Washington State Legislature

New Plan 1 Funding Method
~ or ~
The Story of When Bears Attack

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Office of the State Actuary
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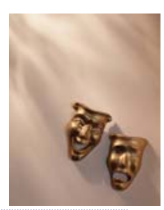
The Plot

- Origin of the Plan 1 funding method
  - Short-sighted setup
- Factors that led to the change
  - Unfortunate events
  - Missed opportunities
- The new Plan 1 funding method
- Looking forward for Plan 1
  - Not out of the woods
  - Risks and opportunities still exist



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Origin Of The Plan 1 Funding Method

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Character Development

- The Plans 1
  - PERS
    - Opened in 1947
    - Largest system - for general employees
  - TRS
    - Opened in 1938
    - For teachers
  - LEOFF
    - Opened in 1970
    - For law enforcement officers and fire fighters
- Closed to new entrants in 1977
- Unfunded liability accrued over time
  - Needed to create new funding plan

Foreshadowing

- New funding plan developed (1989)
  - Pay off unfunded liability by 2024 (35 years)
  - Increasing dollar amount per year
    - Percent of pay for all employers of system (including Plans 2/3)
    - Assumes growth in system will help pay later
    - Little to no principal paid in early years
- Similar to mortgage crisis?
  - Adjustable rate mortgages (ARM)
  - Graduated payment plans
  - Count on future pay increases
  - Ask a relative to help pay
  - Interest-only loans

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Factors That Led To The Change

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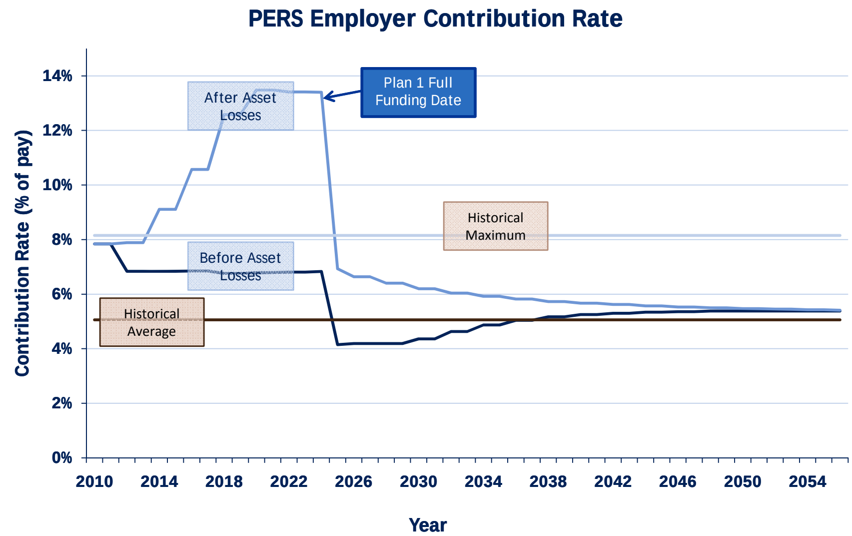
The Problem

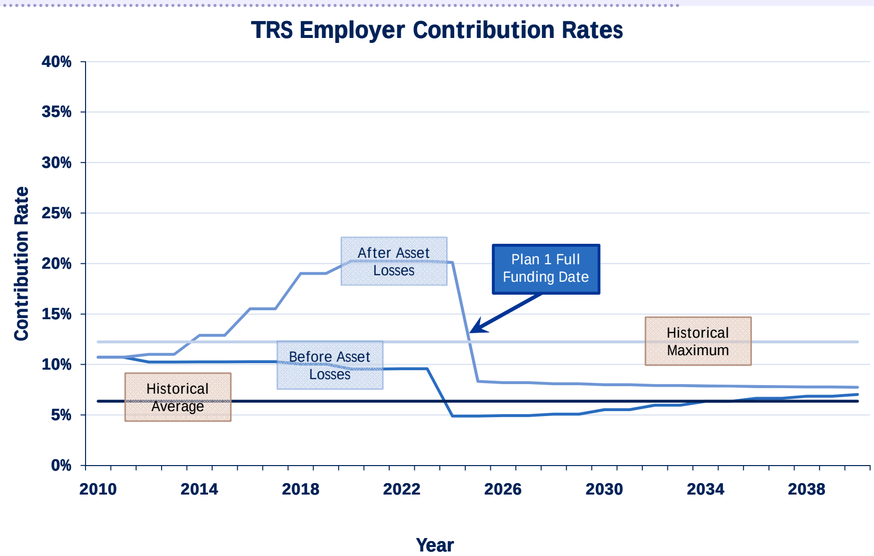
- Unfortunately, analysis a bit short-sighted
  - Only showed "best-estimate" payment amounts
    - Manageable with no volatility / risk
  - Did not consider implications of possible economic events
    - Investment losses at the wrong time
    - Lower than expected system growth or payroll increases
    - Missing payments
- Economic cycle hurt the funding method
  - Missed payments when times were bad
  - Retroactive benefit increases when times were good
  - Large investment losses at the wrong time
- Projections showed potentially unaffordable contributions

