Colorado Public Employees' Retirement Association

Presentation to the Pension Review Subcommittee

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Segal

Agenda

- Response to PNYX statements
  - ***"…liabilities to be 10%, or more, higher than reported."***
  - ***"…material risks of reaching a funded ratio of less than 50%.."***
- Discuss 67% funding likelihood metric in C.R.S. §24-51.1-101(4)(d)
- Comments on PNYX Recommendations

Segal Comments Regarding PNYX Assumption Review Report – July 2024

- *"However, if the trends of the past three years, since the adoption of the demographic assumptions emanating from the 2020 Segal study, continue, it would not be surprising to see the* ***true liabilities to be 10%, or more, higher*** *than reported."*

(in millions)	2021	2022	2023	Total
Retirement	$44.9	$56.6	−$1.3	$100.2
Mortality	−159.4	−256.6	−129.0	−545.0
Turnover	114.1	−74.2	39.3	79.2
Pay increases	207.2	454.4	791.9	1,453.5
New entrant	266.2	400.1	362.1	1,028.4
Disability	6.6	5.6	1.7	13.9
Other	48.1	194.0	115.2	357.3
Total (gain)loss	$527.7	$779.9	$1,179.9	$2,487.5

  - Losses on salaries represent a significant portion of liability loss
    - Higher-than-expected inflation over much of this period is not expected to persist indefinitely
    - In short-term, higher salaries translate to additional contributions
    - Based on exp analysis, adjustments, as appropriate, will be recommended to the Board
  - New entrant liabilities are largely offset by "unexpected" contributions
    - Net impact on UAL is mitigated
- Previous experience study tempered adjustments to retirement rates, turnover rates, and salary scale so as not to "overreact" to recent experience
  - Notwithstanding "Covid-impacted" patterns, retirement and turnover experience reasonably tracked with the 2020 assumptions
  - Upcoming experience study may ultimately result in an increase in actuarial liability as assumptions are refined to reflect recent experience, but a 10%+ increase is unlikely
- "New entrant effect" will be studied in the upcoming experience study and may be reflected in an adjustment to normal cost

Segal Comments Regarding PNYX Assumption Review Report – July 2024

- *“However, if the trends of the past three years, since the adoption of the demographic assumptions emanating from the 2020 Segal study, continue, it would not be surprising to see the **true liabilities to be 10%, or more, higher** than reported.”*

- **In summary:**
  - $2.5 billion of larger than expected losses related to new entrants and salary increases
    - Both of these liability increases were accompanied by additional contributions, so the effect on the overall unfunded liability was significantly reduced, if not offset completely
  - For the statement “…true liabilities to be 10%, or more, higher than reported…” to be a true statement the following would need to occur (based on causes listed by PNYX)
    - PERA never again adjusts the demographic assumptions currently in use
    - Demographic experience related to new entrants and salary increases exactly replicates the experience from the prior three-year period
      - meaning PERA continues to “miss the mark” on anticipating salary increases
    - PERA does not receive “unexpected” contributions related to
      - new members in their first year of employment
      - salary increases during the first (partial) year granted

Segal Comments Regarding PNYX Assumption Review Report – July 2024

- "*The funding path presents **material risks of reaching a funded ratio of less than 50%, that could be considered a point of no return**, with an 18% probability of that outcome by 2048.*"
  - In the Signal Light 3.0 model, 1,426 scenarios (out of 5,000, or 29%) drop below 50% funded **prior to** 2048
    - Only **847** scenarios (or 17%) are below 50% funded **on** December 31, 2047
    - Nearly 600 scenarios "recover" after dropping below 50% funded, suggesting that the 50% threshold is not a "point of no return"
    - **291** scenarios (less than 6%) reach insolvency in the 50-year projection period
      - Fewer scenarios project insolvency under Signal Light 3.0 methodology compared to 2.0
  - Typical traits of the **847** scenarios that are <u>below 50% funded on December 31, 2047</u>:
    - The average compound return through 2047 is **3.75%** and the average return over the first ten years is 3.10%
    - In scenarios where the average return through 2047 exceeded 5%, average increases in total payroll were **0.4% less than the current 3% assumption**
  - Typical traits of the **291** scenarios that <u>reach insolvency in the 50-year projection period</u>:
    - The average compound return over the first 15 years is **2.25%** and the average return over the first five years is 1.45%
    - In scenarios where the average return over the first 15 years exceeded 5%, average increases in total payroll were **0.95% less than the current 3% assumption**

Segal Comments Regarding PNYX Assumption Review Report – July 2024

- "*The funding path presents* ***material risks of reaching a funded ratio of less than 50%, that could be considered a point of no return****, with an 18% probability of that outcome by 2048.*"

