PERA

Investments & Pensions Oversight Committee

Sustainability, Solvency and Fund Liquidity Plans for Market Downturn

Senator George K. Muñoz, Chair
Representative Patricia Roybal Caballero, Vice-Chair

July 29, 2019

Dr. Jackie Kohlasch, Chair
John Melia, Vice Chair
Wayne Propst, Executive Director

PERA Current State

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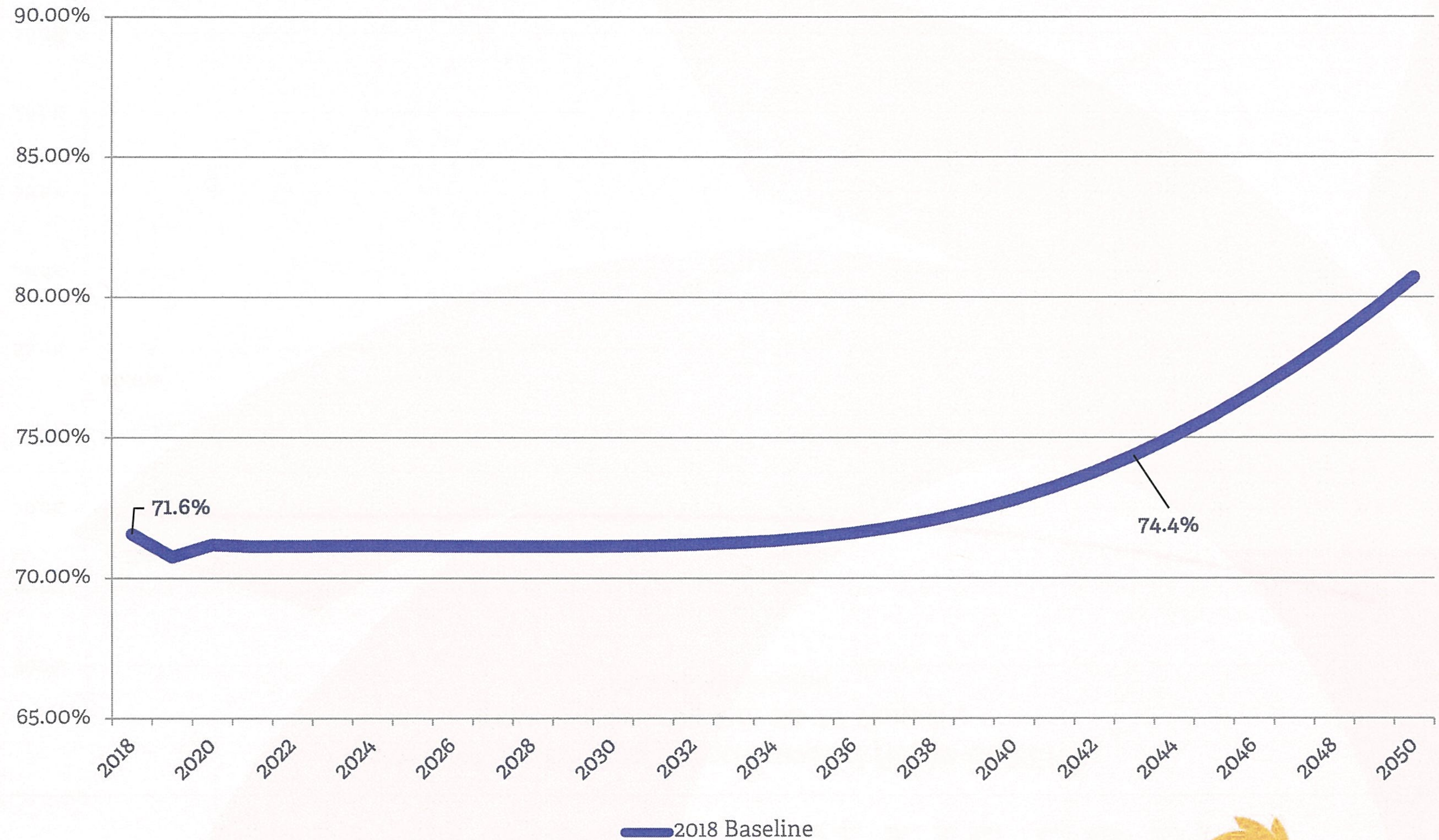
June 30, 2018 PERA Open Group Projection

2018 and 2043 Labeled



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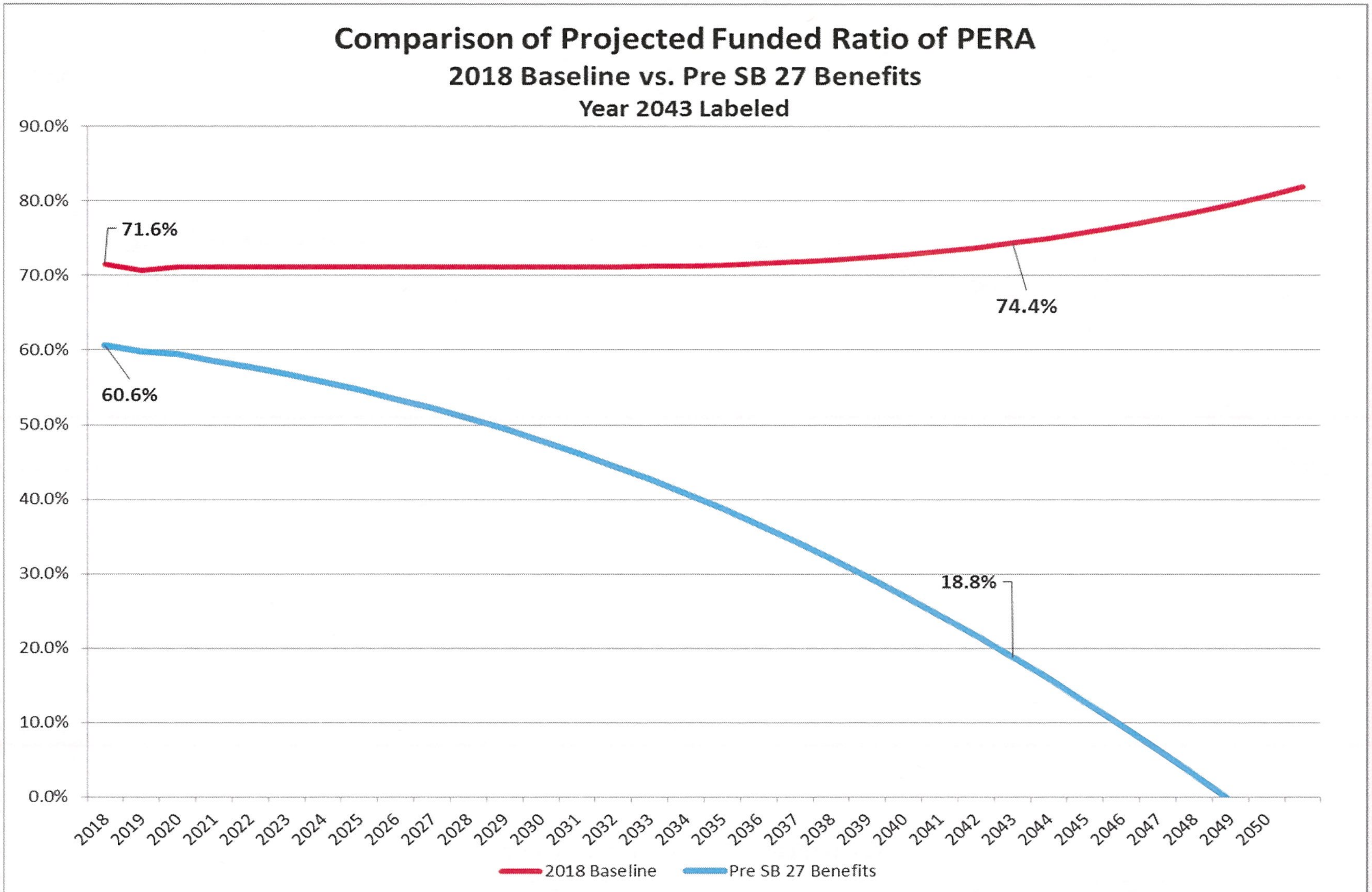
2018 Projection of Pre-SB 27



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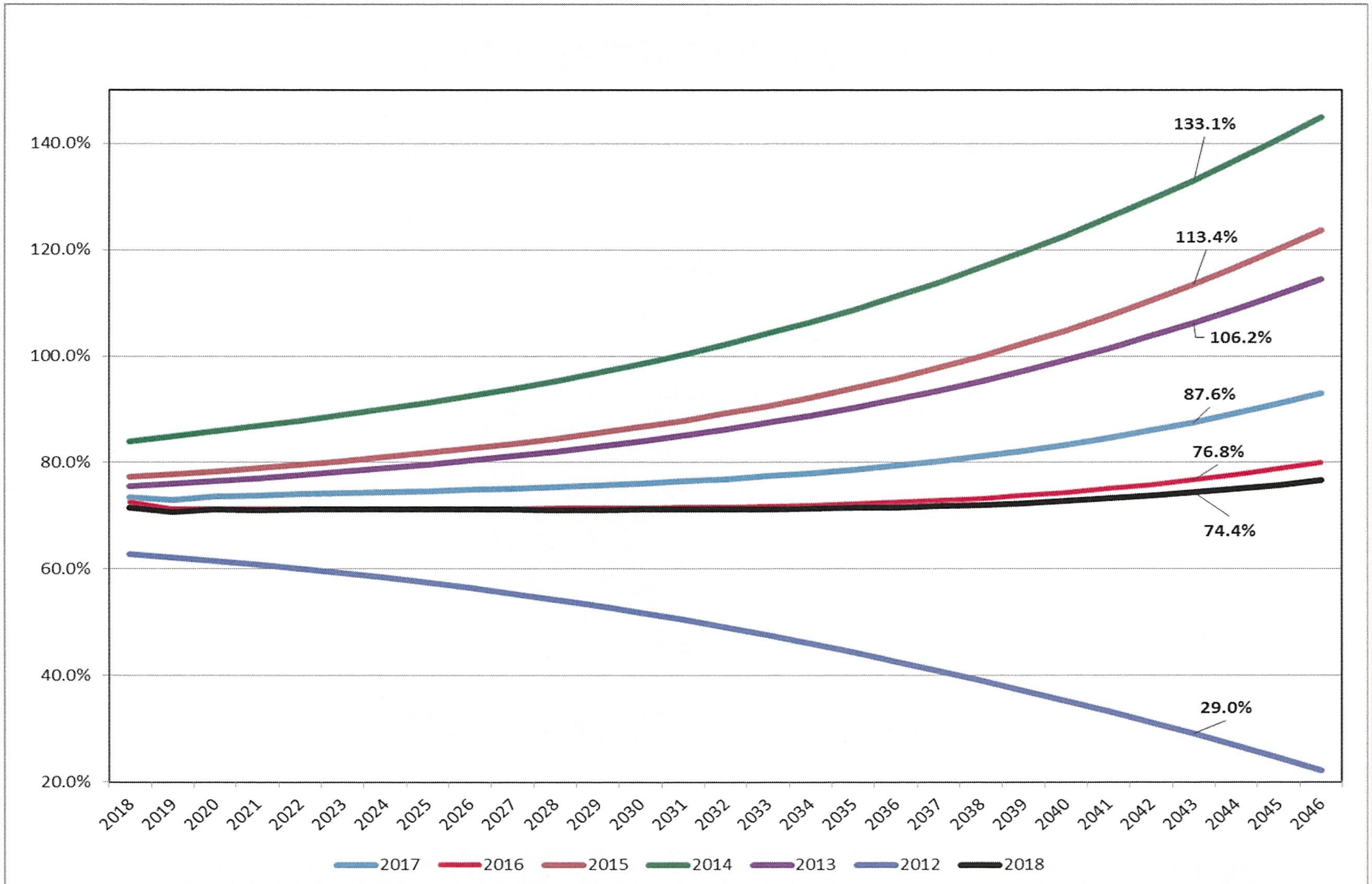
PERA Open Group Projections 2012

