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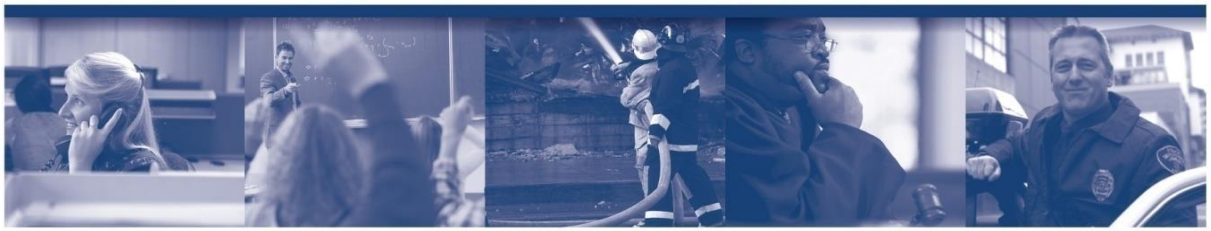
# Omaha School Employees' Retirement System
## January 1, 2022 Valuation Results

**Presented by: Cavanaugh Macdonald Consulting**

**May 5, 2022**



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# Purposes of an Actuarial Valuation

- Measure assets and liabilities at single date
- Evaluate funding progress and the sufficiency of statutory fixed contribution rates. Determine any additional District funding requirements.
- Analyze experience (actual vs. expected) in last year
- Assess and disclose risks associated with funding the System
- Report on trends in assets, liabilities and contributions

# Factors Impacting 1/1/2022 Valuation

- Implementation of assumption changes from the experience study
- Investment return for 2021 of about 18%
  - Due to asset smoothing, rate of return on actuarial assets was about 9%
  - Last year's deferred investment loss has been recognized and there is now a deferred gain
- Unfavorable liability experience
  - Loss of $15 million primarily due to larger compensation increases than assumed
- Net result was an increase in the funded ratio

# Experience Study Changes

- Economic assumptions are being phased-in over four years

| | Prior | 2022 Valuation | 2023 Valuation | 2024 Valuation | 2025 Valuation |
|---|---|---|---|---|---|
| Price inflation | 2.75% | **2.70%** | 2.60% | 2.55% | 2.35% |
| Real rate of return | 4.75% | **4.70%** | 4.70% | 4.65% | 4.65% |
| Investment return | 7.50% | **7.40%** | 7.30% | 7.20% | 7.00% |
| General wage inflation | 3.25% | **3.20%** | 3.10% | 3.05% | 2.85% |
| Covered payroll growth | 3.25% | **3.20%** | 3.10% | 3.05% | 2.85% |

# Experience Study Changes

- Other assumption changes
  - Mortality assumption changed to Pub-2010 General Employees (Median), projected with generational mortality improvements using NPERS projection scale
  - Retirement and termination rates were adjusted
  - Probability of vested members electing a refund upon termination was adjusted
  - Individual salary increase assumption adjusted
  - Marriage assumption was reduced from 100% to 85%
  - Explicit assumption for administrative expenses was set as 0.24% of payroll
  - Amortization period was reduced from 30 to 25 years on future bases

# Impact of Assumption Changes

| ($ millions) | January 1, 2022 Old Assumptions | New Assumptions | Difference |
|---|---|---|---|
| Actuarial Accrued Liability (AAL) | $2,475.9 | $2,476.1 | $ 0.1 |
| Actuarial Value of Assets (AVA) | 1,562.8 | 1,562.8 | 0.0 |
| Unfunded AAL (UAAL) | $ 913.2 | $ 913.3 | $ 0.1 |
| Funded Ratio | 63.12% | 63.12% | 0.00% |
| Total Required Contribution Rate | 27.11% | 27.19% | 0.08% |
| Contribution Shortfall | 5.45% | 5.53% | 0.08% |
| Additional District Contribution Amount | $ 21.5 | $ 21.8 | $ 0.3 |

**Numbers may not add due to rounding.**

Note that if the set of economic assumptions was fully recognized in the current valuation, it would increase the UAAL by an additional $98.8 million and the total actuarial contribution rate by 2.27% of pay. The resulting additional required District contribution would increase to $30.6 million.