- **In summary:**
  - Of the 17% of the Signal Light scenarios below 50% funded **on** December 31, 2047, only about 6% are projected to result in "insolvency" over the 50-year period.
  - Segal's 2024 Signal Light Report considers possible future AAP adjustments
    - PNYX did not mention or attempt to consider the annual AAP assessment or possible future AAP adjustments, as it did not fit into the structure of PNYX's projection programming.
  - The 2024 Signal Light Report, considering possible future AAP triggers, would have provided a better picture for PNYX of possible "insolvency" compared to the 2023 Signal Light Report.
  - Timing of the delivery of the PNYX report (July 2024) negated access to PERA's most recent information pertaining to assumption performance as supplied in PERA's 2024 Signal Light Report.
    - Perhaps the timing issue could be addressed with the Pension Review Subcommittee regarding delivery dates associated with subsequent periodic Assumption Reviews.

Segal Comments Regarding PNYX Assumption Review Report – July 2024

- C.R.S. §24-51.1-101(4)(d): “*If…the Association does not have at least a **67% likelihood** of achieving full funding by 2048, then the Association shall provide recommendations to the Subcommittee for policy changes that would return the Association to full funded status by 2048.*”
  - Based on Signal Light 3.0 modeling, 2,604 scenarios (out of 5,000, or 52%) result in PERA achieving 100% funded on December 31, 2047
  - By design of the AAP assessment, most scenarios that favor exceeding the stated benchmark automatically trigger contribution decreases and an increase in the AI cap, **which run contrary to the “67% likelihood” metric**
  - PERA’s funding policy is set to target full funding of December 31, 2017, unfunded liability (the legacy UAAL) by December 31, 2047, but new sources of unfunded liability (e.g., actuarial losses, assumption changes, etc.) are amortized over periods that extend beyond December 31, 2047
    - “67% likelihood of fully funding the December 31, 2017, unfunded liability” is extremely difficult to measure
  - PERA’s investment return assumption of 7.25% – which has the largest influence on the 67% likelihood measure – is expected to be met or exceeded 53% of the time according to the 2019 ALM study
    - The 67% likelihood measure is materially more conservative than processes used to develop PERA’s investment return (most influential) assumption used in determining projected funded status

Segal Comments Regarding PNYX Assumption Review Report – July 2024

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- **In summary:**
  - The 67% likelihood metric does not coordinate well with PERA's:
    - AAP Assessment enacted through SB 18-200
    - Pension Funding Policy intentionally updated in 2018 to coordinate with the recently enacted annual AAP Assessment
    - Periodic ALM analysis or Board investment policies used in setting economic assumptions

Segal Comments Regarding Informal Requests from PRS

What is required in each scenario that results in PERA achieving the 67% likelihood metric[1]?

Proposed Scenario	Assumed Long-Term Rate of Return	Proposed Change / Action Required to Meet Goal	Estimated Achieved Metric	Notes
Combination of benefit and contribution changes	7.25%	• 1.75% multiplier • 8-Year Avg HAS • Trigger last two AAP adj • $4B Lump Sum	67%	Significant changes to new tier of benefit provisions, plus large lump sum
Lump Sum	7.25%	$20B ($13B without considering AAP[2])	67%	
Lump Sum	6.71%	$38B ($27B without considering AAP[2])	67%	
Indexing on Direct Distribution (assume 3%, per annum)	7.25%	Indexing the Direct Distribution at Local CPI	Improved Metric from 52% to 54%	Assumed Indexing at 3.0%, per annum (approximate 10-year annualized Local CPI)

[1] 67% likelihood of achieving 100% funded status by 2048.

[2] Additional dollars needed if considering the AAP, due to the greater likelihood of triggering "120% AAP Adjustments" with large infusion of cash.

Segal Comments Regarding PNYX Assumption Review Report – July 2024

- PNYX Summary of Recommendations for improving PERA's funded ratio
  - Adjust allocation within bands and widen them, optimizing for either return or downside limitation (AON already addressed)
  - $2B lump sum contribution to the Plan
    - Likely not supported by the Colorado General Assembly with questions regarding:
      - Source of the additional funds and
      - Support for the spending of the additional funds on public pensions
  - 1% increase in annual contributions
    - As enacted via SB 18-200, AAP adjustments are already designed to handle contribution increases as deemed necessary via the annual AAP assessment
  - Create $2B Colorado state wealth fund to cover potential long-term shortfalls
    - Uncommon in the US state public sector space for a number of reasons:
      - Assets maintained outside of the fund would not be trust-protected
      - Using separate funds with different allocations could work against the overall risk/return balance
      - A new allocation philosophy could simply be applied to a portion of the current fund