shown in the table on the bottom, if everyone over age 60 retired, it would add about \$228 million to annual benefit payments.
- While it is easy to imagine scenarios that produce a much greater number of retirements or much greater increase in benefit payments than anticipated in a single year, these potential increases are not very significant in the context of the entire system.

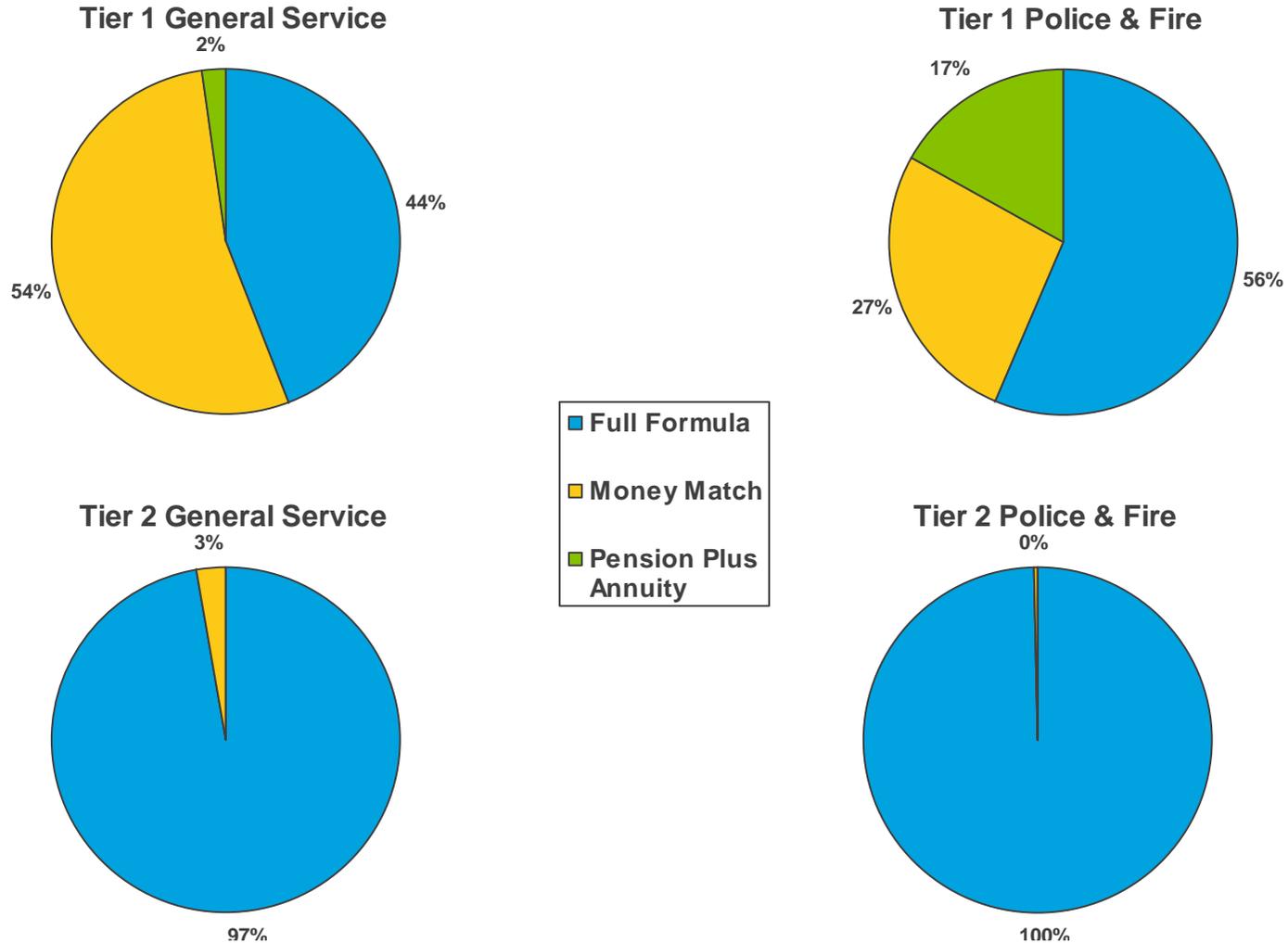
Annual New Benefit Payments			
Replacement Ratio	Count	Annual Amount	Cumulative Amount
100% +	1,471	\$79	\$79
80% - 100%	2,222	\$111	\$191
60% - 80%	3,293	\$135	\$325
40% - 60%	6,720	\$173	\$498
20% - 40%	14,564	\$191	\$689
0% - 20%	9,611	\$42	\$731