2043 Labeled



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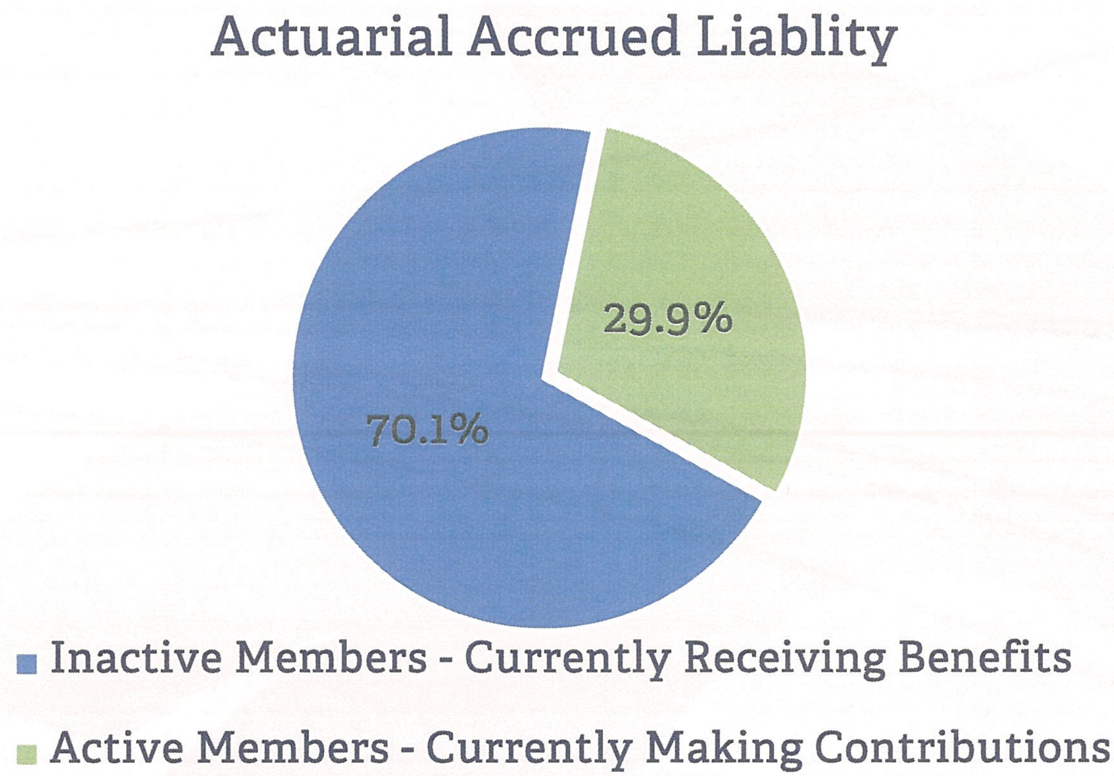
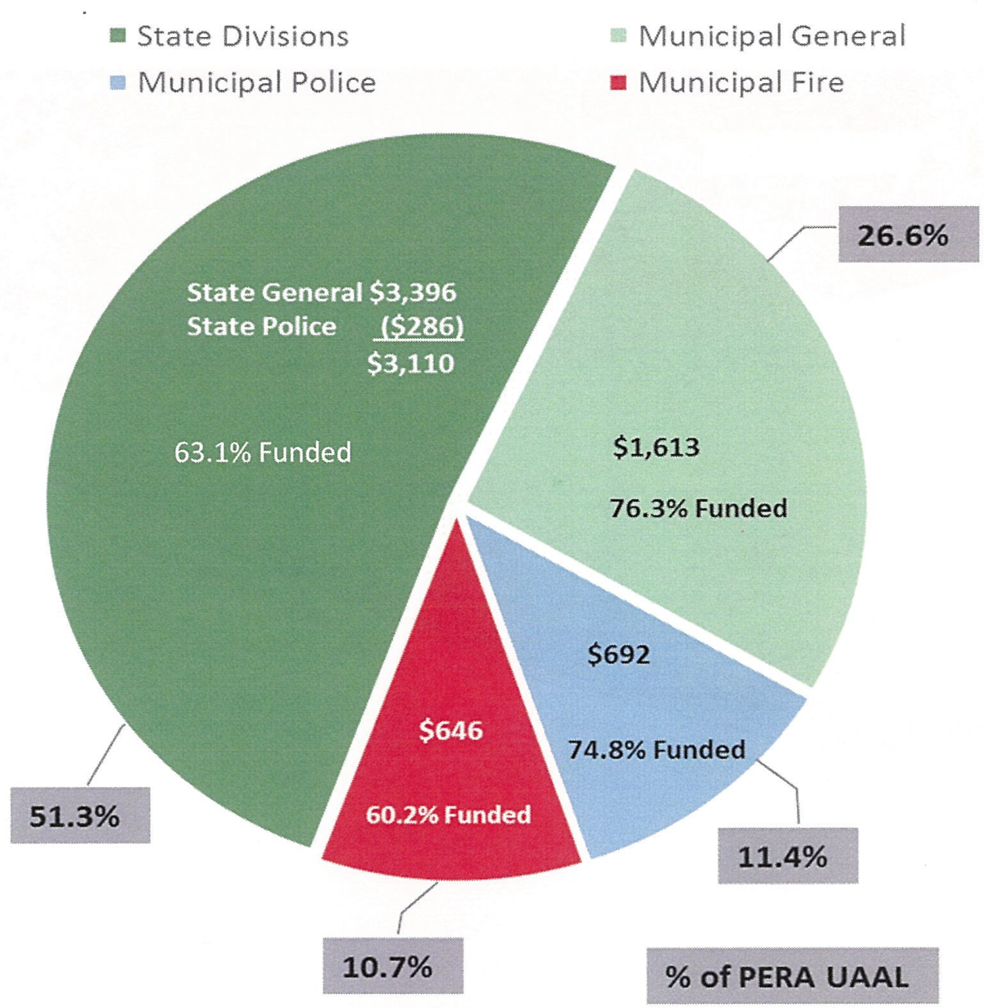
Attribution of Accrued Liability



REMEMBER: 2018 Funded Ratio = 71.6%

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

Attribution of 2018 UAAL by Division



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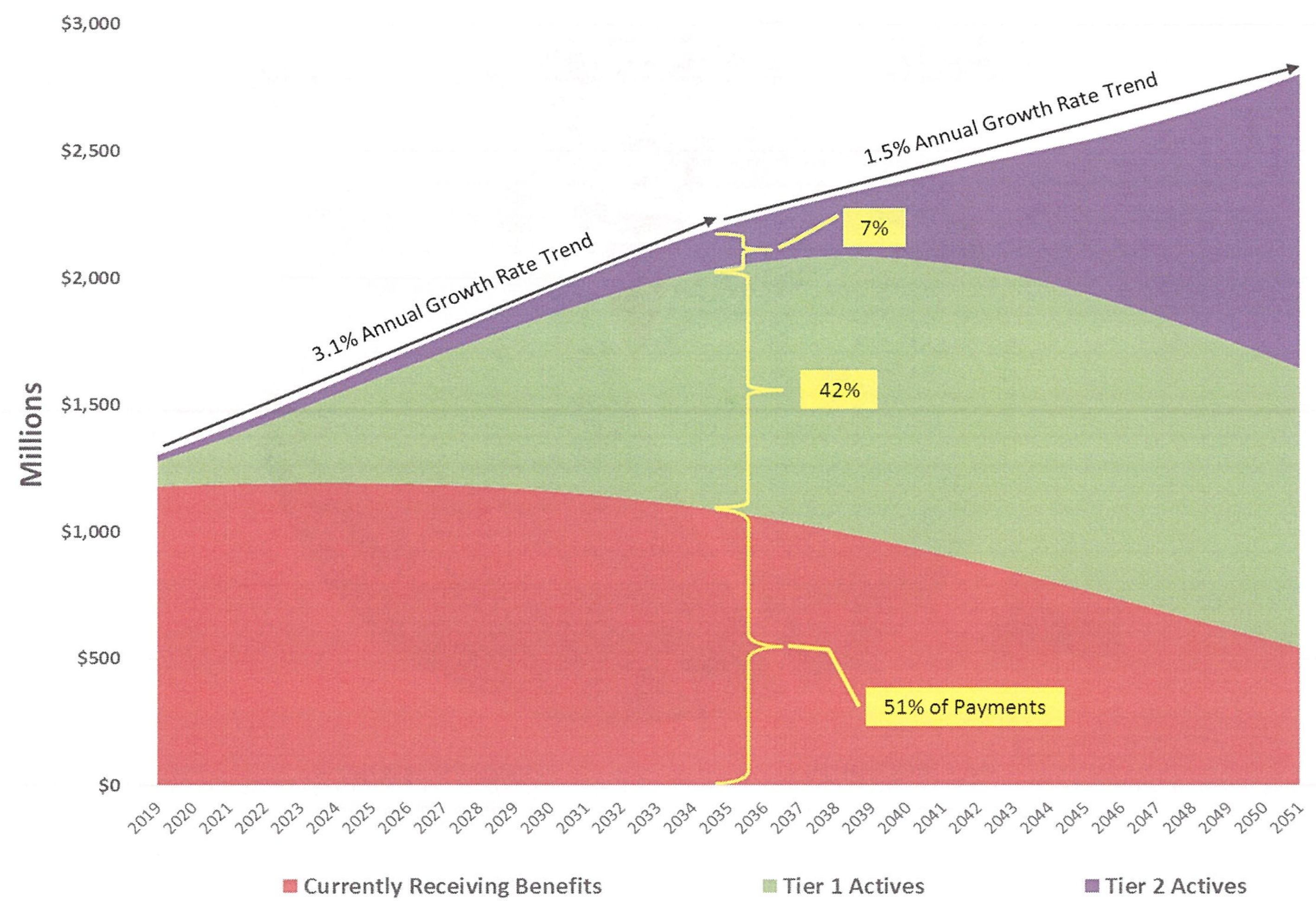
Projection of Annual Benefit Payments



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Net External Cash Flow

- **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

=

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%

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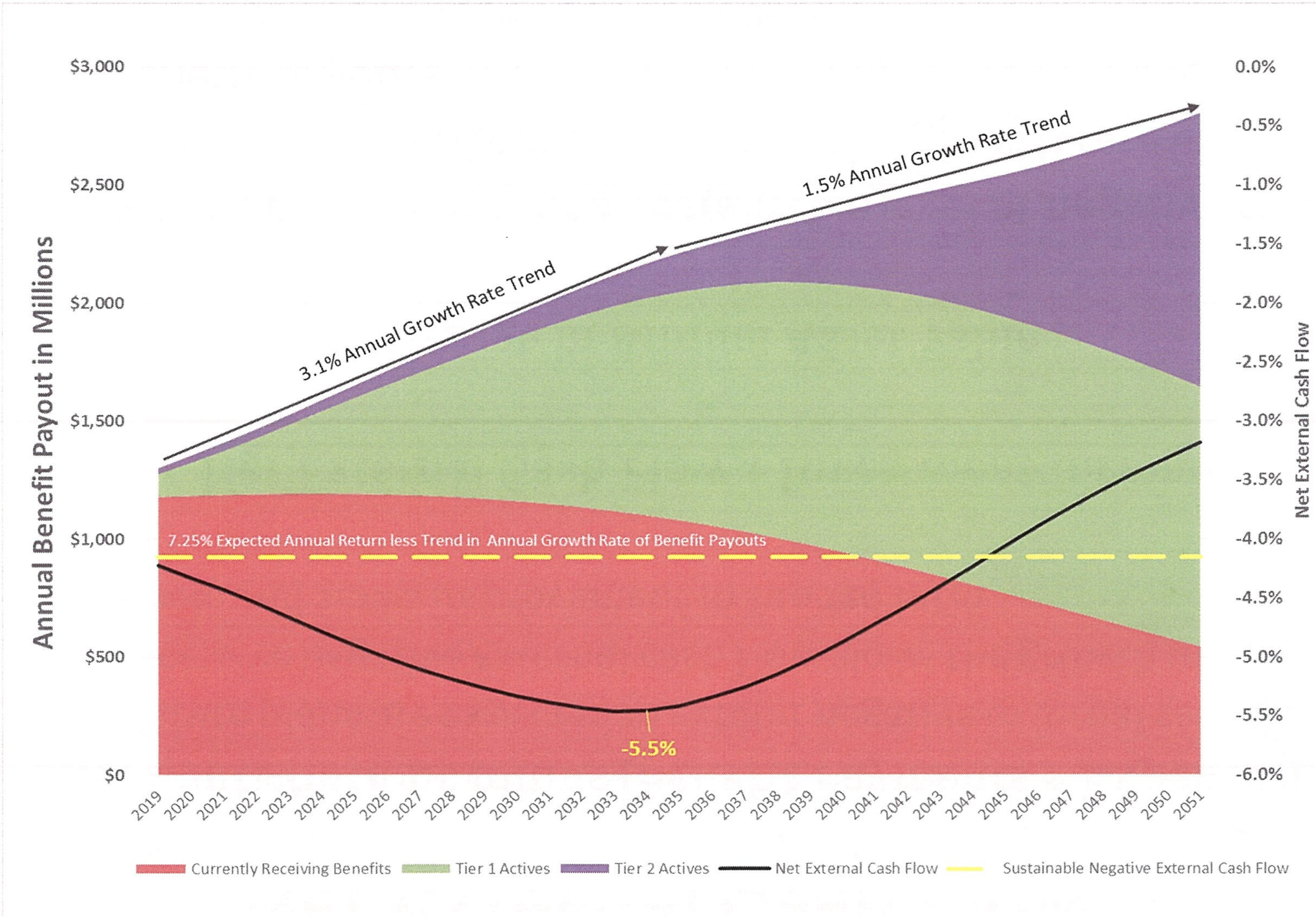
Projection of Net External Cash Flow



