



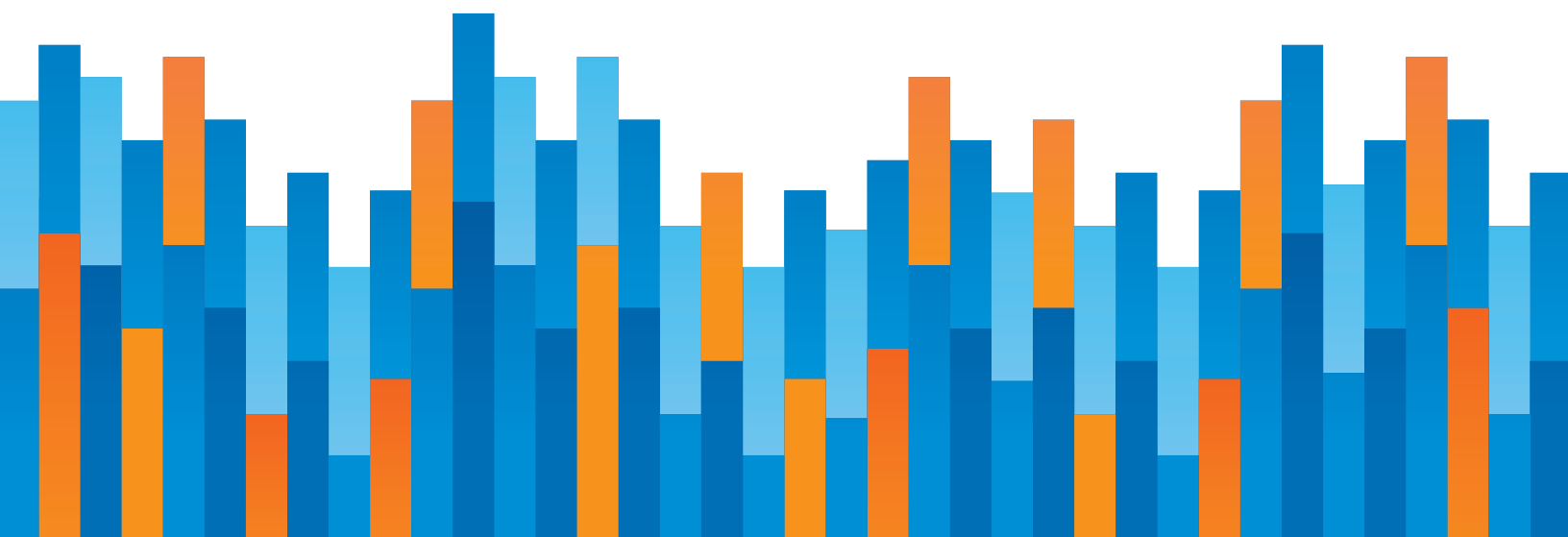
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# THE PERSONAL RETIREMENT OPTIMIZATION PLAN: AN OPTIMIZED DESIGN FOR STATE AND LOCAL GOVERNMENT EMPLOYEES

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# EXECUTIVE SUMMARY

With most private firms shifting workers to 401(k)-style defined contribution (DC) retirement plans since the 1980s, the state and local government market is effectively the last bastion of traditional defined benefit (DB) pension plans. However, even among governments the ubiquity of traditional pension plans has been slipping. And much of the movement away from traditional DB plan designs has been caused by accumulated unfunded liabilities that are fiscally burdening both the pension plan and jurisdictions' budgets.

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*In practice, a traditional 401(k) on its own will rarely comprise a core, or primary, retirement plan. This is because this type of plan was designed, and functions best, as a supplemental, employer-sponsored, tax-deferred savings plan.*

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Public pension reform has been seen as a binary choice: the traditional DB or a 401(k)-style DC plan, with the latter option frequently presented as a standalone retirement option. In practice, a traditional 401(k) on its own will rarely comprise a core, or primary, retirement

plan. This is because this type of plan was designed, and functions best, as a supplemental, employer-sponsored, tax-deferred savings plan.

This study presents a new retirement plan design, the Personal Retirement Optimization—or PRO Plan, which is built on a DC foundation but designed to operate more like a traditional pension. The DC foundation for the PRO Plan was chosen because it allows more public employees to accrue valuable retirement benefits regardless of length of service compared to defined benefit approaches. The design uses cutting-edge financial technologies to focus on providing plan participants with a predictable and customizable retirement income. It uses a liability-driven contribution (LDC) approach, tailored to individual situations and needs, for determining necessary contribution levels. Primarily concerned with risk-managed income adequacy in retirement, it addresses wealth accumulation only as a secondary objective. The PRO Plan provides participants the flexibility to choose an asset distribution methodology but uses several types of currently available annuities as a default method. The annuity default, combined with proper financial education and advice, tailor the PRO Plan income to an individual's unique situation.

This study illustrates the effectiveness of the PRO Plan design in meeting individual retirement needs while effectively managing employer workplace expectations. To do so, the study elaborates on various scenarios that are relevant for the public sector. This analysis compares the relative funding requirements for three separate longevity scenarios:

1. Scenario 1: Do-It-Yourself (DIY) – the individual self-insures their personal longevity for the entire period until age 95.
2. Scenario 2: QLAC (deferred annuity) – the individual purchases an IRS Qualified Longevity Annuity Contract to address longevity risk from 85 to 95.
3. Scenario 3: 100% Immediate Annuity – the individual purchases an immediate life annuity at retirement age 67 for the entire stream of payments.

Each scenario's funding requirement is based on an actuarial analysis of net present value of a stream of inflation-adjusted payments starting at age 67 until age 95 (or death). We found that a DIY scenario was the costliest PRO Plan alternative. Our analysis shows that a typical mid-level earner at age 67 would require \$1,050,000 under the DIY scenario. The QLAC scenario requires 28% less funding, or only \$760,000. The 100% Immediate Annuity scenario requires 38% less funding than the DIY scenario, or \$652,000, to achieve the same retirement income.

To show how the PRO Plan would work when the target benefit accumulation is greater or lesser than needed, we analyzed both a shortfall and excess \$100,000 in plan accumulations at age 50. These scenarios showed that PRO Plans would better protect individuals by positioning them to adjust savings rates up or down as needed. Similar to the baseline scenarios, the QLAC and 100% Immediate Annuity options require lower additional contributions to allow participants in shortfall situations to reach the target retirement benefits.

This study serves as a hands-on tool for public fund managers willing to implement the PRO Plan option. In addition to providing the reader with various scenarios, it details all the plan features necessary for its successful implementation. PRO Plan is an innovative way of incorporating the benefits of 401(k)-style solutions into modern-day public sector retirement plans that give their workers flexibility and predictability of their benefits.

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# PART 1

## INTRODUCTION

Most retirement industry professionals hold that any true employer-sponsored retirement plan should primarily support employee financial security in their post-employment years. For most state and local government employers, the DB pension plan has been the traditional answer to this objective with about 82% of public employees participating in this type of plan.<sup>1</sup> The long-term underfunding of many of these defined benefit plans led to financial stress over the years. As a result, there have been calls and, in some cases, action taken to move in whole or in part from defined benefit approaches to the DC plans more common in the private sector.

But in too many cases public policymakers have assumed that 401(k)-type plans alone are a comprehensive response to challenges associated with pensions. This is a mistake. By itself, a 401(k)—which is merely a reference to a section of the federal tax code—is not and should not be looked at as providing a template for a well-rounded retirement plan. Any formulation of a next generation retirement plan for public employees must instead begin by looking at the various parties' interests and objectives and the needs of not only today's public employees but future generations as well.

<sup>1</sup> "National Compensation Survey: Employee Benefits in the United States," March 2021, U.S. Department of Labor, Martin J. Walsh, Secretary, U.S. Bureau of Labor Statistics, William W. Beach, Commissioner, September 2021; <https://www.bls.gov/ncs/ebs/benefits/2021/employee-benefits-in-the-united-states-march-2021.pdf>

The DB plan designs historically used in the public sector have met the needs of the public employers, employees, and taxpayers at varying times and to varying degrees. But recently, public employers have accrued massive DB unfunded pension liability debt resulting in squeezing out funding for other elements of employee compensation and benefits as well as for public services and infrastructure.<sup>2</sup> Although DB approaches have matured by paying out benefits to large numbers of long-service participants, they have often short-changed shorter-term workers. When plans fail to evolve sufficiently to appeal to a changing workforce, public employers fail to attract and retain employees. While DB plans err on sustainability and service to all employees, DC plans can fall short of adequately addressing the funding, investment, and longevity risks of individual participants.



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*This study proposes rethinking any movement to or assessment of existing DB and DC retirement plans for state and local government employees to include reformulating and broadening public retirement benefit policy to focus on helping all employees achieve retirement security—not just for a favored few.*

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This study proposes rethinking any movement to or assessment of existing DB and DC retirement plans for state and local government employees to include reformulating and broadening public retirement benefit policy to focus on helping *all employees* achieve retirement security—not just for a favored few. The study discusses how traditional DB and typical DC approaches fall short and presents a new plan design called the Personal Retirement Optimization or PRO Plan. This plan uses design features, existing technologies, and available lifetime income products to provide a more customized solution for individual public employees, while meeting the needs of a modern changing workforce and the workplace needs of employers.

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<sup>2</sup> William G. Gale and Aaron Krupkin, “Financing State and Local Pension Obligations: Issues and Options,” July 2021; <https://www.brookings.edu/wp-content/uploads/2016/07/Financing-State-and-Local-Pension-Obligations-Gale-Krupkin-1.pdf>



## PART 2

# A BROADER RETIREMENT BENEFIT POLICY IS NEEDED TO GUIDE PLAN DESIGN

In order to maintain their current standard of living, an individual will need between 70% and 90% of pre-retirement income in retirement.<sup>3</sup> That amount of income is generated by several sources including employer-sponsored retirement plans, Social Security (if applicable), and personal savings or other wealth and income sources (e.g., spousal retirement plan, inheritance, other business, or employment income).

However, traditional plans don't serve employees well because they:

- use policies that don't allow for customization to an employee's circumstances, and
- are not fair to short-term employees due to back-loading in deference to career employees.

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<sup>3</sup> See for example – “A Measurement Tool For Retirement Planning,” Aon Consulting's Replacement Ratio Study, 2008. [files.nc.gov/retire/documents/files/Governance/FutureOfRetirement/RRStudy070308.pdf](https://files.nc.gov/retire/documents/files/Governance/FutureOfRetirement/RRStudy070308.pdf) (1 July 2022).

For example, if an individual joins any employer at age 25-30 and retires from that same employer at age 65, any decent plan type and design can provide sufficient income in retirement to support maintaining that individual's standard of living. However, nowadays this example of a public employee working with the same public employer for 35-40 years is the exception and not the rule. In 2020 the median tenure of a state government employee was only 5.6 years, a far cry from the 25-30 years needed to ensure a sufficient DB benefit.<sup>4</sup>



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While individuals have unique circumstances that create very different financial needs in retirement, standard retirement design generally only addresses a narrow set of design variables. For instance, employers design retirement assuming all employees will have full career length of service, no periods in and out of the workforce, average longevity, average raises and average retirement ages, and average Social Security. This approach works as a general starting place for designing a retirement plan, but these variables vary dramatically from one individual to the next.

Individuals face many more types of pre- and post-retirement risks and to different degrees than can readily be addressed by traditional DB and DC plan designs. In 2011, the Society of Actuaries published “Managing Post-Retirement Risks—A Guide to Retirement Planning,” a policy report that effectively discussed the major retirement risks and factors that can impact a financially secure retirement.<sup>5</sup> The following is a partial list of these factors:

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<sup>4</sup> “Table 5: Median years of tenure with current employer for employed wage and salary workers by industry, selected years, 2010-2020,” Bureau of Labor Statistics, Economic News Release, [www.bls.gov](http://www.bls.gov), 22 September, 2020. [www.bls.gov/news.release/tenure.t05.htm](http://www.bls.gov/news.release/tenure.t05.htm) (1 July 2022).

<sup>5</sup> “Managing Post-Retirement Risks – A Guide to Retirement Planning,” Committee on Post-Retirement Risks, Society of Actuaries, 2011. [www.soa.org/globalassets/assets/files/research/projects/post-retirement-charts.pdf](http://www.soa.org/globalassets/assets/files/research/projects/post-retirement-charts.pdf) (1 July 2022).

- Longevity risk – outliving your retirement assets
- Investment risk – market losses can reduce retirement savings
- Interest rate risk – affects market returns and annuity payouts
- Inflation risk – devalues fixed incomes
- Employment patterns and the effect on employer plan accruals – switching or losing jobs can create gaps in benefit accrual
- Business (employer) continuity and strength—the employer sponsoring the plan could go out of business or restructure in ways that disrupt the accrual of benefits (e.g., layoffs or benefit reductions)
- Health care cost risk—medical cost inflation and the availability of and local access to affordable caregivers and facilities
- Housing costs and needs—e.g., rent, property, and insurance
- Public policy risk—e.g., funding of Social Security and Medicare
- Marital and dependent status—including care for aging parents
- Home ownership—significantly affects net assets
- Other unforeseen expenses

As this study shows, these retirement security risks are either completely ignored or only partially or incidentally addressed under traditional DB and DC plan designs.

A more comprehensive solution set is needed to support employees in their diverse financial situations, career paths, and needs in retirement. Moreover, in the public sector, taxpayers ultimately bear the plan's financial risk and the social safety net risk of public employees not achieving retirement financial security. In other words, any unfunded liabilities fall back on the taxpayers' shoulders. The challenge for a public employer is to design a retirement program that will best meet the broadest set of employee needs while ensuring that all promises are fully funded on employer's side.

## PART 3

# LIMITATIONS OF TRADITIONAL DEFINED BENEFIT PLANS IN THE 21<sup>ST</sup> CENTURY

For many decades, a formula-driven DB pension plan has been and continues to be the standard approach for state and local governments. In this design, retirement income is determined by a formula, such as 2.0% (multiplier) of a final three-year average salary multiplied by years of service. In this example, if an employee retired after a 35-year career with the same employer and with a final three-year average salary (FAS) of \$75,000 their annual retirement income would be:

Annual DB Benefits =

FAS x Multiplier x Years of Service =

\$75,000 (FAS) X 0.02 (Multiplier) X 35 (YOS) = \$52,500

In this example the retirement plan benefit calculates out to be 70.0% of final average salary which, when combined with Social Security and other sources of retirement income, will adequately maintain standard of living. This traditional approach has generally been effective for full-career employees.

