



PERA Solvency Task Force Review of PERA Current Condition

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Goals of Task Force

- Prepare and present to the Office of the Governor a set of Recommendations *to preserve the defined benefit system offered by PERA* by August 30, 2019

- Recommendation must:
 1. Result in the July 1, 2019 Unfunded Actuarial Accrued Liability (UAAL) being fully amortized in 25 years or less using an expected investment return assumption of 7.25%
 2. Include employer and employee contribution levels and benefit structure that are *actuarially sound, preserve the defined benefit retirement and ensure intergenerational equity for all members*
 3. Consider the funded levels of the Divisions within PERA

Present Value of Benefits

- Value of benefits expected to be paid to all current participants (active and retired)
- Includes past service and expected future service

Actuarial Accrued Liability

- Value of benefits expected to be paid to participants based upon past service
- Includes all benefits for members in pay status
- Includes the portion of active members' benefits allocated to service performed up to the valuation

Normal Cost

- Present value of active members' benefits allocated to the upcoming year of service
- Sometimes called service cost – the additional cost resulting from an additional year of service

Present Value of Future Normal Costs

- Value of all future annual normal costs
- Value of expected future benefit accruals

Actuarial Cost Method

- A method used to allocate the Present Value of Benefits between past service (Actuarial Accrued Liability) and future service (Present Value of Future Normal Costs)
- Currently PERA uses the Entry Age Normal cost method
- All cost methods maintain the following relationship:



Actuarial Value of Assets

- Dampens the effect that market value fluctuations on funding results. PERA “smooths” the recognition of market gains and losses over 4 years.

Funded Ratio

- The ratio of the Actuarial Value of Assets to the Actuarial Accrued Liability
- Commonly used to monitor the progress toward funding objectives

Unfunded Actuarial Accrued Liability (UAAL)

- The difference between the Actuarial Accrued Liability and the Actuarial Value of Assets
- Liability allocated to past service in excess of assets
- Also reflects the cumulative effect of experience gains and losses

Funding Period

- The number of years required to fully amortize the Unfunded Actuarial Accrued Liability

- **Actuarial Accrued Liability** is the accumulated value of past Normal Costs

- **Normal Cost Contribution** is shared between Member and Employer
 - Provided all assumptions are met, the Normal Cost contributions accumulate and equal the accrued liability in each future year
 - If actual experience differs from assumptions, the gain or loss decreases or increases the unfunded liability

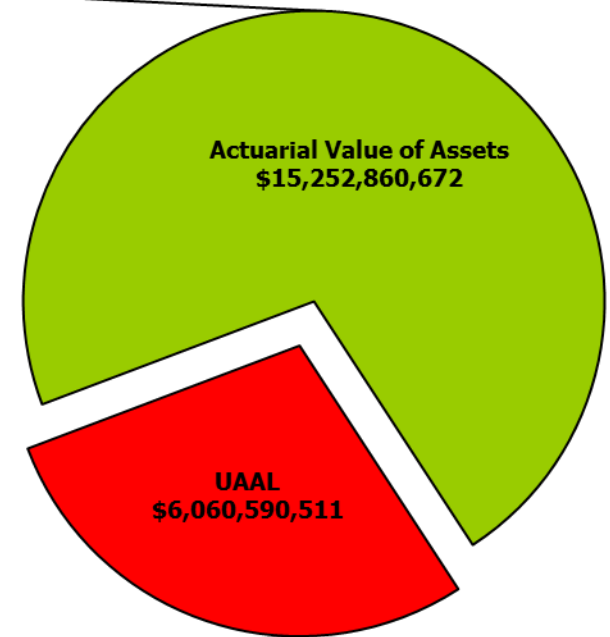
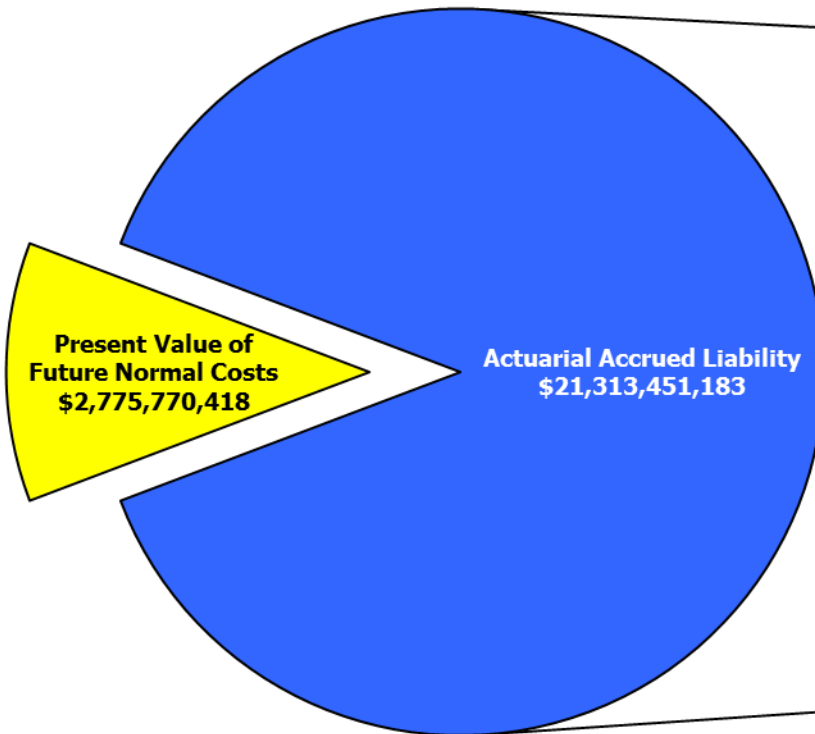
- **Unfunded Liability** spreads the impact of gains and losses on required funding through use of an amortization method

- **Statutory Rates** ignores needed changes to the UAAL amortization cost unless legislated

- **Actuarial Valuation**
 - Measures projected benefits of current plan members and current assets
 - All actuarial assumptions are exactly met
- **Actuarial Open-Group Deterministic Projection**
 - Assumes current members leaving active status are replaced with new members
 - All actuarial assumptions are exactly met
- **Actuarial Open-Group Stochastic Projection**
 - Also called Asset Liability Model (ALM)
 - Open-group but runs 500 random streams of future investment returns from likely distribution of returns
 - Provides sensitivity of projected results to investment volatility

