

# Pennsylvania Association of Public Employee Retirement Systems

**Fall Conference**



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# *The Liability Side of the Equation: A Closer Look at Unfunded Actuarial Liabilities*

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# Today's Topics:

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## I. Pension Funding Background

## II. What is a Shortfall?

## III. What to Do About The Unfunded Liability

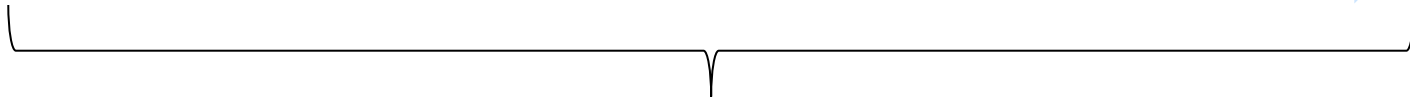
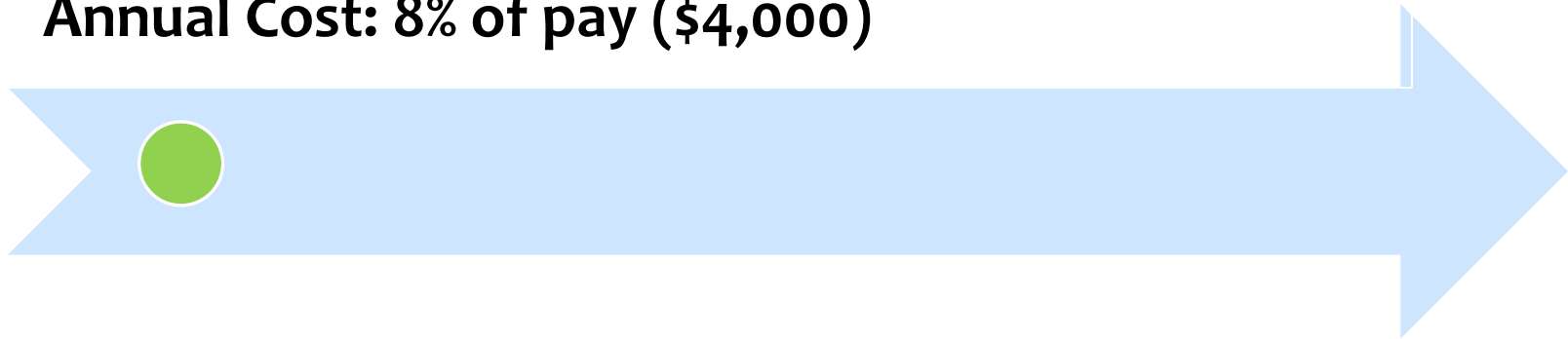
# I. BACKGROUND: How Does Pension Funding Work?