From a participant perspective, one advantage of a traditional DB plan is its ability to deliver a stream of income for life in retirement without investment or longevity risk to the retiree. But not all participants share equally in this lifetime income benefit. It is reserved for a relatively small sub-segment of public employees who have a long career in public employment with coverage under that retirement system. Some two-thirds of participants in public employee retirement defined benefit plans are expected to receive a benefit much lower than that of the other one-third who remain their entire career. This benefit accrual pattern is explained primarily because of 1) the back-loading of benefit accruals and 2) the lack of portability of benefits.



*Some two-thirds of participants in public employee retirement defined benefit plans are expected to receive a benefit much lower than that of the other one-third who remain their entire career.*



The back-loading pattern of benefit accrual of DB plans also can impact retirement income security.<sup>6</sup> The following discussion illustrates the back-loading patterns of the value of retirement benefit accruals of a typical DB plan and a typical DC plan over time, along with the cumulative impact of employee turnover.<sup>7</sup>

Unlike a generation ago, it is increasingly rare for an individual to remain with one employer for an entire working career. In fact, according to the U.S. Department of Labor,

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<sup>6</sup> Zvi Bodie, Alan J. Marcus, Robert C. Merton, "Defined Benefit versus Defined Contribution Pension Plans: What are the Real Trade-offs?" *Pensions in the U.S. Economy*. Eds. Zvi Bodie, John Shoven, David Wise, (Chicago: University Of Chicago Press, 1988).

<sup>7</sup> Calculations based on comparative analysis of a state retirement system DB and DC plans conducted by Reason Pension Integrity Project.

median tenure in January 2020 was just 5.6 years for state employees nationally.<sup>8</sup> A more illustrative example of this is the Pension Integrity Project analysis of Colorado PERA School Division data that shows only 37% of hires remain in the system after five years of service.<sup>9</sup>

The combination of back-loading benefits and a lack of portability of benefits has a particularly negative impact for employees with shorter periods of service. One academic study that examines the benefit accrual experience of teachers under DB plans concludes that three in 10 new teachers leave within five years, forfeiting their benefits. The study notes because many teachers cross state lines to teach elsewhere they “split” their careers between multiple state pension systems, greatly reducing their retirement benefits compared to those who stay for a full career in one state. The study also finds that only 25% of teachers break even and earn a pension benefit that is equal to the value of the contributions made by themselves and their employers.<sup>10</sup>

Figure 1 clearly shows that traditional DB pensions are a poor fit for all but a narrow band of workers nearing retirement age. The DC benefit accruals exceed DB pension benefit accruals until an employee reaches over two decades of service.

This illustrates the general point that traditional DB plans do less to contribute a proportionate share of needed retirement benefits to younger and shorter service employees who leave before the crossover (DB crossing DC accruals) point in the chart. The DB accrual pattern is also uneven, reflecting the impact of benefit features like early retirement (often subsidized) and age + service retirement rules. In contrast, the DC accrual pattern is more even and more valuable for younger and shorter-career employees before the crossover point.

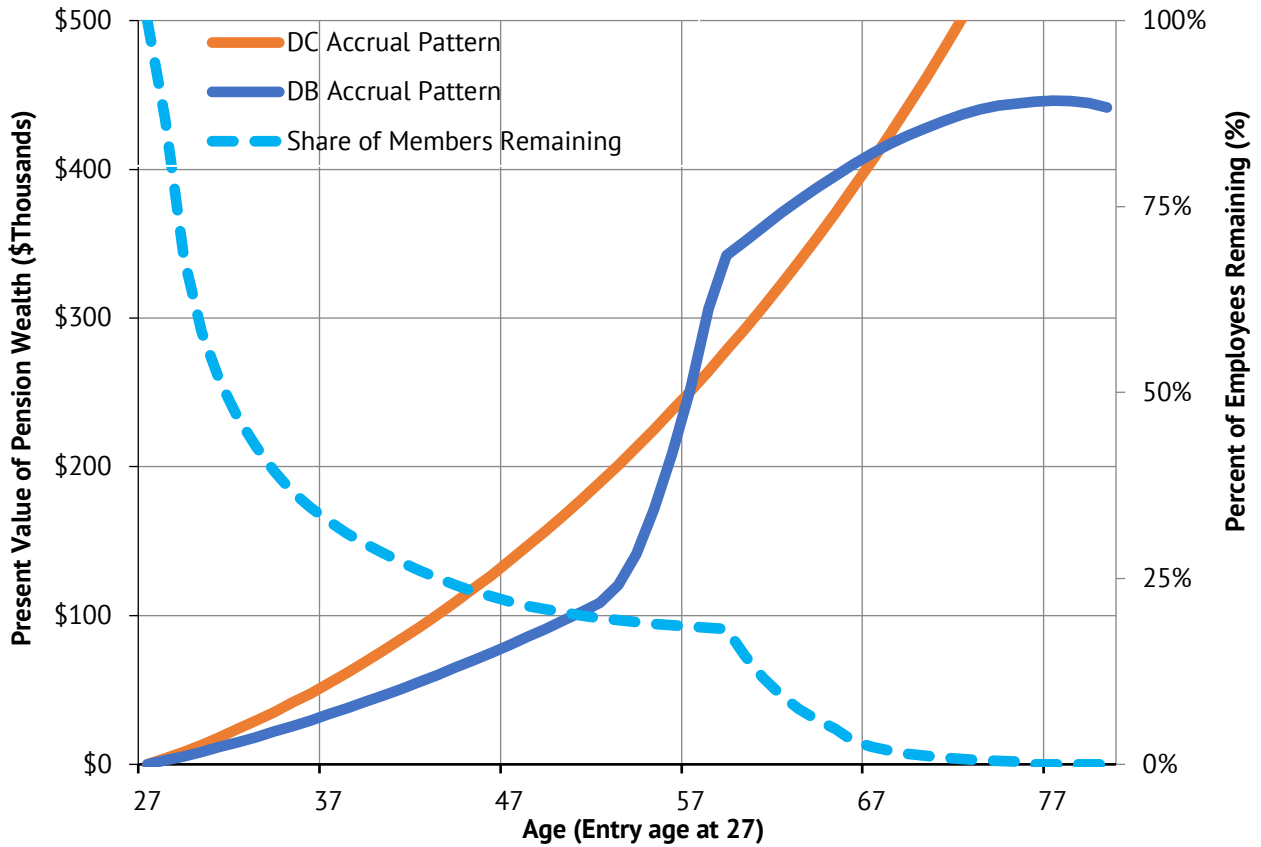
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<sup>8</sup> “Table 5: Median years of tenure with current employer for employed wage and salary workers by industry, selected years, 2010-2020,” Bureau of Labor Statistics.

<sup>9</sup> Anthony Randazzo, Leonard Gilroy, and Zachary Christensen, “Colorado Adopts Significant Pension Changes for All Public Employees,” Reason Foundation, 25 May 2018. [www.reason.org/commentary/colorado-adopts-significant-pension-changes-for-all-public-employees/](http://www.reason.org/commentary/colorado-adopts-significant-pension-changes-for-all-public-employees/) (1 July 2022).

<sup>10</sup> Chad Aldeman and Richard Johnson, “Negative Returns: How State Pensions Shortchange Teachers,” Bellwether Education Partners, 2015. [www.urban.org/sites/default/files/publication/71521/2000431-Negative>Returns-How-State-Pensions-Shortchange-Teachers.pdf](http://www.urban.org/sites/default/files/publication/71521/2000431-Negative>Returns-How-State-Pensions-Shortchange-Teachers.pdf) (1 July 2022).

**FIGURE 1: COMPARISON OF DB AND DC BENEFIT ACCRUAL PATTERNS FOR A COHORT OF PARTICIPANTS**



Source: Pension Integrity Project and authors’ actuarial analysis of a large public retirement system. The analysis is based on a new hire at the age 27. The defined benefit pension wealth at each age represents the total stream of pension payouts that an employee has earned by that age, and this stream of benefit checks is valued back to the present—as a single amount—using the system’s 7% current discount rate.

The second reason for lower pension accruals for younger and short service employees is the general lack of portability of benefits in traditional DB plans. Employees who do not vest forfeit 100% of the value of the contributions their employers had made to their pension benefit, and those who leave before retirement age, even if vested, experience the actuarial reduction of the present value of frozen vested accrued benefits over time. This is not an issue for defined contribution approaches, where the accumulations continue to participate in investment experience.

The Employee Retirement Income Security Act (ERISA) is the set of regulations governing private sector retirement plans. While not directly applicable to the public sector, ERISA is often recognized as providing policy benchmarks across all employment sectors. Many public plans have vesting periods longer than the ERISA maximums.<sup>11</sup> Vesting forfeitures and the decreasing value of frozen deferred benefits for public employees who leave before retirement eligibility clearly have a large negative impact on employees' retirement security.



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*Employees who do not vest forfeit 100% of the value of the contributions their employers had made to their pension benefit, and those who leave before retirement age, even if vested, experience the actuarial reduction of the present value of frozen vested accrued benefits over time.*

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Some claim that traditional DB plans are particularly important and effective as a tool to attract and retain high-quality employees, but other studies find no such correlation. One such study, while admitting high turnover rates (6.8% per year for teachers), focuses on how well DB plans work for full-career public school teachers, but does not address the impact on shorter career and younger employees.<sup>12</sup> For teacher defined benefit plans, public K-12 teachers are predominately female (76%).<sup>13</sup> The benefit accrual pattern and portability inherent in defined benefit plans have a particularly negative impact on female teachers who do not stay within one public retirement system their entire working career.

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<sup>11</sup> Daniel Schmidt, "2017-18 Comparative Study of Major Public Employee Retirement Systems," Wisconsin Legislative Council, 2018. [www.nasra.org/files/Topical%20Reports/Plan%20Design/2018\\_retirement.pdf](http://www.nasra.org/files/Topical%20Reports/Plan%20Design/2018_retirement.pdf) (01 July 2022).

<sup>12</sup> Illana Boivie, "Revisiting The Three Rs of Teacher Retirement Systems: Recruitment, Retention, and Retirement," National Institute on Retirement Security, 2017. [www.nirsonline.org/wp-content/uploads/2017/11/final\\_three\\_rs\\_report\\_.pdf](http://www.nirsonline.org/wp-content/uploads/2017/11/final_three_rs_report_.pdf) (1 July 2022).

<sup>13</sup> Soheyla Taie and Rebecca Goldring, "Characteristics of Public and Private Elementary and Secondary School Teachers in the United States: Results from the 2017–18 National Teacher and Principal Survey First Look," National Center for Education Statistics of U.S. Department of Education. 21 Sep. 2020. <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2020142rev> (1 July 2022).



A 2016 study further cast doubt on the employee retention advantages of DB plans, finding no association between shifts away from DB plans to a hybrid arrangement and higher turnover.<sup>14</sup> The study finds little support for the notion that a DC pension structure will increase employee turnover. It also noted that employees are likely motivated by the personal utility of the options provided.<sup>15</sup>

However, if the inquiry is broadened to include other efficiency benchmarks beyond just cost, including the number of participants actually earning benefits, the results would be very different. A Bureau of Labor Statistics analysis provides a cost comparison analysis of DB vs DC that shows that DB plans only benefit a small number of participants instead of all employees.<sup>16</sup>

Overall, traditional public sector DB plans have demonstrated strengths, but also have some undeniable weaknesses that a new generation of plans proposed in this analysis make up for.

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<sup>14</sup> Dan Goldhaber, Cyrus Grout, Kristian Holden, “Pension Structure and Employee Turnover: Evidence from a Large Public Pension System,” *ILR Review* 70 (2017). [www.journals.sagepub.com/doi/full/10.1177/0019793916678424](http://www.journals.sagepub.com/doi/full/10.1177/0019793916678424) (1 July 2022).

<sup>15</sup> Ibid.

<sup>16</sup> “Retirement costs for defined benefit plans higher than for defined contribution plans,” *Beyond the Numbers: Pay and Benefits*, December 2012, [www.bls.gov/opub/btn/volume-1/pdf/retirement-costs-for-defined-benefit-plans-higher-than-for-defined-contribution-plans.pdf](http://www.bls.gov/opub/btn/volume-1/pdf/retirement-costs-for-defined-benefit-plans-higher-than-for-defined-contribution-plans.pdf) (1 July 2022).

**PROS AND CONS OF TRADITIONAL DEFINED BENEFIT PENSION PLANS****Pros:**

- Stable, fixed, predictable, long-term, government-backed lifetime annuity income—regardless of market performance, with some inflation protection for long-tenured employees
- Mandatory participation
- Professionally managed investments not requiring employee involvement
- Potentially a “golden handcuff” that can aid keeping some employees in place

**Cons:**

- Benefit accrual designs that significantly disadvantage younger and shorter term of service employees.
- Inflexible benefit distribution designs that do not provide employees sufficient opportunity to optimize how they receive benefits from the plan based on their individual needs.
- Standard final average salary formulas can disproportionately benefit higher paid cohorts and encourage pension spiking abuses.
- Subject to governance risks, because of political interference, which impact plan viability

Recognizing these challenges calls for retirement plan designs that serve career mobility and provide benefit portability. Simply ignoring the retirement security needs of non-full-career workers is not the answer.

## PART 4

# THE POSSIBILITIES OF DC PLANS

Simply stated, a DC plan is a plan structure whereby the amount of the periodic contributions made is what is “defined,” rather than the ultimate retirement benefit. In other words, rather than the employee receiving a predictable amount of pension and the employer picking up any slack created by investment losses, the employer pays a predictable amount into the system, invests it, and pays the employee according to the market value of those assets at time of distribution. In addition to defining the contribution amounts, the plan sponsor can specify many other provisions of the plan. These provisions can include investment fund options, asset distribution requirements, vesting periods, and others.

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*Simply stated, a DC plan is a plan structure whereby the amount of the periodic contributions made is what is “defined,” rather than the ultimate retirement benefit.*

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DC retirement plan design has developed through several stages. Private corporations had long maintained DB plans as their primary retirement plans. For many reasons they began to shift away from the DB plans that were no longer meeting their and their employees' needs. When corporations first shifted away from DB plans to DC plans, they simply utilized their existing 401(k) supplemental employee savings plan as their retirement plan. This type of 401(k) plan was DC 1.0. Following this stage, there is a long history—over a century—of successful DC retirement plans in higher education designed specifically to address the needs of a mobile faculty in a nationwide employment pool. These plans have embedded annuities, both fixed and variable, and have adequate contribution levels defined in their design. They also include controls on distribution methods that ensure lifetime income adequacy for participants following a career in higher education. This design can be described as DC 2.0.

Corporate DC retirement plans today, as well as the DC plans discussed in reform efforts for state and local governments, have begun to focus on providing long-term sustainability and lifetime income security more effectively for participants following a career of employment. Many corporate plans today fall under the DC 2.0 banner as do most proposed DC plans for state and local governments.



