# Proactive Pension Management

## An Elected Official's Guide to Variable Benefit and Contribution Arrangements

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Center for State & Local Government Excellence

AARP Real Possibilities

# Contents



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# Proactive Pension Management: An Elected Official's Guide to Variable Benefit and Contribution Arrangements

## Introduction

Public pension systems often require fine-tuning to ensure stable finances. Unfortunately, reacting to every change in demographic trends or market conditions would place a significant burden on the available time of legislators and their staff, while also impacting the predictability of public pension benefits and their value in recruiting and retaining a skilled workforce. One strategy for meeting those needs in a proactive way is to implement variable benefit and/or variable contribution arrangements. Under such arrangements, a pre-set formula drives occasional adjustments in the plan to maintain long-term stability.

This report discusses how such variable arrangements can add flexibility, risk and gain sharing, and potential benefits to the plans and beneficiaries alike. A topic overview is presented, followed by a series of case studies and additional resources. For those seeking an introduction to the topic of public pension benefits, The Center for State and Local Government Excellence (SLGE) and AARP collaborated on [*Public Pensions: A Guide for Elected Officials.*] *Proactive Pension Management* builds on that earlier document.

## Background

Since the 2008 recession, many retirement system administrators and legislatures have been grappling with lower pension plan funded ratios, investment returns that are volatile and projected to be lower than they have been in the past, and related increases or decreases in employer and employee benefit contributions. Many states have also passed legislation amending the terms under which a retired employee may return to the workforce, either with or without the ability to receive pension benefits during that period of renewed employment.[1] In balancing various policy choices, elected officials play an important role in contributing to the long-term financial sustainability of pension funds, while also maintaining the role pension benefits play in the recruitment, retention, and retirement of a talented and diverse public workforce and keeping promises to workers and retirees.

By instituting pension design changes, many states have stabilized or improved their pension funds' financial condition. The challenge ahead will be how they react to future financial pressures and workforce shifts—whether via a considered and forward-looking strategy or more reactively as crises arise.

The most prevalent forms of public retirement benefits are defined benefit pensions and defined contribution plans, or a combination of the two.

*This report was written by Gerald Young and Joshua Franzel, PhD, from the Center for State and Local Government Excellence, and Paula Sanford, PhD, from the Carl Vinson Institute of Government at the University of Georgia.We are grateful to Barrie Tabin Berger and Thomas Nicholls, AARP, for their input and advice, Keith Brainard of the National Association of State Retirement Administrators (NASRA) for his review, Anne Phelan for copy editing, and Rob Maguire Designs.*

**Table 1.** *Key Aspects of the Benefit Types*

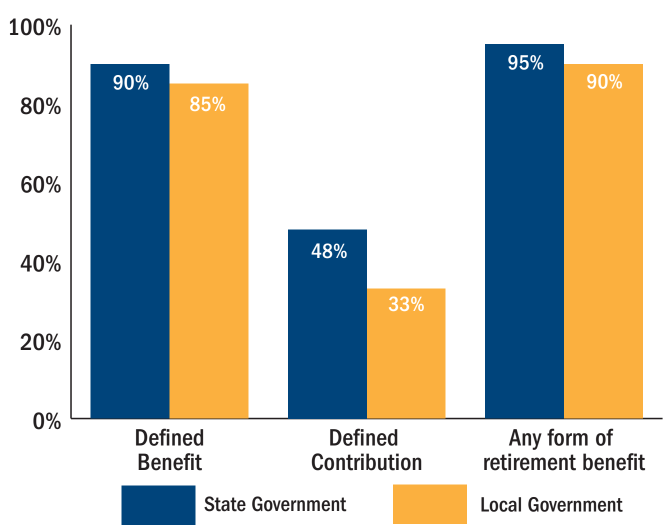
| | **Defined Benefit** (Traditional pension) | **Defined Contribution** ("401k-style" benefit) |
|---|---|---|
| Employer and Employee Contributions | Actuarially determined annual employer contributions coupled with employee contributions that typically are fixed as a percentage of pay. | Employer and employee contributions made to individual employee accounts at a fixed percentage of pay, sometimes with employers providing a full or partial match to employee contributions. |
| Value of Benefit | Benefits payable at retirement are based on a formula that considers the employee's age, salary, and years of service. Gains/losses on investments do not impact the level of benefits provided to retiree. | The account balance at and throughout retirement determines level of retirement income available. |
| Investment responsibility | Employer, through pension fund, is responsible for investing and managing plan assets. | Employees are responsible for making investing decisions and managing their own retirement plan assets. |
| Risk | The pension plan and government sponsor bear the risk of investment loss and long-term effects of insufficient employer contributions. | Investment risk is borne by the employee/retiree. |

In the United States, defined benefit plans are much more common among governments.[2] While the structures outlined in Figure 1 are the most common, there is a wide variety within each of these types of retirement plans, including hybrid plans and cash balance plans (that offer both defined benefit and defined contribution elements), variable benefit structures, and variable contribution structures.

In varying either the benefit or contribution schedule, the goal is typically to impact various key pension fund metrics, such as the funded ratio, amortization period, or plan cost. A brief glossary follows in Table 2 (next page).

Variable benefit or contribution structures allow for adjustments in the benefit or contribution based on predetermined formulas, rather than postponing action until some later legislative correction. **This is intended to bolster the plan's sustainability and improve predictability for retirees.**

**Figure 1.** *Retirement Benefits: Availability to Employees of State and Local Government*




*Source*: Bureau of Labor Statistics, National Compensation Survey, March 2018.
*NOTE*: Some jurisdictions may provide both a form of DB and DC plan, or some hybrid, and as a result, the columns at the right do not represent a sum of the other two.

## Variable Benefits and Contributions

Unlike benefit structures that provide a calculated, set base benefit with fixed adjustments to reflect cost-of-living increases, many plans across the country—both defined benefit and hybrid plans[3]—have features in place that adjust some combination of the following components for participants, depending on plan funded status or investment returns: base benefit, cost-of-living adjustment, or employee contribution levels (which may be capped). These changes may be applied automatically once certain thresholds are crossed, or through retirement board action, or both.

With the aggregate funding level at 72 percent, compared to 87 percent in 2007, and employer-required contributions close to 17 percent of payrolls, up from 10 percent in 2007, hybrid-like pension plans that make use of the variable

**Table 2.** *Key definitions*

| Key term | Definition |
|---|---|
| Annuity | An annual benefit to be paid to a retired employee from their pension plan. This is typically a fixed amount, but may be governed by some of the variable benefit provisions discussed in this report. |
| Normal Cost | The share of an employee's projected lifetime benefits that is allocated to the current year. |
| Actuarially Determined Employer Contribution (ADEC) | This is the employer contribution necessary to fund the pension's annual Normal Cost and to amortize the unfunded accrued liability over time. First introduced by the Government Accounting Standards Board in 2013, the ADEC serves as a de facto standard of whether or not an employer is adequately funding its pension plan. |
| Annual Required Contribution (ARC) | The ARC is practically identical to the ADEC and served as the de facto standard for pension funding adequacy from its introduction, in the 1990s, until 2013. |
| Actuarial Value of Assets; Asset Smoothing | The asset value used for valuation purposes (i.e., calculating the reported funded ratio and required contributions). Public pensions recognize in their actuarial value of assets calculation investment gains and losses over varying time periods, most commonly five years. The purpose for using an actuarial value of assets rather than a market value of assets is to reduce or "smooth out" the effect of market volatility on the plan's cost and funding level. |
| Automatic Escalation | A provision under which employee contributions to a defined contribution supplemental retirement plan increase according to a pre-set schedule. The employee may opt out of this provision if they choose. As implemented in Virginia, the employee's contribution under automatic escalation also triggers an employer match. |
| Cost-of-Living Adjustment (COLA) | An adjustment to retirement benefits to offset the impacts of inflation. Such adjustments may be provided on an ad hoc basis or implemented via an automatic formula. In the case studies below, most COLAs have a compounding impact, applying a percentage increase to both the base benefit and any subsequent adjustments. (See also separate discussion in the Utah case study.) |
| Discount Rate | The discount rate is used to calculate the present value of future benefits. For most public pension plans, the discount rate is the same as the plan's assumed rate of investment return. |
| Funded Ratio | The proportion of the actuarial value of assets to the plan's actuarial accrued liability. This is one indicator of the plan's ability to pay promised benefits. |
| Highest Annual Salary or Final Average Compensation | The base amount on which a pension benefit is calculated is the highest or final salary of the employee. This is typically determined by an average of a designated number of years of employment. |
| Percentage of ADEC Paid | The actuarially determined contribution may or may not be paid in a particular year. The percentage paid reflects the extent to which annual contributions align with the projected path to fully cover fund liabilities. |
| Rule of 85 (or similar number) | A standard used by some public pension plans to determine a participant's eligibility for retirement. The rule requires that the sum of the employee's age plus their years of service must equal or exceed that designated number to be eligible to retire (except under early or phased retirement provisions). |
| Variable Benefit | A provision that adjusts retirees' benefits, often according to a predetermined formula, based on investment returns, funded ratio, cost of living, or actuarial determinations. |
| Variable Contribution | A provision that adjusts the employer and/or employee contribution, often according to a predetermined formula, in order to maintain a certain funded ratio or meet other plan goals. |
| Vesting | The number of years of participation in a pension plan required for an employee to qualify for benefits at retirement. Regardless of vesting, employees may still need to reach a designated minimum age, a number of years of service, or some combination before they may qualify to retire (see Rule of 85). |
| Years of Service | The number of years the employee has worked for employers covered by the pension plan. This typically serves as a multiplier in calculating pension benefits. |

