EMBRACING CHANGE to position PERA for the future

Pension Review Commission

Ron Baker, Executive Director Amy C. McGarrity, Chief Investment Officer



Colorado Public Employees' Retirement Association

Founded in **1931** to address the retirement needs of the public sector, PERA is a retirement plan that serves as a **replacement for Social Security.**

Voluntary Investment Program

PERAPlus 401(k) and 457 Plans





Defined Benefit Plan

Stable benefit payments to over 121,000 retired public employees

Defined Contribution Plan

Choice available to State and Local Government employees

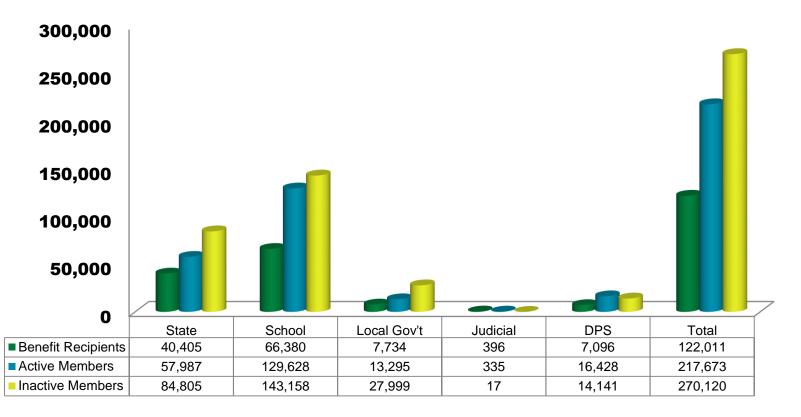
Health Benefits Program

Active and retired member coverage



PERA Membership April 30, 2019

Total: 609,804





2018 Comprehensive Annual Financial Report



Issued annually in June

Thorough reporting on financials, membership, investment performance, and funded status

Available online and delivered electronically to all legislators

- *CAFR* Snapshot
- 121,865 Retirees and beneficiaries receiving a benefit from PERA in 2018
- 58.8 years Average age at retirement

-3.5% Investment return in 2018

• 23 years Average years of service at retirement

SB 200: Major Provisions





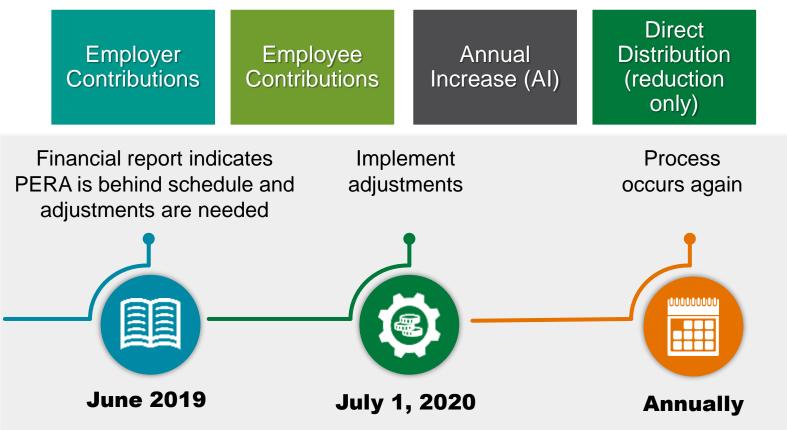
Align Contributions With Benefits



Automatic Adjustment Provision

Automatic Adjustment Provision

Four Components





Automatic Adjustment Provision

FULLY FUNDED BY 2047

0

Decrease AI percentage by up to 0.25% in one year, not to fall below 0.5%

Increase employer contributions by up to 0.5% in one year, not to exceed an additional 2%

Increase member contributions by up to 0.5% in one year, not to exceed an additional 2%



Increase the direct distribution from the State budget by up to \$20 million in one year, not to exceed \$225 million

SB 200 and the Amortization Period

| Division Trust Fund | Projected Years to Full Funding <i>without</i> Automatic Adjustment | Projected Years to Full Funding <i>with</i> Automatic Adjustment | | |
|------------------------|---|--|--|--|
| State | 33 | 28 | | |
| School | 41 | 34 | | |
| Local | 40 | 29 | | |
| Judicial | 24 | 21 | | |
| DPS | 20 | 17 | | |