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*The corporate sector began to shift away from traditional DB plans as the economics of such plans became unsustainable and as the plans were no longer meeting the needs of an increasingly mobile workforce.*

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DC plans were initially utilized as supplemental tax-deferred savings plans in the state and local government market. These plans, generally under Section 457(b) of the Internal Revenue Code, were roughly the equivalent of the 401(k) plans in the corporate sector and 403(b) in the nonprofit world. All these plans were employee-funded, tax-deferred savings plans that were designed to supplement a traditional DB pension plan.

The corporate sector began to shift away from traditional DB plans as the economics of such plans became unsustainable and as the plans were no longer meeting the needs of an increasingly mobile workforce. In general terms, however, when they moved away from DB plans, corporations simply adopted their existing 401(k) supplemental savings plans as their primary retirement vehicle. Unlike the outgoing DB plans, the 401(k) plans made no provisions for lifetime income and often had contributions inadequate to effectively fund retirement. In many cases employer contributions were low or nonexistent.

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*The limited availability of lifetime retirement income products and solutions for the DC plan market fails to address individual longevity risk—the possibility of outliving one’s retirement assets.*



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These design flaws were the result of the corporations and their consultants and advisors not understanding proper DC retirement plan design, since there was nothing in the governing Internal Revenue Code and ERISA laws that precluded more effective retirement plan designs. Nevertheless, as state and local governments began exploring pension reform measures for the same reasons corporations had already done so, opponents to change latched on to the flawed 401(k)-style plan, suggesting that it was the only alternative to DB being vetted. This pendulum swing to individual account, participant-directed investments in the corporate sector gave rise to the current state of over \$7.3 trillion of assets in 401(k) plans—the vast majority of the \$10.4 trillion held in all defined contribution arrangements.<sup>17</sup> Mutual funds managed \$4.8 trillion, or 65%, of assets held in 401(k) plans at the end of September 2021. The swing to mutual fund investments also impacted the 403(b) market as well with mutual funds in large ERISA 403(b) plans representing 60% of assets in 2017 with variable annuities holding 21% of assets, and fixed annuities holding 19%.<sup>18</sup>

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<sup>17</sup> “Release: Quarterly Retirement Market Data,” Investment Company Institute, 2022. [https://www.ici.org/statistical-report/ret\\_22\\_q1](https://www.ici.org/statistical-report/ret_22_q1)

<sup>18</sup> The BrightScope/ICI Defined Contribution Plan Profile: A Close Look at ERISA 403(b) Plans,” BrightScope and Investment Company Institute, 2021. [www.ici.org/pdf/21\\_ppr\\_dcplan\\_profile\\_403b.pdf](http://www.ici.org/pdf/21_ppr_dcplan_profile_403b.pdf) (1 July 2022).

The limited availability of lifetime retirement income products and solutions for the DC plan market fails to address individual longevity risk—the possibility of outliving one’s retirement assets. While the market is starting to respond to this challenge, and the removal of some fiduciary barriers by the Setting Every Community Up for Retirement Enhancement (SECURE Act) of 2019 has been welcome, the pace of adoption remains slow. A 2020 PSCA report indicates only 16.3% of DC plans offer retirement income solutions.<sup>19</sup> The interest in adding lifetime income options going forward is limited due to reasons ranging from lack of demand from participants, product complexities and costs, and consultant reluctance.<sup>20</sup> Interestingly, the hesitation to add income options may have more to do with a failure by plan sponsors and their consultants to make retirement income the explicit and primary purpose of the plan. Making this simple change of perspective (i.e., retirement income first and wealth accumulation second) should lead to a very different result. It is short-sighted to exclude in-plan lifetime income solutions merely because of lack of employee demand for them. Nobody would make that argument in the DB plan context.



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*It is short-sighted to exclude in-plan lifetime income solutions merely because of lack of employee demand for them. Nobody would make that argument in the DB plan context.*

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Because of the individual account nature of DC plans, the cost of administration is higher than for DB plans, although in recent years the gap has been narrowing considerably. The Investment Company Institute (ICI) reports a steady drop in overall 401(k) plan expenses from 2009 to 2018 on a plan-weighted, asset-weighted, and participant-weighted basis, with the largest plans having an average asset-weighted cost of about 38 basis points.<sup>21</sup> These costs are still higher than many DB plans, but they include the investment

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<sup>19</sup> “2020 Plan Investment Trends,” Plan Sponsor Council of America, 2020. [www.pzca.org/sites/pzca.org/files/Research/2020/2020%20Plan%20Investment%20Trends\\_FINAL\\_protected.pdf](http://www.pzca.org/sites/pzca.org/files/Research/2020/2020%20Plan%20Investment%20Trends_FINAL_protected.pdf) (01 July 2022).

<sup>20</sup> Robert Steyer, “Outlook 2022, Defined Contribution, Shaping up to be a prime year for lifetime income options,” Pensions & Investments, January 10, 2022. <https://www.pionline.com/special-report/shaping-be-prime-year-retirement-income-options>

<sup>21</sup> The BrightScope/ICI Defined Contribution Plan Profile: A Close Look at ERISA 403(b) Plans,” BrightScope and Investment Company Institute, 2021. [www.ici.org/pdf/21\\_ppr\\_dcplan\\_profile\\_403b.pdf](http://www.ici.org/pdf/21_ppr_dcplan_profile_403b.pdf) (1 July 2022).

management fees and asset-based administrative, education, financial planning, and advice fees for a wide range of participant services not generally available from DB plans. Any direct comparison of the cost of DC plans vs. DB plans that does not consider the relative value of the different benefits at different points in time, the importance of benefit portability, and the different scope of services provided to participants is at best misleading.

The standard 401(k) style DC plan uses participant-directed investments to deflect fiduciary risk away from the plan sponsor employer. But this has resulted in too many participants failing to invest properly to meet their retirement financial security goals. Behavioral finance academic Shlomo Bernartzi stated that, when left to their own devices, participants in defined contribution plans invest poorly, largely because of behavior risk aversion and status quo bias.<sup>22</sup>



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*Any direct comparison of the cost of DC plans vs. DB plans that does not consider the relative value of the different benefits at different points in time, the importance of benefit portability, and the different scope of services provided to participants is at best misleading.*

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The DC industry, however, has moved significantly away from the standard do-it-yourself investment menu of 15-25 investment options to focus on managed investments that decrease the investment behavioral risk of participants in DC plans using target date/lifecycle funds, managed accounts, and individual advice and guidance services.

EBRI/ICI reports in 2021 indicate that target date funds have grown in popularity. At year-end 2018, more than half (56%) of 401(k) participants in the EBRI/ICI 401(k) database held

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<sup>22</sup> Shlomo Benartzi, "Implication of Participant Behavior for Plan Design," AllianceBernstein Investments, 2007. [www.alliancebernstein.com/cmsobjectabd/pdf/research\\_whitepaper/r29284\\_implications\\_0131\\_wp.pdf](http://www.alliancebernstein.com/cmsobjectabd/pdf/research_whitepaper/r29284_implications_0131_wp.pdf) (1 July 2022).

target date (or lifecycle) funds. Target date fund assets were more than one-quarter (27%) of 401(k) plan assets in the database.<sup>23</sup>

While much more must be done to improve the quality of defined contribution retirement plans in this country, it is clear that a properly designed DC retirement can be just as effective as a DB pension in providing an income-focused retirement plan for a full career employee. It is also true that there are certain inherent strengths and weaknesses in DC plans, just as there are in any retirement plan design.

### **PROS AND CONS OF DEFINED CONTRIBUTION PLANS**

#### **Pros:**

- Effectively address employee mobility with assets being portable and controlled by the employee
- More suitable to customization to meet specific individual needs
- More equitable benefit accrual patterns for shorter-career employees
- By definition, it cannot create unfunded liabilities for employers and taxpayers
- Employer's obligation fully met when contributions are made
- More effective recruiting tool within the mobile workforce

#### **Cons:**

- Potentially higher investment costs and lower diversification due to less pooling of investments
- Potential for suboptimal investment allocation due to lack of participant expertise and behaviors
- Risk of depletion of retirement assets
- Investment risk borne by individual plan participant
- Employee suffers if inadequate contributions are made into the plan

<sup>23</sup> Sarah Holden, Jack Van Derhei, and Steven Bass, "401(k) Plan Participants' Use of Target Date Funds," *EBRI Issue Brief* 537, September 2021. [https://www.ebri.org/docs/default-source/ebri-issue-brief/ebri\\_ib\\_537\\_401ktdfs-9sep21.pdf?sfvrsn=bf653b2f\\_4](https://www.ebri.org/docs/default-source/ebri-issue-brief/ebri_ib_537_401ktdfs-9sep21.pdf?sfvrsn=bf653b2f_4) (1 July 2022).



## PART 5

# 10 PRINCIPLES FOR NEXT GENERATION PUBLIC EMPLOYEE RETIREMENT PLANS

Many retirement plans need to do a better job of delivering adequate and secure retirement benefits to employees. To do so, some guiding principles for designing the next generation of plans are in order. We propose the following principles be used for assessing how well the various plan designs accomplish this objective.

***Principle #1 – Individual Optimization:***

*Support employees to optimize their retirement financial security by being responsive to the individual's unique personal circumstances and work career pattern.*

- Flexible and customizable approaches are preferred to “one-size-fits-all” approaches in delivering an adequate and secure retirement for every employee.
- Benefit design must factor in more elements than length of service and compensation.

***Principle #2 – Similar Outcomes for All Service:***

*Apportion accrued benefits similarly for similarly situated employees.*

- While plans should be flexible enough to serve an individual's circumstances, similarly situated individuals should be treated similarly. This will discourage back-loading of benefit accruals and avoid benefit manipulation such as pension spiking.
- Designs should provide proportionate accrual of benefit values (not front- or back-loaded) for all periods of service regardless of age or length of service.

***Principal #3 – Income Replacement Benefit:***

*Establish income replacement as the target benefit objective relative to working years with the employer (taking into account prior and current Social Security benefit accumulation and/or participation).*

- The primary objective of a retirement program is income replacement and not wealth accumulation. A benchmark income replacement of 70%–90% of pre-retirement income can be used for this purpose.
- The retirement plan's target benefit should be set taking into account an average Social Security benefit for that level of compensation unless the employer does not participate in Social Security.

***Principle #4 – Adequate, Shared, and Concurrent Funding:***

*Ensure sufficient, joint, and concurrent funding by contributions from both the employer and employee.*

- Funding for retirement security should be sufficient to reach the income replacement target benefit and is a shared responsibility. A 50/50 split seems a good place to start.
- Retirement benefits should be prefunded as they are being earned to avoid/minimize creating unfunded promises that can surprise stakeholders with future shortfalls and funding demands on future generations.
- To guarantee funding adequacy, loans from a core retirement plan should not be permitted to avoid diversion/leakage of retirement assets for non-retirement purposes. Loans would only be permitted from voluntary supplemental savings contributions to other plans offered by the employer.

***Principle #5 – Immediate/Mandatory Participation:***

*Immediate and mandatory participation has to be part of the benefit design.*

- Allowing voluntary participation subverts the whole point of a retirement plan and opens the door to financial ruin. Auto-enrollment in a retirement program ensures employees financial security.
- Waiting periods before enrollment of matching eligibility can cause significant periods without retirement savings especially for those with short periods of service. Delays should not be allowed.

***Principle #6 – Immediate Vesting:***

*Retirement benefits are a form of deferred compensation that employees should be able to keep.*

- Retirement benefits are a form of currently earned compensation to be paid in the future. As such, lengthy vesting requirements forfeit pay from short-term employees unfairly.
- Considering the modern mobile workforce, retention objectives should be subordinate to the higher priority of delivering adequate retirement benefits to a broader range of employees.

***Principle #7 – Risk Managed Design:***

*Employees and employers should manage and share major risks such as low investment returns, longevity, inflation, and disability.*

- Investment return and volatility, longevity, and inflation must be managed by appropriate plan design and asset management, administration tools, and risk pooling products and policies.
- Disability risk should be managed through a separate income replacement benefit—insured or self-insured—rather than through the retirement income plan.
- Apportionment of who bears these risks will vary by the risk tolerance of the plan sponsor.

***Principle #8 – Transparent Benefits and Costs:***

*The value and cost of benefits provided should be transparent to the employer and employee.*

- Employers must ensure that employees understand what is being earned toward their retirement security objectives. This helps reduce the risk of expectations deviating substantially from reality with either funding or benefit shortfalls.
- Transparency and employee education about benefits creates the opportunity for taking corrective action when circumstances change and, conversely, to avoid changes to the design that are contrary to these fundamental principles.

***Principle #9 – Employer Workforce Objectives:***

*The retirement benefit should support employer goals, including attraction and retention of quality employees, and be responsive to changes in the employment market.*

- As a form of deferred compensation, the retirement benefit has an impact on the attraction and retention of quality employees. Choosing appropriate vesting schedules and availability of retirement options such that they help achieve employer's goals are critical for achieving this goal.
- The retention element of this principle should be secondary to the need to deliver retirement benefits for everyone.

***Principle #10 – Simple and Understandable:***

*Participants need robust financial and retirement planning services to help customize and optimize their retirement income success.*

- The employer should provide financial and retirement planning services and notify employees on a regular basis of their plan's investment performance—both the guaranteed portion and the non-guaranteed portion.
- Plans should include measures such as default managed investments, default, or mandatory retirement income features to reduce the risk of falling short of retirement income objectives and to increase the chances of success.

## PART 6

# IDEAS FOR THE NEXT GENERATION RETIREMENT PLAN FOR PUBLIC EMPLOYEES

The usual Scylla and Charybdis comparisons of DB vs DC plans—as if there is only one conceptual prototype design in each category as opposed to a wide range of design parameters and best practices that allows for much creativity in design—begs the question whether there is a different sailing path that recognizes the inherent advantages of each and avoids as much as possible the disadvantages.

Can appropriate plan design changes address the shortcomings inherent to each plan type? The following discussion examines some of the possibilities for changes to both plan types.

## 6.1

## KEY CHANGES TO IMPROVE DEFINED BENEFIT PENSION PLAN EFFECTIVENESS

- **Add immediate vesting and lump sum cash out features to DB plans.** While it is technically possible to shorten or eliminate vesting provisions in defined benefit plans and to add lump sum cash-out features to create more-portable benefits, these ideas are not enough because they do not solve the benefit back-loading problem. These changes would also increase the normal cost of these plans, which presently enjoy the cost reductions resulting from vesting forfeitures and frozen benefits for deferred vested participants. Adding money purchase options to DB plans allows benefit portability, and some public DB systems do have this feature. Including an alternative money purchase benefit formula, however, is not as appropriate for all individuals because of the singular asset allocation strategy that is applied.
- **Embrace variable DB pensions.** There are many variations of so-called “variable pensions” that could be considered. These approaches focus on providing a lifetime benefit with the amount subject to change depending on the performance of the underlying investments. Variable benefit plans help reduce the funding risk on the employer by shifting some of the investment risk to the employee. Unfunded liabilities can still occur but are less likely because of the investment risk shifting to employees and because benefits can go either up or down. Benefit portability and back-loading of benefits is still a concern.
- **Replace traditional DB plans with cash balance pensions.** Cash balance plans have been around for a long time. They are DB plans that provide guaranteed principal nominal individual accounts with pooled investments with a guaranteed annuity option in many cases. The individual account nature of cash balance plans can better handle benefit portability objectives. The downside of cash balance plans is that, as a defined benefit plan, they can still result in unfunded liabilities due to investment performance and longevity experience. They also provide a one-size-fits-all investment structure for participants that may not be optimal.