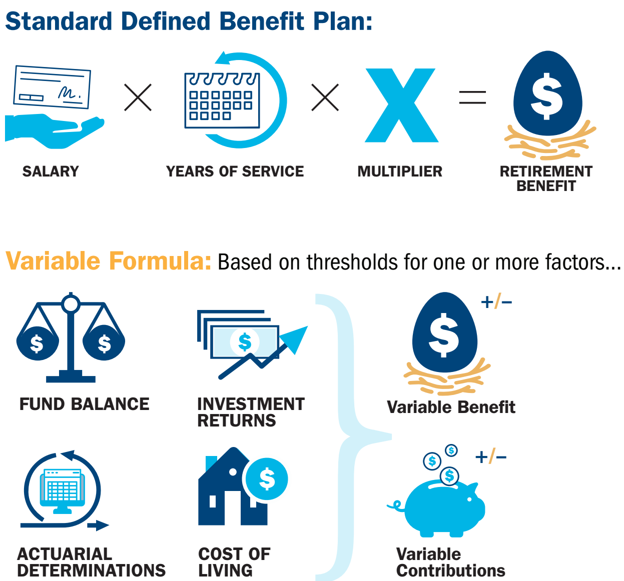
For additional background, see "Public Plans Data," https://publicplansdata.org/resources/terms-concepts/.

arrangement are one approach being considered.[4] Some of these plan designs are not new, with certain plans having used them for 30 or more years (as in Wisconsin), while others were adopted post-recession or more recently (as in Colorado).

As can be seen in the following set of case studies, there is no one correct or standard approach to implementing these variable arrangements, which can be applied to a wide range of retirement plan designs across the Unites States. These may include:

- A primary, stand-alone defined benefit plan
- A defined benefit/defined contribution or cash balance hybrid plan
- Mitigation of employer risk when plan funding and related investment performance decline
- Reductions in employee contributions and benefit increases in times of increased plan funding positions
- Contribution level changes dictated by actuarial calculations alone
- Stipulations that benefit or contribution changes still require approval by the legislature or plan administrators.
- Caps on the extent to which benefits or contributions may be altered.

**Figure 2.** *Standard vs. Variable Pension Structures*

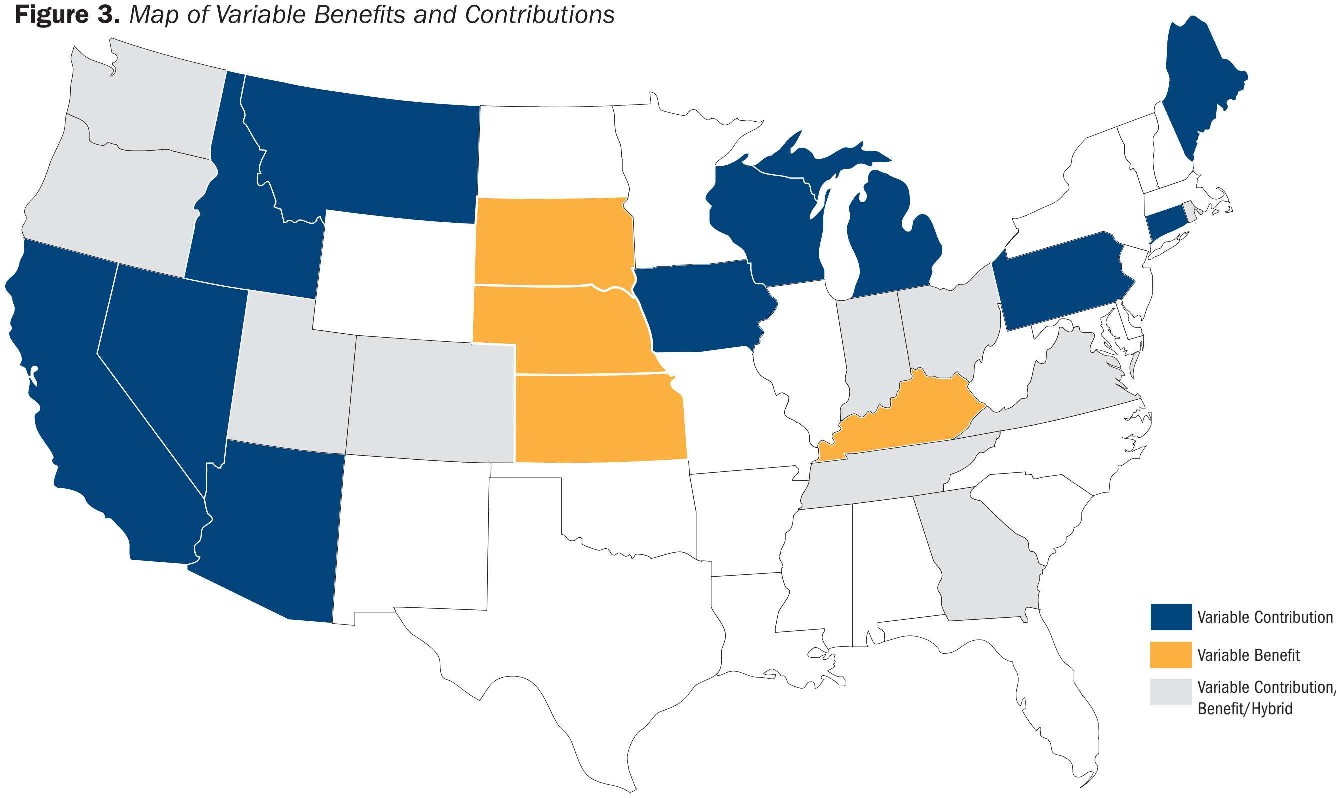



Any current and future implementation of these approaches should reflect the risk preferences of plan sponsors and employees alike, and the important workforce management roles of retirement plans should remain foremost in pension policy conversations.

In addition to the six case studies explored in this report, several other states have also implemented variable benefit or variable contribution arrangements. While some of these have been in place for some time, others are newer. For example, the Maine Public Employees Retirement System's variable contribution arrangement has an effective date of FY2020.

The Center for State and Local Government Excellence does not recommend particular pension funding structures, but rather provides these case studies as a resource to those who may be considering the opportunities presented by adding variable components to their benefit or contribution management.

**Figure 3.** *Map of Variable Benefits and Contributions*




*States shown in gray may have a combination of variable contribution, variable benefit, and defined benefit/defined contribution hybrid plans. Excluded from this map are states that only have a variable contribution or benefit for special purpose pension funds within the state, such as a police, fire, or teacher retirement fund.*

# Case Studies

*Case studies are presented in order of their variable provisions' initial effective date. NOTE: For all case studies but Colorado, covered employees also participate in Social Security.*

## Wisconsin Retirement System[5]

### Primary Defined Benefit Plan[6]

Multi-employer plan including the state, local governments, and school districts

| | |
|---|---|
| **Total Membership:** | 632,802 (November 28, 2018) |
| **Actuarial Value of Assets:** | $100.8 billion (FY 2017) |
| **Actuarial Funded Ratio:** | 100% (FY 2017) |
| **Discount Rate:** | 7.0% for active employees and 5.0% for retirees |
| **Normal Retirement Age:** | 65, or 57 with 30 years of service (general participants) |
| **Vesting:** | 5 years |
| **Standard Pension Benefit:** | 3-year average of highest earnings x years of service x 1.6%.[7] Retirement benefit is limited to 70% of average salary. |
| **Effective Date:** | Variable provisions were implemented with merger of prior retirement plans to create Wisconsin Retirement System in 1982. |

Since the 1980s, the vast majority of public employees in the State of Wisconsin have received a base or "floor" annuity with a variable component that allows for additions and, if needed, subtractions, but never below the base annuity benefit. This variable portion to the retirement benefit is used in lieu of traditional guaranteed cost-of-living increases, which are not specifically authorized. The retirement plan's design stability and consistent status as being fully funded (or nearly so) even following the 2008 recession is a testament to its success. That success can be attributed to three main components: flexibility with contributions, post-retirement adjustments, and funding discipline by paying actuarially determined contributions in full.

Since the plan's inception, employers have paid **variable contribution rates** to ensure the actuarially determined employer contribution (ADEC) was met while employees paid a fixed rate. For general employees this equaled 5.0 percent of pay.[8] In 2011 this structure changed, as employees began equally sharing with employers (50-50 split) the required contributions, which by necessity meant they also had variable contribution rates. For 2019, the combined contribution rate was 13.1 percent of payroll. The assumed discount rate for investments in which annual contributions are partially determined is 7.0 percent. To limit variance in the contribution rates from year to year, the plan uses a five-year asset-smoothing method to determine the ADEC.

Retirees also share investment risk through the variable component of their annuities. At retirement, employees receive their floor annuity, which is determined using a defined benefit formula or an annuity calculated from the balance of their accounts. Beyond this base benefit, retirees can receive **variable benefits** depending on the retirement fund's investment performance and other considerations, like changes in mortality. If investments perform above the assumed discount rate, then retirees can receive additional money as part of their annuity. If investments perform poorly, retirees could have those additional funds taken away; however, their benefit can never go below their initial, base annuity. Again, to limit wide variations in the variable annuity, asset smoothing is applied.

From 1982 to 2008, WRS retirees received 26 annual increases to their variable annuities (in 2002 there was no change), but in 2009 that annuity was decreased for the first time. Even though the Department of Employee Trust Funds (ETF), which manages the WRS, had always and regularly explained that the variable annuity could decrease, the reduction in 2009 surprised many retirees. In response, ETF revamped its messages and information tools about the variable annuity to stress that it could go down. ETF also communicates to employees that because of the variable annuity, they should build out personal savings as well.

