



COLORADO PERA DEFINED BENEFIT PENSION PLAN FUNDING POLICY

ADOPTED MARCH 20, 2015,
LAST AMENDED NOVEMBER 16, 2018

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I. INTRODUCTION

The Colorado Public Employees' Retirement Association (PERA) maintains five pre-funded, hybrid defined benefit pension plans [i.e., State Division Trust Fund, School Division Trust Fund, Local Government Division Trust Fund, Judicial Division Trust Fund, and Denver Public Schools (DPS) Division Trust Fund]. Each defined benefit pension plan is funded through PERA-affiliated employer contributions, member contributions, and the investment earnings resulting from those contributions. The fixed contribution rate at which each division's employers and members contribute is determined by the Colorado General Assembly and defined within the statutes governing PERA.

The purposes of this funding policy are to state the overall funding goals and annual actuarial metrics and to guide the PERA Board of Trustees (Board) when considering whether to pursue or support proposed contribution and benefit legislation. The policy also includes a brief list of governance responsibilities regarding the commissioning, collection, and review of actuarial information, as described in the Board's *Governance Manual*.

PERA also maintains two pre-funded defined benefit retiree health care subsidy plans (i.e., Health Care Trust Fund and DPS Health Care Trust Fund), classified as other postemployment benefit (OPEB) plans. On January 19, 2018, the Board approved a separate OPEB funding policy with regard to these plans recognizing the adoption and implementation of the Governmental Accounting Standards Board (GASB) Statement No. 74, applicable to OPEB.

It is the intention of the Board that this funding policy be considered a working document, reviewed periodically and, as necessary, altered in the future through formal action of the Board. The final page of this document contains the review and revision/adoption history pertaining to the funding policy of the PERA defined benefit pension plans.

II. BACKGROUND

In response to the unfavorable investment market of 2008, and in addition to the funding policy adopted in November 2007, the Board set the following guiding principles in 2009 in the development of a comprehensive package to maintain long-term sustainability of the pension plans:

- » Shared responsibility among members, retirees, and employers;
- » Intergenerational equity;
- » Preservation of the defined benefit plan;
- » Preservation of portability through the maintenance of existing benefit structures for the different divisions; and
- » Development of recommendations that would have little-to-no short-term impact on member behavior.

In 2009 and 2010, these guiding principles benefited the Board and all the stakeholders associated with the pension plan as solutions to the immediate funding situation were explored. The Board constructed a series of plan provision changes, enlisting the philosophy of the guiding principles—under the umbrella of shared responsibility—and communicated their recommendations to the General Assembly. Senate Bill 10-001 was the culmination of all the provisional and contribution changes that were to set PERA's course toward sustainability. Senate Bill 10-001 also contained the following funding and annual increase requirements, which now are embedded in Colorado Statute and will be implemented regardless of the Board's pension funding policy:

- » Per C.R.S. § 24-51-411(8), and § 24-51-411(9), the AED and the SAED are adjusted based on the year-end actuarial funded ratio within a particular division;
 - If a division trust fund's actuarial funded ratio;
 - Reaches 103 percent, a decrease in the AED and SAED is mandated, and,
 - Subsequently falls below 90 percent, an increase is mandated.

- For the Local Government and Judicial Divisions, if the actuarial funded ratio reaches 90 percent and subsequently falls below 90 percent, an increase in the AED and SAED is mandated.
 - Increases in AED and SAED cannot exceed the statutory maximum allowable limitation.
- » Per C.R.S. § 24-51-1009.5, if the combined pension divisions' trust fund actuarial funded ratio;
- Reaches 103 percent, the upper limit of the annual increase shall be increased by one-quarter of one percent, and,
 - Subsequently falls below 90 percent, the upper limit of the annual increase shall be decreased by one-quarter of one percent.

These statutory elements, in addition to the current schedule of employer contribution rates, assist in the ongoing balance of shared responsibility. It is not the intention of this Board, through the development of this funding policy, to undermine or circumvent the work accomplished by Senate Bill 10-001, but rather to ensure continued fiduciary commitment through sound governance practices and recognition of these statutory funding policies.

The combined funding policy regarding PERA's pension and OPEB plans, adopted by the Board in November 2007, was in force with regard to the pension plans through December 30, 2014. On March 20, 2015, the Board approved a separate pension funding policy with regard to these plans, which reflects the guiding principles listed above. This pension funding policy is effective with the December 31, 2014 actuarial valuation, recognizes the adoption and implementation of the GASB Statement No. 67, applicable to pensions, and has been adopted and updated as indicated on the last page of the document.

