



INVESTED IN TOMORROW.

## **PERA Board Meeting**

Senator Fabian Chavez Jr. Board Room

PERA Building • 33 Plaza La Prensa • Santa Fe, NM 87507

**April 27, 2017**

After Investment Committee

### **AGENDA**

- 1. Roll Call**
- 2. Approval of Agenda**
- 3. Approval of Consent Agenda**
- 4. Current Business**

A. Liabilities and Long Term Solvency Education Session - Part 1      John Garrett, Principal and Consulting Actuary;  
Jonathon Craven, Senior Actuary; Cavanaugh  
Macdonald Consulting LLC

B. Executive Director's Report      Wayne Propst, Executive Director

- 5. Other Business**
- 6. Adjournment**

Any person with a disability who is in need of a reader, amplifier, qualified sign language interpreter, or any other form of auxiliary aid or service to attend or participate in the hearing or meeting, please contact Trish Winter at 476-9305 at least one week prior to the meeting, or as soon as possible. Public documents, including the agenda and minutes, can be provided in various accessible formats. Please contact Ms. Winter if a summary or other type of accessible format is needed.



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**PERA Board Meeting  
April 27, 2017**

**CONSENT AGENDA**

- 1. Approval of Minutes:** March 30, 2017
- 2. Investments:** Alternative Asset recommendation for approval, to be funded according to the cash plan and subject to legal review by the General Counsel:
  - a. Recommendation to Commit up to €100 Million to CVC Capital Partners VII, L.P.
  - b. Recommendation to Commit up to \$75 million to Altaris Health Partners IV, L.P. and Altaris Constellation Partners IV, L.P.
- 3. SmartSave:**
  - a. Approval to engage Eide Bailly, LLP to conduct the independent audit and provide its report on the financial statements of the PERA Smart Save Deferred Compensation Plan for the fiscal year ending June 30, 2017.
- 4. Ratification of Retirements - Benefits processed through 4/1/2017:**
  - a. Normal
  - b. Deferred
  - c. Reciprocity to ERA
  - d. Non-Duty Death
  - e. Non-Duty Disability
  - f. Reciprocity to PERA
- 5. Affidavits for Free Military Service:**
  - a.
- 6. Duty and Non-Duty Death Determinations:**
  - a.
- 7. Resolutions:**
  - a. Village of Jemez Springs - The Village of Jemez Springs submitted Resolution No. 2016-29 authorizing an employer pick up of member contributions for determining tax treatment under the Internal Revenue Code.
- 8. Educational Conferences:**
  - a.
- 9. Setting of Meetings: May 2017**

a. Special Board Meeting	May 9, 2017	9:00 a.m.
b. SmartSave Committee	May 9, 2017	After Special Board Meeting
c. Rules & Administration Committee	May 9, 2017	After SmartSave
d. Audit & Budget Committee	May 9, 2017	After Rules & Administration
e. Disability Review Committee	May 9, 2017	11:00 a.m.
f. Investment Committee	May 25, 2017	9:00 a.m.
g. Board Meeting	May 25, 2017	After Investments

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Cavanaugh Macdonald  
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*The experience and dedication you deserve.*

# 2017 Actuarial Education Session #1: Actuarial Principles and Funding Concepts

**April 27, 2017**

**John Garrett, ASA, FCA, MAAA**

**Jonathan Craven, ASA, EA, FCA, MAAA**



# Table of Contents



Basic Principles

Actuarial Methods

How Did We Get Here?

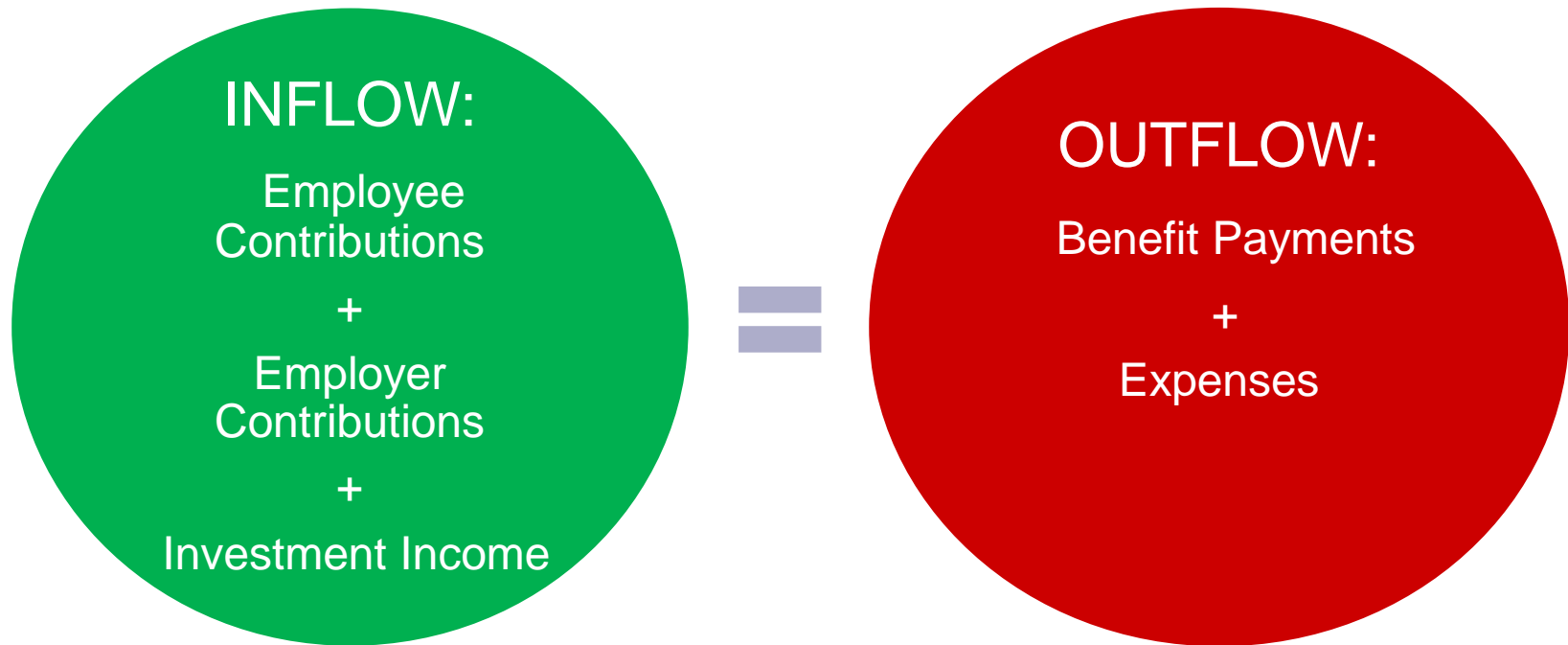
# Basic Principles



- Purpose of a Defined Benefit Retirement Plan
  - Provide a lifetime of retirement income in return for a career of service
- Retirement benefits are defined in statutes
  - Vesting requirements
  - Termination benefits
  - Retirement benefits
  - Disability benefits
  - Death benefits
- Required employee contributions are also defined in statutes