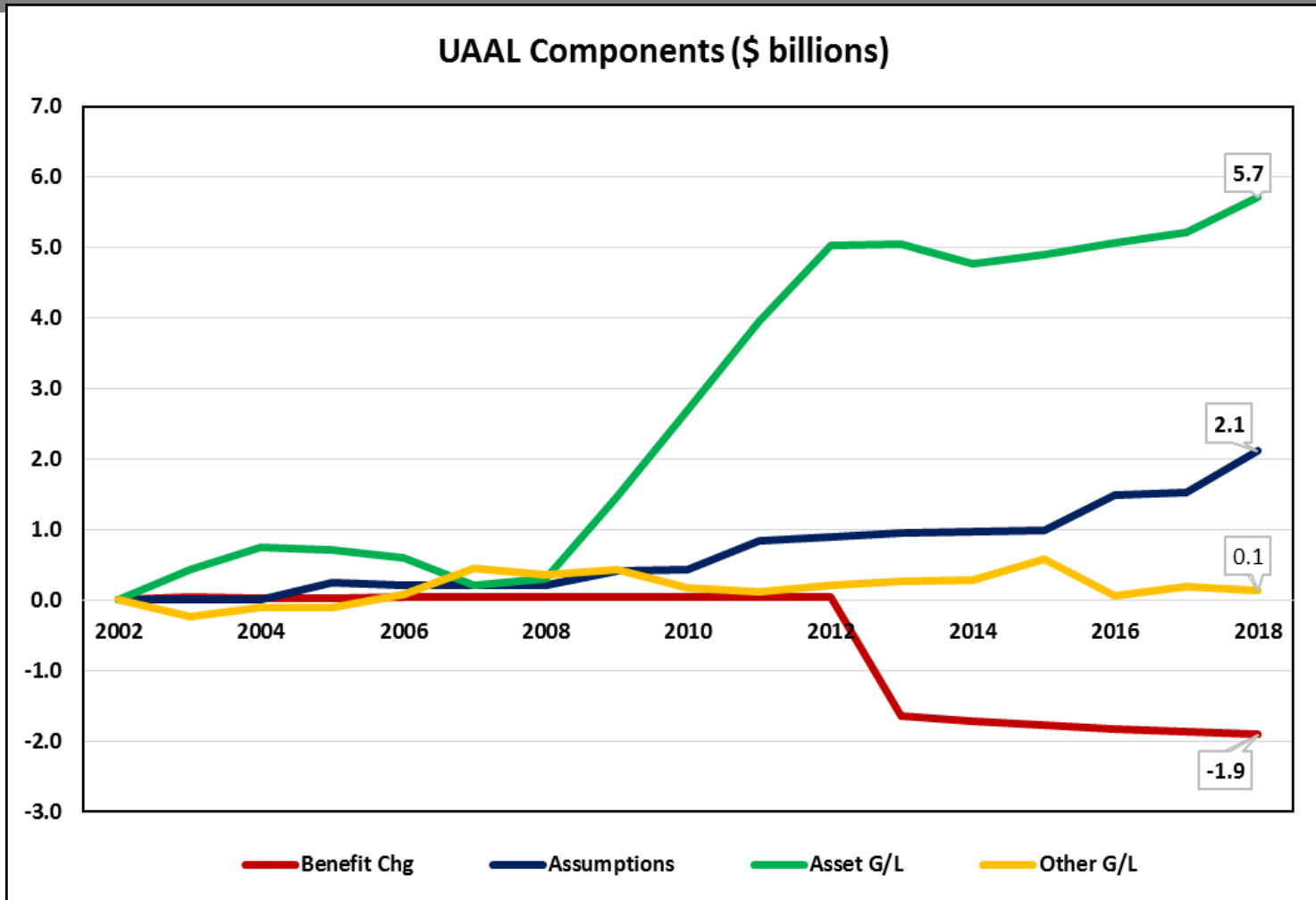
June 30, 2018 PERA Actuarial Valuation Results