The Villain - Bear Sighted On Wall Street

Rising Action – Bear Attack



Rising Action – Bear Attack



Problem Solving

- How do we avoid unaffordable contributions?
  - Study the past
    - How did we get here?
  - Look at the risks of the current funding method
  - Create a new method that manages these risks
  - Stick to the funding plan
- Looking at risks
  - Need to look at more than "expected"
  - See what happens when experience is different than assumed

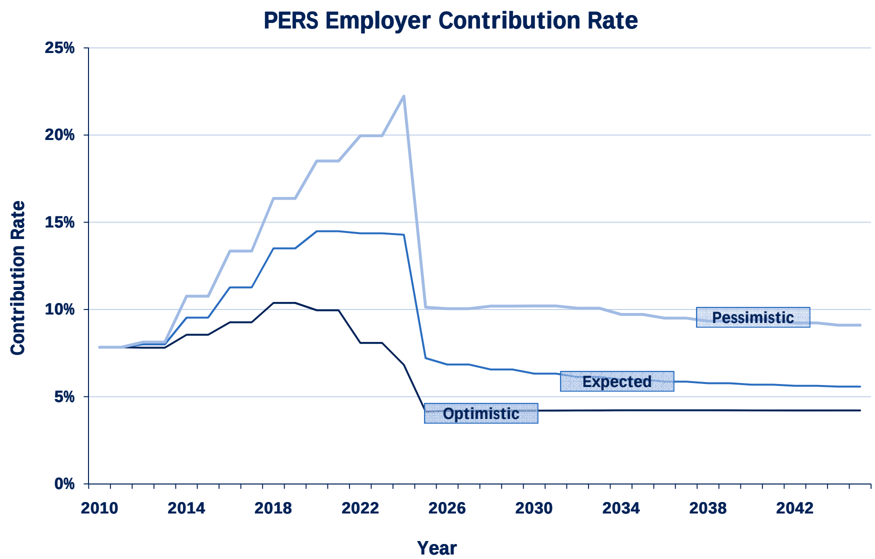
Risk Analysis – Beyond The Expected

- Two ways of looking at risk
- Sensitivity analysis – "scenario testing"
  - Next step beyond "best-estimate" analysis
  - See what happens under a few possible scenarios
  - Does not tell how likely the scenarios are
- Simulation analysis
  - Next step beyond sensitivity analysis
  - Create many equally likely scenarios
  - Calculate the likelihood of specific events occurring
  - Time consuming, but useful for expensive decisions