# How It Works

## HIRE

**Assets needed: \$0**

**Annual Cost: 8% of pay (\$4,000)**



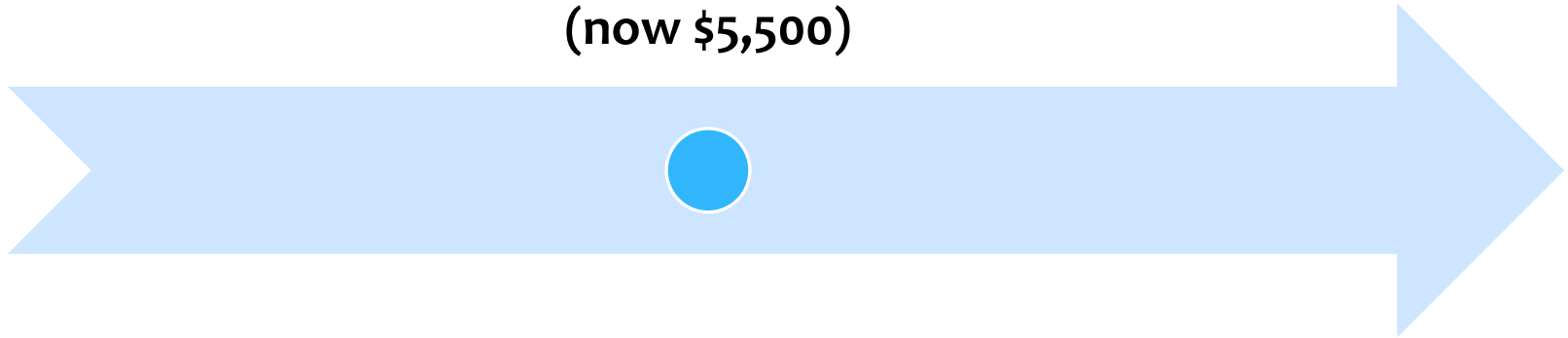
Active Working Career

# How It Works

## MID CAREER

**Assets needed: \$150,000**

**Annual Cost: 8% of pay  
(now \$5,500)**

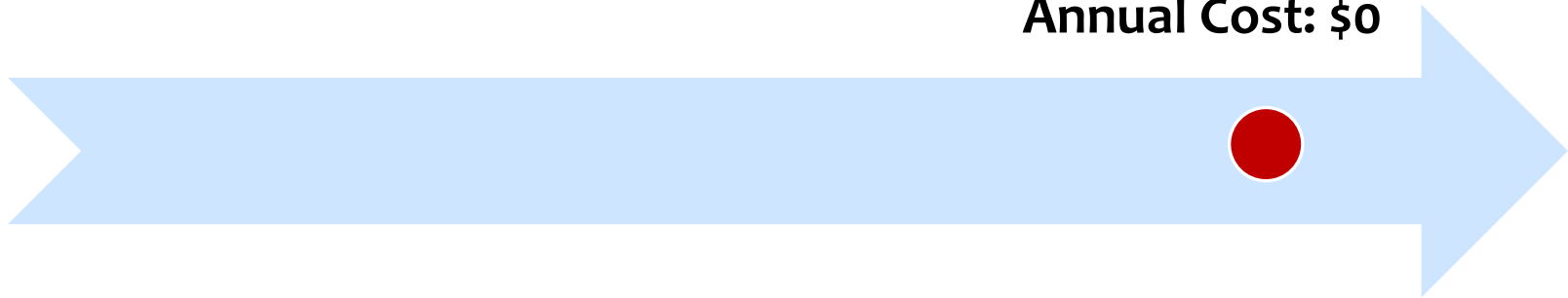


# How It Works

## RETIREMENT

Assets needed: \$400,000

Annual Cost: \$0



**Actuarial Terms: Assets Needed = “Actuarial Accrued Liability”  
Annual Cost = “Normal Cost”**

# II. Funding Shortfalls: What is it, and how does it happen?



# Funding Shortfalls

## HIRE

Assets needed:  
\$0

Actual: \$0

## RETIREMENT

Assets needed:  
\$400,000

Actual: \$250,000

## MID CAREER

Assets needed:  
\$150,000

Actual: \$50,000

**Shortfall, aka  
Unfunded  
Liability**

# What Impacts Plan Funding?

Factor	More than Expected	Less than Expected
Investment Performance	HELPS	HURTS
Salaries	HURTS	HELPS
Retiree longevity	HURTS	HELPS
Retirements	HURTS	HELPS
Terminations	HELPS	HURTS
Disabilities	HURTS	HELPS

# Definitions

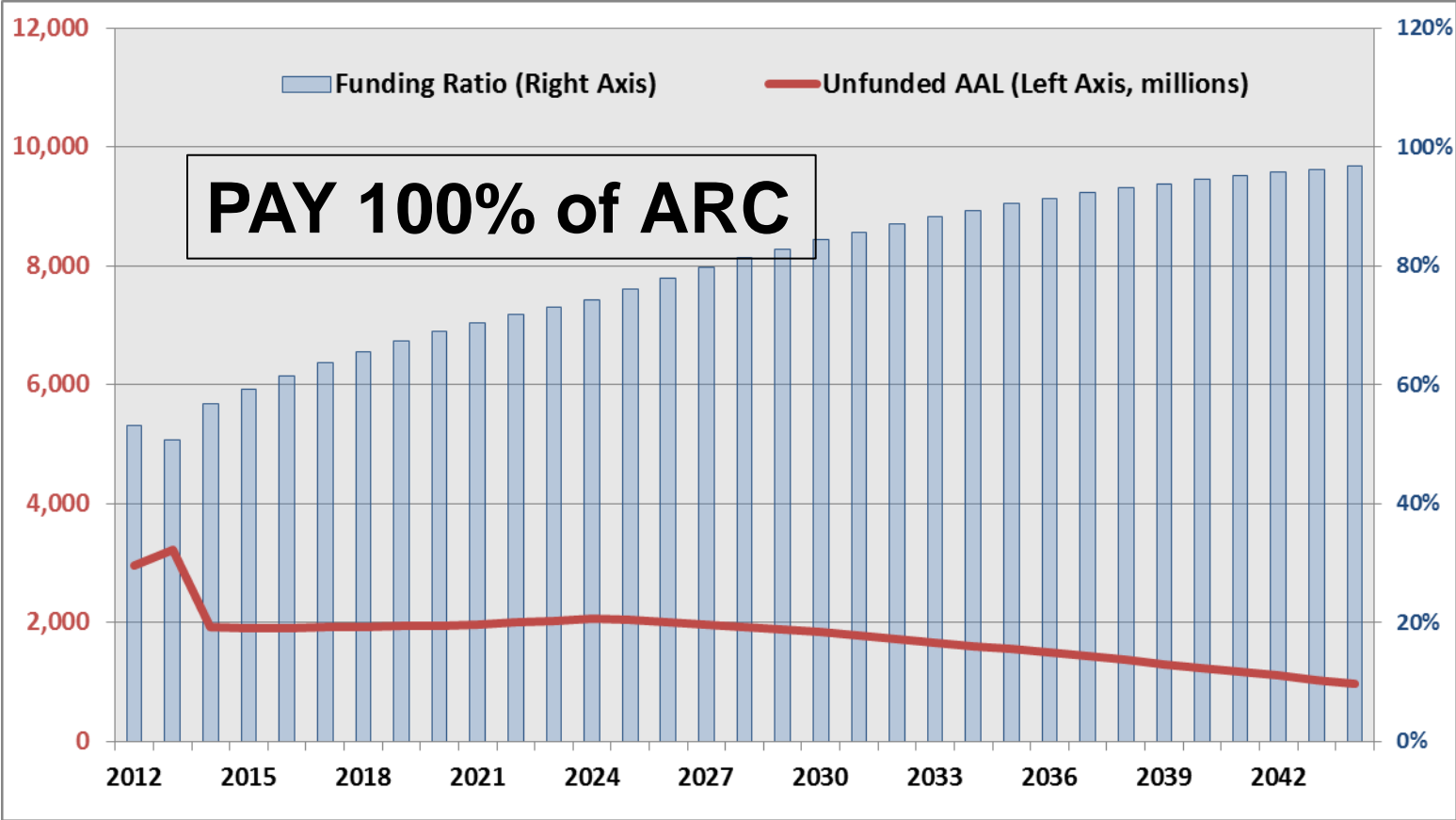
(for this presentation)

- ↳ Unfunded Liability: Shortfall
- ↳ Underfunding: Paying less than required/needed for actuarial funding