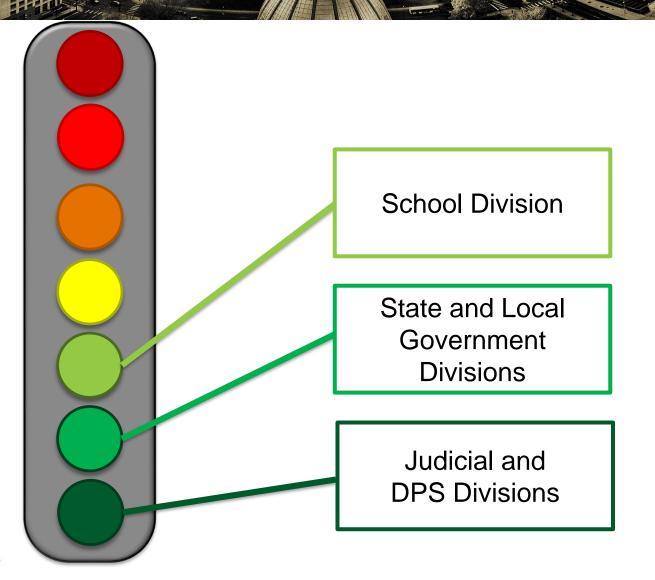


Signal Light Methodology

| Status | Definition | | | |
|-------------|--|--|--|--|
| Dark Green | Plan is anticipated to pay off current UAAL by 2041 – Consistent with Senate Bill 10-001 | | | |
| Green | Plan is anticipated to pay off current UAAL by 2048 – A 30-year funding period from 2018 | | | |
| Light Green | Plan is anticipated to pay off current UAAL by 2058 – A 40-year funding period from 2018 | | | |
| Yellow | Plan is anticipated to pay off current UAAL by 2068 – A 50-year funding period from 2018 | | | |
| Orange | Plan is anticipated to remain solvent and pay off current UAAL beyond 50 years from the most recent valuation date | | | |
| Red | Plan is anticipated to become insolvent after 2039 (after 20 years from the most recent valuation date) | | | |
| Dark Red | Plan is anticipated to become insolvent by 2039 (within 20 years from the most recent valuation date) | | | |

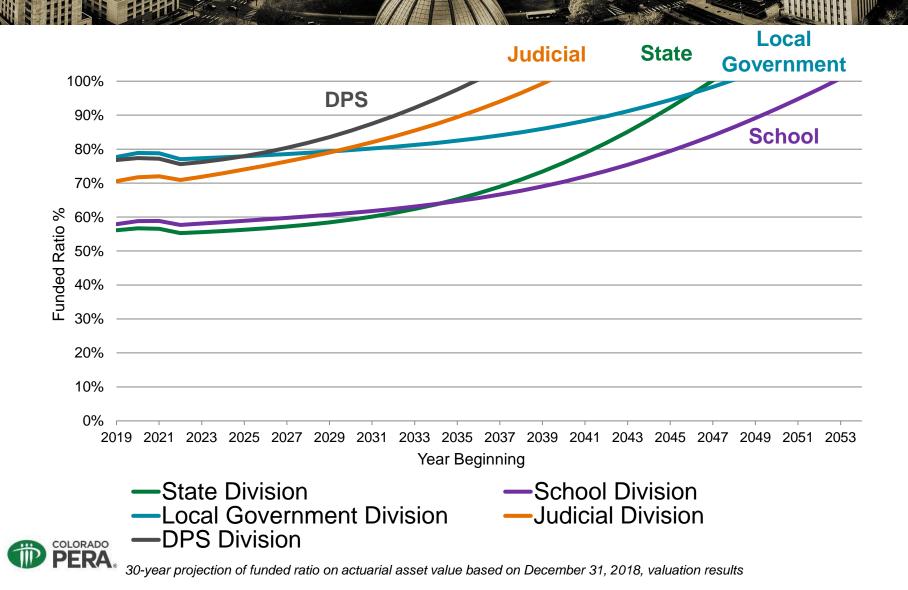
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Signal Light Reporting