# OSERS Funding

- Members contribute 9.78% of pay
- State of Nebraska contributes 2.00% of pay
- Nebraska statutes provide that the School District shall contribute the greater of:
  - 101% of the contributions made by members or
  - Amount necessary to maintain the solvency of the System, as determined annually by the Board upon recommendation of the Actuary and Trustees
    - Actuarial contribution rate (normal cost + administrative expenses + UAAL payment) is used to determine the contribution necessary to maintain the solvency of the system

# Actuarial Valuation

- Snapshot picture of the system on a single date (January 1, 2022)
- Statistical projection of the timing and amount of all future benefits to be paid
  - Uses one set (best estimate) of many assumption sets that could be considered reasonable
  - Variations are to be expected from year to year as experience unfolds because assumptions are long-term in nature
- Evaluation of funding progress and sufficiency of scheduled contributions. Calculation of any additional District contribution for the year.

# Valuation Year 2021 Actual Experience

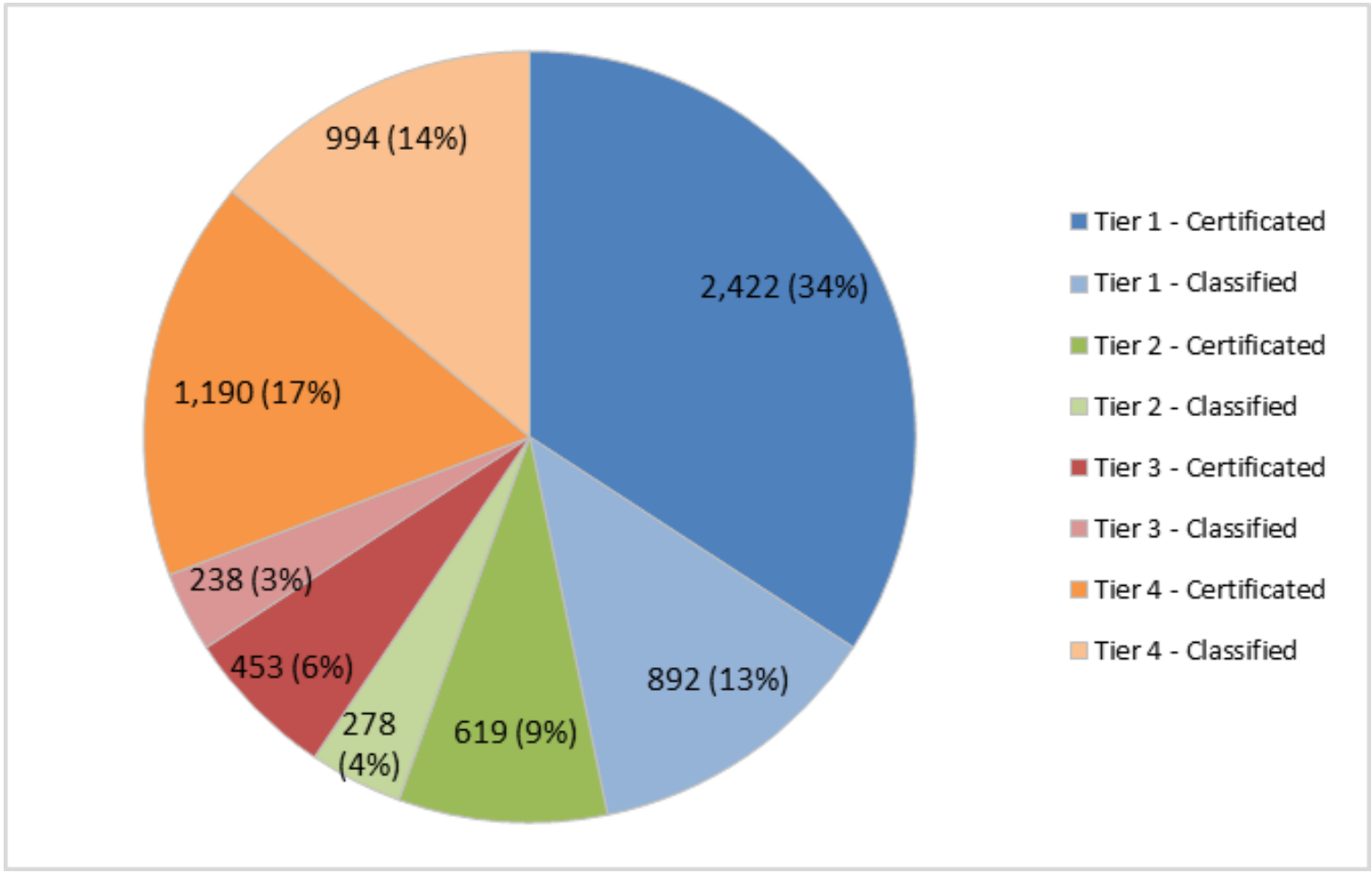
- Return of 17.8% on market value of assets and return on actuarial value of 8.9%. Resulted in an actuarial gain of $21 million.
- Net actuarial loss on liabilities of $15.3 million
- Additional District contribution in 2021 was $24.1 million, almost 9% higher than the actuarial required contribution of $22.2 million
- Unfunded actuarial accrued liability decreased slightly from $914M to $913M
- Funded ratio increased from 62% to 63% (market value increased from 59% to 66%)

