



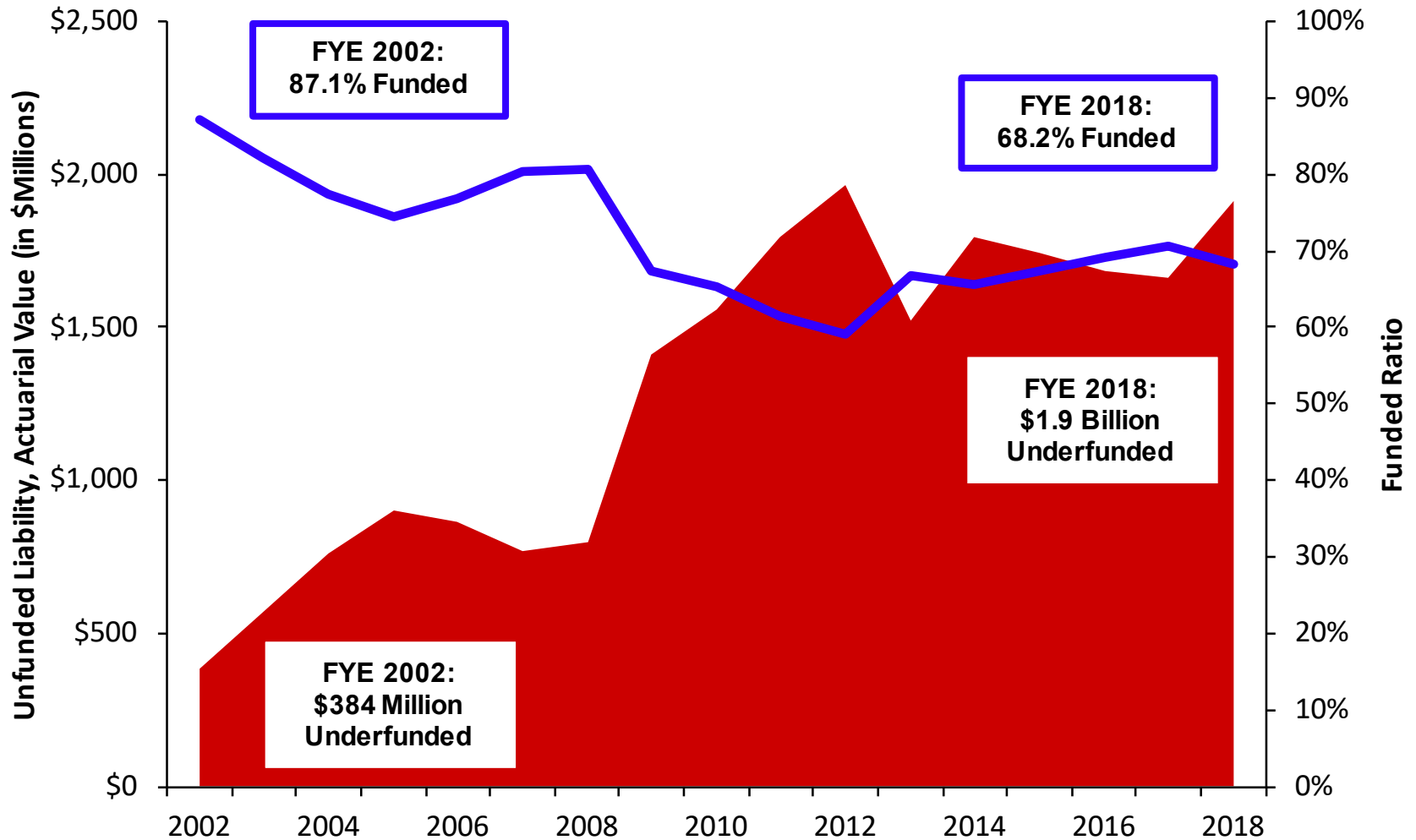
MONTANA TEACHERS' RETIREMENT SYSTEM SOLVENCY ANALYSIS

Prepared by:

Pension Integrity Project at Reason Foundation

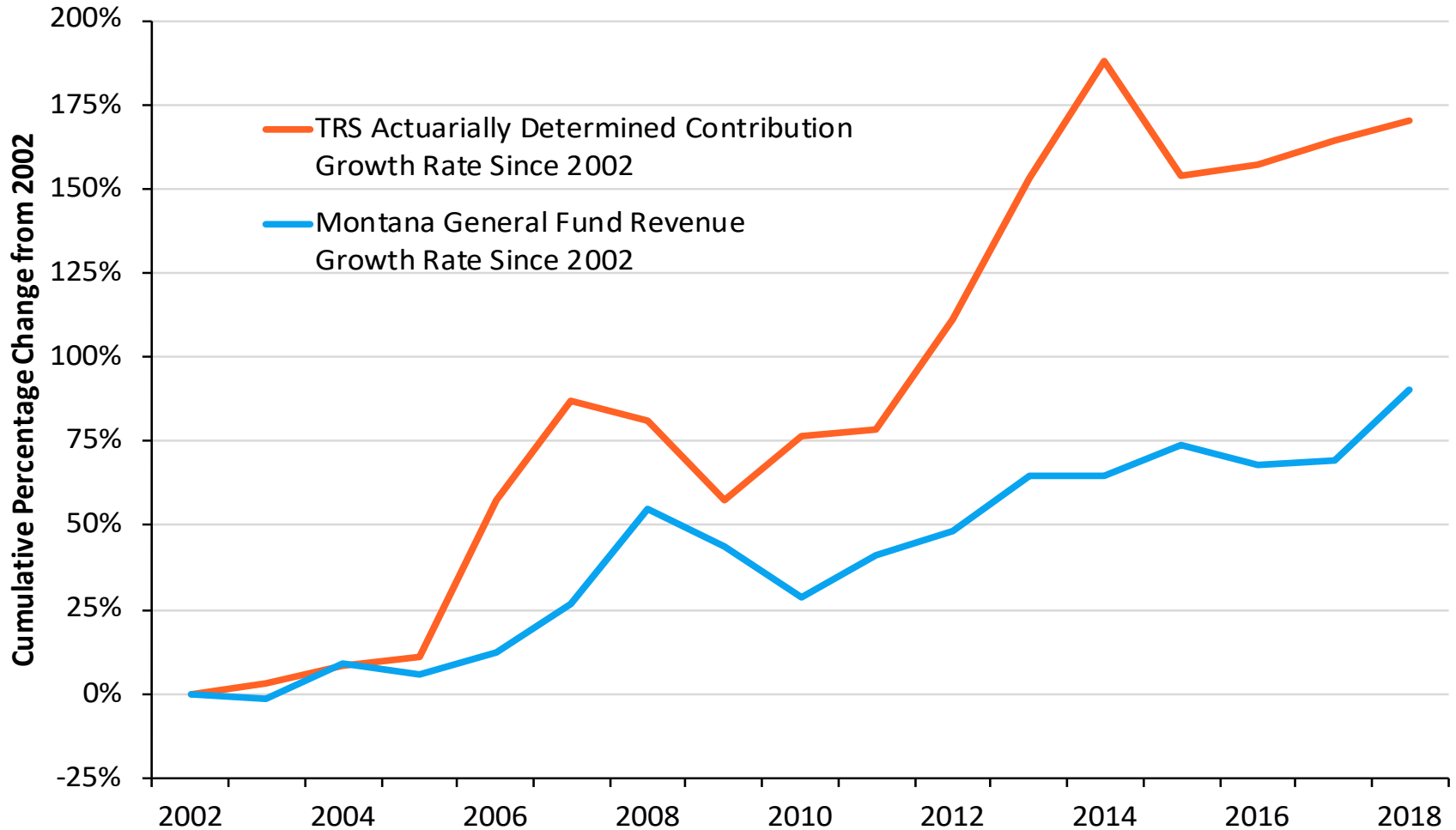
August 19, 2019

A History of Weakening Solvency (2002-2018)



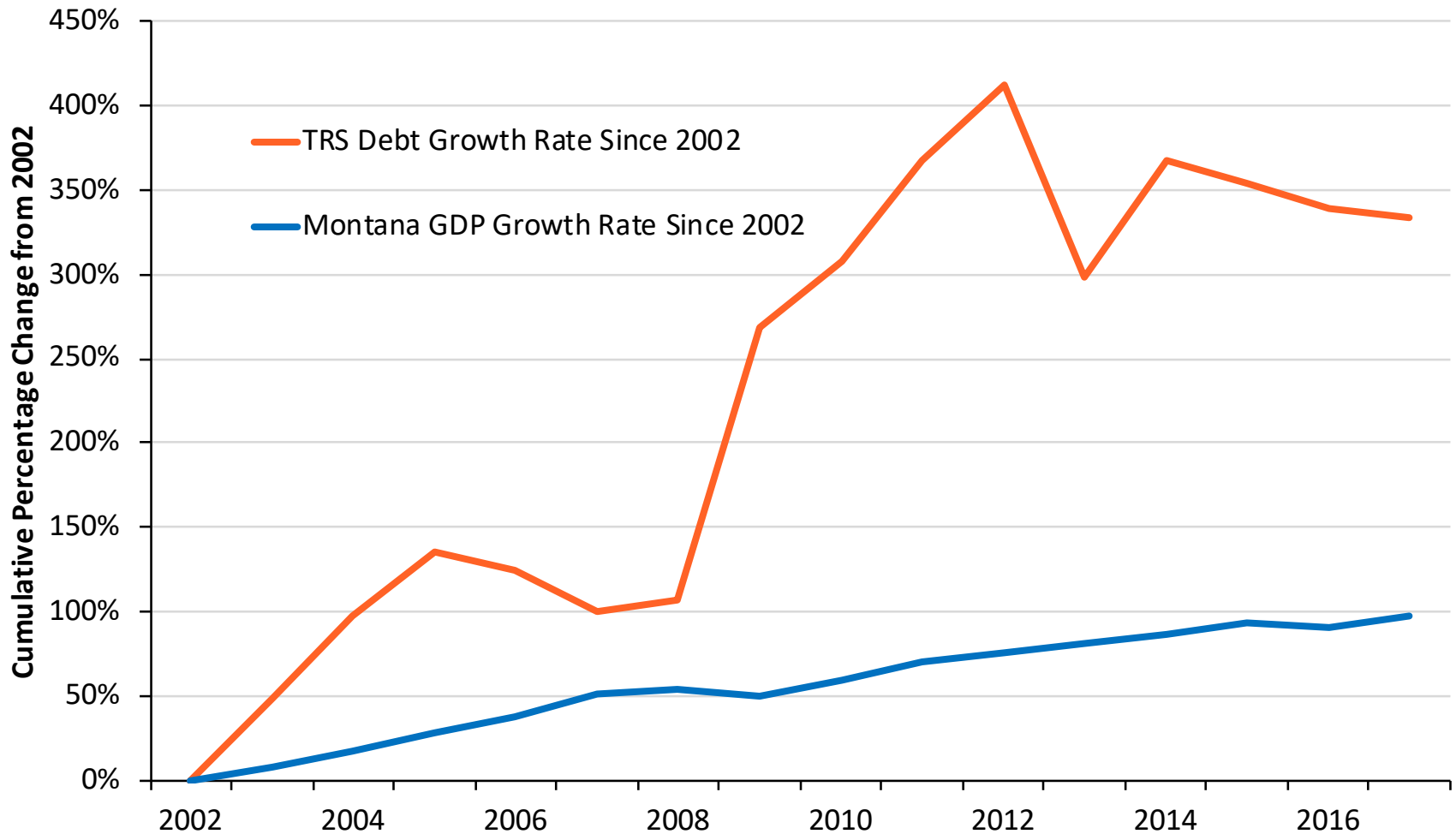
Source: Pension Integrity Project analysis of actuarial value of assets and actuarial accrued liability found in Montana TRS valuation reports and CAFRs

Actuarially Determined Contribution Rates Growing Faster than Montana Revenue



Source: Pension Integrity Project analysis of TRS actuarial valuation reports and data from NASBO Fiscal Survey of States. GASB recently changed the definition of Actuarially Required Contribution (ARC) to Actuarially Determined Employer Contribution (ADEC).

MTRS Unfunded Liabilities are Growing Faster than the Montana Economy



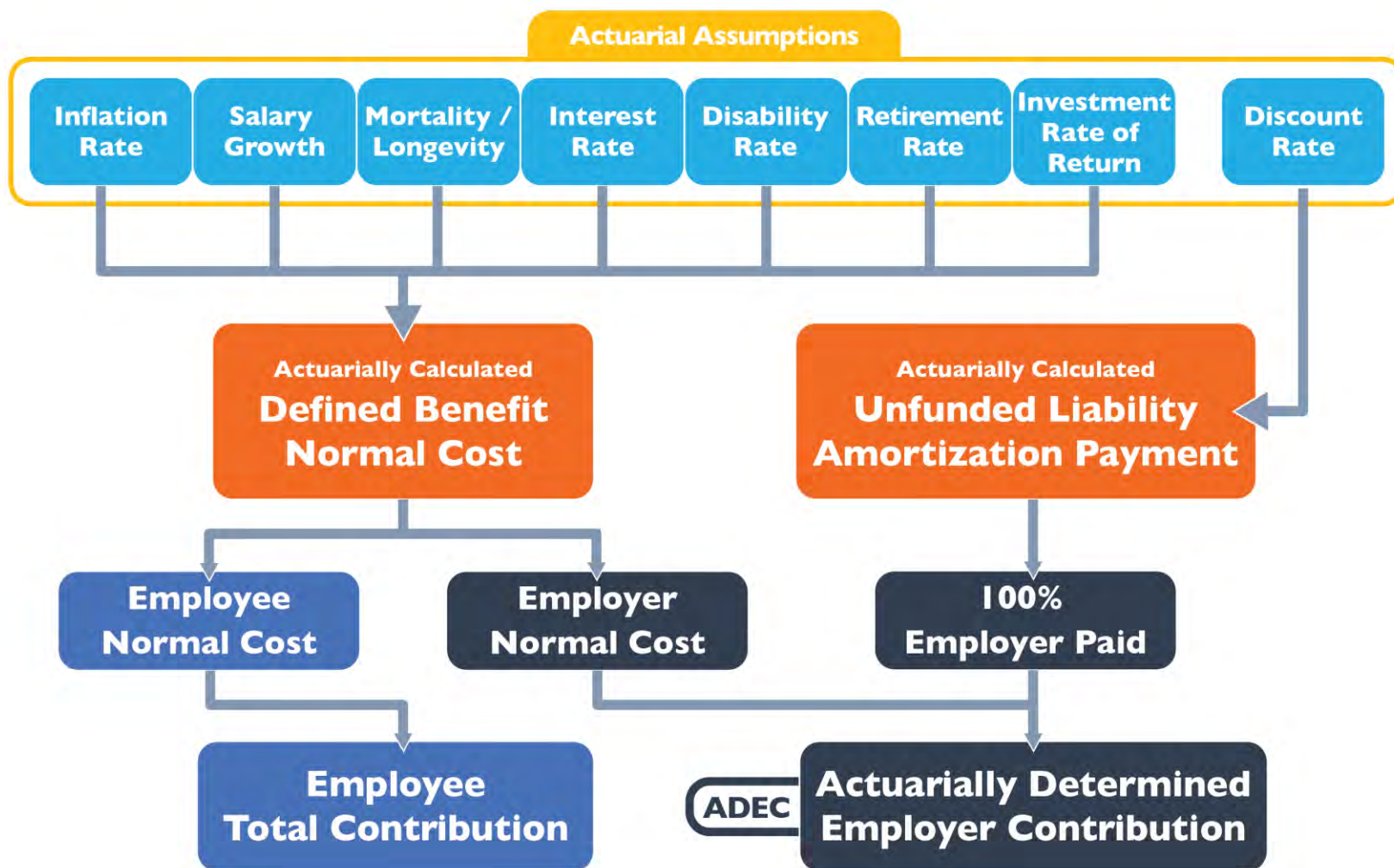
Source: Pension Integrity Project analysis of TRS actuarial valuation reports and CAFRs, Federal Reserve of St. Louis Data for Montana' gross domestic product.