This document is revised as of November 16, 2018, to reflect the Board's funding plan coming out of the September 2017 planning meeting with the intent to 1) propose pension reforms that would fully fund each of the five division trust funds within a 30-year period from first recognition, and 2) reset the 30-year closed amortization period for purposes of determining the Actuarially Determined Contribution (ADC) to mirror the funding period of the proposed changes, contingent on the passage

of pension reform legislation. Given the June 4, 2018, enactment of Senate Bill 18-200, the Board was unable to affect the reinitialization of the 30-year period prior to finalization of the December 31, 2017, funding actuarial valuation results. Thus, as of the December 31, 2018, funding actuarial valuation, the 30-year closed amortization period is effective for amortizing the total unfunded actuarial accrued liability (UAAL) for each division trust fund as of December 31, 2017, in alignment with the initial recognition of the Senate Bill 18-200 pension forms. This action allows for a more accurate analysis of the "statutory contribution rate versus ADC rate" necessary to determine if the auto-adjust mechanism, also enacted through Senate Bill 18-200, is triggered for the following period.

III. FUNDING GOALS

- » Preservation of the **defined benefit plan structure** of providing lifetime retirement benefits to the employees of PERA-affiliated employers, reflecting the fact that PERA members are not covered under Social Security.
- » Demonstration of **transparency and accountability** through the continued maintenance of a defined benefit pension plan funding policy for the stakeholders of PERA.
- » **Achievement of a combined divisions' trust fund actuarial funded ratio greater than or equal to 110%.** Once the 110% combined funded ratio is achieved, following (1) the complete discontinuance of AED and SAED contributions, and (2) the restoration of the annual increase to pre-2010 levels pursuant to C.R.S. § 24-51-1009.5, the Board will consider and/or support the following actions, as ordered, as long as the funded ratio, either combined or individual by division, does not fall below 100% after consideration of the proposed change:
 - Examination and possible action of de-risking the total trust fund, including all divisions
 - Reduction in the base contribution rate(s)
 - Adoption of a benefit enhancement, beyond restoration of the annual increase as described above.

If the 110% combined funded ratio benchmark is attained through the assistance of certain funding arrangements where assets, outside of statutory contributions, are added to the plans, and results in additional tax-payer obligation, the payment method and duration of this debt should be considered prior to any supportive action taken regarding benefit enhancements.

- » Dedication to the balance between:
 - **Contribution rate stability**—keeping contributions relatively stable over time, and
 - **Intergenerational equity**—allocating costs over the members’ period of active service.
- » Dedication to the **systematic reduction of the UAAL**, subject to the required action by the state legislature as described in C.R.S. § 24-51-411(8), § 24-51-411(9), and § 24-51-1009.5, and as briefly summarized above in Section II.
- » Recognition that within a multiple-employer cost-sharing defined benefit plan there are **beneficial elements of pooled risk**, both in the accrual of plan liabilities, recognizing actuarial gains and loss by division, rather than by employer; and in the accumulation of plan assets through the engagement of an appropriate level of asset risk management.

IV. ANNUAL ACTUARIAL METRICS

Below is a list of actuarial metrics to be assessed on an **annual basis as of the actuarial valuation date**. The Board recognizes that a single year’s results may not be indicative of long-term trends and projected results.

- » **Funded ratios**—Calculate and review by division:
 - The actuarial funded ratio based on the actuarial value of plan assets divided by the defined benefit pension plan’s actuarial accrued liability (AAL), and
 - The market value funded ratio based on the market value of plan assets divided by the defined benefit pension plan’s AAL.

- Funding period—To be determined for each division with respect to the applicable contribution rates. A funding period is the amortization period required to pay off that division’s UAAL considering the resources available. Funding periods for each division will be determined in the annual actuarial valuation in relationship to both
 - Statutory contribution rates, and
 - ADC rates.
- » **Contribution rate comparison**—
 - Calculate and review by division.
- » **Actuarial Projections**—
 - Perform and review, by division,
 - Actuarial projections considering appropriate benefit provisions, salary and demographic data, actuarial assumptions, membership growth, and statutory contribution rates in order to determine the sustainability of each division under their benefit provisions and statutory contribution rate structure.
 - Projection modeling that allows for the testing of projection results under various economic and demographic stress conditions.

V. FUNDING VALUATION ELEMENTS

Annually, the Board’s actuary will perform an actuarial valuation for funding purposes, and calculate ADC rates against which to compare contribution rates mandated under State statute. The ADC will be the sum of a payment based on normal cost and a payment on the UAAL. The normal cost and the amount of payment on the UAAL are determined by the following three major components of a funding valuation:

- » **Actuarial Cost Method:** This component determines the attribution method upon which the cost/liability of the retirement benefits are allocated to a given period, defining the normal cost or annual accrual rate associated with the projected benefits.