# Active Membership Count by Tier

| | 1/1/2022 | 1/1/2021 | % Change |
|---|---|---|---|
| Certificated | | | |
| - Tier 1 | 2,422 | 2,628 | (7.8) |
| - Tier 2 | 619 | 684 | (9.5) |
| - Tier 3 | 453 | 514 | (11.9) |
| - Tier 4 | 1,190 | 954 | 24.7 |
| - Total | **4,684** | **4,780** | **(2.0)** |
| Classified | | | |
| - Tier 1 | 892 | 1,030 | (13.4) |
| - Tier 2 | 278 | 323 | (13.9) |
| - Tier 3 | 238 | 285 | (16.5) |
| -Tier 4 | 994 | 764 | 30.1 |
| - Total | **2,402** | **2,402** | **0.0** |
| Total Actives | **7,086** | **7,182** | **(1.3)** |

**Tier 1: became a Member before July 1, 2013**
**Tier 2: became a Member on/after July 1, 2013 and before July 1, 2016**
**Tier 3: became a Member on/after July 1, 2016 and before July 1, 2018**
**Tier 4: became a Member on/after July 1, 2018**

# Active Members By Tier



# Total Membership – OSERS

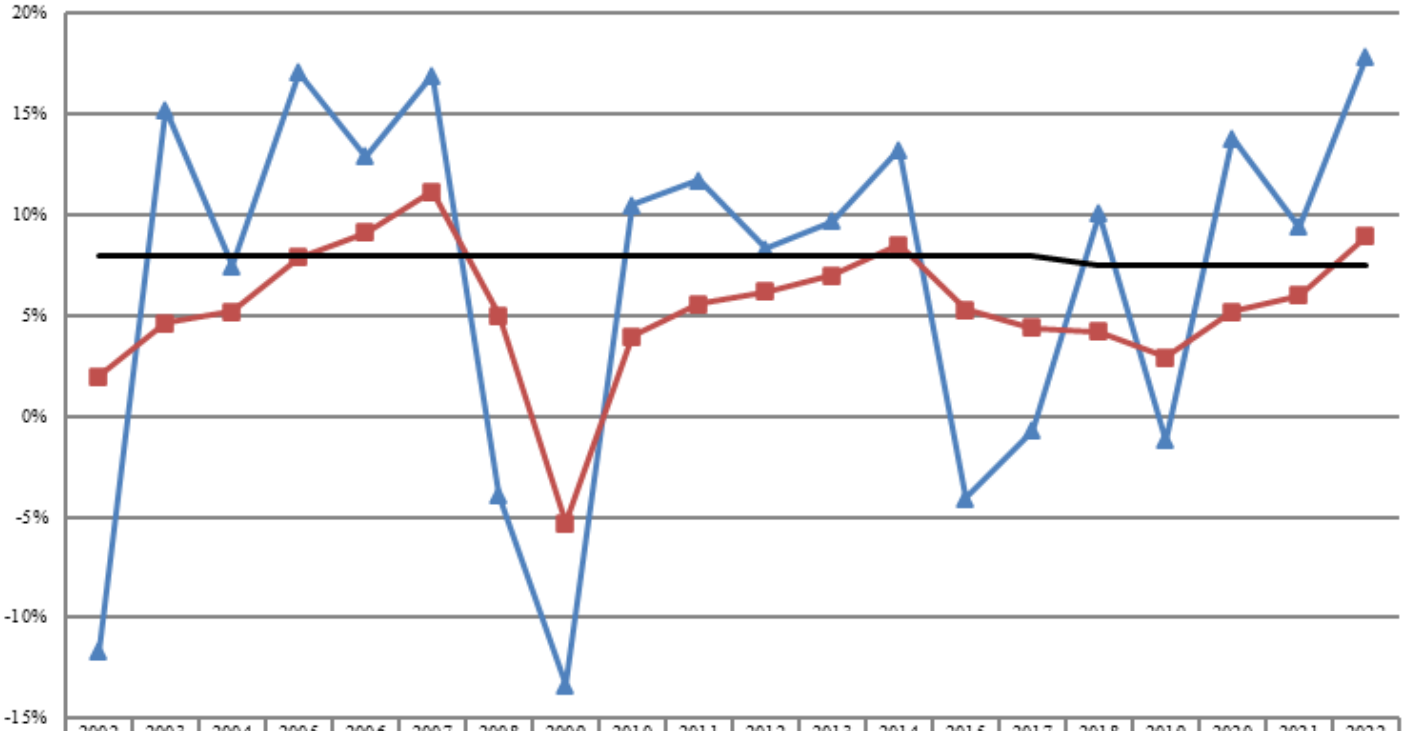
| | January 1, 2022 | January 1, 2021 | % Change |
|---|---|---|---|
| Actives | | | |
| - Certificated | 4,684 | 4,780 | (2.0) |
| - Classified | 2,402 | 2,402 | 0.0 |
| - Total Actives | 7,086 | 7,182 | (1.3) |
| Retirees and Disabled Members | 4,954 | 4,829 | 2.6 |
| Beneficiaries | 284 | 260 | 9.2 |
| Inactive Vested Members | 1,361 | 1,223 | 11.3 |
| Inactive Non-Vesteds | 1,152 | 917 | 25.6 |
| Total | 14,837 | 14,411 | 3.0 |

