SAVING FOR OUR FUTURE

Evaluating Colorado's Public Retirement System

REPORT
2013

Colorado Pension Business Steering Committee

Phase 1 Report | July 2013

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Introduction and Background

In its efforts to engage the business community in statewide education issues, Colorado Succeeds created a forum for business leaders in October of 2012 to learn about Colorado's pension system from national experts and discuss the implications for not only the state of education, but for the state as a whole. Based on the strong response to that forum, Colorado Succeeds convened the Colorado Pension Business Steering Committee to bring together business and civic leaders representing every county in Colorado to more closely examine the issues surfaced during the initial meeting and explore the merits of further action. Following is a list of participants and a report of their findings.

Dick Allison	***Club 20***
Jill Barkin	***America Succeeds***
John Beeble	***Saunders Construction***
Amy Beringer	***The Colorado Forum***
Richard Betts	***Colorado Health Exchange***
Kelly Brough	***Denver Metro Chamber of Commerce***
Matt Drosendahl	***Norgren Americas***
John Fox	***The Colorado Forum***
Cathy Garcia	***Action 22***
Ted Harms	***Anschutz Foundation***
Jennifer Hopkins	***Crescendo Capital Partners***
Bruce Hoyt	***St. Charles Capital***
Wayne Hutchens	***The Colorado Forum***
Gail Klapper	***The Colorado Forum***
Scott Laband	***Colorado Succeeds***
Tony Lewis	***Donnell-Kay Foundation***
Paul Major	***Telluride Foundation***
David Miller	***Denver Foundation***
Zack Neumeyer	***Sage Hospitality***
Bonnie Petersen	***Club 20***
Mary Rhinehart	***Johns Mansville Corp.***
Tim Schultz	***Boettcher Foundation***
Cathy Shull	***Progressive 15***
Eric Sondermann	***Political Analyst***
Teresa Taylor	***Blue Valley Advisers***
Tim Taylor	***America Succeeds***
Al Timothy *(retired)*	***MillerCoors***
Tamra Ward	***Colorado Concern***

Executive Summary

In 2012, when Colorado began to appear on the list of states whose public pension systems raised "serious concerns" about financial stability, the state's business leaders took note.[1] In early 2013, a group of 30 business and community leaders representing every county in Colorado came together to study Colorado's public pension system and assess the need for further action to improve it. Their conclusion:

The situation is serious. Colorado has promised benefits to retirees and current employees that it has not fully funded. Repaying this roughly $22.7 billion liability[2] is already crowding out other vital public services, and forces future generations to bear an even greater burden.

The problems are clear. The problems stem from the current level and design of benefits, and the current level of funding. The structure of our defined benefit system creates unnecessary risk and complexity, and has adverse effects on the hiring and retention of quality workers. Questionable assumptions and unpredictable variables lead to confusion and a lack of transparency. Historical underfunding by the state now burdens taxpayers and shortchanges current and future employees.

The solutions are within reach. While members of the group found reason for concern, they also found reason to believe the situation can be greatly improved. They agreed on four guiding principles that must be balanced in the design of a more ideal public retirement system for Colorado:

1. Be fiscally prudent and financially sustainable;
2. Promote a high-quality workforce;
3. Provide adequate retirement income opportunity for public employees;
4. Be transparent and adaptable to change over time.

The time for action is now. After examining all aspects of the system with input from national and local experts, 88% of the group supported or strongly supported the need to take further action on a broader scale to improve the public retirement system in Colorado.

Members of this group will work during summer and fall of 2013 to engage a broader set of stakeholders in this critical conversation, promoting dialogue among the diverse perspectives, and identifying common ground for improving the public retirement system. This broader group will delve more deeply into lessons learned from other states and the options Colorado has for creating a more stable and sustainable retirement system for its public employees.

Colorado simply can't afford to push our public pension problems onto the next generation. We must act now. By working together to create a public retirement system for the 21st Century, we will better preserve Colorado's quality of life for future generations to enjoy.

[1] PEW Charitable Trust. *State Fact Sheets: Widening the Gap.* 6/18/12. www.pewstates.org.

[2] Colorado Public Employees Retirement Association. *Comprehensive Annual Financial Report,* 2012. p. 136.

The State We Are In

Public Pensions: A Looming Crisis

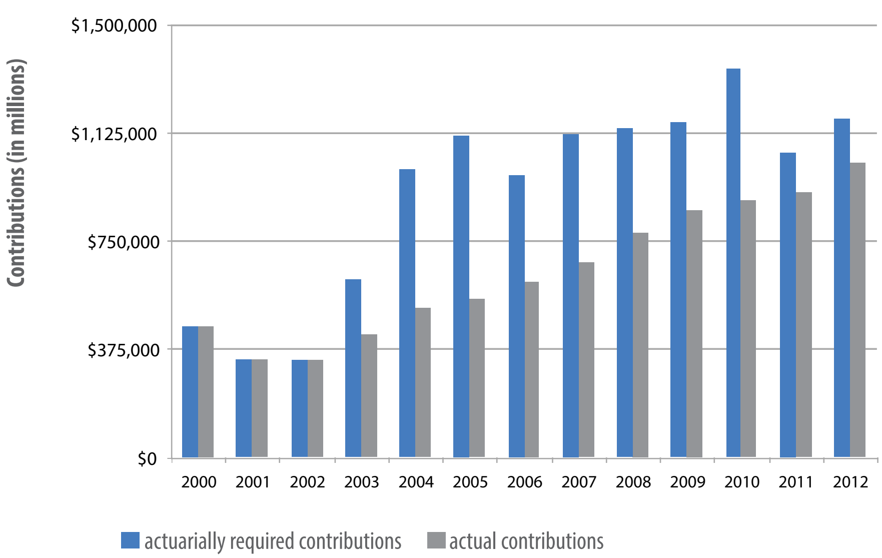
The cost of public-sector retirees is a "time bomb," says Warren Buffet. *Time Magazine* likens public pension underfunding to the Social Security crisis, only harder to fix, and the single biggest threat to the nation's fiscal health.[3] Moreover, says commentator Fareed Zakaria, if the U.S. is to face an economic meltdown akin to that of Greece, it will be at the state and local government level, with pension liabilities eating away huge chunks of annual budgets.[4]