- The Entry Age Normal Cost Method (EAN), as used for PERA's annual actuarial valuation purposes, is to be used for the determination of the normal cost rate and the actuarial accrued liability for purposes of calculating the ADC.
- Under this method, normal cost is calculated using benefits based on projected service and salary at retirement and is allocated over an individual's career as a level percent of payroll. Because EAN normal cost rates are level for each participant, the normal cost pattern for the entire plan under EAN is more stable in the face of demographic shifts in the workforce. It is this normal cost stability that makes the EAN method the preferred funding method for the majority of public defined benefit pension plans.
- The amortization payment will be determined on a level percentage of pay basis.
- The length of the amortization periods will be as follows:
 - Existing UAAL on December 31, 2017—30 years.
 - Any increase (or decrease) in the UAAL existing as of December 31, 2017—remaining period of the initial 30-year period from the date of the valuation.
 - Annual future actuarial experience gains and losses—30 years from the date of the valuation.
 - Future assumption changes—30 years from the date of the valuation.
 - Future benefit enhancements/reductions—the number of years, as determined by the Board, to represent the anticipated duration of payment of the enhancement or, if a reduction, duration of the benefit to the plan. This determination will be based on the nature of the benefit change and the demographics of the membership group affected by the change, not to exceed 25 years from the date of the valuation.

ASSET VALUATION METHOD

- » **Asset Valuation Method:** This component dictates the method by which the asset value, used in the determination of the UAAL, is determined, which could be a market value or a smoothed actuarial value of trust assets.
 - Because investment markets are volatile and defined benefit pension plans typically have long investment horizons, application of an asset-smoothing technique can be an effective tool to manage contribution volatility and provide a more consistent measure of funding over time. Asset-smoothing methods reduce the effect of short-term market volatility on contributions, while still tracking the overall movement of the market value of plan assets, by recognizing the effects of investment gains and losses over a period of years.
 - The asset valuation method to be used shall be a four-year *smoothed* market value of assets. The difference between actual market value investment returns and the expected actuarial investment returns is recognized equally over a four-year period.
- » **Amortization Method:** This component prescribes, in terms of duration and pattern, the systematic manner in which the difference between the actuarial accrued liability and the actuarial value of assets is reduced.
 - Once established for any component of the UAAL, the amortization period for that component will be closed and will decrease by one year annually.
 - If any future annual actuarial valuation indicates a division has a negative UAAL, the ADC shall be set equal to the Normal Cost until such time as the funded ratio equals or exceeds 120%. At that time, the ADC shall be equal to the Normal Cost less an amount equal to 15 year amortization of the portion of the negative UAAL above the 120% funded ratio.
 - The target amortization period noted above regarding new UAAL will be applied for funding benchmark and RSI reporting purposes. Alternative ADCs will be determined by division, by applying the layered amortization methodology as described above, using a 25-year closed period, a 20-year closed period, and a 15-year closed period, in lieu of the 30-year period, for amortization of new UAAL. These comparatives are to appear in the Comprehensive Annual Financial Report (CAFR) as a demonstration of the transparency and accountability funding goal delineated in Section III of this document.

In conjunction with the three major components discussed above, a number of actuarial assumptions are used to develop the annual actuarial metrics, as well as the ADC rates, and are described in detail in the annual actuarial valuation report. The actuarial assumptions are derived and proposed by the Board's actuary and adopted by the PERA Board of Trustees in conformity with the *Actuarial Standards of Practice* issued by the Actuarial Standards Board. The assumptions represent the Board's best estimate of anticipated experience under the benefit provisions of PERA and are intended to be long-term in nature. In the development of actuarial assumptions, the Board considers not only past experience but also trends, external economic forces, and future demographic and economic expectations.

- » **Actuarial Assumptions**—Actuarial assumptions are generally grouped into two major categories:
 - **Demographic assumptions**, which include rates of termination, retirement, disability, mortality, etc., and
 - **Economic assumptions**, which include investment return, salary increase, payroll growth, and inflation, etc.

Actuarial assumptions do not impact the total cost of the plan (benefit payments and expenses), but rather the timing of prescribed contributions. To the extent that actuarial experience deviates from the assumptions, and actual contributions deviate from projected, experience gains and losses will occur. These gains (or losses) then serve to reduce (or increase) the projected future contributions necessary to achieve or sustain a certain actuarial standard. It is in this vein that the ADC rates may help indicate if the statutory contribution rates are adequate to meet the future cost requirements of the plan, although the ADC calculated in valuation results has limitations due to changing costs over time. Considering various benefit tiers currently in effect within the Colorado PERA defined benefit pension plan, the results of the actuarial projections will be the best indication of the adequacy of the statutorily prescribed pension contribution schedule.