## 6.2

## KEY CHANGES TO IMPROVE DEFINED CONTRIBUTION PLAN EFFECTIVENESS

- **Investment fixes:** This analysis does not make a recommendation as to the most appropriate investment strategy for next generation DC plans for public employees. There are pros and cons for each solution that should be evaluated for each situation. It is very important, however, to evaluate and adopt more cost-effective and efficient strategies that reduce the already noted deficiencies of do-it-yourself participant-directed investment. Employers should use these packaged investment solutions (including standard and custom target date (lifecycle) funds, managed accounts, and pre-packaged risk-based diversified investments) on a default or mandatory basis. The authors would encourage minimizing or even eliminating participant-directed structures from most core retirement DC plan employer contributions. A myriad of studies has demonstrated that employees, when left to their own devices to manage their DC plan investment accounts, usually get it wrong.<sup>24</sup> The market has significantly reacted to this behavioral problem by developing several managed solutions that take the decision-making out of the equation and help reduce investment costs.
- **Institutional priced and pooled investments:** Moving away from high-priced retail share class investments is a critical step to reducing the cost of DC plans. Larger plans can use their economies of scale and buying power to use institutionally priced investments and pooled investment strategies such as separate account and collective investment trusts (CITs) to deliver more cost-effective investment solutions.
- **Liability-driven investment for DC plans (LDI):** A very intriguing newer approach to the DC marketplace proposed by Nobel Laureate Robert C. Merton in 2014 develops an investment strategy with an income-focused retirement asset allocation with a liability-driven bond portfolio.<sup>25</sup> This approach is essentially applying DB investment methods to individually focused DC accounts. The LDI approach may offer better risk management than conventional allocations, which typically rely on short-term, nominal fixed income. To protect the desired income stream from inflation, the approach uses treasury inflation-protected securities (TIPS) as a fundamental part of

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<sup>24</sup> Benartzi, “Implication of Participant Behavior for Plan Design.”

<sup>25</sup> Robert Merton, “The Crisis in Retirement Planning,” *Harvard Business Review*, July–August 2014. [www.hbr.org/2014/07/the-crisis-in-retirement-planning](http://www.hbr.org/2014/07/the-crisis-in-retirement-planning) (1 July 2022).

the strategy. While LDI funding approaches create higher certainty of achieving an inflation-protected retirement income goal, they do not fully protect against longevity risk. It is still possible to outlive the LDI DC plan asset and so this approach should be combined with other lifetime income protection features.

- ***DC plan lifetime income fixes:*** As previously noted, the lack of in-plan lifetime income solutions in core DC plans is a critical design flaw. It leaves retirees with having to manage the risk of outliving their retirement plan assets by anticipating accurately how long they are going to live—an impossible task. The answer is to emulate the best advantage of DB plans and shift longevity risk to third party risk pools as a mandatory or default design feature of the DC plan. Making this simple change aligns the next generation DC designs with the 10 Principles previously outlined and with Reason’s DC plan design Best Practice Standards.<sup>26</sup> Another favorable consequence of mandatory or default lifetime income options is that they can reduce the amount of savings needed to fund the target lifetime retirement income stream. (See Part 8: The Utility of In-Plan Retirement Income Solutions for further discussion.)
- ***Guaranteed minimum withdrawal benefit (GMWB):*** The GMWB guarantees a steady stream of annual withdrawals via a guarantee of a floor benefit regardless of the performance of the underlying investments. It also provides a chance for some inflation protection if investment performance beats benchmarks. Standard GMWB features can be expensive – e.g., 100 basis points per year when the insurance feature kicks in (e.g., age 55). Underlying investments are usually target date funds. GMWB approaches do tend to provide a lower annual income amount than other options such as immediate annuities.<sup>27</sup> A GMWB does provide withdrawal flexibility by allowing participant opportunity to withdraw additional amounts, but that will impact the guaranteed amount. The standard GMWB does not explicitly have a target income replacement objective, although it could be designed with that in mind.

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<sup>26</sup> Richard Hiller, Raheem Williams, and Leonard Gilroy, “Policy Brief: Defined Contribution Plans: Best Practices in Design and Utilization,” Reason Foundation, 2020. [www.reason.org/policy-brief/best-practices-in-the-design-and-utilization-of-public-sector-defined-contribution-plans/](http://www.reason.org/policy-brief/best-practices-in-the-design-and-utilization-of-public-sector-defined-contribution-plans/) (01 July 2022).

<sup>27</sup> Benjamin Goodman and David P. Richardson, “Achieving Retirement Income Security: A Comparison of Guaranteed Lifetime Withdrawal Benefit, Systematic Withdrawal and Partial Variable Annuity Strategies,” *Research Dialogue* 117 (2016). [www.tiaainstitute.org/publication/achieving-retirement-income-security-comparison](http://www.tiaainstitute.org/publication/achieving-retirement-income-security-comparison) (1 July 2022).



- **Collective defined contribution (CDC) plans:** This is a relatively new defined contribution approach adopted in some cases in the European Union and UK that has fixed employer contributions with benefits paid in the form of variable annuity payments.<sup>28</sup> This approach and its variants generally start with fixed employer contributions (which makes it financially predictable to employers) and provides lifetime annuity payments, but the amount is not guaranteed and is subject to reduction if investment or longevity experience is poor. Because investments are pooled (not participant-directed) it helps with reducing investment costs and volatility as well as diversification risks of standard participant-directed plans. The CDC approach usually creates a target benefit that is not guaranteed, and participants bear the investment risk through benefit cuts and/or increased employee contributions. It is thus possible to have younger employees subsidizing the benefits of older employees and retirees, which is a significant negative because of the possibility of intergenerational inequities. The defined contribution features of this plan type do help solve benefit portability and back-loading, but the intergenerational subsidization challenges are problematic from a best practices perspective. It also creates a level of complexity that makes it difficult for participants to understand.

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<sup>28</sup> Mark Iwry, David John, Christopher Pulliam, and William Gale, “Collective Defined Contribution Plans,” Economic Studies at Brookings, 2021. [brookings.edu/research/collective-defined-contribution-plan](https://brookings.edu/research/collective-defined-contribution-plan) (1 July 2022).

## PART 7

# CRITICAL FEATURES FOR THE NEXT GENERATION DEFINED CONTRIBUTION PLAN

Using the Principles for Next Generation Public Employee Retirement Plans (see Part 5) and borrowing from the Pension Integrity Project’s eight best practices for DC retirement plan design,<sup>29</sup> the next generation of DC plans for public employees should have the following major features:

- A clear statement defining retirement plan objectives
- Mandatory participation for all eligible employees
- Adequate contributions to fund an income replacement objective
- Default one-touch asset allocation solutions
- Benefit portability
- Default lifetime income distribution with a variety of alternative options
- Disability coverage
- Broadly available communication, education, and retirement income planning

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<sup>29</sup> Hiller, Williams, and Gilroy, “Policy Brief: Defined Contribution Plans: Best Practices in Design and Utilization.” (1 July 2022).

## 7.1

## A CLEAR STATEMENT DEFINING RETIREMENT PLAN OBJECTIVES

If any retirement plan is to be effective in meeting plan objectives, those objectives must first be defined in law, policy, or both. It is a best practice for a plan sponsor to define those objectives in writing (and preferably in the authorizing statute or ordinance) as part of a comprehensive “benefits policy statement” or at least within a “retirement plan policy statement.” This statement should discuss the plan’s objective to provide lifetime retirement income security in combination with other plans (personal savings and Social Security) following a career of employment.

The retirement benefit policy statement should explicitly recognize the broad range of work and life experiences that employees have. Simply focusing on the needs of career employees without addressing at least some of the additional retirement security needs and risks should not be considered in the best interests of society.

An example of such a next generation retirement benefit policy statement might be something like the following:

*The primary objective of the [Name of Plan] is to support participating employees, during their working career with participating employers, to accrue on a tax-advantaged basis a share of the financial resources needed to maintain their pre-retirement standard of living throughout retirement following a full career of employment and to help meet participating employer workplace objectives for recruiting and retaining qualified employees. The employee’s career can be all or partially with participating employers. Maintaining the employee’s standard of living in retirement will include income from this program as well as Social Security, personal savings, and other retirement arrangements, including from non-participating employers.*

Through the lens of this broader retirement benefit policy, we can next formulate certain best practices to examine how current approaches work and guide in the formulation of new solutions.

## 7.2

## MANDATORY PARTICIPATION FOR ALL EMPLOYEES VIA AUTO-ENROLLMENT

For a core DC retirement plan to meet its defined objectives effectively, employees must participate in it. This seemingly obvious observation is critical. The first step of any competent core DC plan design is to mandate participation. This can be accomplished through auto-enrollment features that enroll new employees immediately upon being hired.

Research shows that the likelihood that an employee participates in a retirement plan and the timing of this decision are strongly correlated to auto-enrollment features. Absent auto-enrollment, employees may opt out of retirement planning altogether or wait too long to start saving, which lowers the probability of achieving satisfactory income replacement in retirement.<sup>30</sup>

## 7.3

## ADEQUATE CONTRIBUTIONS TO FUND AN INCOME REPLACEMENT OBJECTIVE

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*Any retirement plan’s most basic goal should be to provide enough income during retirement to maintain the retiree’s pre-retirement standard of living for life.*  
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Any retirement plan’s most basic goal should be to provide enough income during retirement to maintain the retiree’s pre-retirement standard of living for life. As a rule of thumb, a well-designed retirement plan (or combination of employer-sponsored retirement plans, Social Security, and/or private savings) should replace approximately 80% of a worker’s final salary.<sup>31</sup> This assumes retirees will have a lower cost of living with major financial commitments such as mortgages and childrearing complete. Public sector DC

<sup>30</sup> Gabriel D. Carroll, James Choi, David Laibson, Brigitte Madrian, and Andrew Metrick, “Optimal Defaults and Active Decisions,” *Quarterly Journal of Economics*, 1639-1674. <https://academic.oup.com/qje/article-abstract/124/4/1639/1917201>

<sup>31</sup> “A Measurement Tool for Retirement Planning,” Aon Consulting.

plans should be designed to meet this standard, with a more accurate replacement ratio ranging between 70% and 90% of average final income, with the actual percentage being inversely correlated to income. In other words, the higher the income, the lower the replacement ratio is necessary to maintain an employee's standard of living. The reality, however, is that adequate income replacement varies by individual. As noted in 2018 by retirement consultant firm Aon, "Retirement readiness is ultimately about each individual's goals and resources, and every person's adequacy calculations are unique."<sup>32</sup>

An important component of plan design is a contribution rate that, in combination with other plan features, will mitigate underfunding risk. Financial experts strongly recommend total contributions of 12% to 15% of pre-tax earnings into a retirement account throughout the employee's career for those participating in Social Security; a higher 18%-25% is generally recommended for those with no other DB pension or Social Security to rely on.<sup>33</sup> This is a combined employer/employee rate that could be divided any number of ways between the two parties.



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*Financial experts strongly recommend total contributions of 12% to 15% of pre-tax earnings into a retirement account throughout the employee's career for those participating in Social Security; a higher 18%-25% is generally recommended for those with no other DB pension or Social Security to rely on.*

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Often, the employer contribution will be "matched" or dependent on the employee contribution. Older workers with a closer retirement horizon and inadequate savings may need to contribute even more than otherwise to achieve income adequacy in retirement.

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<sup>32</sup> "The Real Deal, 2018 Retirement Income Adequacy Study," Aon, 2018. [www.aon.com/getmedia/59c14111-6414-46a4-adbb-0dba9e0e8676/Aon-Retirement-Solutions-The-Real-Deal-Full-Report-US-2018.aspx](http://www.aon.com/getmedia/59c14111-6414-46a4-adbb-0dba9e0e8676/Aon-Retirement-Solutions-The-Real-Deal-Full-Report-US-2018.aspx) (1 July 2022).

<sup>33</sup> Hiller, Williams, and Gilroy, "Policy Brief: Defined Contribution Plans: Best Practices in Design and Utilization." (1 July 2022).

One technology-based feature that plan sponsors can use to ensure the recommended contribution rates are reached is auto-escalation within plan design. Auto-escalation slowly increases employee contributions into DC plans over a period of several years and can be designed as a default or mandatory feature. Auto-escalation can be tied to rising wages of an employee, so that it increases proportionally to the wage increase.

**7.4**

## DEFAULT ONE-TOUCH ASSET ALLOCATION SOLUTIONS

Achieving a plan's ultimate objectives requires including investment options that directly target a long-term retirement time horizon. Among these, well-designed DC plans should offer "one-touch" investment options for employees who are not sophisticated investors and do not want to avail themselves of in-plan investment advice. Target date funds (TDFs) allow a worker to take on more risk while young for higher returns. The worker's investment mix slowly shifts to a more conservative asset allocation as the worker nears retirement, locking in gains.<sup>10</sup>

Today's plans often use TDFs that adjust asset allocation to the employee's retirement horizon to mitigate investment loss risk as retirement approaches. While a significant step forward, TDFs do have limitations. Basically, they treat everyone with the same birthdate as having the same asset allocation needs throughout their careers. While this is broadly accurate, individuals with common birthdates may realistically have vastly different investment and retirement planning needs.

With continuing technological advancements in the financial services industry, new methods of determining asset allocations on the individual level are becoming available. Whereas a generation ago these approaches were largely manual and thereby cost prohibitive, they are now based on highly sophisticated computer-based stochastic modeling that makes them cost effective for all employees and plan sponsors. This newly available approach to asset allocation is based on LDI techniques. DB plans have long used LDI on the plan level, and now DC plans can use it on the individual participant level. In contrast to TDFs, which treat each individual of the same age the same, LDI looks at each participant's specific financial picture and creates and manages the asset allocation for that individual over time. Furthermore, LDI modeling can heed the plan's ultimate income replacement goal and manage assets over a career to best match that goal for each participant.