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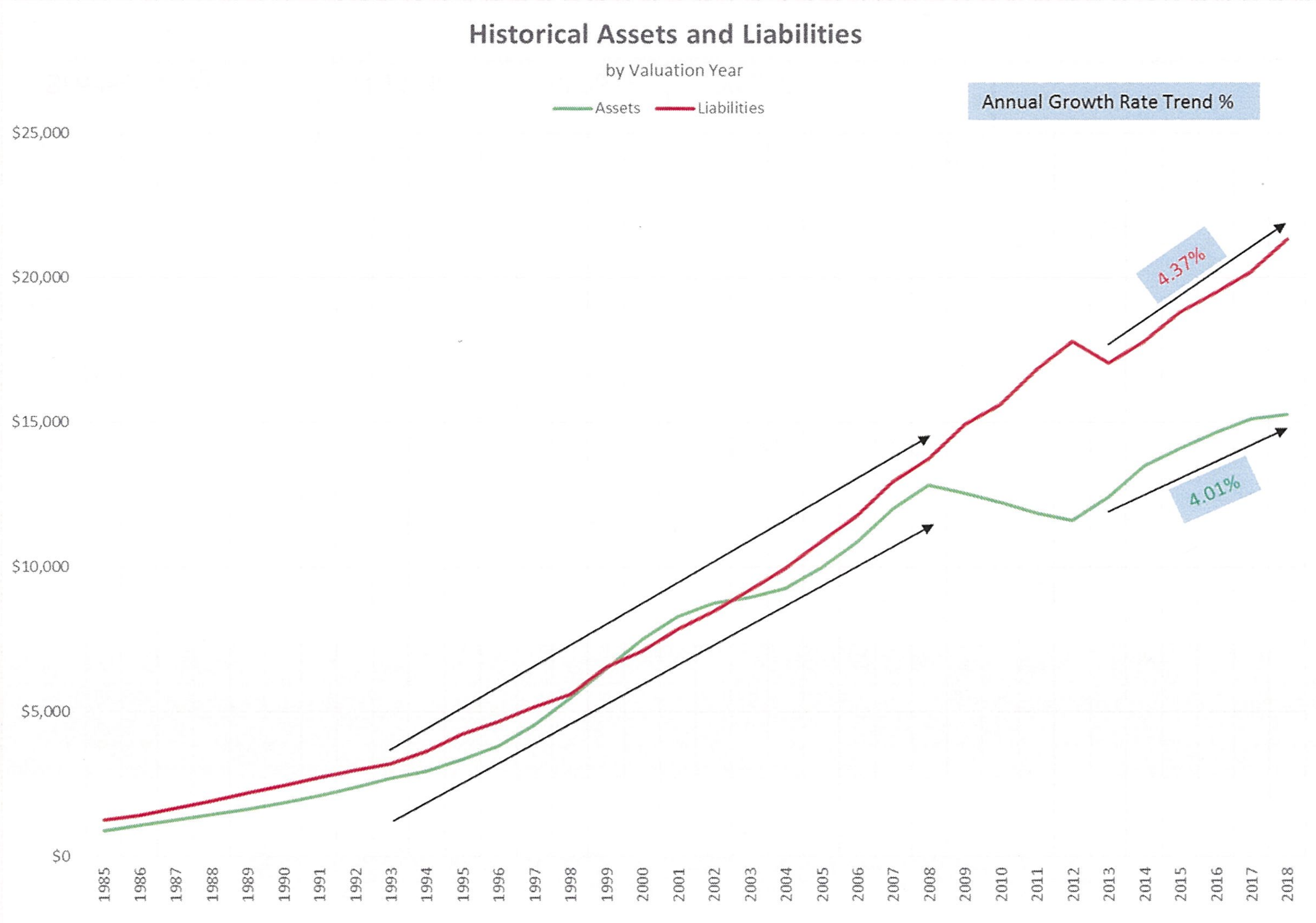
Long-term Trend in Actuarial Valuation Results



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June 30, 2018 PERA State Divisions

30 Year and 25 Year Amortization

	State Divisions					
	General		Police/Corrections		Legislative	
	30 Yr	25 Yr	30 Yr	25 Yr	30 Yr	25 Yr
Normal Cost	15.73%	15.73%	22.75%	22.75%	$931,257	$931,257
Administrative Expenses	0.50%	0.50%	0.50%	0.50%	$6,000	$6,000
UAAL ($mil)	$3,395.6	$3,395.6	($286.0)	($286.0)	($11.7)	($11.7)
Funding Period (Yrs)	Infinite	Infinite	0	0	30	25
Funded Ratio	63.1%	63.1%	130.2%	130.2%	137.7%	137.7%
Policy Rate	37.62%	39.86%	4.13%	2.12%	0.00%	0.00%
Statutory Rate	25.91%	25.91%	34.33%	34.33%		
Rate Shortfall/(Margin)	11.71 %	13.95 %	(30.20)%	(32.21)%		

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June 30, 2018 PERA Municipal Divisions

30 Year and 25 Year Amortization

	Municipal Divisions					
	General		Police		Fire	
	30 Yr	25 Yr	30 Yr	25 Yr	30 Yr	25 Yr
Normal Cost	14.16%	14.16%	22.80%	22.80%	25.59%	25.59%
Administrative Expenses	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
UAAL ($mil)	$1,613.3	$1,613.3	$692.0	$692.0	$645.7	$645.7
Funding Period (Yrs)	43	43	Infinite	Infinite	Infinite	Infinite
Funded Ratio	76.3%	76.3%	74.8%	74.8%	60.2%	60.2%
Policy Rate	24.81%	25.88%	42.28%	44.26%	54.89%	57.90%
Statutory Rate	23.25%	23.25%	35.87%	35.87%	39.10%	39.10%
Rate Shortfall/(Margin)	1.56 %	2.63 %	6.41%	8.39%	15.79%	18.80%

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June 30, 2018 PERA Normal Cost Rates

	Divisions					
	State General	State Police	Muni General	Muni Police	Muni Fire	Total 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 %

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June 30, 2018 PERA Normal Cost Rates

- 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

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Cost of Living Allowances (COLA)

- 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*

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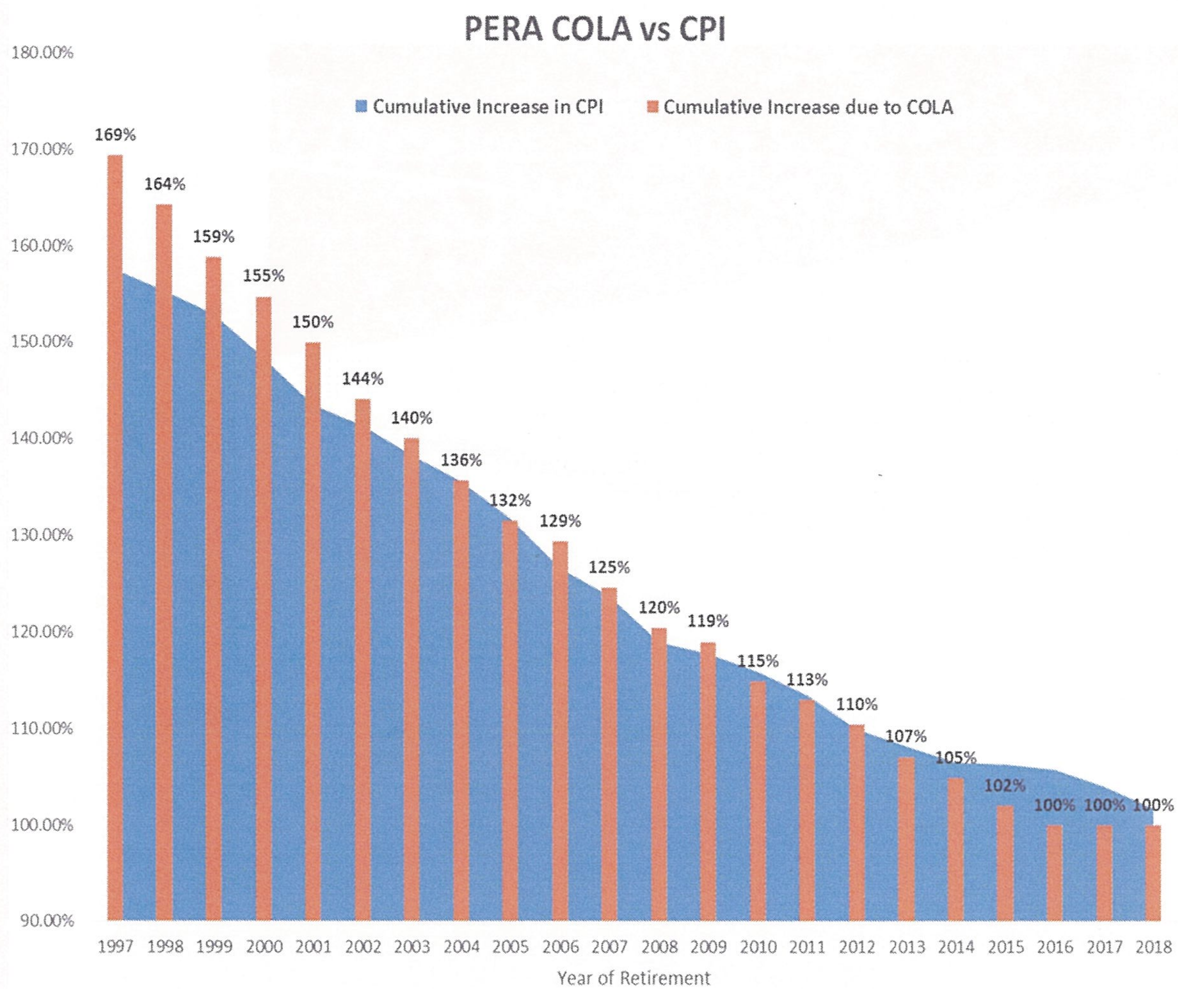
Have COLAs Offset Inflation?



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**

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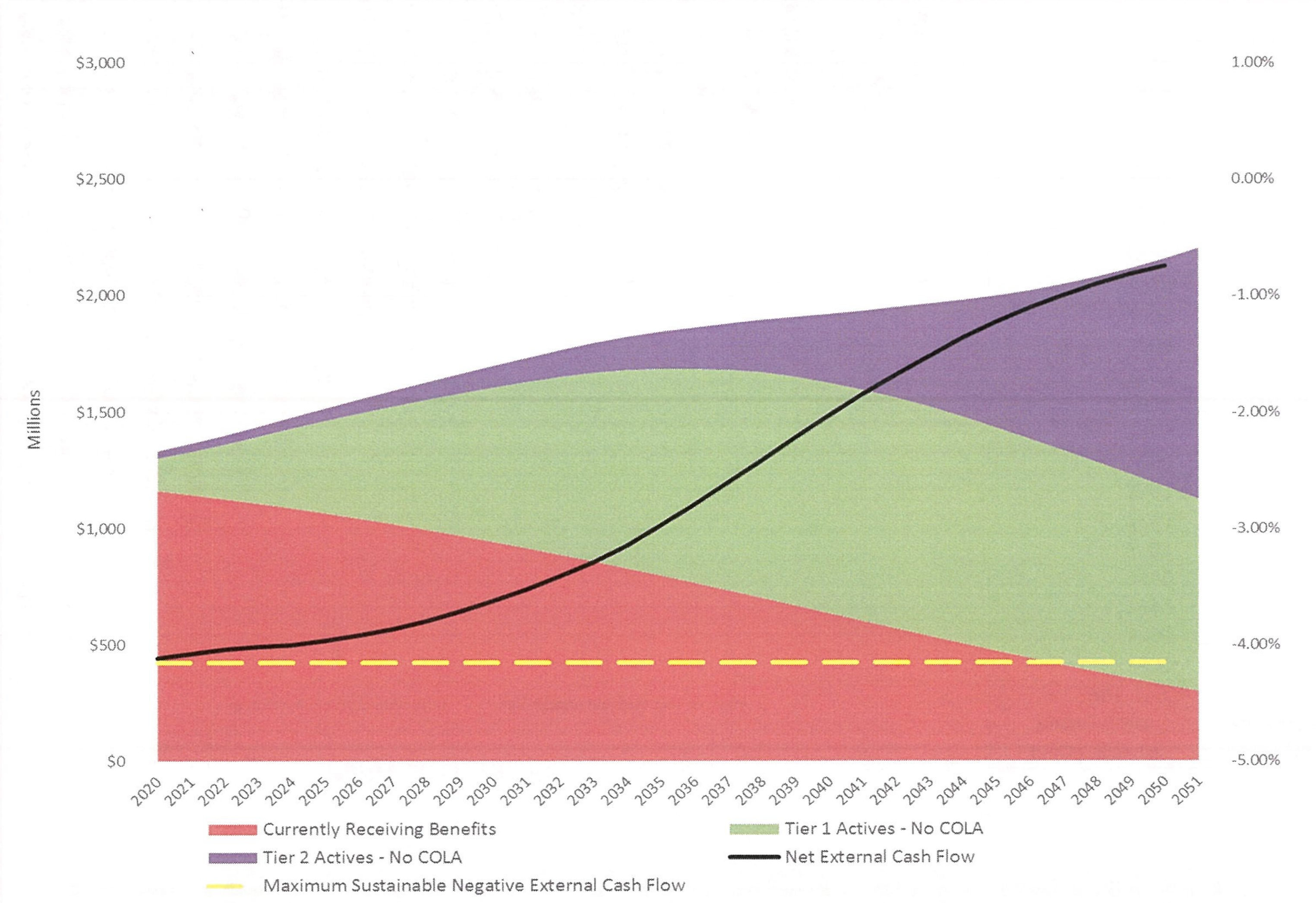
COLAs Impact on PERA's Projected Benefit Payments



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PERA's Investment Strategy, Results, & Future Outlook

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PERA Long-Term Investment Objectives Scorecard

PERA Long-Term Objective	Actual Results
Maintain appropriate strategic asset allocation to meet the actuarial discount rate assumption over the long run	✓ Exceeded actuarial hurdle rates for 10 years, 30 years, and since data inception (1985)
Meet 10-Year annualized returns to equal or exceed benchmarks	✓ Exceeded Passive "Reference" Portfolio & Internal Benchmarks for 10, 20, 30 years, and since data inception (1985) ✓ For 10 years, PERA produced over $1.3 billion in value add over Passive "Reference" Portfolio
Achieve a total investment cost at or below a benchmark cost relative to peers adjusted for fund size and asset mix.	✓ Compared to 317 Global funds (162 U.S. Pension funds, 74 Canadian funds, 70 European funds, 8 Asia-Pacific funds), PERA is low cost and saved approximately $1.9m in fees and costs.