Show Me the Numbers: How Serious is Pension Underfunding in Colorado?

According to *State Fact Sheets: Widening the Gap,* a 2012 Pew Charitable Trust report on pension health by state, "Colorado failed to consistently pay its full annual pension contribution from 2005 to 2010. The system was 66 percent funded in fiscal year 2010 and faced a $20 billion funding gap. Most experts agree that a fiscally sustainable system should be at least 80 percent funded." [5] Colorado's percentage was 63.1% in 2012, and the unfunded liability stands at $22.7 billion. The chart below explains how this came about.

COLORADO PENSION PLANS RECOMMENDED AND ACTUAL CONTRIBUTIONS

(source: PERA CAFR'S)



[3]Sivy, M. "Underfunded Pensions Add Billions to National Deficit." *Time Magazine*, Sept. 26, 2012. http://business.time.com/2012/09/26/how-bad-is-americas-pension-funding-problem/

[4]Zakaria, Fareed. "Why We Need Pension Reform." *Time Magazine*, June 25, 2012. http://www.time.com/time/magazine/article/0,9171,2117244,00.html

[5]PEW Charitable Trust. *State Fact Sheets: Widening the Gap.* June 18, 2012. www.pewstates.org.

PERA itself saw the risk of these trends and in 2010, it spearheaded a number of strategies for addressing this situation, which culminated in the successful passage of Senate Bill 1. In the minds of some observers, the combination of reductions in future benefits and increases in employer contributions over the next 30 years enacted in SB 1 have addressed the issues. In fact, they argue, Colorado is a model for how it has responsibly handled its approach to both the unfunded liabilities and to controlling future costs. Other observers disagree, arguing that the timelines involved in paying off the unfunded liabilities are simply too long and expose the state to more risks of underfunding. But there is one point that everyone can agree on. Since the core strategy of SB 1 is a reduction in future Cost of Living Adjustments (COLA)—which is currently being challenged in court—even the proposed "fix" to PERA's future stability now hangs in the balance as the courts reach their decision. From this standpoint, all Colorado citizens share a common interest in finding alternatives to improve Colorado's public retirement system.

What is at Stake

Addressing Colorado's public pension system shortfall, as well as the underlying structure that leads to instability and unintended consequences for the workforce, is a critical issue for the state. As Josh McGee, Vice President for Public Accountability Initiatives at The Arnold Foundation points out in his solution paper on this topic:

> "Sate and local budgets across the nation are facing enormous distress. Although part of this hardship can be attributed to the worldwide financial crisis and the recession that followed, a significant portion has been caused by widespread, unsound budgetary practices. By and large, the financial crisis merely uncovered deep, veiled structural flaws. Chief among these flaws is the perpetual underfunding of public employee benefits." [6]

From the perspectives of McGee and others who have examined this issue, while pensions themselves are complex, the road ahead need not be.

[6]McGee, Josh B. *Creating a New Public Pension System.* Laura and John Arnold Foundation. 2011.

Facing the Challenge

Understanding the Issues from a Business Perspective

Given the alarming facts outlined above and their potential impact on Colorado's economic future, business and community leaders came together to study Colorado's pension liability in early 2013. The charge was two-fold:

1. Study the situation to understand the current state and future prospects of Colorado's public pension system; and
2. Determine whether adjustments to the system are necessary.

The group met seven times between February and April 2013. The group was convened by Colorado Succeeds, originally as a study group on the pension system specifically, but in the course of conversations it focused on the broader notion of a retirement system for public employees. The Civic Canopy, a Denver nonprofit, provided planning, research and meeting facilitation to guide the group toward its stated goals.

The group was committed to exploring the situation from multiple perspectives to better understand the complexity of the public retirement system in Colorado. Experts in national and local pension policy attended meetings to provide the group with information and to answer questions specific to Colorado. Speakers included:[7]

- Henry Sobanet, Budget Director, State of Colorado;
- Josh McGee, economist for The Arnold Foundation;
- Greg Smith, Executive Director, Colorado Public Employees Retirement Association; and
- Ron Kirk, Economist, State Legislative Council.

Discussions explored a wide range of topics, including the legal, political and financial considerations of pension, the impact of the pension system on the state and local budgets, and the impact of pensions on labor markets of public employees. The group also reviewed a number of printed resources and media on the public pensions (see annotated bibliography at the end of this document).

To help ground the discussions, the group reached consensus on the guiding principles for a sound public retirement system, a priority ranking of those principles, and the assessment of Colorado's current retirement system relative to those principles.