WRS's retirement plan incorporates flexibility with both contributions and benefits, providing several tools that allow the system to adjust to changing demographic and market conditions. However, this complexity can be challenging to explain. The shared investment risk among employers, employees, and retirees also results in a "shared pain" when investments do not meet expectations, according to ETF Secretary Bob Conlin. Retirees and other stakeholders are satisfied when the variable annuity can be increased (or contributions reduced), but generally less so when they may bear an additional cost. Therefore, effectively communicating with stakeholders is critical. "Overall, though, there are far more upsides to the plan and the system has performed well over time," said Conlin.

## South Dakota Retirement System[9]

### Primary Defined Benefit Plan[10]

Multiple-employer plan including the state, local governments, and school districts

**Total Membership:** 88,106 (June 30, 2018)[11]

**Actuarial Value of Assets:** $12.2 billion (FY 2018)

**Actuarial Funded Ratio:** 100% (FY 2018)

**Discount Rate:** 6.5%

Benefit Structure for Hires after June 2017 (Generational Members):

**Normal Retirement Age:** 67

**Vesting:** 3 years of credited service

**Standard Pension Benefit:** 5-year final average compensation x years of service x 1.8%.

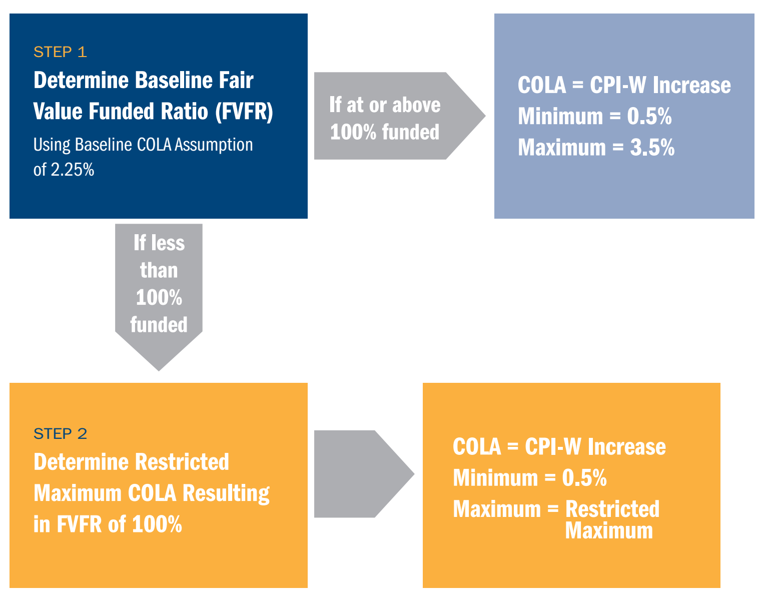
**Effective Date:** Variable COLA first went into effect July 2011 with modifications effective July 2018.

The South Dakota legislature, in partnership with the South Dakota Retirement System (SDRS), instituted public pension changes in 2010 and 2017 to ensure the long-term sustainability of the state's retirement plan. Two primary tenets of the approach were: (1) confirmation that retirement benefits be supportable within the resources provided by fixed contribution rates and (2) the retirement plan include a mechanism to balance the anticipated benefit costs with changing member demographics and a volatile investment market. The plan maintained the existing core defined benefit plan and fixed contribution rates. The key changes were: (1) creating a **variable cost-of-living adjustment (COLA)** that allows the plan to adjust the benefit to meet fiscal realities, like a downturn in investment returns and (2) instituting a new benefit structure for new employees. (Those becoming part of SDRS after June 30, 2017 are considered generational members.)

The basic benefit for generational members is a defined pension benefit with a 1.8-percent multiplier and five-year final average compensation. Employers and employees equally contribute at a fixed rate of 6.0 percent of salaries.[12] Because contribution rates are statutorily fixed, the variable COLA is critical for the plan to adjust to changing investment returns and member demographics. The amount of a COLA retirees will receive is based on the plan's financial status. The general expectation with this formula is that over the long-term, the COLA will be close to but no longer exceed the rate of inflation.

The starting point for determining the annual COLA is whether the plan is 100-percent funded[13] after taking into consideration all of the plan's actuarial assumptions, including a 2.25-percent baseline COLA. If the plan is funded at 100 percent or more, then the COLA is the increase in the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W),[5] no

**Figure 4.** *Annual SRDS COLA Determination Process*



less than 0.5 percent and no greater than 3.5 percent. If that initial threshold is not met, meaning that the plan is less than 100-percent funded assuming future COLAs equal to the 2.25-percent baseline assumption, then a restricted maximum COLA is instituted. (See Figure 4.) The restricted maximum COLA is equal to the COLA that if paid in all future years, results in the plan being funded at 100 percent. For example, SDRS's June 30, 2018, actuarial valuation determined that a restricted maximum COLA of 2.03 percent was required for the next fiscal year to maintain a 100-percent funding level even though inflation for the prior year was 2.79 percent. Regardless of funding status, all retirees receive at least a 0.5-percent COLA annually.[14] Changes to the SDRS COLA for current retirees were previously upheld by the South Dakota Circuit Court.

Beyond these changes, the legislature has long-standing funding thresholds for the retirement plans that, if not met, require corrective action legislation. If the funded status of a retirement plan is less than 100 percent, recognizing the restricted maximum COLA, then SDRS recommends benefit changes to improve funding status.

A foundation for SDRS's successful plan changes has been its great relationship with the state legislature. For example, 2017 legislation passed unanimously in committees and floor votes. The SDRS works closely with the legislature to explain why changes are needed and openly provides an annual summary of the funded status of the plan to the legislature and all of the system's stakeholders (current employees, retirees, and employers). By diligently working with all stakeholders to explain the need for plan changes, the SDRS helps all these diverse groups to see how the variable COLA will allow their retirement benefits to be sustainable over the long term.

The SDRS mindset is that is has a fiduciary responsibility to every stakeholder—current employees, retirees, and employers—so no one group should subsidize the benefit of another. Employers and employees each pay half the fixed contribution. Retiree COLAs are based on what the plan can afford so current employees do not have to incur a higher contribution rate to pay unfunded liabilities. Likewise, employees choosing to retire early have an actuarially equivalent reduction in their benefits. This has contributed to a shared understanding between employee generations about what it takes to balance contributions and sustainable benefits.

SDRS has created an innovative financing mechanism through its variable COLA. By allowing employee retirement benefits to moderately adjust to changing environmental conditions, like investment returns, employers and employees receive the stability of fixed contribution rates and fully funded benefits.

## Utah Retirement System[15]

### Tier 2: Primary Defined Benefit Plan – Public Employees Only[16]

Multi-employer plan including the state, local governments, and school districts

| | |
|---|---|
| **Total Membership:** | 28,353 |
| **Actuarial Value of Assets:** | $318.8 million (FY 2017) |
| **Actuarial Funded Ratio:** | 94.3% (FY 2017) |
| **Discount Rate:** | 6.95% |
| **Normal Retirement Age:** | 65, or 35 years of service |
| **Vesting:** | 4 years |
| **Standard Pension Benefit:** | Average of 5 highest years of salary x years of service x 1.5%[17] |
| **Effective Date:** | Variable provisions implemented in 2011 |

The Utah legislature was seriously concerned about the negative impact of the 2008 recession. Prior to that time, the Noncontributory Retirement Plan was funded at 104 percent but, in the years following 2008, it was headed toward a funding level of just 70 percent. The legislature turned to a new hybrid plan with defined benefit and defined contribution components. Senate Bill 63 (2010) capped employer liability and added potential employee contributions, yet still offered the security of a defined benefit plan for employees.

Employers contribute 10 percent of pay for general employees and 12 percent for firefighters and police officers, regardless of actual normal cost.[18] Any employer contributions in excess of normal cost go into employees' individual supplemental defined contribution accounts (e.g., 457 plans). For example, if the normal cost equals

7 percent of general employee salaries in a fiscal year, the employer would contribute 3 percent of salary into employees' personal 457 plan. If the normal cost ever exceeds the 10-percent/12-percent capped employer contribution, then *employees* must contribute the difference to ensure full actuarial funding for the plan. This plan design provides stability for employers, eliminating their risk of contribution increases during times when investment income is low and rewarding employees when investment income is high. In sum, the plan has a fixed contribution rate for employers and a **variable contribution rate for employees**.

The new Tier 2 Plan included additional changes to reduce overall costs, including increasing the years of service required for full retirement from 30 to 35 and raising the number of years used to calculate final average salary from three to five. A COLA was kept but reduced somewhat, going from a maximum increase of 4 percent or the Consumer Price Index (CPI), whichever was lower, to a maximum of 2.5 percent. The COLA is viewed as important by the Utah Retirement System (URS) because it mitigates a substantial portion of employees' lost purchasing power due to inflation. While many COLA formulas are compounded—meaning they are calculated based on the value of the retirement benefit times any previous COLAs—the URS COLA is only applied to the base retirement benefit. This "simple COLA" formula makes it less costly than a compound COLA would be.

Several years after implementation, the Tier 2 Plan continues to work well. To date, the normal cost has never exceeded the 10% employer contribution, but URS continues to stress to employees that they may have to contribute in the future. To reduce potential fluctuations in contributions for employees, URS utilizes asset smoothing in determining the Tier 2 Plan's funded status and subsequent contribution rate.

With a hybrid plan, employee savings become more important, and URS fully appreciates its role in incentivizing employees to save more. For example, senior staff have created a customized risk tolerance survey for employees and have worked with the Utah Division of Securities to secure a "No Action" letter to ensure that the individualized retirement planning information given to employees does not violate any state laws. With this information, URS's financial educators can work with employees, helping them understand how different investment choices impact their retirement goals.