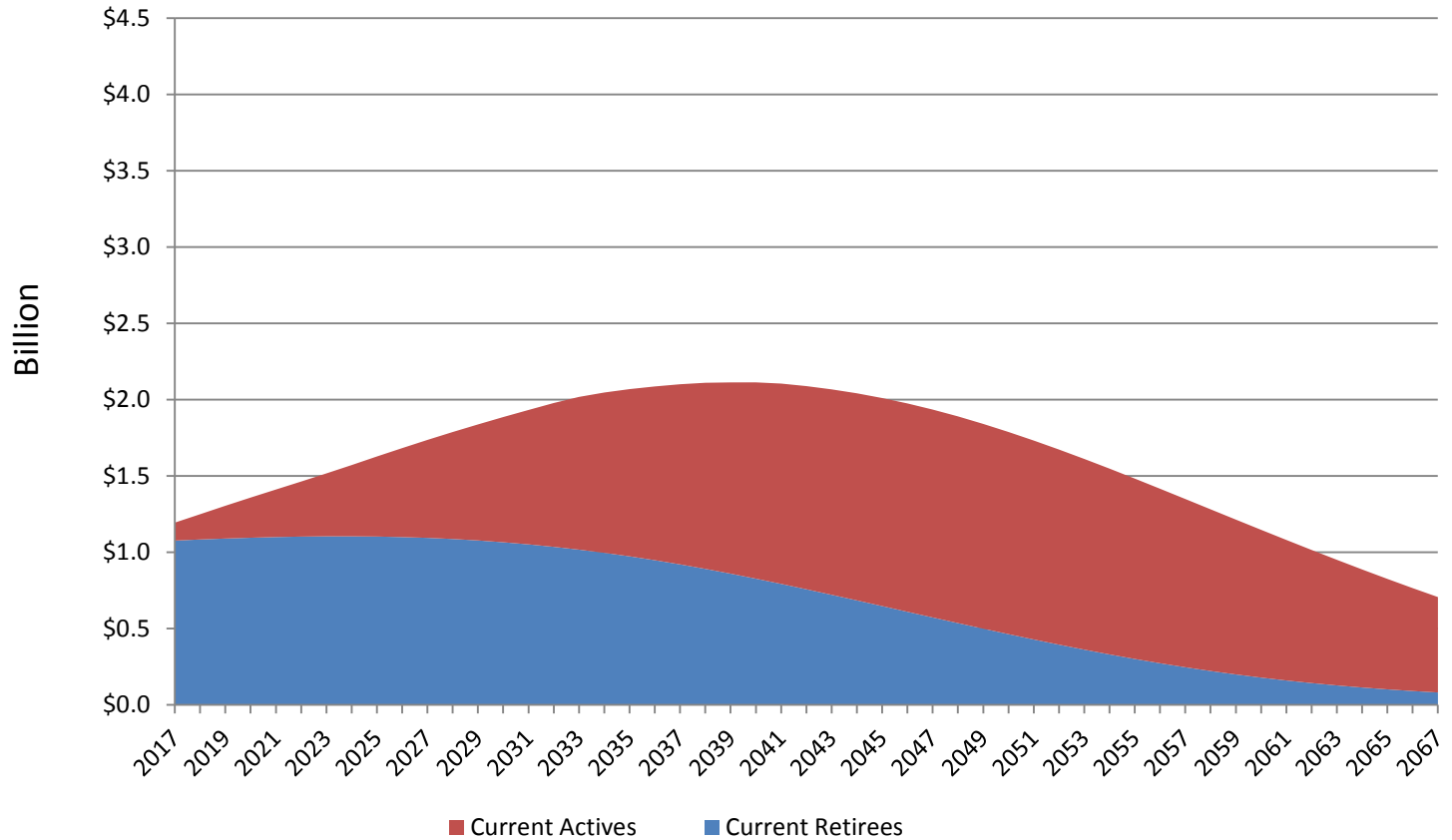
# Funding Equation: $C + I = B + E$

To ensure long term solvency the inflows must equal the outflows over the life of the program



# Expected Benefits Promised

**PERA Expected Total Benefit Payments Current Members  
 Basis for Annual Valuation Liability**



# Actuarial Funding Definitions



## 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

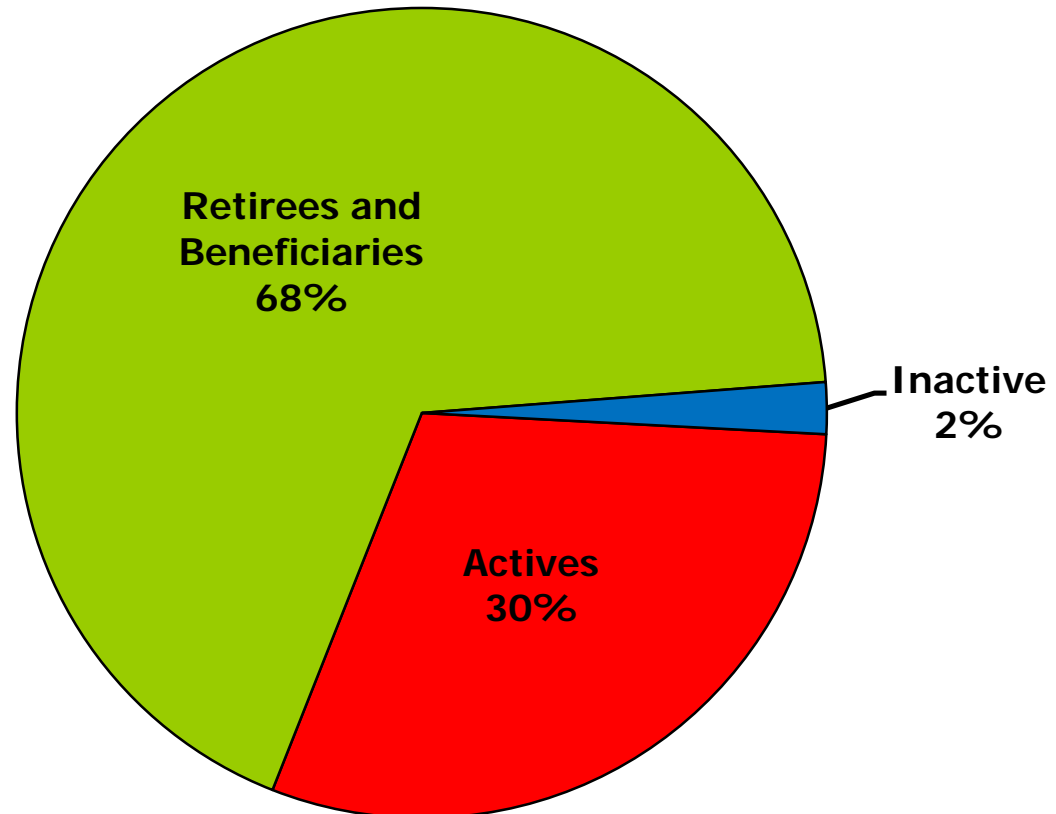
- Present Value of Benefits allocated to past service
  - Includes all benefits for members in pay status
  - Includes the portion of active members' benefits allocated to service performed up to the valuation



# PERA Actuarial Results



June 30, 2016 Actuarial Accrued Liability =  
\$19,474,241,000



# Actuarial Funding Definitions



## Normal Cost

- Present value of active member's 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
- Present Value of Benefits allocated to future service

## 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)
- PERA uses the Entry Age Normal cost method
- All cost methods maintain the following relationship:



# Actuarial Funding Definitions

## Actuarial Value of Assets

- Typically utilizes a smoothing method to dampen the effect that market value fluctuations have on funding requirements

## 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 to fully amortize the Unfunded Actuarial Accrued Liability – also called Amortization Period

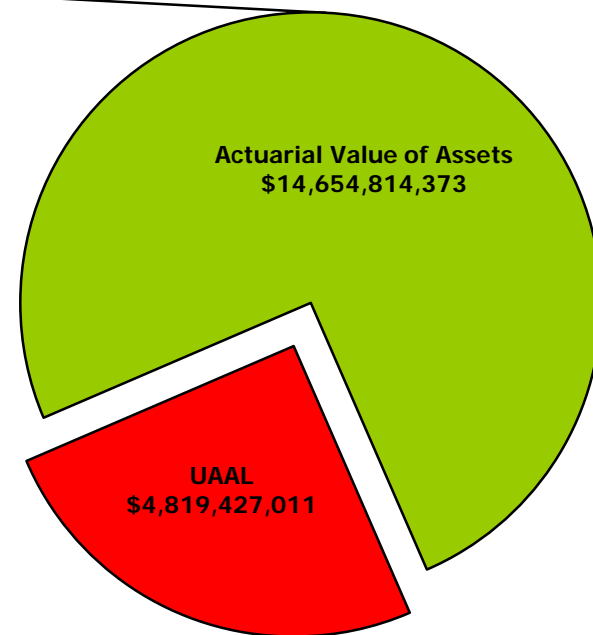
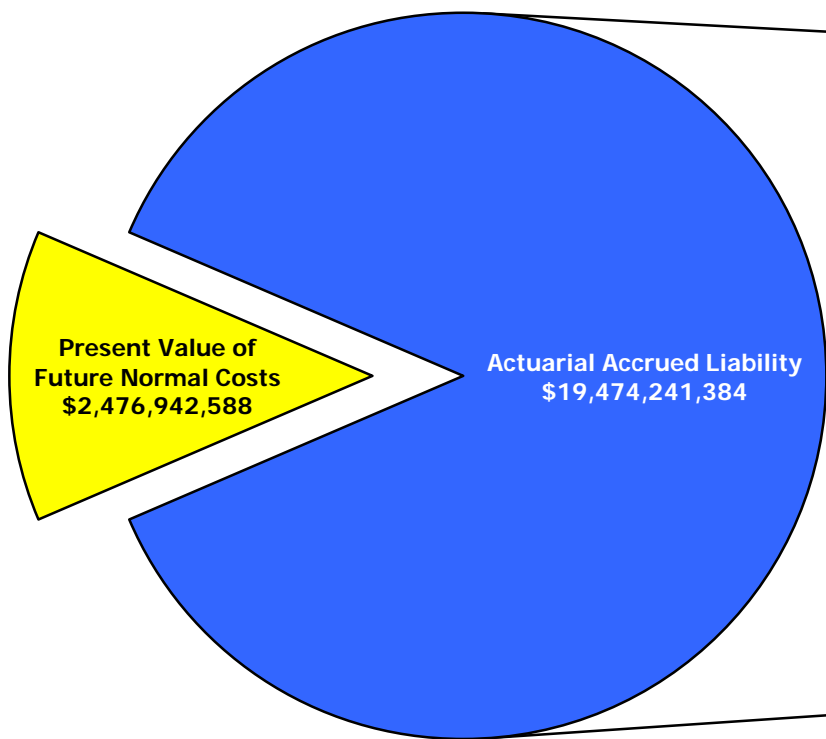
# Purpose of Valuations