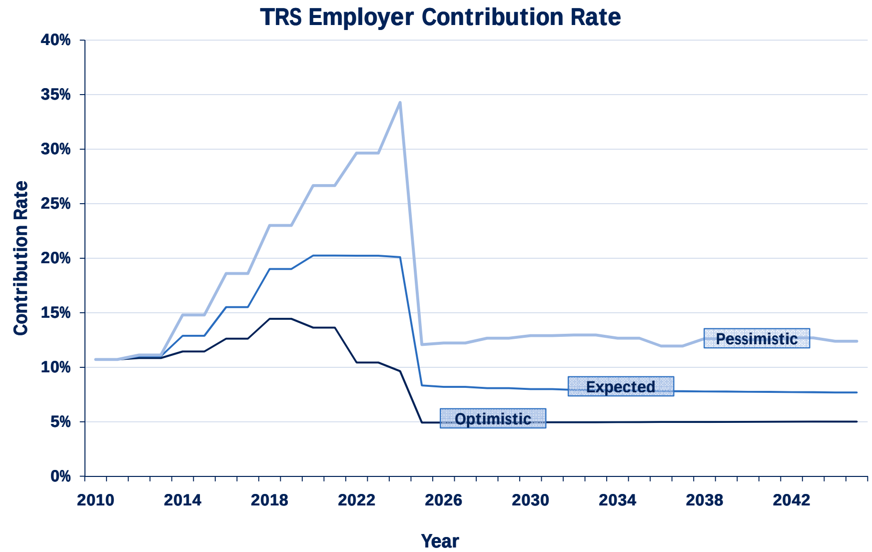
Plan 1 Risks

- Investment returns are largest external risks
  - Risks to employer budgets
    - Large spike in rates
    - Unaffordable rate increases
  - Risks to Plan 1
    - Large spike in rates not funded
    - Plans run out of money prematurely
- Simulate different investment returns
  - Look at optimistic, expected, pessimistic scenarios
  - Simulations based on WSIB's assumptions for future

Likely Scenarios



Likely Scenarios



Explanation Of Scenarios

- Optimistic outlook
  - 10.2 percent annual rate of return (ROR) over 15 years
  - Plans fully funded by 2023
- Expected (assumed) outlook
  - 8 percent annual ROR
  - Plans fully funded by 2024
    - Steep rate increases required
- Pessimistic outlook
  - 5.4 percent annual ROR over 15 years
  - Plans 1 run out of money in 2026 with up to $2.4 billion in required annual benefit payments
  - Contractual benefits means funding is no longer discretionary

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The New Plan 1 Funding Method (2009 Session)

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A New Funding Method Was Needed

- Old method likely to create unmanageable costs
- Ways to manage risks with a new method
  - Make more contributions sooner
  - Eliminate fixed full-funding date
  - Make contributions over longer period if necessary
  - Fund future benefit improvements over shorter period
- Walking a fine line between running out of money and having manageable costs
  - Unlikely to be able to refinance again

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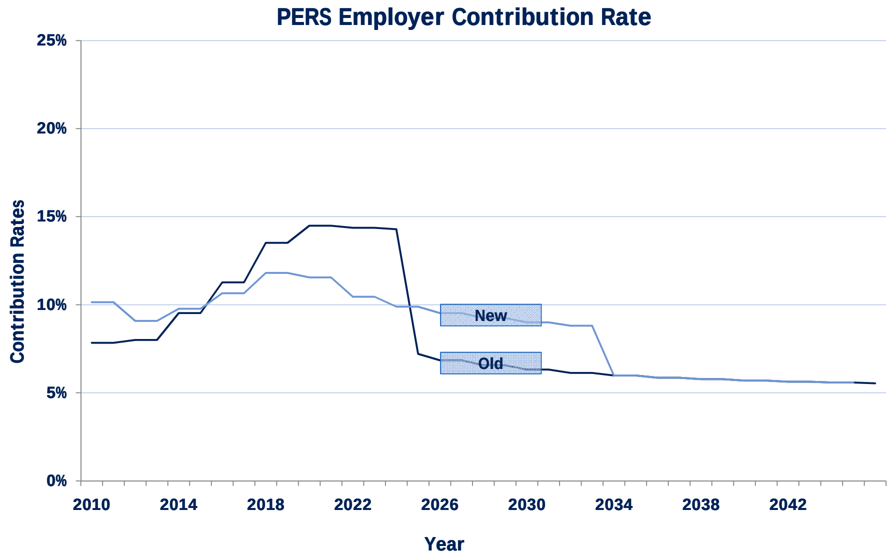
A New Method – Basic Principles



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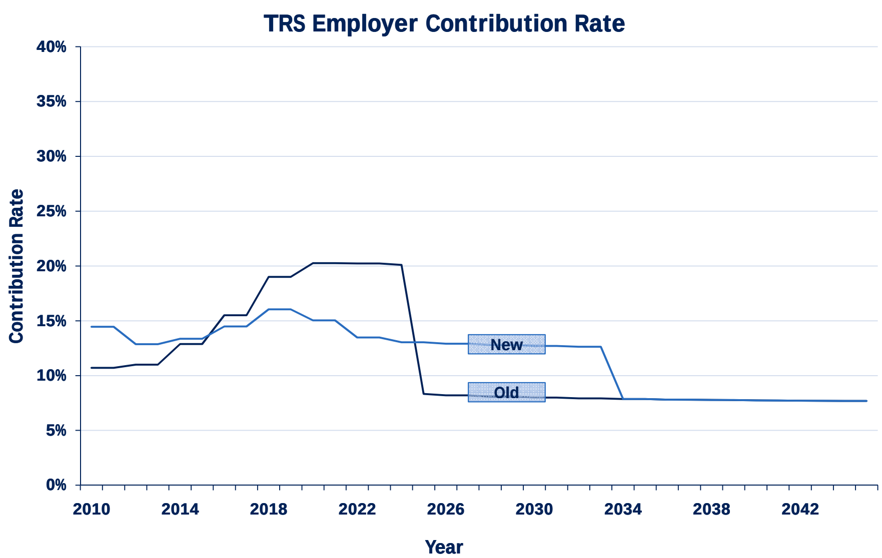
19