URS Executive Director Dan Andersen stressed the importance of open communication early in the legislative process and of stakeholders having a practical mindset as key lessons learned in Utah's process of introducing retirement benefit changes. For other policy makers, he recommends that all stakeholders have a shared understanding about the retirement plan's current and future funding status. As a starting point, all the groups should use common data when exploring different alternatives.

## Iowa Public Employees' Retirement System[19]

### Primary Defined Benefit Plan[20]

Multi-employer plan including the state, local governments, and school districts

| | |
|---|---|
| **Total Membership:** | 361,412[21] (June 30, 2018) |
| **Actuarial Value of Assets:** | $31.8 billion (FY 2018) |
| **Actuarial Funded Ratio:** | 82.4% (FY 2018) |
| **Discount Rate:** | 7.0% |
| **Normal Retirement Age Regular Membership:** | 65 or Rule of 88 |
| **Vesting:** | 7 years of service |
| **Standard Pension Benefit:** | 5-year highest covered salary x years of service x 2%[22] |
| **Effective Date:** | Variable structure effective July 2012 |

With its fixed contribution rates for employers and employees, the Iowa Public Employees' Retirement System (IPERS) regular membership plan (excluding public safety and other groups) had been unable to fully receive its annual required contribution (ARC) from as early as 2003 and instead relied on strong investment performance to maintain its healthy asset-to-liability ratio.[23] With investments losses in FYs 2008 and 2009, the unfunded actuarial liabilities reached $4.9 billion[24] and IPERS's Benefits Advisory Committee began reviewing possible changes in earnest. The result was legislation that has addressed critical long-term funding needs of the plan.

The legislation made several modifications to the regular membership plan, which affected both current and new members. These included extending the years to calculate final average salary from three to five, increasing the years to vest from four to seven, and adjusting the benefit reduction for early retirement.[25] A core goal was establishing variable contribution rates for both employers and employees. With this step, IPERS gained a valuable tool to adapt to fluctuating investment returns and changing employee demographics. However, IPERS cannot increase or decrease the total contribution rate by more than 1 percentage point each year. With the contribution and benefit changes, the plan's unfunded liability decreased by $673.9 million and the ARC is fully paid every year.[26]

Having the advisory committee initiate and research possible plan changes was central to the legislation's ultimate success. Composed of members of different stakeholder groups, such as the Iowa Association of School Boards, Iowa State Education Association, and AFSCME,[27] the advisory committee understood that the plan's long-term sustainability required that changes be made and they wanted the impact to be immediate. After running models of the proposed changes through IPERS's staff and actuary, the advisory committee presented the recommended changes to the IPERS Investment Board (Trustees) for their concurrence.

The advisory committee and the Investment Board presented the recommended changes to the joint legislative Public Retirement Systems Committee.[28] The proposals were presented to the full legislative body as a committee bill. Employers, employees, and retirees supported the legislation. The advisory committee's employee representatives did an excellent job of explaining why the changes were necessary to their members, particularly with regard to the importance of a **variable contribution** rate for plan sustainability. Employee support is important because they pay 40 percent of the contribution while employers pay 60 percent. The timing for the legislation worked well and the bill received support from the legislature and the governor, passing without problems.

The benefit of variable contribution rates can be seen from two additional membership groups with differing benefits administered by IPERS, (i.e., the Sheriffs & Deputies and Protection Occupations). These two plans have had the same investments, discount rates, etc. as the Regular Membership Plan; the only significant difference is that they have historically utilized variable contribution rates from both employers and employees. These two groups have had the flexibility to address investment return variability and employee and retiree demographic shifts over time. As a consequence, these plans' employers have fully paid their actuarially determined employer contribution (ADEC) throughout the 2000s and are currently funded at nearly 100 percent.[29]

**Variable provisions may be piloted for certain tiers** within a plan or for specific membership groups, such as IPERS's Sheriffs & Deputies and Protection Occupations.

To further support plan sustainability, IPERS adopted a policy that mandates each plan's ADEC be paid in full annually[30] and that the required contribution rate cannot be lower than the previous year's rate until the plan is at least 95 percent funded, with additional conditions applicable until the plan reaches and sustains a 110-percent funding ratio.[31]

When asked what lessons she learned from the initiative, IPERS's Chief Executive Officer Donna M. Mueller offered several points about plan design and the legislative process. First, garnering stakeholder support, particularly from employees, is very important. For IPERS, the Benefits Advisory Committee played the critical role of explaining what the plan changes would be and why they were needed. In regards to plan design, Mueller stated, "The goal is to adopt contribution rates based on liability need and sustainability, not politics,"[32] which includes the following:

1. Determining contribution rates that meet liability estimates generated from real data and honest expectations.
2. Reductions to contribution rates based on objective standards.

# Virginia Retirement System[33]

### Hybrid Retirement Plan[34]

Multi-employer plan including the state, local governments, and school districts

| | |
|---|---|
| **Total Active Membership:** | 85,179[35] |
| **Discount Rate:** | 7.0% |
| **Normal Retirement Age:** | "Rule of 90" (when summed age and years of service equals at least 90) or age to reach unreduced Social Security[36] |
| **Vesting:** | 5 years |
| **Hybrid Retirement Plan Benefits:** | |
| **Defined Benefit (DB):** | Average 5 highest consecutive years of salary x years of service x 1.0%[37] |
| **Defined Contribution (DC):** | 1% *mandatory* contribution from employer and employee and employee *voluntary* contributions to 457 accounts with employer matching contributions. |
| **Effective Date:** | Law into effect in 2014 for new employees; first instance of automatic escalation occurred in January 2017. |

In 2014, the Virginia Retirement System (VRS) began implementing its newest retirement plan, the Hybrid Retirement Plan. The plan significantly differs from the state's two legacy plans, Plan 1 and Plan 2, because of the defined contribution component. Like many hybrid plans, the defined benefit multiplier equals 1 percent. What makes VRS's plan unique is its adoption of **automatic escalation in the defined contribution** component to encourage employee savings. VRS successfully implemented its first round of automatic escalation in 2017, demonstrating that this tool can be effectively utilized to grow individual employee savings.

Legislation establishing VRS' hybrid plan was passed in 2012 and went into effect for new employees hired on or after January 1, 2014. The plan has two components:

1. A defined benefit with a 1-percent multiplier. Employees contribute 4 percent of salary to the plan and employers pay the difference between the actuarial determined contribution and the employee contribution. From the June 2017 actuarial valuation, the plan's normal cost was 6.16 percent for general state employees and 6.45 percent for teachers. VRS also provides a cost-of-living increase for retirees in the defined benefit component of the plan, based on changes in the Consumer Price Index (CPI-U) with a maximum benefit increase of 3 percent.
2. A defined contribution component that includes both mandatory and voluntary contributions.
   a. *Mandatory* contributions equaling one 1 percent each from employees and employers go to the Hybrid 401(a) Cash Match Plan.
   b. *Voluntary* contributions from employees go to the Hybrid 457 Deferred Compensation Plan. Employers match 100 percent of an employee's initial 1-percent voluntary contribution and give an additional 50-percent match until the employee reaches the maximum contribution of 4 percent. For example, if an employee contributes 4 percent of salary into his or her 457 account then the employer provides a 2.5-percent match. What is particularly special about this plan component is its automatic escalation feature.

The automatic escalation feature in the Hybrid Retirement Plan is one of the few nationally in public retirement plans. With it, plan members have their contributions to their 457 plans increased by 0.5 percent every three years until they reach the maximum 4 percent (see above). **Employer matches continue with automatic escalation**, up to the maximum 2.5 percent match. Employees can opt out of the increase prior to it occurring or reduce if after it becomes effective, if they choose. The first round of escalation occurred in January 2017 and went very well, with 97 percent of participants keeping their higher escalation rate rather than changing it back to a lower amount.

The extremely high percentage of employees keeping the higher voluntary contribution rate after automatic escalation is a testament to two key factors: the potency of behavioral economic tools to influence savings and the high-quality communication and education VRS provided to employees and employers about the need for retirement savings.

Behavioral economics is a field of study that examines psychology in economic and financial decision making. Among the core findings from research in this field is that, generally, people struggle with knowing how much to save and invest for retirement and suffer from inertia when it comes to saving. To overcome these challenges, defined contribution plans can include special components, like automatic escalation. Automatic escalation addresses issues related to knowing how much to invest and inertia because the plan formula automatically increases the contribution when an employee does not actively do so. Likewise, the default investment selection helps employees choose a reasonably suitable investment option, such as one that matches their risk profile to the number of years remaining until retirement.

For more information on employee behavior within automatic escalation programs, see SLGE's report on Nudging Deferral Rates within Public Sector Supplemental Retirement Plans

VRS has invested significant effort into educating employees and employers about the hybrid plan and why automatic escalation is a valuable tool in reaching retirement security. Informing employers is believed to be particularly important because they are often the first source of benefit information for employees. Some of the educational tools that VRS made available to employers included PowerPoint slides, videos, posters, and content for employers to post on their websites. Several of the tools were also designed for employers to easily customize, such as adding their own local government logo, for presenting at employee orientations.

Beyond providing information on the basics of the Hybrid Retirement Plan, VRS has stressed the importance of making voluntary contributions to the plan and created several innovative tools to encourage that.[39] With SmartStep, plan members have more control over their automatic saving increases. For example, they can choose to automatically increase their voluntary contribution rate annually rather than every three years. New employees can also pre-set their voluntary contributions during orientation. VRS has even developed an online paycheck calculator for employees to see the impact of additional savings and other deductions on their take-home pay. The calculator offers guidance on how employees can save more as well. A testament to the success of VRS's education efforts is that the organization did not receive one written employee complaint after the first round of automatic escalation.