- Benefits payments are “set”
- Employee contributions are “set”
- Investment Income (net of expenses) is “assumed”
- Employer Contributions are “set”
- Demographic behavior is “assumed”
- Funding progress is measured
  - Funded ratios (assets/liabilities)
  - Amortization period to pay UAAL
  - UAAL/payroll
  - Contribution shortfall

# PERA Actuarial Results

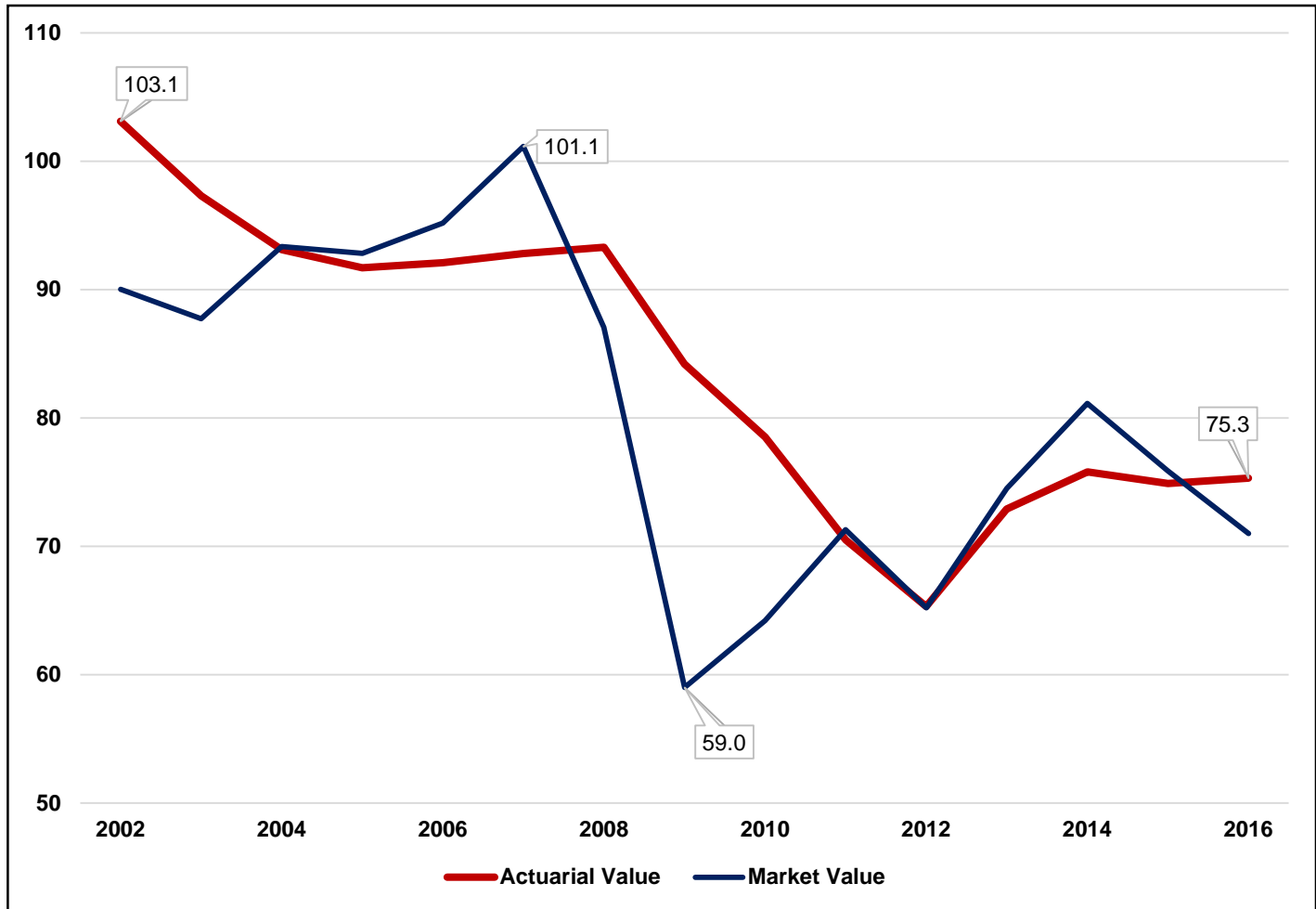


**Present Value of Benefits**  
**\$21,951,183,972**

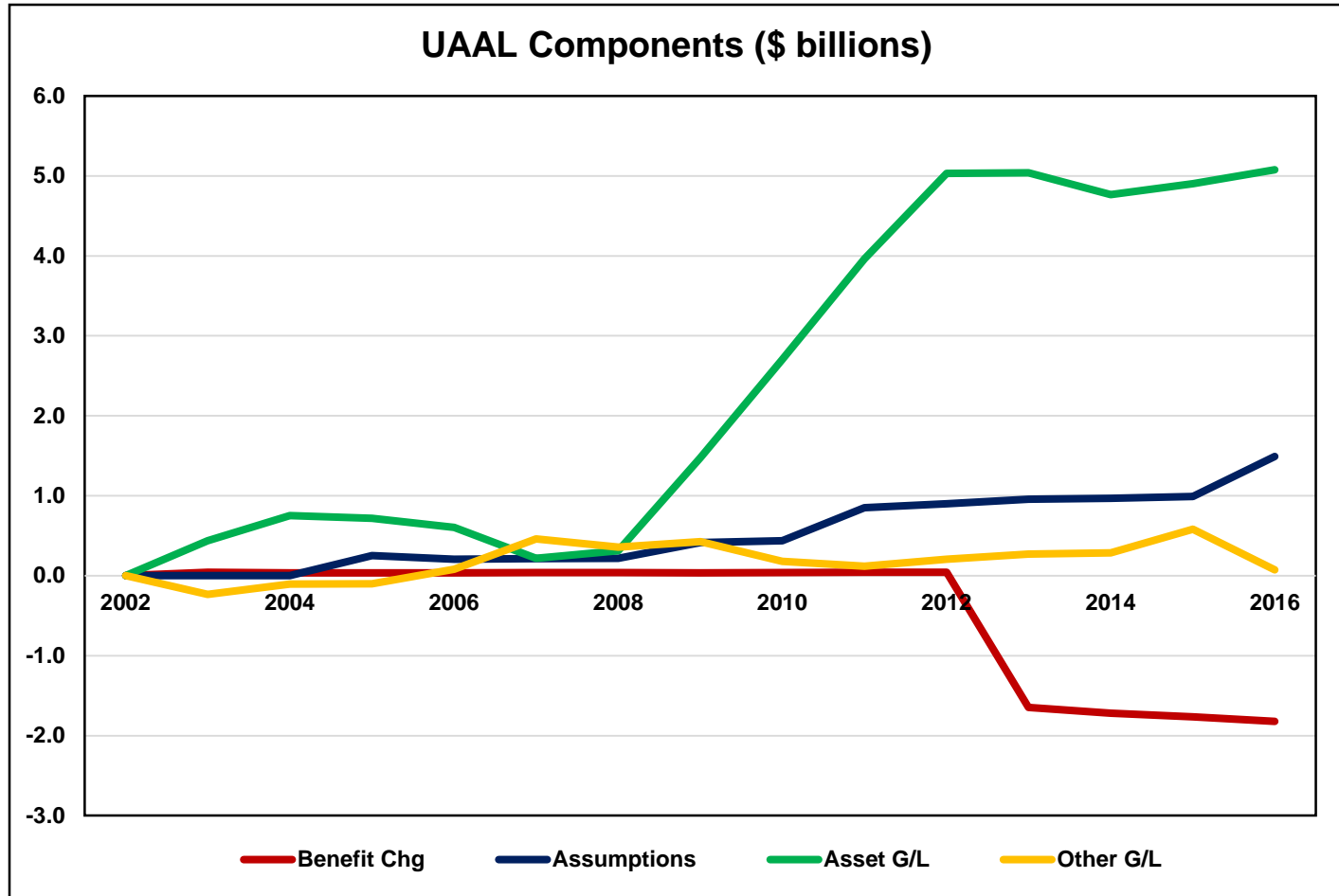


**2016 Funded Ratio = Assets/Accrued Liability or 75.3%**

# PERA Funded Status 2002-2016