CHALLENGES CURRENTLY FACING MONTANA TRS

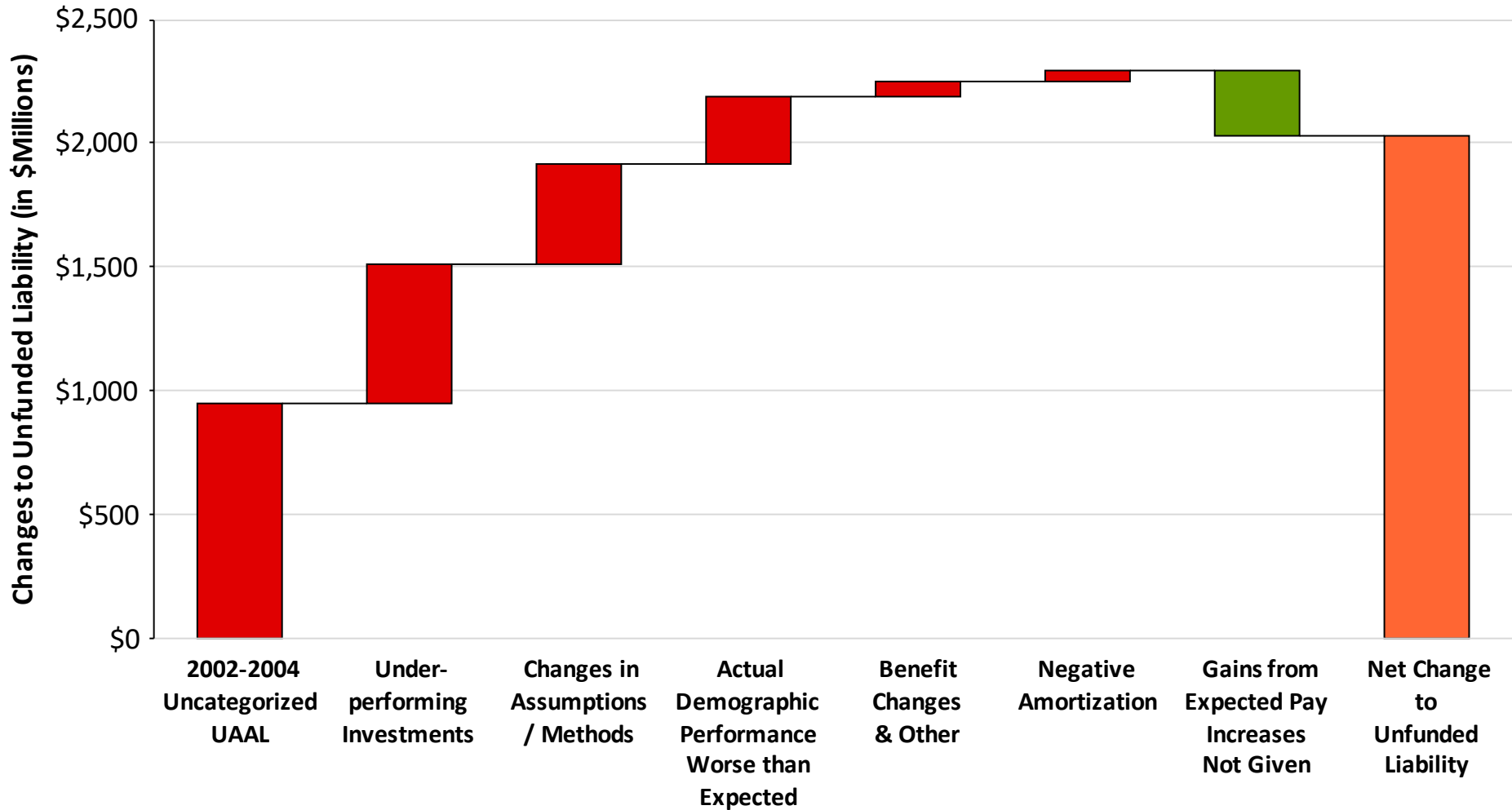


How a Pension Plan is Funded



The Origins of MTRS Pension Debt

Actuarial Experience of Montana TRS, 2002-2018



Source: Pension Integrity Project analysis of Montana TRS CAFRs. Data represents cumulative unfunded actuarial liability by gain/loss category.

The Drivers Behind MTRS Pension Debt



1. **Underperforming Investment Returns** added \$554 million to the unfunded liability since 2005 making it the largest contributor to Montana TRS debt.
2. **Prudent Changes in Actuarial Assumptions and Methods** since 2005 to better reflect current market and demographic trends required the recognition of previously unrecognized pension cost and the acknowledgment of \$406 million to the unfunded liability.
3. **Demographic Experience** not meeting plan actuary forecast over the last 14 years has added \$273 million to the unfunded liability.
4. **Contribution and Amortization Methods** set in statute have resulted in \$116 million in additional unfunded liability since 2005.
5. **Undervaluing Debt** through discounting methods that have remained relatively unchanged, leading to an undercalculation of required contributions.



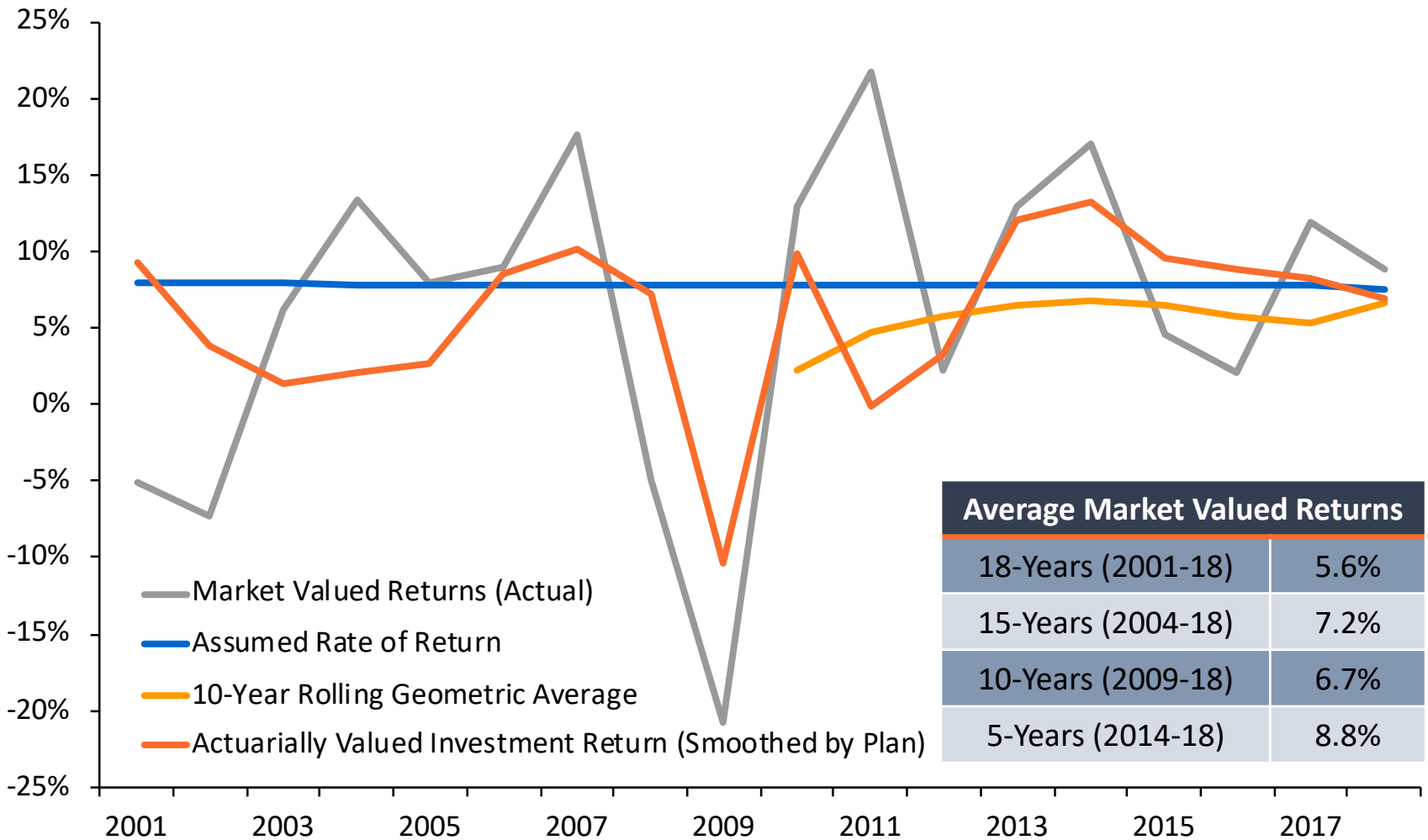
CHALLENGE I: ASSUMED RATE OF RETURN

- **Unrealistic Expectations:** The Montana TRS *Assumed Return* exposes taxpayers to significant investment underperformance risk.
- **Underpricing Contributions:** Using an unrealistic *Assumed Return* has likely resulted in underpriced *Normal Cost* and an undercalculated *Actuarially Determined Contribution*.



Montana TRS Problem: Underperforming Assets

Investment Return History, 2001-2018



Source: Pension Integrity Project analysis of Montana TRS actuarial valuation reports and CAFRs. The current assumed rate of return for MTRS is 7.50%

New Normal: The So-Called Recovery Has Already Happened, the Market Has Changed



Over the past two decades there has been a steady change in the nature of institutional investment returns.

- ✓ 30-year Treasury yields have fallen from around 8% in the 1990s to consistently less than 3% today.
- ✓ Globally, interest rates are at historically low levels, while market liquidity continues to be restrained by financial regulations.

McKinsey & Co. forecast the returns to equities will be 20% to 50% lower over the next two decades compared to the previous three decades.

The “new normal” for institutional investing suggests achieving even a 6% average rate of return is optimistic.



New Normal: Forecasts for Future Returns are Significantly Lower than Past Returns

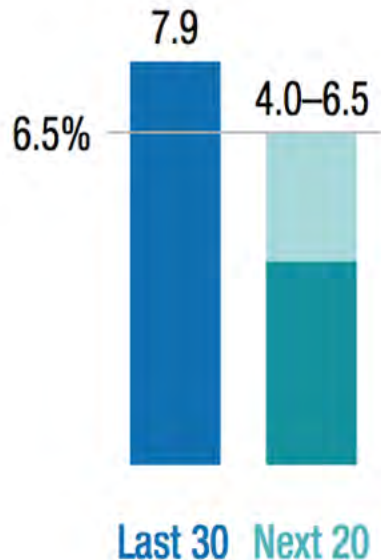
The past 30 years saw returns that exceeded the long-run average

The next 20 years could be more challenging

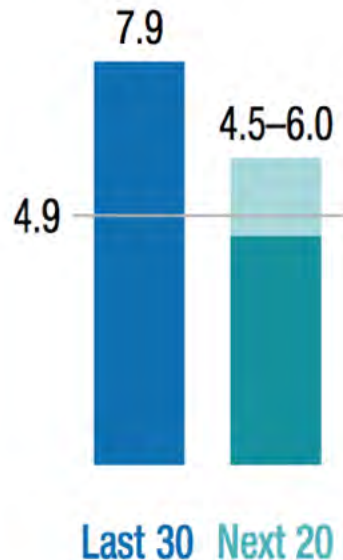
- Historical real returns
- Last 100 years average return

- Growth-recovery scenario
- Slow-growth scenario

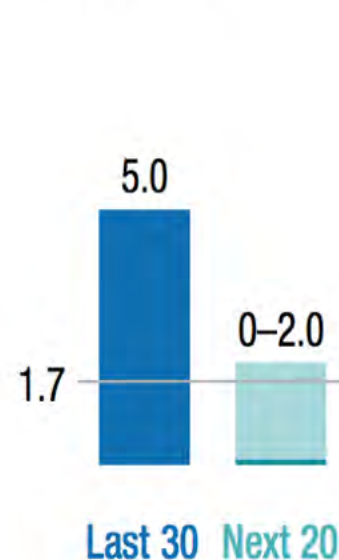
US equities



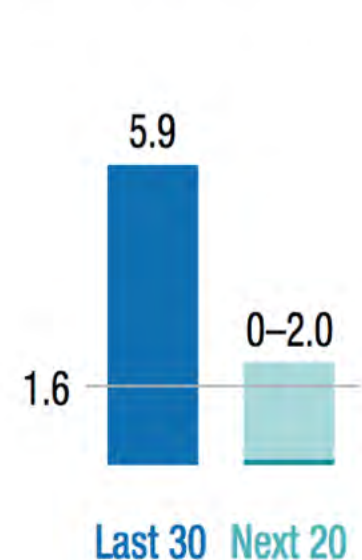
European equities



US bonds

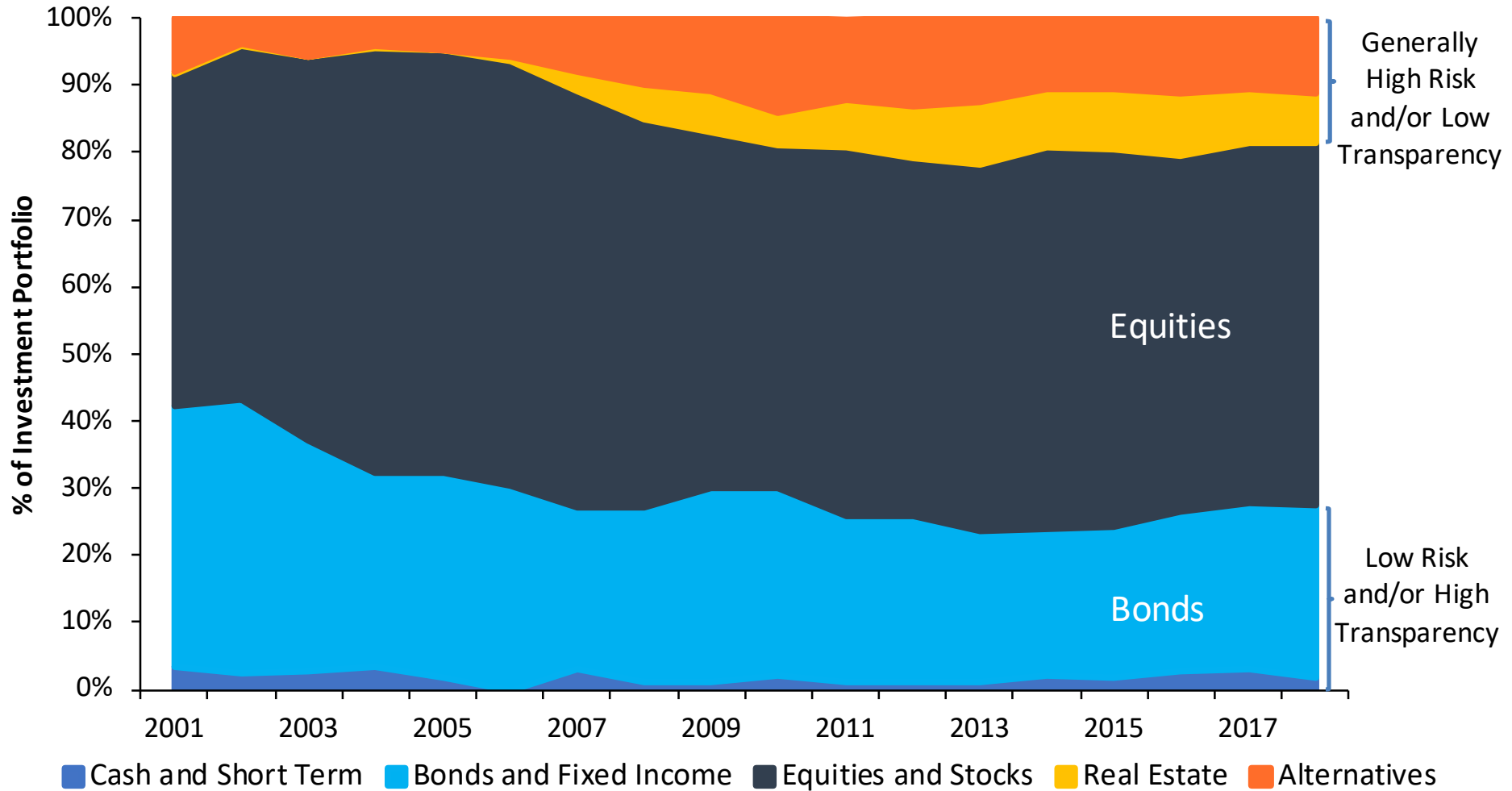


European bonds



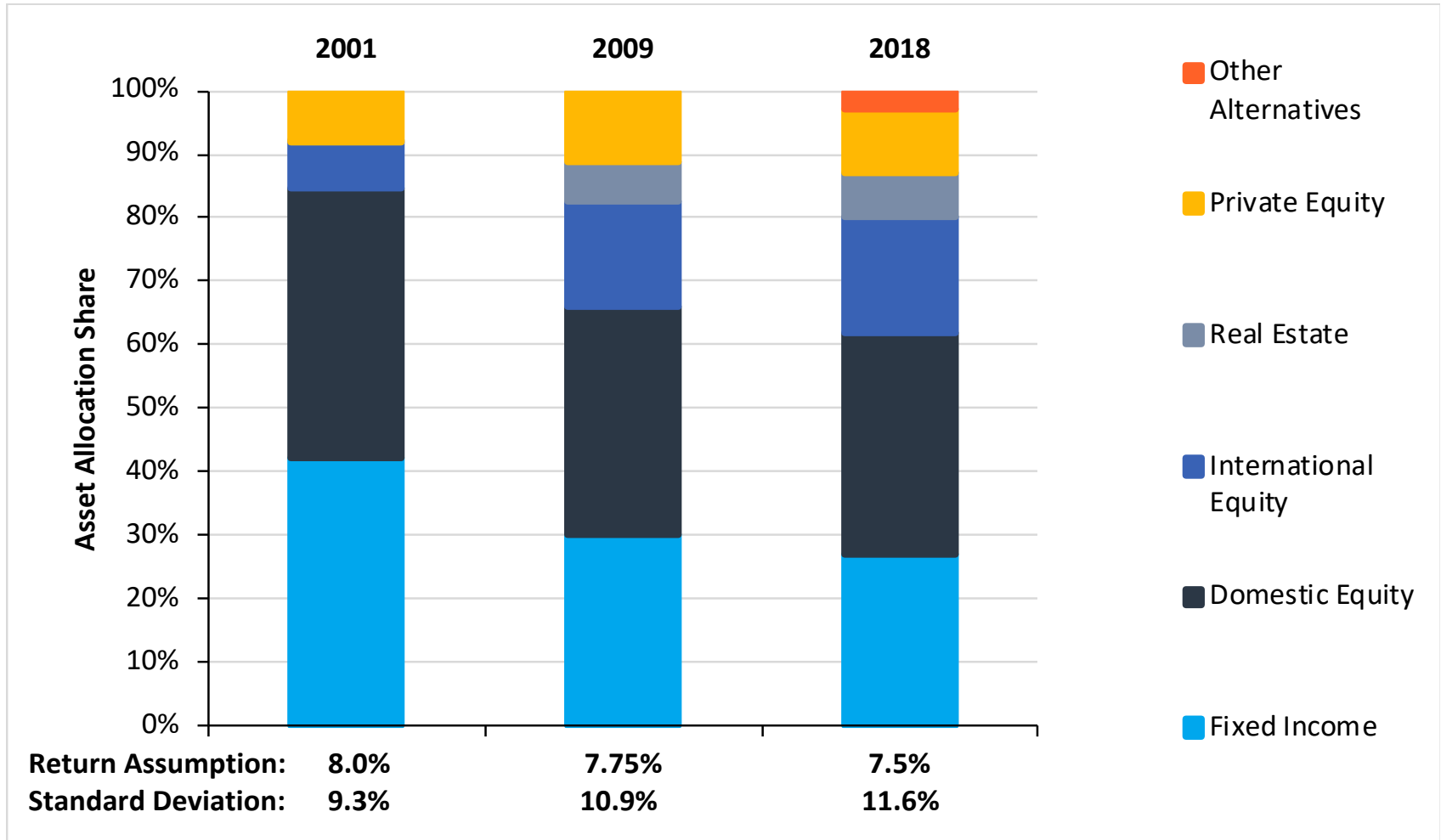
Montana TRS Asset Allocation (2001-2018)

Expanding Risk in Search for Yield



Source: Pension Integrity Project analysis of Montana TRS actuarial valuation reports and CAFRS.