With its first round of automatic escalation completed, policy makers have had time to evaluate the success of the Hybrid Retirement Plan. Overall, the VRS policy makers are generally pleased with the plan and its impact on improving overall funding ratios and reducing employer contribution costs. In the future, there may be more interest in increasing the frequency or amount of contributions through automatic escalation or implementing automatic enrollment, which VRS already uses in its supplemental defined contribution plan.

According to VRS Executive Director Patricia Bishop, the issues they discussed in adopting their plan included:

* What is the final retirement benefit desired and how much of that benefit will need to come from employees' savings?
* How high can an automatic escalation contribution increase be before employees will choose to opt out of it? (The answer to that is based on a myriad of factors such as the organizational culture, employee demographics, compensation, and other benefit costs like health care.)

Additionally, for automatic escalation to function effectively, it depends upon educating employees about the value of their individual supplemental savings. VRS demonstrates that automatic escalation can be successful when part of a well-constructed retirement plan and supported with a high-quality employee education program.

## Colorado Public Employees' Retirement Association[40]

### Primary Defined Benefit Plan[41]

Multi-employer plan including the state, local governments, and school districts

| | |
|---|---|
| **Total Membership:** | 584,070 (December 31, 2017) |
| **Actuarial Value of Assets:** | $45.6 billion all funds (CY[42] 2017) |
| **Actuarial Funded Ratio:** | 61.3% all plans (FY 2017) |
| **Discount Rate:** | 7.25% |
| **Normal Retirement Age:** | Age 60 with 30 years of service. For new hires January 1, 2020, age 64 with 30 years of service. Any age with 35 years of service. |
| **Vesting:** | 5 years[43] |
| **Effective Date:** | Retirees' annual increase was suspended in 2018 and 2019, with variable structure in the annual increase effective in July 2020. |
| **Standard Pension Benefit:** | 5-year average of highest earnings x years of service x 2.5% for new employees.[44] Retirement benefit is limited to 100% of average salary. Most Colorado PERA members do not participate in Social Security. |

Through legislation (SB 200) in 2018, the Colorado Public Employees' Retirement Association (PERA) has a new plan design for its retirement plans over a 30-year period. Historically, PERA's plans had utilized fixed contribution rates from employers and employees to pay set benefits, including the annual increase (AI), a compounded COLA-like adjustment. This precluded PERA from significantly adjusting the plans to meet changing conditions, like market performance or retirees living longer, without legislative action. For example, in calendar year (CY) 2017, the actuarially determined contribution was 22.71 percent for general state employees, yet the employer and employee statutory contributions summed only to 19.13 percent, resulting in a contribution shortfall of approximately 3.5 percent.[45] Over the last 15 years, annual contribution deficiencies have resulted in a funding deficit totaling $4.9 billion.[46] With SB 200, these plan design limitations were addressed while keeping the defined benefit intact.

As fiduciaries, members of the PERA Board of Trustees knew that change was needed to ensure the system's pension plans were sustainable for current and future participants. Therefore, the board undertook a year-long fact-finding process and researched a variety of plan design options. Board members directed senior staff to work with employee associations and all other stakeholders, sharing information and educating them on the financial condition of the pension fund. Stakeholders were also given the opportunity to provide input into different design alternatives and to see their respective financial impacts. The board appreciated the importance of involving these stakeholders in order for legislation to pass.

The final bill included **adjustments to contributions and the AI**. More specifically, the employee contribution rate will gradually increase from 8 to 10 percent of pay[47] over a three-year period, July 2019 to July 2021. For employers, the increase is more modest at 0.25 percent,[48] with the stated reason that employers had previously been contributing more. For example, employer contributions for state employees, except state troopers, and teachers equaled 10.15 percent for CY 2018 and rose to 10.4 percent effective July 1, 2019.[49]

SB 200 also includes specific thresholds to adjust contributions if funding goals are not met. If the new combined contribution rate is less than 98 percent of the total actuarially determined contribution, the law allows PERA to increase employer contribution rates up to 0.5 percent annually and employee rates by up to 0.5 percent annually. However, maximum contribution thresholds also exist for both groups: 2 percent above the July 2019 rate for employers and 2 percent above the July 2021 rate for employees. Likewise, rates can be reduced if the combined contributions ever equal or exceed 120 percent of the total required contribution.

The bill also made significant adjustments to PERA's annual increase, which is similar to a cost-of-living adjustment. Prior to passage of SB 200, the AI had been fixed at 2 percent for members hired before January 1, 2007, regardless of actual inflation unless investment income was negative (i.e., actual losses). Under the new legislation, the AI amount was reduced to 1.5 percent. As with the contribution rates, the AI percentage can be adjusted based on the funded status of the system. If the funding goals are not being met, (i.e., total annual contributions are less than 98 percent of required contribution), then the AI would be reduced to less than 1.5 percent. The maximum reduction per year is 0.25 percent and by law, the AI cannot be reduced to fall below 0.5 percent. If a plan's funding status is found to exceed the funding goal, the AI can go up as well. At no point can the AI percentage increase by more than 2 percent. Also, according to the legislation, new service retirees must wait three years before receiving an AI adjustment to their retirement benefit.

The contribution rate increases work in conjunction with adjustments to the AI. If rate increases are required, then so would a decrease in the AI of up to 0.25 percent in one year. Essentially, each of the three major stakeholders—employers, employees, and retirees—bear a third of the burden to keep PERA's funding status on track.

The legislation included several other plan modifications, with the more significant changes noted below:

- Increasing the years to determine final highest average salary from three to five
- Increasing full-retirement eligibility to age 64 with 30 years of service[50]
- Including sick leave payout when calculating highest average salary
- Increasing contributions by an additional 2 percent of pay from retirees who return to work for a PERA employer.[51]

Finally, a new fourteen-member oversight committee, referred to as the Pension Review Subcommittee, was created. The subcommittee is composed of a mix of legislators and appointed nongovernmental experts from relevant fields. The new subcommittee will study a variety of policy issues related to PERA and make recommendations either to the General Assembly or to the PERA Board.

The entire process that culminated in the enactment of major legislation provides important lessons. PERA undertook extensive and lengthy research and considered different proposals from all stakeholders as part of developing a formal proposal for the legislature. In addition, the changes do not impact just one stakeholder group. Rather, all feel the effect: including employers and employees with potentially higher contributions and retirees with a potentially lower AI benefit. This risk sharing is important not only from an equity standpoint but also to help preclude one group from getting frustrated with the new plan and seeking legislative changes in the future. Finally, and perhaps most importantly, the new law includes thresholds with a set funding goal that enable PERA to adjust contributions and the AI if necessary. With all these management tools, PERA may be better able to meet its fiduciary responsibility to ensure all members will receive their earned pension benefit both in the short and long term.

## Additional Perspectives

The case studies in this report demonstrate what can be accomplished in instituting variable benefit or variable contribution structures, but they do not provide a bigger picture roadmap to the efficacy or advisability of such a course of action. For that, it may be instructive to look at some of the professional associations active in this arena.

For example, the National Conference of State Legislators (NCSL) views such arrangements as an innovative approach to a thorny issue. With this noted, their pension experts caution that the formulas and triggers built into such arrangements may lead to some state retirees working without cost-of-living adjustments for long stretches of time, perhaps a decade or longer.[52]

It is important to note that innovative pension strategies have also been implemented internationally over many years. While every public finance, governance, and workforce environment is unique, it can be informative to explore lessons learned from jurisdictions outside the United States. Some examples include the Defined Ambition approach in the Netherlands, occupational pension plans in Switzerland, and Nonfinancial DC (NDC) plans in Sweden—all of which can adjust benefits and/or contributions based on the underlying plan financial status, economic environment, and/or member demographics (including life expectancy changes).[53]

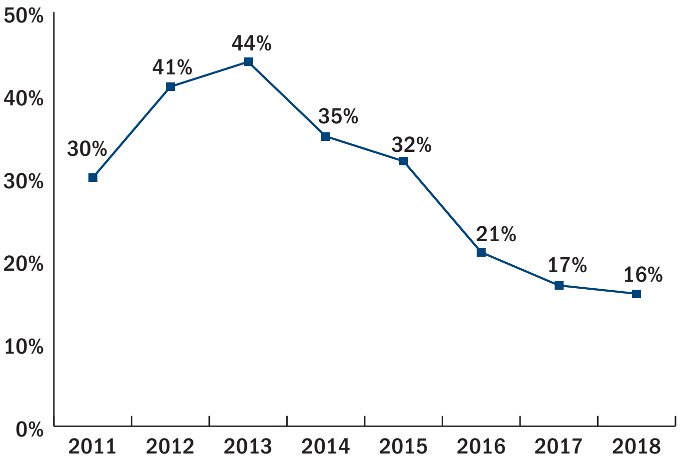
## Impacts of Variable Arrangements

The goal of pension changes – whether through variable arrangements or more traditional methods – may include:

- Improving the underlying funded status of the plan
- Committing to make the entire actuarially-determined public employer contributions
- Enhancing overall plan cost stability or predictability
- Providing clarity in terms of public employee and employer/taxpayer contributions and benefit expectations, along with associated risks

According to surveys conducted by SLGE in conjunction with the International Public Management Association for Human Resources (IPMA-HR) and the National Association of State Personnel Executives (NASPE), the post-2008 recession percentage of state

**Figure 5.** *Percentage of State and Local Governments Making Changes to Retirement Plans*

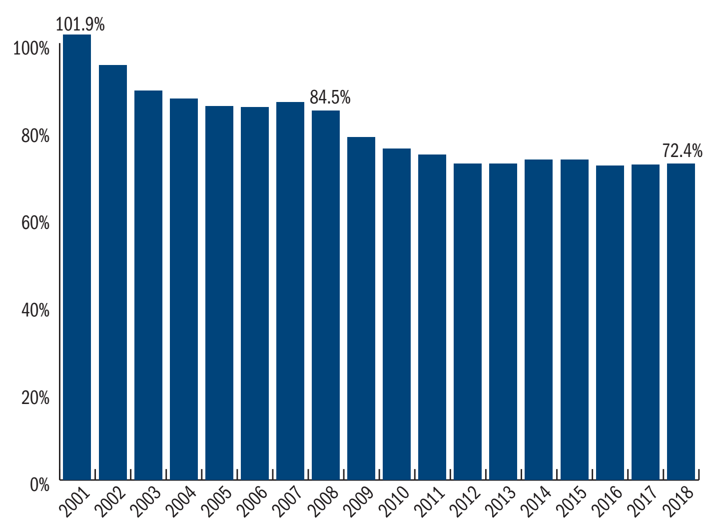



*Source*: SLGE/IPMA-HR/NASPE Annual Workforce Survey

and local government employers making changes in their retirement plans peaked in 2012-2014 (see Figure 5), which makes this an appropriate time to assess the impact of those changes.