As of 3/31/2019

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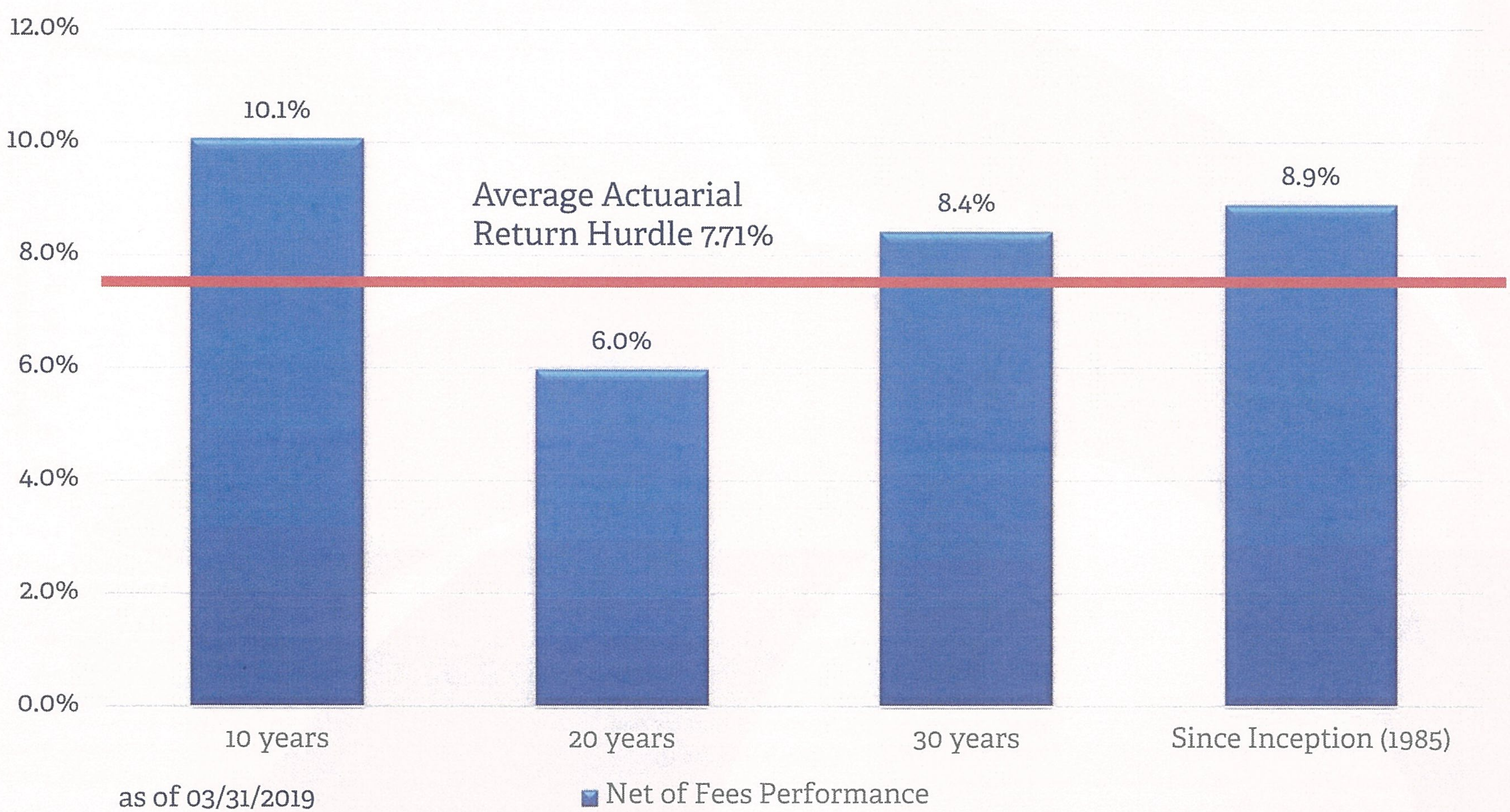
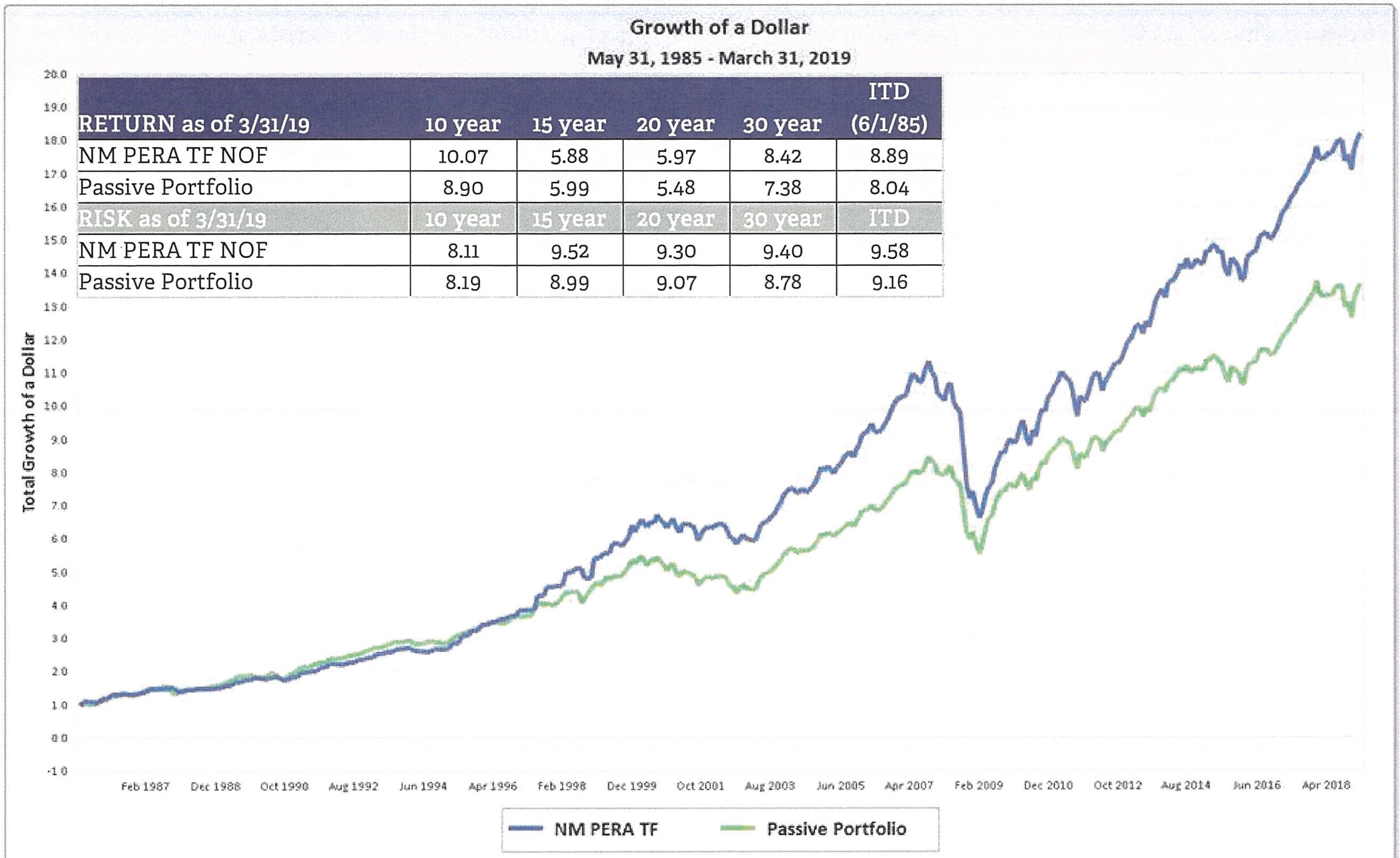
Meeting Long Term Assumed Returns



as of 03/31/2019

PERA Long Term Performance

RETURN as of 3/31/19	10 year	15 year	20 year	30 year	ITD (6/1/85)
NM PERA TF NOF	10.07	5.88	5.97	8.42	8.89
Passive Portfolio	8.90	5.99	5.48	7.38	8.04
RISK as of 3/31/19	**10 year**	**15 year**	**20 year**	**30 year**	**ITD**
NM PERA TF NOF	8.11	9.52	9.30	9.40	9.58
Passive Portfolio	8.19	8.99	9.07	8.78	9.16



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Three Big Challenges Ahead

1. **" Bridge the Gap"**
   - Meeting Actuarial Returns (7.25%) in a Low Return Environment

2. **Maneuvering through Late Cycle Economy**
   - Potential for Recession

3. **Negative Cash Flow**
   - Managing liability bulge and burgeoning negative cash flow of the system

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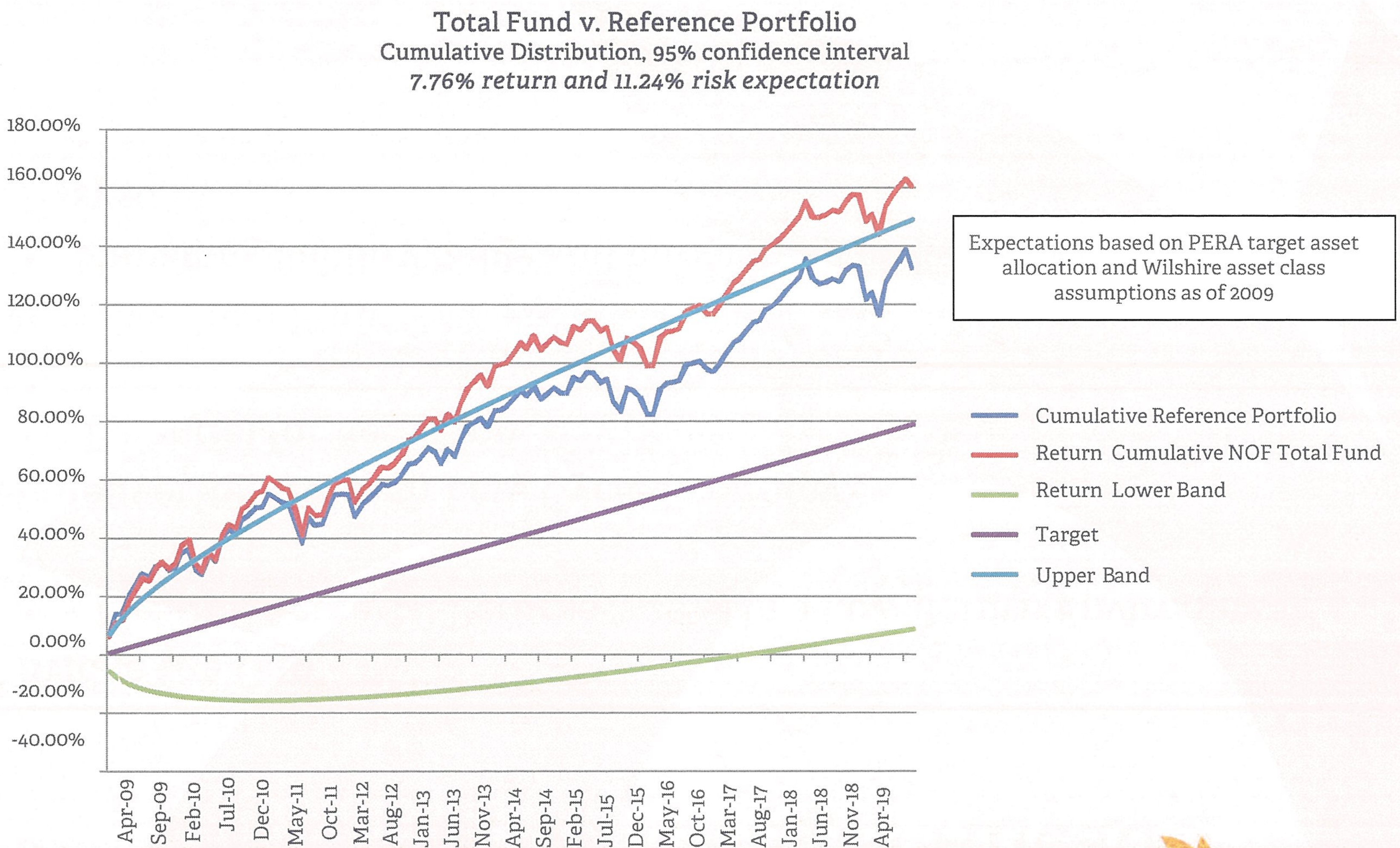
A Statistical Outlier: Exceptional Last 10 Years