## 7.5

**BENEFIT PORTABILITY MAXIMIZATION**

DC plans are uniquely able to meet the career mobility realities of the modern workforce, where median job tenure for state government employees' is 5.6 years according to Bureau of Labor Statistics.<sup>34</sup> However, plans need to be properly designed with benefit portability features to meet this critical objective.

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*DC plans are uniquely able to meet the career mobility realities of the modern workforce, where median job tenure for state government employees' is 5.6 years according to Bureau of Labor Statistics.*

”

Benefit portability is best achieved in DC plans with short or immediate vesting periods (the time spent participating in the plan before the assets are fully “owned” by the participant). Since the amount of accumulated assets an individual owns determines the retirement income from a DC plan, short or immediate vesting is directly tied to retirement benefit adequacy and can help employees accumulate the assets necessary to meet plan income objectives.

Since plan participants will almost certainly work for several employers during a career, shorter vesting periods or immediate vesting at each career stop is critical to achieving adequate retirement income.

## 7.6

**DEFAULT LIFETIME INCOME DISTRIBUTION WITH A VARIETY OF ALTERNATIVE OPTIONS**

Many believe that DC retirement plans can only distribute plan assets to individuals as a lump sum, but this is inaccurate. A plan sponsor can very specifically define the asset distribution methods available in the plan document. The plan can distribute some or all an individual's accumulated assets as lifetime income (or “annuitizing” assets) using fixed

<sup>34</sup> “Table 5: Median years of tenure with current employer for employed wage and salary workers by industry, selected years, 2010-2020,” Bureau of Labor Statistics.

and/or variable annuities, guaranteed minimum withdrawal benefits, or any number of other available products.

Distribution options minimize retirement income inadequacy and should align with plan objectives. In other words, if the plan's defined and articulated objectives seek to maintain a standard of living in retirement, the plan should make lifetime income the default option offered to participants. Advanced TDF offerings and LDI designs can increasingly factor future income needs into their product designs using in-plan products such as fixed and variable annuities and qualified longevity annuity contracts (QLAC).

DC plans can also offer lump-sum withdrawals and rollovers, which may be appropriate for some plan participants depending on their specific financial circumstances. Traditional DB plans typically do not offer this range of distribution options. A lifetime income is the only distribution available at retirement under most of these plans.

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*DC plans can also offer lump-sum withdrawals and rollovers, which may be appropriate for some plan participants depending on their specific financial circumstances. Traditional DB plans typically do not offer this range of distribution options.*



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Another distribution-related DC plan best practice prohibits participants from borrowing against their account balances. The legal structure of DC plans may allow participant loans, but a plan sponsor need not make them available. While loans may have a place in supplemental DC plans, they most certainly do not in core retirement DC plans, just as states do not allow workers to take loans against their accrued pension benefits.

A best-practice retirement plan focuses on providing lifetime income security in retirement as a primary objective. Borrowing from the assets in a core DC retirement plan is inconsistent with that objective.



## 7.7

## DISABILITY COVERAGE

Employees who suffer a long-term disability during their tenure need insurance coverage to replace the income suddenly lost as a result. Public DB pension plans normally provide a disability income benefit for employees, and DC plans should offer the same disability protection. Government employers can generally purchase a separate disability insurance benefit from a quality insurer—or even self-insure—for somewhere between 50 to 150 basis points (0.5% to 1.5% of salary).

## 7.8

## BROADLY AVAILABLE COMMUNICATION, EDUCATION, AND RETIREMENT INCOME PLANNING

Plan sponsors need to ensure plan members are educated on the available choices and have all the relevant information to make competent retirement choices. Not doing so could lead to the plan's objectives not being met for a broad cross-section of participants. Education on plan objectives, investment policy and options, and all plan features can be provided by the employer, the financial services provider hired by the plan sponsor, or by third-party financial education providers. The important factor is that the education must be unbiased and directly tied to plan objectives.

Additionally, it is best practice to make specific investment guidance and advice available to individual plan participants when participants are permitted to direct their own investments. To prevent a potential conflict of interest and ensure that the employee's best interest takes precedent over firms seeking to sell financial instruments, an independent third party (not a party providing investments available in the plan) must formulate the advice for a plan participant. As compared to "guidance," "advice" includes specific, fund-level investment recommendations. With advances in technology available in the financial services area, such advice can be provided for plan participants at very low cost. Plan sponsors can contract with independent advisors, making advice available to all plan participants without direct cost to them.

The most important part of meeting an individual's retirement income needs is to measure progress repeatedly over time and not just at retirement age. It is easy for changes and gaps in a person's working career to derail retirement income outcomes. Loss of job, being out of the workforce during child-raising years, moving to part-time because of elder care responsibilities, and periods of disability are just a few examples. Working careers are normally uneven. It is rare that anyone has a completely steady progression in their

working lifetime. That is why it is vital that there be an ongoing financial planning component to any next generation retirement plan. This allows adjustments to be made at the individual level to optimize the chance of retirement security success.

A retirement security check-in is warranted every few years at least and, in parallel with any significant change in the employee's life and work situation that may arise. At each point, three points need to be measured: First, what does Social Security provide (if anything)? Second, what does the retirement plan provide? And third, what does the employee need to contribute or use other income sources in addition to keep the retirement income objective he or she has on track?

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*The most important part of meeting an individual's retirement income needs is to measure progress repeatedly over time and not just at retirement age.*

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The nature and scope of retirement financial planning needs to increase as retirement age gets nearer. A good benchmark would be between age 50-55 for Social Security participants. It is this "retirement red-zone" where decisions need to be made and specific actions can be taken, including needed "catch-up" contributions, retirement budget planning, retirement location, housing, and medical needs planning. It is also at this stage that decisions on how much retirement income should be guaranteed, and longevity insurance planning should start to take place.

## PART 8

# THE UTILITY OF IN-PLAN RETIREMENT INCOME SOLUTIONS

The utility of immediate and deferred annuity purchases as a means for delivering cost-effective retirement income from DC plans has been demonstrated in multiple studies. A 2017 study concludes that defaulting a fixed fraction of workers' DC plan assets over a dollar threshold is a cost-effective and appealing way to enhance retirement security that overcomes much of the concern that "... financially inexperienced consumers may do a poor job handling investment and longevity risk in their self-directed retirement accounts."<sup>35</sup>

A 2019 Reason Foundation working paper illustrates how adding "a suite of insurance products that blend guaranteed incomes into the portfolio management of individual retirement accounts—i.e., putting a defined benefit design into a defined contribution package—is financially feasible and would lead to significantly improved retirement outcomes."<sup>36</sup>

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<sup>35</sup> Vanya Horneff, Raimond Maurer, and Olivia Mitchell, "Putting the Pension Back in 401(k) Plans: Optimal versus Default Longevity Income Annuities," *Wharton Pension Research Council Working Papers* 29. 13 Feb. 2017. [repository.upenn.edu/prc\\_papers/29](https://repository.upenn.edu/prc_papers/29) (1 July 2022).

<sup>36</sup> Jason Perry and Anthony Randazzo, "Building Guaranteed Retirement Income into Defined Contribution Plans: Life Cycle Retirement Planning with Income Insurance Products," *Reason Foundation Working Paper*, 28 March 2019. [www.ssrn.com/abstract=4113537](https://www.ssrn.com/abstract=4113537) (1 July 2022).

A related study in 2020 concludes that plan sponsors should use their plan's institutional buying power to provide Qualified Longevity Annuity Contracts (QLACs) as a default feature enabling the purchase of longevity insurance for defined contribution plans.<sup>37</sup> It concludes that extending the default to encompass the retirement phase can be beneficial for both participants and plan sponsors. Both reap cost efficiencies because the plans retain greater economies of scale by keeping the assets during retirement, and participants benefit because they get access to a sophisticated solution at an institutional price for the retirement phase.

## 8.1

### MODELING THE UTILITY COST OF SELF-FUNDING VS. ANNUITIES

The cost utility of including annuities in the design of a next generation DC plan is illustrated in Figure 2 below, which shows the net present value of a stream of inflation-adjusted payments starting at age 67 until age 95 for three scenarios:

1. Scenario 1: Do-It-Yourself (DIY) - the individual self-insures their personal longevity for the entire period until age 95.
2. Scenario 2: QLAC (deferred annuity) – the individual purchases an IRS Qualified Longevity Annuity Contract to address longevity risk from 85 to 95.
3. Scenario 3: 100% Immediate Annuity – the individual purchases an immediate life annuity at retirement age 67 for the entire stream of payments.

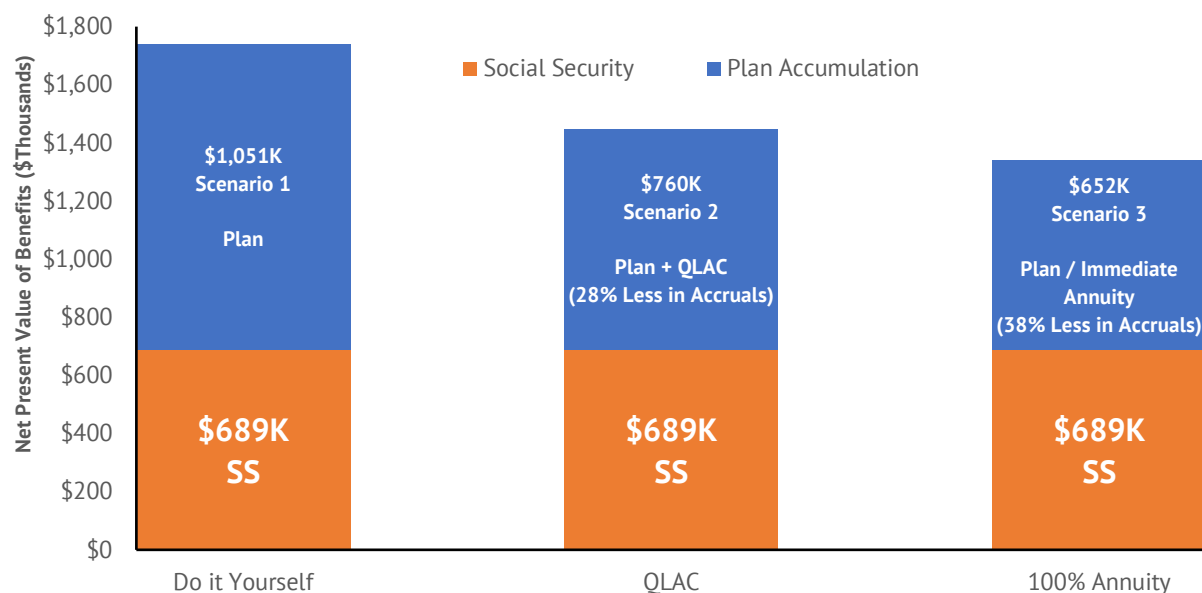
For each of the scenarios, it is assumed that the individual is trying to achieve an 80% replacement of \$75,000 Final Average Salary (FAS) of retirement income (or \$60,000 per year). Social Security will cover about 32% (\$23,760/year) of the income leaving about 48% (\$36,240) to come from the retirement plan. The retirement plan target amount is increased by 3% a year to protect against average inflation.<sup>38</sup>

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<sup>37</sup> Arthur Guimaraes, Marco Merz, and David Ireland, "Addressing Longevity Risk in Defined Contribution Plans with Lifetime Income Solutions," State Street Global Advisors, 2020; [www.ssga.com/dc/2019/Addressing-Longevity-Risk-In-Defined-Contribution-Plans.pdf](http://www.ssga.com/dc/2019/Addressing-Longevity-Risk-In-Defined-Contribution-Plans.pdf) (1 July 2022).

<sup>38</sup> Note: we are assuming age 95 as a cut-off point, for modeling purposes. In reality, both QLAC and 100% annuity scenarios would assume life-long benefits.

**FIGURE 2: MID-EARNER COST COMPARISON (AGE 67-95) OF DO-IT-YOURSELF, QLAC, 100% IMMEDIATE ANNUITY METHODS FOR LONGEVITY PROTECTION**



**NOTE:** See Appendix for a full description of the actuarial methodology and assumptions used for modeling each scenario.

**Source:** Pension Integrity Project actuarial calculations

$$\begin{aligned}
 \text{Total Plan Cost (NPV at 67)} &= (\text{FAS}_{(\text{inflation-adjusted annually})} \times 80\% (\text{Target}) - \text{Social Security}_{(\text{inflation-adjusted annually})}) \\
 & / (1 + \text{Discount Rate})^{(\text{years from retirement})}
 \end{aligned}$$

According to this modeling, the DIY cost would be \$1,050,000 at age 67. This is the net present value (NPV at 3% discount rate) amount the individual would have to have in their DC plan account at retirement age 67 to self-insure the receipt of \$36,240/year inflation adjusted stream of payments until age 95.

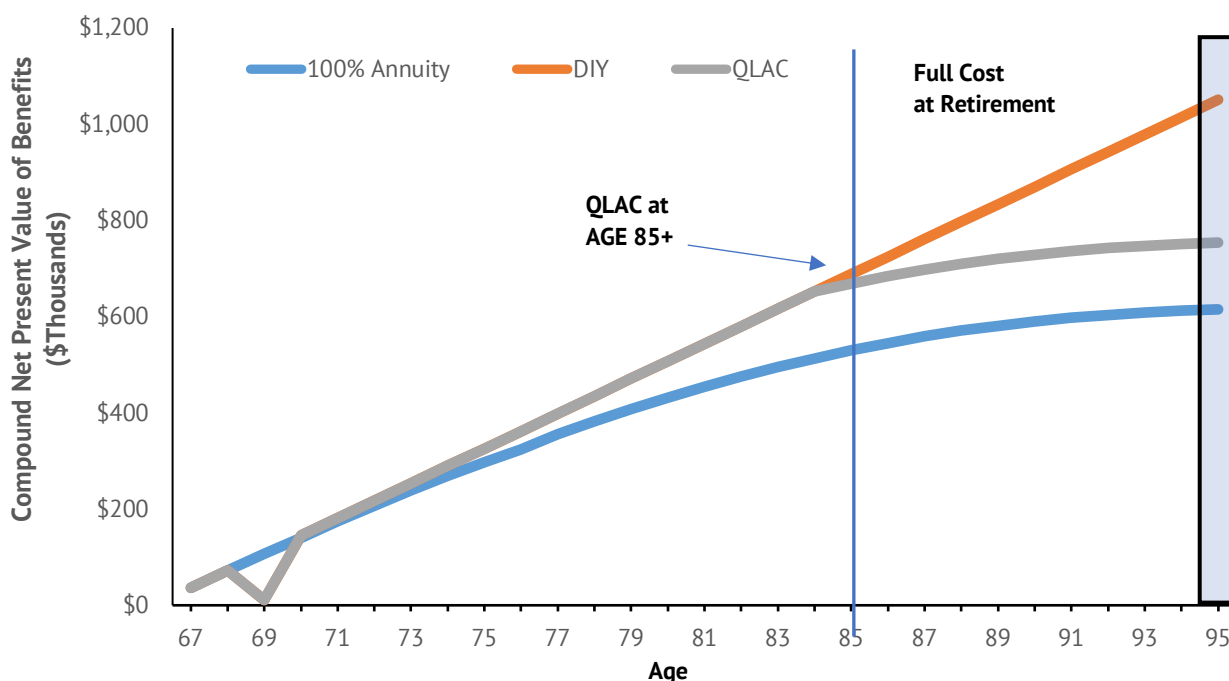
In Scenario 2, the individual instead purchases a QLAC insurance product at age 67 in the maximum amount allowed by the IRS (the lesser of 25% of their DC account or the dollar limitation (\$135,000 for 2021)). The Scenario 2 QLAC would require \$760,064 in the DC account at age 67—28% lower total cost required compared to the DIY scenario.