# Actuarial Value of Assets

- Market value is not used directly in the valuation due to volatility in market returns
  - Smoothing method allows the ups and downs in market returns to average out over time
  - Helps create stability and predictability in the District's contribution rate

- Current method = Expected asset value (based on assumed return) + 25% of the difference between actual market value and expected asset value
  - Equivalent to 75% of Expected Value + 25% Market Value

# Market vs Actuarial Rate of Return




| | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MVA | -11.7% | 15.2% | 7.5% | 17.1% | 12.9% | 16.9% | -3.9% | -13.3% | 10.5% | 11.7% | 8.3% | 9.7% | 13.3% | -4.1% | -0.7% | 10.1% | -1.2% | 13.8% | 9.4% | 17.8% |
| AVA | 2.0% | 4.6% | 5.2% | 7.9% | 9.1% | 11.2% | 5.0% | -5.3% | 4.0% | 5.6% | 6.2% | 7.0% | 8.5% | 5.3% | 4.4% | 4.2% | 2.9% | 5.2% | 6.0% | 8.9% |
| Assumption | 8.0% | 8.0% | 8.0% | 8.0% | 8.0% | 8.0% | 8.0% | 8.0% | 8.0% | 8.0% | 8.0% | 8.0% | 8.0% | 8.0% | 8.0% | 7.5% | 7.5% | 7.5% | 7.5% | 7.5% |

# System Assets
**($ in millions)**

| | Market | Actuarial |
|---|---|---|
| Assets, 1/1/21 | $ 1,405 | $ 1,468 |
| Adjustment for late reporting | 0 | 0 |
| ▪ Contributions | 108 | 108 |
| ▪ Benefit Payments | (143) | (143) |
| ▪ Investment Income | 255 | 130 |
| Assets, 1/1/22 | $ 1,626 | $ 1,563 |
| | | |
| Rate of Return | 17.8% | 8.9% |

Note: Numbers may not add due to rounding.