PERA Experience



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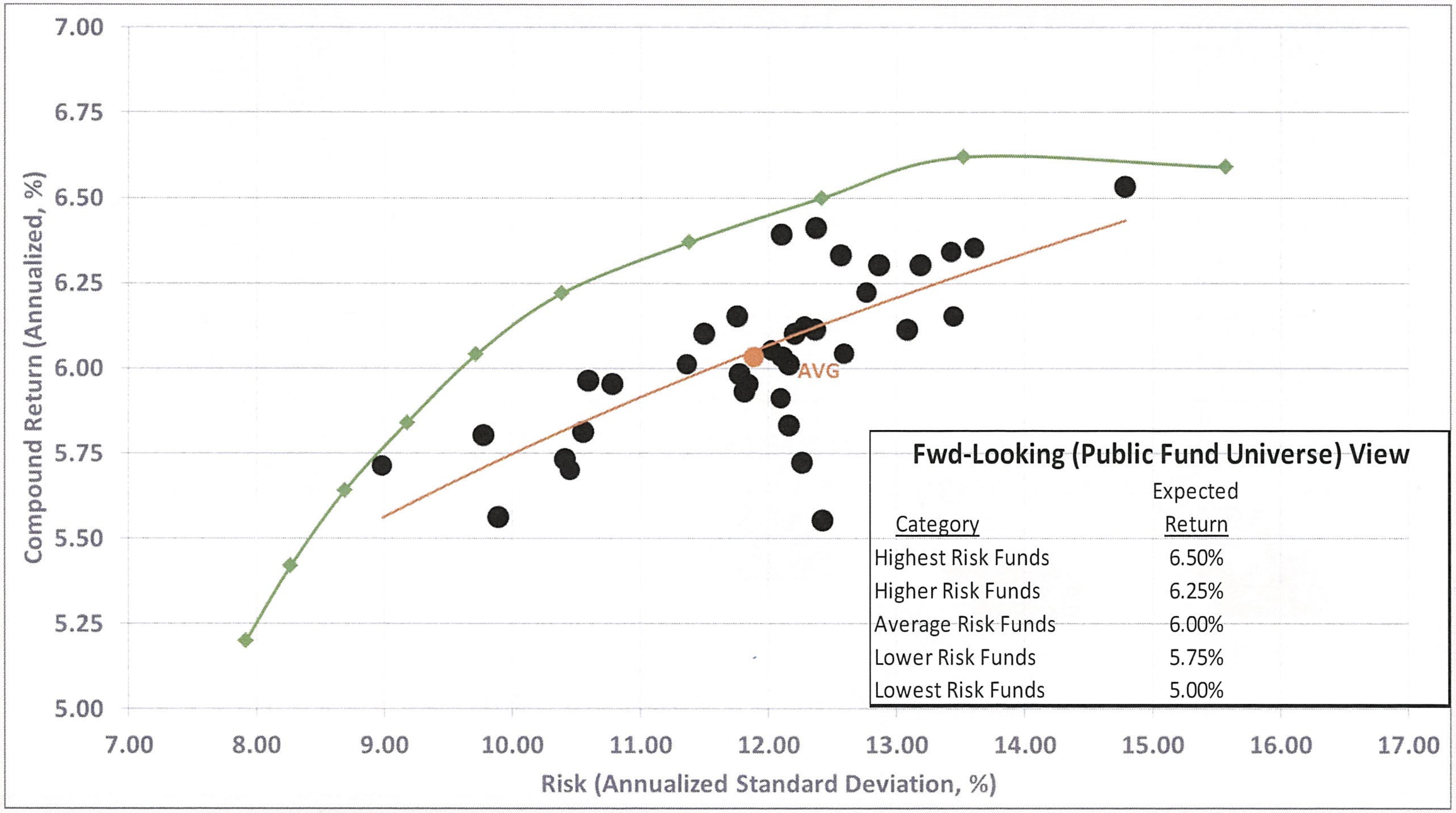
Long-Term Outlook: Low Return Environment

10 Year Expected Return of 37 Public Funds >$5 billion



Source: State Investment Council

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Bridging the Return Gap: PERA 10 Year Return Strategy

Note: 10-year forecast.; projected and subject to change based on market volatility

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PERA Strategic Asset Allocation

Adopted July 2018

Global Equity – Economic Growth	• Global Public Equity • Global Low Volatility Equity • Hedged Equity • Private Equity	35.5%
Risk Reduction/Mitigation – Safety and Liquidity	• Core Fixed Income • Global Core Fixed Income	19.5%
Credit Oriented – Hybrid Exposure to Growth and Income	• Liquid Credit Strategies • Emerging Market Debt • Illiquid Credit Strategies	15.0%
Real Assets – Inflation Protection	• Liquid Real Estate • Illiquid Real Estate • Liquid Real Assets • Illiquid Real Assets	20.0%
Multi-Risk Allocation – Diversification	• Risk Balance	10.0%

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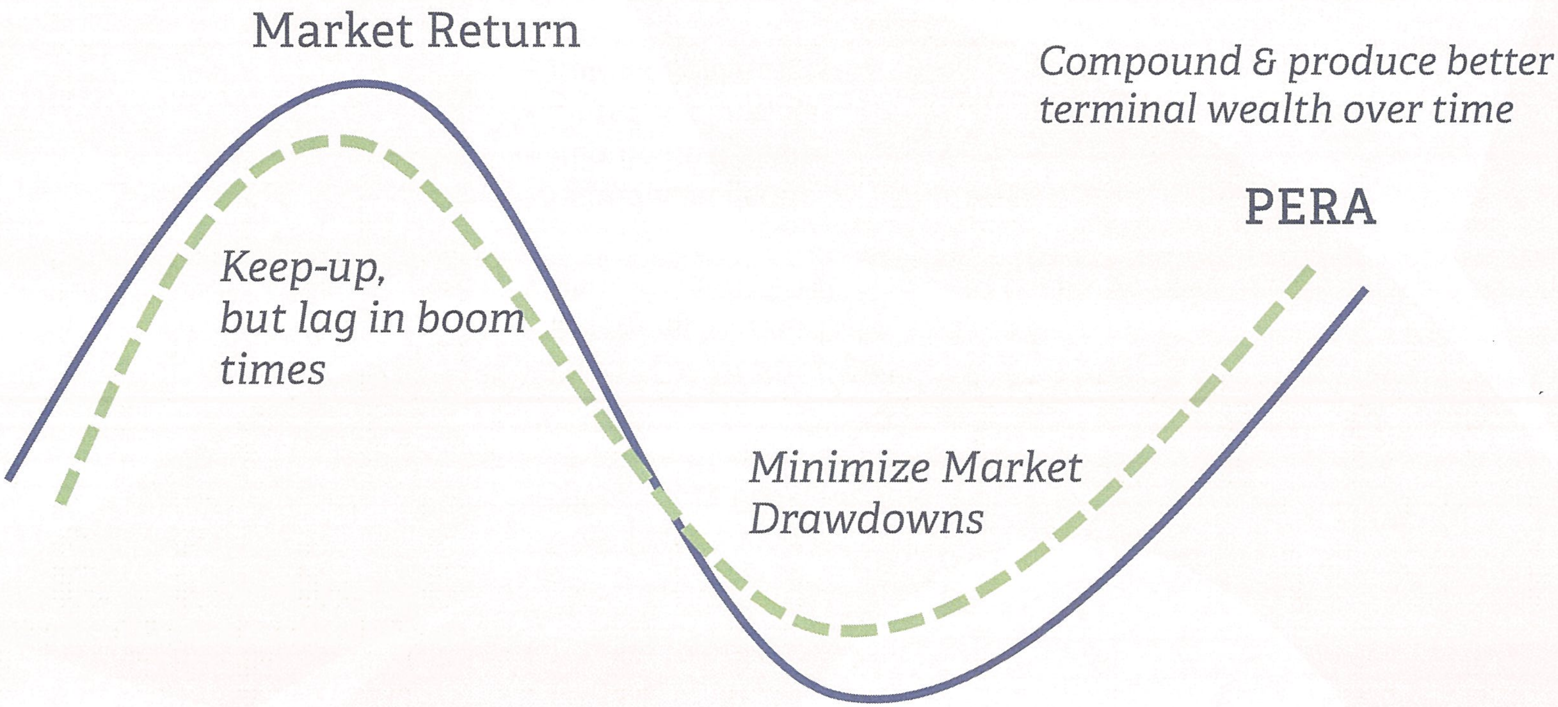
PERA Investment Strategy:
Take Advantage of Diversification Benefits



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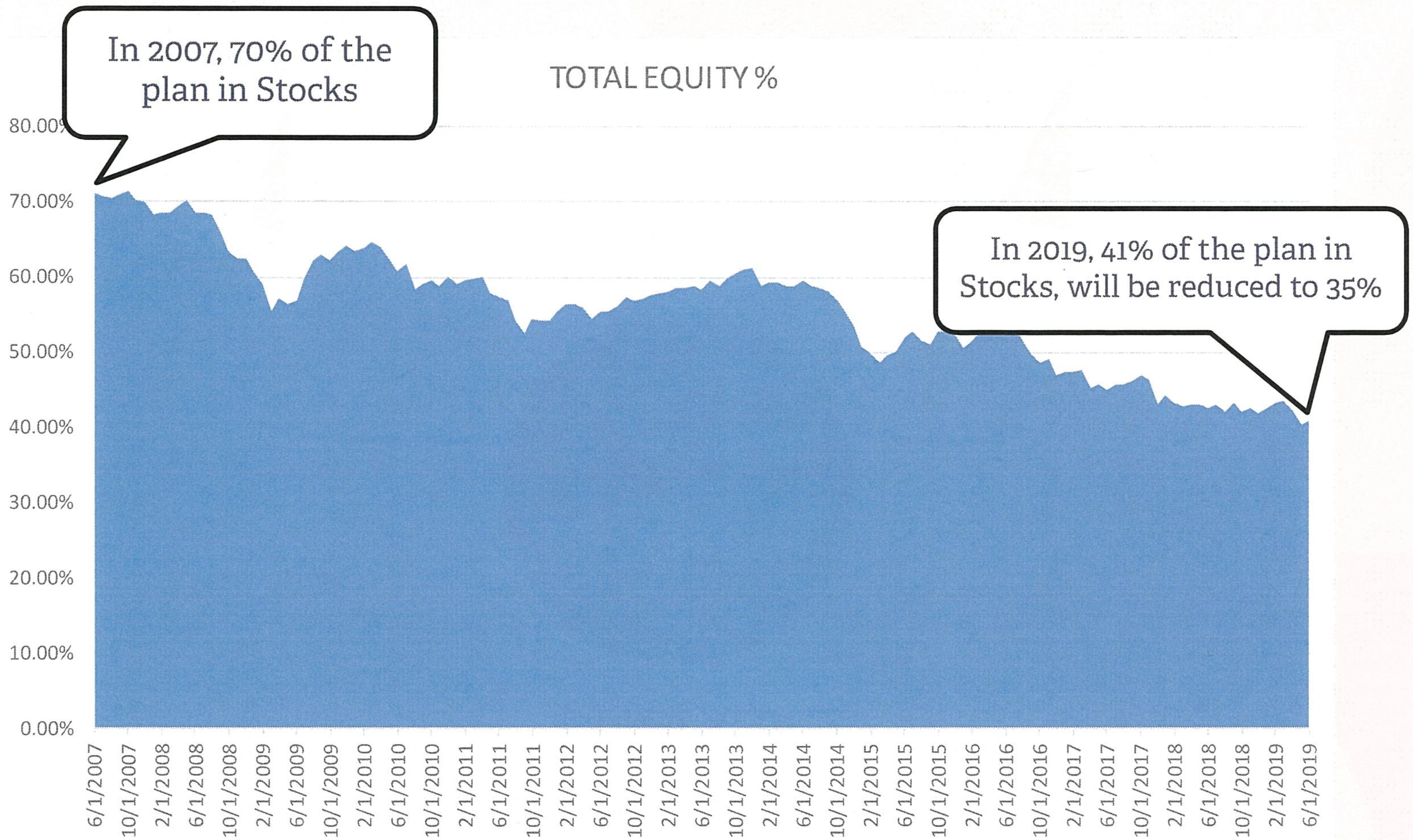
Diversifying Away From Equity Risk Premium