In Scenario 3, the individual fully insures the \$21,500 inflation-adjusted annual payments until age 95 with a cost of \$652,000 at age 67 – 38% lower total cost required compared to the DIY scenario.

The net present value savings realized from using either the QLAC or immediate annuity as a means of protecting against longevity risk is substantial, and building them into a DC plan as a primary feature can act to reduce the amount of savings needed to achieve a target retirement income objective or create opportunities for everyone to use their retirement asset for other purposes. Although we are using age 95 as a cut-off point for calculations, it is assumed that annuity-based products provide benefit protection for the entire life of an individual (i.e., no longevity risk). The DIY approach—where the individual must gamble on longevity risk their entire life—is a less efficient way to fund for retirement income.

Figure 3 provides a comparison of the running NPV costs of the benefit streams under the DIY, QLAC, and Immediate Annuity scenarios and shows again that DIY approaches to self-insuring longevity risk are generally more costly than the alternatives.

**FIGURE 3: NET PRESENT VALUE OF MID-RANGE ACCRUALS FOR THREE METHODS (WITHOUT SOCIAL SECURITY)**



Source: Pension Integrity Project actuarial calculations

Some financial planners argue that using annuities in this fashion is not needed and can result in many participants with lower levels of retirement assets than could have been realized if they had stayed fully invested in the market.<sup>39</sup> Technically, this can be true but the argument misses the point—i.e., the purpose of the plan needs to be about creating high probabilities of delivering a targeted retirement income stream and not just maximization of wealth.

The latter objective as argued previously is not the purpose of a retirement plan—retirement income is. Wealth maximization as a primary objective can result in ignoring other risks to retirement security, e.g., financial ruin if one outlives their retirement assets. It also ignores the consequences of market volatility on retirement security. The next generation retirement plan must address all these and other risks.

The other financial objectives individuals may have—such as wealth accumulation or legacy benefits—can be addressed using other investments, life insurance and savings vehicles, and actually can be funded because of the money saved by the planned use of annuities for the retirement lifetime income objective.

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<sup>39</sup> “Why Annuities Are a Poor Investment Choice,” Shawn Plummer, <https://www.annuityexpertadvice.com/why-annuities-are-a-poor-investment-choice/>

## PART 9

# THE PERSONAL RETIREMENT OPTIMIZATION PLAN (PRO PLAN)

A common thread among standard DB and 401(k) DC approaches is that while they may be effective for the workforce broadly, none is particularly effective for a specific individual. This is because individuals are rarely “average.”<sup>40</sup> They each have unique circumstances and needs that have not been effectively addressed in traditional retirement plan designs. Individual needs and circumstances differ in many ways including:

- Work patterns and tenure
- Family status
- Debt status
- Health history and expectations
- Sources of income

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<sup>40</sup> Todd Rose, *The End of Average: How We Succeed in a World that Values Sameness*, (San Francisco: HarperOne 2016).



- Inheritance expectations
- Asset ownership

Two individuals seemingly at the same station in life (same income, same age, same career path) may well, considering the above factors, have dramatically different needs for retirement income. Recognizing individual retirement income needs and providing the means within a plan design to address these needs is the essence of effective plan design for the modern state and local government employee. Meeting individual retirement needs is not just effective for the employee, but it can also be an effective recruiting and retention tool for employers.

Given the readily available financial technologies available today, the PRO Plan is imminently achievable and in no way is it simply aspirational. In fact, a PRO Plan can be designed, implemented, and operated in the state and local government market today in a way that fits within all reasonable cost parameters. This is a plan design that can redefine how plan efficiency is measured and should become the standard moving forward.



*The backbone of the PRO retirement plan design is the advancement in financial technological capabilities that enable defined benefit-like investment and lifetime income solutions to be customized at the individual plan participant level—essentially delivering the intention of a DB pension within the context of a DC benefit structure.*



The backbone of the PRO retirement plan design is the advancement in financial technological capabilities that enable defined benefit-like investment and lifetime income solutions to be customized at the individual plan participant level—essentially delivering the intention of a DB pension within the context of a DC benefit structure. Technology enables this optimization approach to be provided to individuals at low cost compared to what it would have taken some years ago to provide the same capabilities.

With this new retirement optimization approach, retirement plans can be structured to adjust more effectively to changes in an individual's career and life circumstances, as well

as provide flexibility to select the level of lifetime income needed to reflect differences in expected longevity, dependent needs, and the availability of other financial and income resources. The PRO Plan will both better meet employee needs and better manage costs for employers and taxpayers.

The PRO Plan design uses an individual account approach to avoid the back-loading and portability problems inherent in DB pension plans. It also recognizes, however, that the standard contribution and participant-directed investment menus and approaches of typical DC plans that focus only on basic investment return and volatility management solutions are and should be replaced in favor of a Liability Driven Contribution (LDC) approach—i.e., a funding amount that focuses on a personal retirement liability determined by calculating the value of an *individualized inflation-protected target income stream in retirement*. This liability driven approach is a key element in determining how to properly fund the individual's personal DB-like benefit in retirement through a DC construct.

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*A standard 401(k)-type participant-directed investment structure does not allow an efficient way to deliver with sufficient certainty an account value that meets all the adequacy and security objectives for individuals.*

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A standard 401(k)-type participant-directed investment structure does not allow an efficient way to deliver with sufficient certainty an account value that meets all the adequacy and security objectives for individuals. There are too many variables and the cost of fully “self-insuring” each risk would require much higher savings rates than are necessary. This means that group insurance products should be incorporated to address risks that cannot be addressed by wealth accounts alone.

The PRO Plan focuses on the use of qualified longevity annuity contracts (QLACs) as a default distribution feature to provide a base level of longevity protection beginning at age 85. The default QLAC purchase amount is set at the IRS regulatory maximum of the lesser of \$125,000 (indexed) or 25% of the participant account balance reduced by any prior years’

QLAC purchases.<sup>41</sup> Participants would be allowed to opt out of the QLAC default and purchase lesser QLAC amounts or protection beginning earlier than age 85. This option would allow more individualized optimization to take place.<sup>42</sup>

Additional longevity protection would be permitted through in-plan available immediate annuities. This optimization feature addresses some individuals' need or desire for cost effective income protection for the decumulation period prior to age 85 or to free up retirement assets for other purposes—e.g., bequest motives.

#### Key Features of the Proposed Personal Retirement Optimization (PRO) Plan Design

- DB in a DC Shell: combining lifetime income with benefit portability
- Flexibility to tailor to individualized needs and goals with Liability Driven Contribution (LDC) approach
- Addressing risks and securing lifetime income streams with group insurance products
- Offering both deferred (QLAC) and immediate (100% Annuity) annuity options

## 9.1

### A SAMPLE PRO PLAN DESIGN

The PRO Plan has layers of solutions that address each element of an individual's target retirement income benefit. There are multiple ways to design the PRO Plan to address the unique needs of an employer and its employees. The following chart outlines the elements of an example design for a non-public safety employee covered by Social Security.

<sup>41</sup> IRS Reg. Section 1.401(a)(9)-6(b).

<sup>42</sup> Horneff, Maurer, and Mitchell, "Putting the Pension Back in 401(k) Plans."

**TABLE 1: SAMPLE DESIGNS FOR NON-PUBLIC SAFETY EMPLOYEE WITH SOCIAL SECURITY, PRO PLAN**

<b>Design Element</b>	<b>PRO Plan Feature</b>	<b>Description</b>	<b>Rationale: Design Principle(s) Supported</b>
<b>Plan Type</b>	Defined contribution; IRC 401(a) plan and trust with an integrated voluntary retirement savings plan (i.e., 401(k), 457(b), 403(b)) <sup>43</sup>	A portable individual accrual account receiving contributions and investment experience	<i>Principle #1–Individual Optimization</i> <i>Principle #2–Similar Outcomes for All Service</i> <i>Principle #8–Transparent Benefits and Costs</i> <i>Principle #9–Workforce Attraction and Retention</i> <i>Principle #10–Simple and Understandable</i>
<b>Eligibility and Participation</b>	Immediate	Eligibility should be broadly defined to include benefit-eligible full- and part-time employees and be immediate to ensure benefit accrual for all periods of employment.	<i>Principle #2–Similar Outcomes for All Service</i> <i>Principle #8–Transparent Benefits and Costs</i> <i>Principle #9–Workforce Attraction and Retention</i> <i>Principle #10–Simple and Understandable</i>
<b>Target Benefit</b>	70%-90% inflation protected income replacement for full-career employee with Social Security.	Primary purpose of the plan is inflation-protected income replacement for life—not wealth accumulation.  Lower income replacement result for higher paid employees because of the regressive nature of SS replacement structure.	<i>Principle #3–Income Replacement Benefit</i> <i>Principle #7–Risk Managed Design</i> <i>Principle #8–Transparent Benefits and Costs</i> <i>Principle #9–Workforce Attraction and Retention</i> <i>Principle #10–Simple and Understandable</i>
<b>Mandatory Contribution Structure</b>	Mandatory employer and employee contribution based on percentage of covered compensation. Contributions are pre-tax through IRC 414(h)(2) pickup. <sup>44</sup>	Based on a Liability Driven Contribution approach (LDC): Total required contribution is based on amount needed to accumulate the Net Present Value of the target benefit	<i>Principle #2–Similar Outcomes for All Service</i> <i>Principle #4–Adequate and Shared Funding</i> <i>Principle #7–Risk Managed Design</i>

<sup>43</sup> Maria Hurd, “401(K), 403(B), 457(B): Why Are the Rules Different?” April 25, 2022, <https://www.asppa-net.org/news/401k-403b-457b-why-are-rules-different>

<sup>44</sup> IRC Section 414(h)(2) allows public sector 401(a) plans to have mandatory employee contributions paid on a pre-tax basis through a non-elective salary reduction or offset against future salary increase.

<b>Design Element</b>	<b>PRO Plan Feature</b>	<b>Description</b>	<b>Rationale: Design Principle(s) Supported</b>
<b>Mandatory Contribution Structure (continued)</b>	Shared 50/50 of total required contribution.		<i>Principle #8–Transparent Benefits and Costs</i> <i>Principle #9–Workforce Attraction and Retention</i> <i>Principle #10–Simple and Understandable</i>
<b>Employee Flexible/Voluntary Contribution</b>	Permitted up to IRS limits. 457(b)/401(k)/403(b) plans as available	Allows employees to adjust/optimize contribution based on additional retirement income replacement or wealth accumulation objectives each may have and to react to any investment or accrual shortfalls.  Auto-enroll and auto-escalation features are encouraged.(See discussion in Section 7.2. of this document.)	<i>Principle #1–Individual Optimization</i> <i>Principle #4–Adequate and Shared Funding</i> <i>Principle #7–Risk Managed Design</i>
<b>Vesting</b>	Immediate	Provides immediate ownership and value of the deferred compensation part of total compensation package.	<i>Principle #2–Similar Outcomes for All Service</i> <i>Principle #6–Immediate Vesting</i> <i>Principle #8–Transparent Benefits and Costs</i> <i>Principle #9–Workforce Attraction and Retention</i> <i>Principle #10–Simple and Understandable</i>
<b>Investment Structure</b>	Default/mandatory investment to risk managed investment vehicles—e.g., LDI, target date funds, custom target date funds.  An optional participant-directed investment menu is not recommended except for voluntary contributions.	Use of pooled and institutional vehicles to reduce cost. Advice driven asset allocation investment placement to allow individual investment optimization should be broadly available.	<i>Principle #1–Individual Optimization</i> <i>Principle #2–Similar Outcomes for All Service</i> <i>Principle #3–Income Replacement Benefit</i> <i>Principle #4–Adequate and Shared Funding</i> <i>Principle #7–Risk Managed Design</i> <i>Principle #10–Simple and Understandable</i>
<b>Distribution Structure</b>	Mandatory/Default maximum IRS allowed QLAC deferred annuity purchase payable at age 85.  Annuity purchases may be at NRA or based on staged purchases beginning an early retirement	The QLAC default provides a baseline longevity protection feature for participants. By using the IRS maximum, the plan focuses on the needs of lower vs. higher paid individuals.	<i>Principle #1–Individual Optimization</i> <i>Principle #3–Income Replacement Benefit</i>

<b>Design Element</b>	<b>PRO Plan Feature</b>	<b>Description</b>	<b>Rationale: Design Principle(s) Supported</b>
<b>Distribution Structure (continued)</b>	<p>eligibility (e.g., age 55) to address sequencing/timing risk.</p> <p>Option to choose lesser QLAC and purchase additional immediate annuity amounts to optimize use of retirement asset for each individual financial situation.</p> <p>Opt-out or annuity purchase less than the default amount allowed only after a financial planning service.</p> <p>Plan can provide default spousal joint and survivor benefit with option for other annuity types.</p>	<p>The plan allows participants to opt-out of the QLAC default and choose a lesser amount or one that adds protection for ages earlier than 85.</p> <p>The plan also allows purchase of immediate annuities that add additional longevity protection as an individual may need.</p>	
<b>Loans and Hardships</b>	Not permitted in core 401(a) plan; Allowed for voluntary contributions.		<p><i>Principle #1–Individual Optimization</i></p> <p><i>Principle #7–Risk Managed Design</i></p>
<b>Disability Benefit</b>	LTD or other disability income benefit offered by the employer. Separately funded from the PRO Plan		<p><i>Principle #2–Similar Outcomes for All Service</i></p> <p><i>Principle #3–Income Replacement Benefit</i></p> <p><i>Principle #7–Risk Managed Design</i></p> <p><i>Principle #9–Workforce Attraction and Retention</i></p> <p><i>Principle #10–Simple and Understandable</i></p>
<b>Retirement Optimization Planning Services</b>	Technology driven ongoing retirement planning assessments for all participants projecting individual retirement success outcomes, probabilities, and corrective actions needed to deliver target retirement income from all sources.	Provided through independent third-party plan administrators, record keepers, financial planners, and advisors as appropriate for the program.	<p><i>Principle #1–Individual Optimization</i></p> <p><i>Principle #4–Adequate and Shared Funding</i></p> <p><i>Principle #7–Risk Managed Design</i></p> <p><i>Principle #10–Simple and Understandable</i></p>

## PART 10

# INCORPORATING RETIREMENT OPTIMIZATION PLANNING SERVICES

A best practice for any retirement plan is to offer a comprehensive suite of educational and communication programs so that employee needs can best be met, and employer commitment demonstrated. In the PRO Plan it is critical for an individual to utilize the planning tools if they want to achieve their retirement objectives. The tools need to go beyond typical “suitability” questionnaires that seek to help an individual understand their investment risk tolerance and their willingness and ability to take certain levels of risk. Suitability questions may have utility in considering an individual’s tolerance for investment risk, but they do not significantly address an individual’s goals or tolerances related to non-investment risks, particularly longevity risk, retirement expenses, and inflation planning.