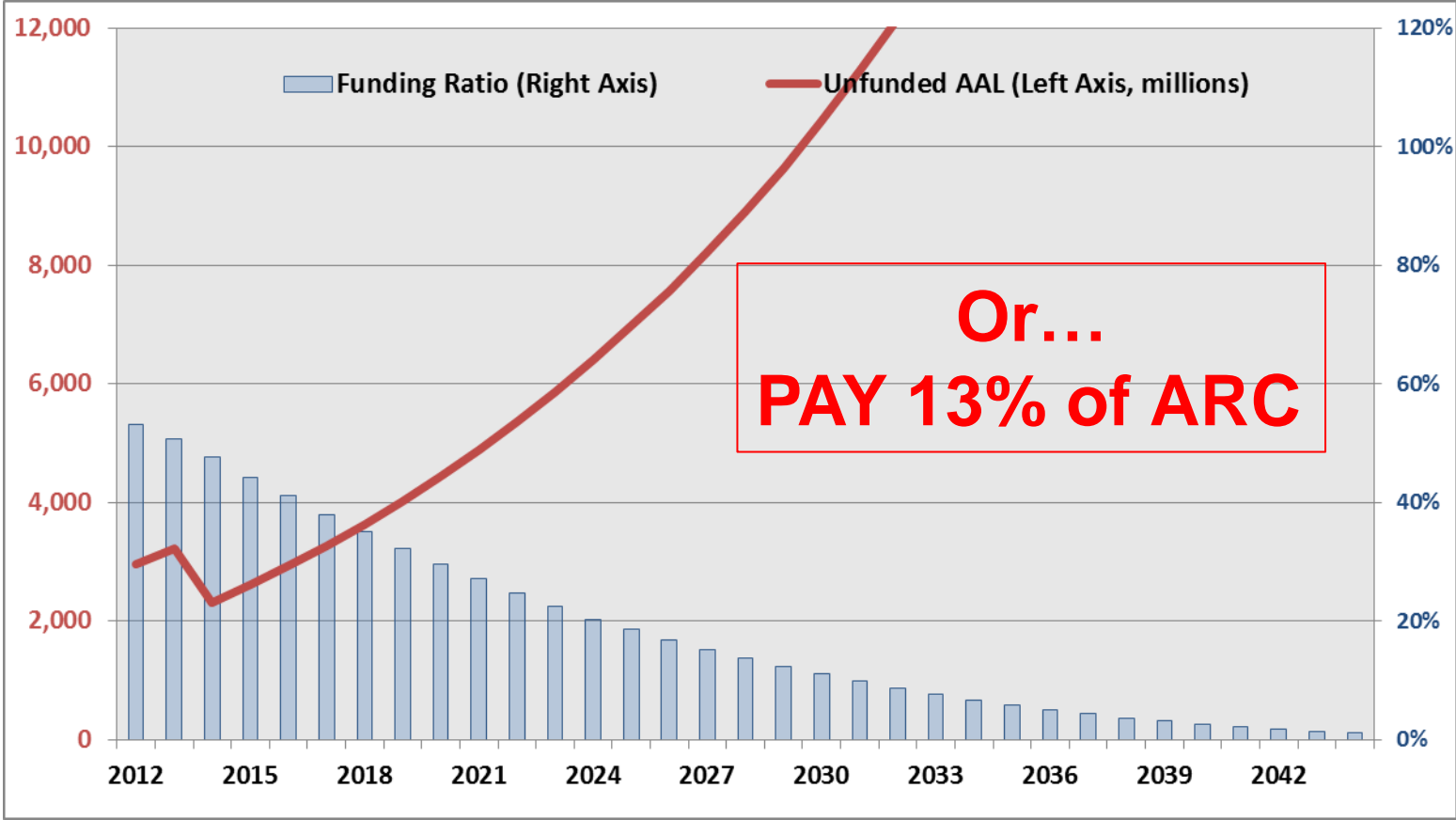
# Primary Causes of Shortfalls

<u>Explicit</u> Underfunding	<u>Implicit</u> Underfunding
<p>“ARC” = \$10 million</p>	<p><b>1. Return Assumption Too High</b></p>
	<p><b>2. Did not plan for longer lifetimes</b></p>
	<p><b>3. Benefit Increases not properly funded</b></p>
<p><b>Actual Contribution = \$8 million</b></p>	<p><b>4. Actuarial methods too liberal, most commonly amortization</b></p>
	<p><b>** These are often unintentional, but sometimes not</b></p>