A New Method – Basic Principles



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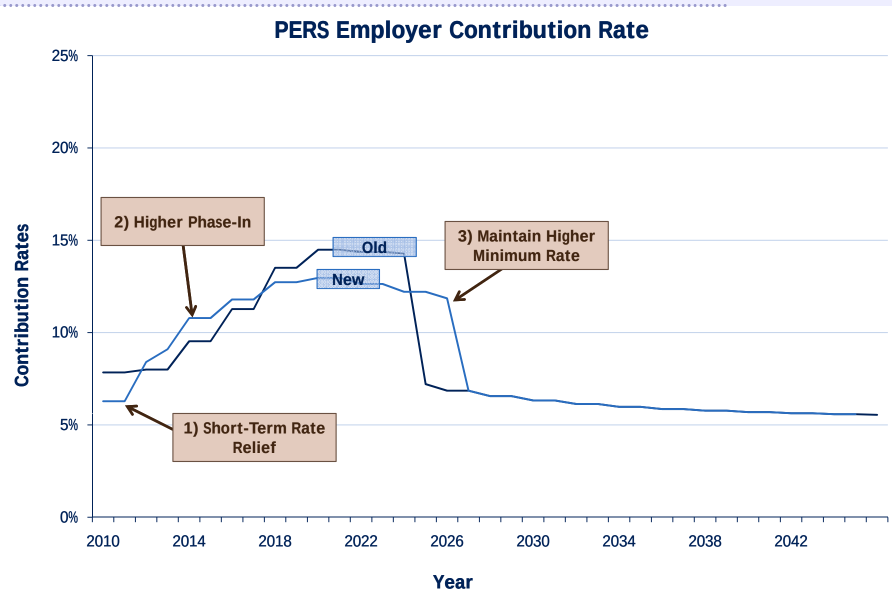
20

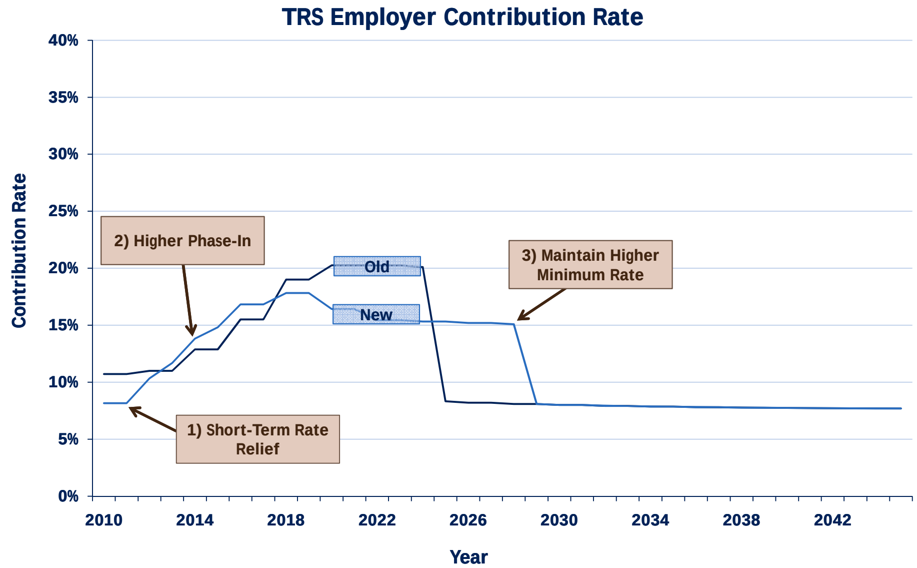
What About The Short-Term Employer Risks?