# Sources of UAAL (\$4.82 billion) Since Full Funding in 2002

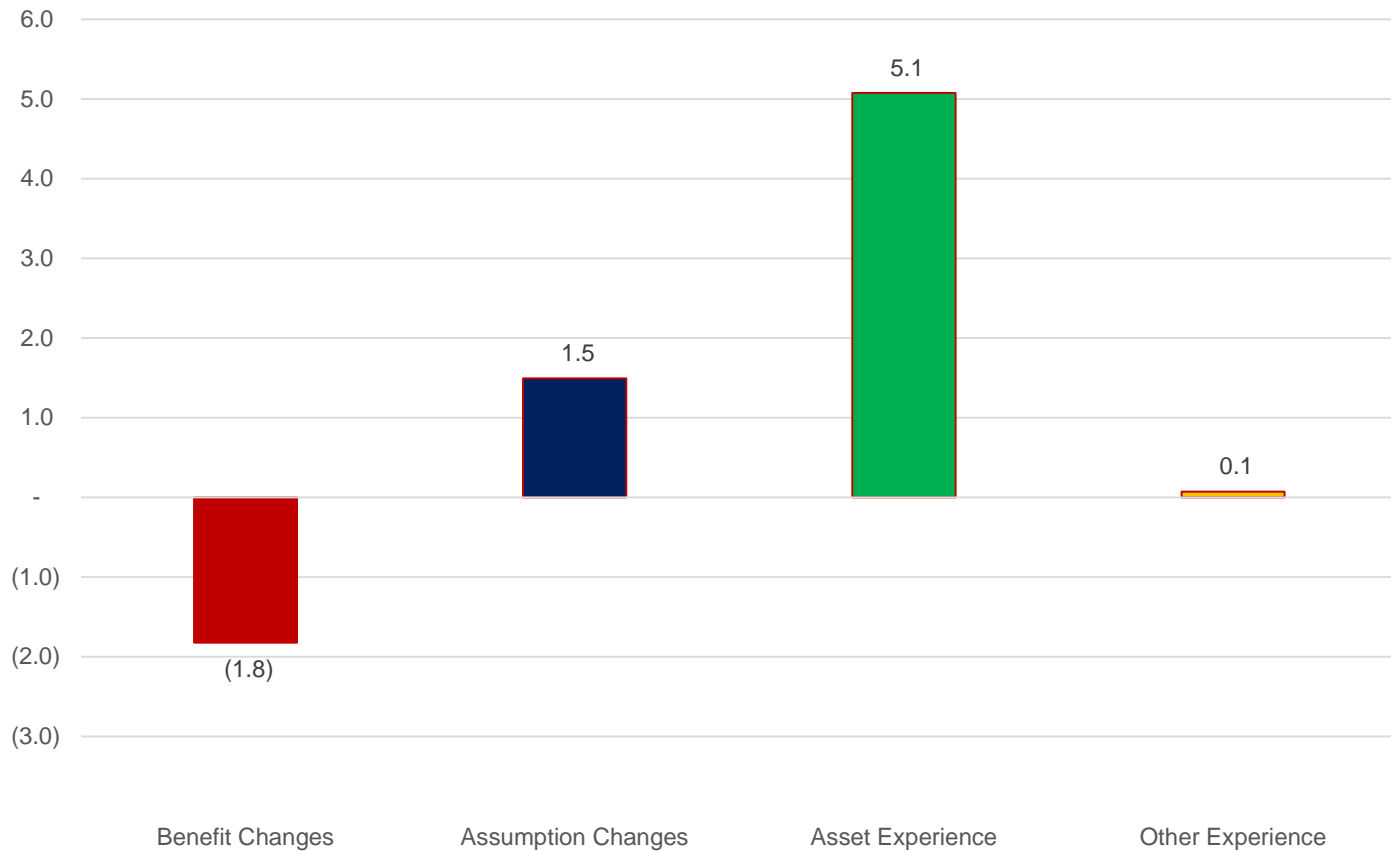




# Sources of UAAL (\$4.82 billion) Since Full Funding in 2002



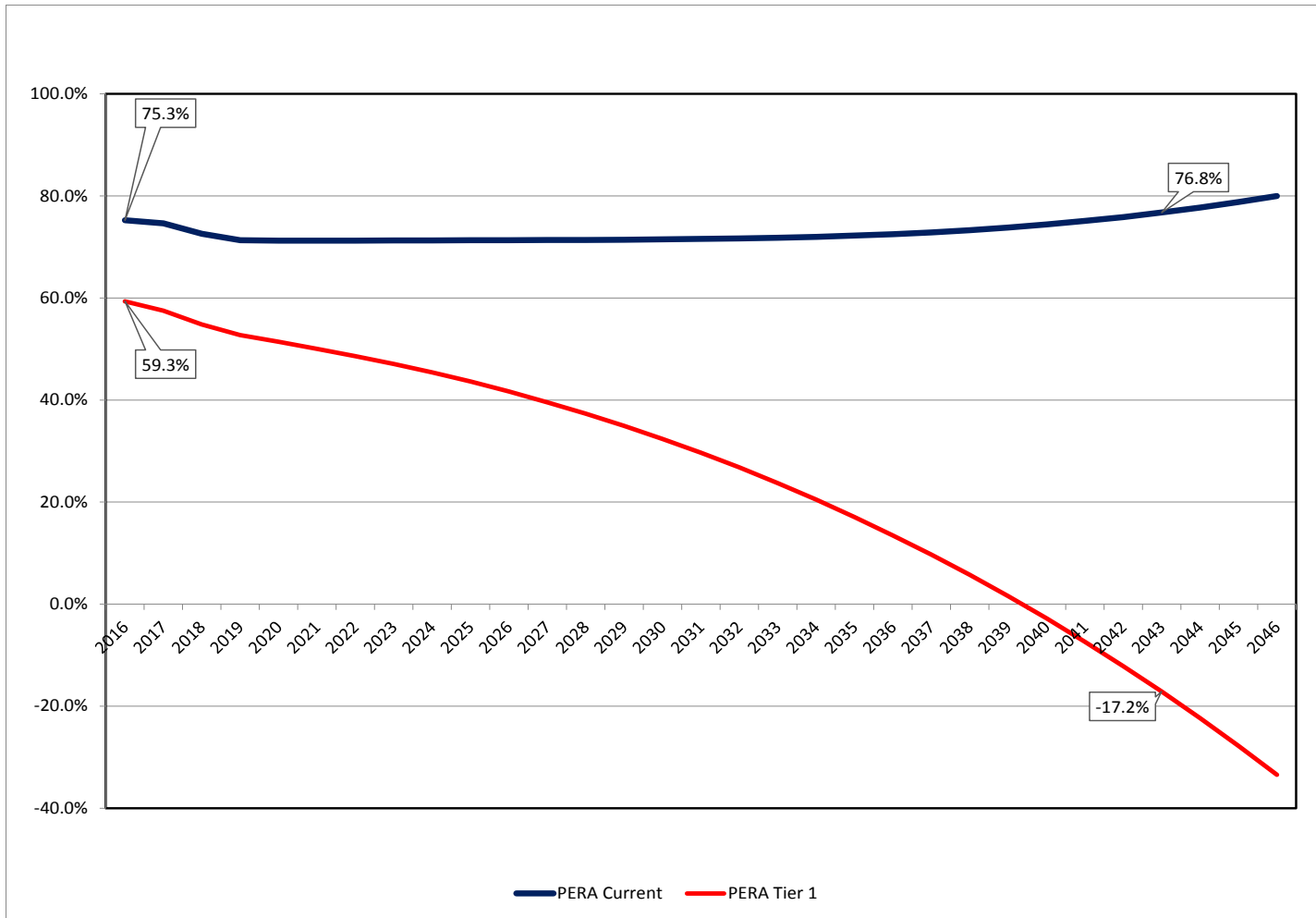
UAAL Components (\$ billions)



# Impact of SB 27 on Normal Costs

	6/30/2013	6/30/2014	6/30/2015	6/30/2016
All PERA	18.92%	16.67%	16.58%	16.55%
State General	17.58%	15.75%	15.54%	15.46%
State Police/Corrections	28.51%	21.13%	20.87%	20.66%
Municipal General	15.82%	14.10%	14.20%	14.31%
Municipal Police	27.37%	22.94%	22.67%	22.54%
Municipal Fire	27.64%	26.17%	25.86%	25.63%