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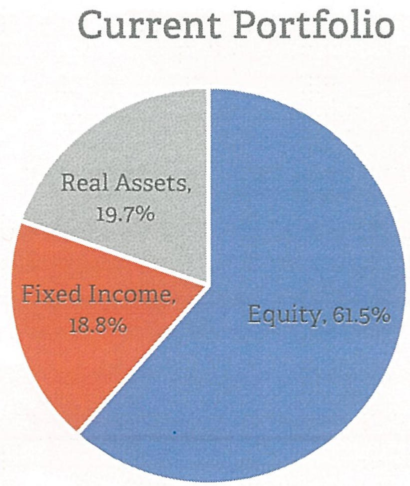
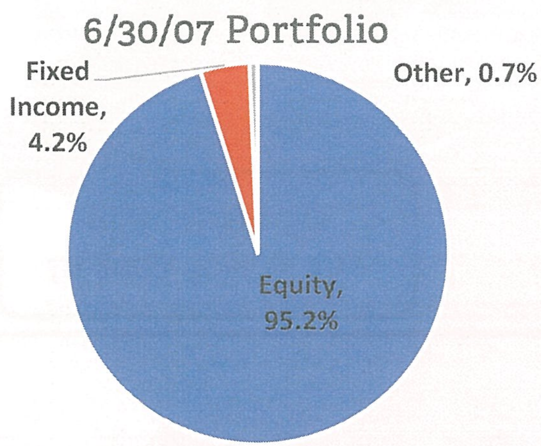
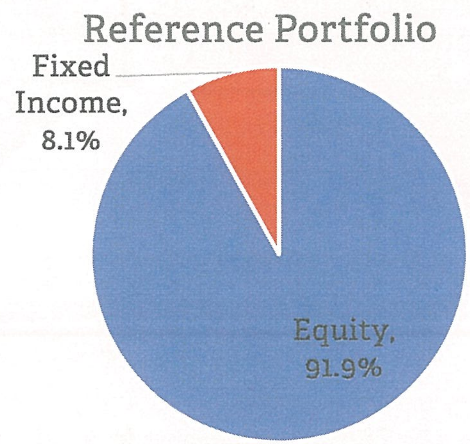
Diversifying Away From Equity Risk Premium: Risk Contribution







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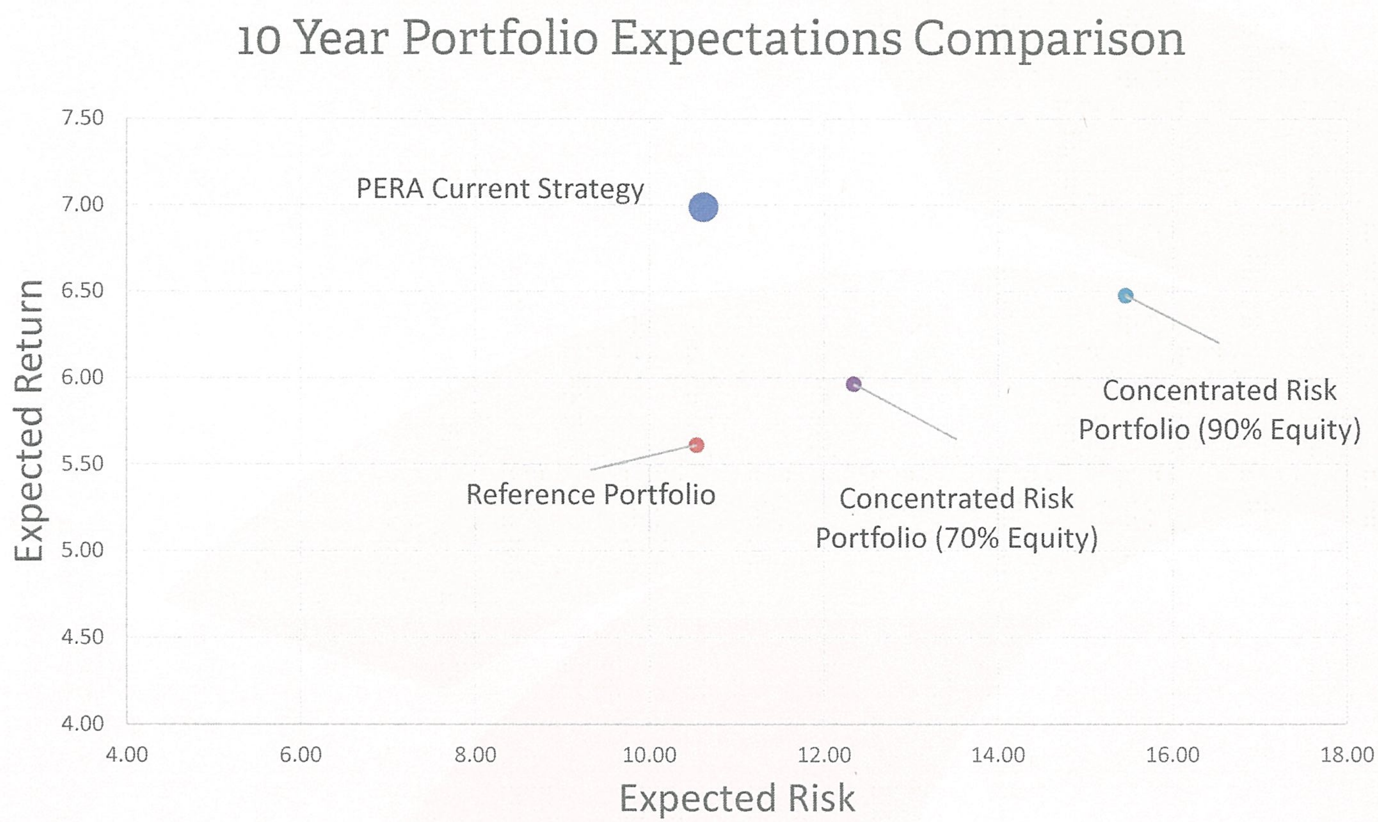
Benefits of Diversification



- PERA use of diversifying and illiquid asset classes increases expected return at the same level of risk as the simple Passive "Reference" Portfolio
- Further concentrating the PERA portfolio into equity assets adds expected volatility without a substantial increase in expected return

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Portfolio Stress Test & Liquidity Profile

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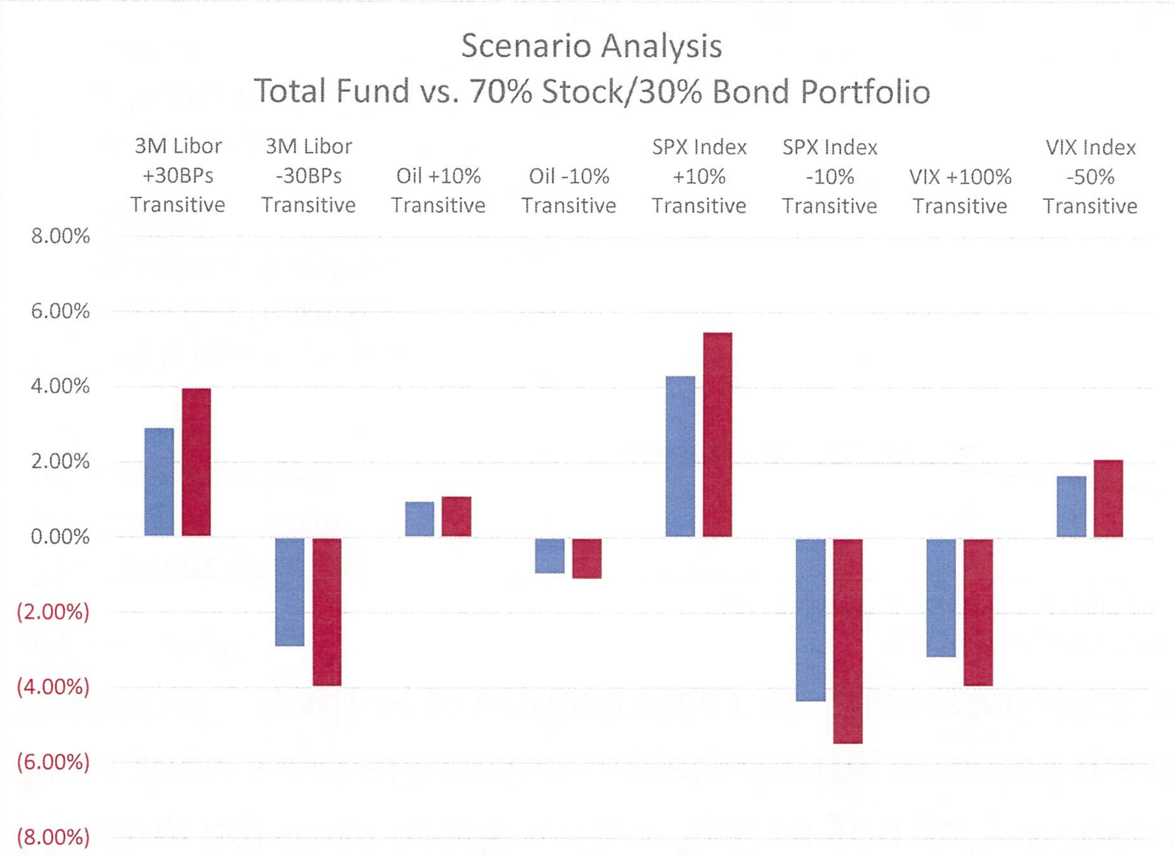
PERA Portfolio Stress Tests



- Current PERA portfolio provides higher level of downside protection in stressed events
- Estimates of systematic return drivers for the events described using holdings based analysis
- Idiosyncratic returns are not included

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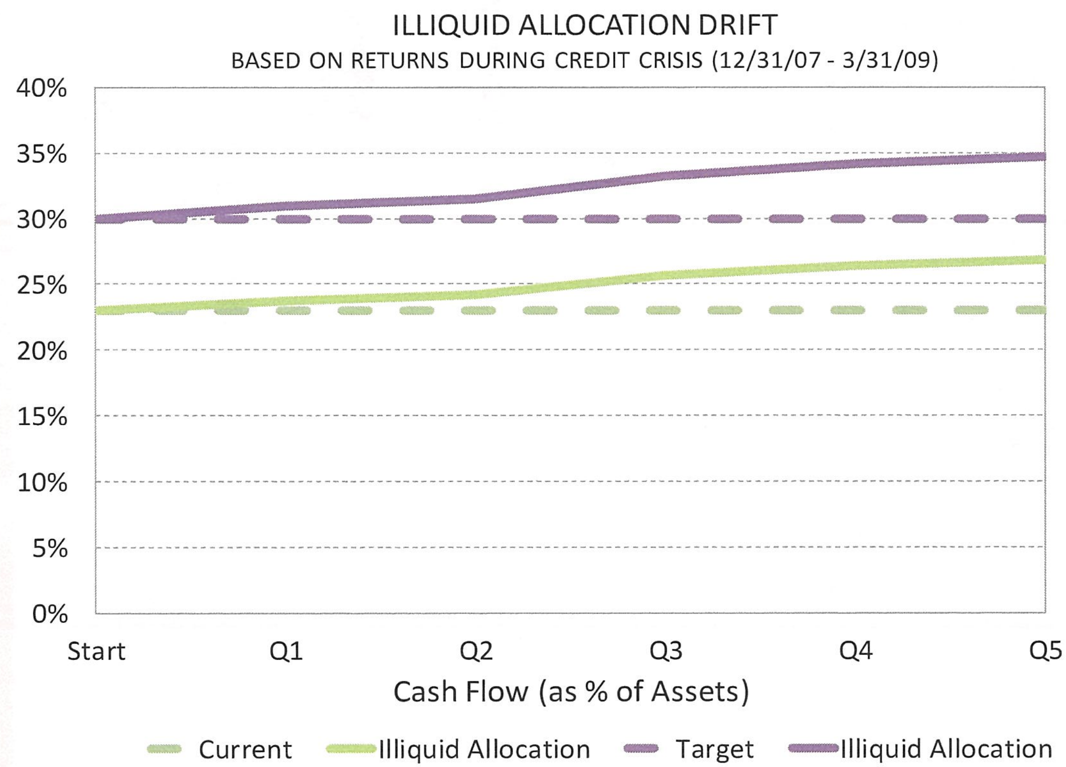
PERA Portfolio Stress Tests

Meeting liquidity needs with a "sell as you go" process can tear portfolios away from their asset allocation targets during stressed market environments Potentially leading to undesirable risk characteristics and/or increased market vulnerability

The threat of being pushed away from allocation targets increases...