- Still need to provide short-term relief
  - Lower initial contributions
- Need to put more money in before spike occurs
  - Phase in to higher rates
- Need to keep putting money in before plans runs out of money
  - Maintain higher minimum contribution rates after phase-in

A New Method – With Specific Risks Addressed



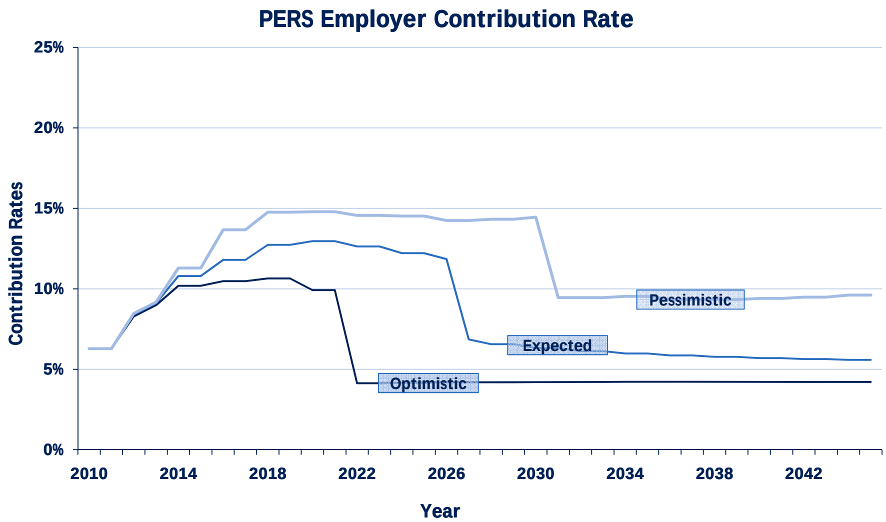
A New Method – With Specific Risks Addressed



"Expected" Not Enough

- Unlike 1989, new method was thoroughly assessed
- Test method for variable investment returns
- Optimistic (75th percentile)
  - One in four chance rates will be better
  - Three in four chance rates will be worse
- Expected
  - 50/50 chance rates will be higher or lower
- Pessimistic (25th percentile)
  - One in four chance rates will be worse
  - Three in four chance rates will be better
- Optimistic and pessimistic are very real scenarios
  - Rates could just as easily be outside these scenarios

A New Method – Stress Testing



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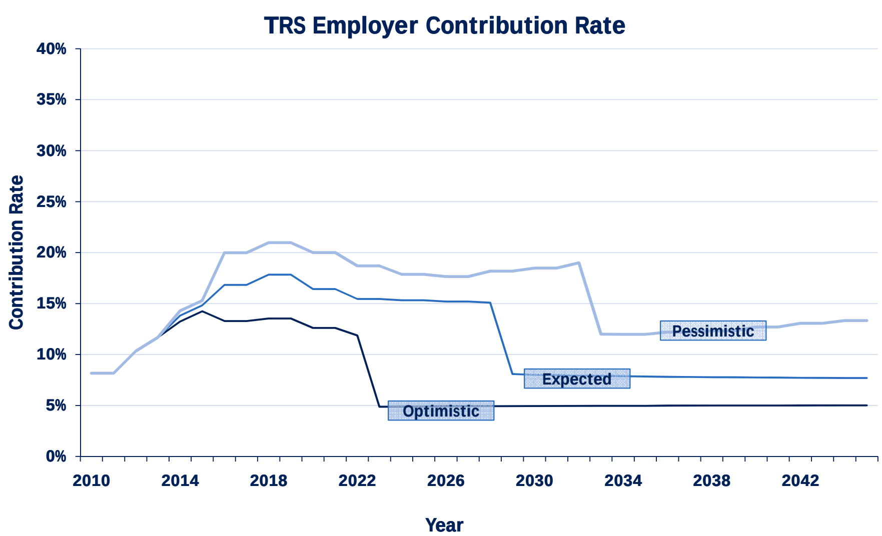
25

A New Method – Stress Testing



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26

Capturing the Upside / Limiting the Downside

- Optimistic outlook
  - Plans fully funded by 2022/2022 (PERS/TRS)
  - Fully funded one year earlier than old method
- Expected outlook
  - Plans fully funded by 2026/2028
  - Rate spike reduced by 11 percent/12 percent in exchange for later full-funding date
- Pessimistic outlook
  - Plans fully funded by 2030/2033
  - Rate spike reduced by 34 percent/39 percent
  - Plans do not run out of money prematurely
    - Plans run out of money in 2026 under old method

Climax - A New Method – The Details

- Rolling ten-year payment plan
- Six-year maximum rate phase-in
  - Provides early rate relief
  - Allows for lower rates if investment returns are good
- Minimum contribution rates after phase-in
  - Minimum rates needed to fully fund plans
  - Rolling payment plan will not pay off on its own
    - Would otherwise always push future costs over ten more years.

