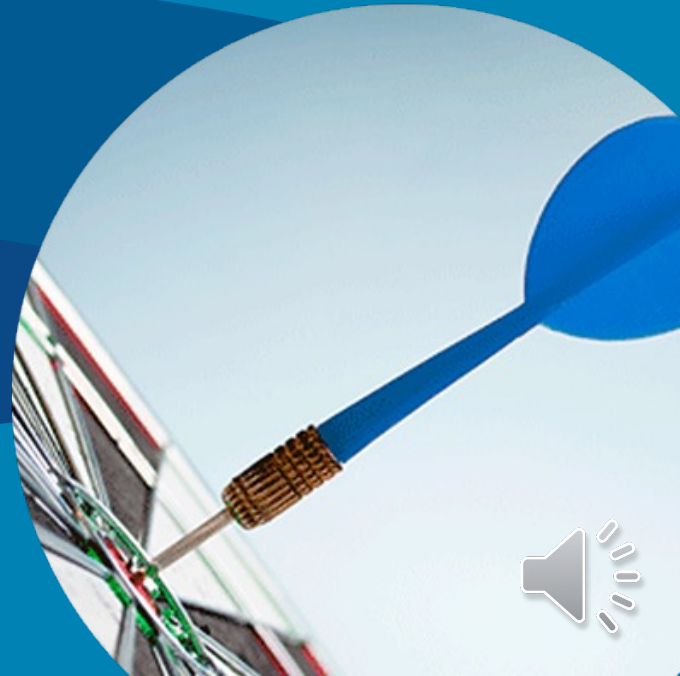




# Reading Old Hire Actuarial Reports

Dana Woolfrey, FSA, MAAA



# Old Hire Reports

---

- Each Department has individual liabilities, assets, and funding policy
- Purpose of Valuation:
  - Determine funded level of plan – how do assets compare to obligations?
  - Determine required contribution



# The Actuarial Terms we will define

---

- Actuarial Accrued Liability (AAL)
- Actuarial Value of Assets (AVA)
- Unfunded Actuarial Accrued Liability (UAAL)
- Funded Ratio
- Required Contribution (RC)

*\*Examples assume no investments are available, earnings = \$0.*



# Closed Plan Dynamic

---

- Last Old Hire member was hired in 1978
- No active members
- Vast majority of members are in payment phase
- Generally fund benefits over active career so, in theory, would like to have benefits fully funded at this point



# Actuarial Accrued Liability (AAL)

---

- Because Plans are closed, the accrued liability simply represents the total present value of the annuities over the member's life expectancies.
  - Assume plan has two retirees, age 70 and 75.
  - Assume life expectancy 80 (or 10 and 5 years remaining respectively).
  - Both receive benefits of \$10,000 per year
  - Total liability =  
$$10 * \$10,000 + 5 * \$10,000 = \$150,000$$

# Actuarial Accrued Liability (AAL)

---

- The Actuarial Accrued Liability also represents the *target value of assets* at the valuation date

# Actuarial Value of Assets (AVA)

---

- Investment returns are volatile
- Don't want all that volatility to flow through to contribution requirements
- Smooth any deviation from investment return assumption (above or below expectation) over 5 years
- Smoothed value is the actuarial value of assets



# Unfunded Accrued Liability

---

- Accrued liability is representative of desired amount in the bank, but...
- That doesn't always mean that's what's in the bank
- Example:
  - Accrued Liability: \$50,000
  - Assets: \$40,000
  - **Unfunded Accrued Liability:** \$10,000
- Flip flopped situation “surplus”
- **Funded ratio** = Assets/Liability = 40000/50000 = 80%





# How did we end up with an unfunded liability?

---

- Improving Benefit Provisions
  - Ad Hoc COLAs without funding to cover the up front increase in liabilities
- Contributed less than actuarially determined amount
- Asset losses
  - Don't earn as much as assumption
- Demographic losses
  - Mortality – members live longer than expected
  - Less terminations than expected
  - Members retire sooner than expected



# How did we end up with an unfunded liability?

---

- Other reasons:
  - Assumption changes
    - Asset allocation change dictated change in investment return assumption
    - Increased liabilities
- Can have flip side gains and end up with a surplus



# Providing for Unfunded Benefit Payments

---

- New funding policy does not focus on amortization
- In plans with unfunded liabilities, focus on spreading assets available over remaining payments
  - Use portion of assets to pay current benefits
    - Portion based on funded status
  - Use minimum contribution to fund the rest
- Focus on level funding where possible
  - Margin will help reduce contribution volatility in the future



# Why did my Required Contribution change?

---

- Benefit modification
- Administrative expense
  - Floating assumption
- Investment experience
  - Varied investment performance in 2020 and 2021
  - Still dealing with 5-year smoothing on 2018
  - Overall outcome (gain/loss) depends on asset allocation pool and timing of contributions



# Why did my Required Contribution change?

---

- Salary/rank experience
- Contributions more/less than expected
- Mortality and Other

---

This concludes the  
**Reading Old Hire Actuarial Reports**  
Presentation.

If you wish further information  
or have questions please call

**FPPA**  
Fire and Police  
Pension Association

(303) 770-3772 in the Denver Metro area or  
(800) 332-3772 toll free Statewide.