Present Value of Benefits
\$24,089,221,601

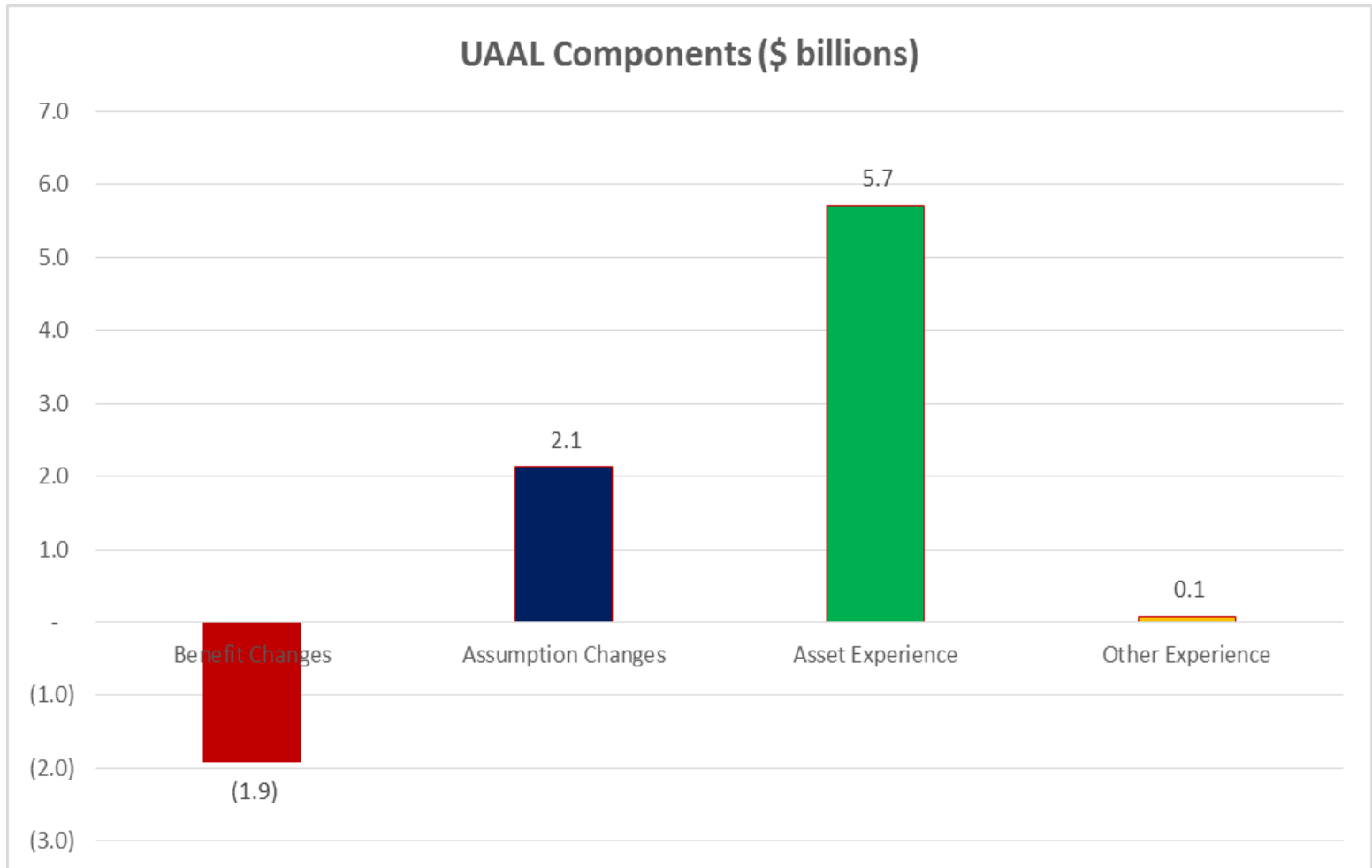


2018 Funded Ratio = Assets/Accrued Liability or 71.6%

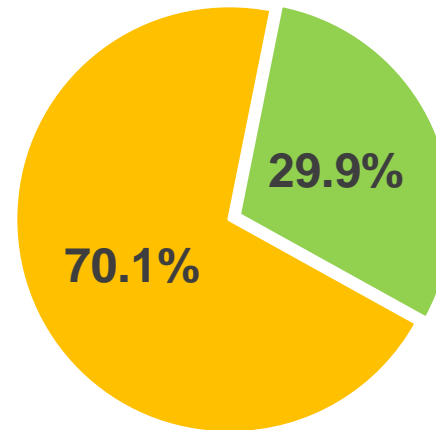
Components of Unfunded Actuarial Accrued Liability 2002-2018



Components of Unfunded Actuarial June 30, 2018



Actuarial Accrued Liability



- Inactive Members - Currently Receiving Benefits
- Active Members - Currently Making Contributions

REMEMBER: 2018 Funded Ratio = 71.6%

⚠ Based on 2018 projection, Inactive Members' Accrued Liability exceeds 100% of Assets in FY 2024

June 30, 2018 PERA Normal Cost Rates



| | Divisions | | | | | |
|------------------------------|-----------|----------|---------|--------|---------|--------|
| | State | State | Muni | Muni | Muni | Total |
| | General | Police | General | Police | Fire | PERA |
| Normal Cost | 15.73% | 22.75% | 14.16% | 22.80% | 25.59% | 16.59% |
| Administrative Expenses | 0.50% | 0.50% | 0.50% | 0.50% | 0.50% | 0.50% |
| Total Ongoing Cost | 16.23% | 23.25% | 14.66% | 23.30% | 26.09% | 17.09% |
| Employee Contributions | 8.92% | 8.75% | 13.47% | 17.21% | 17.55% | 12.03% |
| Employer Portion | 7.31% | 14.50% | 1.19% | 6.09% | 8.54% | 5.06% |
| ER Statutory Rate | 16.99% | 25.58% | 9.78% | 18.66% | 21.55% | 14.81% |
| Available for UAAL | 9.68% | 11.08% | 8.59% | 12.57% | 13.01% | 9.75% |
| Rate Shortfall/(Margin) 25yr | 13.95 % | (32.21)% | 2.63 % | 8.39 % | 18.80 % | 7.35 % |

PERA Expected Investment Return Assumption

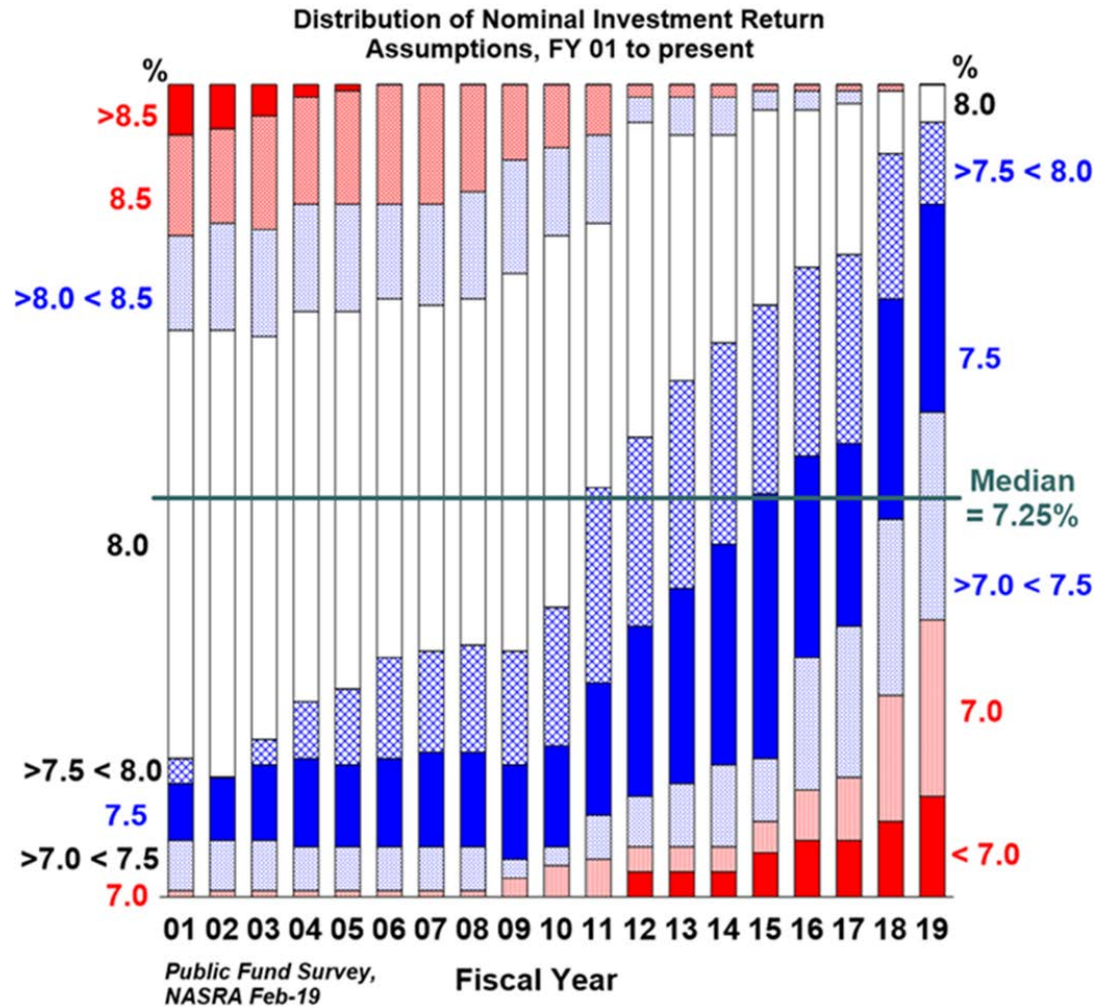
Probability Distribution of Expected Returns – 10 Year