1. With larger required cash outflows (i.e., greater liquidity needs)
2. With larger allocations to illiquid assets



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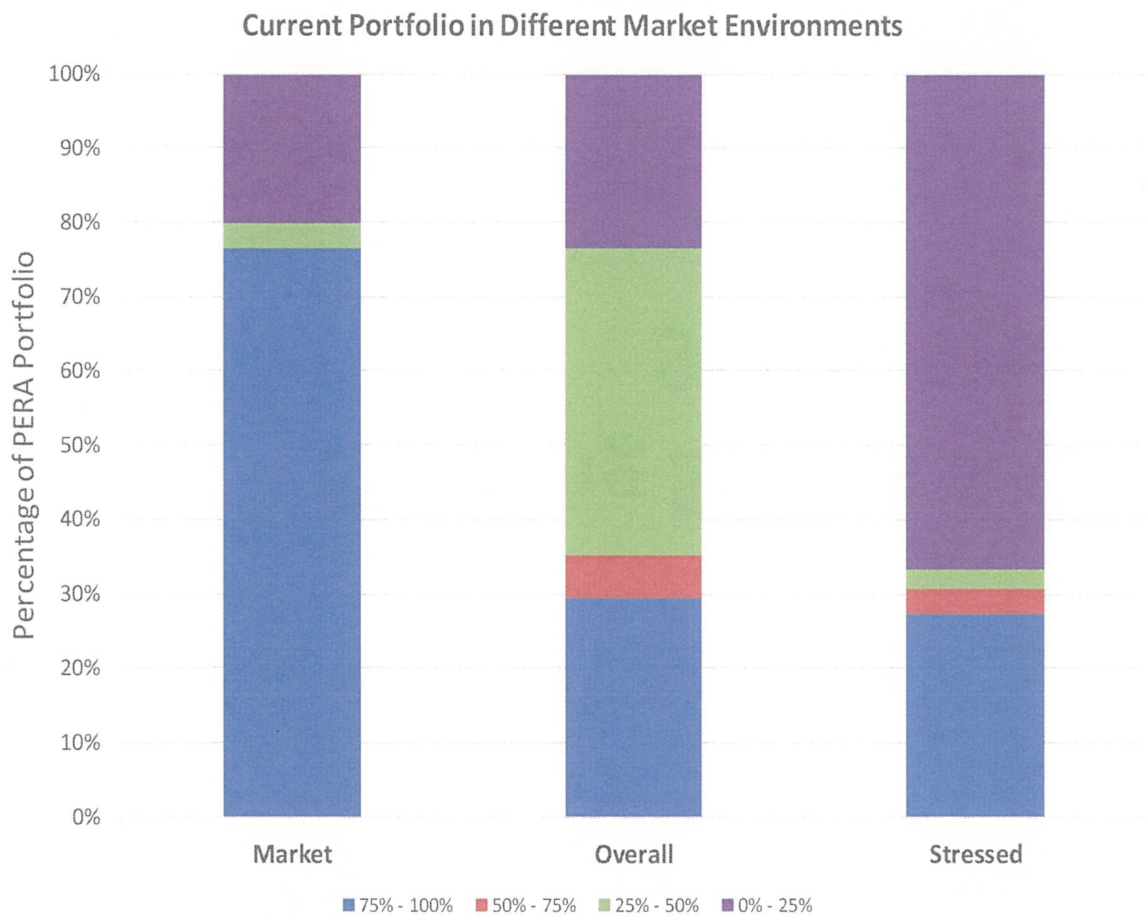
PERA Portfolio Liquidity Profile: Stress



PERA maintains a strong liquidity position across different market environments

- In stressed market, the highest liquidity bucket makes up almost 30% of the PERA portfolio
- Equates to over $4.5 billion available to pay benefits, fund illiquid opportunities, and rebalance the portfolio

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Funding Status & Cash flow Stress Test

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Some Investment Scenarios

- Updated Baseline
  - Uses estimated asset return of 6.4% for FYE 2019
- Scenario 1: Lowest 10th Percentile of Returns (Estimated to be 5.185%)
- Scenario 2: 6.0% Returns
- Scenario 3: Simulated repeat of Great Financial Crisis (Returns of -25%, 12%, 12%, 12% and 7.25% thereon)
- Scenario 4: Simulated shallow recession (Returns of -5%, -5%, 10%, 10%, and 7.25% thereon)

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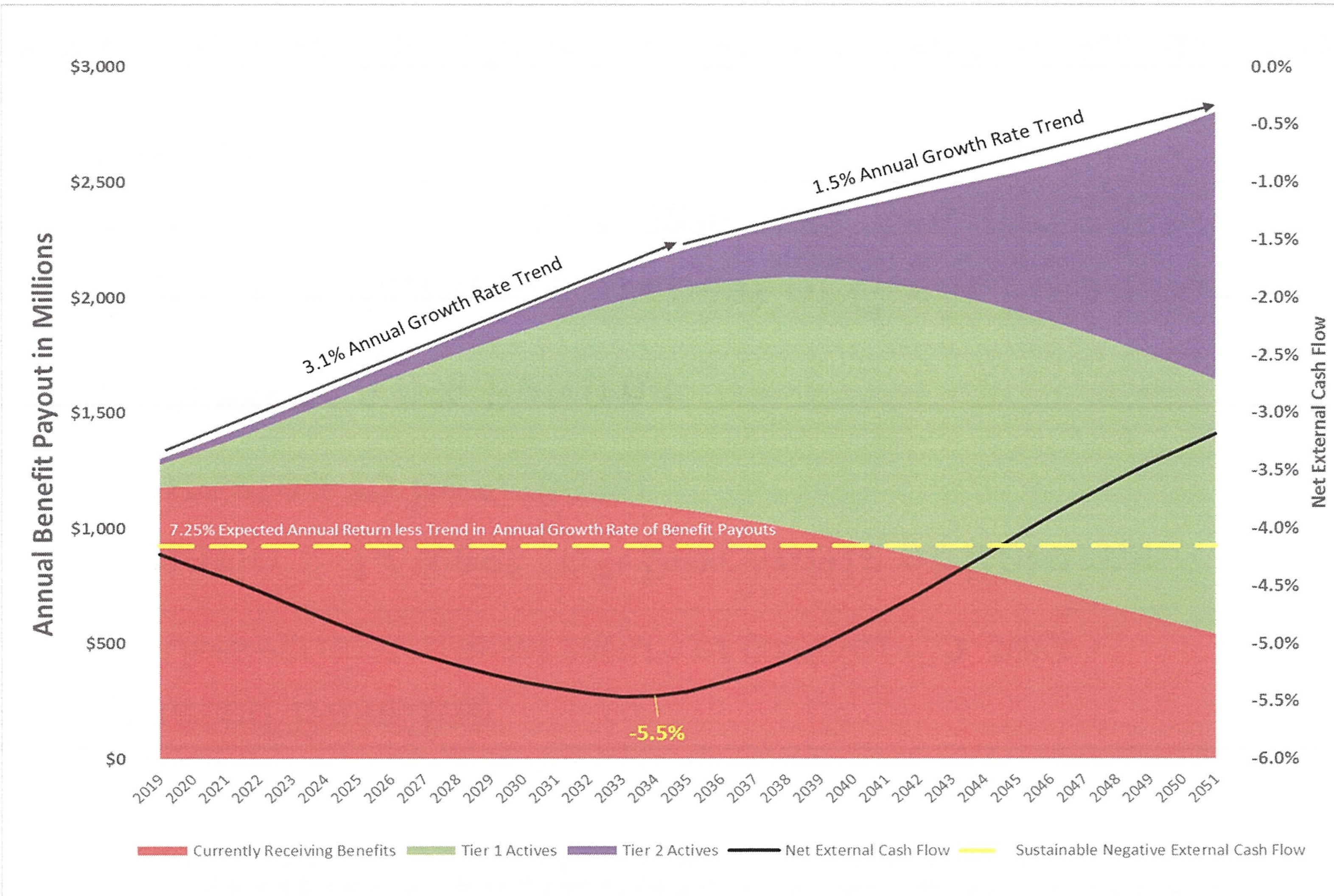
Projection of Net External Cash Flow



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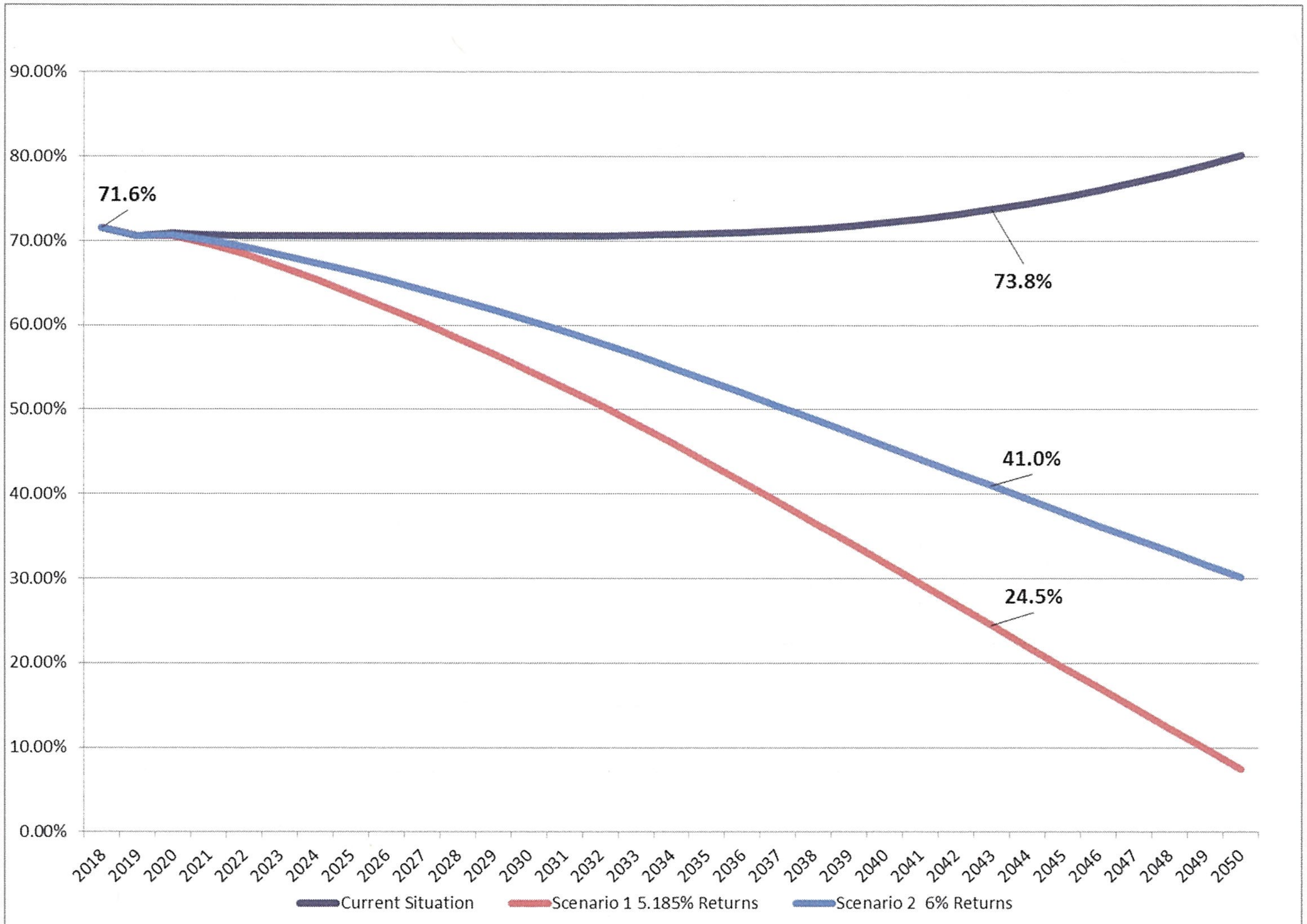
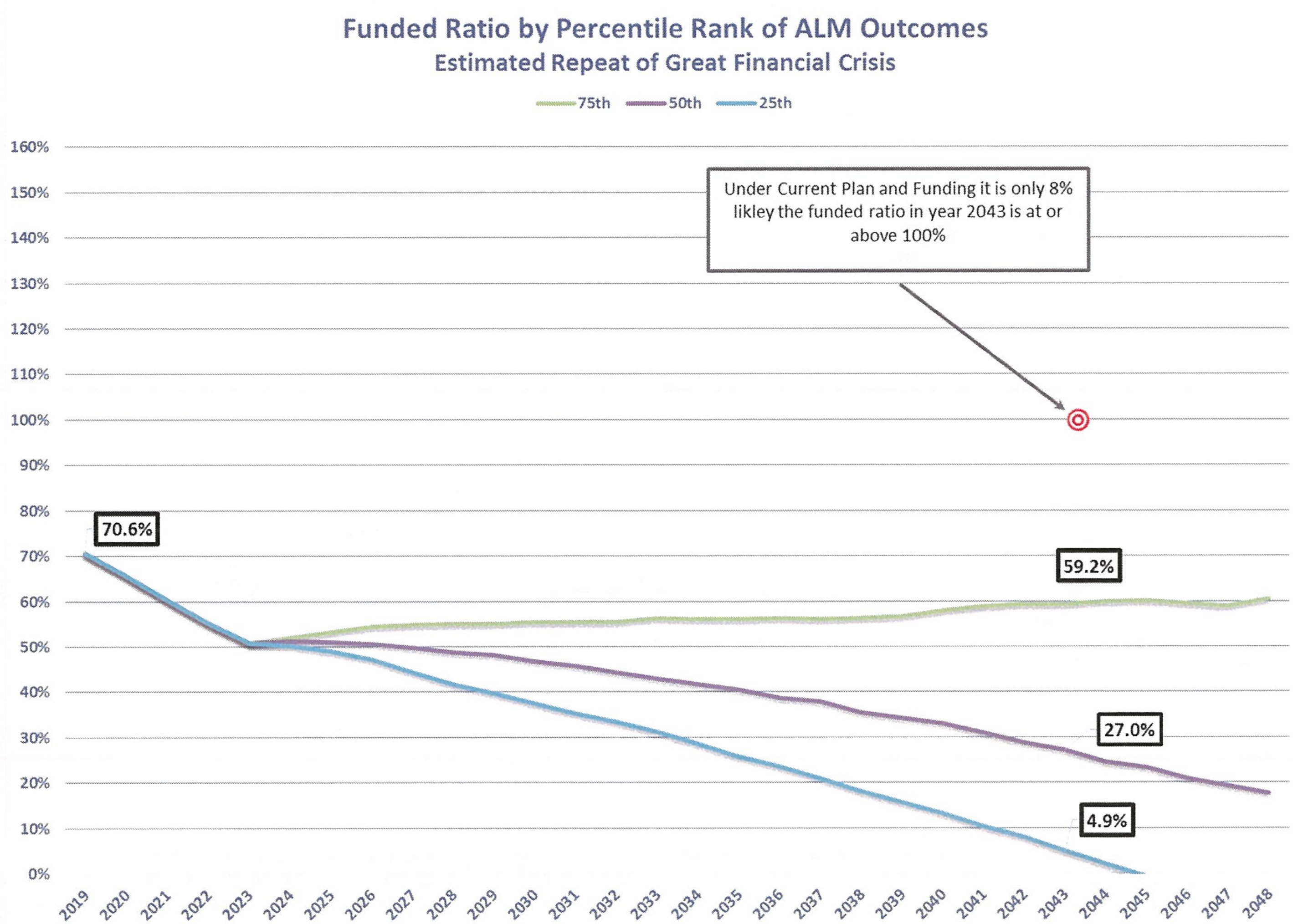
Comparison of Projected Funded Ratio of PERA: Baseline, Scenarios 1 and 2