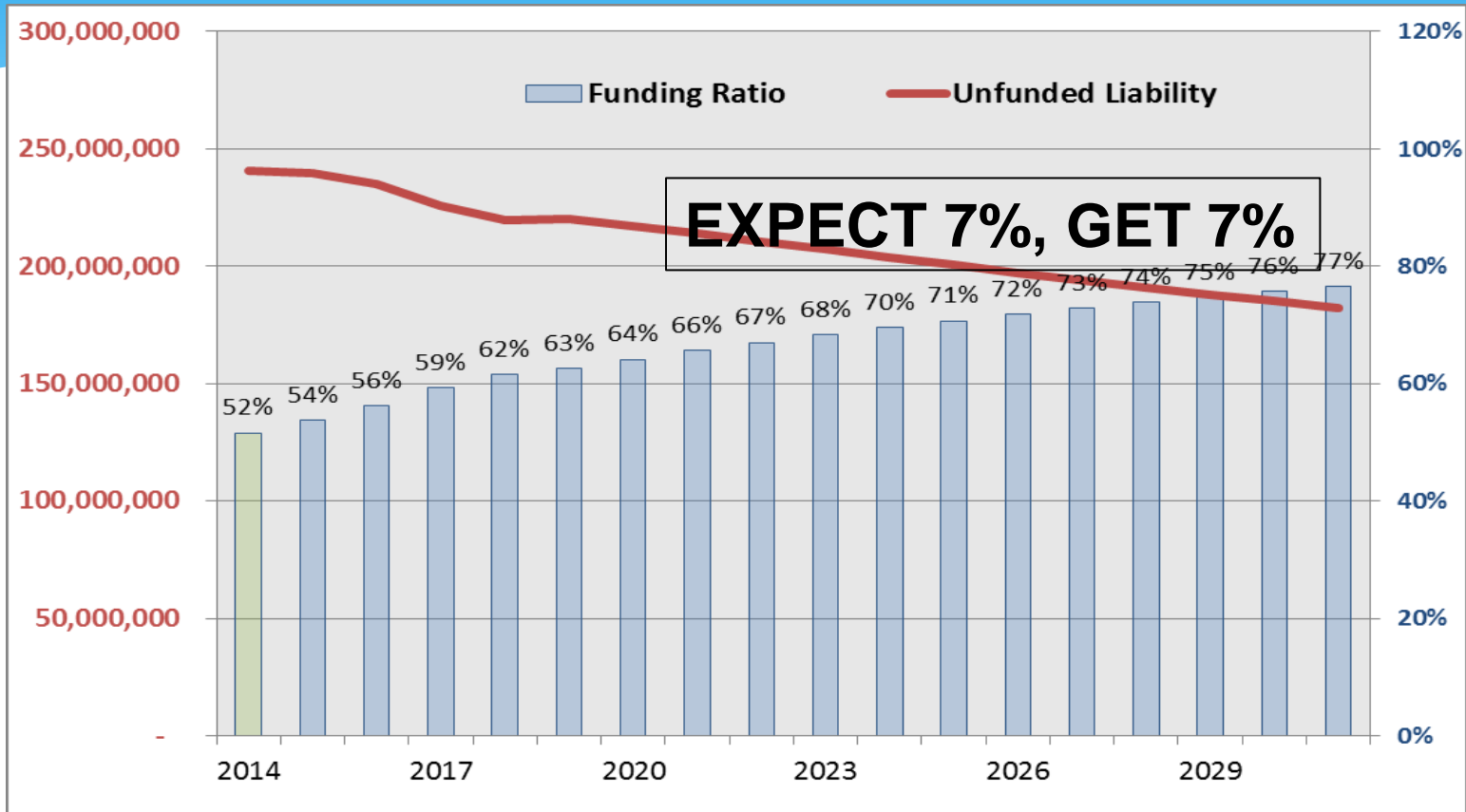
# Explicit Underfunding Example



# Explicit Underfunding Example

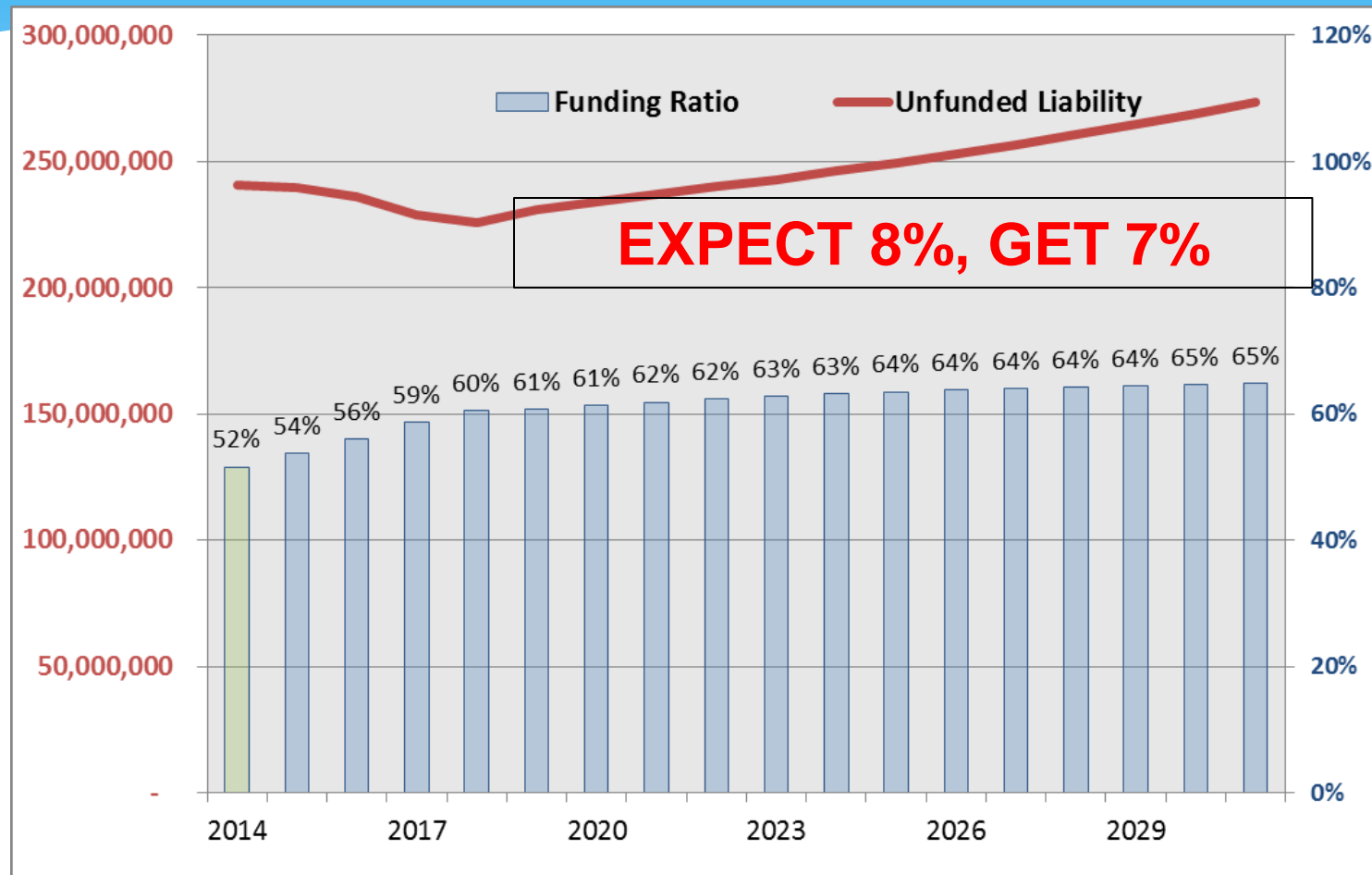


# Implicit Underfunding Example



Aka, the “What If We Are Right?” Scenario

# Implicit Underfunding Example





**III. How to Fix It:  
Strategies Govt's  
Have Used to  
Address Pension  
Funding Problems**

HOW HAS STATE GOVERNMENT  
DEALT WITH THE PROBLEM OF  
PENSION DEBT SO FAR?