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Plans 1 – Looking Forward

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After the Change – Looking Forward

- From July 2007 through June 2009, the big mean bear took almost 24 percent of the fund's value ($15 billion)
  - LEOFF 1 expected to come out of surplus and require contributions
  - PERS/TRS 1 funding method restructured to reduce risks
- Not out of the woods – risks remain
  - Missing payments
  - Retroactive benefit increases
- Opportunities to reduce future risks
  - Increased contributions
- How do the plans handle poor investment returns when these things happen?

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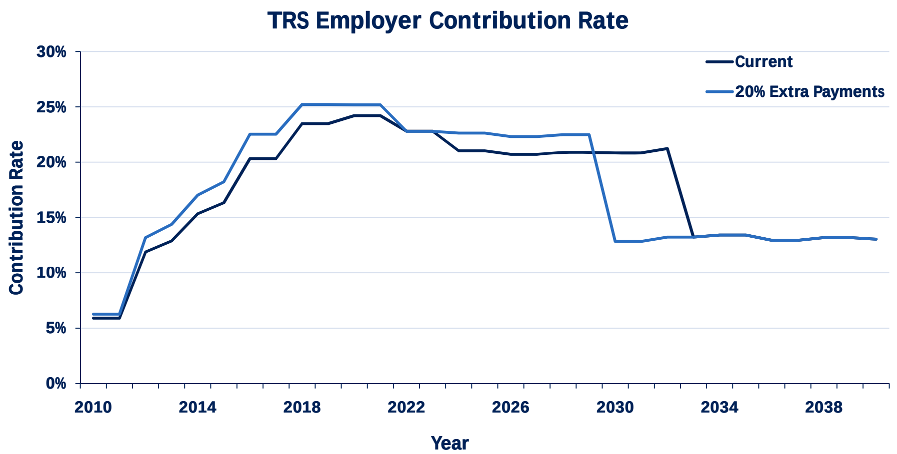
30

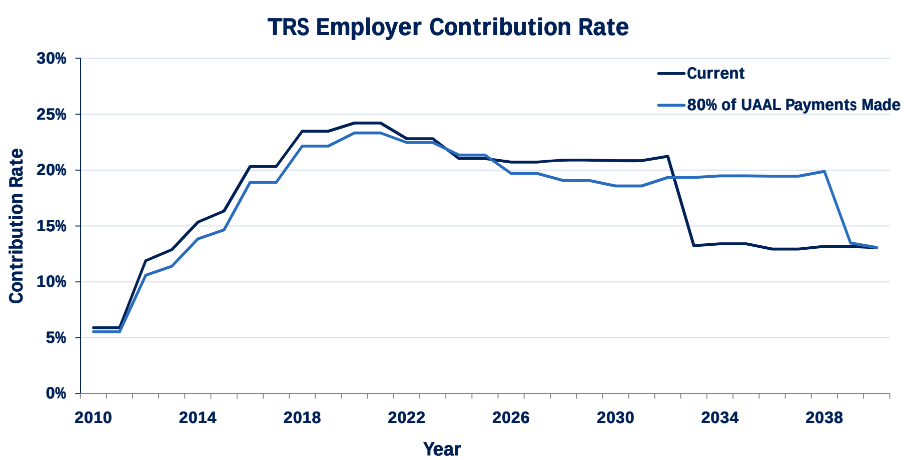
Looking Forward – Extra Contributions

- Increased Funding
  - TRS 1 pessimistic view when funding is increased by 20 percent every year



Looking Forward – Missed Contributions

- Missing payments
  - TRS 1 pessimistic view when only 80 percent of contributions are made
  - Fifteen percent chance of running out of money



The Moral - Preparing For Bear Attacks

- Need to know and be comfortable with risk of failure / unwanted outcomes
- Likely out of opportunities to refinance Plans 1
  - Could run out of money
- Taking on more risk in an already risky situation by missing future payments or increasing benefits
- Can reduce risk with extra contributions
- Not out of the woods
  - Bears still out there

Note: This focused on Plan 1. The next presentation will talk more about all plans.

Arming Yourself With The Right Tools

Any Questions?