[7] The conclusions in this report may or may not be the same as those held by the speakers themselves.

Guiding Principles

For Colorado's Public Retirement System

As the group explored the challenges related to the current system, it became clear that one's assessment of the current system is in large part a function of what one believes the system is designed to deliver. That led to an exploration of the principles that should guide the design of a more ideal system.

1. **Be fiscally prudent and financially sustainable.**

   Colorado's public retirement system should fund its long-term liabilities through a reasonable level of taxpayer support and sustainable financial assumptions. This includes:
   - Paying down the current unfunded liabilities in a reasonable time.
   - Remaining financially sustainable for both employers and employees over time.
   - Relying on reasonable taxpayer contributions.

2. **Promote a high quality workforce.**

   Colorado's public retirement system should be a part of an overall compensation system that allows Colorado to have a quality public workforce. This includes:
   - Attracting high quality workers to public service.
   - Retaining high quality workers in the system but not unduly influencing workers to stay past the point where quality declines.
   - Supplementing but not replacing an appropriate level of current compensation.

3. **Provide the opportunity for an adequate level of retirement income for all public employees.**

   Colorado's public retirement system should enable all public employees to build resources throughout their careers that lead to a secure retirement. This includes:
   - Enabling public employees to retire from public service with adequate resources for retirement.
   - Enabling public employees to build retirement resources throughout their years of public service even if they leave before retirement.
   - Benefits should be fair in comparison with other marketplace plans.

4. **Be transparent and adaptable.**

   Colorado's public retirement system should be based on assumptions and policies that are clear, open to review, and that are reasonable to the general public. This includes:
   - Presenting financial assumptions in a manner that the general public can review and understand.
   - Using assumptions that can be tested and adapted over time should they not prove accurate.

In discussing the relative importance of each principle, the group first observed that they rated some principles to be of greater importance than others, and that as a group of business leaders, they would likely rank them in a different order than PERA members would, or college graduates exploring career options. But over the course of discussion, participants noted that a truly effective public retirement system would maximize all principles to the greatest extent possible, and not allow any one principle to be emphasized to the detriment of the others. In the end, it became clear that inventing the best possible public retirement system for Colorado amounts to a balancing act of interdependent interests.

Assessing Colorado's Current Public Retirement System

Key Concerns

Using the Guiding Principles as a point of comparison, committee members assessed Colorado's current system public retirement system and raised the following concerns and questions.

Unfunded Liabilities. While SB 1 outlined a plan for paying off the currently unfunded portion of PERA's liabilities in roughly 30 years, the group wondered how advisable it is to saddle future generations with this debt. Concern was also expressed about how reliable this prediction is given the assumptions around rates of investment return and life expectancy, not to mention the political temptations to underfund the pension plan in lean economic times.

Crowding Out. Funding pension costs is a priority that adversely impacts funding for other public services, especially education budgets, which have seen declining funding in Colorado for years.

Workforce Quality. Attracting the best workforce should be a matter of offering an overall compensation package consistent with the marketplace, not just the most generous retirement package. Further, the current system potentially distorts employees' retirement decisions by over-incentivizing people to retire when benefits are maximized rather than when it is the right career decision.

Risk. Relying on a 30-year payoff creates the risk of future underfunding by policymakers who continue to be influenced by a perceived political and budgetary necessity of putting off future payments to cover another "more urgent" funding need. This is what has happened in the past. It also increases exposure to potential underfunding.

Complexity. All the variables that factor into the solvency of the pension fund (life expectancy, salary levels, length of service, etc.) create confusion and misunderstanding and increase risk. Complexity encourages tinkering at the margins rather than really rethinking the system.

Level of Benefits. The plan is designed so that career public employees receive 80% of their highest average salary for life in retirement plus the potential for inflation. This is far better than what workers in the private sector can expect from social security and individual retirement plans. While some in the group wondered if that should be the proper point of comparison, all agreed that improving the public retirement system will require that benefits are in line with their actuarially defined value. Further, these benefits should accrue equally throughout an employee's career, rather than growing slowly in the early years of employment and rapidly as retirement age approaches—which can have negative impacts on employee's decisions on how long to stay in their positions.

Governance Structure. The system and processes are highly vulnerable to politics. Many, if not most, of those with oversight are vested in the current system. It can be very tempting for term limited politicians to underfund the pension and let future legislators grapple with the consequences. Ultimately, local employers, school districts, and taxpayers pay the price for poor oversight.

Accountability. There's no political imperative to look at Colorado's pension shortfall. This situation was in part created by policymakers who were not held accountable for the consequences of underfunding our pension obligations. The risks of such actions need to be more clearly defined.

Assessing the Current System Against the Ideal

Using the Guiding Principles as a framework, the group assessed the current system against their ideal system. The table on the next page shows how Colorado's system measures up, principle by principle, based on the information available. Assessments were made against a seven point scale:

1. I don't believe there are serious issues;
2. I think are issues to address but minor ones;
3. The evidence seems mixed but is more favorable than not;
4. The evidence is mixed;
5. I believe there are problems that need to be fixed;
6. I believe there are significant problems to be fixed;
7. I believe we are in a crisis.