New Normal: More Risky Investments Result in Higher Deviation of Annual Returns



Source: Pension Integrity Project Monte Carlo model based on Montana TRS asset allocation and expected risks by asset class. Asset class risks are based on 2018 estimates.

Probability Analysis: Measuring the Likelihood of TRS Achieving Various Rates of Return



Probability of TRS Achieving A Given Return Based On:

Possible Rates of Return	TRS Forecast			Short-Term Market Forecast				Long-Term Market Forecast	
	TRS Forecast	TRS Forecast (RVK)	TRS Historical Returns	BNY Mellon 10-Year Forecast	JP Morgan 10-15 Year Forecast	Research Affiliates 10-Year Forecast	Horizon 10-Year Market Forecast	BlackRock 20-Year Forecast	Horizon 20-Year Market Forecast
9.00%	30%	17%	9%	12%	11%	7%	17%	27%	30%
8.00%	43%	26%	19%	22%	21%	13%	27%	40%	44%
7.50%	51%	32%	25%	29%	27%	18%	33%	47%	51%
7.00%	58%	38%	33%	36%	34%	23%	40%	54%	58%
6.50%	66%	45%	41%	44%	42%	29%	47%	60%	66%
6.00%	73%	52%	50%	53%	49%	36%	54%	68%	72%
5.00%	84%	65%	67%	70%	65%	52%	68%	79%	83%

Source: Pension Integrity Project Monte Carlo model based on TRS asset allocation and reported expected returns by asset class. Forecasts of returns by asset class generally by BNYM, JPMC, BlackRock, Research Affiliates, and Horizon Actuarial Services were matched to the specific asset class of TRS. Probability estimates are approximate as they are based on the aggregated return by asset class. For complete methodology contact Reason Foundation. RVK is the internal TRS investment consultant. TRS Forecast based on 2017 Horizon 20-year forecast. Probabilities projected in Horizon 20-Year Market Forecast column reflect 2018 reported expected returns. Horizon is an external consulting firm that surveyed capital assumptions made by other firms.

Probability Analysis: Measuring the Likelihood of TRS Achieving Various Rates of Return



TRS Forecast

- A probability analysis of TRS historical returns over the past 20 years (1999-2018) indicates only a modest chance (25%) of hitting the plan's 7.5% assumed return.
- While the Horizon's capital assumptions adopted by TRS project a 51% chance of achieving their investment return target, the capital assumptions produced by the plan's own investment consultant RVK project a significantly lower probability of 32%.

Short-Term Market Forecast

- Returns over the short to medium term can have significant negative effects on funding outcomes for mature pension plans with large negative cash flows like TRS.
- Analysis of capital market assumptions publicly reported by the leading financial firms (BlackRock, BNY Mellon, JPMorgan, and Research Affiliates) suggests that over a 10-15 year period, TRS returns are likely to fall short of their assumption.

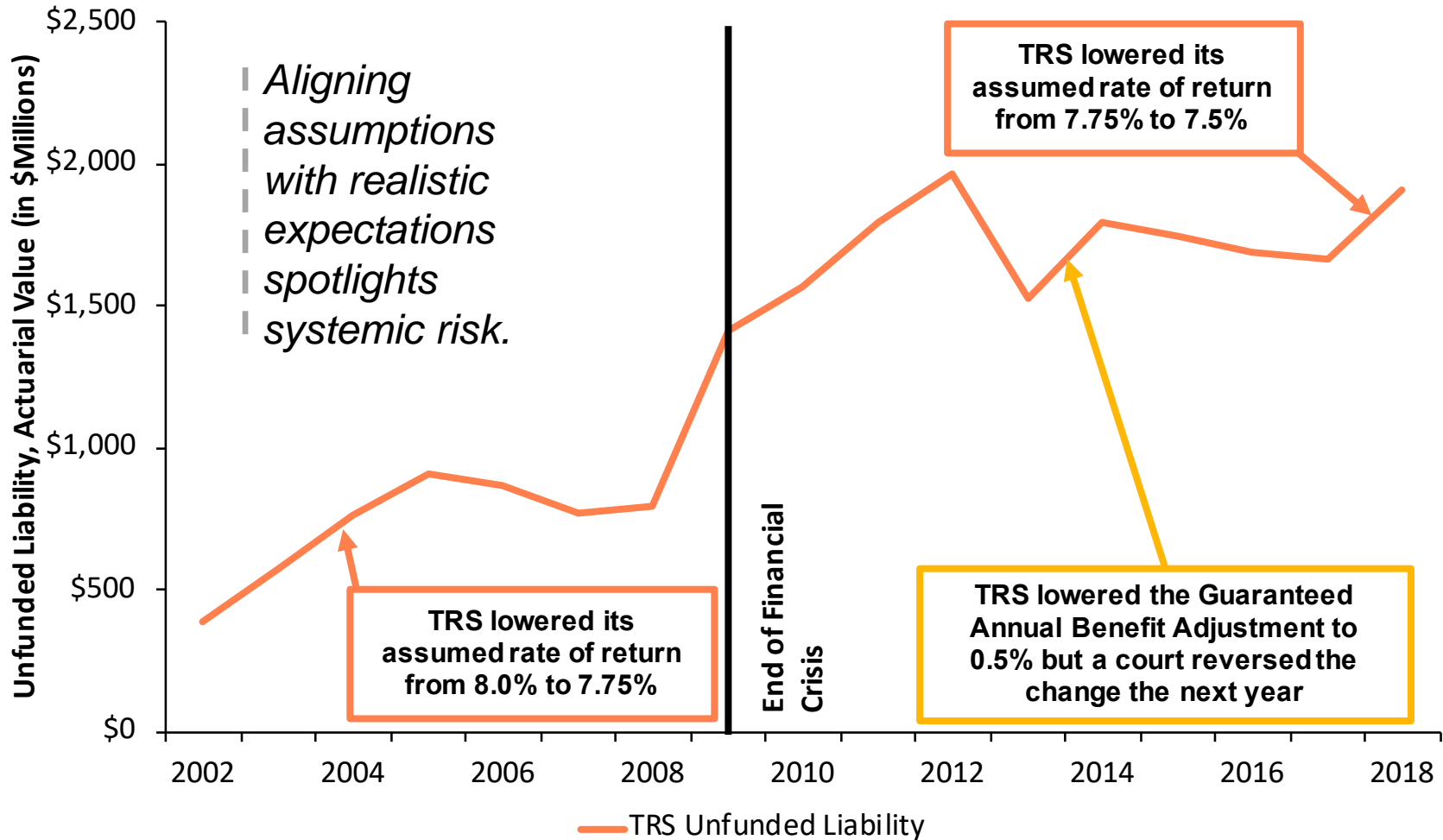
Long-Term Market Forecast

- Longer-term projections typically assume TRS investment returns will revert back to historical averages.
 - ✓ The "reversion to mean" assumption should be viewed with caution given historical changes in interest rates and a variety of other market conditions that increase uncertainty over longer projection periods, relative to shorter ones.
- Forecasts showing long-term returns near 7.5% being likely also show a significant chance that the actual long-term average return will fall far shorter than expected.
 - ✓ For example, according to the BlackRock's 20-year forecast, while the probability of achieving an average return of 7.5% or higher is about 47%, the probability of earning a rate of return below 5% is about 21%.



Benefits of Making Prudent Assumption Changes

Recognition of More Accurate Debt Levels



Source: Pension Integrity Project analysis of TRS and PERS actuarial valuation reports.



RISK ASSESSMENT

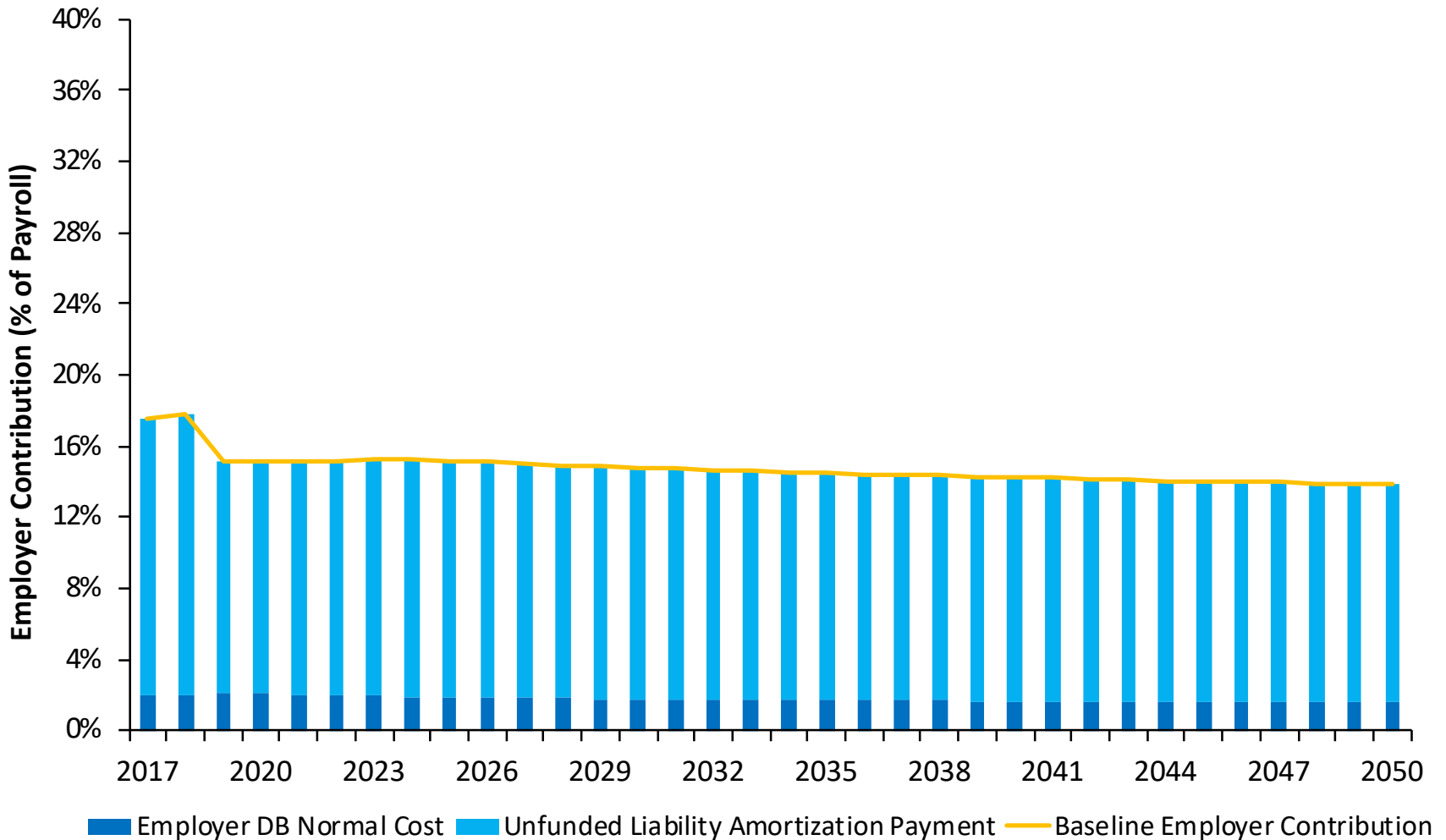
- **How resilient is Montana TRS to volatile market factors?**



Current Fixed Rate Baseline: Normal Cost + Amortization (current state)

What Happens if TRS Hits its Investment Target?

Discount Rate: 7.5%, Assumed Return: 7.5%, Actual Return: 7.5%

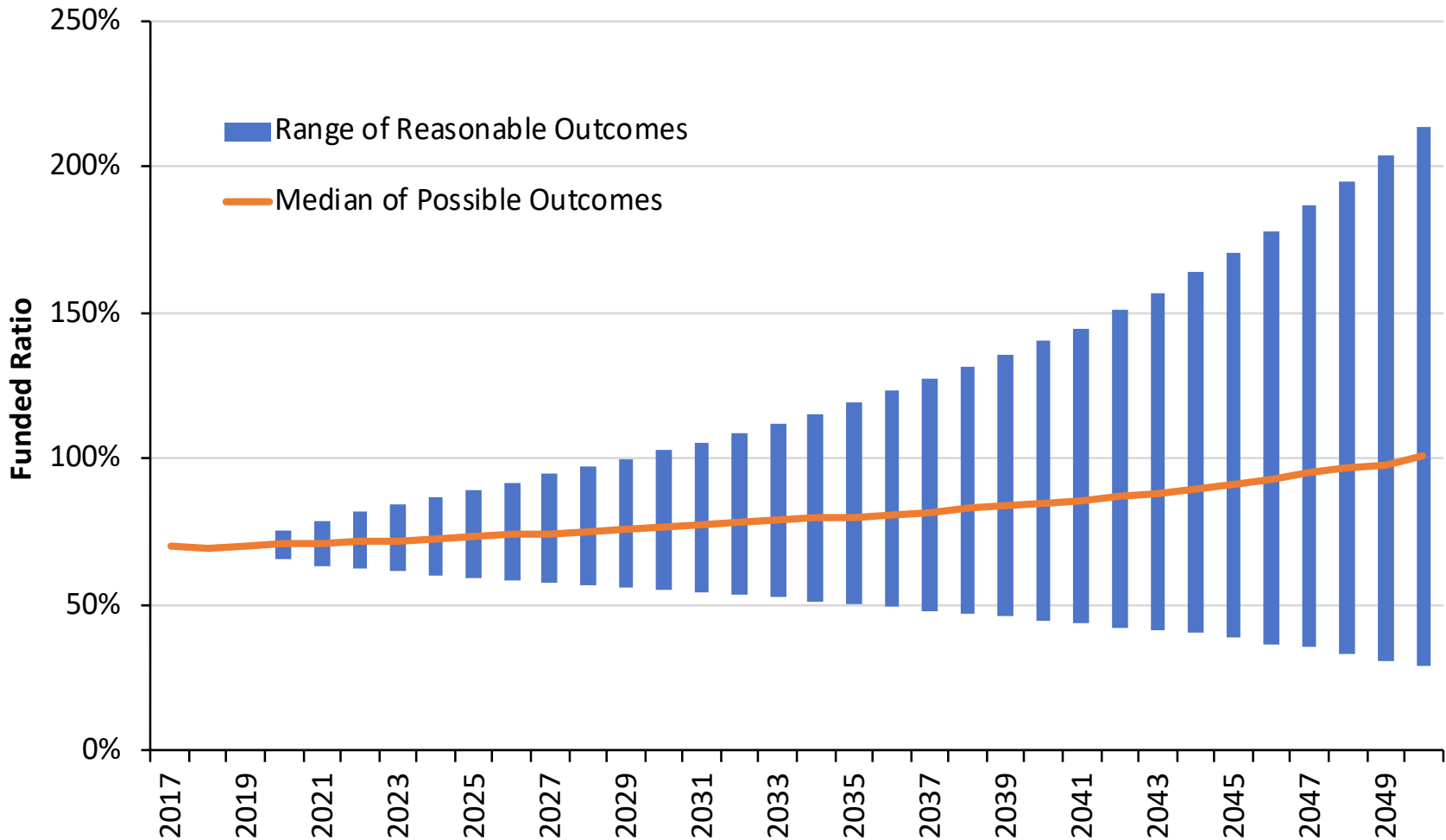


Source: Pension Integrity Project actuarial forecast of TRS. Scenario assumes that the state continues to pay 100% of the fixed statutory contribution each year.