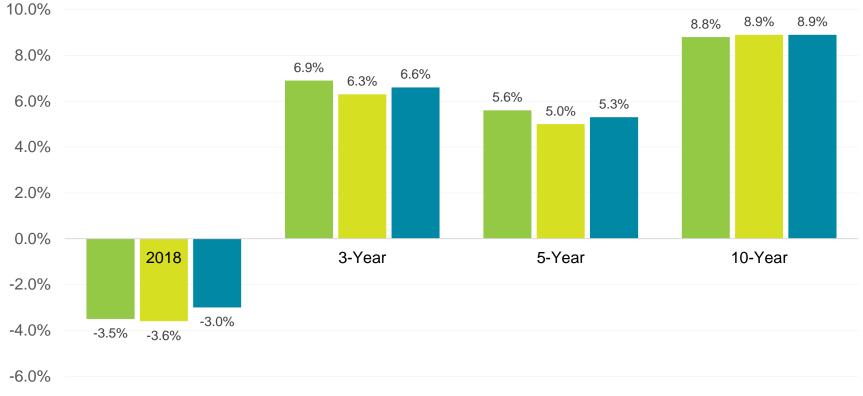




2018 Funding Levels



Total Fund Returns Compared to Benchmark and Median Plan



- PERA Total Portfolio
- Total Fund Policy Benchmark

Median Plan (BNY Mellon Performance and Risk Analytics' and Investment Metrics' Median Public Fund Universe)



Returns by Asset Class Compared to Benchmark (as of 12/31/18)

| | 2018 | 3-Year | 5-Year | 10-Year |
|---|--------|--------|--------|---------|
| PERA Total Portfolio | | 6.9% | 5.6% | 8.8% |
| Total Fund Policy Benchmark | (3.6%) | 6.3% | 5.0% | 8.9% |
| Median Plan (BNY Mellon Performance and Risk Analytics' and Investment Metrics' Median Public Fund Universe) | (3.0%) | 6.6% | 5.3% | 8.9% |
| Global Equity | (9.1%) | 7.2% | 5.0% | 10.5% |
| Global Equity Custom Benchmark | (9.9%) | 6.5% | 4.2% | 10.1% |
| Fixed Income | (0.1%) | 2.6% | 2.9% | 4.3% |
| Fixed Income Custom Benchmark | 0.1% | 2.7% | 2.8% | 4.1% |
| Private Equity | 7.6% | 12.5% | 10.7% | 12.4% |
| Private Equity Custom Benchmark | 10.2% | 12.1% | 11.4% | 16.5% |
| Real Estate | 11.1% | 10.7% | 12.5% | 8.1% |
| Real Estate Custom Benchmark | 7.9% | 7.8% | 9.9% | 6.7% |
| Opportunity Fund | 5.6% | 8.1% | 4.6% | 3.8% |
| Opportunity Fund Benchmark | 2.2% | 6.0% | 3.8% | 6.5% |
| Cash and Short-Term Investments | 2.0% | 1.2% | 0.7% | 0.6% |
| ICE BofAML U.S. 3-Month Treasury Bill Index | 1.9% | 1.0% | 0.6% | 0.4% |



Bullish Optimism Cedes to Bearish Realities

December 2017

At the beginning of 2018, strategists estimated the return on the S&P 500 in 2018 would be 9.0%

December 2018

The return (price) was actually -6.2%

Euro zone growth, eclipsing U.S. economy, set to be best in decade

US Senate approves sweeping tax overhaul FT.02-Dec-17

US stock market hits record high after Trump tax bill success Guardian, 04-Dec-17

> 'Sufficient Progress' Made on Phase One of Brexit Talks FX Street, 08-Nov-17

Dow Industrials Fall 508 Points as Investors Fret Over Growth

Individual Investors Try Not to Panic Over Big Market Gyrations "My friends are like: Oh my God, the world is ending"