Fiscally Prudent, Financially Sustainable	• Allowing 30 years to pay off the debt is not fiscally sound. • Taxpayers assume 100% of the risk; employees assume no risk except for increases in COLA going forward. • The system is vulnerable to poor governance; people with short-term views are making decisions with long-term effects. • The magnitude of risk is multiplied by the sheer number of variables.	Mean = 6
Promote a Quality Workforce	• The system does not appear adaptive to a changing workforce. • The number of employees who have left the system is significant—the argument that this system retains talent seems unfounded. • The field of education has struggled to compete for the nation's top graduates, and a generous retirement system does not seem to be changing this. • The crowding out effect means we can't hire as many new workers; fewer dollars for salaries, leads to less effective workforce and lower morale, and is less attractive for recruiting a future workforce.	Mean = 5.6
Provide Adequate Retirement Income Opportunity	• What is an "adequate" level of retirement income and how do amounts in this system compare to those in other systems, such as 401k or Social Security? It is difficult to justify to taxpayers why PERA members should be guaranteed more favorable benefits than private sector workers, especially during economic downturns. • The core issue is the complexity of risk factors; need to narrow the risk to rate of return. • What are American saving patterns? In private sector, we know people are poorly prepared. How do you create a system that encourages people to prepare well?	Mean = 5
Transparent & Adaptable	• Not sure the current system can be understood by the general public, and the complexity obscures what is really going on. • The retirement system is not subject to ERISA, but we need to be clear about what accounting standards it is subject to. • GASBE takes effect in 2014 and the liability will flow down through to employer balance sheets, which will help with transparency but will highlight the seriousness of the situation; this will get public attention.	Mean = 5.5

The Call to Action

Strong Consensus on Taking Action

The group of 30 business and community leaders set out to assess Colorado's current public retirement system and determine if further action should be taken to strengthen it. After examining all aspects of the system with input from national and local experts, 88% of the group supported or strongly supported the need to take further action on a broader scale to improve the public retirement system in Colorado.

Next Steps

1. Determine Key Facts and Figures. The group recommends a study be conducted to gather data related to Colorado's public pension situation akin to the *Truth in Numbers* reports commissioned by Rhode Island and Illinois (Cook County), and a comparison of what has worked in other jurisdictions and how they might be similar to Colorado. This report will provide an overview of the current state of the public retirement system in Colorado, how it compares to other state systems, and summarize alternate models of how the guiding principles could be incorporated in innovative ways into a more ideal system for Colorado.

2. Establish a Leadership Group. As was the case with Phase 1, a smaller leadership group will meet regularly to discuss potential topics, speakers and vet ideas for the larger stakeholder group to consider in their meetings. This group would be diverse enough to credibly represent the variety of perspectives on the issues, but small enough to ensure the ideas gathered through the process lead to meaningful action.

3. Gather Stakeholder Input. Using the fact-finding report as a tool for raising awareness, the group will gather input from key stakeholders. This process will involve educating groups representing diverse geographies, sectors of employment, and interests across the state. A variety of methods and tools will be incorporated, both online and in-person, to ensure broad awareness of the issues and the broadest range of input possible.

The group felt there are a number of questions related to the Guiding Principles that were not fully answered in Phase 1, but which will be critical in the process of generating new solutions. These include:

- How do we determine what an adequate level of retirement benefits is? What is the proper point of comparison?
- What is the best way to pay off unfunded liabilities and minimize tax payer risk?
- What role does the retirement system play in ensuring Colorado has the highest quality public workforce?
- What changes to the current governance structure are necessary to ensure a more effective and transparent oversight of the public retirement system?
- What have other states done to address these issues? What models can Colorado draw upon as we work to improve our public retirement system?

Throughout the process, group members emphasized the urgency of the situation, even while they acknowledged the challenge of moving quickly through the complex and easily polarized landscape. The action steps outlined here are designed to build a broad coalition unified behind a shared commitment to a set of guiding principles. Even more, these action steps build upon Colorado's proven track record of collaboration that will help design a public retirement system for the 21st Century.

Defining Terms

Several key terms and acronyms are explained below.

Cost of Living Adjustment (COLA) – an additional amount of benefit paid to retirees based on the increase in the cost of goods and services.

Crowding Out – as the cost for funding the pension liability increases, it commands a greater portion of state and local budgets, thereby 'crowding out' other spending. For example, some argue that as school districts spend more on pension contributions, fewer funds are available for teacher salaries and other important education expenditures.

Defined Benefit (DB) – With a Defined Benefit, or DB, plan, employers provide employees a specific retirement benefit based on salary and years of service. Defined benefit plans can be funded exclusively by employer contributions, or require employee contributions. These monies are pooled together and professionally managed to increase efficiency and remove financial risk for the participant. These plans provide a stream of income for life, which makes it predictable and allows participants to plan for retirement and feel a sense of financial security. The most common formula to calculate benefits is based on the employee's earnings at the end of the worker's career. The employer or government bears funding and investment risk.[7]

Defined Contribution (DC) – Defined Contribution (DC) plans provide a means for both employees and employers to contribute a steady stream of revenue into the participant's retirement account. A DC plan with a fixed annuity option, can also supply guaranteed lifetime income. Adding a variable annuity option allows the participant to invest in equities, bonds, real estate and other types of asset classes potentially to earn additional income. DC plans generally allow participant-directed investments and vest (or allow employees to receive benefits) sooner than DB plans. DC benefits are also portable, which is becoming more important for workers in today's evolving marketplace where the average worker may switch jobs and even careers multiple times over the course of a lifetime. In DC plans the rate of employer and/or employee contributions are usually defined as a percentage of salary. How much income a participant receives in retirement will depend on several factors, including salary level, duration of contributions, investment earnings and age at retirement.[8]

Employee Retirement Income Security Act of 1974 (ERISA) – ERISA is a federal law that establishes minimum standards for pension plans in private industry and provides for extensive rules on the federal income tax effects of transactions associated with employee benefit plans. ERISA was enacted to protect the interests of employee benefit plan participants and their beneficiaries. Public pension plans are not typically subject to ERISA standards.