Annual New Benefit Payments			
Age	Count	Annual Amount	Cumulative Amount
70 +	470	\$7	\$7
65 - 69	2,030	\$34	\$41
60 - 64	10,173	\$187	\$228
55 - 59	23,467	\$452	\$680
50 - 54	1,741	\$50	\$731

Dollar amounts in millions

# Descriptive Statistics for Actives

Dominant Formula Assuming Immediate Retirement (if eligible)



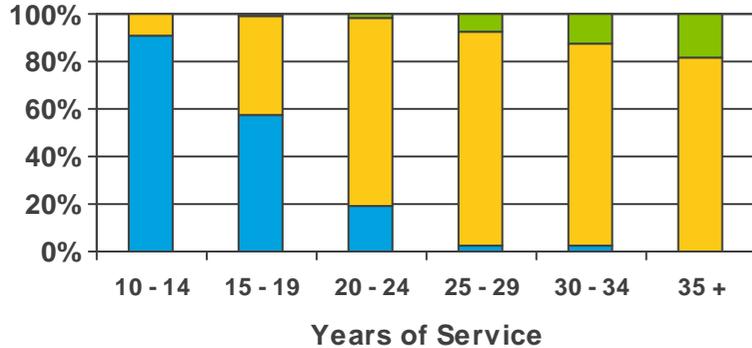
Charts exclude Members reported with less than \$15,000 annual salary for 2007

# Descriptive Statistics for Actives

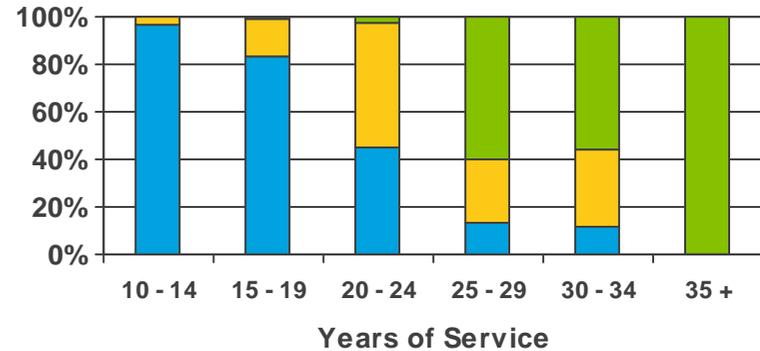
## Dominant Formula Assuming Immediate Retirement (if eligible)