MAYBE, IF  
WE IGNORE HIM,  
HE'LL GO AWAY.



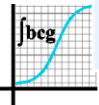
**“There are a lot of ways to NOT  
pay a bill...**

**But only ONE way to pay it.”**

# 1. Benefit Changes

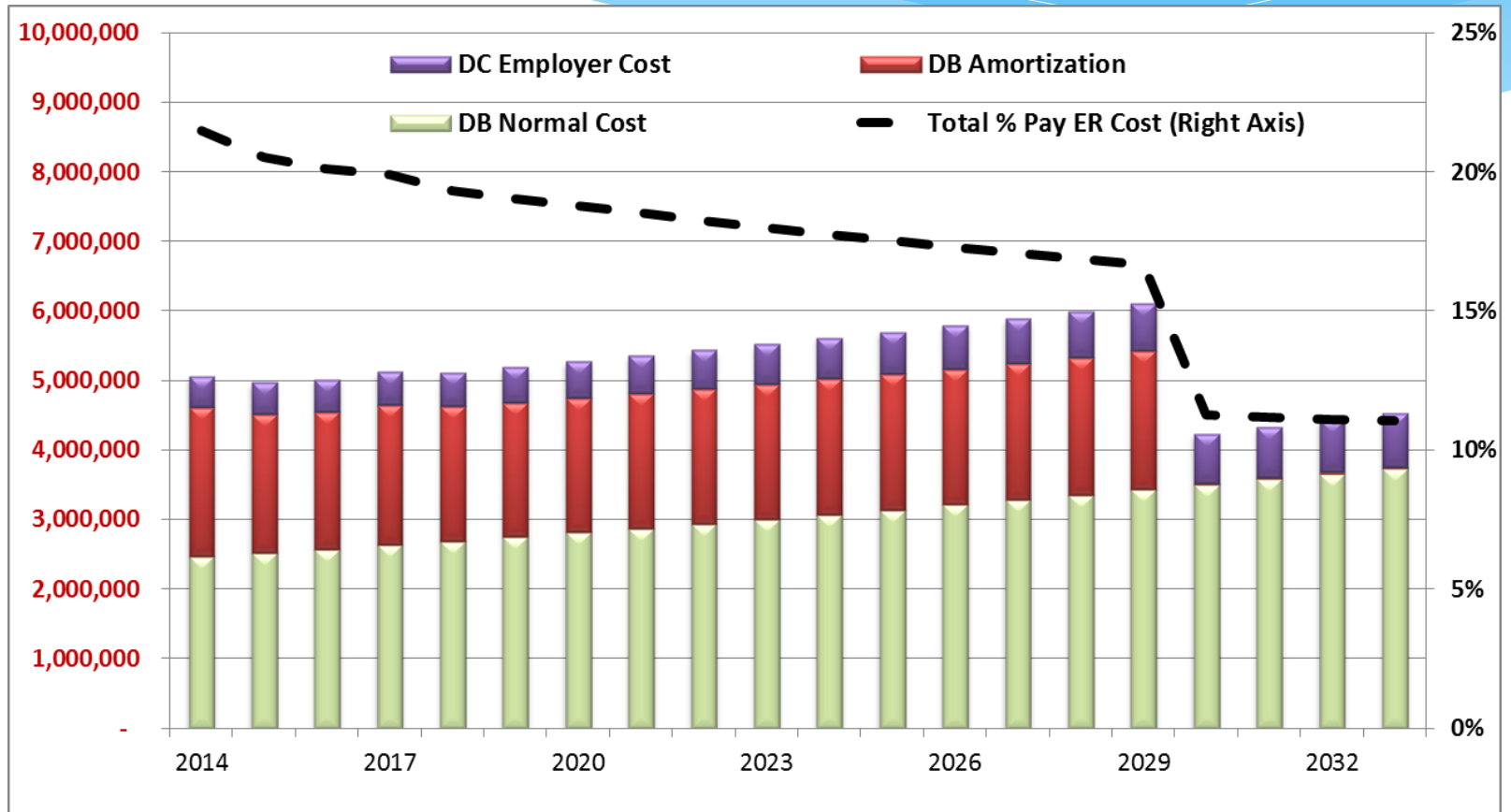
Common Changes	Impact
Reduce/Eliminate Retiree COLAs	Significant
Increase EE Contribs	Leverages Cost
Final Average Pay	Usually minimal
Increase Vesting Years	
Change Pensionable Earnings Definition	Can be noticeable, but doesn't affect retirees
Decrease Benefit Multiplier	
Increase Eligibility Age/Service	