| Item | 25 th Percentile | 50 th Percentile | 75 th Percentile |
|-------------------------------|-----------------------------|-----------------------------|-----------------------------|
| Real Rate of Net Return | 3.6% | 4.6% | 5.6% |
| Inflation | <u>2.5</u> | <u>2.5</u> | <u>2.5</u> |
| Net Investment Rate of Return | 6.1% | 7.1% | 8.1% |

Expected Return Recommendation – 2018 Experience Study

| Assumption | Current | Recommended |
|---------------------------|-------------|-------------|
| Rate of Inflation | 2.25%/2.75% | 2.50% |
| Real Rate of Return | 5.00% | 4.75% |
| Investment Rate of Return | 7.25%/7.75% | 7.25% |

NASRA History of Expected Investment Return Assumptions



- Of 48 Statewide Retirement Systems (not only public safety or teachers) with 2016 plan information available on Public Plans Data website (*publicplansdata.org*), the current employee contribution of PERA covered employees is the highest, State General would be 5th by itself.

| | Normal Cost Rate | Employee Contribution Rate | Employer Share of Normal Cost Rate |
|-------------------------------------|---------------------|----------------------------|------------------------------------|
| 2016 Median of 48 State-wide System | 10.86% | 6.38% | 4.29% |
| PERA Total 2018 | 17.09% ¹ | 11.90% ² | 5.19% |
| PERA State General 2018 | 16.23% ³ | 8.92% ⁴ | 7.31% |

Notes:

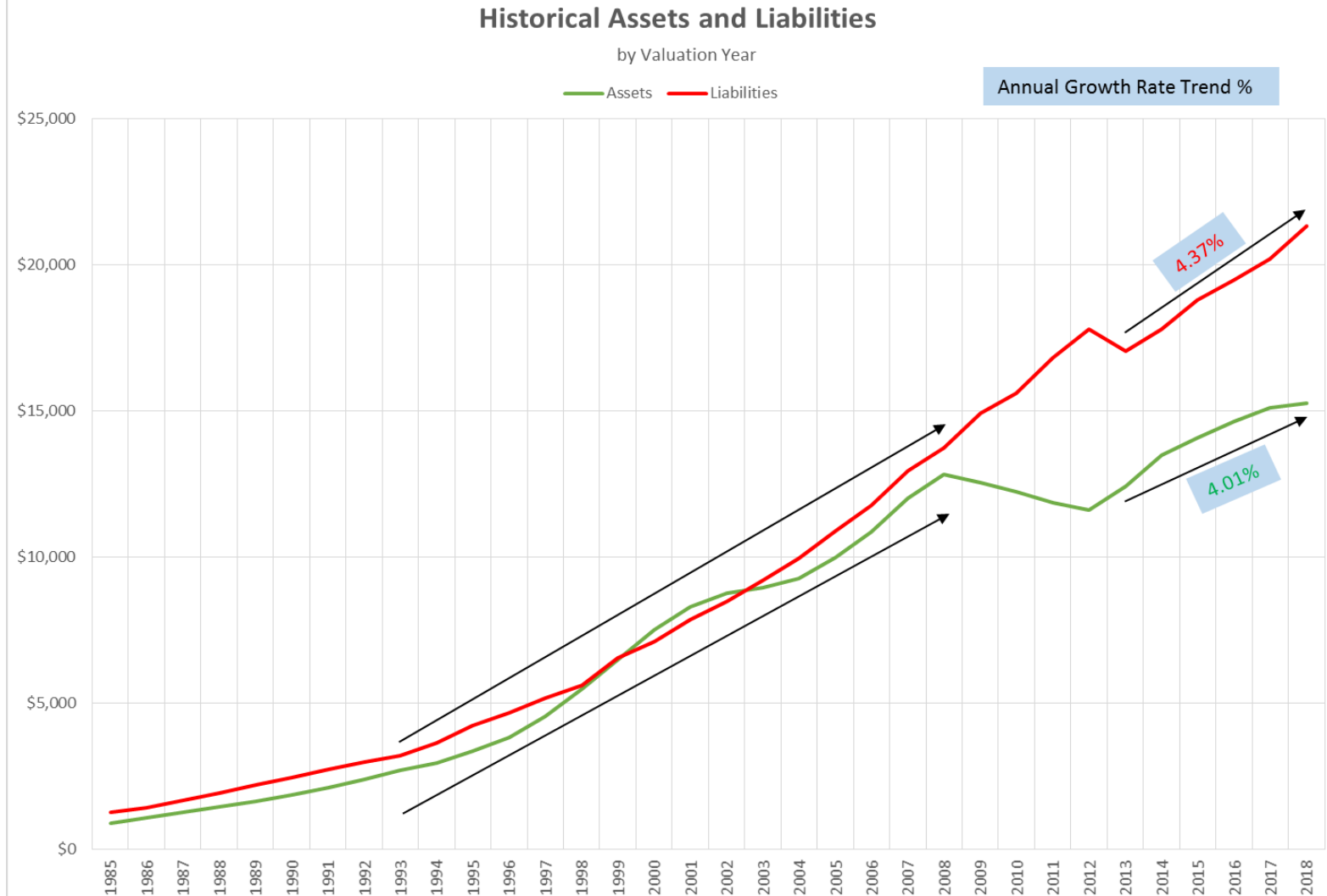
¹ 4th Highest Normal Cost Rate

² Highest Employee Rate

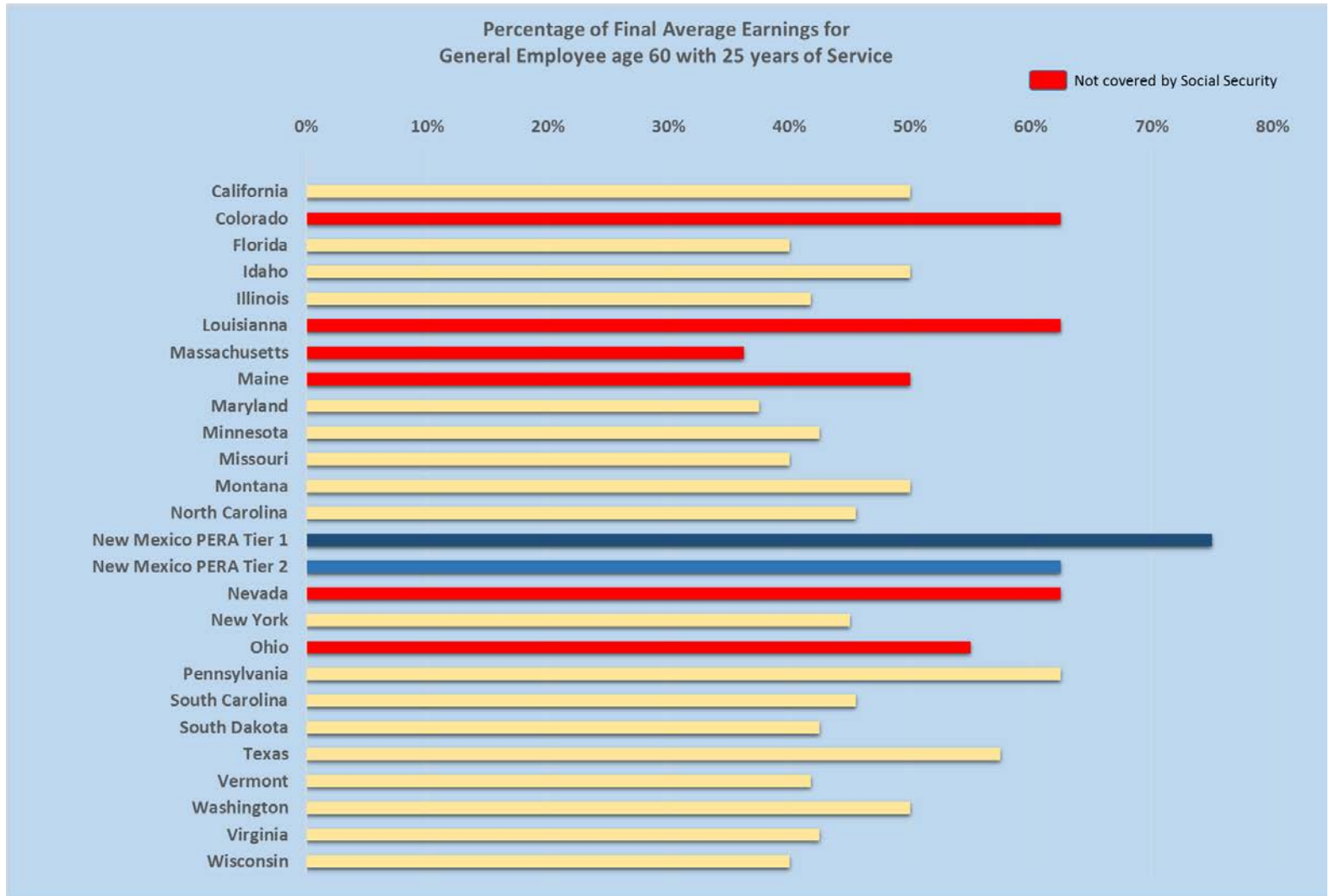
³ By itself 6th Highest

⁴ By itself 5th Highest

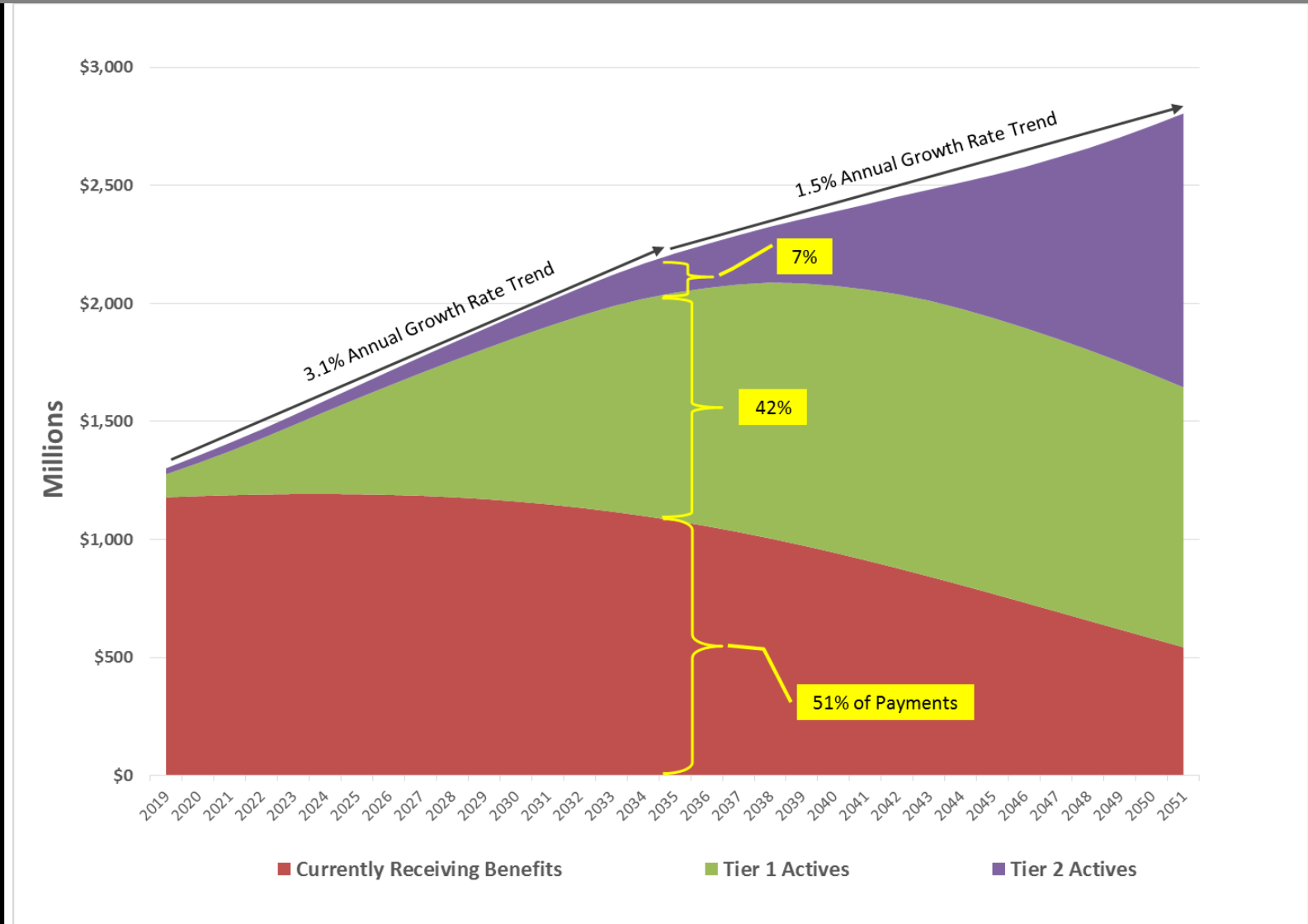
Long-term Trend in Actuarial Valuation Results



PERA Benefit Comparison



Projection of Annual Benefit Payments