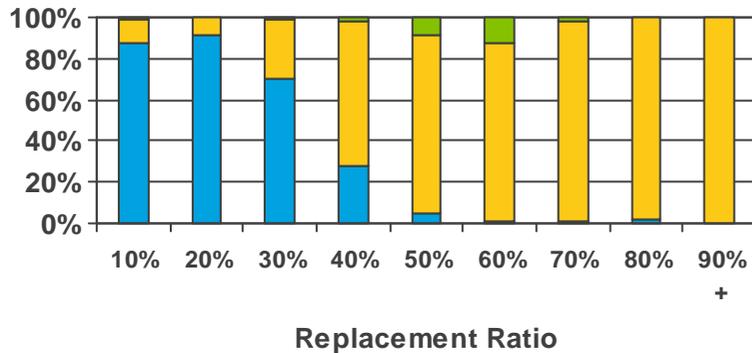
Tier 1 General Service



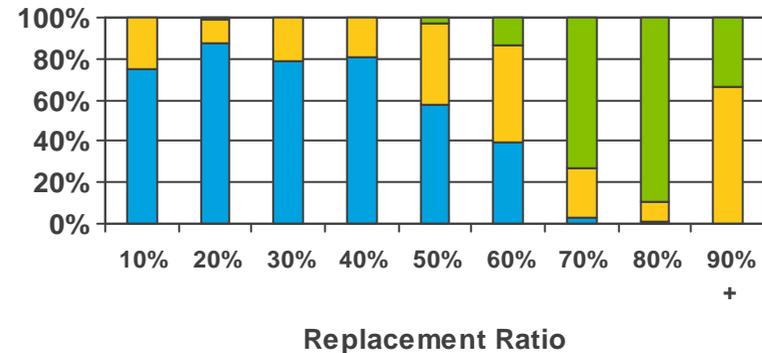
Tier 1 Police & Fire



Tier 1 General Service



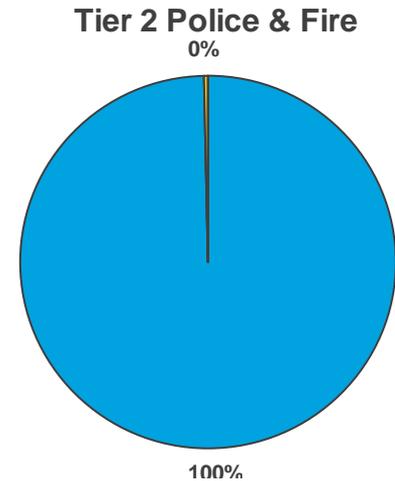
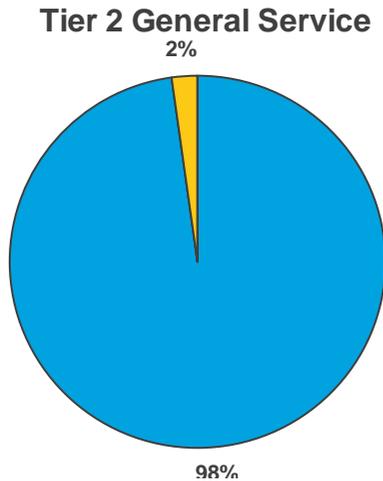
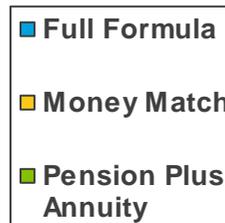
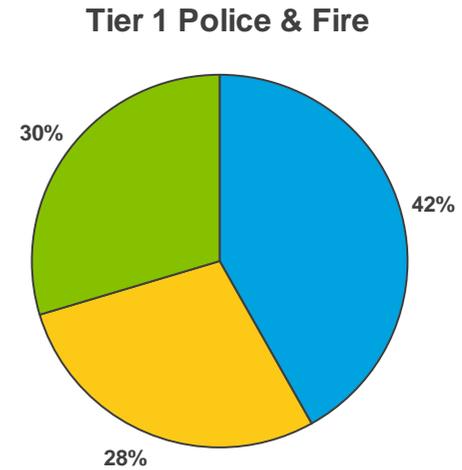
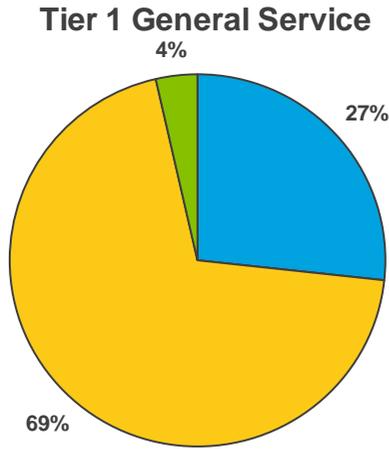
Tier 1 Police & Fire