30-year Funded Ratio Forecast (current state)

Funded Ratios are Expected to Improve

Long-term Average Returns of 7.5%



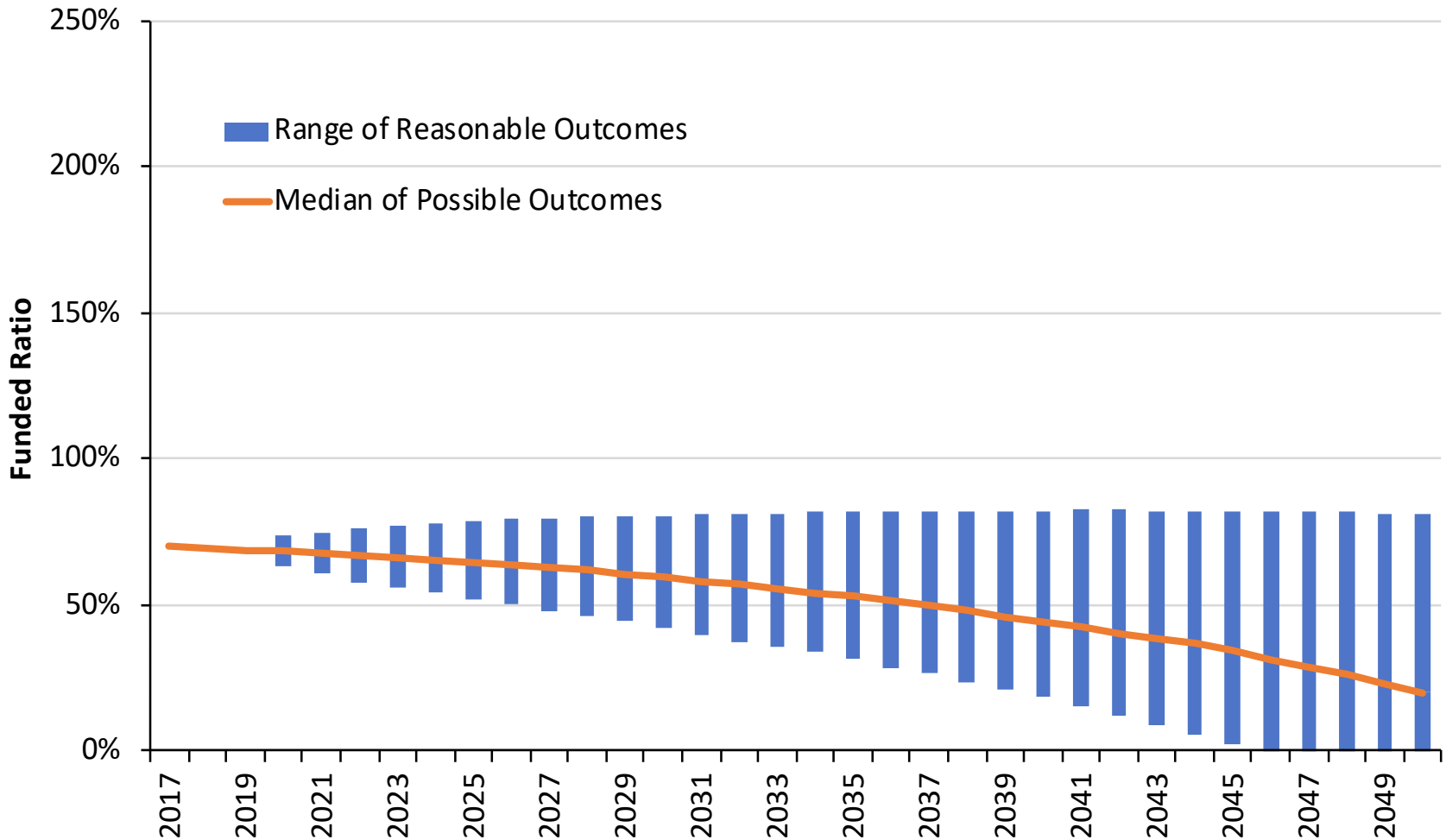
Source: Pension Integrity Project actuarial forecast of TRS plan based on TRS return and risk assumptions. Range of Reasonable Outcomes represents the 50% of possible outcomes closest to the median.



30-year Funded Ratio Forecast (current state)

How Do Missed Returns Impact Funded Ratios?

More Conservative Long-term Average Returns



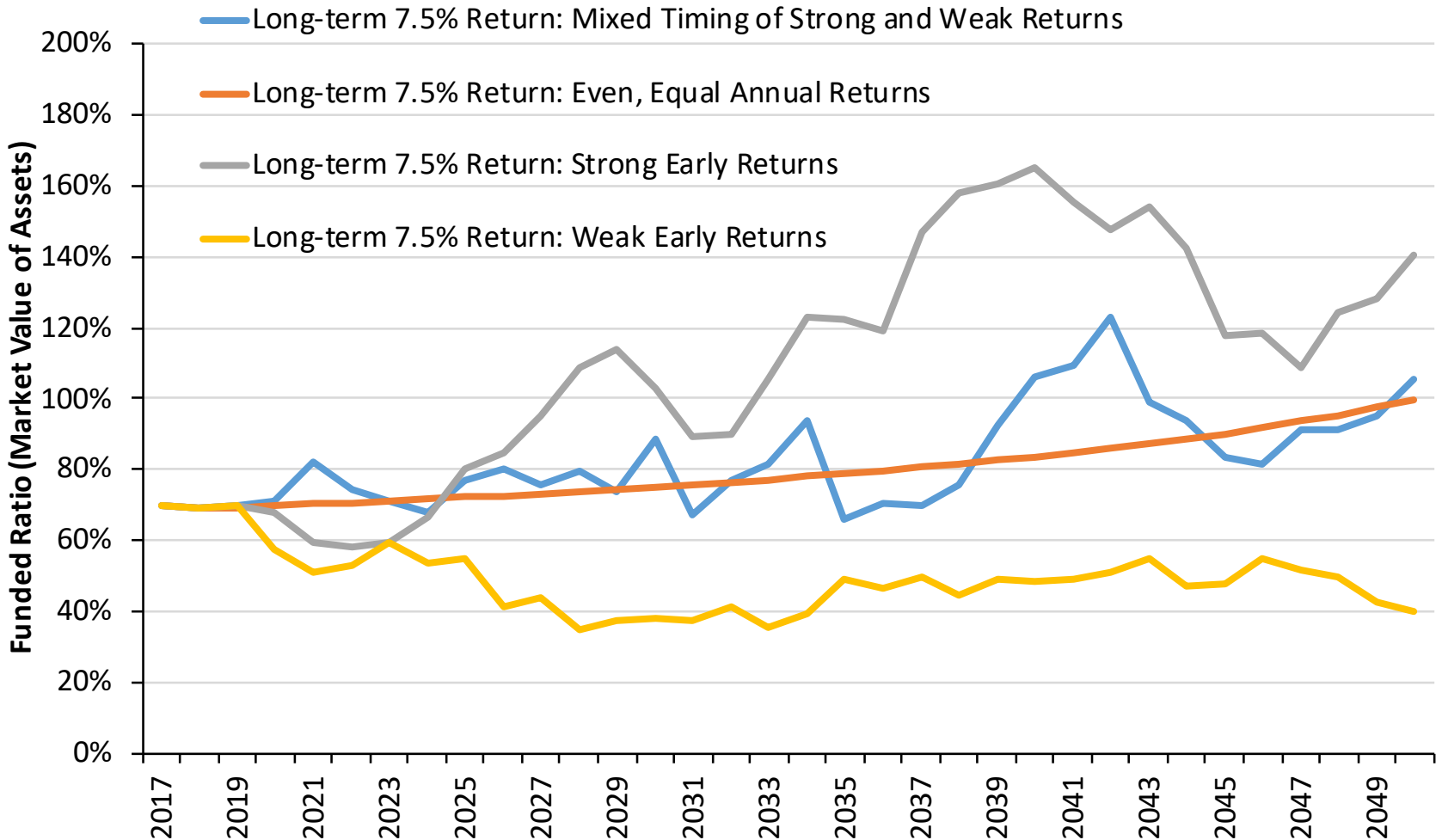
Source: Pension Integrity Project actuarial forecast of TRS plan using the return and risk assumptions of the Monte Carlo analysis. Conservative returns are 5.8%, which are the result of combining the short-term capital market assumptions from four prominent financial firms



30-year Funded Ratio Forecast (current state)

All Paths to a 7.5% Average Return Are Not Equal

Long-Term Average Returns of 7.5%



Source: Pension Integrity Project actuarial forecast of TRS plan. Strong early returns (TWRR=7.5%,MMWR=80%), Even, equal annual returns (Constant Return = 7.5%), Mixed timing of strong and weak returns (TWRR=7.5%,MMWR=7.5%), Weak early returns (TWRR=7.5%,MMWR=62%) Scenario assumes that MTRS pays the fixed statutory rate each year. Years are plan's fiscal years.

Paying Down Unfunded Liabilities with a Variable Contribution Rate

Current Montana TRS Amortization Policy



If the TRS actuary calculates an unfunded liability amortization window...

Greater than 30 years:

The actuary will recommend a contribution rate increase that can expect to fully amortize the UAAL over a closed 30-year period.

Less than 30 years, but greater than 0 and is projected to continue to decline over the remainder of the closed period:

The actuary will not recommend a change in the statutory contribution rates.

Less than 30 years, but has increased over prior valuations and is projected to continue to grow:

The actuary will recommend a contribution rate increase that is expected to reverse the trend and reestablish a closed amortization period equal to that of the last valuation.

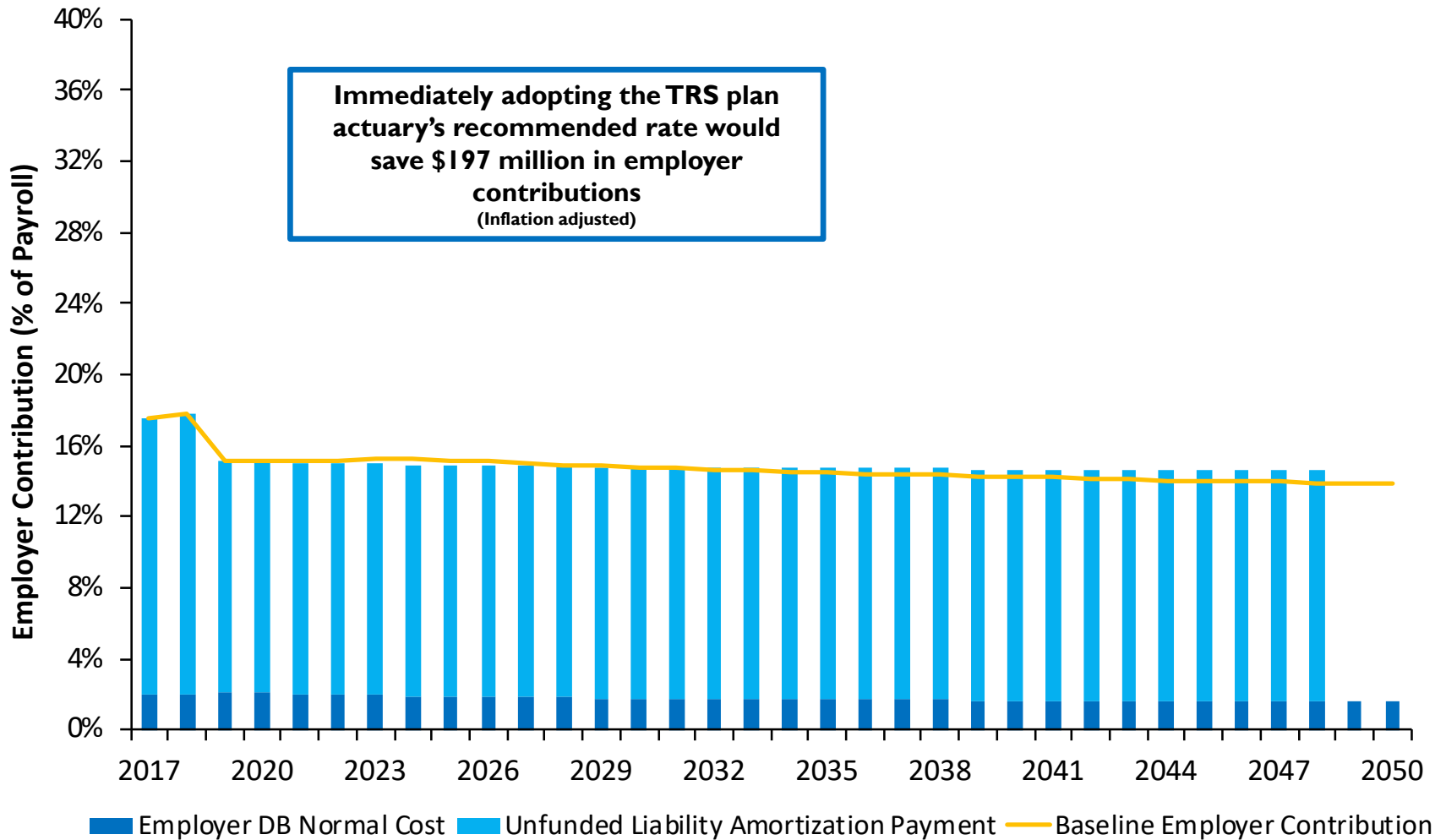
Unfunded Liability Amortization Payments: Pension plans are required to make regular payments to reduce any actuarially accrued unfunded liability, which is effectively pension debt. Amortization payments are regular contributions to reduce the unfunded liability and are on a set schedule, similar to paying off a student loan, or a mortgage that allows for negative amortization payments.



Scenario: I (Variable Rate)

What Happens if TRS Hits its Investment Target?

Discount Rate: 7.5%, Assumed Return: 7.5%, Actual Return: 7.5%, Amo. Period: 30-Year



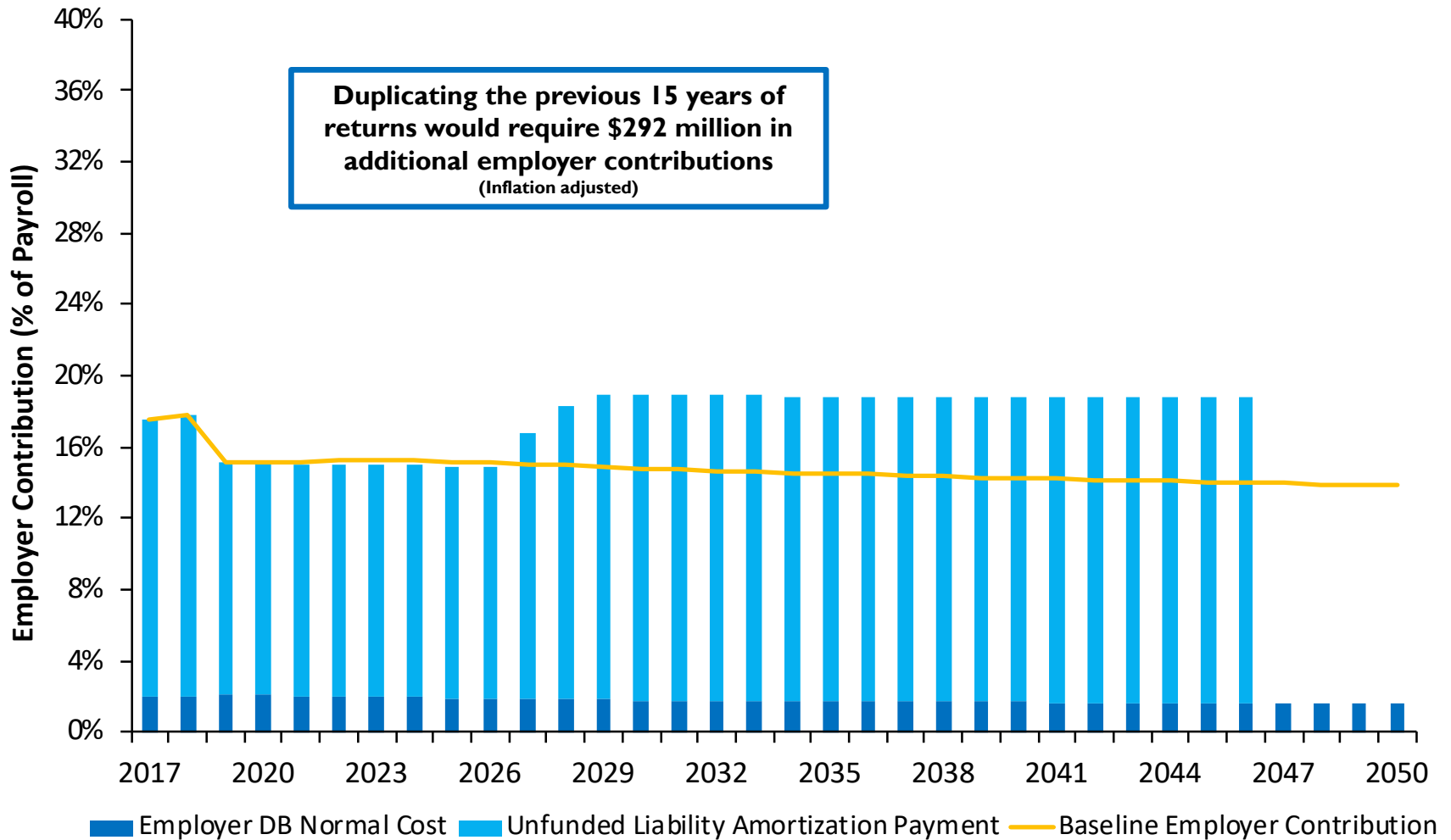
Source: Pension Integrity Project actuarial forecast of TRS. The variable statutory contribution policy assumes the employer contribution will be adjusted to bring the amortization period down to 30 years immediately whenever the period exceeds 30 years. When the amortization period is below 30 years, the contribution is assumed to stay fixed as a percent of payroll. The absolute contribution amount is assumed to grow at the payroll growth rate. Figures are rounded and adjusted for inflation.



Scenario: 2 (Variable Rate)

What if the Next 15 Years are the Same as the Last 15?