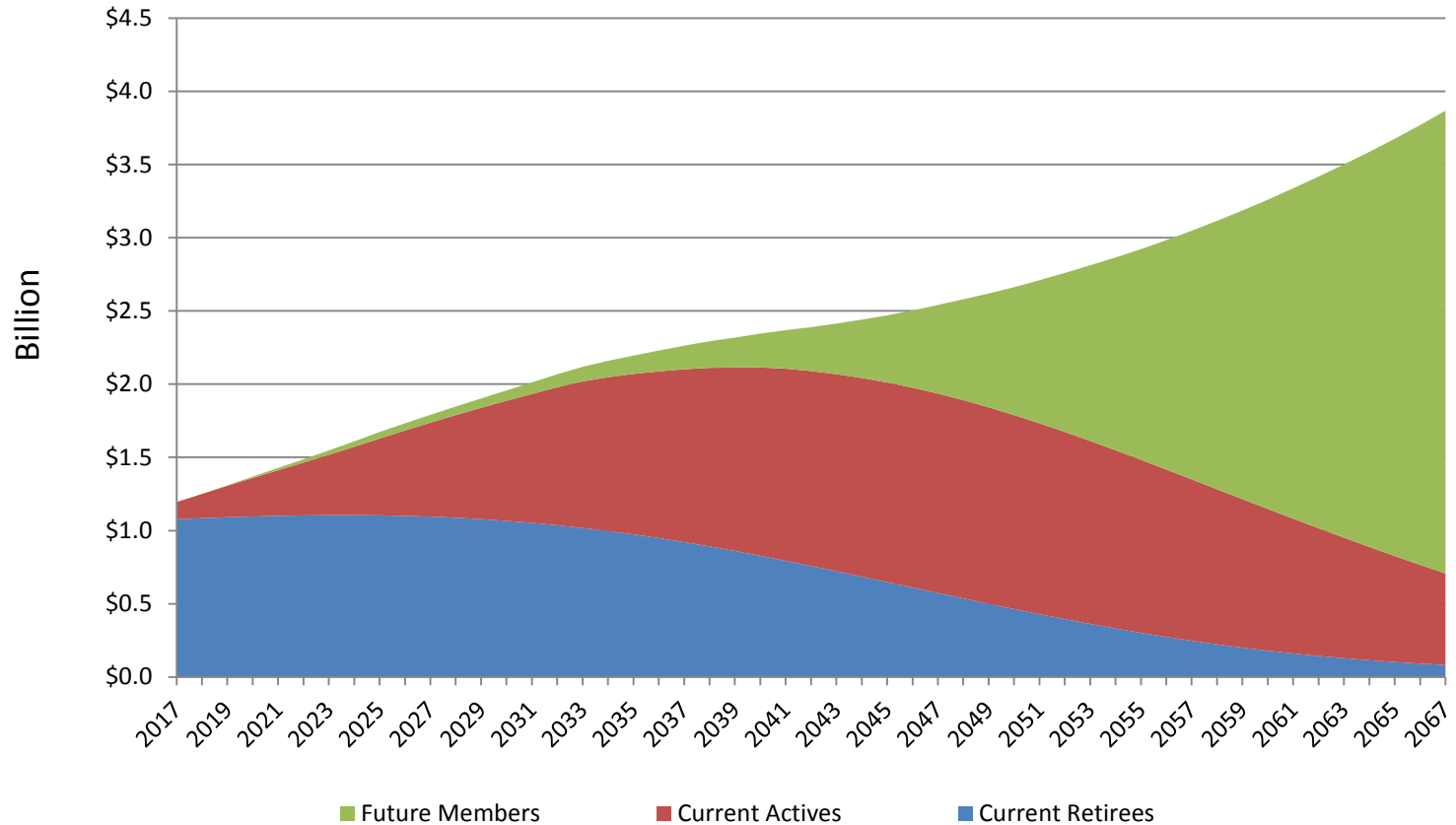
# Impact of SB 27 on 2016 Projections (2043 Funded Ratios Labeled)