For members to make informed decisions in the PRO Plan, they need a more comprehensive and individualized look at their full financial picture. While the process needs to be comprehensive, it does not need to be overly complicated. Methods to conduct the necessary analysis can be in-person with an independent financial advisor, on-line

planning tools, and telephone counseling sessions, among others. The most important goal to achieve is to make the service as broadly and automatically available as possible.

Whatever the delivery method, several key areas should be covered in the process:

- ***Income needs:*** It is important for individuals to estimate, to the extent possible, what their income needs will be in retirement. This analysis should go beyond the common “70%-90% of salary” rule of thumb and should be thoughtful and specific to the needs of the individual. Some people will require an income in retirement that is significantly lower than income during employment (e.g., they may have additional savings, they are married to a spouse with a more generous retirement plan, etc.), while others will want an income more in line with their time in the workforce. This target can change over time, of course, so it should be periodically reevaluated on an ongoing basis.
- ***Retirement timing:*** The timing of retirement is also an important consideration. This is not always within the control of the individual for a wide variety of reasons, including health concerns and others, but proper planning requires an estimated date to target. Timing of receipt of Social Security benefits should be optimized as well.
- ***Additional retirement funds:*** What really distinguishes the planning in a PRO Plan from other plan types is the importance of including other income sources and assets in the planning process. This goes beyond Social Security expectations by also including other pensions, DC assets, and investment accounts. Other asset ownership and inheritance should be included to the extent possible. Spousal assets in all the above categories are important to include as well. The more complete and more comprehensive, the more accurate the output.
- ***Family survivor benefits:*** Planning for survivor benefits for spouses and dependents is a critical area to be addressed in the retirement planning process, particularly as it relates to continued guaranteed annuity benefits in its various forms.
- ***Expenditure planning:*** Expenditure planning is just as important as retirement income planning and must include rental/mortgage housing costs. Addressing the cost of health care must be included and it should address the many ways this can vary because of retirement before Medicare eligibility, existing health conditions, geographical differences in premiums, medical inflation, and Medicare premium surcharges for higher income earners. Including available retiree health benefits



from employers and individual health accounts (e.g., HRAs, HSAs) should be included in both the accumulation and distribution planning phases.

- **Other:** While these are the key differentiating planning areas, others remain very important. Longevity expectations based on family history and personal health status are important planning inputs, as are tax considerations.

Complete data compiled thoughtfully is essential to developing an optimization plan for retirement income. This information is used to implement an asset accumulation strategy during a working career and to plan an asset distribution strategy in retirement. Plan administrators should emphasize the importance of full participation by participants. Putting in the time early will pay big dividends in retirement.

This level of retirement planning services is not something new; rather, it is currently available and offered by most retirement plan service providers and advisors. The challenge to the marketplace is to make such information and consultation broadly available and automated as much as possible. For example, providing periodic ongoing “Are you on track for retirement?” checkups, along with qualitative comparisons between current financial status and retirement income goals, can continually educate participants and push them to update their retirement data.

## PART 11

# HOW THE PRO PLAN WOULD WORK: SCENARIOS

A Personal Retirement Optimization plan can meet the retirement objectives of individuals that may have very different life circumstances leading to retirement. This could include individuals at different ends of the compensation spectrum, from an individual retiring with a \$50,000 salary to someone with a final salary well in excess of \$100,000. Other differences are manageable as well in a PRO Plan such as a retiree who only has accumulated assets in the PRO Plan and is expecting Social Security benefits, to someone with PRO Plan, Social Security, spousal retirement assets, and substantial personal savings.

Lifestyle changes are likewise addressed by the PRO Plan's flexibility. This could range from someone spending their whole career with one employer who needs about 80% of pre-retirement income in retirement, to a worker who had multiple employers during their career and is desiring 100% of salary in retirement to cover more elaborate retirement aims.

These and many other individual situations can be addressed using a PRO Plan that is designed to specifically treat each individual personally and not lump people into broad

and simple categories. The following sections offer conceptual examples of a PRO Plan in action.

## 11.1

### FINAL COMPENSATION SCENARIOS (BASELINE)

The Baseline scenarios (Tables 2, 3, and 4) address a PRO Plan design aimed at providing an 80% income replacement indexed for inflation until age 95 for a mid-range (\$75,000 final compensation) employee with Social Security benefits included. The PRO Plan total employer and employee contribution is a fixed percentage for all compensation levels at the rate needed in the scenario after Social Security to cover 80% replacement of final compensation for the mid-range earner. The tables show the outcomes for different final compensation levels—\$50,000, \$75,000, and \$125,000—to show the actual additional retirement savings, if any, that may be needed. Table 2 shows the results for a retiree who is self-insuring longevity risk (DIY). Table 3 shows the results for a retiree who uses a deferred annuity QLAC product (up to maximum amounts allowed by IRS regulations) to partially insure longevity risk. Table 4 shows the results for a retiree who fully insures longevity risk with the purchase of an immediate annuity.

#### Assumptions:

- Work entry Age: 27
- Final compensation at age 67:
  - Lower paid: \$50,000/year
  - Mid-range: \$75,000/year
  - Higher paid: \$125,000/year
- Income replacement target: Minimum 80% of final pay indexed for inflation at 3%/year.
- Social Security: Yes
- PRO Plan total employer and employee contribution is a fixed percentage for all compensation levels at the rate needed in the scenario after Social Security to cover 80% replacement of final compensation for mid-range earner.

**TABLE 2: INCOME REPLACEMENT % FOR DIY SCENARIO**

<b>DIY – Baseline</b>			
	<b>Lower Paid</b>	<b>Mid-Range</b>	<b>Higher Paid</b>
Participant income replacement target	80%	80%	80%
Social Security replacement %	37%	32%	26%
Net target income replacement % after Social Security	43%	48%	54%
PRO Plan NPV required at age 67 to achieve 80% income replacement	\$630,297	\$1,050,898	\$1,962,404
PRO Plan non elective contribution rate (fixed at mid-range for all participants)	19.00%	19.00%	19.00%
Projected PRO Plan replacement (excluding SS)	67%	48%	34%
Projected PRO Plan replacement (including SS)	104%	80%	60%
Additional annual voluntary savings rate needed (for 80% replacement target)	0%	0%	11%
Total resulting income replacement	104%	80%	80%

**TABLE 3: INCOME REPLACEMENT % FOR QLAC SCENARIO**

<b>QLAC – Baseline</b>			
	<b>Lower Paid</b>	<b>Mid-Range</b>	<b>Higher Paid</b>
Income replacement target	80%	80%	80%
Social Security replacement %	37%	32%	26%
Net target income replacement % after Social Security	43%	48%	54%
PRO Plan NPV required at age 67 to achieve 80% income replacement	\$455,861	\$760,065	\$1,419,323
PRO Plan non elective contribution rate (fixed at mid-range for all participants)	13.70%	13.70%	13.70%
Projected PRO Plan replacement (excluding SS)	67%	48%	34%
Projected PRO Plan replacement (including SS)	104%	80%	60%
Additional annual voluntary savings rate needed (for 80% replacement target)	0%	0%	8.0%
Total resulting income replacement	104%	80%	80%
Cost savings vs DIY baseline	28%	28%	28%

The analysis shows the cost advantages of creating a mandatory or default use of a QLAC or immediate annuity in the design of the PRO Plan and cost disadvantage of trying to self-insure longevity risk under the DIY approach. It is possible to achieve or exceed the target

80% replacement rate for the lower paid and mid-range final compensation scenarios with a 28% lower NPV cost for a QLAC scenario and a 38% lower NPV cost for the immediate annuity scenario. The higher paid scenario still requires additional retirement savings or other income/wealth sources to achieve the 80% target because of the regressive nature of Social Security benefits.

**TABLE 4: INCOME REPLACEMENT % FOR 100% IMMEDIATE ANNUITY SCENARIO**

<b>100% Immediate Annuity - Baseline</b>			
	<b>Lower Paid</b>	<b>Mid-Range</b>	<b>Higher Paid</b>
Income replacement target	80%	80%	80%
Social Security replacement %	37%	32%	26%
Net target income replacement % after Social Security	43%	48%	54%
PRO Plan NPV required at age 67	\$391,060	\$652,001	\$1,217,490
PRO Plan non elective contribution rate (fixed at mid-range)	11.80%	11.80%	11.80%
Projected PRO Plan replacement (excluding SS)	67%	48%	34%
Projected PRO Plan replacement (including SS)	104%	80%	60%
Additional annual voluntary savings rate needed (for 80% replacement target)	0%	0%	7.0%
Total resulting income replacement	104%	80%	80%
Cost savings vs DIY baseline	38%	38%	38%

The PRO Plan would allow employers to design the arrangement to mandate or default participants into a QLAC or immediate annuity distribution and create a contribution structure with these retirement income solutions in mind. The Plan would set a minimum QLAC or immediate annuity purchase amount that could be a fixed percentage or based on a variable amount depending on the particular needs and circumstances of each individual, derived from the optimization tools previously described. For example, an individual may have no retirement assets other than Social Security and the PRO Plan and is in good health with a high chance of living longer than average longevity. In this case, the optimization model would recommend a high level of QLAC and/or immediate annuity purchase. Alternatively, if a person had a lower longevity expectation and possibly additional retirement assets, the optimization model would recommend a lower level or no longevity protection at all.

## 11.2

## ADDITIONAL OR SHORTFALL RETIREMENT ASSET SCENARIOS

The previous modeling scenarios use an unlikely situation where the individual starts work and retirement savings at age 27 and stays in the plan for their entire career with uniform increases in pay and uniform funding made throughout the 40-year accumulation period. The reality, as noted previously, is that it is more likely individuals will experience a wide range of possible career paths and savings patterns, and at any point they will be either on-target for achieving retirement savings goals or off-target. The PRO Plan would have ongoing benchmark/measuring points during a participant's working career to determine if anything has happened to change the required in-plan savings. There could be a wide variety of events and changing circumstances that can cause a deviation from the expected retirement savings path requiring a course correction. Examples include:

- |   |  |
|---|--|
| 1. Late start in saving for retirement              | 9. Change in family status                       |
| 2. Years out of the workforce                       | 10. Increased cost of living in retirement       |
| 3. Social Security benefit reductions               | 11. Housing costs and values                     |
| 4. Ad-hoc gains or losses from supplemental sources | 12. Change in plan's existing benefit provisions |
| 5. Market gains or losses                           | 13. Job loss or change                           |
| 6. Health changes                                   | 14. Cost-of-living change because of job move    |
| 7. Need for survivor income                         | 15. Long-term care need expectations             |
| 8. Need to retire earlier (economic/other reason)   | 16. Spikes in long-term Inflation rates          |

At each benchmark measuring point the PRO Plan would identify the changes and the implications for success in meeting the retirement income replacement needs of each participant—not just those who have high account balances. Tables 5 and 6 illustrate how the PRO Plan might advise the participant when there is either a shortfall or excess retirement asset at age 50 of \$100,000.

## 11.3

## ADDITIONAL RETIREMENT ASSET AVAILABILITY SCENARIOS

Tables 5 and 6 provide an analysis of the PRO Plan design baseline results assuming that the retiree has an additional \$100,000 in retirement assets at age 50. The additional assets could come from a number of sources—e.g., excess investment return, inheritance, other investments, other employment income. This additional retirement asset is factored into

the PRO Plan outcomes for the DIY, QLAC, and immediate annuity scenarios to determine any changes the retiree may need or want to make to achieve the target 80% income replacement objective.

Assumptions:

- Work entry age: 27
- Final compensation at age 67:
  - Lower paid: \$50,000/year
  - Mid-range: \$75,000/year
  - Higher paid: \$125,000/year
- Income replacement target: 80% of final pay indexed for inflation at 3%/year.
- Social Security: Yes
- PRO Plan total employer and employee contribution is a fixed percentage for all compensation levels at the rate needed in the scenario after Social Security to cover 80% replacement of final compensation for mid-range earner.
- At the age 50 checkpoint, the employee is projected to have \$100,000 additional assets at age 67 to provide replacement income to age 95 under:
  - DIY
  - Immediate annuity for QLAC and immediate annuity scenarios

Tables 5, 6, and 7 show how the PRO Plan optimization service will inform the participant about the value of the \$100,000 retirement asset in terms of providing additional income replacement and any changes in the required voluntary savings rates for the higher paid participants. Participants will be able to make changes to the amount of planned expenditures in retirement and adjust the necessary QLAC or immediate annuity purchases.