The most relevant metrics for assessing the impact of those changes are the funded status and percentage of actuarially determined employer contribution (ADEC) paid, both of which are tracked via the Public Plans Database at https://publicplansdata.org.

**Figure 6.** *Funded Ratio: National Average of State and Local Pension Plans*




Source: *Public Plans Database, https://publicplansdata.org/quick-facts/national/#actuarialfundingblicplansdata.org. National data averages are weighted by plan size.*

## Funded Status:

Looking at the national average among state and local pension funds, the funded status has decreased from 102 percent in FY 2001 to 72 percent in FY 2018. This changed significantly in FY 2009, but has remained fairly stable since then.

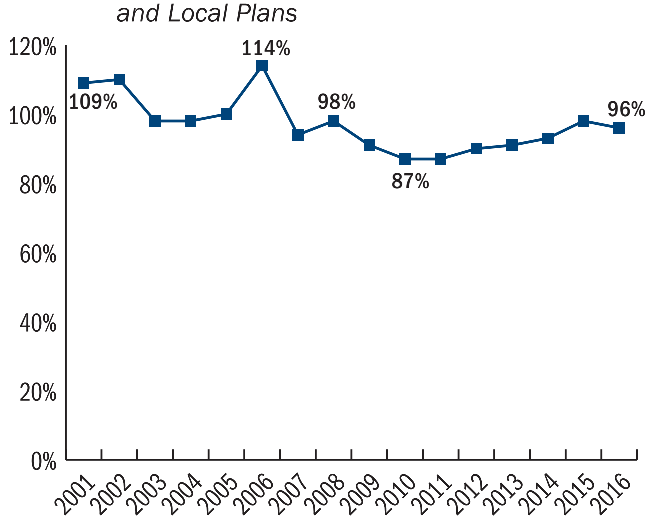
For four of the case studies, the funded status has improved since 2012, and they exceed the national average by 5 percent (Virginia), 9 percent (Iowa), and 28 percent (South Dakota and Wisconsin). The Utah Tier 2 Plan remains 94-percent funded. It is too soon to assess the impacts of the Colorado legislation, as the effective dates of its variable benefit and other provisions are from 2018-2020.

## Payment of Actuarially Determined Contributions:

The national trend is toward full payment of the actuarially determined employer contribution. In many states this is not a *required* contribution, and as such, some plans did not commit to full contributions at the depths of the recession, but currently, the average plan is receiving contributions at 96 percent of the actuarially determined amount.

Among the plans discussed in the case studies,

**Figure 7.** *National Average: Percentage of Actuarially Determined Employer Contribution Paid, State and Local Plans*




Source: *Public Plans Database*

Wisconsin, South Dakota, Utah and Iowa all reflect employer contributions at or above 100 percent of the actuarially determined amounts. In Virginia and Colorado, contributions are at 80 percent or more of the actuarially determined amounts. With the approaches discussed in the case studies only beginning to be applied in Virginia (via the hybrid plan for those hired since January 1, 2014) and Colorado (effective in 2019), it will be several more years until the impacts in those states can be fully assessed.

Regardless of whether changes in the funded status can be fully attributed to the variable arrangements, they have served as one factor in fostering a long-term focus on proactive fund management. For details on each fund, please see the appendix.

## Stability and Predictability:

All of the case studies represent improvements in predictability via the proactive, variable provisions enacted to adjust to market fluctuations or changes in worker or retiree demographics. Beyond that, some of these recent changes also impacted the stability of contribution amounts, such as through multi-year asset smoothing formulas in Wisconsin and Utah, so that a single year's market fluctuation would not lead to a drastic change in employer or employee contributions.

## Providing Clarity of Benefits and Shared Risks:

In all six of the case studies, both the employer and employee bear some risk via a share of the annual contributions, while retirees also face some variable benefit risk in the form of formula-based COLAs. Where changes are being phased in for new employees, such as with Virginia's hybrid plan, the full impact will not be felt until there has been significant turnover in the active and retired workforce. Regardless of whether the changes impact benefits or contributions immediately or only in rare circumstances, the variable provisions enable all stakeholders to understand how, when, and to what extent contributions or benefits might be subject to formula-based changes, and as a result, enable them to plan for the long-term.

# Conclusion

Variable benefits and variable contributions are especially timely issues for two reasons.

First, with the pending retirement of the last wave of baby boomers, there will be a large number of employees leaving the government workforce. To the extent that those vacancies are filled with new hires at some level within their respective organizations, that turnover will provide a key block of new employees who may be subject to any tiered benefit structures that may be adopted. Once mass retirements and replacement hiring taper off, it would likely take a longer period of time for any subsequent pension changes to impact the bottom line.

Second, while the economy had stabilized since the 2008 recession and many public pension systems made strides in either maintaining or increasing their funded rates, relatively stable economic conditions are not guaranteed to prevail. Those states that consider variable benefit or variable contribution approaches outside of a crisis mode may find greater buy-in from those who might potentially be impacted by the formulas' eventual application. As with the Utah Retirement System, the changes adopted have put a mechanism in place to improve funded status, but current employees were not faced with immediate changes to their benefit structure.

For those interested in examining such changes, the example of these states shows that there is no one single path forward. Variable contributions, variable benefits, adjustable COLAs, shared risk, and auto-escalation are all changes worth exploring and may be part of a healthy, proactive strategy for short-term predictability of costs and benefits, long-term financial sustainability, and appropriate balancing of risk among employers, employees, and retirees.

Regardless, changes in benefit design can impact a state's ability to attract and retain talented workers[54] and the promises made to retirees. As such, it is best considered in a process that includes legislatures, retirement funds and critical stakeholders, including government sponsors, employees, retirees, employee unions, and employee and retiree representative groups.

Overall, in determining any course of action, officials need to understand the financial positions of the retirement systems that their governments sponsor and the underlying current and future workforce needs of their jurisdictions.

While this report is focused on case studies of what has already been implemented, effective pension oversight also requires accurate forecasting of financial and workforce trends.

To aid with financial forecasts, the Public Plans Database collects data on the 190 largest state and local pension funds, ranging from funded ratios and percentage of actuarially determined employer contributions paid, to allocations to each of multiple types of alternative investments. Data are available from 2001 to the present on as many as 100 variables.

To aid in workforce planning, SLGE has completed a report on the *Workforce of the Future: Strategies to Manage Change*.

In addition, each year SLGE conducts a workforce survey in cooperation with the National Association of State Personnel Executives (NASPE) and the International Public Management Association for Human Resources (IPMA-HR), collecting information on retirement and health benefit changes; hiring, layoffs, and turnover; retention and employee development programs; flexible work practices; and other key metrics. The 2019 report is posted at https://www.slge.org/resources/state-and-local-workforce-survey-2019.

For access to the full array of issue briefs and other SLGE retirement, workforce, and health and wellness research, visit https://slge.org.