# Expected Benefits Promised

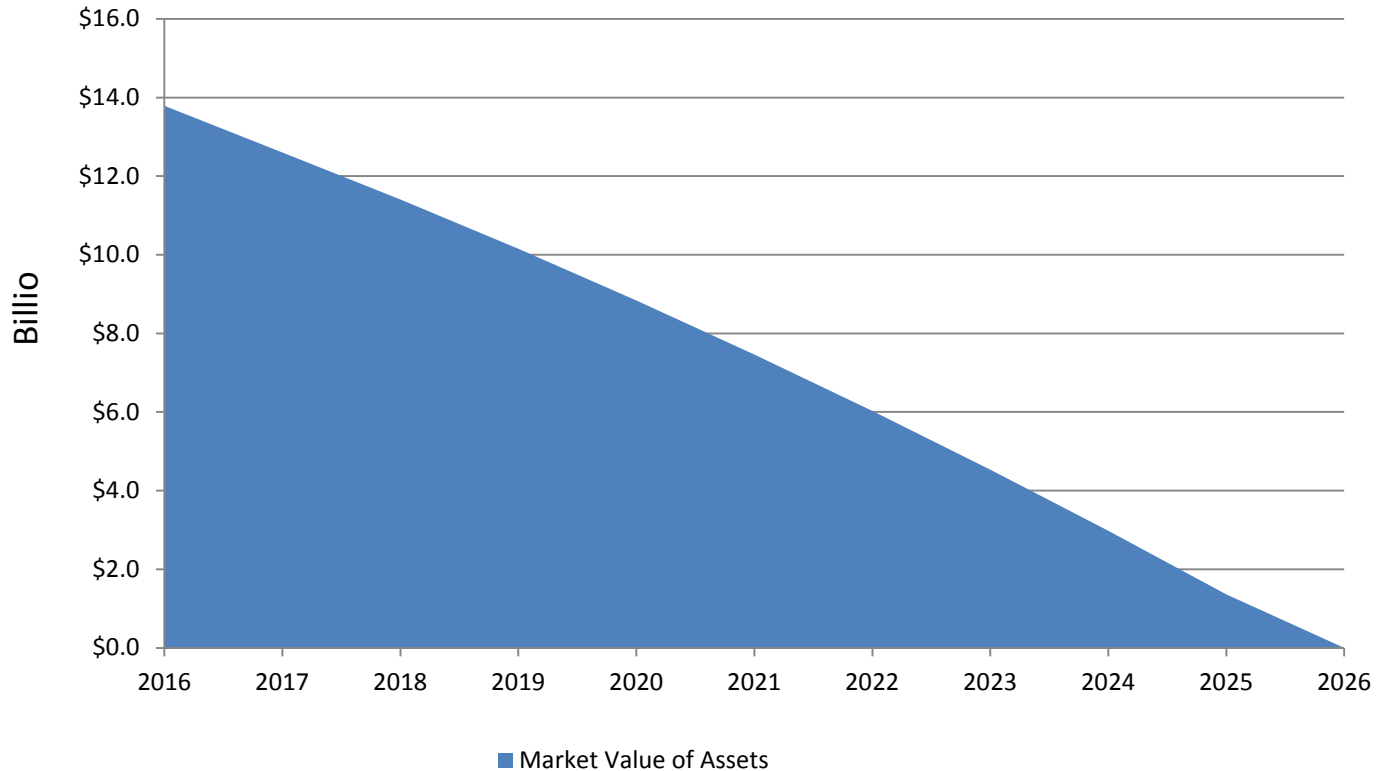


**PERA Expected Total Benefit Payments Including Future Members – Basis for Projections**



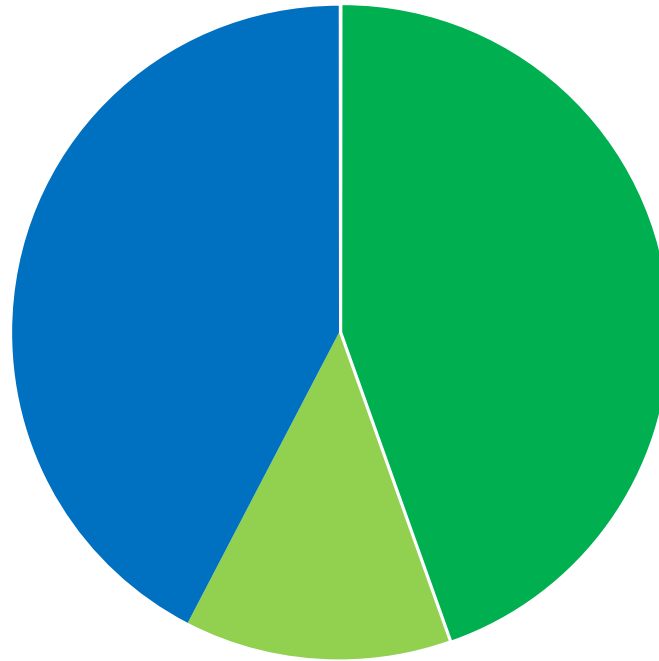
# Assets to Pay Expected Benefits

**Market Value of PERA  
Assets No Contributions Zero Return**



# Sources of Contributions

## 2016 PERA Total Contribution Rates

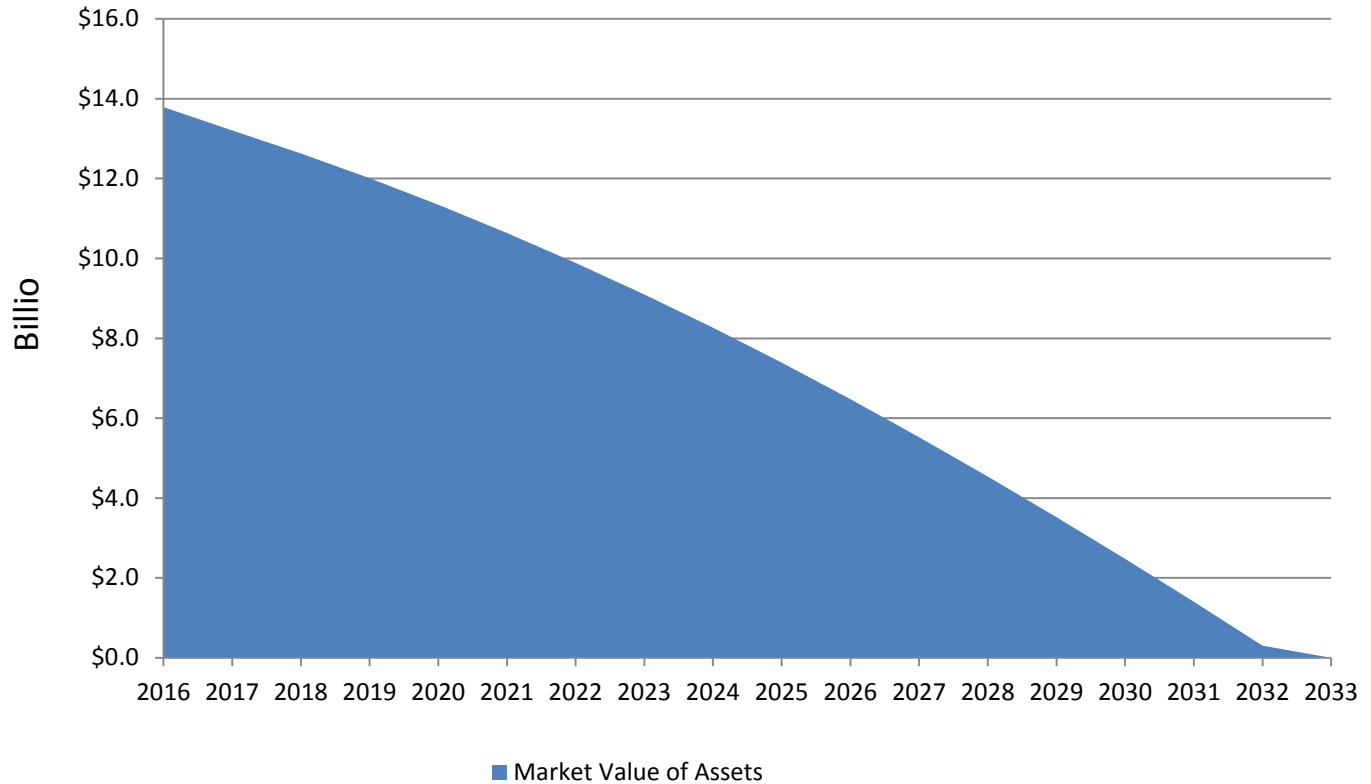


- 12.28% Employee Contribution Rate
- 3.61% Employer Normal Cost Contribution
- 11.67% Employer Unfunded Accrued Liability Amortization Rate

# Assets to Pay Expected Benefits



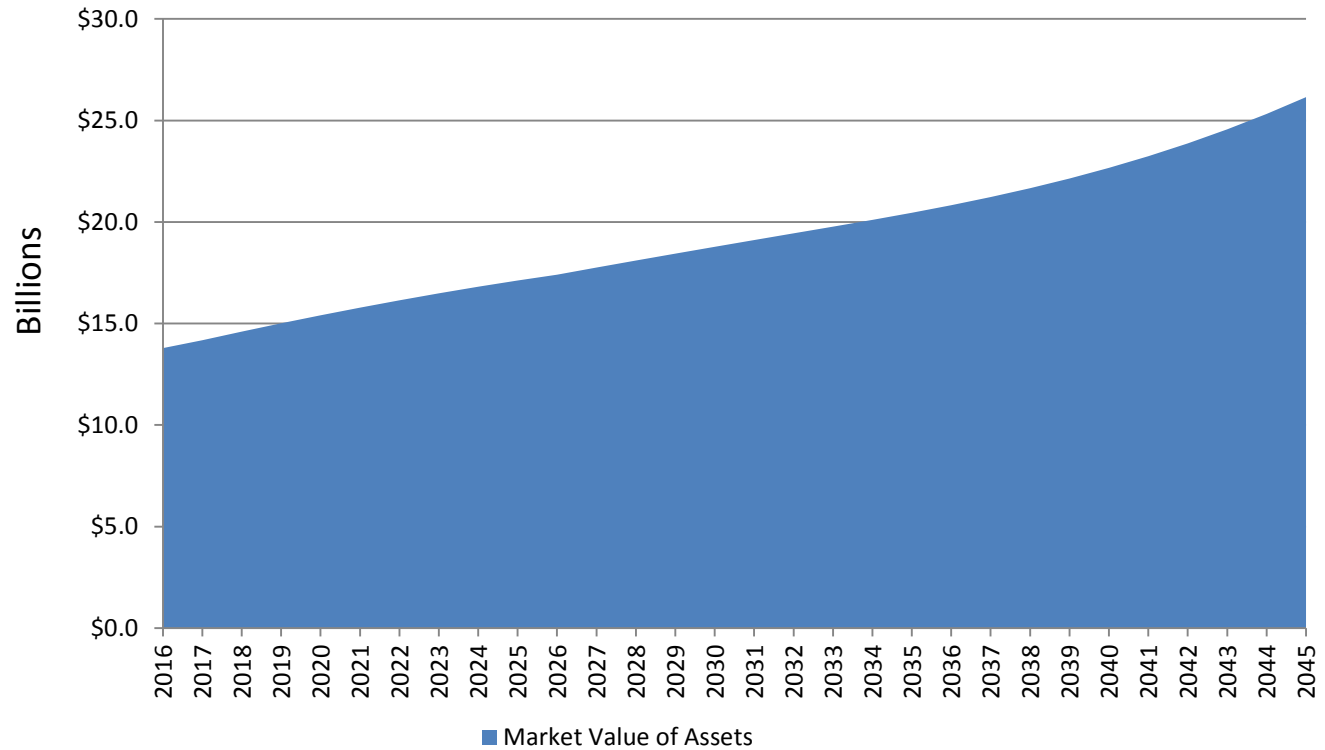
## Market Value of Assets PERA Assets Statutory Contributions Zero Return