**Unrecognized investment gain at 1/1/22 is $63 million.**

**$21 million actuarial gain on assets.**

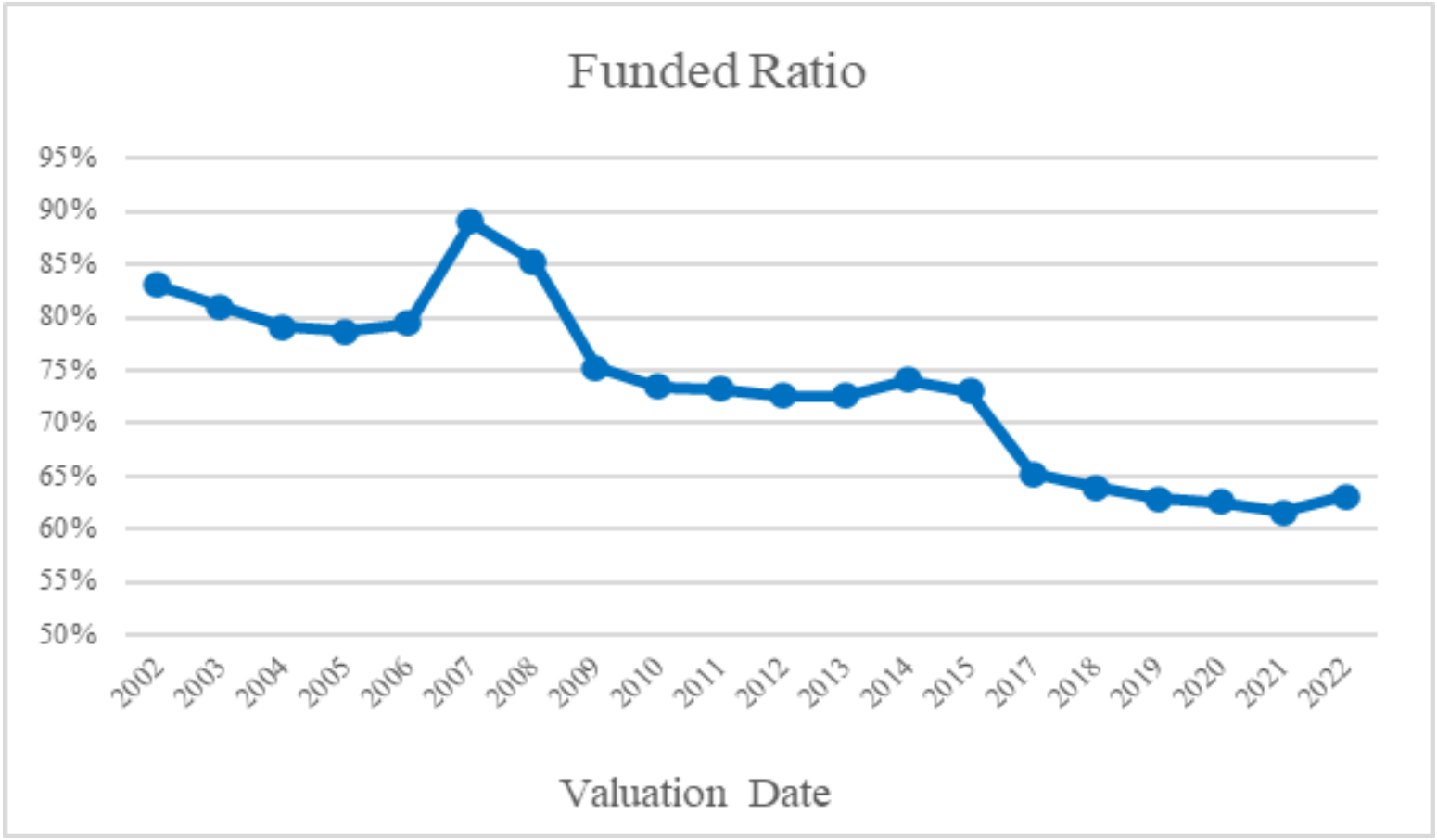
# Funded Status

**($ in millions)**

| | January 1, 2022 | January 1, 2021 |
|---|---|---|
| | | |
| Actuarial Accrued Liability (AAL) | $ 2,476 | $ 2,381 |
| Actuarial Value of Assets (AVA) | 1,563 | 1,468 |
| Unfunded Actuarial Accrued Liability | $ 913 | $ 914 |
| | | |
| Funded Ratio: Actuarial Assets/AAL | 63% | 62% |
| Funded Ratio: Market Value/AAL | 66% | 59% |