## Resources

*Understanding Public Pensions: A Guide for Elected Officials,* Center for State and Local Government Excellence and AARP, April 2017. Available at: https://www.slge.org/resources/understanding-public-pensions-a-guide-for-elected-officials

*Nudging Deferral Rates within Public Sector Supplemental Retirement Plans,* Center for State and Local Government Excellence and ICMA-RC, March 2019. Available at: https://www.slge.org/assets/uploads/2019/03/nudging-deferral-rates-within-public-sector-supplemental-retirement-plans_final.pdf

Public Plans Data 2001-2018, Center for State and Local Government Excellence, National Association of State Retirement Administrators and Center for Retirement Research at Boston College Available at: http://publicplansdata.org/

Keith Brainard and Alex Brown, *In-depth: Risk Sharing in Public Retirement Plans*, National Association of State Retirement Administrators, December 2018. Available at: https://www.nasra.org/files/Spotlight/Risk%20Sharing%20in%20Public%20Retirement%20Plans.pdf

*Balancing Objectives in Public Employee Post-Retirement Employment Policies: Reassessing Barriers to Continued Work*, Center for State and Local Government Excellence and National Association of State Retirement Administrators, November 2018. Available at: https://www.slge.org/resources/balancing-objectives-in-public-employee-post-retirement-employment

*Workforce of the Future: Strategies to Manage Change*, Center for State and Local Government Excellence and Kronos, September 2018. Available at: https://slge.org/assets/uploads/2018/10/workforce-of-the-future-oct-2018.pdf

*State and Local Workforce Trends: 2016-2026*, Center for State and Local Government Excellence and Kronos, September 2018. Available at: https://www.slge.org/assets/uploads/2018/10/infographic-workforcetrends2026.pdf

*How Have Pension Cuts Affected Public Sector Competitiveness?,* Center for State and Local Government Excellence and Center for Retirement Research at Boston College, April 2018. Available at: https://www.slge.org/resources/how-have-pension-cuts-affected-public-sector-competitiveness

### For More Information

AARP
aarp.org/retirement/

Center for State and Local Government Excellence
slge.org

Government Finance Officers Association
gfoa.org/sustainable-funding-practices-defined-benefit-pensions-and-other-postemployment-benefits-opeb

National Association of State Retirement Administrators
nasra.org

National Conference of State Legislatures
ncsl.org/research/fiscal-policy/pensions.aspx

National Institute on Retirement Security
nirsonline.org

Public Plans Database
publicplansdata.org

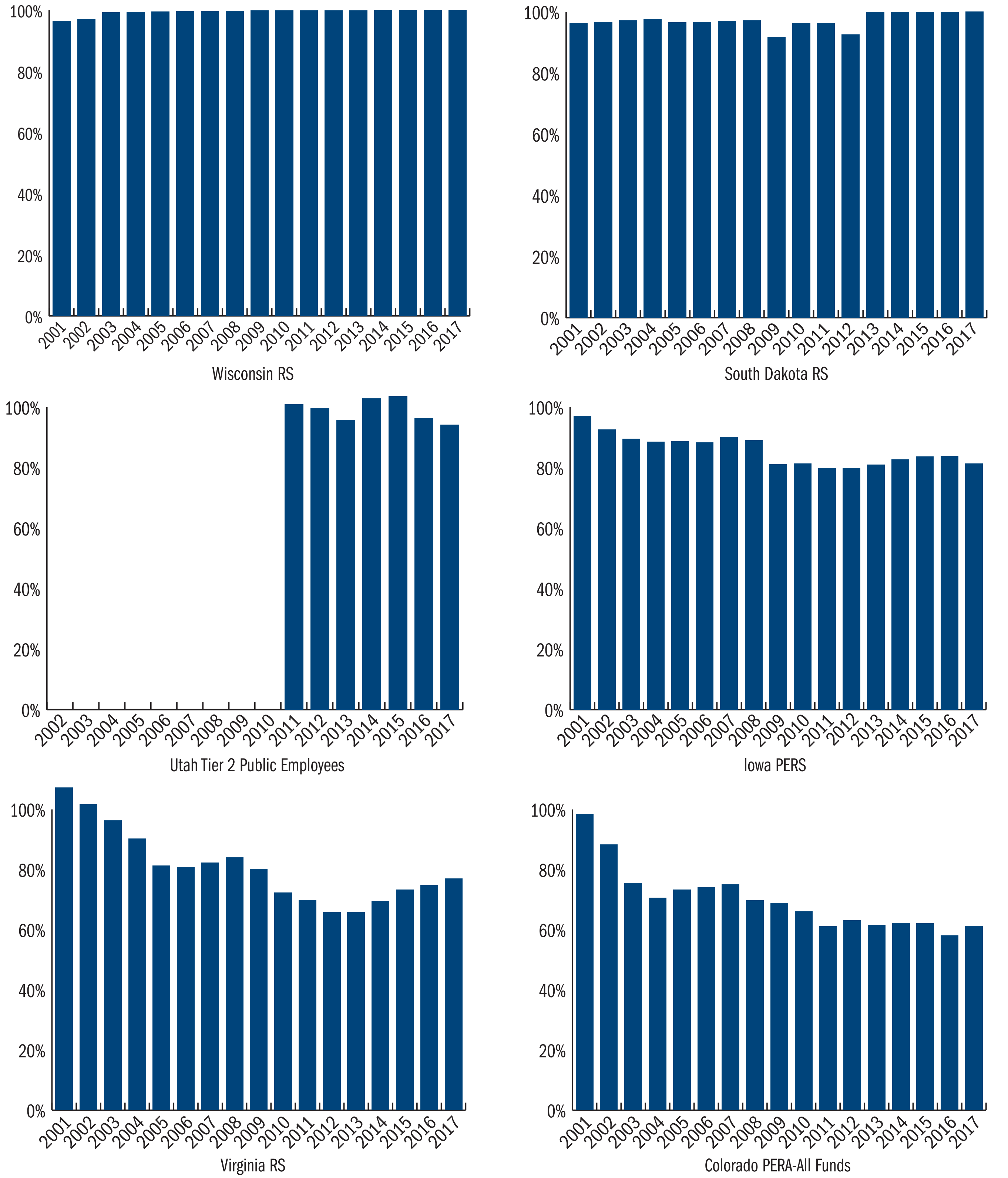
# Appendix

**Table 3.** *Funded ratios and Percentage of Actuarially Determined Employer Contribution Paid*

| | Wisconsin RS | | South Dakota RS | | Utah Tier 2 Public Employees | | Iowa PERS | | Virginia RS | | Colorado PERA | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fiscal Year | Funded Ratio | % of Required Contrib. Paid | Funded Ratio | % of Required Contrib. Paid | Funded Ratio | % of Required Contrib. Paid | Funded Ratio | % of Required Contrib. Paid | Funded Ratio | % of Required Contrib. Paid | Funded Ratio | % of Required Contrib. Paid |
| 2001 | 96.5% | 100% | 96.4% | 100% | | | 97.2% | 100% | 107.3% | 100% | 98.6% | |
| 2002 | 97.1% | 100% | 96.7% | 100% | | | 92.6% | 100% | 101.8% | 80% | 88.3% | |
| 2003 | 99.2% | 100% | 97.2% | 100% | | | 89.6% | 99% | 96.4% | 68% | 75.6% | |
| 2004 | 99.4% | 100% | 97.7% | 100% | | | 88.6% | 91% | 90.3% | 92% | 70.6% | |
| 2005 | 99.5% | 100% | 96.6% | 100% | | | 88.7% | 86% | 81.3% | 85% | 73.3% | |
| 2006 | 99.6% | 100% | 96.7% | 100% | | | 88.4% | 84% | 80.8% | 90% | 74.1% | |
| 2007 | 99.6% | 100% | 97.1% | 100% | | | 90.2% | 83% | 82.3% | 86% | 75.1% | |
| 2008 | 99.7% | 100% | 97.2% | 100% | | | 89.1% | 87% | 84.0% | 93% | 69.8% | |
| 2009 | 99.8% | 100% | 91.8% | 91% | | | 81.2% | 88% | 80.2% | 81% | 68.9% | |
| 2010 | 99.8% | 108% | 96.3% | 100% | | | 81.4% | 90% | 72.4% | 67% | 66.1% | 66% |
| 2011 | 99.9% | 100% | 96.4% | 100% | 101.0% | 100% | 79.9% | 82% | 69.9% | 47% | 61.2% | 87% |
| 2012 | 99.9% | 100% | 92.6% | 100% | 99.6% | 100% | 79.9% | 98% | 65.8% | 60% | 63.2% | 85% |
| 2013 | 99.9% | 100% | 100.0% | 100% | 95.8% | 100% | 81.0% | 98% | 65.9% | 76% | 61.5% | 79% |
| 2014 | 100.0% | 100% | 100.0% | 100% | 102.9% | 100% | 82.7% | 100% | 69.6% | 76% | 62.3% | 95% |
| 2015 | 100.0% | 100% | 100.0% | 100% | 103.7% | 100% | 83.7% | 102% | 73.3% | 83% | 62.1% | 75% |
| 2016 | 100.0% | 100% | 100.0% | 100% | 96.3% | 100% | 83.9% | 104% | 74.8% | 86% | 58.1% | 81% |
| 2017 | 100.0% | | 100.1% | 100% | 94.3% | 100% | 81.4% | 105% | 77.0% | 94% | 61.3% | 84% |
| Variable component effective date | 1982 | | 2011; 2018 | | 2011 | | 2012 | | 2014 | | 2018-2020 | |

Source: *Public Plans Database; Utah Retirement System CAFRs (figures since the inception of the Tier 2 Public Employees plan), and Colorado PERA CAFRs and PAFRs (figures for non-health care contributions). Plans are displayed in order of the variable components' effective date. Colorado PERA percentages of required contributions paid are since incorporation of the Denver Public Schools Division trust fund in 2010. VRS Hybrid is not a stand-alone plan, but a tier of benefits provided to non-hazardous duty employees. Therefore, the plan does not have assets associated with just the hybrid tier of benefits. The information provided here is for VRS as a whole.*

**Figure 8.** *Funded Ratio by Plan*



# End Notes

1 *Balancing Objectives in Public Employee Post-Retirement Employment Policies: Reassessing Barriers to Continued Work*, Center for State and Local Government Excellence, November 2018. Available at: https://www.slge.org/resources/balancing-objectives-in-public-employee-post-retirement-employment

2 Among private sector employers, only 68 percent offer any form of retirement benefit (see Bureau of Labor Statistics, "Retirement benefits: Access, participation, and take-up rates, State and local government workers, March 2018," available at https://www.bls.gov/ncs/ebs/benefits/2018/ownership/govt/table02a.pdf). For a more complete discussion of employee benefits, see Center for State and Local Government Excellence and Kronos, *Workforce of the Future: Strategies to Manage Change* (Washington, D.C.: Center for State and Local Government Excellence and Kronos, October, 2018), available at: https://www.slge.org/resources/workforce-of-the-future.