VI. GOVERNANCE POLICY/PROCESSES

As delineated in the *PERA Governance Manual*, below is a list of specific actuarial and/or funding-related studies, the frequency at which they should be commissioned/requested by the Board, and additional responsibilities relating to the studies:

- » **Actuarial Valuation** (perform annually)—The Board is responsible for reviewing PERA's annual actuarial valuation report; and submitting a summary report to the Legislative Audit Committee and the Joint Budget Committee of the General Assembly, together with any recommendations concerning such liabilities that have accrued. In addition, the Board, in consultation with their retained actuary, will provide recommendations to the Colorado General Assembly regarding any necessary adjustments to the statutory employer and member contribution rates.
- » **Experience Analysis** (perform periodically, historically performed approximately every four years)—The Board is responsible for ensuring that an experience analysis is performed as prescribed, for reviewing the results of that study, and for approving the actuarial assumptions and methodologies to be used for all actuarial purposes relating to the defined benefit pension and OPEB plans.
- » **Actuarial Audit** (perform every five years, or the appointment of a new actuarial firm will satisfy requirement)—The Board is responsible for ensuring that an actuarial audit is performed as prescribed and for reviewing the results of that audit.
- » **Asset Liability Study** (perform at least every three to five years, or more frequently if necessary)—The Board is responsible for ensuring that a study of the relationship between the defined benefit trust assets and liabilities is performed as prescribed and for reviewing the results of that study.
- » **Review of the Defined Benefit Pension Plan Funding Policy and the Defined Benefit OPEB Plan Funding Policy** (perform periodically)—The Board is responsible for the periodic review of the funding policies applicable to the defined benefit pension and OPEB plans, as is deemed necessary.

VII. GLOSSARY OF FUNDING POLICY TERMS

- » **Actuarial Accrued Liability (AAL):** The AAL is the value at a particular point in time of all past normal costs. This is the amount of assets the plan would have today if the current plan provisions, actuarial assumptions, and participant data had always been in effect, contributions equal to the normal cost had been made, and all actuarial assumptions had been met. For each of the PERA defined benefit plans, the AAL includes the balance in the affiliated annual increase reserve.
 - » **Actuarial Cost Method:** The actuarial cost method allocates a portion of the total cost (present value of benefits) to each year of service, both past service and future service.
 - » **Annual Increase Reserve (AIR):** As of January 1, 2007, an AIR was created for each division trust fund for the purpose of funding annual increases for PERA benefit structure members hired on or after January 1, 2007. A portion of the employer contribution, equal to one percent of the salaries of affected members, is accumulated in the AIR to be paid out in annual increases each July 1, to the extent affordable. Although invested with the affiliated division assets, the reserve balances are accounted for separately.
 - » **Asset Values:** For each of the PERA defined benefit plans, the actuarial and market asset values include the balance in the affiliated AIR.
 - **Actuarial Value of Assets (AVA):** The AVA is the market value of assets less the deferred investment gains or losses not yet recognized by the asset smoothing method.
 - **Market Value of Assets (MVA):** The MVA is the fair value of assets of the plan as reported in the plan's audited financial statements.
 - » **Entry Age Normal Actuarial Cost Method (EAN):** The EAN actuarial cost method is a funding method that calculates the normal cost as a level percentage of pay or level dollar amount over the working lifetime of the plan's members.
 - » **Funded Ratio:** The funded ratio is the ratio of the plan assets to the plan's actuarial accrued liabilities.
 - **Actuarial Value Funded Ratio:** is the ratio of the AVA to the AAL.
 - **Market Value Funded Ratio:** is the ratio of the MVA to the AAL.
 - » **Normal Cost:** The normal cost is the cost allocated under the actuarial cost method to each year of active member service.
 - » **Present Value of Benefits (PVB) or total cost:** The PVB is the value at a particular point in time of all projected future benefit payments for current plan members, plus the balance in the affiliated AIR. The future benefit payments and the value of those payments are determined using actuarial assumptions regarding future events. Examples of these assumptions are estimates of retirement and termination patterns, salary increases, investment returns, etc.
 - » **Surplus:** A surplus refers to the positive difference, if any, between the AVA and the AAL.
 - » **Unfunded Actuarial Accrued Liability (UAAL):** The UAAL is the portion of the AAL that is not currently covered by the AVA. It is the positive difference between the AAL and the AVA.
 - » **Valuation Date:** The valuation date is the annual date upon which an actuarial valuation is performed; meaning that the trust assets and liabilities of the plan are valued as of that date. PERA's annual valuation date is December 31st.
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Adopted: March 20, 2015

Amended: January 19, 2018

Amended: November 16, 2018