Governmental Accounting Standards Board (GASB) – The body that creates accounting standards for public entities.

Public Employees Retirement Association (PERA) – PERA provides retirement and other benefits to the employees of more than 500 government agencies and public entities in the state of Colorado. PERA is the 21st largest public pension plan in the United States. Established by State law in 1931, PERA operates by authority of the Colorado General Assembly and is administered under Title 24, Article 51 of the Colorado Revised Statutes. In accordance with its duty to administer PERA, the Board of Trustees has the authority to adopt and revise Rules in accordance with state statutes.

[7]Definition from TIAA-CREF, https://www.tiaa-cref.org/public/support/help/ask-tiaa-cref/db-vs-dc
[8]Ibid.

Annotated Bibliography

Brown, Hank. ***"Congress Could Use Some 'Colorado Courage.'"*** *Brownstein Hyatt Farber Schreck* 8 Mar. 2003. **Web. <http://www.bizjournals.com/denver/print-edition/2013/03/08/congress-could-use-some-colorado.html?page=all>**	Lauds the successful actions of a bipartisan Colorado state legislature tackling a balanced approach to reforming the states pension system. Challenges the US congress to follow Colorado's lead and tackle tough fiscal issues with bipartisan cooperation.
Carroll, Vincent. ***"PERA's Tweet Fails to Reassure."*** *The Denver Post* 17 Mar. 2013. **Web. <http://www.denverpost.com/carroll/ci_22592998/peras-tweet-fails-reassure>**	Columnist Vincent Carroll expresses disappointment over an article tweeted by PERA, "*The Five Myths about Public Employee Pensions*' and expresses concern over PERA's $26 Billon unfunded liability.
Hillman, Mark. ***"PERA Bailout Shortchanges Students, Teachers."*** *The Denver Post* 29 Mar. 2013. **Web. <http://www.denverpost.com/opinion/ci_22893614/pera-bailout-shortchanges-students-teachers>**	Hillman highlights how PERA's unfunded liability and "bailout" crowds out other State funding priorities and is shortchanging schools for the next 35 years to pay for past mistakes.
Hoover, Tim. ***"Colorado's Public Worker Pension Fund Not 'Fiscally Sound.'"*** *The Denver Post* 30 Nov.2012. **Web. <http://www.denverpost.com/breakingnews/ci_22101268/report-colorados-public-worker-pension-fund-not-fiscally>**	Summarizes a November 2012 report by Morningstar, Inc. that found that 21 states' (including Colorado) aggregate funded rations were below the 70 percent "fiscally sound" threshold.
Lieber, Ron. ***"Battle Looms over Huge Costs of Public Pensions."*** *New York Times* 6 Aug. 2010. **Web.<http://www.nytimes.com/2010/08/07/your-money/07money.html?_r=0>**	Leiber weighs the issues of balancing fairness and fiscal responsibility related to Colorado's 2010 pension reform legislation.
Sharf, Joshua. ***"Why PERA's Assumptions are Faulty."*** *EdNews Colorado* 28 Mar. 2013. **Web. <http://www.ednewscolorado.org/voices/voices-why-peras-presumptions-are-faulty>**	Sharf, of the Independence Institute, offers a counterpoint to PERA Executive Director Gregory Smith response to a report by the National Council on Teacher Quality in which Smith defends Colorado's public retirement system. Sharf highlights that while Smith outlined three major advantages of a defined benefit plan (vs. others) Sharf explains that these benefits are not dependent on having a defined benefit plan and offers alternatives.
Smith, Greg. ***"Voices: PERA Responds to National Council on Teacher Quality (NCTQ) Report."*** *EDNews Colorado* 13 Jan. 2013. **Web.<http://www.ednewscolorado.org/voices/voices-pera-responds-to-nctq-report>**	PERA Executive Director Smith responds to the National Council on Teacher Quality report and defends PERA's hybrid defined benefit plan and criticizes the reports research that concluded that total compensation (including a pension) matters when attracting the best talent to the teaching profession. With a proven track record of providing value to the taxpayers and an equitable benefit to Colorado's educators, we must have the discipline and patience to let the landmark, bipartisan reform legislation work.
Von Drehle, David. ***"The Little State That Could."*** *Time Magazine* 5 Dec. 2011. **Web.<http://www.time.com/time/magazine/article/0,9171,2100110,00.html>**	Highlights then neophyte politician, Rhode Island State treasurer, Gina Riamondo's leadership in creating Landmark pension reform legislation in Rhode Island and her political leadership that lead to its passage.