*These have often been applied to NEW HIRES only...*



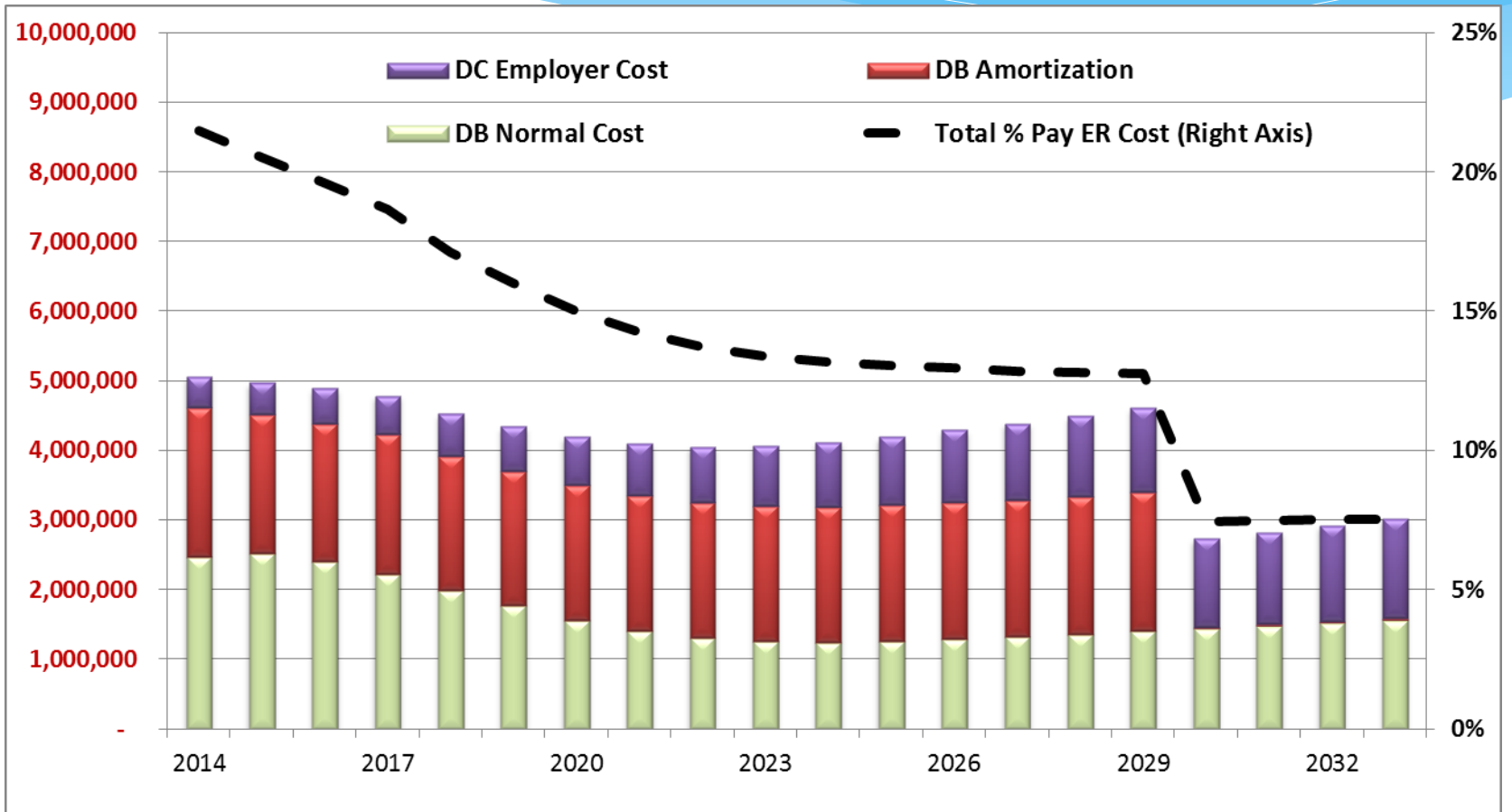
# NEW HIRE Changes

**BEFORE**



# NEW HIRE Changes

**AFTER**



# NEW HIRE Changes

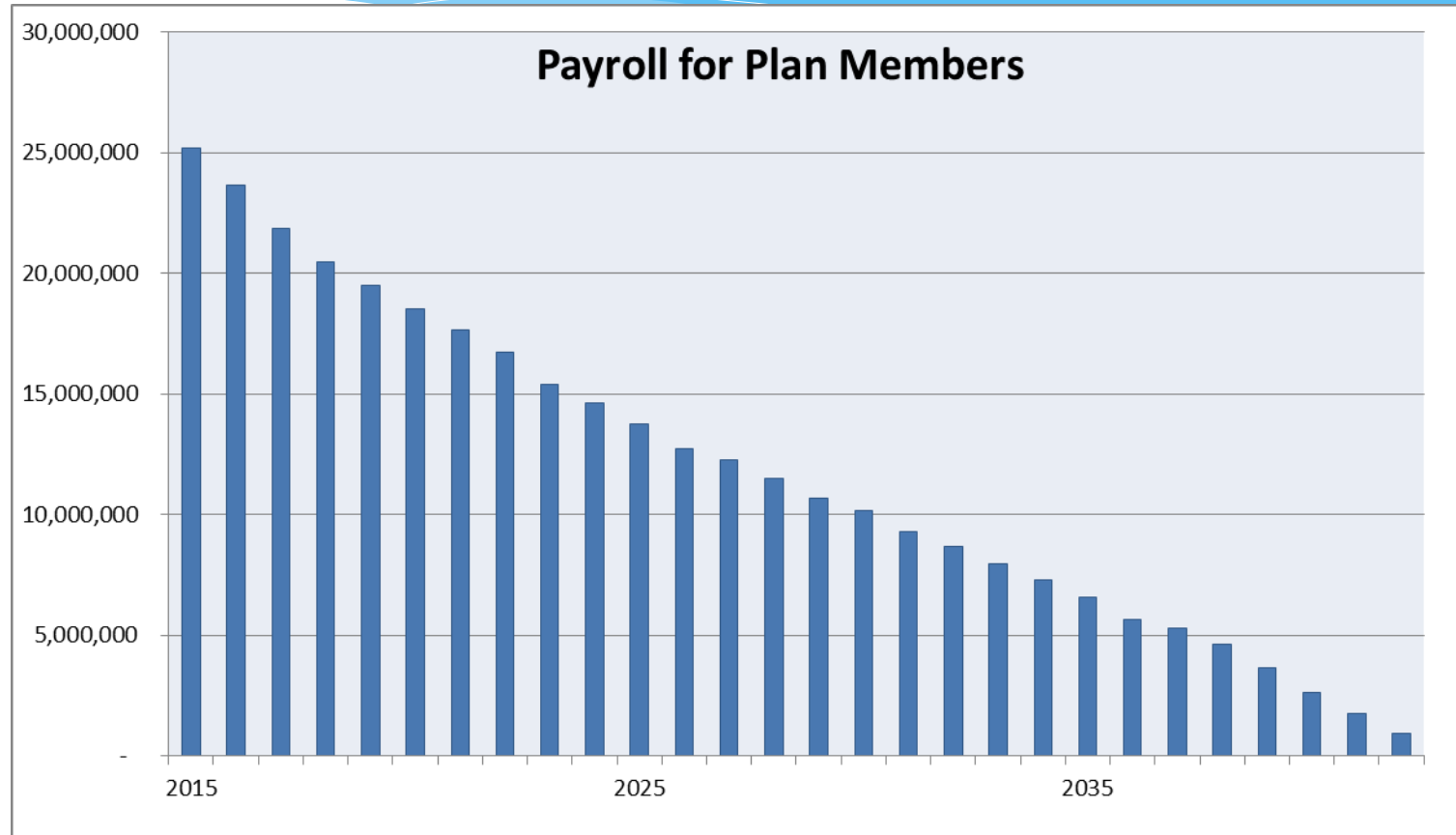
- ➔ PROBLEM: Does NOT address unfunded liability
- ➔ DOES change expected pension contributions, but...
- ➔ Does NOT change expected funding progress in most cases