Charts exclude Members reported with less than \$15,000 annual salary for 2007

# Descriptive Statistics for Actives

## Total Benefit Amounts by Formula Assuming Immediate Retirement



Charts exclude Members reported with less than \$15,000 annual salary for 2007

## Descriptive Statistics for Actives

### Ratio of Total Accrued Benefits to Full Formula Benefits

- The longer a Tier 1 member has been employed, the greater the difference is likely to be between a Money Match or Pension Plus Annuity benefit and the Full Formula benefit.
- Since Full Formula benefits are greater for Police & Fire members, the historical advantages of Money Match and Pension Plus Annuity are less.

**Average Percentage Excess of Total Benefit Over Full Formula Benefit**

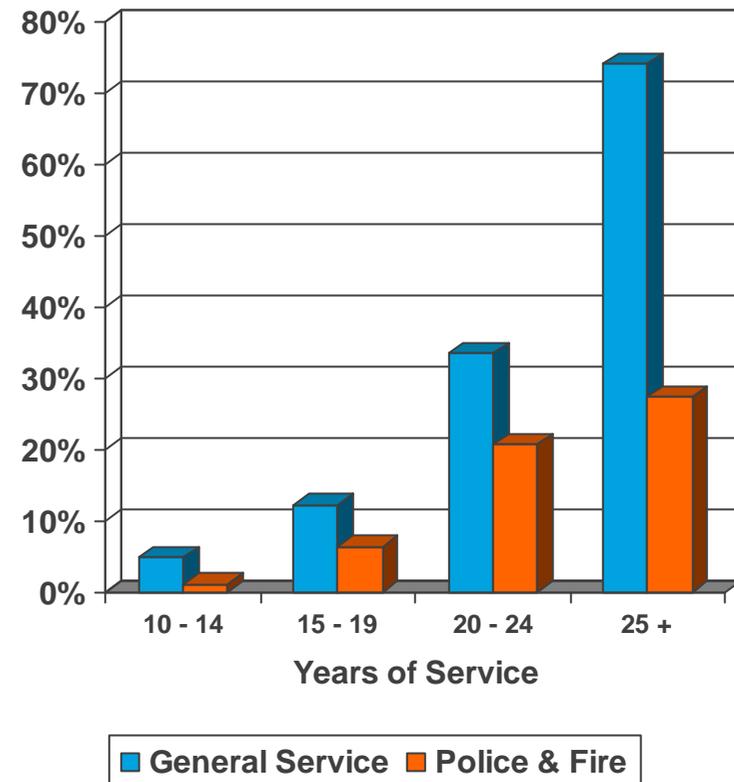


Chart excludes Members reported with less than \$15,000 annual salary for 2007

## Descriptive Statistics for Actives

- For Tier 2 Members, Full Formula benefits dominate the System.
- For Tier 1 Members, Full Formula is emerging as the dominant formula for members with fewer years of service. Longer service members, however, tend to have significantly greater benefits under Money Match (or Pension Plus Annuity for Police & Fire members).

## Next Steps

- Present Net Cash Outflow information to the OIC and their investment consultants.
- Potential financial modeling study
  - Baseline assumes perfect rebalancing of portfolio.
  - Alternative scenarios examine potential impacts of cash requirements and illiquid investments interacting with investment performance and contribution rate changes.

## Appendix

### Basis for Study

- All benefit payment projections and descriptive statistics were based on the data, assumptions and methods from the December 31, 2007 actuarial valuation report and a projected stable active population.
- All contribution projections are based on the results of our financial modeling study presented to the Board on May 16, 2008. This study was based on the data, assumptions, and methods from the December 31, 2006 actuarial valuation.
- For IAP projections, we assumed a constant 6% of pay contribution rate and benefit payments (and expenses) equal to 3% of expected prior year assets (projected assuming an 8% return).
- Actual plan experience may differ significantly and materially from the scenarios examined in this study.

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