Briefs and White Papers

United States. Center for Retirement Research at Boston College. ***Compensation Matters: The Case of Teachers.*** By Alicia H. Munnell and Rebecca Cannon Fraenkel.* Number 28, Jan. 2013. **Web. http://crr.bc.edu/wp-content/uploads/2013/01/slp28.pdf>**	The purpose of this brief was to show that compensation matters in attracting quality teachers. The analysis found that, controlling for demands of the job and personal characteristics, state and local teacher plans that compensate teachers more generously are able to hire higher quality teachers – as measured by the SAT score at their undergraduate institution. These findings are important in a period when financial pressures are leading public sector employers to cut pension benefits. But rather it is to argue that pensions are a part of a total compensation package, and total compensation for teachers – even before cuts – is either the same or lower than that for private sector workers with similar characteristics. So even if the pension changes are good policy, without compensating wage increases, they will diminish the total compensation that new teachers will receive, make teaching in public schools less attractive, and reduce the quality of applicants.
United States. Colorado PERA (2010). ***Effect of Senate Bill 10-001 on Colorado PERA Membership.*** **Web.<https://www.copera.org/pdf/Misc/2010LegChart2-25.pdf>**	Very helpful 2 page summary chart outlining the effects of SB-001 on Colorado PERA membership, by type.
United States. Colorado PERA (Feb. 2012). ***FAQs about Colorado PERA for Active Members.*** **Web. <https://www.copera.org/pdf/5/5-107.pdf>**	Describes how service credit and benefits are calculated, coordination with Social Security benefits, Medicare eligibility and more.
United States. Colorado PERA (Aug. 2012) ***PERA Contribution Rates.*** **Web. <https://www.copera.org/pdf/5/5-123.pdf>**	PERA contribution rates by year, including employee, employer, Amortization Equalization Disbursement (AED) and Supplemental Amortization Equalization Disbursement (SAED) description and amounts, from 2010-2017.
United States. Colorado PERA (Jan. 2013) ***Members and Benefit Recipients by County.*** **Web. <https://www.copera.org/pdf/5/5-122.pdf>**	Shows number of active members, inactive members, benefit recipients, and annual PERA benefits paid for each Colorado county.
United States. Colorado PERA. ***PERA 101 for Media Contacts.*** **Web. <https://www.copera.org/pdf/5/5-115.pdf>**	Describes PERA's governance, membership, various employer contribution rates, and defined benefits.
United States. Colorado PERA (Sept. 2012) ***Senate Bill 10-001 Provisions: Comprehensive Summary.*** **Web.<http://www.copera.org/pera/formspubs/puborder.htm#factsheets>**	Describes SB 1 provisions that affect PERA membership: cost of living adjustment (COLA)/annual increase, contribution rates, early retirement reduction factors, highest average salary, etc.
United States. Colorado PERA (November 2011) ***Economic and Fiscal Impacts.*** By Pacey and McNulty. **Web.<https://www.copera.org/pdf/Impact/Impact2011.pdf>**	PERA commissioned Pacey and McNulty, a Boulder Economics firm, to complete their Economic and Fiscal Impact study 2011 update shows large economic of PERA impact to state.

Briefs and White Papers

McGee, Josh, Ph.D. ***Creating a New Public Pension System.*** By Laura and John Arnold. Foundation Briefing Paper. n.d. **Web.<http://arnoldfoundation.org/sites/default/files/pdf/A9RBC84.pdf>**	McGee outlines structural problems of public pensions, including perpetual underfunding, of states' pension systems and lays out criteria for reform along with five specific solutions.
United States. ***National Council on Teacher Quality. No One Benefits: How teacher Pension Systems are Failing BOTH Teachers and Taxpayers.*** By Kathryn M. Doherty, Sandi Jacobs and Trisha M. Madden (2012). **Web. <http://www.nctq.org/p/publications/docs/nctq_pension_paper.pdf>**	Provides an overview of the pension funding crisis in the United States, explores the technical and sometimes hidden features of teacher pensions that are costly to taxpayers, examines the elements of current pension systems that make them not fair, advantageous or beneficial to teachers, outlines a forward looking approach to reforming teacher pensions that can help shore up states financially and improve their ability to recruit and retain highly-effective teachers. It finds that pension systems are severely underfunded, pension underfunding is even worse than meets the eye, that retirement eligibility rules add to costs and that most pension systems are inflexible and unfair to teachers.
United States. National Institute on Retirement Security. ***A Better Bang for the Buck: The Economic Efficiencies of Defined Benefit Pension Plans.*** By Almeida & Fornia. (2008). **Web.<http://www.nirsonline.org/index.php?option=com_content&task=view&id=121&Itemid=48>**	The National Institute on Retirement Security has released a new report, "A Better Bang for the Buck: The Economic Efficiencies of Defined Benefit Pension Plans." The report presents an original analysis on the efficiencies of defined benefit pension (DB) plans, and the costs of DB plans as compared to 401(k)-type individual defined contribution (DC) plans. The report's analysis and findings serve as a myth buster with respect to the costs of defined benefit pension plans. Specifically, the embedded economic efficiencies of DB plans make them nearly half the cost of DC plans, or a 46 percent cost savings..