Discount Rate: 7.5%, Assumed Return: 7.5%, Actual Return: Same as last 15 years, 7.5% Following Years



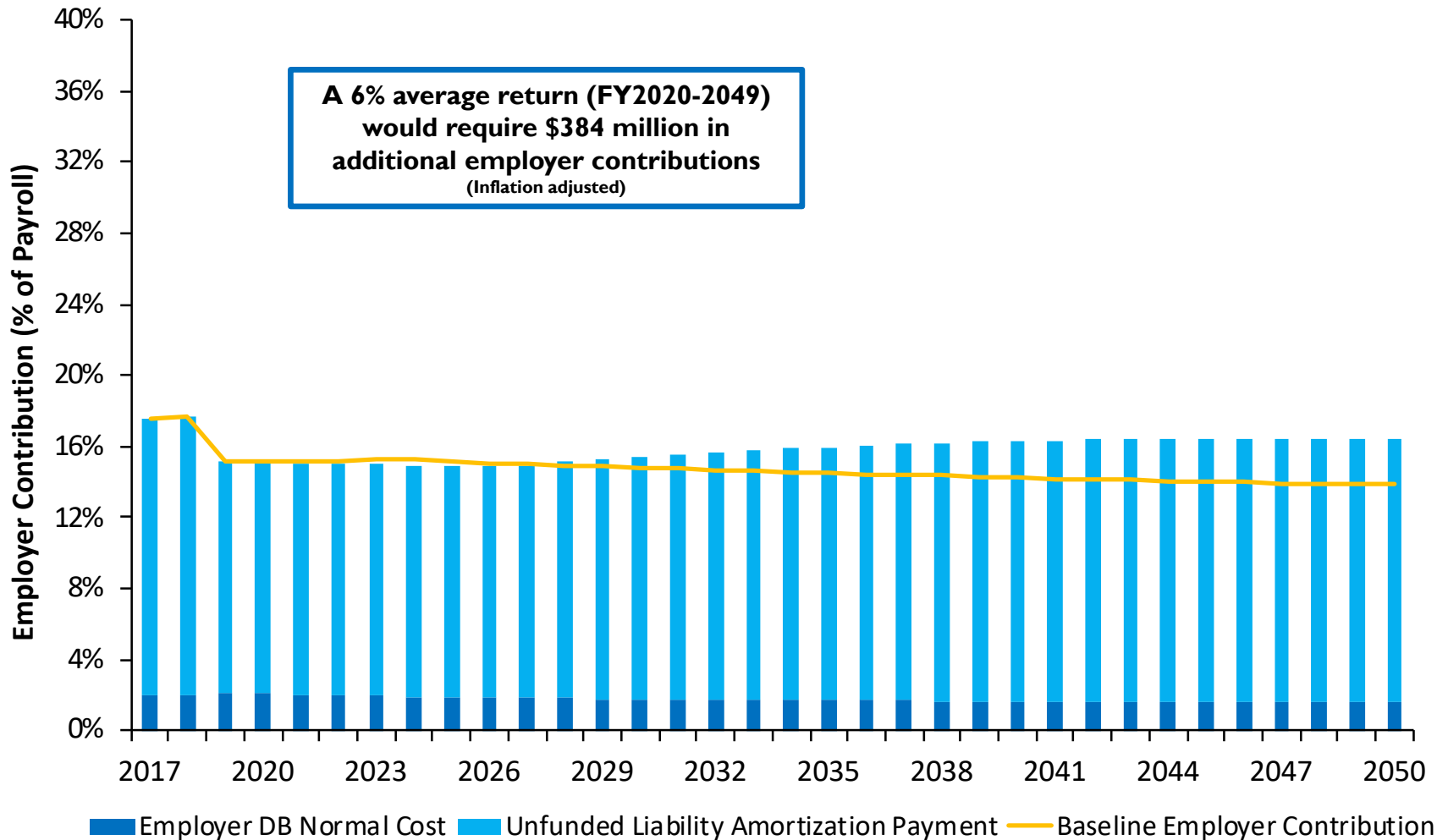
Source: Pension Integrity Project actuarial forecast of TRS. The variable statutory contribution policy assumes the employer contribution will be adjusted to bring the amortization period down to 30 years immediately whenever the period exceeds 30 years. When the amortization period is below 30 years, the contribution is assumed to stay fixed as a percent of payroll. The absolute contribution amount is assumed to grow at the payroll growth rate. Figures are rounded and adjusted for inflation.



Scenario: 3 (Variable Rate)

What Happens if TRS Underperforms?

Discount Rate: 7.5%, Assumed Return: 7.5%, Actual Return: 6%, Amo. Period: 30-Year



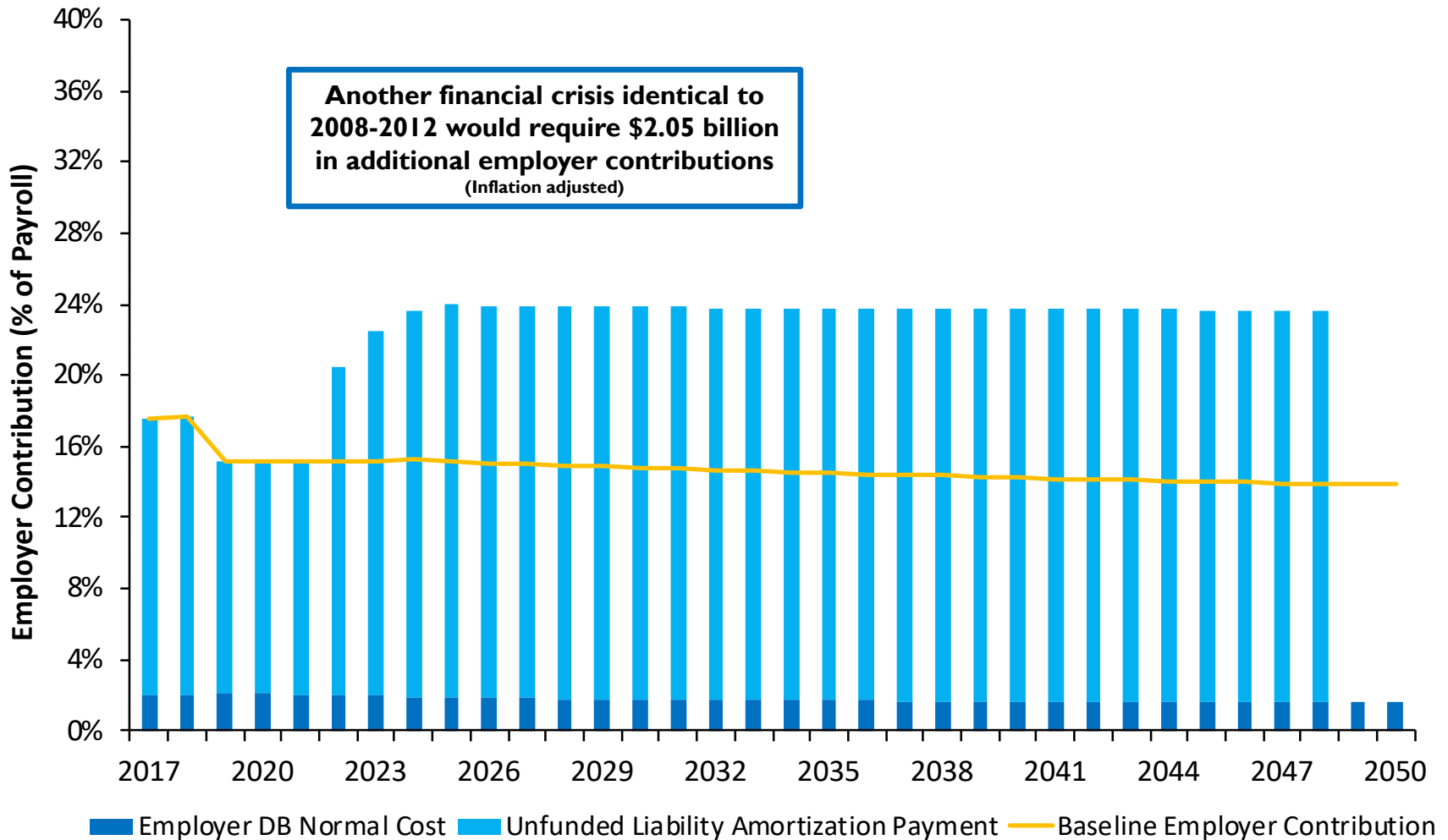
Source: Pension Integrity Project actuarial forecast of TRS. The variable statutory contribution policy assumes the employer contribution will be adjusted to bring the amortization period down to 30 years immediately whenever the period exceeds 30 years. When the amortization period is below 30 years, the contribution is assumed to stay fixed as a percent of payroll. The absolute contribution amount is assumed to grow at the payroll growth rate. Figures are rounded and adjusted for inflation.



Scenario: 4 (Variable Rate)

What Happens if TRS Experiences Another Crisis?

Discount Rate: 7.5%, Assumed Return: 7.5%, Actual Return: Crisis Returns 2020-24, 7.5% Following Years



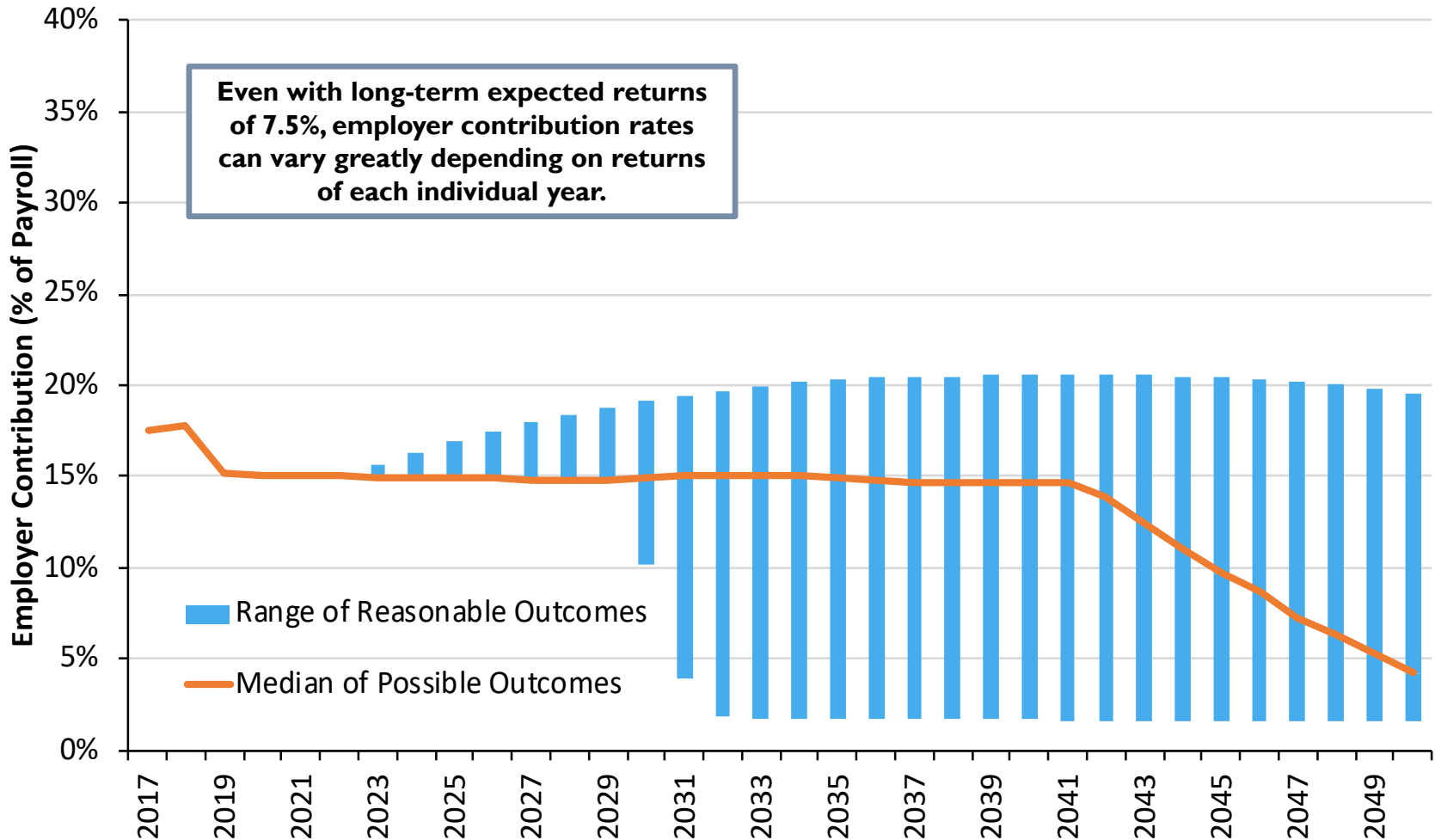
Source: Pension Integrity Project actuarial forecast of TRS. The variable statutory contribution policy assumes the employer contribution will be adjusted to bring the amortization period down to 30 years immediately whenever the period exceeds 30 years. When the amortization period is below 30 years, the contribution is assumed to stay fixed as a percent of payroll. The absolute contribution amount is assumed to grow at the payroll growth rate. Figures are rounded and adjusted for inflation.



30-year Employer Contribution Forecast (Variable Rate)

If TRS Performs as Expected, Rates Can Still Vary

Long-term Average Returns of 7.5%



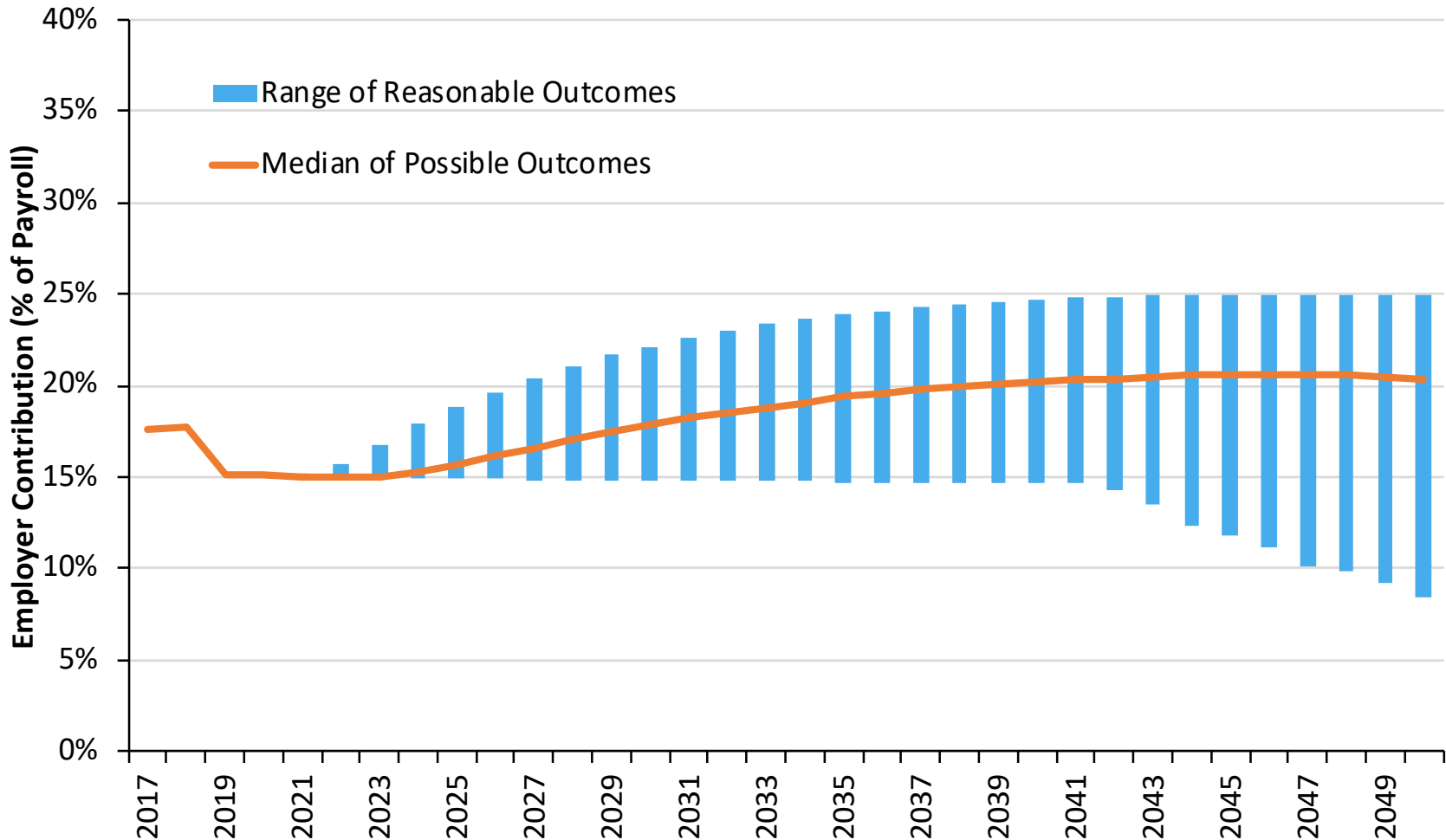
Source: Pension Integrity Project actuarial forecast of TRS. The variable statutory contribution policy assumes the employer contribution will be adjusted to bring the amortization period down to 30 years immediately whenever the period exceeds 30 years. When the amortization period is below 30 years, the contribution is assumed to stay fixed as a percent of payroll. The absolute contribution amount is assumed to grow at the payroll growth rate. Figures are rounded and adjusted for inflation.



30-year Employer Contribution Forecast (Variable Rate)

If TRS Underperforms, Expect Higher Contribution Rates

More Conservative Long-term Average Expected Returns

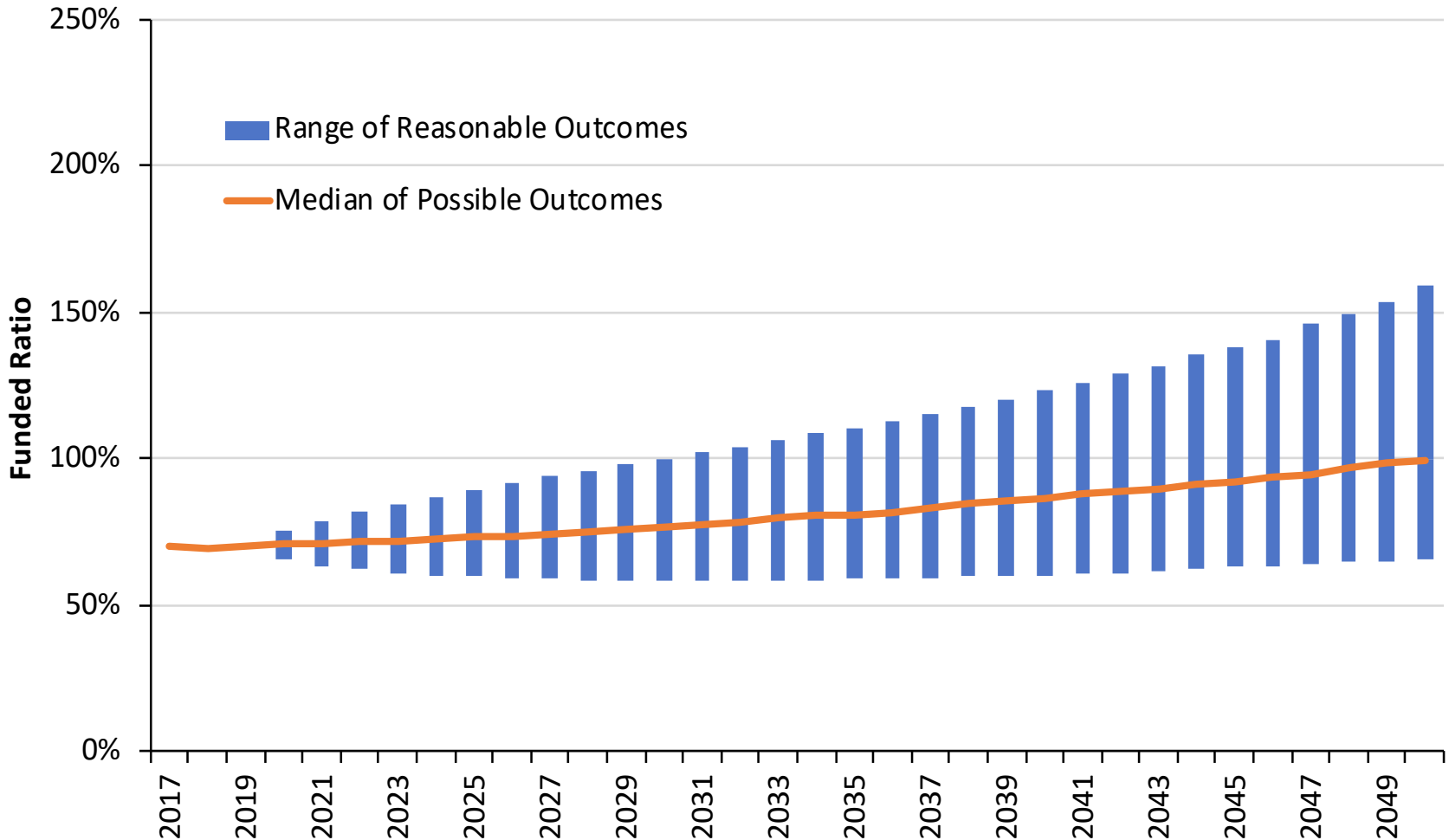


Source: Pension Integrity Project actuarial forecast of TRS plan using the return and risk assumptions of the Monte Carlo analysis. Conservative returns are 5.8%, which are the result of combining the long-term capital market assumptions from four prominent financial firms. The variable statutory contribution policy assumes the employer contribution will be adjusted to bring the amortization period down to 30 years immediately whenever the period exceeds 30 years. When the amortization period is below 30 years, the contribution is assumed to stay fixed as a percent of payroll. The absolute contribution amount is assumed to grow at the payroll growth rate.