Scenario 3- GFC Type Event



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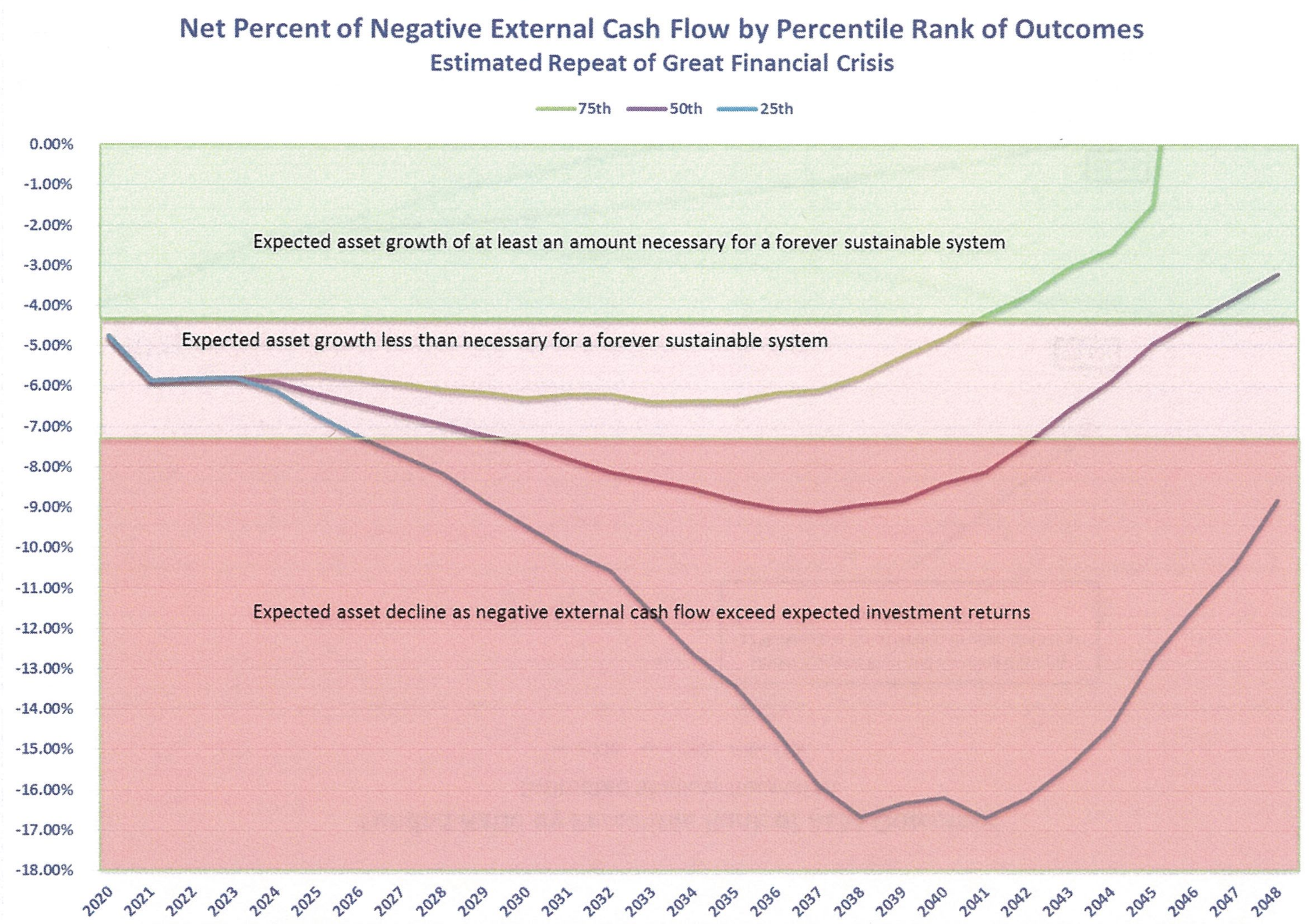

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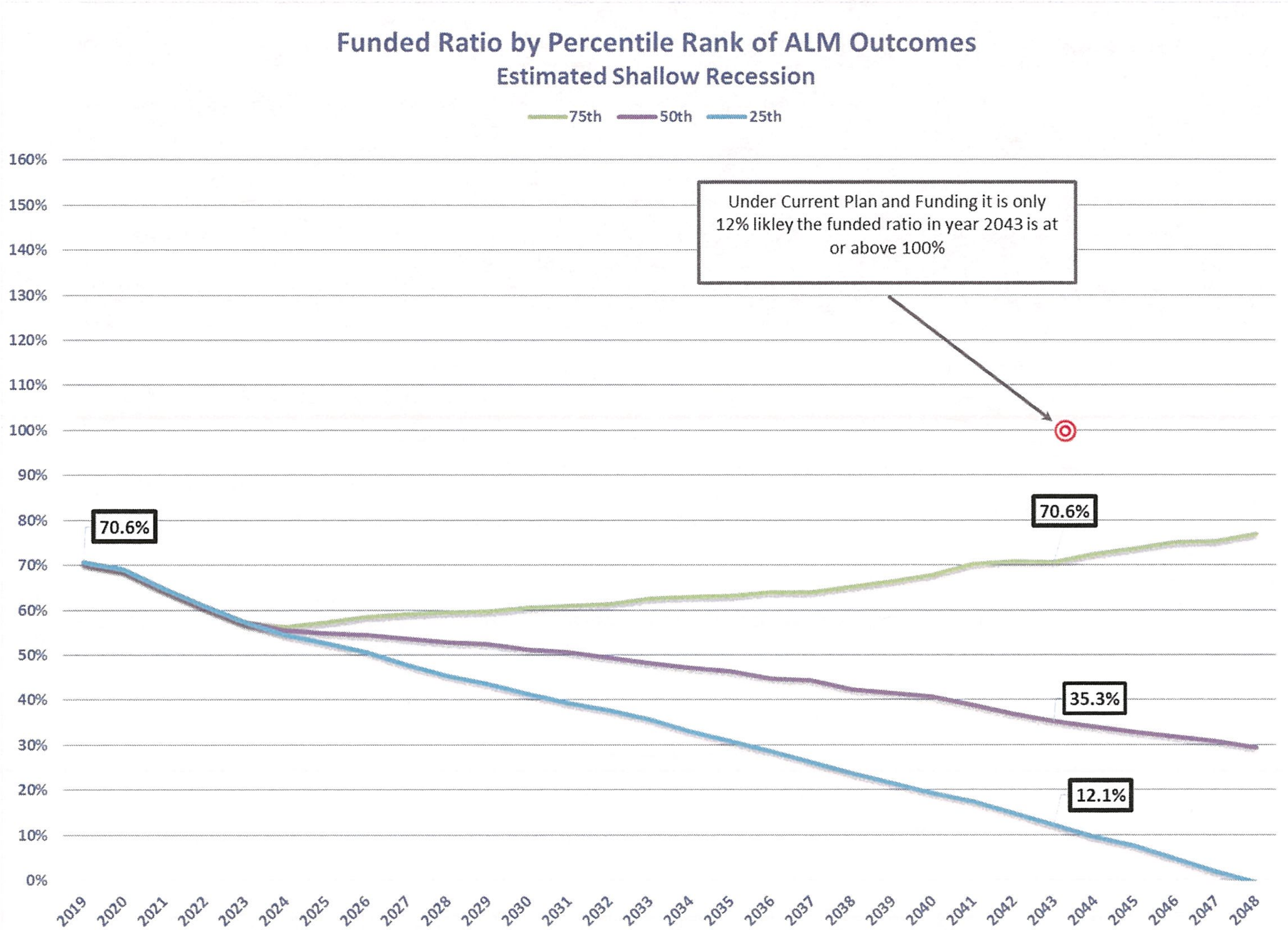
Scenario 4- Shallow Recession



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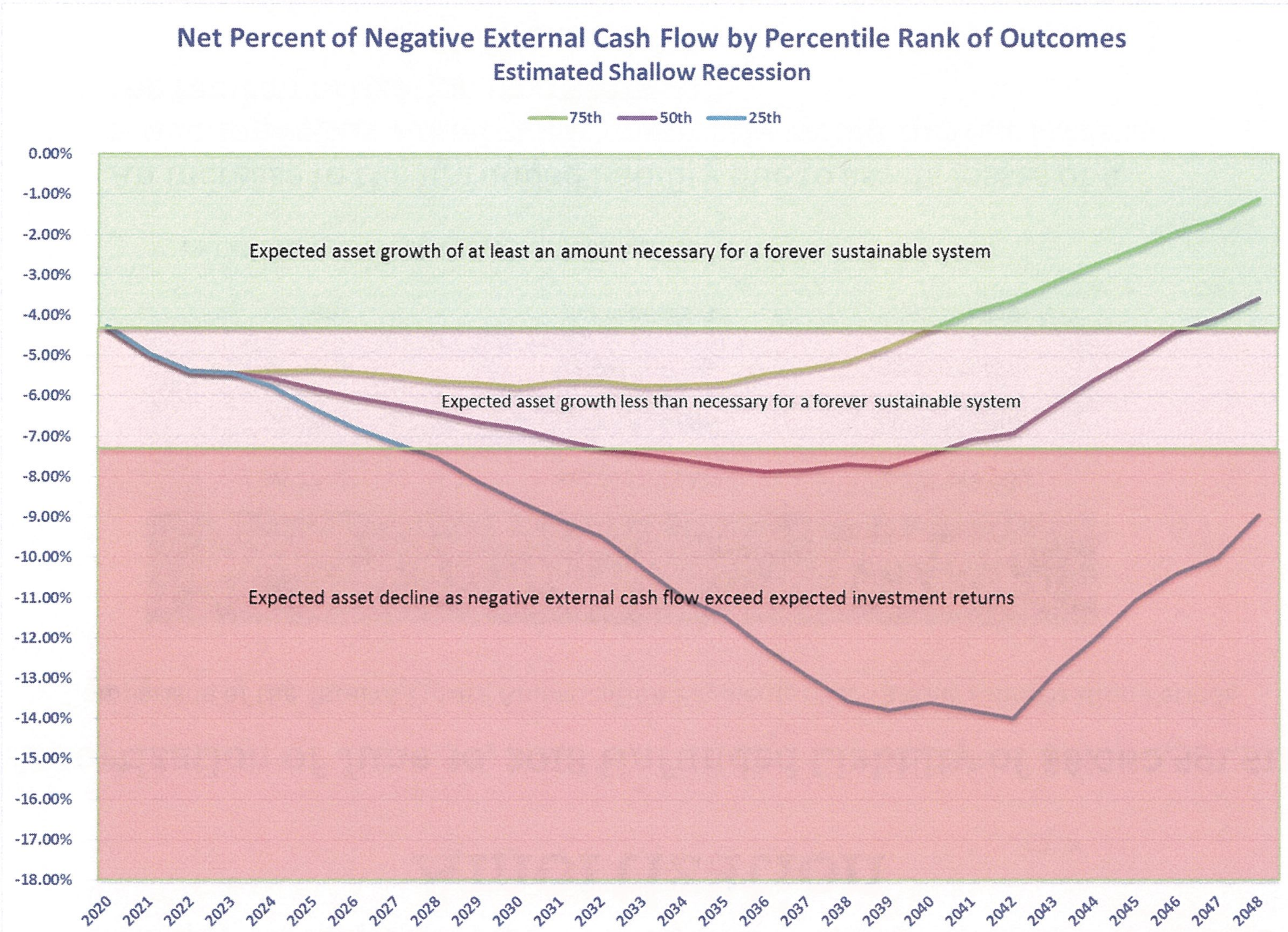
Scenario 4- Shallow Recession



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Additional Cost of Extended Amortization

Amortization of June 30, 2018 Unfunded Liability of $6,060,591,511

Comparison of the Total of Future Amortization Payments over Various Amortization Periods

Amortization Period	Total of Payments*	Total Cost per $1 billion of UAAL
25 Year	$13,765,698,517	$2,271,346,083
30 Year	16,259,994,596	2,682,905,992
40 Year	22,591,296,119	3,727,573,423
50 Year	31,224,865,583	5,152,116,040

*Uses Level Percent of Payroll Amortization method

- An increase to the unfunded liability due to assets losses or a reduction to the valuation discount rate would further increase the total amortization payments

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