3 Center for State and Local Government Excellence, *What are Hybrid Retirement Plans?* (Washington, D.C.: Center for State and Local Government Excellence, January 2011). Available at: https://slge.org/assets/uploads/2011/12/Hybrid-primer.pdf

4 Public Plans Data, "National Data." Available at: https://publicplansdata.org/quick-facts/national/

5 This case study is significantly based on a phone interview with Bob Conlin, Secretary of the Wisconsin Department of Employee Trust Funds, on February 21, 2019.

6 Wisconsin Retirement System (WRS) Annual Actuarial Valuation and Gain/Loss Analysis December 31, 2017 and Wisconsin Retirement System Fact Sheet, ET-8901 (REV 11/28/2018). In addition to the general participants, there are separate benefit levels for Elected/Executive and Protectives with and without Social Security.

7 WRS provides a second method for determining an employee's annuity benefit based on the accumulated earnings in an employee's retirement account. However, the details of this benefit determination are beyond the scope of this report.

8 Executive and Elected officials paid 5.5 percent and members in protective classes paid 6.0 percent with Social Security or 8.9 percent if not participating in Social Security.

9 This case study is significantly based on a phone interview with Rob Wylie, Executive Director of the South Dakota Retirement System, on February 1, 2019.

10 South Dakota Retirement System, *Comprehensive Annual Financial Report*, 2018.

11 Approximately 93 percent of the system's members are typical public employees. The remaining are public safety and judicial employees. Different contribution rates and benefit provisions are applicable to public safety and judicial employees.

12 Center for State and Local Government Excellence, *What are Hybrid Retirement Plans?*

13 The plan is evaluated based on the fair value of assets. SDRS does not apply actuarial smoothing of its assets.

14 D. Fiddler, R. Schrader, and R. Wylie, *South Dakota Retirement System Generational Benefit Structure* (Schaumburg, Illinois: Society of Actuaries, 2018).

15 This case study is significantly based on a phone interview with Dan Andersen, Executive Director of the Utah Retirement System, on February 15, 2019.

16 Utah Retirement System, *2017 Comprehensive Annual Financial Report*. For the entire URS system, the actuarial value of assets available for benefits was $30,877,194,000 on December 31, 2017.

17 Employees also participate in Social Security.

18 The legislation also created a defined contribution (DC) plan alternative with the same employer contribution rates as the hybrid plan. Employees have up to one year to choose between the hybrid and DC plan with the default option being the hybrid plan. Only about 20 percent of new employees select the DC option.

19 This case study was significantly informed by a phone interview with Donna Mueller, Chief Executive Officer, and Judy Akre, Director of Communications, of the Iowa Public Employee Retirement System, on February 7, 2019.

20 Iowa Public Employees Retirement System, *Comprehensive Annual Financial Report*, FY 2018.

21 Regular members constitute 96 percent of all members. IPERS also manages the Sheriff & Deputies and the Protection Occupation Retirement Funds.

22 After 30 years the multiplier drops to 1 percent and the maximum percentage equals 65 percent.

23 Center for State and Local Government Excellence, F*our States that Maintain Funding Ratios of More than 80 Percent in Their Defined Benefit Plans: Iowa Public Employees' Retirement System* (Washington, D.C.: Center for State and Local Government Excellence, 2011). Available at: www.slge.org/resources/case-studies-de-il-muni-ia-nc

24 By June 30, 2010.

25 Center for State and Local Government Excellence, *Four States that Maintain Funding Ratios of More than 80 Percent in Their Defined Benefit Plans: Iowa Public Employees' Retirement System*.The 2.0-percent benefit multiplier and retirement age did not change. The plan does not provide for a cost-of- living adjustment.

26 Center for State and Local Government Excellence, *Four States that Maintain Funding Ratios of More than 80 Percent in Their Defined Benefit Plans: Iowa Public Employees' Retirement System*.

27 The American Federation of Federal, State, County, and Municipal Employees (AFSCME) is a public employee union.

28 Permanent Statutory Committee of the Iowa Legislature.

29 Sheriffs & Deputies plan is funded at 97.9 percent and the Protection Occupation plan is funded at 98.5 percent. Source: Iowa Public Employees Retirement System Actuarial Valuation, July 1, 2018.

30 For the Regular Member Plan, the required contribution rate cannot be increased by more than 1 percent annually.

31 The unfunded actuarial liability contribution rate is not permitted to be negative unless the funded ratio has been at least 110 percent for three consecutive years.

32 Donna Mueller, phone Interview on February 7, 2019.

33 This case study is significantly based on a phone interview with Patricia Bishop, Director, Jeanne Chenault, Public Relations Director, and Kelly Hiers, DC Plans Administrator, of the Virginia Retirement System, on February 28, 2019 and the Center for State and Local Government Excellence report, *Using Automatic Escalation in Public Sector Retirement Plans to Increase Savings* (Washington, D.C.: Center for State and Local Government Excellence, March 2014).

34 The Virginia Retirement System Hybrid Plan is not a stand-alone plan, but a tier of benefits provided to non-hazardous duty employees. Therefore, the plan does not have assets associated with just the hybrid tier of benefits.

35 Virginia Retirement System, *2018 Popular Annual Financial Report*. Data as of June 30, 2018. Total membership in all VRS plans totals approximately 550,000, with an actuarial value of assets for all plans of $69.2 billion.

36 Rule of 90: normal retirement age for an employee whose combined age and years of service sum to 90.

37 Employees also participate in Social Security.

38 For comparison, the total normal costs for the State Plan 1 and Plan 2 were 11.01 percent and 10.06 percent, respectively. Employees in these plans contribute 5 percent of salary as well.

39 Virginia Retirement System, *2018 Comprehensive Annual Financial Report*, p. 8.

40 This case study is significantly based on a phone interview with Adam Franklin, General Counsel, and Katie Kaufmanis, Public Information Officer, of the Colorado Employees' Retirement Association, on January 30, 2019.

41 Colorado Public Employees' Retirement Association (PERA), *Comprehensive Annual Financial Report*, December 31, 2017.

42 Calendar year.

43 For employees hired on or after January 1, 2020, "Rule of 88" is eliminated but a person can retire at any age with 35 years of service.

44 For employees who were vested when SB 200 was passed, the FAS is based on a three-year average of highest earnings.

45 Colorado Public Employees' Retirement Association (PERA), *Comprehensive Annual Financial Report*, 2017, p. 34.

46 Ibid.

47 Except for state troopers who had member contribution rate of 10 percent in July 2018 and will increase to 12 percent by July 2021.

48 One exception is the Local Government Division. Employers will not contribute more than the historic 10 percent of salaries because that division has a higher funding ratio than the others. The higher funding ratio is due to different demographics of this employee group.

49 Excluded contributions for unfunded liabilities.

50 Previous full-retirement eligibility: There have been several changes over time but the retirement ages immediately prior to SB200 were as follows: School Division: modified rule of 88 (age 58 with 30 years). All other members had a rule of 90 (age 60 with 30 years of service). New members hired after January 1,2020 are subject to a rule of 94 (age 64 with 30 years of service).

51 Colorado Public Employees Retirement Association, "Senate Bill 18-200, Impact of Changes," April 2019. Available at: www.copera.org/sites/default/files/documents/impactofchanges-18.pdf

52 Among other groups, The National Governors Association (NGA) has not taken a position on any specific pension changes, but notes that the issue is much more pressing for some states than for others. The National League of Cities (NLC), in their review of State of the City addresses, reported various individual communities where variable benefit or contributions arrangements were adopted (e.g., Fort Worth, Texas; Baltimore, Maryland; and Ocala, Florida; see http://www.fortworthbusiness.com/news/fort-worth-council-approves-pension-plan-now-employees-will-vote/article_ee827cf6-fdc9-11e8-937c-a371e2ef08f8.html, http://www.fwretirement.org/benefits/active_member_benefits/index.php, https://conduitstreet.mdcounties.org/2014/06/09/baltimore-city-adopts-series-of-pension-reforms/, and http://www.ocalafl.org/home/showdocument?id=4400). The International City/County Management Association (ICMA), recommends that the impact of plan changes on the long-term required contributions by (typically) newer employees be a central consideration, along with broad involvement by all stakeholders.

53 See Mar Gerard, *Reform Options for Mature Defined Benefit Pension Plans: The Case of the Netherlands*, IMF Working Paper 19, January 2019, available at: https://www.imf.org/~/media/Files/Publications/WP/2019/wp1922.ashx; Niels Kortleve, "The 'Defined Ambition' Pension Plan: A Dutch Interpretation," CFA Digest vol. 43 no. 4 (November 2013), summary available at: https://www.cfainstitute.org/en/research/cfa-digest/2013/11/the-defined-ambition-pension-plan-a-dutch-interpretation-digest-summary; and John A. Turner, "Hybrid Pensions: Risk Sharing Arrangements for Pension Plan Sponsors and Participants," Society of Actuaries, 2014, available at: https://www.soa.org/Files/Research/Projects/research-2014-hybrid-risk-sharing.pdf

54 In a study released by SLGE and the Center for Retirement Research at Boston College, the impact of pension changes was quantified as reducing the prior salary of incoming employees by 2.9 percent—an indication that the more highly compensated and presumably more highly skilled individuals were opting for private sector employment instead (*How Have Pension Cuts Affected Public Sector Competitiveness?* Center for State and Local Government Excellence, April 2018. Available at: https://www.slge.org/resources/how-have-pension-cuts-affected-public-sector-competitiveness).

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777 N. Capitol Street NE | Suite 500 | Washington DC 20002-4290 | 202 682 6100 | info@slge.org