**Note: Numbers may not add due to rounding**

# Historical Funded Ratio




**The increase in 2007 reflects resetting actuarial value to market value. The decline from 2007 to 2012 reflects the impact of the Great Recession and the decrease in 2017 is due to the change in assumptions, which included lowering the investment return assumption from 8.0% to 7.5%.**

# Change in UAAL
**($ in millions)**

| | | |
|---|---|---|
| UAAL, 1/1/2021 | $ | 914 |
| ▪ Expected increase from amortization method | | 11 |
| ▪ Contributions more than actuarial rate | | (2) |
| ▪ Investment experience | | (21) |
| ▪ Liability experience | | 15 |
| ▪ Assumption changes | | 0 |
| ▪ Other experience | | (4) |
| UAAL, 1/1/2022 | $ | 913 |

**UAAL = Unfunded Actuarial Accrued Liability**

# Actuarial Contribution Rate

- Normal cost – ongoing cost for active members
- Administrative expenses – expenses expected to be paid from the trust during the upcoming year
- UAAL Payment – payment to fund the UAAL based on the Board of Trustees' funding policy
  - Level percent of payroll (increasing dollars)
  - "Layered" approach
    - Legacy UAAL was reset to January 1, 2019 UAAL and amortized over a closed 30-year period
    - New UAAL bases were amortized over a new closed 30-year period commencing on the respective valuation date. Effective with the January 1, 2022 valuation, new bases are amortized over a new 25-year period.