Video and Websites

"Colorado's Pension Challenges; The Need for an Affordable, Secure and Sustainable Retirement Plan." PEW Charitable Trust, Laura and John Arnold Foundation, 2012. Web. (Draft – not yet available))	PEW and Arnold Foundations team up to outline Colorado's pension challenges and offer a framework for reform including developing a plan to responsible pay down the debt over a reasonable time frame; adopting a reformed retirement system that is affordable, sustainable and secure and enduring that any plan adopted enhances the state's ability to recruit and retain a talented workforce.
Draine, David and McGee, Josh. ***"Presentation on Colorado Pensions."*** Pew Center on the States, Laura and John Arnold Foundation, 2012. **Web. <http://www.dkfoundation.org/sites/default/files/files/Hot%20Lunch%20Presentation%20Colorado%20Testimony%2010%2008%2012%20%28JM%20Rev%29.pdf>**	Power point presentation that lays out Colorado's pension challenges and urges action. Similar recommendations to those in "Colorado's Pension Challenges", above and in the Colorado state Fact Sheet from PEW's Widening the Gap update.
Employee Benefit Research Institute. ***"FAQs about Benefits – Retirement Issues."*** 2013. **Web.<http://www.ebri.org/publications/benfaq/index.cfm?fa=retfaq13>**	Defined Benefit and Defined Contribution Private Sector Assets by Plan Type. In the private sector, retirement plans have changed dramatically. The total assets in private sector defined contribution plans and IRAs are substantially larger than the assets in private sector defined benefit plans, which was not the case in 1985. Furthermore, the percentage of retirement plan participants who consider a defined benefit to be their primary plan has dropped significantly. In contrast, public sector retirement plan participants who consider a defined benefit plan as their primary plan has held steady if not increased.
Employee Benefit Research Institute. ***"FAQs about Benefits – Retirement Issues 2013."*** Trends in US Retirement Plans. (VERIFY DATES FOR FAQ). **Web.< http://www.ebri.org/ publications/benfaq/index.cfm?fa=retfaq10>**	Graph showing the percentage of workers participating in an employee based retirement plan 1987-2005. Shows trend data, that retirement plan participation (the percentage of the workforce who participates in a plan regardless of eligibility) has held somewhat steady from 1987-2005. However, participation for all workers increased from 37.6% to 40.9% from 1987 to 2005, but for full-time, full-year workers, the participation decreased from 58.4% to 54.8%. After the percentages peaked in 1999 and 2000, they declined reaching their lowest levels since 1993.
Friedberg, Leora, Turnter, Sarah. ***" Labor Market Effects of Pensions and Implications for Teachers."*** National Center on Performance Incentives. Prepared for Rethinking Retirement Benefit Systems in Nashville, Tennessee on February 19-20, 2009. **Web.<https://my.vanderbilt.edu/performanceincentives/files/2012/10/200911_Ni_EtAl_IncentivesLaborMkt.pdf>**	Policy discussions about teacher quality and teacher "shortages" often focus on recruitment and retention of young teachers. However, attention has begun to focus on the incentive effects of teacher retirement benefit systems, particularly given their rising costs and the large unfunded liabilities. In this paper we analyze accrual of pension wealth for teachers in a representative defined benefit teacher pension system. Missouri substantially enhanced retirement benefits during the 1990s in response to a booming stock market. We estimate the current costs of those enhancements, and evidence of their effects on teacher retention and retirement. We construct forward-looking measures of teacher pension wealth and show that the actual distribution of teacher retirements can be approximated by simple models which assume that teachers retire when pension wealth is maximized. While retirement age is rising in other sectors of the economy, these pension enhancements appear to have lowered the average experience and age of retiring public school teachers in Missouri.

Video and Websites

Gainer, Bridget Cook. Commissioner, 10th District.) ***"Truth in Numbers: The Cook County Pension Fund."*** 2012. **Web. <http://www.openpensions.org/wp-content/uploads/Gainer-Truth-In-Numbers.pdf>**	Cook County Truth in Numbers report outlining fiscal realities through numbers and facts in Cook, County, Illinois.
Johnson, Geoffery. Colorado Legislative Council Staff Memorandum ***"Colorado PERA 2010 Reform Legislation and Historical Funded Status"*** 28 Sept. 2010. **Web.<http://cospl. coalliance.org/fedora/repository/co:9423>**	This memorandum provides a brief description of the Colorado Public Employees' Retirement Association (PERA), presents the pension plan's historical funded ratio, and summarizes provisions of 2010 PERA reform legislation.
Kahn, Salman. Illinois Pension Obligations. Video. n.d. **Web.<http://www.khanacademy.org/about /blog/post/36815487104/illinois-pension-obligations>**	This helpful and user-friendly video shows map of US states and their unfunded pension obligations. Looks at fiscal impacts of Illinois' liabilities, including crowding other state expenditures, such as K-12 education.
"Kentucky's Pension Challenges – Opportunities for Real Reform." PEW Charitable Trust, Laura and John Arnold Foundation. Aug. 2012. **Web. <http://www.pewstates.org/uploadedFiles/PCS_Assets/2012/Pew_Kentucky_Pension_Challenges.pdf>**	Highlights Kentucky's pension plan 2011 funding levels at a worrying 53 percent and a $23 billion shortfall. Recommends that Kentucky develop a plan to responsibly pay down the unfunded liability over a reasonable time frame; adopt a reformed retirement system that is affordable, sustainable, and secure; and ensure that whatever plan the state offers enhances its ability to recruit and retain a talented public-sector workforce.
"Montana's Pension Challenges." PEW Charitable Trust. Laura and John Arnold Foundation. 2013. (Verifydate). **Web.<http://leg.mt.gov/content/Publications /fiscal/Pensions/Pew-Pension-Brief-2-2013.pdf>**	Claims that Montana's pension system is on an unsustainable course, with a 2012 funding level of only 64%. It highlights how Montana frequently misses annual payments – that it has not made its full annual recommended contribution in seven of the past 11 years. It says that Montana's current pension reform plans have fallen short and urges that Montana must have an unwavering commitment to full funding - savings and benefit accrual rates that will provide a reasonable benefit for all workers regardless of tenure; and investment options that have pooled assets that are professionally managed with low fees with easy annuitization at reasonable rates.
"Rhode Island Retirement Security Act of 2011, Executive Summary" Gabriel, Roder, Smith and Company. 2012. **Web. <http://www.pensionreformri.com/resources/ReportwithGRSAppendix.pdf>**	Executive Summary of Rhode Island's 2011 pension reform act that reduces the state's unfunded liability of nearly $7.0 billion by over $3.0 billion and prevents future erosion of the state's pension systems while targeting an 80.0 percent funding level for all pensions systems. Ensures employees preserve what they have earned through June 30, 2012 while shifting future risk to public employees through installing a new hybrid plan that draws from both defined benefit and defined contribution plans; and ensures there is no impact on the ability to retire for those who are eligible to retire as of June 30, 2012.