- Total Contributions minus [Benefit Payments + Expenses]
 - Mature plans are expected to exhibit negative external cash flow
 - Excessive negative external cash flow slows the growth in plan assets and slows improvement in funded ratio

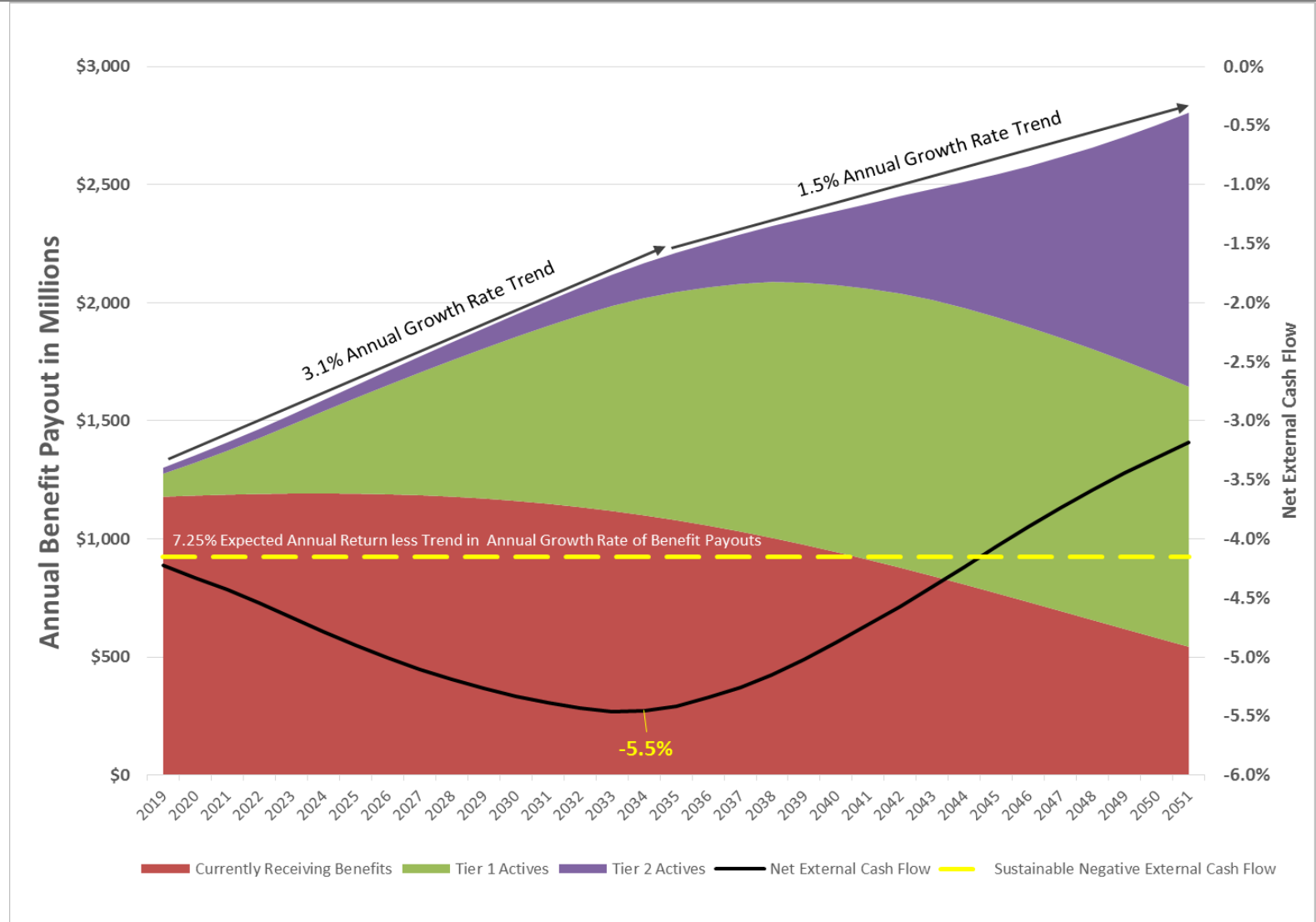
Net External Cash Flow + Investment Income