30-year Funded Ratio Forecast (Variable Rate)

Funded Ratios are Expected to Improve

Long-term Average Returns of 7.5%



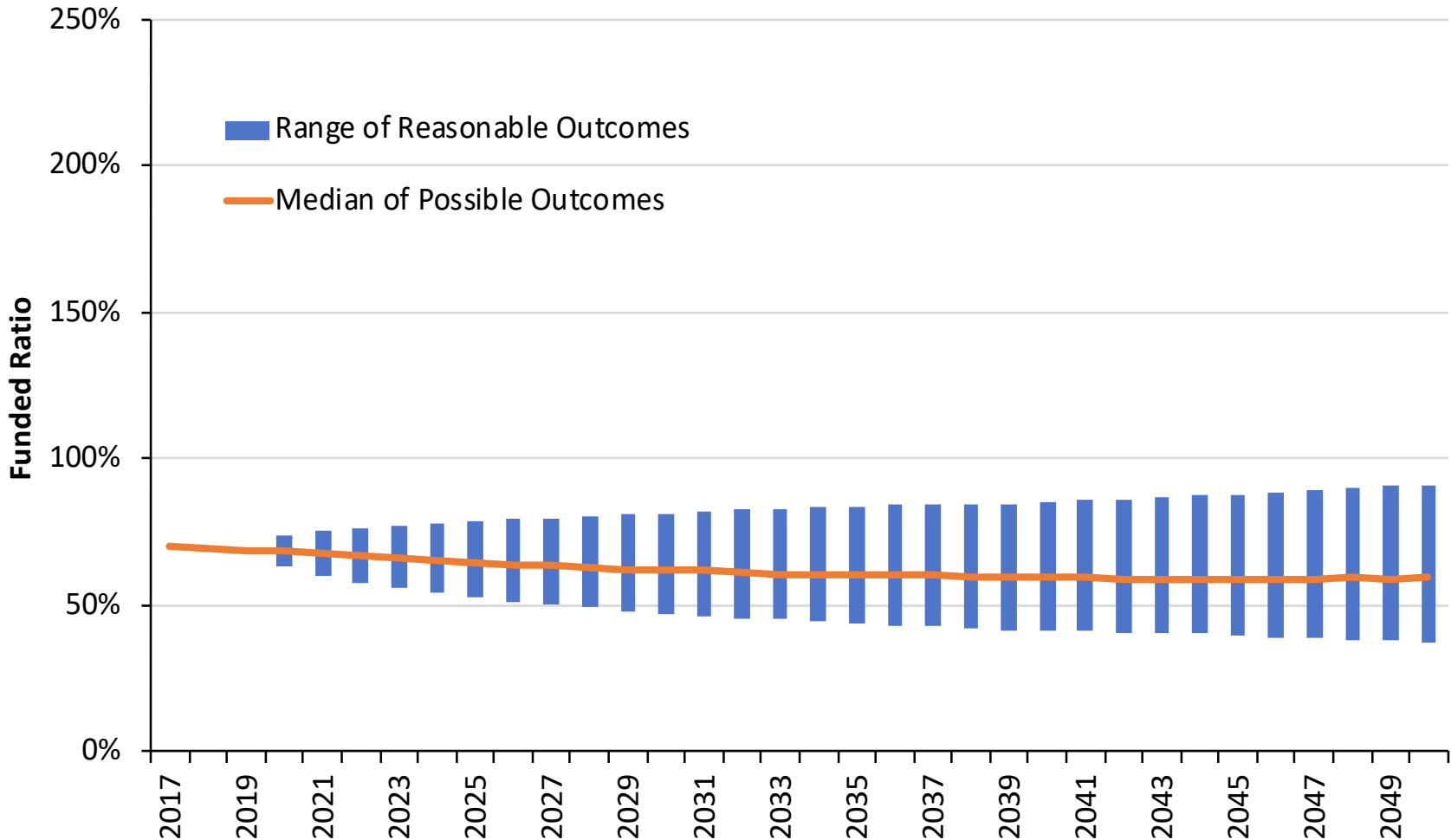
Source: Pension Integrity Project actuarial forecast of TRS plan based on TRS return and risk assumptions. Range of Reasonable Outcomes represents the 50% of possible outcomes closest to the median. The variable statutory contribution policy assumes the employer contribution will be adjusted to bring the amortization period down to 30 years whenever the period exceeds 30 years. When the amortization period is below 30 years, the contribution is assumed to stay fixed as a percent of payroll. The absolute contribution amount is assumed to grow at the payroll growth rate.



30-year Funded Ratio Forecast (Variable Rate)

How Do Missed Returns Impact Funded Ratios?

More Conservative Long-term Average Returns



Source: Pension Integrity Project actuarial forecast of TRS plan using the return and risk assumptions of the Monte Carlo analysis. Conservative returns are 5.8%, which are the result of combining the long-term capital market assumptions from four prominent financial firms. The variable statutory contribution policy assumes the employer contribution will be adjusted to bring the amortization period down to 30 years whenever the period exceeds 30 years. When the amortization period is below 30 years, the contribution is assumed to stay fixed as a percent of payroll. The absolute contribution amount is assumed to grow at the payroll growth rate.



CHALLENGE 2: ACTUARIAL ASSUMPTIONS AND METHODS CHANGES

- Failure to meet actuarial assumptions, and delay in updating those assumptions, has led to an underestimation of the total pension liability.
- Adopting more prudent actuarial assumptions and methods necessitates the recognition of additional unfunded liabilities.

Acknowledging Outdated Actuarial Assumptions

When Experience Differs from Assumptions



(-) Actuarial Assumption and Methods

- TRS unfunded liabilities have increased by a combined \$406 million between 2002-2018 due to prudent updates to actuarial assumptions and methods such as lowering the assumed rate of return.

(+) Salary Increase Assumptions

- TRS employers have not raised salaries as fast as expected, resulting in lower payrolls and thus lower earned pension benefits - a common case for many state-level pension plans.

(-) Withdrawal Rate, Service Retirement, and Mortality Assumptions

- Due to misaligned demographic assumptions, TRS unfunded liabilities have increased by a combined \$273 million between 2002-2018.
- This likely stems from a combination of one or more of the following factors:
 - ✓ Actual withdrawal rates before members have reached either a reduced or normal retirement threshold have been lower than anticipated.
 - ✓ TRS members have been retiring earlier than expected, receiving more pension checks.



Acknowledging Outdated Actuarial Assumptions

When Experience Differs from Assumptions

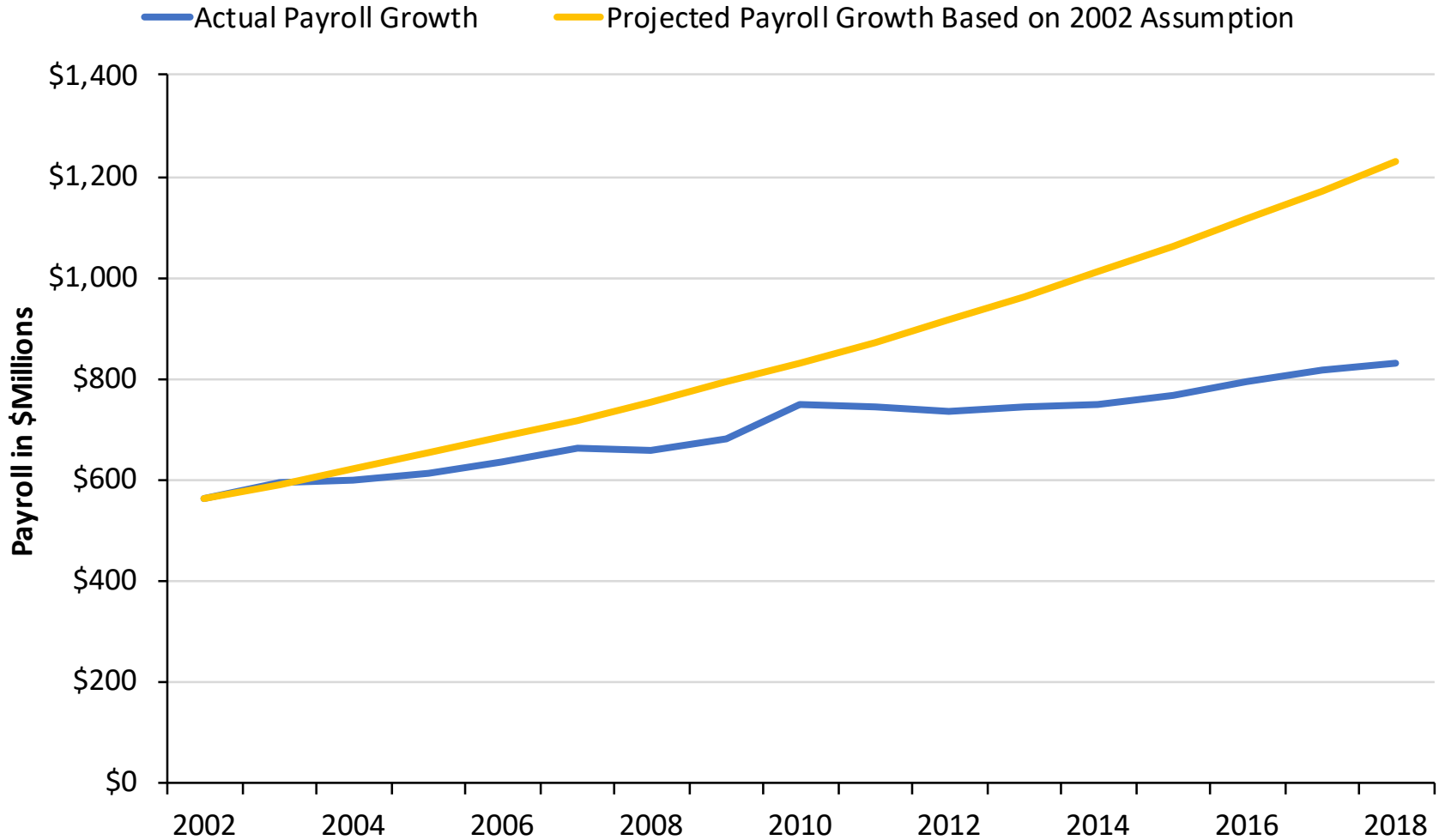
(-) Overestimated Payroll Growth

- Overestimating payroll growth may create a long-term problem for TRS in combination with the level-percentage of payroll amortization method used by the plans.
- This method *backloads pension debt payments* by assuming that future payrolls will be larger than today (a reasonable assumption).
- While in and of itself, a growing payroll is a reasonable assumption, if payroll does not grow as fast as assumed, employer contributions must rise as a percentage of payroll.
 - ✓ This means the amortization method combined with the inaccurate assumption is delaying debt payments.



Montana TRS: Acknowledging Outdated Actuarial Assumptions

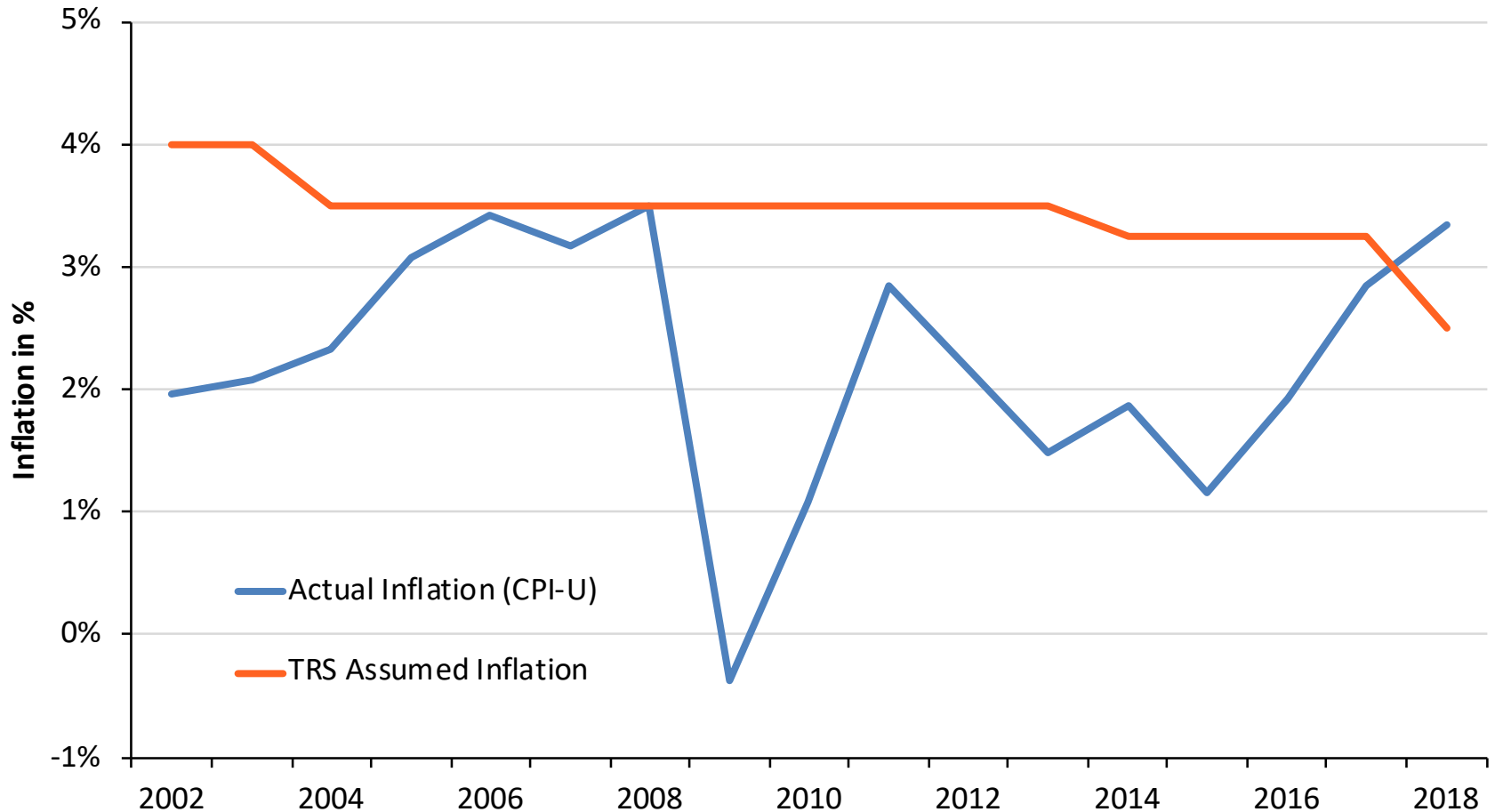
Actual Change in Payroll v. Assumption



Source: Pension Integrity Project analysis TRS actuarial valuation reports and CAFRs.

Montana TRS: Acknowledging Outdated Actuarial Assumptions

Actual Inflation v. Assumption



Source: Pension Integrity Project analysis TRS and PERS actuarial valuation reports and CPI-U data from the Bureau of Labor Statistics.



CHALLENGE 3: INSUFFICIENT CONTRIBUTIONS

- Over the past two decades employer contributions to TRS have frequently fallen short of the amount plan actuaries determined would be needed to reach 100% funding in 30 years.
- State contributions towards paying off pension debt are less than the interest accruing on the pension debt.



Sensitivity Analysis: Normal Cost Comparison Under Alternative Assumed Rates of Return

TRS	Gross Normal Cost	Employer Normal Cost	Employee Normal Cost
7.50% Assumed Return (FYE 2018 Baseline)	9.96%	1.81%	8.15%
7.00% Assumed Return	11.02%	2.87%	8.15%
6.00% Assumed Return	13.48%	5.33%	8.15%
5.00% Assumed Return	16.49%	8.34%	8.15%

Note: These alternative gross normal cost figures should be considered approximate guides to how much more normal cost should be under different investment return assumptions. Any policy changes should be based on more precise normal cost forecasts using detailed plan data. Alternative normal cost rates based on reported liability sensitivity from the FYE 2017 TRS CAFR.