Video and Websites

"Rhode Island Retirement Security Act of 2011: A Fair and Comprehensive Solution to Our Pension Crisis". Power Point Presentation. Rhode Island House Finance Committee. Oct. 2011. **Web.<http://www.pensionreformri.com/resources/TreasurersOverview Presentation10-24-11.pdf>**	Power point presentation to Rhode Island House Finance Committee that outlines the major components of Rhode Island's proposed pension reform legislation.
"The Role of Public Employee Pensions in Contributing to State Insolvency and the Possibility of a State Bankruptcy Chapter" February 14, 2011 House of Representatives Testimony of Keith Brainard Research Director. National Association of State Retirement Administrators. W**eb. <http://judiciary.house.gov/news/Statement02152011.html>**	Brainard's congressional testimony defending the strength of public pension plans and further stating that; pensions are a relatively small portion of state and local budgets; significant financing and benefit changes are already underway or enacted; that pension solvency has been confirmed; urging a measured approach to long-term solutions; decrying faulty analysis as unhelpful to state and local recovery efforts; and claiming that federal intervention is unwarranted.
Snell, Ron. ***"Lessons from Rhode Island".*** National Council of State Legislatures. Feb. 2012. **Web. <http://www.ncsl.org/issues-research/labor/lessons-from-rhode-island.aspx>**	Snell, a (now) retired pension expert based in Colorado lauds Rhode Island's pension reform actions and outlines their importance. He says that the importance of Rhode Island's initiative can hardly be overstated. By changing how employees accrue benefits and reducing future cost-of-living adjustments for current and future retirees, the legislation hits many nails on the head, outlining that: The state retirement plans' unfunded liabilities fall from \$7.3 billion to \$4.3 billion; The estimated state and local government contributions for FY 2013 fall almost 40 percent, from \$689 million to \$415 million; the costs of restructuring are shared by all: retired workers, current employees and new hires; and all benefits earned in the past are protected.
Snell, Ron. ***"Pension and Retirement Plan Enactments in 2011 State Legislatures."*** National Conference of State Legislatures 31 Jan. 2012. **Web.< http://www.ncsl.org/issues-research/labor/2011-pension-and-retirement-enacted-legislation.aspx>**	This report summarizes selected state pensions and retirement legislation enacted in 2011. Its goal is to help researchers and policy makers know how other states have addressed issues that could arise in any state. In keeping with that goal, the report excludes most clean-up legislation, cost-of-living adjustments, administrative procedures and technical amendments.
"State Fact Sheets." PEW Charitable Trust. 18 June 2012. **Web.<http://www.pewstates.org/uploadedFiles/PCS_Assets/2012/Pew_Pensions_Update_State_Fact_Sheets.pdf>**	Very helpful one-page fact sheets grading the fiscal health of each states' pension and retiree health care systems.
"Truth in Numbers: The Security and Sustainability of Rhode Island's Retirement System." Office of the General Treasurer. Jun.11. **Web.<http://www.ricouncil94.org/Portals /0/Uploads/Documents/General%20Treasurer%20Raimondo%20report.pdf>**	Rhode Islands report uses data and real numbers to estimate the price tag for past service, diagnose key drivers of the structural pension deficit; understand the implications of further inaction and provide a framework for solutions.

Video and Websites

"When Teachers Choose Pension Plans: The Florida Story." Matthew M. Chingos Brown Center on Education Policy, Brookings Institution and Martin R. West, Harvard Graduate School of Education. Feb.2013. **Web. <http://edexcellencemedia.net/publications/2013/20130219-When-Teachers-Choose-Pension-Plans/20130219-When-Teachers-Choose-Pension-Plans-FINAL.pdf>**

Using a Florida case study, the authors conclude the following: That a nontrivial fraction—a quarter to a third of new Florida teachers—opted for the DC plan despite the fact that the DB plan was the default; that teachers with more career options—notably individuals with advanced degrees or math and science specialties—are more apt to favor the DC plan; that the analysts found only a weak relationship between teachers' value added (to student achievement) and their choice of pension plans; and that many short-timers are using the DC option to leave with something rather than nothing (a smart choice!); others are leaving empty-handed. The analysis shows clearly that it's simply irrational—in any "vesting" situation—for teachers who expect to be short-timers to opt for DB pension plans.