# Closed Plan

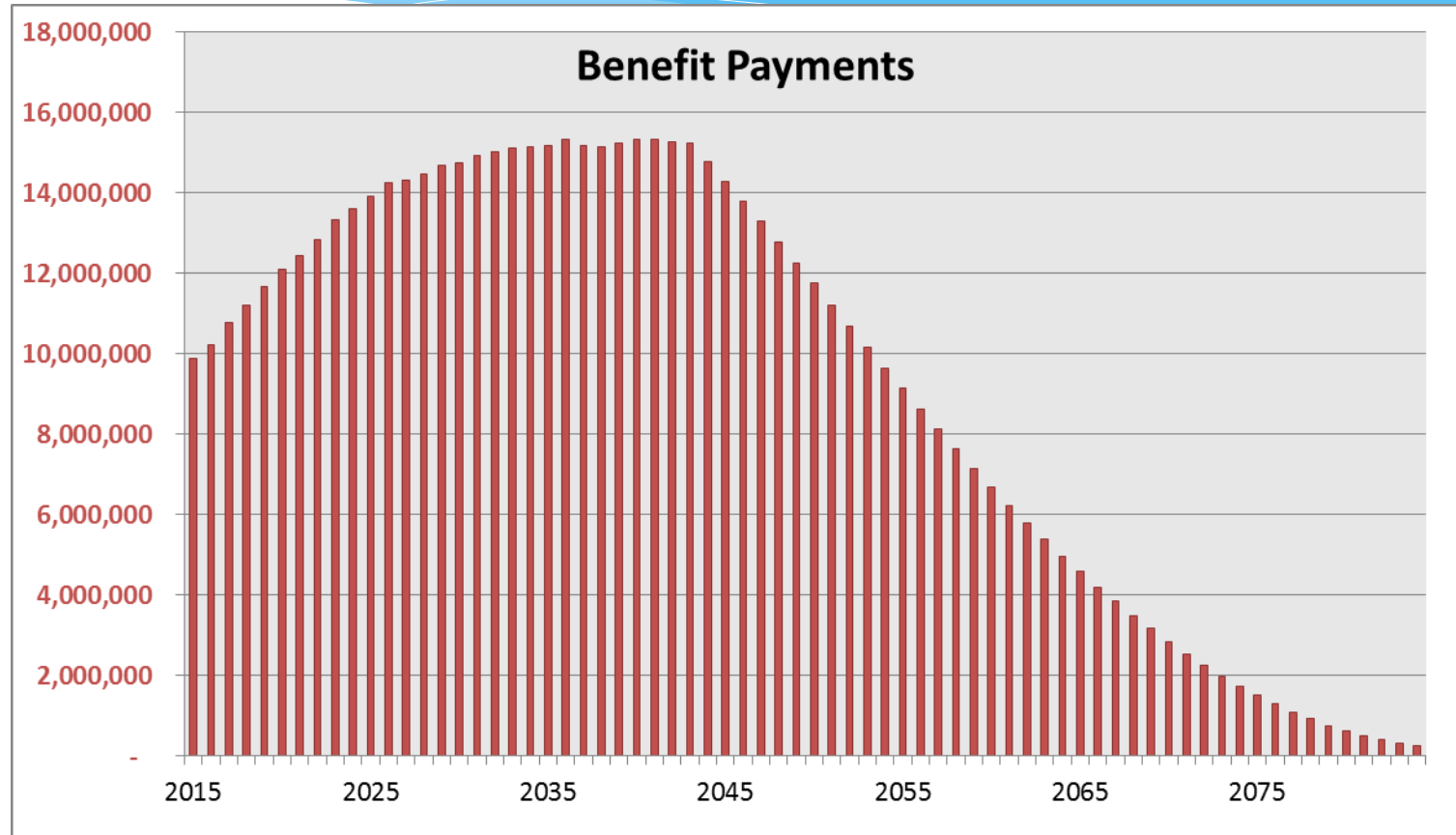
- Closed Plan: NO new entrants at all after a certain date
- Decreasing payroll
  - Normal cost will go along with it
- Benefit payments will peak, then decline
- Larger portion of plan (eventually 100%) will be retiree liabilities
  - Asset allocation likely to be revised eventually