**TABLE 5: INCOME REPLACEMENT PERCENTAGE FOR DIY SCENARIO WITH \$100K ADDITIONAL RETIREMENT ASSET AT AGE 50 CHECKPOINT**

<b>DIY</b>			
	<b>Lower Paid</b>	<b>Mid-Range</b>	<b>Higher Paid</b>
Baseline income replacement from PRO Plan and SS	<b>104%</b>	<b>80%</b>	<b>60%</b>
Additional income replacement ratio from \$100k	<b>+7.0%</b>	<b>+5.0%</b>	<b>+3.0%</b>
Total resulting income replacement from PRO Plan, Social Security, and \$100k retirement asset	<b>111.0%</b>	<b>85.0%</b>	<b>63.0%</b>
Excess of total income replacement vs 80% target	<b>+31.0%</b>	<b>+5.0%</b>	<b>-17.0%</b>
PRO Plan non elective contribution rate (fixed at mid-range)	<b>19%</b>	<b>19%</b>	<b>19%</b>
<b>DIY: 80% Replacement Target</b>			
Additional voluntary savings rate needed (age 27–age 49)	<b>0%</b>	<b>0%</b>	<b>+11%</b>
New additional voluntary savings rate needed (age 50–age 67) with \$100k addition	<b>0%</b>	<b>0%</b>	<b>+6.5%</b> <i>(reduction of 4.5%)</i>

**TABLE 6: INCOME REPLACEMENT % FOR QLAC AND IMMEDIATE ANNUITY SCENARIOS WITH ADDITIONAL \$100K RETIREMENT ASSET AT AGE 50 CHECKPOINT**

	<b>Lower Paid</b>	<b>Mid-Range</b>	<b>Higher Paid</b>
Baseline income replacement from PRO Plan and SS	104%	80%	60%
Additional income replacement ratio from \$100k	10%	6%	4%
Total resulting income replacement from PRO Plan, Social Security, and \$100k retirement asset	114%	86%	64%
Excess of total income replacement vs 80% target	34%	6%	-16%
PRO Plan non elective contribution rate (fixed at mid-range)	13.70%	13.70%	13.70%
Additional voluntary savings rate needed (age 27–age 49)	0%	0%	8%
New additional voluntary savings rate needed (age 50–age 67) with \$100k addition	<b>0%</b>	<b>0%</b>	<b>3.5%</b> <i>(reduction of 4.5%)</i>



**TABLE 7: INCOME REPLACEMENT % FOR 100% IMMEDIATE ANNUITY SCENARIO WITH ADDITIONAL \$100K RETIREMENT ASSET AT AGE 50 CHECKPOINT**

<b>100% IMMEDIATE ANNUITY</b>			
	<b>Lower Paid</b>	<b>Mid-Range</b>	<b>Higher Paid</b>
Baseline income replacement from PRO Plan and SS	104%	80%	60%
Additional income replacement ratio from \$100k	12%	8%	5%
Total resulting income replacement from PRO Plan, Social Security, and \$100k retirement asset	116%	88%	65%
Excess of total income replacement vs 80% target	36%	8%	-15%
PRO Plan non elective contribution rate (fixed at mid-range)	11.80%	11.80%	11.80%
Additional voluntary savings rate needed (age 27–age 49)	0%	0%	7%
New additional voluntary savings rate needed (age 50–age 67) with \$100k addition	<b>0%</b>	<b>0%</b>	<b>2.5%</b> (reduction of 4.5%)

### 11.3.1 Shortfall Retirement Asset Scenarios

Tables 8, 9, and 10 provide an analysis of the PRO Plan design baseline results assuming that the retiree has a shortfall of \$100,000 in retirement assets at age 50. This asset shortfall could come from a number of sources—e.g., investment losses, emergency expenses, inadequate personal savings, or absence from the workforce. This asset shortfall is factored into the PRO Plan outcomes for the DIY, QLAC, and immediate annuity scenarios to determine any changes the retiree may need or want to make to achieve the target 80% income replacement objective.

#### Assumptions:

- Work entry age: 27
- Final compensation at age 67:
  - Lower paid: \$50,000/year
  - Mid-range: \$75,000/year
  - Higher paid: \$125,000/year
- Income replacement target: 80% of final pay indexed for inflation at 3%/year.
- Social Security: Yes

- PRO Plan total employer and employee contribution is a fixed percentage for all compensation levels at the rate needed in the scenario after Social Security to cover 80% replacement of final compensation for mid-range earner.
- At the age 50 checkpoint, the employee is projected to have \$100,000 shortfall at age 67:
  - E.g., market downturn losses greater than assumed
  - E.g., additional NPV needed for higher income replacement goal

These three tables show how the PRO Plan optimization service will inform the participant about the impact of the shortfall of \$100,000 in retirement asset in terms of meeting the 80% income replacement objective and any changes in the required voluntary savings rates to fill the gap. They will be able to make changes to their current planned expenditures before and after retirement and also adjust the necessary QLAC or immediate annuity purchases.

**TABLE 8: INCOME REPLACEMENT % FOR DIY SCENARIO WITH \$100K SHORTFALL RETIREMENT ASSET AT AGE 50 CHECKPOINT**

<b>DIY</b>			
	<b>Lower Paid</b>	<b>Mid-Range</b>	<b>Higher Paid</b>
Baseline income replacement from PRO Plan and SS	104%	80%	60%
Reduced income replacement ratio from \$100k shortfall	-7%	-5%	-3%
Total resulting income replacement from PRO Plan, Social Security, and \$100k retirement asset	97%	75%	57%
Shortfall of total income replacement vs. 80% target	0%	-5%	-23%
PRO Plan non elective contribution rate (fixed at mid-range)	19.0%	19.0%	19.0%
Additional voluntary savings rate needed (age 27–age 49)	0%	0%	11%
New additional voluntary savings rate needed (age 50–age 67) with \$100k shortfall	<b>0%</b>	<b>6.0%</b>	<b>15.50%</b>

**TABLE 9: INCOME REPLACEMENT % FOR QLAC SCENARIO WITH \$100K SHORTFALL RETIREMENT ASSET AT AGE 50 CHECKPOINT**

<b>QLAC</b>			
	<b>Lower Paid</b>	<b>Mid-Range</b>	<b>Higher Paid</b>
Baseline income replacement from PRO Plan and SS	104%	80%	60%
Reduced income replacement ratio from \$100k shortfall	-10%	-6%	-4%
Total resulting income replacement from PRO Plan, Social Security, and \$100k retirement asset	94%	74%	56%
Shortfall of total income replacement vs. 80% target	0%	-6%	-24%
PRO Plan non elective contribution rate (fixed at mid-range)	13.70%	13.70%	13.70%
<b>QLAC: 80% Replacement Target</b>			
Additional voluntary savings rate needed (age 27–age 49)	<b>0%</b>	<b>0%</b>	<b>8%</b>
New additional voluntary savings rate needed (age 50–age 67) with \$100k shortfall	<b>0%</b>	<b>6.0%</b>	<b>+12.5%</b>

**TABLE 10: INCOME REPLACEMENT % FOR 100% IMMEDIATE ANNUITY SCENARIO WITH \$100K SHORTFALL RETIREMENT ASSET AT AGE 50 CHECKPOINT**

<b>100% IMMEDIATE ANNUITY</b>			
	<b>Lower Paid</b>	<b>Mid-Range</b>	<b>Higher Paid</b>
Baseline income replacement from PRO Plan and SS	104%	80%	60%
Reduced income replacement ratio from \$100k shortfall	-12%	-8%	-5%
Total resulting income replacement from PRO Plan, Social Security, and \$100k retirement asset	92%	72%	55%
Shortfall of total income replacement vs 80% target	0%	-8%	-25%
PRO Plan non elective contribution rate (fixed at mid-range)	11.80%	11.80%	11.80%
Additional voluntary savings rate needed (age 27–age 49)	0%	0%	7%
New additional voluntary savings rate needed (age 50–age 67) with \$100k shortfall	<b>0%</b>	<b>6%</b>	<b>11.50%</b>

## PART 12

# CONCLUSION

A state or local government employer seeking to implement a new retirement plan or redesign their existing retirement plan should always begin by clearly identifying sound retirement benefit design principles and using those principles to determine and articulate the objectives of that plan. The principles and resulting design should include as the primary objective providing a share of lifetime income, attributable to the employee's tenure, enabling the employee to maintain their standard of living in retirement. The design of the plan should provide the flexibility to meet the needs of employees in varying circumstances. Of course, other workplace objectives of the employer and financial realities for plan sponsors should also be considered.

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*Standard DB and 401(k)-type DC plans are often compared with little regard to the simple question of what design elements provide the greatest utility to the greatest number of employees while still serving the employer's workforce management objectives.*

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Standard DB and 401(k)-type DC plans are often compared with little regard to the simple question of what design elements provide the greatest utility to the greatest number of

employees while still serving the employer's workforce management objectives. Many arguments have been advanced on all sides of the issue, some valid, others not so much. The real answer to the question of what type of plan most aids recruiting and retention is a plan that best meets the varying needs of most employees. This analysis concludes that providing retirement benefit and savings solutions that adjust to meet the different and changing needs of employees is what will more likely aid employers in attracting and retaining quality employees.

The PRO Plan design is specifically crafted to be adaptable to the needs of the broadest cross-section of employees possible. The focus of the plan is on providing employees with the target retirement income replacement ratio determined by the employer. Income replacement is the primary objective with wealth accumulation a secondary consideration. Importantly, the plan, based on employer-specific criteria, can have a longevity annuity default that can be opted-out of by employees meeting certain specific criteria. The mandatory contribution rates for both employer and employee, as defined by the employer, combined with the investment design and distribution controls, are all designed to minimize risks for the employee while meeting employer workplace objectives.

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*While most retirement plans are designed around the “average” employee, the PRO Plan recognizes that there are no “average” employees. Individual participants are unique in many ways, even if they have the same salaries and years of service.*



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Providing education, communication, and comprehensive financial planning to employees through the PRO Plan helps ensure that they stay on track for retirement through changing circumstances during a working career. While most retirement plans are designed around the “average” employee, the PRO Plan recognizes that there are no “average” employees. Individual participants are unique in many ways, even if they have the same salaries and years of service. Broader financial, health, and other personal circumstances must be considered if a plan is to meet the needs of many workers. Various design elements in the PRO Plan, combined with the planning tools, enable this individual focus.

The PRO Plan is designed to cost-effectively meet the broadest needs of employees, meet recruiting and retention goals of employers, and do it all without the possibility of accruing crippling unfunded liabilities.

# APPENDIX: FINANCIAL AND ACTUARIAL MODELING ASSUMPTIONS AND METHODOLOGY

## Definitions:

- **Discount Rate:** Rate at which future annual benefits are discounted back to present time (either hiring or retirement age). The discount rate equals the annual growth rate of annual benefits in post-retirement period.
- **Net Present Value of Pension Payouts:**
  - Represents a future amount valued at present time using a discount rate
  - The concept refers to “time value of money” where sum of money is worth more now than the same sum in a future date. Hence, annuity payments scheduled to payout in the next five years are worth more than an annuity that pays out in the next 25 years.

- The basic formula for determining the present value of an annuity is  $PV = \text{dollar amount of an individual annuity payment multiplied by } P = \text{PMT} * [1 - (1 / 1+r)^n] / r]$  where:
  - P = Present value of your annuity stream
  - PMT = Dollar amount of each payment (growth at 3%)
  - r = Discount Rate
  - n = Number of periods in which payments will be made (range from age 67 to 95)
- **QLAC:** Deferred annuity that is purchased at retirement age 67 and starts at age 85 to 95.
- **Target Replacement Rate:** Portion of the final average salary (FAS) that is targeted for annual payouts (we default at 80% of FAS in this paper). Costs of a plan/individual are determined as present value of targeted payouts minus present value of Social Security payouts at retirement (age 67).

#### **Actuarial Assumptions and Methods Used for Modeling:**

- **Disclosures:** We are assuming the inflation adjustment of annual payouts is completely funded through the balance at retirement age 67 under the DIY scenario. Contribution rates are fixed for each scenario. Although we are using age 95 as a cut-off point for calculations, it is assumed that annuity-based products provide benefit protection for the entire life of an individual.
- **Discount Rate:** 3% (equivalent to Vanguard Intermediate-Term Bond ETF return)
- **Post-retirement benefit growth rates:** 3% (average projected inflation rate)
- **Pre-retirement individual account investment returns:** 6% (Based on the average 20-year projections in the 2021 Horizon survey for a hypothetical pension plan)) at ages 27-57, that gradually lowered in the last 10 years before retirement (ages 58-67) to 3% (intermediate-term bond). This is a simplified version of a target-date fund strategy of rebalancing investment portfolio to lower risks by retirement age.
- **Payroll growth assumption:** Combination of merit-based (for the first 10 years) increases and a constant wage inflation (all years). Individual is assumed to be hired at age 27 with a \$20,000-starting salary. Wage inflation is assumed to grow annually by:
  - 2% (\$50,000 FAS scenario)
  - 2.5% (\$75,000 FAS scenario)
  - 3.5% (\$125,000 FAS scenario)



- **Retirement period:** ages 67 to 95
- **QLAC:** 10 years (ages 85 to 95)

**Social Security Benefits:** We are using the Social Security Benefit Calculator (<https://www.ssa.gov/OACT/quickcalc/inddex.html>), and assuming retirement at age 67 with final average salaries (FAS) of \$50,000, \$75,000, and \$125,000 with approximate monthly SS benefits of \$1,522, \$1,985, and \$2,694, respectively (scaled up to yearly).

**Annuity Longevity Discounts:** We are using Social Security mortality rates (2019 period life table for the Social Security area population) as a direct discount person would receive through the insurance company that provides benefits to multiple individuals (i.e., under QLAC and 100% annuity scenarios): <https://www.ssa.gov/oact/STATS/table4c6.html>

**Insurance Fees:** Assuming 6% one-time annuity fee on a full amount of immediate/deferred annuity

# ABOUT THE AUTHORS

**Richard Hiller** is a financial service executive who brings his Fortune 100 experience to the Pension Integrity Project as a Senior Fellow. Prior to founding Retirement Policy Consulting, LLC he had a distinguished 35-year career with TIAA.

During his tenure there he influenced financial services-related legislation through congressional testimony and relationship building. He has also testified before many state legislative committees regarding pension design and reform. Hiller specializes in defined contribution-based plan designs that incorporate income features and strong risk management. His work includes influencing public and private higher educational systems nationwide as well as state and local governments.

**Roderick Crane** is an authority on public sector retirement benefit programs with expertise in the design, administration, and governance of defined benefit, defined contribution, deferred compensation, and retiree health plans sponsored by states, local governments, public higher education, local governments, and special districts.

During his 32 years of experience, Crane has worked as legal counsel to a state legislative retirement oversight committee, a retirement benefits and fiduciary consultant for two national retirement consulting and actuarial firms, and directed the public sector market strategy for one of the largest defined contribution financial services firms in this country. Crane has been an active participant in the public retirement industry through his participation and leadership in national public sector retirement associations. He has

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Crane also has expertise regarding federal tax and workplace laws as they apply to public and private sector 401(a), 401(k), 457, and 403(b) arrangements, prefunded retiree 105(h) health reimbursement accounts (HRA), as well as fiduciary and governance requirements that apply to plan sponsors and boards of trustees.

**Anil Niraula** is a quantitative policy analyst with Reason Foundation's Pension Integrity Project.

Prior to joining Reason Anil worked as projects officer in data analytics at the International Monetary Fund.

Niraula focuses on historical and predictive analysis of public pension finances using actuarial and statistical modeling to inform pension policy. Niraula has also helped develop and manage Pension Integrity Project's database for a better storage, collection, analytics, and visualization of pension and other public data. Niraula has contributed to in-depth analysis of the Arkansas TRS, Louisiana LASERS, Louisiana TRSL, New Mexico ERB, and New Mexico PERA pension systems.

Niraula's work has been published by The Independent Institute and Georgia Public Policy Foundation. Niraula recently presented a panel paper at the APPAM 42nd Annual Fall Research Conference.

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