Source: Pension Integrity Project forecasting analysis based on Montana TRS actuarial valuation reports. Table shows amounts to be paid in 2017-18 contribution FY in % of projected payroll.

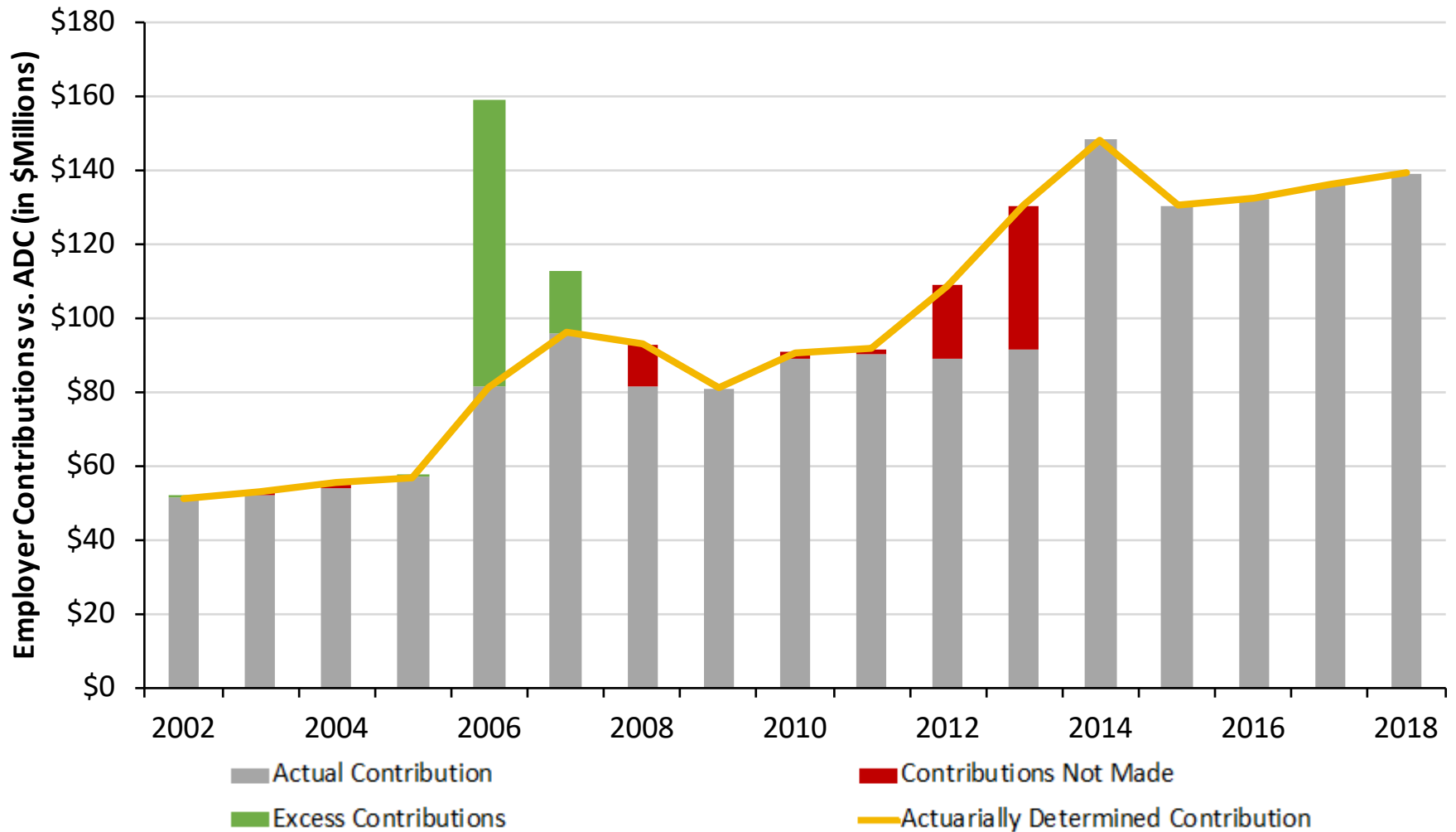
State Statutes and Policy Perpetuate Structural Underfunding Problems for TRS



1. Since 2003 annual employer contributions to TRS have fallen short of the actuarially determined contribution (ADC) rate.
 - ✓ The TRS employer contribution rate is set in statute and adjusted by the legislature after plan actuaries determine the current rate insufficient for TRS to pay off all unfunded liabilities within 30 years.
 - ✓ The legislative process makes it difficult to quickly respond to the recommendations of plan actuaries leading to growth in unfunded liabilities.
2. Negative amortization: Plan actuaries report that contributions available to cover the unfunded liability are less than the interest accruing on the pension debt each year.
3. Under current contribution rates and current assumptions it will take 31 years for TRS to amortize the debt.

Actuarially Determined Employer Contribution History, 2002-2018

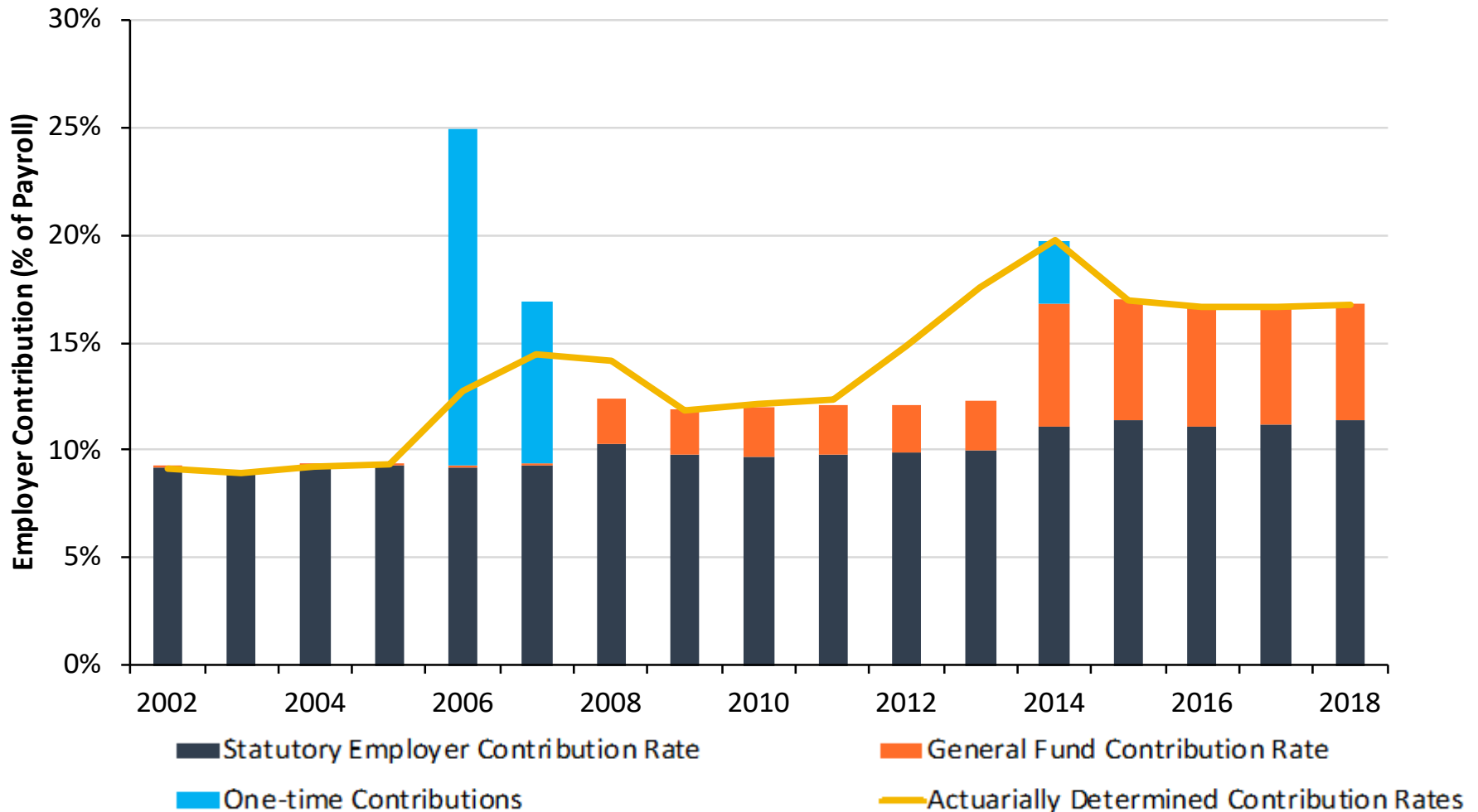
Actual v. Required Contributions



Source: Pension Integrity Project analysis of Montana TRS actuarial reports and CAFRs.

Actuarially Determined Employer Contribution History, 2002-2018

Actual v. Required Contributions

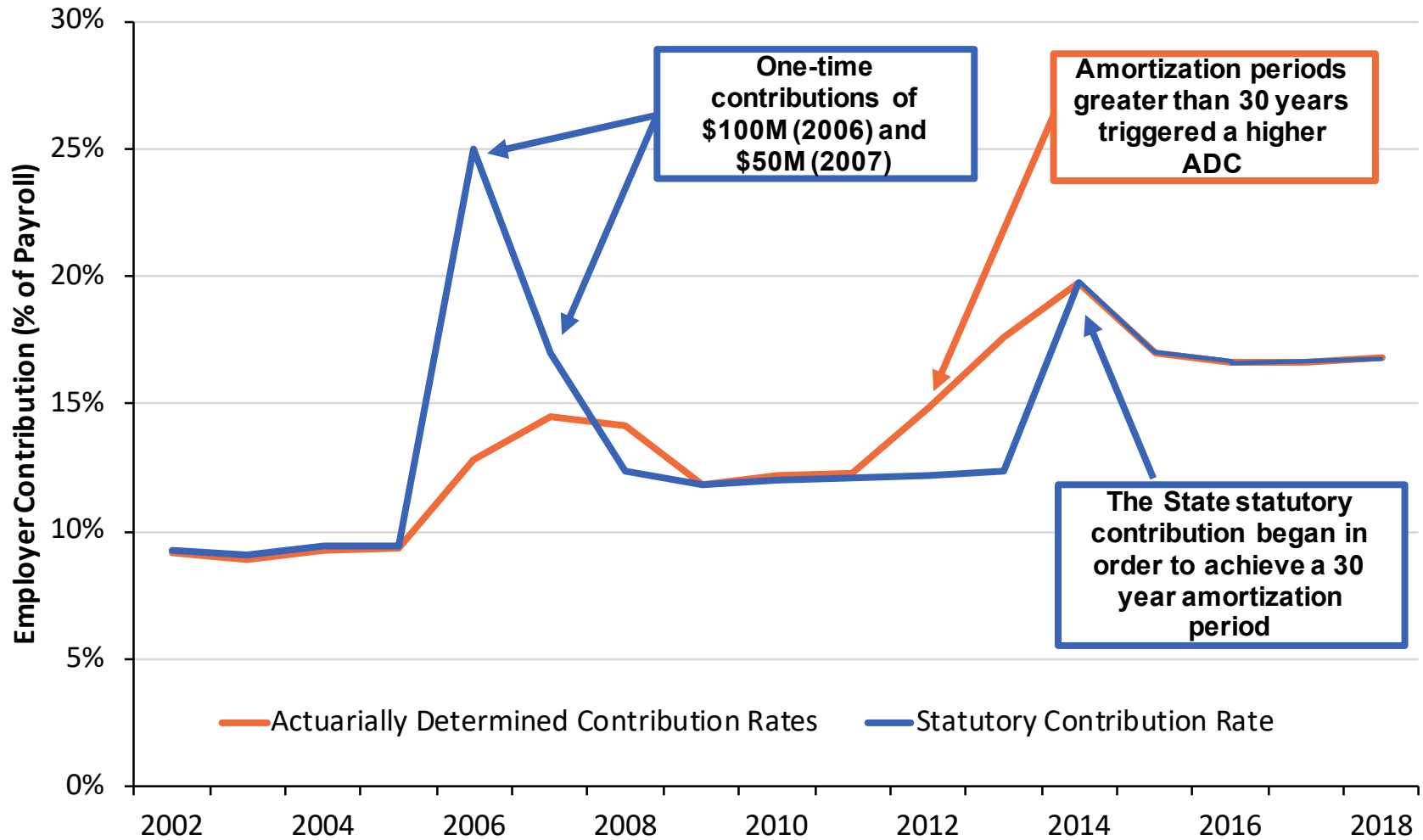


Source: Pension Integrity Project analysis of Montana TRS actuarial reports and CAFRs. The ADC for TRS is effectively whatever amount is contributed to the plan as long as the implied funding period is less than 30 years. Statutory Employer Contribution refers to school districts, state and university employers. General Fund Contribution refers to contributions from the state general fund.



Actuarially Determined Employer Contribution History, 2002-2018

Actual v. Required Contributions

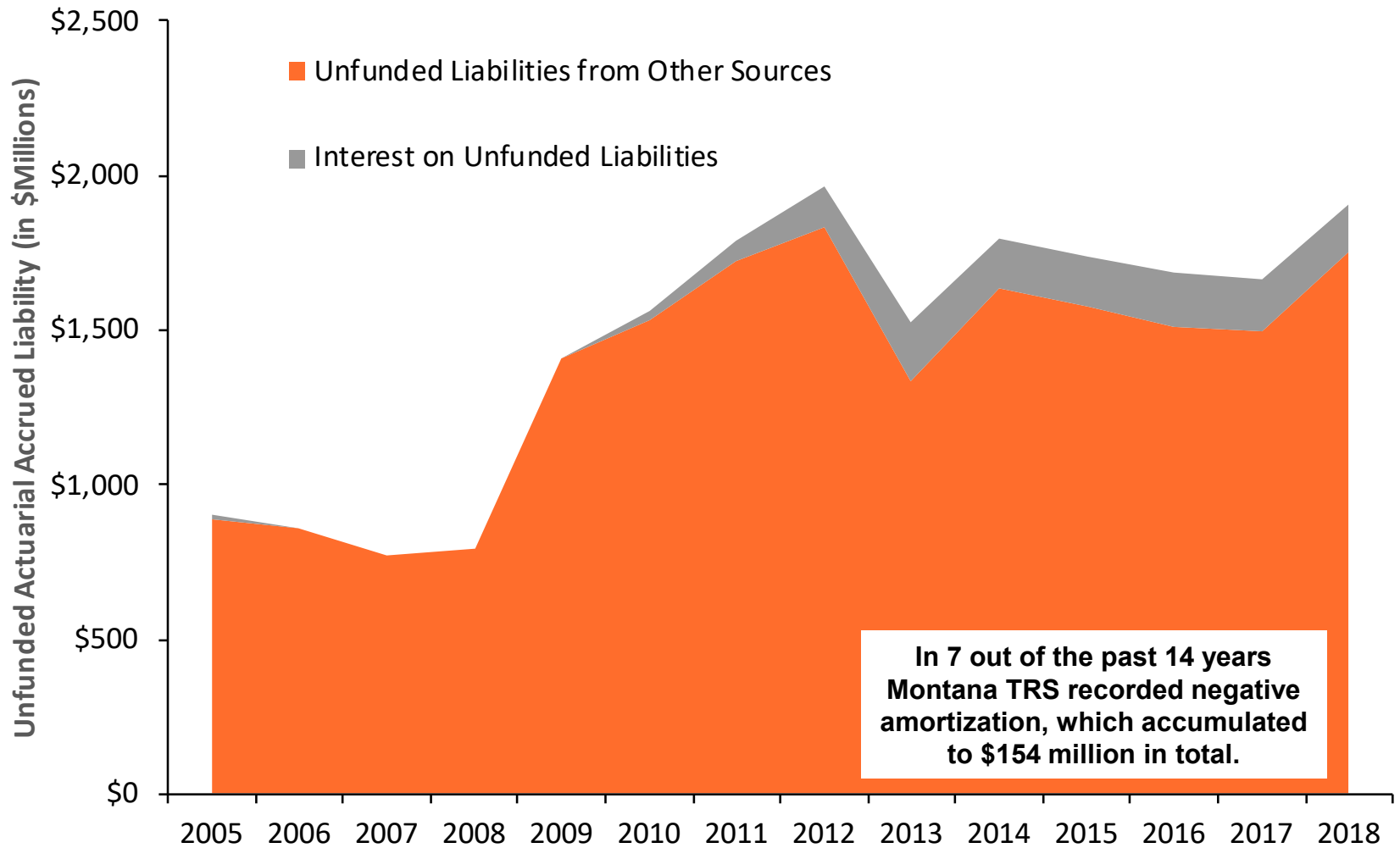


Source: Pension Integrity Project analysis of Montana TRS actuarial reports and CAFRs. The ADC for TRS is effectively whatever amount is contributed to the plan as long as the implied funding period is less than 30 years.



Negative Amortization Growth (2005-2018)

Interest on the Debt as a Portion of UAAL



Source: Pension Integrity Project analysis of Montana TRS actuarial reports and CAFRs.



CHALLENGE 4: DISCOUNT RATE AND UNDERVALUING DEBT

- The discount rate undervalues the total amount of existing pension obligations

Montana TRS Discount Rate Methodology is Undervaluing Liabilities



- 1. The “discount rate” for a public pension plan should reflect the risk inherent in the pension plan’s liabilities:**
 - Most public sector pension plans — including Montana TRS — use the assumed rate of return and discount rate interchangeably, even though each serve a different purpose.
 - The **Assumed Rate of Return (ARR)** adopted by Montana TRS estimates what the plan will return on average in the long run and is used to calculate contributions needed each year to fund the plans.
 - The **Discount Rate (DR)**, on the other hand, is used to determine the net present value of all of the already promised pension benefits and supposed to reflect the risk of the plan sponsor not being able to pay the promised pensions.