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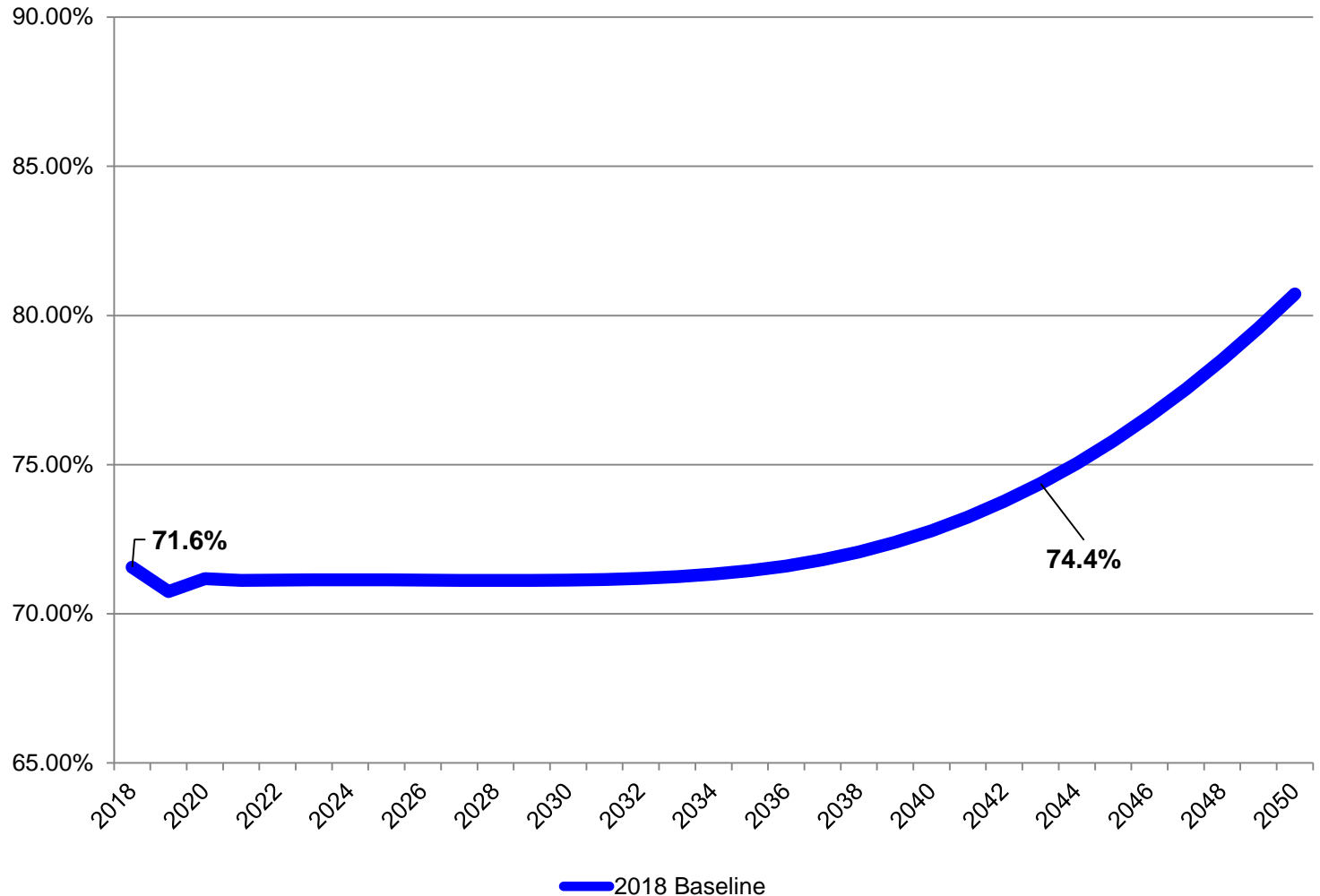
Change in Annual Asset Value

- A good benchmark for a sustainable level of negative cash flow is the investment return less the growth rate in benefit payouts
 - For PERA: 7.25% - 3.00% = 4.25%