# Additional District Contribution

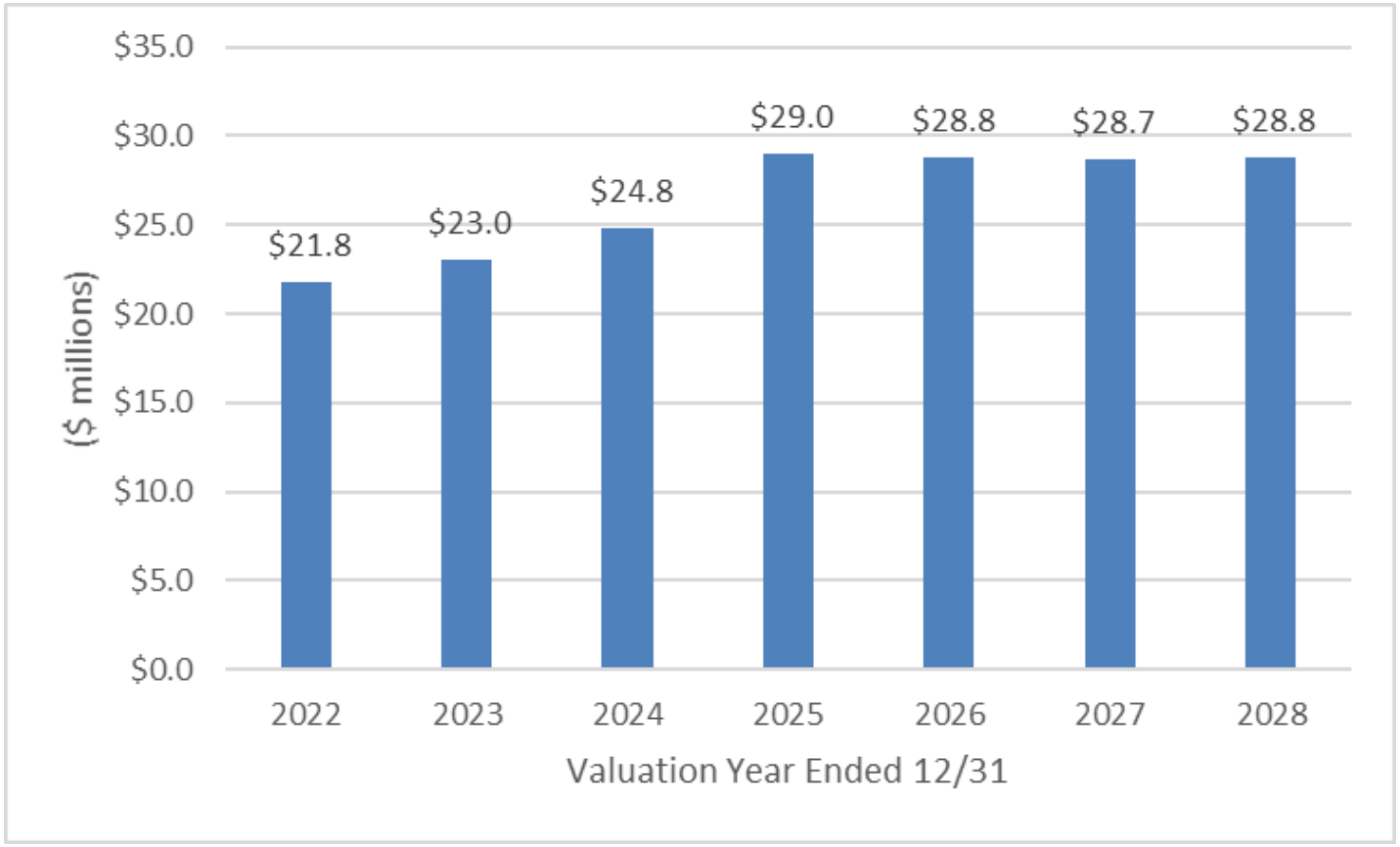
**($ in millions)**

| | 1/1/2022 | 1/1/2021 |
|---|---|---|
| Actuarial Contribution Rate | | |
| • Normal Cost | 12.59% | 12.76% |
| • Administrative Expenses | 0.24% | 0.00% |
| • Amortization of UAAL | 14.36% | 14.77% |
| • Total Contribution Rate | 27.19% | 27.53% |
| Statutory Member Rate | (9.78%) | (9.78%) |
| Statutory Employer Rate (101% of member rate) | (9.88%) | (9.88%) |
| Statutory State Rate | (2.00%) | (2.00%) |
| Additional Required District Contribution | | |
| • Contribution Shortfall/(Margin) | 5.53% | 5.87% |
| • Projected Pay for Upcoming Valuation Year | $ 390 | $ 374 |
| • Additional Required District Contribution | $ 21.8 | $ 22.2 |

# Change in the Actuarial Required Contribution

| | |
|---|---|
| Total Contribution Rate as of 1/1/2021 | 27.53% |
| ▪ Contributions different than actuarial rate | (0.03%) |
| ▪ Investment experience | (0.32%) |
| ▪ Liability experience | 0.23% |
| ▪ Change in normal cost rate | (0.07%) |
| ▪ Payroll growth different than expected | (0.17%) |
| ▪ Assumption changes | 0.08% |
| ▪ Other experience | (0.06%) |
| Total Contribution Rate as of 1/1/2022 | 27.19% |

# Projected Additional District Contribution
## (If All Assumptions Are Met)




**Projections assume all assumptions are met each year, including the step-down in the investment return Assumption over the next 3 years.**

# ASOP 51: Maturity Measurements

- OSERS is a very mature System
  - The more mature the system, the more sensitive it is to investment volatility, i.e., harder to recover from investment losses with increased contributions (higher contribution rates)
  - Significant differences between actual and expected returns, which are not unexpected given the standard deviation of the portfolio, have a large impact on contribution amounts. Variations flow directly through to the additional District contribution amount, resulting in high volatility in that amount.