# Assets to Pay Expected Benefits

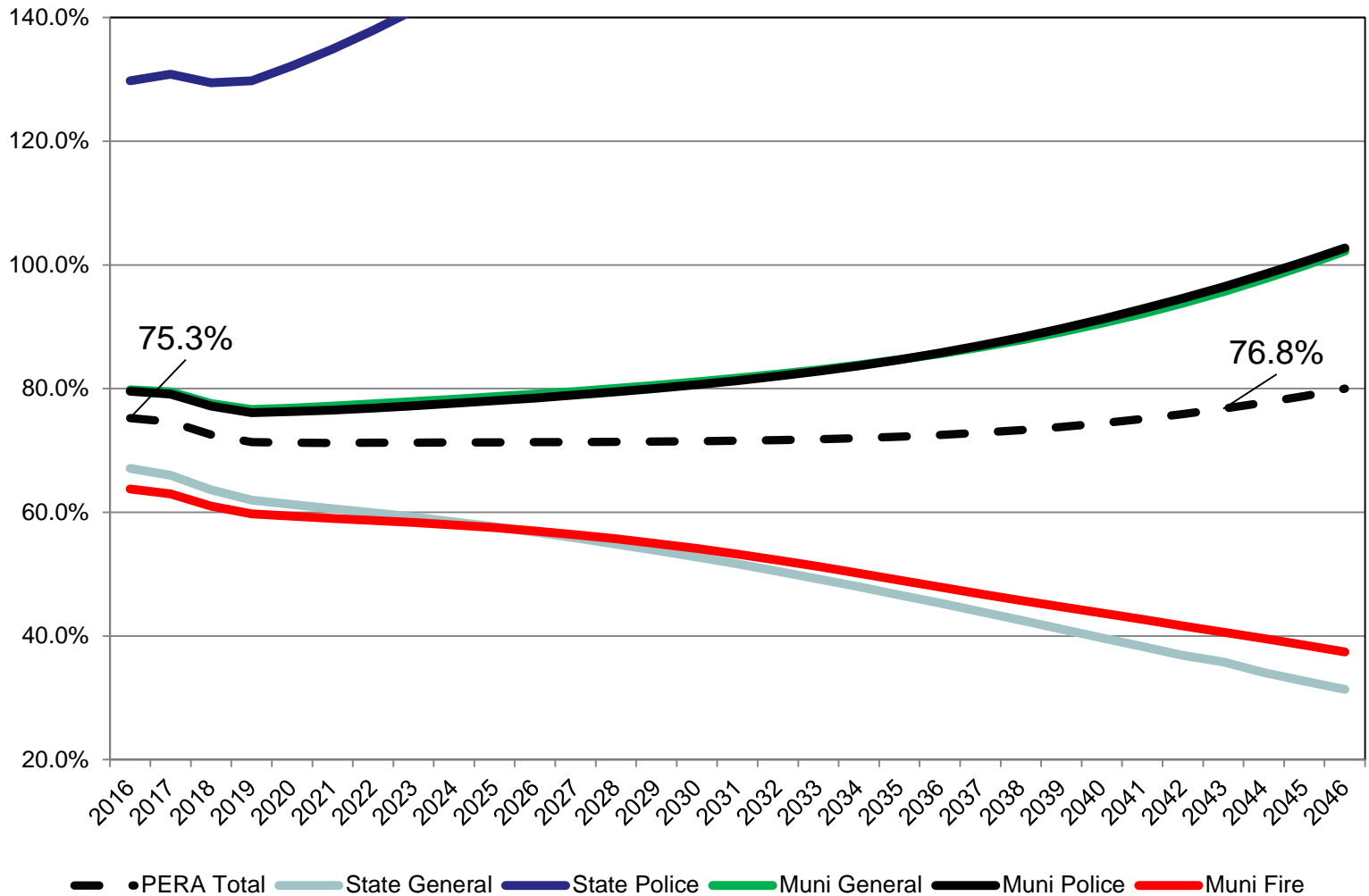


**Market Value of Assets**  
**PERA Assets Statutory Contributions Expected Return**





# Projection of PERA Funded Ratios

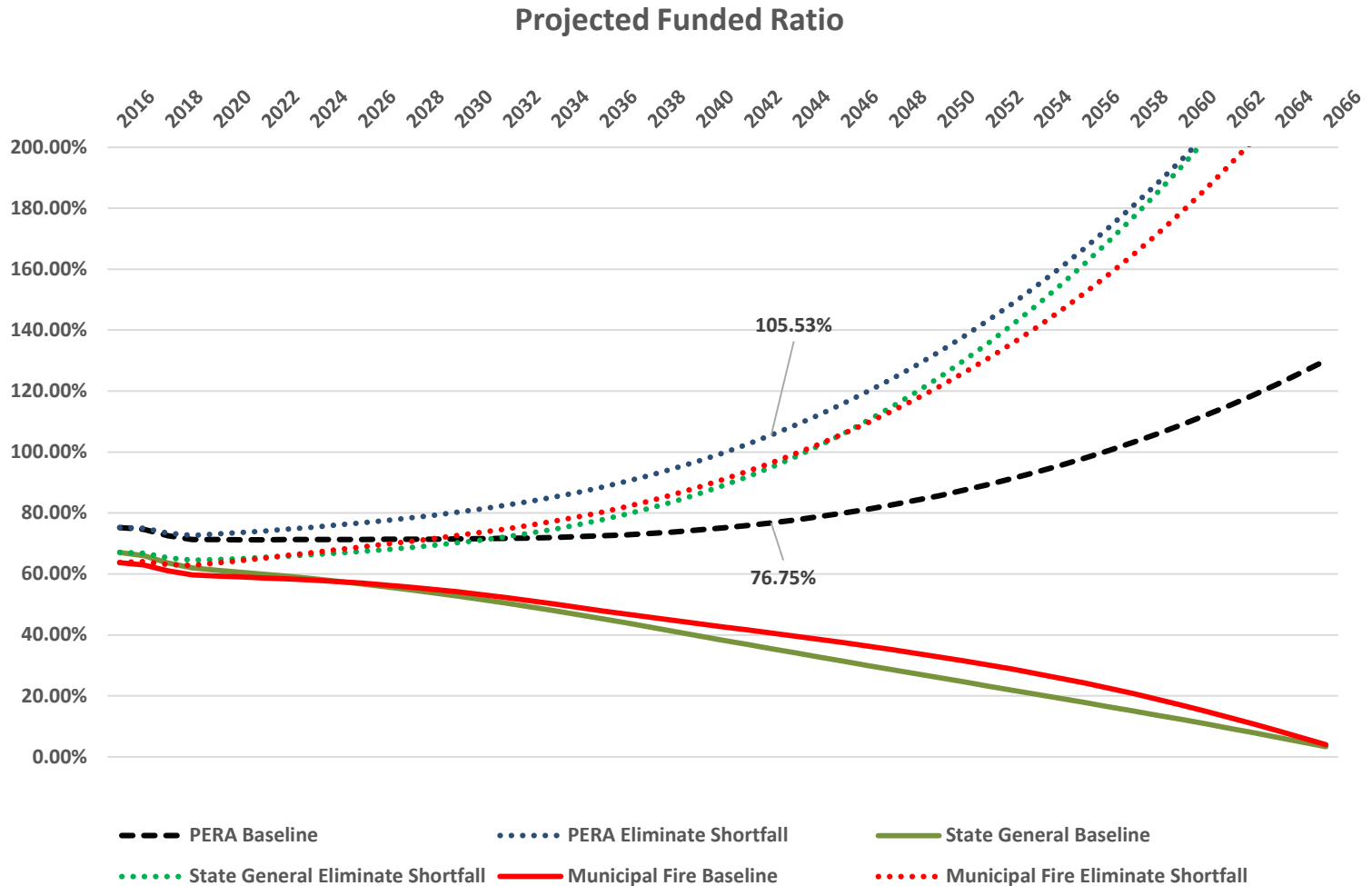


# Significant Funding Shortfalls 2016 Valuation



- State General 7.99% of pay
- Municipal Fire 13.87% of pay

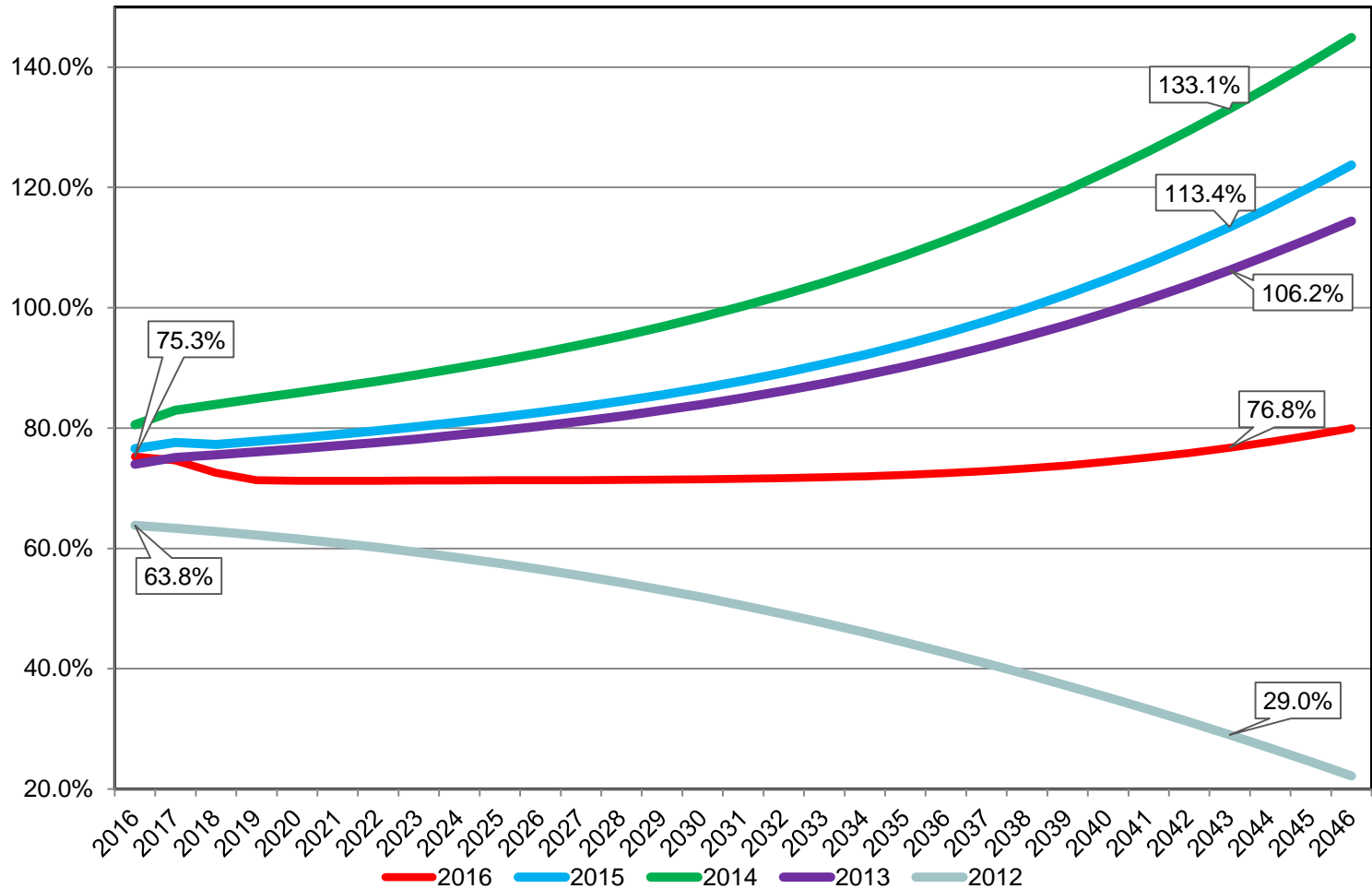
# Fixing Contribution Shortfalls of State General and Municipal Fire