Projection of Net External Cash Flow

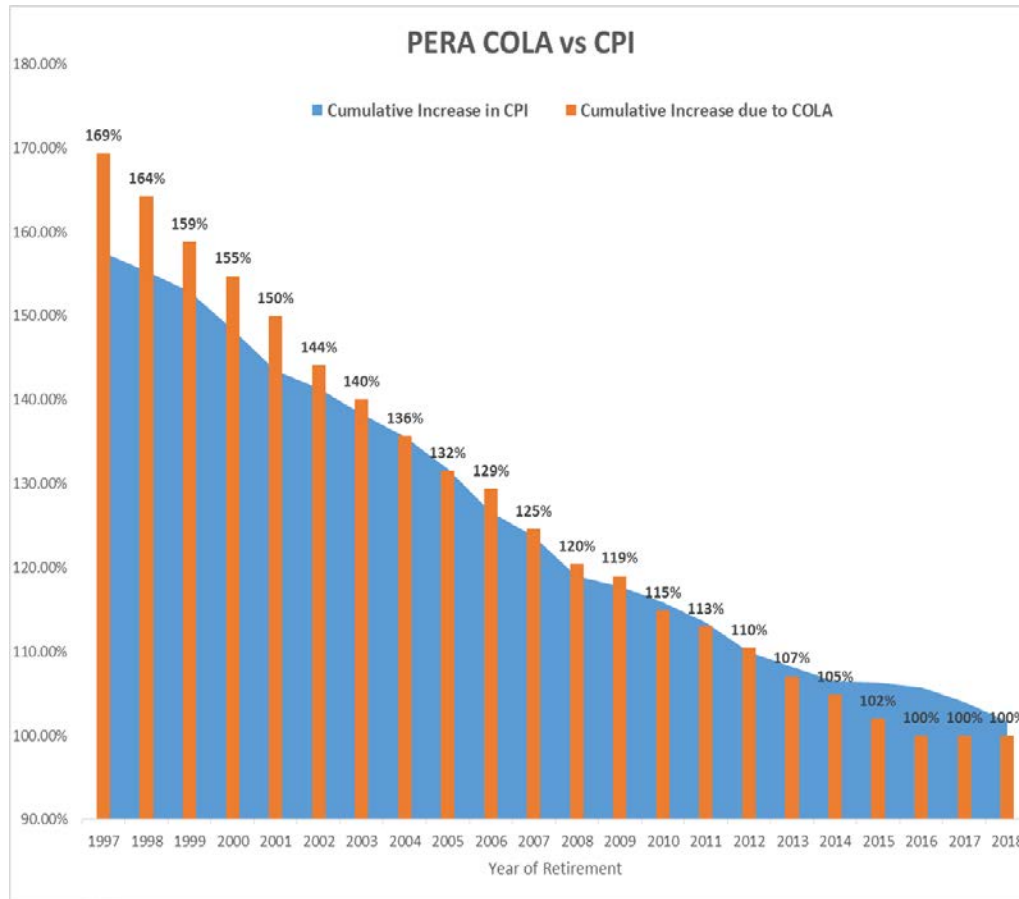


2018 and 2043 Labeled



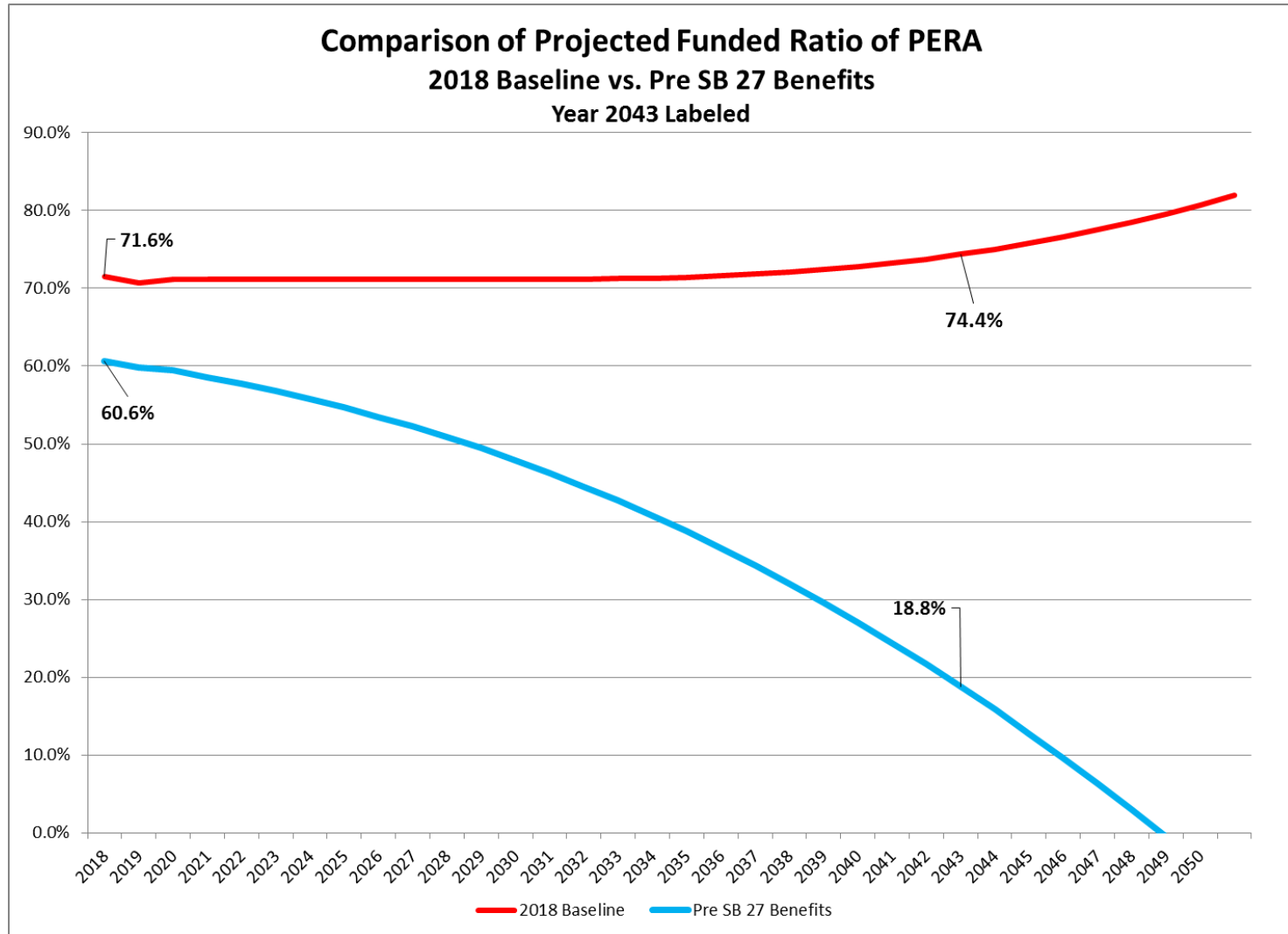
- COLAs are a common feature in public retirement systems
- Reduce the impact of inflation on retirement benefits
- PERA's post SB-27 COLA provisions are mid-range
 - Coupled with the highest benefit accrual rate has a significant impact to cash flow and financial condition

Have COLAs Offset Inflation?



| Fiscal Year of Retirement | Current Average Annual Benefit |
|---------------------------|--------------------------------|
| PRE 1997 | 32,121 |
| 1997 | 36,241 |
| 1998 | 34,913 |
| 1999 | 34,007 |
| 2000 | 33,480 |
| 2001 | 32,215 |
| 2002 | 34,147 |
| 2003 | 33,216 |
| 2004 | 34,056 |
| 2005 | 33,053 |
| 2006 | 31,906 |
| 2007 | 32,263 |
| 2008 | 31,137 |
| 2009 | 32,135 |
| 2010 | 33,130 |
| 2011 | 33,650 |
| 2012 | 30,643 |
| 2013 | 29,833 |
| 2014 | 30,118 |
| 2015 | 28,775 |
| 2016 | 29,505 |
| 2017 | 28,733 |
| 2018 | 29,745 |

2018 Projection of Pre-SB 27



- SB27 did its job. Moved PERA from insolvency. Just was not enough.
- COLAs have exceeded the rate of inflation (CPI) for some retirees (slide 22)
- PERA's challenge is a Funding Ratio AND Cash Flow challenge
- PERA is expected to be in an unhealthy negative cash flow situation peaking in 2034-2035 with baseline projections (slide 19).