Montana TRS Discount Rate Methodology is Undervaluing Liabilities



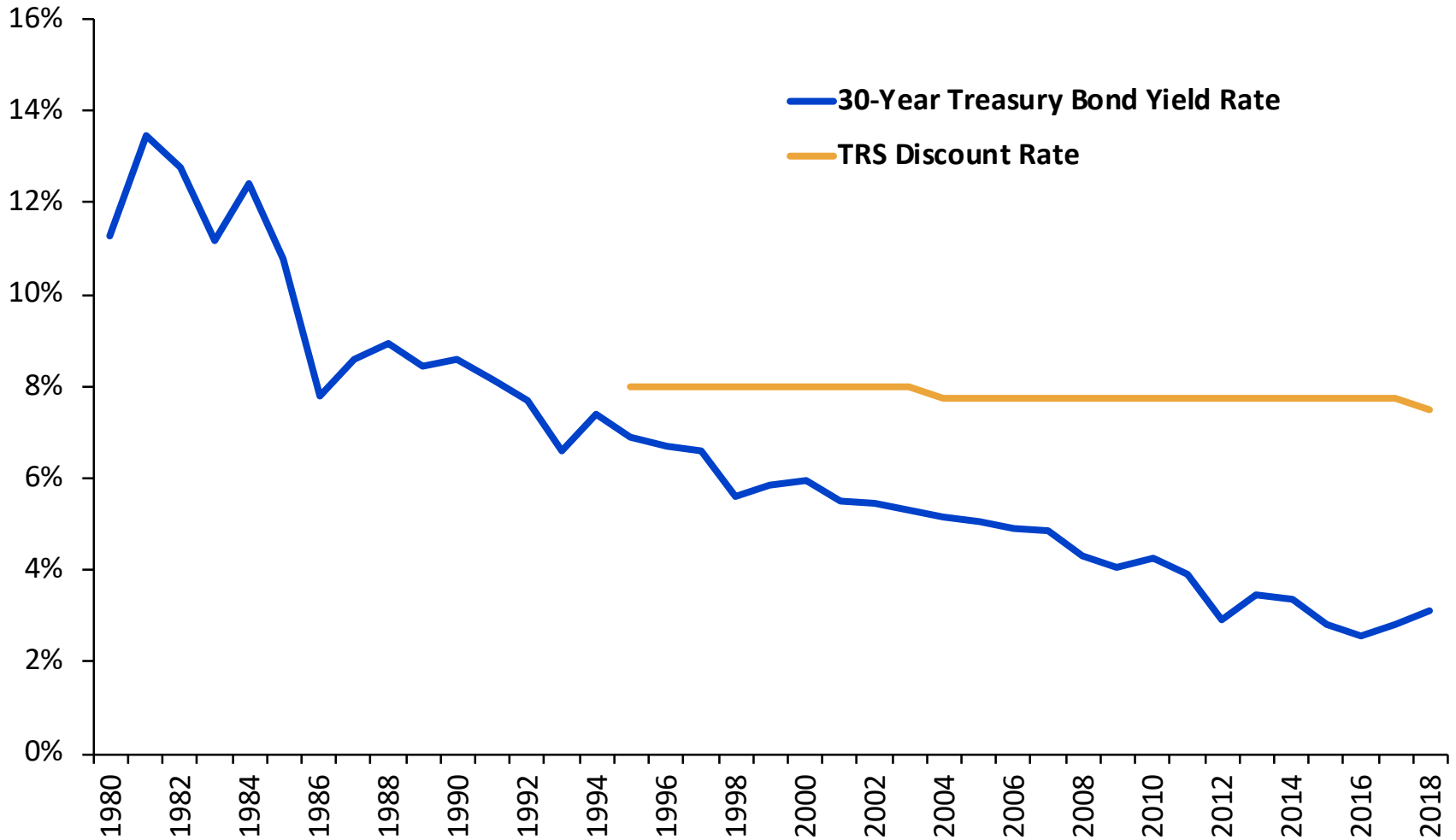
- 2. Setting a discount rate too high will lead to undervaluing the amount of pension benefits actually promised:**
 - If a pension plan is choosing to target a high rate of return with its portfolio of assets, and that high assumed return is then used to calculate/discount the value of existing promised benefits, the result will likely be that the actuarially recognized amount of accrued liabilities is undervalued.
- 3. It is reasonable to conclude that there is almost no risk that Montana would pay out less than 100% of promised retirement income benefits to members and retirees.**
 - The Contract Clause in the Montana Constitution is similar to the U.S. Constitution's Contract Clause. There is little basis to conclude Montana TRS has the kind of liability risks implied by a high discount rate.
- 4. The discount rate used to account for this minimal risk should be appropriately low.**
 - The higher the discount rate used by a pension plan, the higher the implied assumption of risk for the pension obligations.



Sensitivity Analysis: Pension Debt Comparison Under Alternative Discount Rates

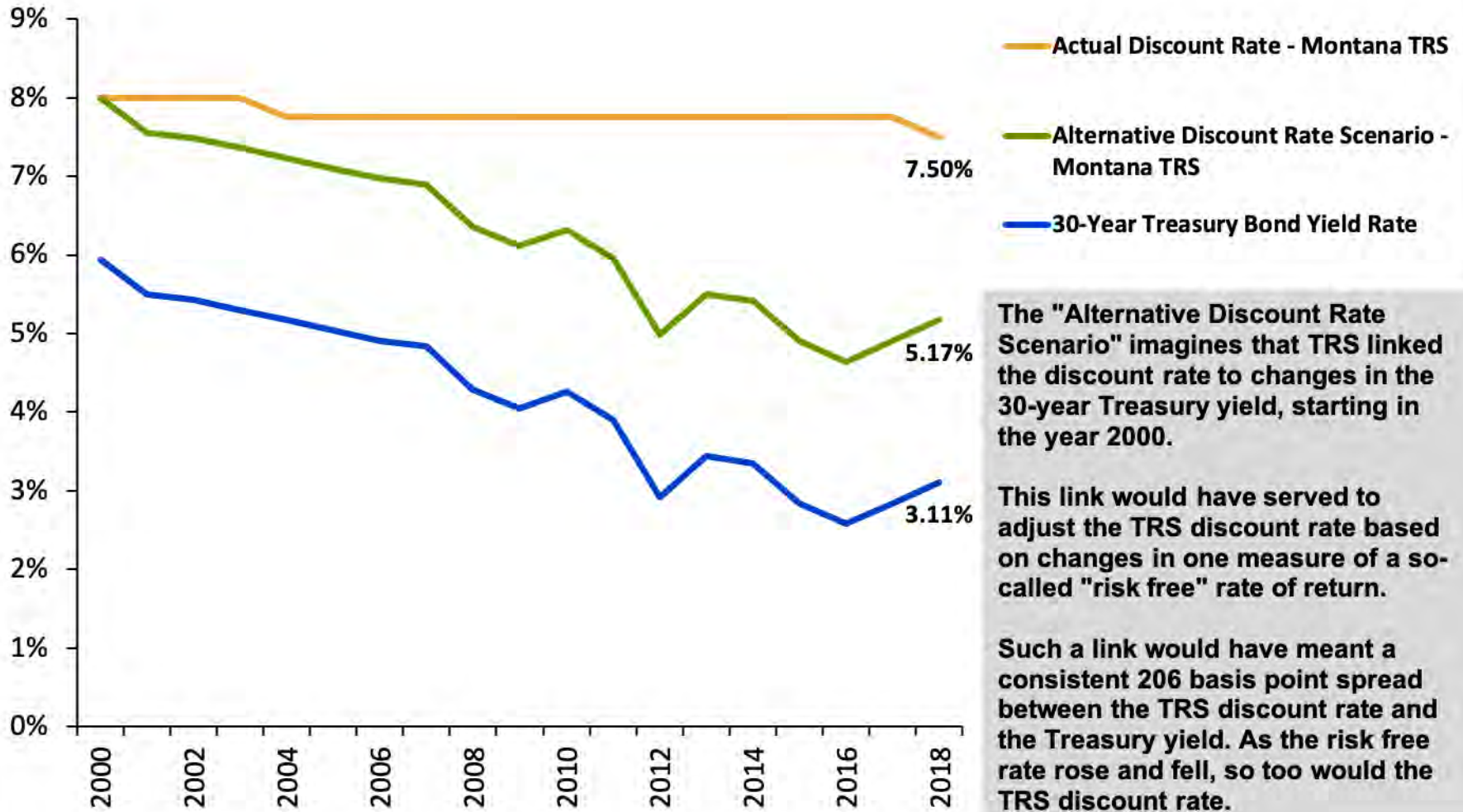
TRS	Funded Ratio (Market Value)	Unfunded Liability (Market Value)	Actuarial Accrued Liability
7.50% Discount Rate (FYE 2018 Baseline)	69%	\$1.9 billion	\$6.0 billion
7.00% Discount Rate	65%	\$2.2 billion	\$6.3 billion
6.00% Discount Rate	58%	\$3.0 billion	\$7.1 billion
5.00% Discount Rate	52%	\$3.9 billion	\$8.0 billion

Changes in the Risk Free Rate Compared to TRS Discount Rate (1980-2018)



Source: Pension Integrity Project analysis of Montana TRS actuarial reports and Treasury yield data from the Federal Reserve.

Change in the Risk Free Rate Compared to TRS Discount Rate (2000-2018)



Source: Pension Integrity Project analysis of Montana TRS actuarial reports and Treasury yield data from the Federal Reserve

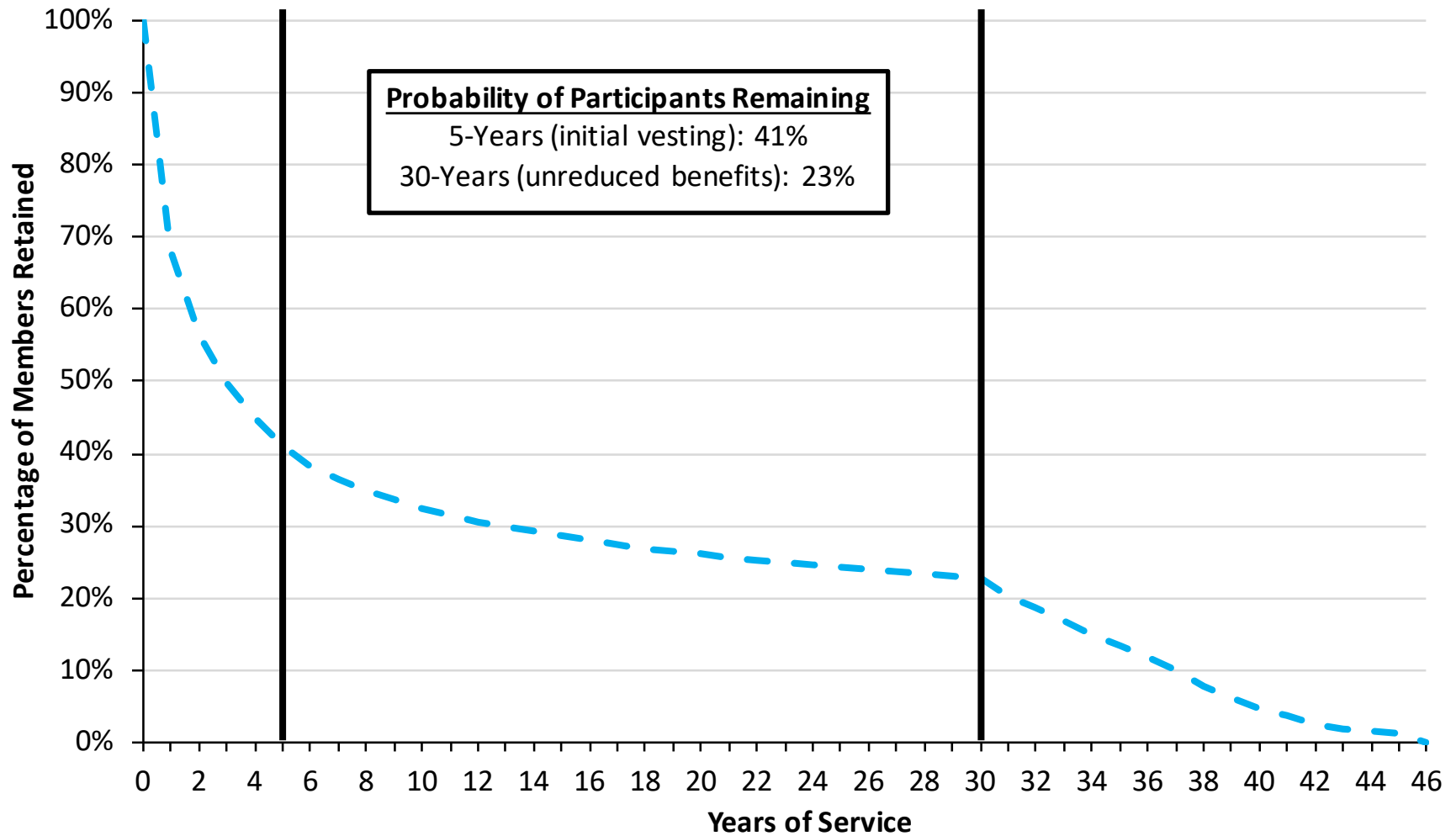


CHALLENGE 5: THE EXISTING BENEFIT DESIGN DOES NOT WORK FOR EVERYONE

- More than 70% of TRS members do not work long enough to earn a full pension
- The turnover rate for Montana teachers suggests that the current retirement benefit design is not effective at encouraging retention in the near-term, and may be pushing out employees at the end of their careers.



Probability of Members Remaining in TRS



Does TRS Retirement Plan Work for All Teachers?



- **59%** of new teachers leave before 5 years
 - TRS members need to work for 5 years before their benefits become vested.
 - Another 9% of new teachers who are still working after 5 years will leave before 10 years of service
- **23%** of all members hired will still be working after 30 years, long enough to qualify for benefits
- Just **19%** of Montana teachers will “break even” on their pensions, according to TeacherPensions.org



FRAMEWORK FOR SOLUTIONS & REFORM



Objectives of Good Reform

- **Keeping Promises:** Ensure the ability to pay 100% of the benefits earned and accrued by active workers and retirees
- **Retirement Security:** Provide retirement security for all current and future employees
- **Predictability:** Stabilize contribution rates for the long-term
- **Risk Reduction:** Reduce pension system exposure to financial risk and market volatility
- **Affordability:** Reduce long-term costs for employers/taxpayers and employees
- **Attractive Benefits:** Ensure the ability to recruit 21st Century employees
- **Good Governance:** Adopt best practices for board organization, investment management, and financial reporting



Practical Policy Framework

1. Establish a plan to pay off the unfunded liability as quickly as possible.
 - The Society of Actuaries Blue Ribbon Panel recommends amortization schedules be no longer than 15 to 20 years

2. Adopt better funding policy, risk assessment, and actuarial assumptions
 - These changes should aim at minimizing risk and contribution rate volatility for employers and employees

3. Create a path to retirement security for all participants
 - Consider offering members that won't accrue a full pension benefit access to other plan design options (e.g., cash balance, DC, hybrid, etc.)

I. Establish a Plan to Pay Off the Unfunded Liability as Quickly as Possible



- **Current amortization policy for TRS targets time horizons that are too long**
 - The TRS boards target a 30-year window to pay off unfunded liabilities.
 - The Society of Actuaries Blue Ribbon Panel recommends amortization schedules be no longer than 15 to 20 years.

- **The legislature could put maximum amortization periods in place and/or require a gradual reduction in the funding period to target a lower number of years**
 - Other states have phased in changes by reducing the amortization schedules one year at a time
 - The legislature could require that TRS be funded on a certain time period under specific scenarios, such as alternative assumptions and/or stress test scenarios

2. Adopt Better Funding Policy, Investment Policy, and Actuarial Assumptions

(1 of 2)



- **Current funding policy has created negative amortization and exposes the plan to significant risk of additional unfunded liabilities**
 - Establishing TRS contribution rates in statute, and requiring political intervention with uncertain outcomes, makes it difficult in practice to respond quickly to changing economic circumstances.
 - This policy is in contrast with the more common funding method based on normal cost and the amortization cost that pays down unfunded liabilities over a predetermined, closed period.
 - Under current contribution rates and actuarial assumptions it will take between 30-40 years to amortize current unfunded liabilities, exposing TRS to major financial risks over that period.
 - Options to consider include:
 - Requiring employers and future employees that accrue defined benefits to make contributions on a pre-defined cost sharing basis (such as a 50-50 split) as actuarially determined
 - Using short (10-year or less) periods to pay off any new, annual unfunded liabilities that might accrue

2. Adopt Better Funding Policy, Risk Assessment, and Actuarial Assumptions

(2 of 2)



■ Improve risk assessment and actuarial assumptions

- Look to lower the assumed return such that it aligns with more realistic probability of success
- Adjust the portfolio to reduce high risk assets no longer needed with lower assumed return target
- Work to reduce fees and costs of active management
- Consider adopting an even more conservative assumption for a new hire defined benefit plan
- Require regular stress testing for contribution rates, funded ratios, and cash flows with look-forward forecasts for a range of scenarios
 - While pension plans can, and some do, implement a limited risk assessment under current financial reporting, an independent risk assessment/stress test review using a range of pre-built stress scenarios is the ideal approach

3. Create a Path to Retirement Security for All Participants of TRS



- **Montana TRS are not providing a path for retirement income security to all educators**
 - For example, only 23% of teachers make it to the 30 years necessary for a reduced pension. And just 18% of teachers earn a full pension. This means the majority of teachers could be better served by having the choice of an alternative plan design — such as a DC plan or Cash Balance plan

- **Employees should have options when selecting a retirement plan design that fits their career and lifestyle goals**
 - Cash balance plans can be designed to provide a steady accrual rate, offer portability, and ensure a path to retirement security
 - Montana has a long history of managing cash balance plans through municipality, county, and district systems
 - Defined contribution plans can be designed to auto-enroll members into professionally managed accounts with low fees that target specified retirement income and offer access to annuities



Questions?

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