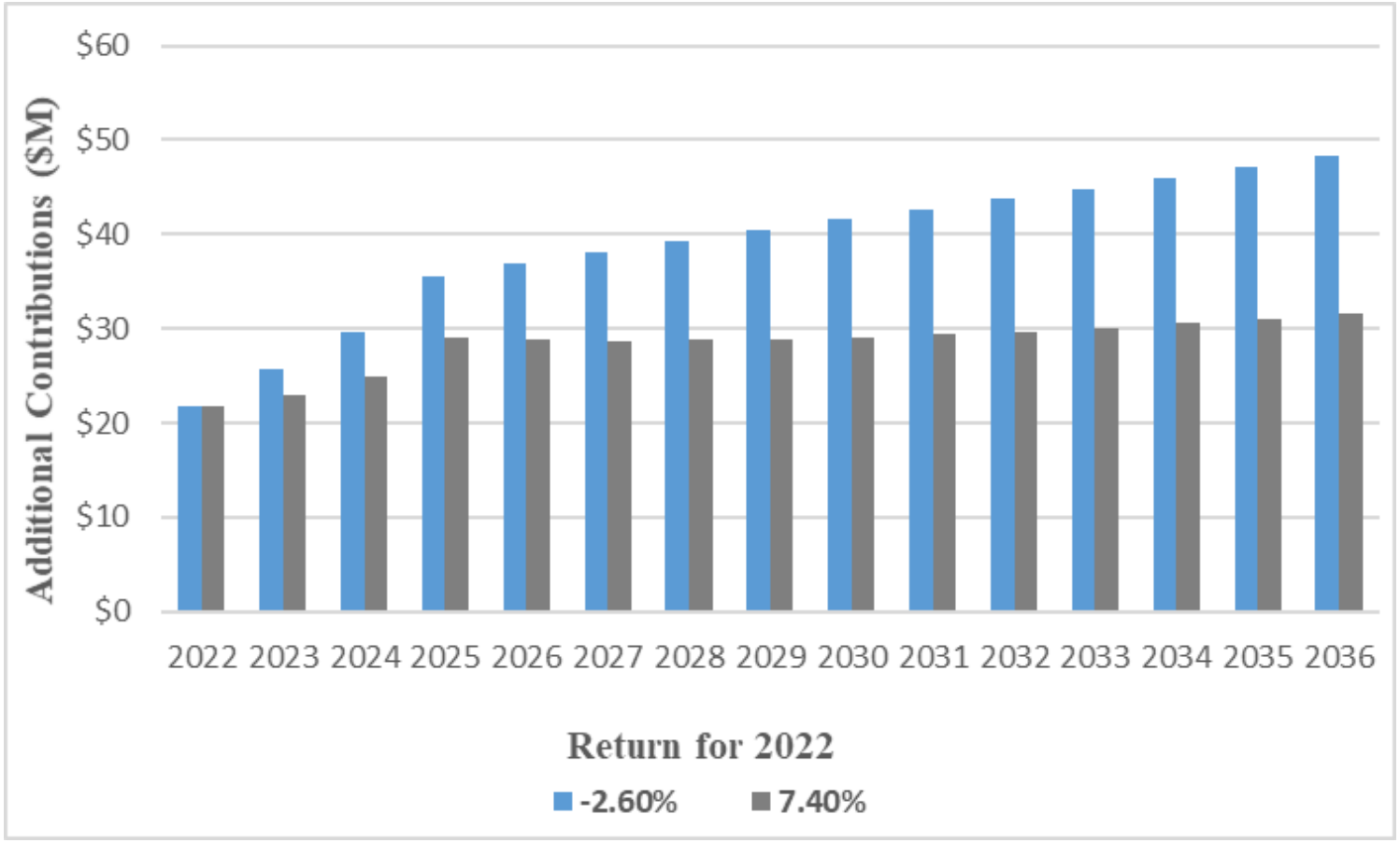
# Measure of Contribution Rate Volatility

- Asset Volatility Ratio is market value of assets divided by covered payroll

| Year | Assets | Payroll | Ratio |
|---|---|---|---|
| 2022 | $1,626 M | $381.9 M | 4.26 |

- Any shortfall in investment return has to be recouped via higher contributions
  - Assets are about 4.3 times payroll so a return of -2.60% (underperforming the investment return assumption by 10%) generates a loss of $163 million (43% of payroll)
  - Resulting increase in the actuarial contribution is 2.74% of payroll (without smoothing)
  - The impact of this experience is directly reflected in the additional District contribution amount (see next slide)

# Additional District Contribution
## Under Different 2022 Return Scenarios




**Projections assume all assumptions are met each year, including the step-down in the investment return Assumption over the next 3 years.**

# Comments

- Funded ratio increased slightly
  - Actuarial gain on smoothed value of assets
  - Net actuarial loss on liabilities
  - Assumption changes increased liabilities slightly
  - Deferred investment gain now exists
- District shortfall contribution for 2022 is 5.53% (or $21.8 million), down from 5.87% of payroll ($22.2M)
- Given funded status and phase in of assumption changes, additional District contributions are likely in the foreseeable future

# Actuarial Certification

We, Patrice A. Beckham, FSA, and Bryan K. Hoge, FSA, are consulting actuaries with Cavanaugh Macdonald Consulting, LLC. We are members of the American Academy of Actuaries, Fellows of the Society of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. We are available to answer any questions or provide additional information as needed.

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