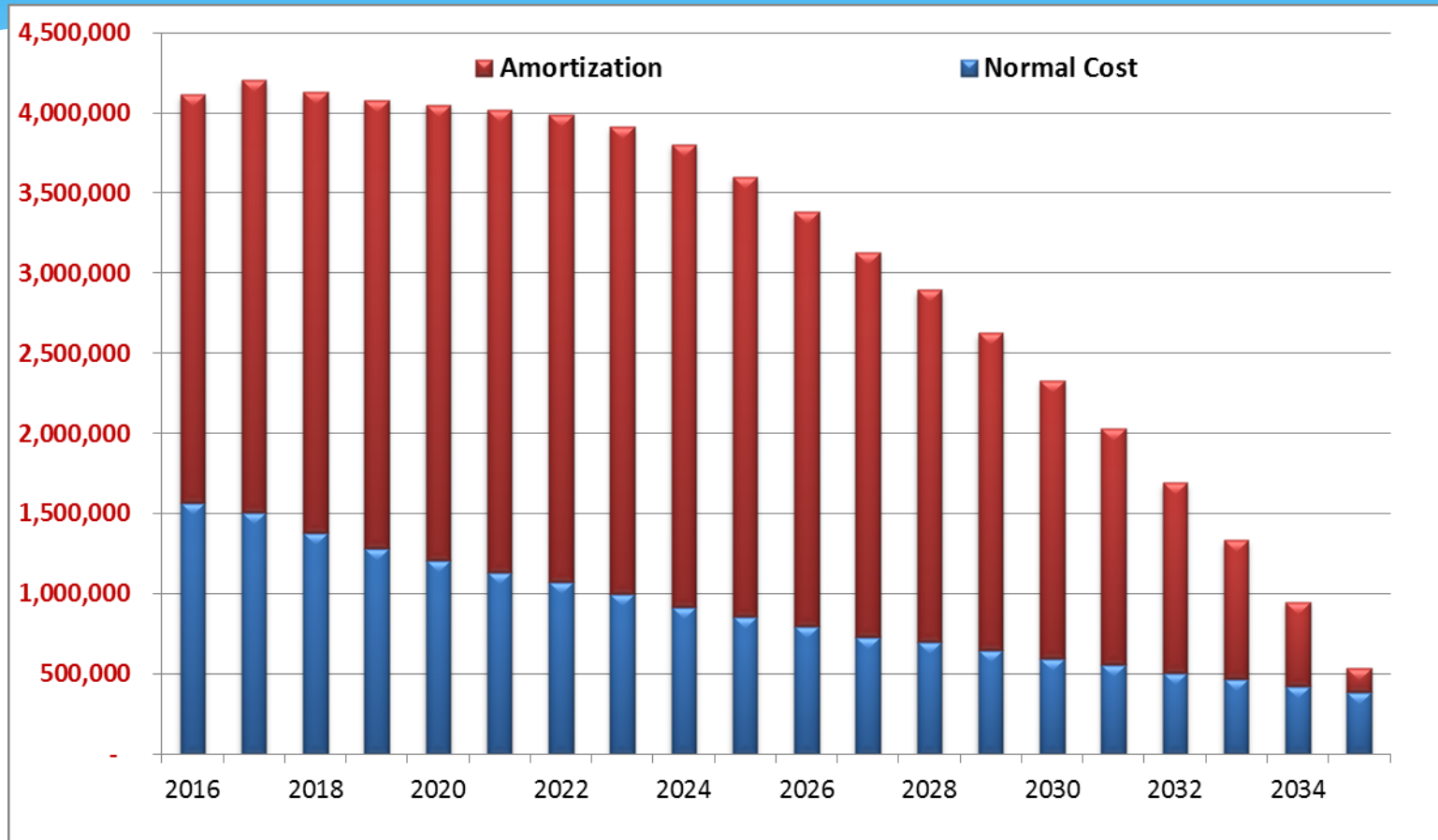
# Closed Plan Implications



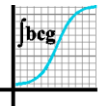
# Closed Plan Implications



# Closed Plan Cost Outlook



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## 2. Pension Obligation Bonds

- \* How it is supposed to work:
  - \* Borrow large sum of money at 3% or 4%
  - \* Put money into pension fund to improve funding
  - \* Earn 7%, while paying the lower rate debt service
  
- \* Is this arbitrage?
  - \* NO

# Pension Obligation Bonds

- \* How it has worked:
  - \* 20 large POB issuances since 1996
  - \* 70% used POB to pay ARC!
  - \* 80% shortchanged the ARC later!
  - \* Not surprisingly, 80% ended up in worse shape
  - \* Of the 4 that did it the “right way”, only 2 ended up better off – WHY?
    - \* Answer: Timing

# 3. Benefit Reductions

- \* Benefit Reduction: A decrease in the monthly pension for retirees
- \* This is a last resort
- \* Usually done in connection with, or to avoid bankruptcy
  - \* **Prichard, Alabama**
  - \* **Central Falls, Rhode Island**
  - \* **Detroit**
- \* Legal issues abound!



# IV. How to Fix It: Any Other Ideas?



# Pot for Pensions



# Gambling for Pensions



# Sell, Lease Assets



# Pension Shortfalls: How to Fix It

1. Figure out how you got there.
2. Be real about assumptions.
3. Figure out what happens if you are right about the future.
4. Align methods with funding improvement goals (balancing cost considerations).
5. Bring stakeholders together to lay out and discuss all options.
6. Know the impact before implementation!



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