# Projection of PERA Funded Ratios



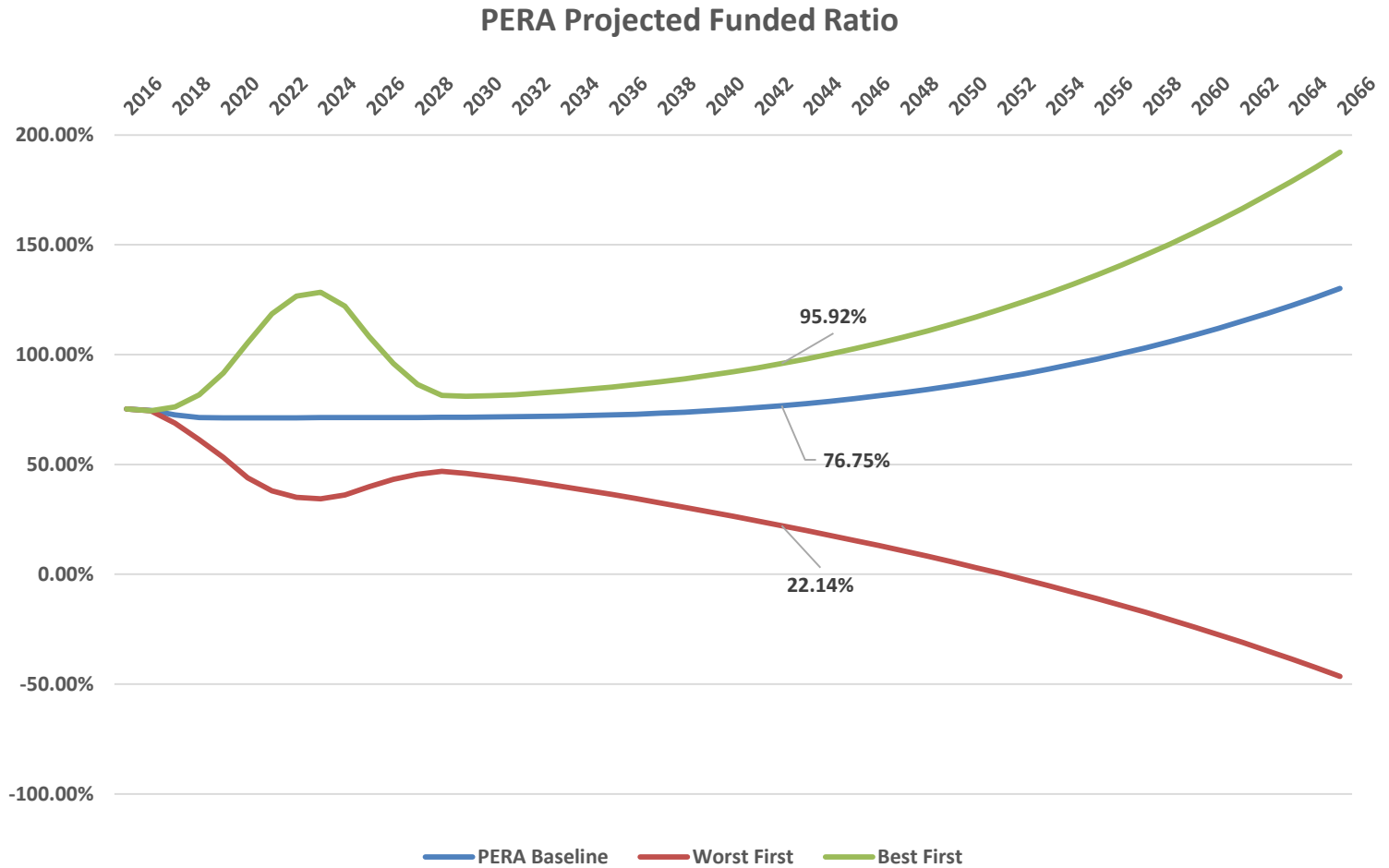
Comparison of Projections Total PERA 2012 to 2016



Statistical Analysis of Expected Real Return Distribution (Net of Investment Related Expenses)							
Time Span In Years	Mean Real Rates of Return	Standard Deviation	Real Rates of Return by Percentile				
			5 <sup>th</sup>	25 <sup>th</sup>	50 <sup>th</sup>	75 <sup>th</sup>	95 <sup>th</sup>
1	5.9%	10.7%	-10.6%	-1.5%	5.4%	12.8%	24.4%
5	5.5%	4.7%	-2.1%	2.3%	5.4%	8.7%	13.5%
10	5.5%	3.4%	0.1%	3.2%	5.4%	7.7%	11.1%
20	5.4%	2.4%	1.6%	3.9%	5.4%	7.1%	9.4%
30	5.4%	1.9%	2.3%	4.2%	5.4%	6.8%	8.7%
50	5.4%	1.5%	3.0%	<b>4.4%</b>	5.4%	<b>6.5%</b>	7.9%

# Order Matters

## Reordering 7.32% 10 Year Average Returns

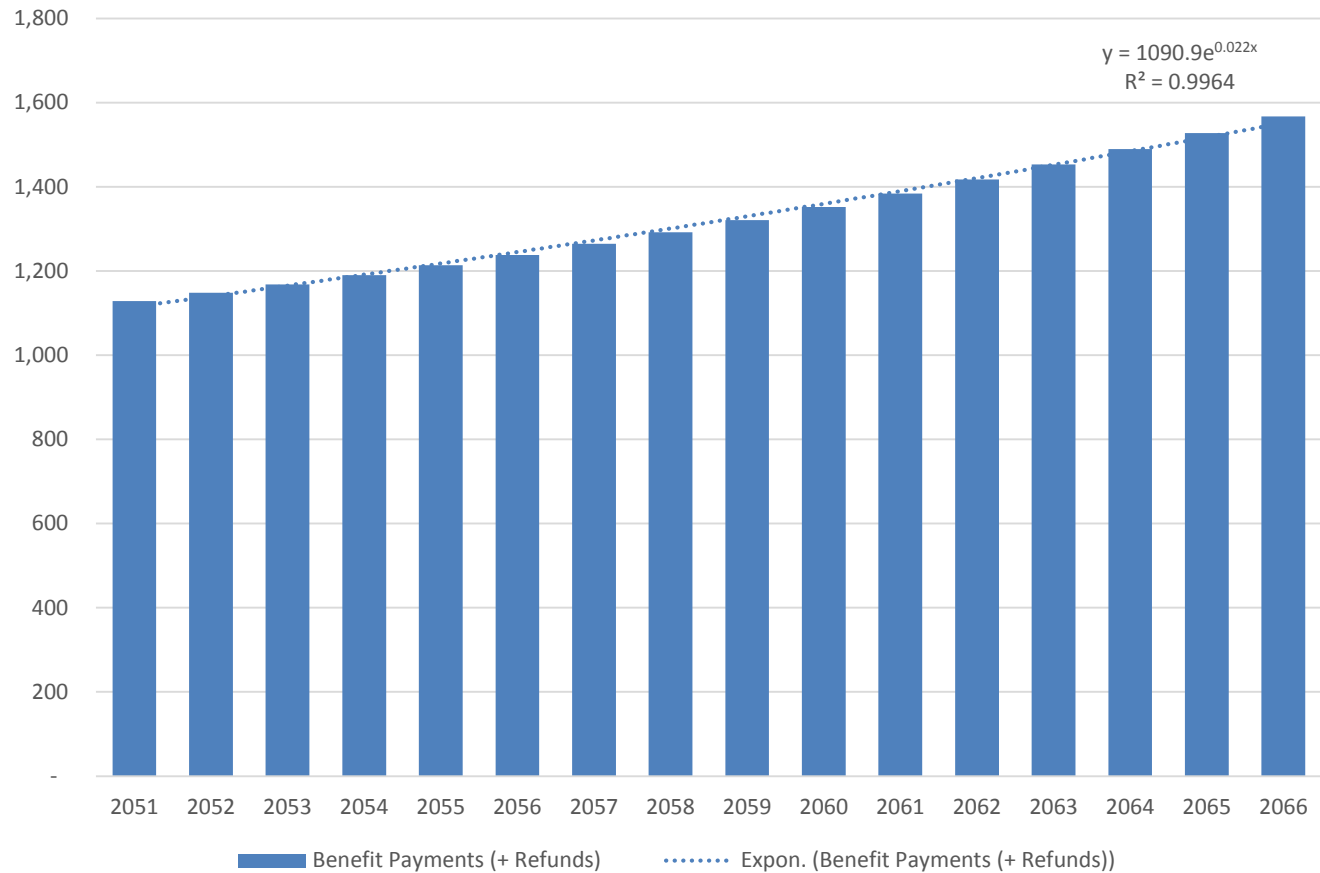


# Actuarial Model

- Model Funded Ratio, Cash Flow and Net Cash Flow.
- Ultimate trend of annual cash outflow increase also approximates minimum sustainable asset growth for ongoing system.
- Maximum sustainable negative cash flow is expected return less outflow trend.

# State General Cash Outflow Trend

Ultimate Trend in Benefit Payments (\$millions)





# Questions