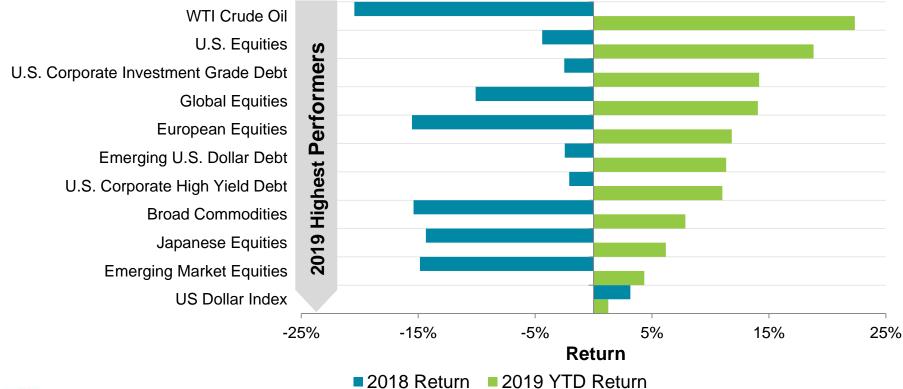
Stock Rout Puts Nasdaq in Bear Market

The Great Cheapening of 2018: Global Stock Valuations Now at Five-Year Lows



Market Performance: 2018 vs. 2019 YTD*

There has been a significant rebound in "risk assets" YTD

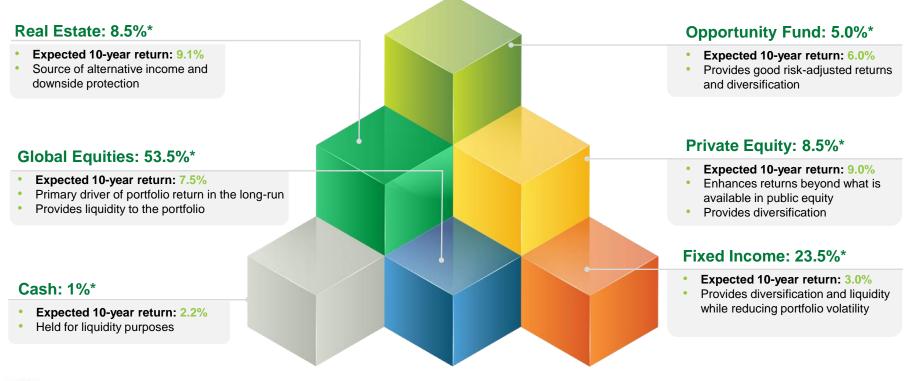




All returns are presented in unhedged USD terms *YTD performance as of 09/04/19

Colorado PERA's Asset Classes

- PERA's strategic asset allocation is the largest determinant of the long-term rate of return assumption (currently 7.25%)
- Each asset class fulfills a specific role (e.g. diversification, returns, liquidity, etc.) within the Total Fund
- PERA's Policy Benchmark is a weighted average of the individual asset class benchmarks
- All benchmarks are chosen by the PERA Board in consultation with their outside consultant (currently Aon)





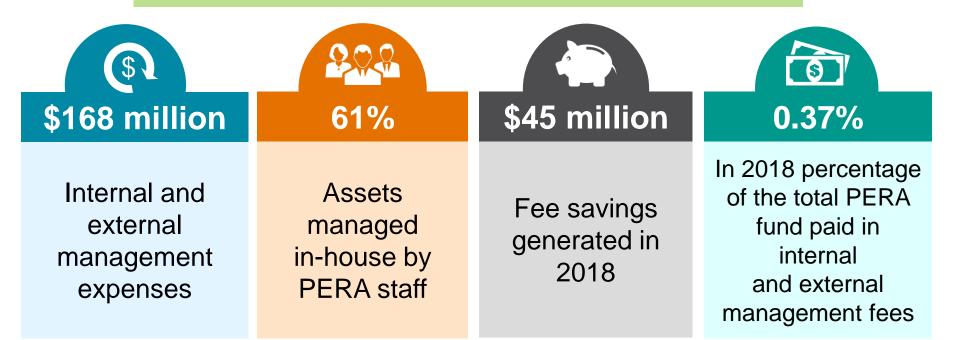
Note: Expected 10-year returns are provided by the Board's external consultant (Aon) as of 2015. PERA Board is currently undergoing an A/L study and reassessing long term expectations.

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Assets under management on behalf of PERA membership





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